NATIONAL INDEX

OF

AGRICULTURAL

FIELD

EXPERIMENTS

VOL. 1 PART 3

ANDHRA PRADESH

1960—65

Published by
INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
NEW DELHI-110012

FOREWORD

The I. C. A. R. has adopted the 'Co-ordinated approach' to crop improvement as its strategy in agricultural research. This approach is based on the principle of giving high priority to problem solving research and for the purpose an intimate knowledge of research in progress and trends of results is very essential. To give impetus to this approach, I. C. A. R. started a scheme for collecting data of all field experiments conducted in the country. It was aimed at compilation of agronomic experiments in the country, with a view to indicate the gaps in the knowledge and to avoid duplication. The scheme entitled : "National Index of Field Experiments" is running under the Institute of Agricultural Research Statistics which has rendered a very valuable service by preparing compendia of agricultural field experiments conducted in the country. Two series of the compendia containing results of about 7,200 and 12,000 experiments conducted during the periods 1948-53 and 1954-59 respectively have already been published by the Institute. The present is the third series of compendia and is expected to contain the results of about 18,000 experiments conducted during the period 1960-65.

The number and the types of experiments have been increasing at a fast rate. Further, many of the experiments were being repeated over a number of years. The conclusions drawn from such experiments should take into account the seasonal variations. For this purpose, it was necessary to carry out consolidated analysis of results over years. Thus, the task of compilation, analysis and interpretation of results of experiments being covered in the third series became more formidable compared to those covered in the earlier two series.

The preparation of this compendium has been possible by the whole-hearted co-operation of State Departments of Agriculture, Agricultural Universities and Central Research Institutes who ungrudgingly made the results of their experimental research available. My thanks are due to various officers of these institutions for participating in this work.

I hope that the present series will be followed by periodical publications of similar compendia for later years in order that the availability of results of scientific experiments in agriculture in India may be maintained up-to-date in a consolidated form.

B. K. SONI
Deputy Director General (AS)
Indian Council of Agricultural Research

NEW DELHI,
January 1, 1973.

PREFACE

The present set of volumes form Part III in the series of compendia of Agricultural Field Experiments being published under the project of National Index of Field Experiments. Volumes comprising in Parts I and II of the series pertaining to the periods 1948-53 and 1954-59 were published in 1962 and 1965 and contained the results of about 7,200 and 12,000 experiments respectively. The present volumes include results of experiments conducted during the period 1960-65. During the last decade there has been an enormous increase in agricultural research and experimentation, so much so that, for the period 1960 – 65 to which the present volumes refer, results of about 18,000 experiments are available.

Like the earlier two series, the compendium for Part III is divided into 15 volumes, one each for (1) Andhra Pradesh, (2) North-Eastern Region (Assam, Manipur, Nagaland, Meghalaya, Tripura, Arunachal Pradesh and Mizoram), (3) Bihar, (4) Gujarat, (5) Kerala, (6) Madhya Pradesh, (7) Maharashtra, (8) Mysore, (9) Orissa, (10) North-Western Region (Punjab, Haryana, Jammu & Kashmir and Himachal Pradesh), (11) Rajasthan, (12) Tamil Nadu, (13) Uttar Pradesh, (14) West Bengal and (15) All Central Institutes. A departure has, however, been made in the presentation of the material contained in each volume. Whereas the results of individual experiments were presented in the volumes of previous series, the present series contains results of pooled statistical analysis of experiments that were conducted for two or more years and concluded during the period 1960-65. In respect of those experiments conducted only for one year, and also those conducted for more than one year but were continuing beyond 1965, the results of individual experiments have been presented

The work under the scheme was carried out at the Institute of Agricultural Research Statistics. Collection of data from different research stations, their scrutiny and preliminary analysis were carried out in successive periods under the charges of Shri T.P. Abraham, Assistant Statistical Adviser, now Joint Director, Central Statistical Organisation ; Dr. B.N. Tyagi, Senior Statistician, Now Joint Director of Agriculture (Statistics), Uttar Pradesh and Shri M.G. Sardana, Senior Statistician, now Officer-on-Special Duty, Central Statistical Organisation. Shri O.P. Kathuria, Junior Statistician, now Statistician in Indian Agricultural Research Institute was also associated.

Preparation of material for inclusion in the third series of compendia volumes and their printing was carried out under the guidance of Shri K.S. Krishnan, Senior Statistician. Shri R.K. Khosla and Shri P.N. Soni, Junior Statisticians, were responsible for the actual working of the scheme till October 1973 and thereafter respectively.

The collection of data of experiments from various research stations was done by the regional staff of the Institute placed in different States. They deserve to be congratulated for the hard work they have put in. The tabulation of the large volume of data involved was facilitated by the assistance rendered by the staff of the computer centre located at the Institute. S/Shri P.P. Rao. M.P. Saksena, M.L. Sahni, A. K. Mukherjee, S. L. Garg, R.K. Jain, H.C. Jain, G.V.S R. Krishna, J.K. Kapoor, D.K. Gulati, D.P. Singh, Mahender Singh, Kuldip Singh and S.S. Kutaula, statistical staff of the Institute deserve mention for the careful and painstaking work in the analysis of data, combination of results of similar experiments and proof reading of the compendia volumes.

Thanks are due to the State Departments of Agriculture, the Central Institutes and the Agricultural Universities who made the data of the experiments conducted under their jurisdiction readily available to the staff of the Institute. The I. A. R. S. acknowledges with thanks their willing co-operation without which the consolidation of the results would not have been

possible. The Institute is also thankful to various officers in the State Departments of Agriculture and Agricultural Universities who worked as Regional Supervisors for the project from time to time and provided guidance to the regional staff working in the scheme. The list of the names of the regional supervisors and regional staff of the project is given on the following pages.

D. SINGH
Director
Institute of Agricultural Research Statistics
(I. C. A. R.)

NEW DELHI,
June 1, 1974

Regional Supervisors and Regional Staff of the National Index of Field Experiments

Sl. No.	Region & Headquarters	Statistical staff from the Institute of Agricultural Research Statistics	Regional Supervisor
1.	Andhra Pradesh (Hyderabad)	1. Shri C. H. Rao 2. Shri G. V. S. R. Krishna 3. Shri P. R. Yeri	1. Shri P. Govinda Rao, Head of the Agri. Res. Instt. 2. Shri S. Vittal Rao, H. Q. Dy. Director (Research)
2.	Assam (Shillong)	1. Shri A. Sinha 2. Shri K. D. Saha	1. Shri U. C. Borah, Research Officer (Stat.)
3.	Bihar (Sabour)	1. Shri R. K. Jain 2. Shri S. M. G. Saran	1. Shri G. P. Singh, Statistician
4.	Gujarat (Ahmedabad)	1. Shri S. P. Doshi	1. Dr. D. K. Desai, Dy. Director of Agriculture (Stat.) 2. Shri J. B. Trivedi, I/C. Dy. Director (Stat.) 3. Shri R. L. Shah, Dy. Director of Agriculture (Stat.)
5.	Kerala (Trivandrum)	—	1. Shri N. George John, Research Officer 2. Shri G. Rama Chandran Nair, Research Officer 3. Shri K. George, Research Officer
6.	Madhya Pradesh (Bhopal)	1. Shri Rama Rao Patil 2. Shri S. S. Kutaula	1. Shri A. G. Khare, Dy. Director of Agriculture (Stat.)
7.	Maharashtra (Poona)	1. Shri P. R. Yeri 2. Shri B. Ramakrishnan	1. Shri V. G. Sharma, Sr. Statistician 2. Shri G. C. Shaligram, Dy. Statistician 3. Shri D. T. Sawant, Asstt. Statistician
8	Mysore (Bangalore)	1. Shri K. A. Balakrishnan 2. Shri P. T. N. Nambiar	1. Dr. N. P. Patil, Director of Research
9.	Orissa (Bhubaneswar)	1. Shri Rama Rao Patil	1. Shri B. Mishra, Dy. Director of Agri. (Hq.) 2. Shri A. Mishra, Chief Statistician

10.	Punjab, Haryana' Himachal Pradesh, Jammu & Kashmir (Ludhiana)	1. Shri B. L. Kaistha 2. Shri U. N. Dixit 3. Shri D. L. Manocha 4. Shri M. S. Batra 5. Shri D. P. Singh	1. Shri P. S. Sahota, Director of Crop Insurance 2. Shri Darshan Singh, Asstt. Statistician 3. Shri M. S. Pannu, Statistician, Department of Agriculture 4. Dr. D. Raghavarao, Prof. & Head, Dept of Maths. & Stat., P A.U., Ludhiana
11.	Rajasthan (Jaipur)	1. Shri N. K. Ohri 2. Shri C. H. Rao	1. Shri H. C. Kothari, Dy. Director (Statistics), Department of Agriculture
12.	Tamil Nadu (Coimbatore)	1. Shri P. Narayanan 2. Shri M. V. George	1. Shri K. R. Nagaraja Rao, Secretary, Research Council 2. Dr. K. Ramakrishnan, Associate Dean 3. Dr. D. Daniel Sunderaraj, Principal
13.	Uttar Pradesn (Lucknow)	1. Shri S. N. Bajpai 2. Shri M. P. Saksena 3. Shri G. N. Bahuguna 4. Shri O. P. Sharma 5. Shri R. Sharma 6. Shri C. B. Tiwari 7. Shri R. S. Singh 8. Shri A. C. Srivastava	1. Dr. K. Kishen, Jt. Director of Agriculture (Statistics) 2. Shri K. P. Avasthy, Officer-on-Special Duty
14.	West Bengal (Calcutta)	1. Shri A. K. Mukherjee 2. Shri A. Sinha	1. Shri S. N. Mukherjee, Dy. Director of Agriculture (Statistics)

ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATOR'S FIELDS GIVEN IN EXPERIMENTAL DATA

Crop :—In the top left corner, is given the name of the crop on which the experiment is conducted. Within brackets along side the crop is mentioned the season wherever the information is available.

Ref :—Against the sub-title 'Reference' is mentioned the name of the State, the year in which the experiment is conducted and the serial number of the experiment for that year is given in brackets.

Abbreviations adopted for States are as follows :

1.	A.P.	—	Andhra Pradesh	11.	Mn.	—	Manipur
2.	As.	—	Assam	12.	Ms.	—	Mysore
3.	Bh	—	Bihar	13.	N.L.	—	Nagaland
4.	Gj.	—	Gujarat	14.	Or.	—	Orissa
5.	H.P.	—	Himachal Pradesh	15.	Pb.	—	Punjab
6.	Hr.	—	Haryana	16.	Rj.	—	Rajasthan
7.	J.K.	—	Jammu & Kashmir	17.	T.N.	—	Tamil Nadu
8.	K.	—	Kerala	18.	Tr.	—	Tripura
9.	M.P.	—	Madhya Pradesh	19.	U.P.	—	Uttar Pradesh
10.	Mh.	—	Maharashtra	20.	W.B.	—	West Bengal

For the experiments conducted under the schemes sponsored by the Indian Council of Agricultural Research, like the All India Co-ordinated Agronomic Experiments (Model Agronomic Experiments and Simple Fertilizer Trials) scheme, no serial numbers have been given at the source as the data of these experiments were collected at the headquarters (New Delhi). In such cases, the abbreviation MAE or SFT is given in the bracket against the year in which the experiment is conducted.

Site & Centre :—Name of the Research Station is mentioned along with the place where it is located. *e.g.* Agri. Res. Stn., Vyara for Agricultural Research Station, Vyara.

For Central Institutes, the corresponding standard abbreviations have been adopted as given below :

C. A. Z. R. I.	—	Central Arid Zone Research Institute.
C. P. C. R. I.	—	Central Plantation Crops Research Institute.
C. P. R. I.	—	Central Potato Research Institute.
C. R. R. I.	—	Central Rice Research Institute.
C. S. S. R. I.	—	Central Soil Salinity Research Institute.
C. T. C. R. I.	—	Central Tuber Crops Research Institute.
C. T. R. I.	—	Central Tobacco Research Institute.
C. T. R. L.	—	Cotton Technological Research Laboratory.
I. A. R. I.	—	Indian Agricultural Research Institute.
I. G. F. R. I.	—	Indian Grassland & Fodder Research Institute.
I. H. R.	—	Institute of Horticultural Research.
I. I. S. R.	—	Indian Institute of Sugarcane Research.
I. L. R. I.	—	Indian Lac Research Institute.
J. A. R. I.	—	Jute Agricultural Research Institute.
J. T. R. L.	—	Jute Technological Research Laboratory.
S. B. I.	—	Sugarcane Breeding Institute.

In case of the experiments conducted on cultivator's fields, whether under an Indian Council of Agricultural Research scheme or by the State Government, the abbreviation (c.f.) is given along with the rite or centre as, for example, Cuttack (c.f.).

Type :—Abbreviations used against this item are one, or more than one, of the following : C—Cultural ; D—Control of Diseases and Pests ; I—Irrigational ; M—Manurial ; R—Rotational ; V—Varietal and X—Mixed cropping. In factorial experiments, the treatments will be abbreviated as, for example. Cultural-*cum*-Manurial as CM.

Object :—A statement of the objective of the experiment is given indicating the main crop and the type of the experiment.

Results :—Information under this heading should be read against the following items :

(i) General mean. (ii) S. E. per plot. (iii) Results of test of significance. (iv) Summary table(s), with critical differences for individual effect means which are significant.

Other abbreviations used in the Experimental Data

Kg	=	Kilogram(s)	Dical. Phos.	=	Dicalcium Phosphate
Kg/ha.	=	Kilogram(s) per hectare	Zn. Sul.	=	Zinc Sulphate
N	=	Nitrogen	Cu. Sul.	=	Copper Sulphate
P	=	Phosphate	Mg. Sul.	=	Magnesium Sulphate
K	=	Potash	Mn. Sul.	=	Manganese Sulphate
Nitro. Phos.	=	Nitrogen Phosphate	Ammo. Molybdate	=	Ammonium Molybdate
Ammo. Phos.	=	Ammonium Phosphate	B.	=	Boron
A/S	=	Ammonium Sulphate	Fe. Sul.	=	Ferrous Sulphate
A/S/N	=	Ammonium Sulphate Nitrate	F. M.	=	Fish Manure
C/A/N	=	Calcium Ammonium Nitrate	G. N. C.	=	Groundnut Cake
A/N	=	Ammonium Nitrate	M. C.	=	Municipal Compost
A/C	=	Ammonium Chloride	T. C.	=	Town Compost
C/N	=	Chilean Nitrate	G. M.	=	Green Manure
Mur. Pot.	=	Muriate of Potash	G. L. M.	=	Green Leaf Manure
Pot. Sul.	=	Potassium Sulphate	F. Y. M.	=	Farm Yard Manure
Super.	=	Super Phosphate	C. M.	=	Cattle Manure

The information regarding the particulars of research stations may be obtained under the respective items as given below :

PARTICULARS OF RESEARCH STATIONS

A. General Information :

(i) District and the nearest railway station with Latitude, Longitude and Altitude, if available. General topographpy of the experimental area. (ii) Type of tract it represents. (iii) Year of establishment. (iv) Cropping pattern. (v) Programme of research.

B. Normal Rainfall :

Average fortnightly rainfall, specifying the period on which the figures are based.

C. Irrigation and Drainage Facilities :

(i) (a) Whether available ; if so, since when. (b) Type of facilities available. (ii) Whether there is a proper drainage system.

D. Soil type and Soil analysis :

(i) Broad soil type with depth, colour and structure etc. (ii) Chemical analysis. (iii) Mechanical analysis.

E. No. of Experiments :

No. of experiments conducted on different crops that have been included in the compendium.

Information under the following heads is to be read against the respective items under experimental data as given on next page.

BASAL CONDITIONS

A. For experiments on annual crops :

(i) (a) Crop rotation followed, if any. (b) Previous crop. (c) Manuring of previous crop (State amount and kind). (ii) Soil type. (iii) Date of sowing/planting. (iv) Cultural practices : (a) Preparatory cultivation. (b) Method of sowing. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (v) Basal manuring given to the whole experiment with time and method of application. (vi) Variety (indicate also early, medium or late). (vii) Irrigated or un-irrigated. (viii) Important post-sowing/planting cultural operations such as weeding, etc. (ix) Rainfall during crop season. (x) Date of harvest.

B. For experiments on perennial crops :

(i) Previous history of the experimental area (Give manuring and other operations). (ii) Soil type. (iii) Method of propagation of plants. (iv) Variety. (v) Date and method of sowing/planting (including spacing). (vi) Age of seedlings at the time of planting. (vii) Basal manuring given to the whole experimental area. (viii) Important cultural operations during the experimental year. (ix) Inter-cropping, if any. (x) Irrigated or un-irrigated (If irrigated, give the source, number, interval and intensity of irrigation). (xi) Rainfall during the experimental year. (xii) Date(s) of harvest.

C. For experiments on cultivator's fields :

(i) (a) Crop rotation followed, if any. (b) Previous crop. (c) Manuring of previous crop (State amount and kind). (ii) Soil type and soil analysis, if available. (iii) Basal manuring (Give time and method of application). (iv) Variety. (v) Cultural Practices : (a) Preparatory cultivation. (b) Method of sowing. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (vi) Date of sowing/planting. (vii) Irrigated or un-irrigated. (viii) Important post-sowing/planting cultural operations such as weeding, etc. (ix) Rainfall during crop season. (x) Date of harvest.

DESIGN

A. For experiments on annual crops :

(i) Abbreviations for designs : C. R. D.—Completely Randomised Design ; R. B. D.—Randomised Block Design ; L. Sq.—Latin Square ; Fact.—Factorial ; Confd.—Confounded ; other designs and modifications of the above to be indicated in full. (indicate confounded effects, if any). (ii) (a) No. of plots per block (in a split-plot experiment, the number of main-plots per replication as well as the number of sub-plots per main-plot should be given). (b) Block dimensions. (iii) No. of replications. (iv) (a) Gross plot-size. (b) Net plot-size. (v) Border or guard rows kept. (vi) Whether treatments are randomised (independently in each block).

B. For experiments on perennial crops :

(i) Abbreviations for designs: C. R. D.—Completely Randomised Design ; R. B. D.—Randomised Block Design ; L. Sq.—Latin Square ; Fact.—Factorial ; Confd.—Confounded ; other designs and modifications of the above to be indicated in full. (indicate confounded effects, if any) (ii) (a) No. of plots per block (in split-plot experiments, the number of main-plots per replication as well as the number of sub-plots per main-plot should be given). (b) Block dimensions. (iii) No. of replications. (iv) (a) Net plot-size. (b) No. of trees per plot (In case of experiments on grasses give plot-size). (v) Border or guard rows kept. (vi) Whether treatments are randomised (independently in each block).

C. For experiments on cultivator's fields :

(i) Design with No. of plots/block and No. of replications (In split-plot experiments, the number of main-plots per replication as well as the number of sub-plots per main-plot should be given). (ii) Method of selection of sites with number and distribution of experiments. (iii) (a) Gross plot-size. (b) Net plot-size. (iv) Whether treatments are randomised (independently in each block).

GENERAL INFORMATION

A. For experiments on annual crops :

(i) General crop condition during growth (if lodged, state date of lodging). (ii) Incidence of pests and diseases and control measures taken, if any. (iii) Types of quantitative observations taken. (iv) (a) If the experiment has continued for more than one year, indicate year of commencement and year of termination. (b) Whether treatments assigned to the same plots every year. (c) Reference to combined analysis, if any. (v) Other centres, if any, where the same experiment has been conducted with reference numbers. (vi) Abnormal occurances such as heavy rains, frost, storm, drought, etc. (vii) Any other important information.

B. For experiments on perennial crops :

(i) General crop condition during growth. (ii) Incidence of pests and diseases and control measures taken, if any. (iii) Types of quantitative observations taken. (iv) If the experiment has continued for more than one year, indicate year of commencement and year of termination (Give reference of previous years, if any). (v) Other centres, if any, where the same experiment has been conducted with reference numbers. (vi) Reference to combined analysis, if any. (vii) Abnormal occurances such as heavy rains, frost, storm, drought, etc. (viii) Any other important information.

C. For experiments on cultivator's fields :

(i) General crop condition during growth. (ii) Incidence of pests and diseases and control measures taken, if any. (iii) Types of quantitative observations taken. (iv) In case of repetition in successive years. (a) Year of commencement and termination. (b) Whether treatments assigned to the same plots every year. (c) Reference to combined analysis, if any. (v) In case of repetition at other places, give names with references, if any. (vi) Abnormal occurances such as heavy rains, drought, etc. (viii) Any other important information.

———

GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1	Paddy	*Oryza sativa* L.	Dhan	Dhan	Dhano	Vadlu, Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan, Chawal	Chaul, Dhan
2	Wheat	*Triticum sativum* Lamk, *Triticum aestivum* L.	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3	Jowar	*Andropogon Sorghum*	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari Jondhla	Jowari Jurra	Jowar; Jaur	Jowar
4	Maize	*Zea mays* L.	Gom dhan	Bhutta	Macca	Makka-jonna	Makka-cholam	Cholam Makka-cholam	Musukina Jola	Makka	Makkai	Makka	Makki, Makayee
5	Bajra	*Pennisetum typhoides stapf Ex Hubbard*	—	Bajra	Bajra	Sajja	Kambu	Kambu	Sajje	Bajri	Bajri	Bajra	Bajra
6	Common millet Proso millet (Variga)	*Panicum milliaceum* L.	—	Cheena	Bachari China, Bagamu	Variga	Paniva-ragu	—	Baragu	Vari	Cheno	Chena, Barri	Cheena
7	Ragi	*Eleusine coracana Gaertn*	—	Marwa	Mandia	Ragi ; Chodi	Keppai ; Ragi	Muthari Ragi	Ragi	Nagli ; Nachni	Nagli ; Bavto	Ragi ; Mandika ; Marwah	Manduka ; Mandhal
8	Tanai (Korra)	*Setaria italica Beauv*	—	Kaon	Kangu ; Kangam Korra	Korra	Tenai	Thena	Navane	Kang ; Rala	Kang	Kakum	Kangni
9	Red Gram (Tur)	*Cajanus cajan* Milsp. ; *Cajanus indicus* sprengl.	Arhar	Arahar	Harad	Kandulu	Thuvarai	Thuvara Payaru	Thogari	Tur	Tuver	Arhar	Harhar, Arhar
10	Green Gram (Mung)	*Phasealus aureus Rocb*	Magumah	Sonamug	Mung	Pacha-pesalu	Pachai-payaru Pasi-payaru	Ceru-payaru Payaru	Hesaru	Mug	Mag	Moong	Moong, Mug
11	Black gram	*Phoseaolus mungo var. radiatus Linn*	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhunnu	Uddu	Udid	Adad, Udad	Urd	Mash Urd
12	Horse gram	*Dholichas biflora Roxb*	—	Kulthi Kalai	—	Vulavalu	Kollu ; Kaanam	Muthira	Huruli	Kulth Hulga	Kulthi	Kultha	Kulthi
13	Brinjal	*Solamum melongen* L.	Bengena	Begun	Baigan	Vankaya	Kathari kai	Vazhu-thana	Bandane kayi	Vange	Vengan	Baingan	Bengan Bataun
14	French beans	*Phaseolus vulgaris* L.	French bean	Pharash bin	Farasi simba	Bangalore beans	Avarai ; seemai avarai	Beans	Hurali Kayi	Shravan gevda	Phanasi	Jangli sem	Frans bean

GLOSSARY OF VERNACULAR NAMES OF CROPS Contd.

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
15	Potato	*Solanum tuberosum* L.	Alooguti	Alu	Bilati Alu	Bangala-dumpa,	Uruzhai Kilangu	Urala kizangu	Alu gedde	Batata	Aloo, Batata	Aaloo	Alu
16	Tomato	*Lycapersicum esculentum*	Bilahi	Bilati begun	Bilati baigun	Tomato	Thakkali	Thakkali	Tomato	Wel wangi ; Tambati	Vilati Wagan ; Tameta	Tamatter	Tamatar
17	Bhindi (Lady's finger)	*Hibiscus esculentus ; Abelmoschus esculentus moench*	Bhendi	Dhenrosh	Vendi	Benda	Bendai kai	Venda	Bende kayi	Bhendi	Bhida ; Bhinda	Bhindi	Bhindi, Tori
18	Sugarcane	*Saccharum officinarum* L.	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
19	Cotton	*Gossypium spp.*	Kapah	Karpas ; Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
20	Mesta	*Hibiscus Cannabinus* L.	San	Bimli	Krunria	Gogu	Pulimanchi ; Pulichai	—	Holada-pundrike	Ambadi	Ambadi Moti	Patsan	Sankura Sankukra
21	Tobacco	*Nicotiana tabacum* L.	Dhopat	Tamak	Uanpatra	Pogaku	Pugayilai	Pukayila	Hoge Sappu	Tambaku	Tamaku	Tambaku	Tamaku Tambaku
22	Groundnut	*Arachis hypogaea* L.	China Badam	Cheena badam	China-badam	Nelashanga	Nila-kadalai	Nilak-kadala	Kadale kayi	Bhuimug	Bhoising ; Magafali	Mungphali	Mungfali
23	Caster	*Ricinus communist* L.	Eri	Rehri	Jada	Amudalu	Amanakku	Avanakku	Haralu	Erandi	Diveli Erando	Rehri	Arind ; Harind ; Rind
24	Gingelly	*Sesanum indicum* L. *sesamum orientale* L.	Til	Til	Rasi	Nuvvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
25	Chillies	*Capsicum frutescens* L.	Jalakiya	Lanka marich	Lanka	Mirapa-kaya	Milakai	Mulaku	Menasi-nakayi	Mirchi	Marcha	Lal mirch	Lal mirach
26	Turmaric	*Carcuma longa* : *Curcumedemestica Val.*	Halodhi	Halud, Haldi	Haldi	Pasupu	Manjal	Manjal	Arisina	Halad	Haldar	Haldi	Halad Haldi, Bassar
27	Onion	*Allium cepa* L.	Piyaz	Plaj	Peas, ulli	Ulli	Vengayam Erangayam	Ulli	Eerulli	Kanda	Dungli Kando	Piaz	Ganda Payaz
28	Banana	*Musa paradisiaca* L.	Kol	Pokakala	Kadli	Arati	Vazhai-pazam	Vazha	Bale	Kele	Kela	Kela	Kela
29	Grape-vine	*Vitis vinifera* L.	Angur	Angur	Angur	Draksha	Kodimu-ndri	Munthiri	Drakshi	Draksha	Darakh	Angoor	Angur bel

CONTENTS

ANDHRA PRADESH

The general information regarding the agro-climatic regions, extent of irrigation, normal cropping pattern, etc. of the State of Andhra Pradesh has been furnished in the first and the second series of the National Index of Agricultural Field Experiments already published for the periods 1948-53 and 1954-59 respectively.

This volume includes the result of 1478 experiments conducted during the period 1960-65, as against 677 experiments for the period 1954-59 and 490 for the period 1948-54. Besides results of experiments belonging to All India Co-ordinated Agronomic Experiments Scheme of I.C.A.R., are also included in the present compendium. The consolidated results of the experiments conducted for more than one year and conducted during the period 1960-65 numbering 835 and forming 323 groups, have been presented with crop-wise and type-wise in Table 1.

TABLE 1

Number of groups and experiments concluded during the period 1960-65
(Crop-wise and Type-wise)

Crop \ Type	M	MV	C	CM	CV	CMV	I	IM	D	X	Total
Paddy	80(204)	—	17(44)	4(11)	2(5)	—	—		27(66)	—	130(330)
Wheat	—	—	1(3)	—	—	—	—	—	—	—	1(3)
Jowar	2(6)	—	1(3)	—	—	—	—	—	—	—	3(9)
Maize	1(6)	4(9)	3(8)	1(2)	—	2(4)	—	—	—	—	11(29)
Ragi	3(7)	—	4(12)	1(3)	—	—	—	—	4(10)	—	12(32)
Korra	1(3)	—	—	—	—	—	—	—	—	—	1(3)
Red gram	2(7)	—	—	—	—	—	—	—	1(2)	—	3(9)
Horse gram	2(4)	—	—	—	—	—	—	—	—	—	2(4)
Brinjal	—	—	—	1(2)	—	—	—	—	2(4)	—	3(6)
Potato	1(2)	—	—	—	—	—	—	—	—	—	1(2)
Tomato	—	—	—	2(4)	—	—	—	—	1(2)	—	3(6)
Bhindi	—	—	—	1(4)	1(2)	—	—	—	—	—	2(6)
Sugarcane	30(82)	6(15)	2(4)	1(3)	3(8)	—	1(3)	2(6)	4(10)	—	49(131)
Cotton	15(34)	1(3)	6(13)	1(2)	—	—	—	—	5(11)	—	28(63)
Mesta	1(2)	—	3(10)	—	—	—	—	—	—	—	4(12)
Tobacco	—	—	—	—	—	1(3)	—	—	—	—	1(3)
Groundnut	13(41)	—	16(43)	1(2)	—	—	—	—	—	—	30(86)
Castor	3(8)	—	2(8)	—	—	—	—	—	—	—	5(16)
Gingelly	—	—	2(5)	—	—	—	—	—	—	—	2(5)
Chillies	—	—	2(4)	—	—	—	—	—	1(2)	—	3(6)
Turmeric	1(4)	—	2(5)	—	2(6)	—	—	—	—	—	5(15)
Onion	—	—	4(11)	—	—	—	—	3(8)	1(4)	—	8(23)
Banana	2(4)	1(2)	—	1(2)	1(2)	—	—	—	—	—	5(10)
Grape	1(3)	—	—	—	—	—	—	—	—	—	1(3)
Mixed--cropping	—	—	—	—	—	—	—	—	—	10(23)	10(23)
Total	158(417)	12(29)	65(173)	14(35)	9(23)	3(7)	1(3)	5(14)	46(111)	10(23)	323(835)

The result of 643 experiments either conducted for only one year during the period under report or were continued beyond 1965 have also been presented. The distribution of all the experiments, according to crop and type of treatments is furnished in Table 2.

TABLE 2

Number of experiments conducted during the period 1960-65.
(Crop-wise and Type-wise)

Crop \ Type	M	MV	C	CV	CM	CMV	I	IM	IV	IC	IMV	D	X	Total
Paddy	329	10	63	23	16	1	2	—	—	—	—	128	—	572
Wheat	—	—	3	—	—	—	—	1	—	—	—	2	—	6
Jowar	10	3	12	2	—	4	—	—	—	—	—	—	—	31
Maize	2	18	9	7	5	4	—	4	1	—	—	4	—	54
Bajra	3	—	—	—	—	—	—	—	—	—	—	—	—	3
Varriga	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Ragi	14	—	13	—	3	—	—	—	—	—	—	11	—	41
Korra	3	—	—	—	—	—	—	—	—	—	—	—	—	3
Red Gram	9	—	1	—	—	—	—	—	—	—	—	—	—	10
Green gram	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Black gram	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Horse gram	4	—	—	—	—	—	—	—	—	—	—	—	—	4
Brinjal	—	—	—	1	3	—	—	—	—	—	—	6	—	10
Fr. Beans	—	—	—	3	—	—	—	—	—	—	—	—	—	3
Potato	2	—	—	—	—	—	—	—	—	—	—	—	—	2
Radish	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Tomato	1	—	—	—	4	—	—	—	—	—	—	2	—	7
Bhindi	1	—	—	2	4	—	—	—	—	—	—	6	—	13
Sugarcane	154	22	15	27	11	1	3	7	1	1	1	29	—	272
Cotton	55	4	27	24	15	3	—	1	—	—	—	28	—	157
Mesta	6	—	10	—	—	—	—	—	—	—	—	—	—	16
Tobacco	3	—	2	—	1	3	—	—	—	—	—	—	—	9
Groundnut	51	—	49	—	7	—	—	1	—	—	—	—	—	108
Caster	10	—	9	—	1	—	—	—	—	—	—	—	—	20
Gingelly	4	—	7	—	—	—	—	2	—	—	—	—	—	13
Chillies	3	—	5	—	—	—	—	—	—	—	—	7	—	15
Turmeric	6	—	5	8	—	—	—	—	—	—	—	1	—	20
Onion	—	—	11	—	—	—	—	9	—	—	—	4	—	24
Banana	7	2	1	2	3	—	—	—	—	—	—	—	—	15
Grape	3	—	6	—	—	—	—	—	—	—	—	—	—	9
Mixed-cropping	—	—	—	—	—	—	—	—	—	—	—	—	36	36
TOTAL	680	59	248	99	73	16	5	25	3	1	1	232	36	1478

39 per cent of the total of 1478 experiments were on Paddy while Sugarcane, Caster and Groundnut accounted for 19, 11 and 9 per cent respectively of the total number of experiments. 46 per cent of the experiments were of purely manurial type while 12 per cent had manurial treatment applied in conjunction with other factors. Experiments relating to cultural practices and control of diseases and pests conducted on different crops, accounted for 17 per cent and 15 per cent respectively. Irrigational treatments were tried only in respect of 2 per cent of the total number of experiments reported.

The principal food crops of the State are Paddy, *Jowar*, Ragi and Pulses. Amongst the cash crops Sugarcane, Cotton, and Tobacco are the important crops grown in the State. Groundnut and Castor are the Oilseed crops, covering about 9% of the total cropped area. The salient feature of experimentation on important crops are given below :

Paddy : Paddy covered 3460* thousand hectares i.e. about 27% of the total cropped area. 330 experiments forming 150 groups were conducted during the period under report. All the experiments were conducted under irrigated conditions. Varieties like HR—19, MTU—15, HR—35, SLO—13, MLU—19 were commonly used. The net plot size adopted for experiments varied from 4·3 m. × 2·3 m. to 14·3 m. × 10·7 m.

Randomised Block Design was commonly used for experimentation. Out of 572 experiments, in as many as 478 experiments, this design was adopted. Split-plot, Confounded and Letin Square designs were adopted in 59, 29 and 6 experiments respectively. The experiments laid out in Randomised Block Design had replications ranging from 1 to 3 for 149 experiments, 4 to 6 for 268 experiments and more than 7 for the remaining. In experiments conducted in Split-plot and confounded designs number of replications varied from 2 to 6 and 1 to 3 respectively.

About 62 per cent of the total number of experiments, were of manurial type or had manure as one of the factors. The source of N in most of the manurial experiments was Am. Sulphate, C/A/N and Urea and that of P was Super, Nitro and Rock phosphate. The levels of N, tried in these experiments ranged between 0 and 134·5 Kg/ha. while that of P and K varied between 0 and 93 Kg/ha.

Beside these, result of experiments with different cultural practices like methods and dates of planting, age of seedlings, spacing between rows and between plants within rows and different methods of weeding, irrigational practices and of measures to control pests and diseases are included in the present volume.

Jowar : Jowar covered 2495* thousand hectares, accounting for about 20% of the total cropped area. Out of 31 experiments reported, 9 experiments forming 3 groups were concluded during the period under report. About one half of the experiments were conducted under irrigated conditions. Varieties like Co-18 (medium), Co-6 and PJ 36 were tried in experiments under irrigated condition while PJ 22 K (Medium) was commonly used in experiments conducted both under irrigated and rainfed conditions. The net plot area varied from 4·6 m. × 1·8 m. to 12·9 m. × 21·5 m.

Randomised Block Design was adopted for 19 experiments Split-plot and confounded designs were used in the case of 5 and 7 experiments respectively. About 60% of the experiments conducted in R.B.D had replications ranging between 2 and 6 while in the case of split-plot and confounded designs 4 to 6 and 1 to 2 replications were used.

Manurial experiments accounted for 50 per cent of the total number of experiments. In these experiments levels of N, P and K tried varied between 0 to 160, 0 to 67, 0 to 62 Kg/ha. respectively. Remaining experiments were conducted on Cultural practices. Different spacings between rows and plants, age of seedling at planting, different methods of cultivation and different dates of sowing were the important practices tried.

Ragi : Ragi covered 338* thousand hectares i.e. about 2·6 per cent of the total cropped area. Out of 41 experiments reported, 32 experiments forming 12 groups were concluded during the period under report. Practically all the experiments were conducted under irrigated conditions. Varieties like AKP-6, VZM-2, Co-7 (early) and AKP-2 were used in experiments. The net plot size adopted for experimentation varied from 2·7 m. × 2·7 m. to 8·1 m. × 4·6 m.

Half of the total number of experiments were laid out in Randomised Block Design. 11 experiments were conducted in Split-plot Design and the remaining were laid out equally in Confounded and Latin Square designs. 4 to 6 replications were normally used for experiments laid out in Randomised Block Design and Split-plot Design while for Confounded Design 1 or 2 replications were adopted.

About one third of the experiments were of manurial type. The sources of N in manurial experiments were Urea, Am. Sulphate, Am. Sulphate Nitrate and Cal. Am. Nitrate and those of P and K were Super and Mur. of Potash respectively. The levels of N, P and K applied from 22·4 to 67·2 Kg/ha. for each of the cases.

In cultural experiments dates and methods of sowing, spacing and age of seedlings etc. were the important treatments tried, Besides these, the results of the experiments on control of pests and diseases have been given.

Sugarcane : Sugarcane an important commercial crop of the State, covered 1218* thousand hectares i.e. 8·7 per cent of the total cropped area. Out of 272 experiments reported during the period, 131 experiments forming 49 groups were concluded. Excepting 2, all the experiments were conducted under irrigated conditions. CO-419, CO-527, CO-997, CO-775, CO-737 and CO-975 were the common varieties tried. The net plot area for experimentation varied from 7·3 m. × 3·7 m. to 11·6 m. × 8·0 m.

90 per cent of the total number of experiments were conducted in Randomised Block Design. Split-plot, Latin Square and Confounded designs were adopted in the cases of 15, 7 and 5 experiments. Excepting 12 experiments where more than 7 replications were adopted, almost all the experiments laid out in Randomised Block Design had replications varying between 2 and 6. 7 experiments conducted in Split-plot Design had replications ranging from 1 to 3 while another 7 had 4 to 6 replications. 8 experiments laid out in Confounded Design had 3 replications.

Manurial experiments accounted for 57 per cent of the total number of experiments. N as Am. Sulphate or Urea, P as Super and K as Mur. of Potash were applied in these experiments either alone or in combination. The levels of N tried varied from 0 to 593 Kg/ha. while those of P and K ranged between 0 and 336 Kg/ha. In Cultural experiments dates and methods of planting and harvesting, spacings between plants and rows, seed rates and earthing-up etc , were some of the important treatments tried.

Groundnut : Groundnut covered 1092* thousand hectares i.e 8.6 percent of the total cropped area. 86 experiments forming 30 groups were conducted during the period under report. Out of 108 experiments, about 58 of the experiments were conducted under irrigated conditions. TMV-2, Spanish (improved) and TMU-2 were used in these experiments. TMV-3 and also Spanish (improved) were the varieties mostly used in experiments conducted under rainfed conditions. The net-plot size adopted for experiments laid out in different designs varied from 6.7m × 2.0m. to 10.1m. × 10.1m., 57, 32 and 19 experiments were conducted in Randomised Block, Confounded and Split-plot designs respectively Experiments laid out in Randomised Block Design had replications ranging between 2 and 6. Confounded designs were laid either in single or two replications. 13 experiments laid out in Split-plot Design had replications ranging from 1 to 3 while the remaining 6 had 4 to 6 replications. About 50 percent of the experiments were of manurial type. The level of N tried in these experiments varied between0 and 56.0 Kg/ha. while that of P and K ranged beteen 0 and 67 2 Kg/ha.

Dates of sowing, spacings between rows and plants, types, of Kernals, tillage practices etc. were the important treatments tried in Cultural expetiments.

Cotton : Cotton covered 373* thousand hectares i.e. 2.9 percent of the total cropped area. Out of 157 experiments, 63 experiments forming 28 groups were concluded during the period under report. About half of the experiments were conducted under irrigated conditions. P-216 F and MCU-2 were the varieties commonly used in these experiments. Coorani 6 (early), Cocades, N-14, and Nandiam were the varieties tried in experiments conducted under rainfed conditions. Laxmi variety was commonly used in experiments conducted under irrigated conditions as also under rainfed conditions. The net plot size adopted for experimentation varied between 6.4m × 1.8m to 11.6m × 6.0m. 96, 43 and 18 experiments were laid out in Randomised Block, Split-plot and confounded designs respectively. Experiments laid out in Randomised Block Design had replications 1 to 3 for 10 experiments and more than 7 for the remaining. 36 experiments laid out in Split-plot Designs had replication varying from 4 to 6 and the remaining 7 had 1 to 3 replications. Experiments conducted in Confounded Design were in single or two replications. About 38 percent of the experiments were of manurial types or had manure as one of the factors tested. The level of N tried in these experiments varied between 0 to 224 Kg/ha. while that of P and K ranged between 0 and 67.2 Kg/ha. Besides these, results of experiments with different Cultural practices like, spacing between rows and plants, age of seedlings, topping, irrigational practices and of those to control the pests and diseases have been included in the present volume.

PARTICULARS OF RESEARCH STATIONS AND SOIL ANALYSIS

1. Millet Research Station, Adilabad.

A. General Information :

(i) In Adilabad distt., 6½ Km. from Adilabad Rly. Stn. The general topography of the experimental area is slightly slopy. (ii) Rainfed tract of Telengana. (iii) Established in 1961. (iv) *Jowar*, Cotton, *Jowar*+Red gram, Cotton. (v) To evolve high yielding strains of millets suitable for the tract.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
—	0·2	1·7	0·2	0·8	15·4	23·2	31·9	13·3	8·4	1·4	1·7	98·2

(Av. monthly rainfall in cm. ; based on the data for the period 1960—63).

C. Irrigation and Drainage Facilities :

(i) (a) Available since inception, but not utilised. (b) Irrigation by wells. (ii) Natural drainage.

D. Soil type and Soil analysis :

(i) Soil type—Clay loam ; Depth—0·61 m. to 1·22 m. ; Colour—Black ; Structure—Clay loam to Sandy clay loam. (ii) Chemical analysis : PH.—7·3 to 7·5 ; E.C.—0·15 to 0·18 ; OC—low to low medium ; Available P_2O_5-1·0 to 3·0 Kg/ha. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Jowar—1 ; Total=1.

2. Cotton Research Farm, Adoni.

A. General Information :

(i) In Adoni taluka of Kurnool district, nearest Rly. Stn. Adoni with Lat—14°30′ N/ Long-73°43′ E./Alt.—414·5 m. above m.s.l. Uniformaly levelled lands. Black, red and mixture soils of Rayalaseema. (iii) Established in 1937. (v) *Jowar*—Cotton ; Korra—Cotton. (v) (a) To evolve an early maturing cotton superior to Western—1, (b) Work on American cotton varieties was also taken up as a part of the western cotton scheme. (c) To evolve better Arboreum *Desi* Cotton to replace existing Adonicum in Red and Mixture soils of *Rayalaseema* area under Munjari improvement scheme.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	0·1	0·2	0·5	4·1	6·4	0·9	2·8	6·0	16·8	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
18·8	15·0	16·0	19·8	8·3	24·4	5·0	3·2	0·2	0·2	7·3	—	155·0

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) Irrigation facilities are not available. (ii) Natural drainage system.

D. Soil type and Soil analysis :

(i) Soil type	Deep Black cotton soils.	Shallow red soils	Red and Black misture soils.
Depth	0·91—1·83 M.	0·45—0·76 M.	0·30—0·76 M.
Colour	Deep Black	Red	Brown to ash colour.
Structure.	Fine clayey.	Loam with sand	0·30—0·76 M.

(ii) Chemical analysis and (iii) Mechanical analysis : Information—N.A.

E. No. of Experiments :

Mixed cropping—24 ; Total=24.

3. Mesta Research Station, Amadalavalasa.

A. General Information :

(i) In Srikakulam taluka of Srikakulam district, 1·5 Km. from Amadalavalasa Rly. Stn. with Lat.—18°24′ N/Long.—83°84′ E/Alt.—274 M. above m.s.l. The topography of the experimental area is flat and levelled. (ii) Rainfed area of Srikakulam and Visakhapatnam. (iii) Established in 1958. (iv) Mesta and groundnut are main crops grown in alternative years. (v) To evolve high yielding varieties.

B. Normal Rainfall :

Information : N.A.

C. Irrigation and Drainage Facilities :

(i) Nil. (ii) Proper drainage system.

D. Soil type and Soil analysis :

(i) Depth—0·91 to 1·82 M. ; Colour—Reddish brown. (ii) Chemical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Mesta—16 ; Total=16.

4. Agriculture Research Station/Project Development and Demonstration Farm, Amaravathi.

A. General Information :

(i) In Guntur district, 36 Km. from Guntur Rly. Stn. Moderately slopy towards river Krishna. (ii) Black soil tract of Nagarjuna Sagar Project, right bank. (iii) Established in 1962. (iv) Green manuring crop, paddy in wet soils. Hybrid *Jowar*, hybrid *bajra*, hybrid maize, sunbeeng, groundnut, wheat, black gram, Onion etc. in the irrigated dry Crops. (v) To evolve suitable cropping pattern for irrigated black soils of Nagarjuna Sagar Project and to determine the water requirements of crops and to study the physical, chemical reactions of soils consequent to introductions of different intensities of irrigation.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	—	—	—	1·6	0·1	0·9	1·6	1·7	4·1	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
7·2	7·6	8·2	13·0	13·3	25·1	1·3	1·5	2·3	0·2	—	—	90·0

(Av. fortnightly rainfall in cm. ; based on the data for the period May 1964 to Dec. 65).

C. Irrigation and Drainage Facilities

(i) (a) Available since 1964. (b) Electric motor and oil engine. Lift irrigation from Krishna River, Nagarjuna Sagar Canal water from 1967. (iii) Field drains.

D. Soil type and Soil analysis :

(i) Soil type—Clay loams ; Depth—Medium deep to deep (0·91 to 1·82 M). ; Colour—Dark grey brown ; Structure—Top soils : granular to sub-angular blockey. Low layers : platy structure. (ii) Chemical analysis : pH. 8·2 to 8·5 in the Ist 30 cm., 8·5 to 9·4 in 61-122 cm. and suddenly decreases to 7·6 to 7·8 at further depths ; Organic mater 0·5 to 0·6 %, Total N—0·03 to 0·04 ; Available P_2O_5—11·2 to 17·9 Kg/ha. ; Available K_2O-67·2 to 168·1 Kg/ha. (iii) Mechanical analysis : Clay—56·76 % ; Silt—18.65 % ; Fine sand—12·25 % ; Coarse sand—5·78% ; Loss by solution 6·56 %.

E. No. of Experiments :

Paddy—2, Wheat - 3, *Jowar*—1, Maize—19, Cotton—20, Groundnut—9, Variga—1, Onion—3 ; Total=58.

5. Maize Research Station, Amberpeta.

A. General Information :

(i) In Hyderabad taluka of Hyderabad district, 6 Km. from Kachguda Rly. Stn. with Lat.—17° N/Long—78° E/Alt.—51·8 m. The topography of the experimental area is well levelled. (ii) Maize growing tract of A.P. Western telangana. (iii) Established in 1957. (iv) Maize—Fallow—Maize ; Maize—G.N.—Maize ; Maize—Bengal gram—Maize. (v) Co-ordinated Maize Breeding Station.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
—	0·2	0·4	1·9	2·3	7·3	20·0	13·5	21·3	5·8	1·3	1·3	75·3

(Av. monthly rainfall in cm.. based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Canal from Musi River and effluent water of sewage farm, since inception. (ii) Yes, proper drainage system exists.

D. Soil type and Soil analysis :

(i) Broad soil types—Sandy loams to heavy clay loams ; Depth—deep soil ; Colour—grey brown to dark grey brown ; Structure—Segna and Chalka. (ii) Chemical analysis : ECa 0·45 to 0·70 ; Carbon—low to Medium ; P_2O_5—Light ; K_2O—Medium ; P.H.—7·6. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Maize—12 ; Total=12.

6. Sugarcane Research Station, Anakapalle.

A. General Information :

(i) In Anakapalle taluka of Visakhapatnam district, 1 km. from Anakapalle Rly. Stn. with Lat. - 18° 45′ N/Long-83° 01′ E/Alt.-26.8m. above m.s.l. The topography of the experimental area is levelled. (ii) Coastal belt. (iii) Established in 1913. (iv) Paddy-sugarcane ; Ragi-jowar-bajra; Paddy-G.N.-paddy. (v) To improve sugarcane yield and reduced cost of production.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0.3	—	2.2	—	0.7	0.4	0.5	1.2	0.9	2.0	3.1	5.1

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
7.0	9.7	3.0	6.7	8.4	12.4	10.1	21.8	2.3	0.5	0.3	0.2	98.8

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) & (b) Irrigation by Canals from Sarada River and by wells since inception. (ii) Yes, proper drainage system exists.

D. Soil type and Soil analysis :

(i) Broad soil types :—loams ; Depth—deep ; Colour—dark brown ; (ii) Chemical analysis : P.H.—7.0 to 7.2 ; Total N—0.0518% ; O.C.—0.52% ; Available P_2O_5—0.012% ; Available K_2O—0.048%. (iii) Mechanical analysis :—Clay—35.98% ; Silt—17.89% ; Coarse fraction—45.50%.

E. No. of Experiments :

Paddy—15 ; Ragi—5 ; Sugarcane—67 ; Total=87.

7. Onion Research Station, Anantharajupeta.

A. General Information :

(i) In Rajampet teluka of Cuddapah district, 3 km. from Anantharajupeta Rly. Stn. The topography of the experimental area is levelled. (ii) It represents plain tract. (iii) Established in 1935. (iv) Perennial crops. (v) To carry out research on citrus and mango with a view to cater the needs of this Region and thereby placing the future of the fruit industry.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	I	2	1	2
0·1	0·1	—	0·1	—	—	0·3	0·6	0·8	3·1	3·6	3·2

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
4·7	8·2	6·0	6·4	7·0	4·5	2·4	14·4	18·2	6·1	5·6	0·6	96·0

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) & (b) Lift irrigation from wells since inception. (ii) Sub soil drains and open drains.

D. Soil type and Soil analysis :

(i) Broad soil types—Red sandy loams. (ii) Chemical analysis and mechanical analysis : Details : N.A.

E. *No. of Experiments* :

Onion—21 ; Toeal=21.

8. Soil Conservation Research Station, Ananthapur.

A. General Information :

(i) In Ananthapur taluka of Ananthapur district, 16 km. from Ananthapur Rly. Stn. with Lat—14° 41′ N/Long.—77° 40′ E/Alt.—345.9m. above m.s.l. The topography of the experimental area is slopy. (ii) It represents-Semi-Arid zone tract. (iii) Established in 1964. (iv) Groundnut-Jowar-Setaria. (v) To devise methods for prevention of loss of fertile top soils, conservation of moisture in the soil for crop use during dry period. Restoration and maintanance of soil fertility. Mainly concerned with soil and moisture conservation problems in Red soils of A.P.

B. Normal Rainfall:

Information—N.A.

C. Irrigation and Drainage Facilities :

(i) No. irrigation facilities. (ii) Natural drainage system exists.

D. Soil type and Soil analysis :

(i) Broad soil types-Red soils, Depth-0 to 23 cm. ; Colour-red and reddish brown ; Structure-loose gravely. (ii) Chemical analysis : P_H.-6.6 to 6.9. ; Total CaO-0.126 to 0.36% ; $K_2$0-0.092 to 0.163% ; Total P_2O_5-0.009 to 0.033% ; O.C.-0.36 to 0.54%. (iii) Mechanical analysis : Gravel-12 to 23% ; Coarse sand-37 to 55% ; Fine sand-30 to 37% ; Silt-2.60 to 5.80% ; Clay-7.56 to 15.50%.

E. No. of Experiments :

Jowar—5, Groundnut—3, Mixed cropping-2 ; Total=10.

9. Exploratory-cum-Demonstration Farm. Araku valley

A. General Information:

(i) In Paderu taluka of Visakhapatnam district, 88 Km. from Kothavasla Rly. Stn. at an altitude of 938·8 M. above m.s.l. The topography of the experimental area is hilly, and slopy. (ii) It represents hilly and slopy tract. (iii) Established in 1944. (iv) Wet land-Paddy-G.N. ; Dry land-Ragi, niger, *Jowar*, Maize and hill redgram ; Garden land-Sugarcane and vegetables demonstration work.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
0·2	0·2	—	0·2	1·3	1.8	1·0	1·3	1·0	0·2	3·0	8·0	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
8·0	3·5	1·8	1·3	2·3	2·5	2·3	1·5	0·2	—	—	—	41·8

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960—64).

C Irrigation and Drainage Facilities :

(i) Information-N.A. (ii) Proper drainage system.

D. Soil type and Soil analysis :

(i) Broad soil types-red letrite soils ; Depth-15 cm. : Colour-red ; Structure-normal. (ii) Chemical analysis : Netural and slightly acidic, low in calcium. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy-1, Potato-2, ; Total=3.

10. Agricultural College Farm, Bapatla.

A. General Information :

(i) In Guntur district, about 3 Km. from Bepatla Rly.Stn. situated at an attitude of 5·5 m. above m.s.l. Uniformly levelled area. (ii) Sandy and clay soils of coastal Andhra. (iii) Established in 1950. (iv) Paddy, Millets. (v) N.A.

B. Normal Rainfall :

Jan.		Feb.		March.		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0·1	0·1	0·1	—	0·3	0·1	2·9	0·5	0·4	2·0	4·5	8·3

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
6·2	6·7	6 7	9·5	14·0	11·15	5·4	10·0	4·7	0·7	0·4	0·1	92 8

(Av. monthly rainfall in cm., based on the data for the pariod 1960-64)

C. Irrigation and Drainage Facilities :

(i) (a) Available since inception. (b) By canal (ii) No proper drainage.

D. Soil type and Soil analysis :

(i) Soil type-Sandy, Sandy loam and clay up to a depth of 3 M. ; Colour-white ; Structure-sandy. (ii) Chemical analysis : (year of analysis 1958) pH.-6·1 to 8·0 ; E.C.-0·05 to 0·90 m.m. hos/cm. ; O.C.-0·02 to 0·09 ; Available P_2O_5-6·6 to 94·2 Kg/ha. (ii) Mechanical analysis : N A.

E. No. of Experiments :

Paddy-46, Ragi 20, Green gram-2, Black gram-1, Horse gram-4, Radish-1, Groundnut-2, Chillies-4 ; Total=80.

11. Sugarcane Liaison Farm, Bobbili.

A. General Information :

(i) In Bobbili taluka of Srikakulam district, 4·8 Km. from Bobbili Rly. Stn. with Lat.-18°-45′ N/Long.-83°-25′E/Alt.-133·5 m. above m.s.l. The topography of the experimental area is slopy towards North and East. (ii) It represents Northern Circars tract. (iii) Established in 1957. (iv) Paddy—sugarcane. (v) To tackle the local problems of sugarcane cultivation and to confirm the recommendations of the Sugarcane Res. Stn., Anakapalle.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0·2	—	0·5	—	0·2	0·2	0·8	0·8	0·8	1·5	1·8	2·8

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
2·8	2·3	2·0	3·0	2·5	3·0	1·8	2·8	0·2	0·2	0·2	—	30·4

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Irrigation by tank from the begining of the station. (ii) Natural drainage.

D. Soil type and Soil analysis :

(i) Broad soil types : Clayey to clay loam ; Depth—15 to 30 cm. ; Colour—Brown ; Structure—Light soil. (ii) Chemical analysis and (iii) Mechanical analysis : Information—N.A.

E. No. of Experiments :

Sugarcane—24 ; Total=24.

12. Regional Rice Research Station, Buchireddipalam.

A. General Information :

(i) In Kodavalur taluka of Nellore district, 14 Km. from Kodavalur Rly. Stn. Uniformly levelled area. (ii) Alluvial soils tract. (iii) Established in 1937. (iv) Paddy—paddy. (v) To evolve Blast resistent rice strains with gra in quality of Molakolukulur variety popular in the tract.

B. Normal Rainfall :

Information : N.A.

C. Irrigation and Drainage Facilities :

(i) (a) Available since inception. (b) By Canal. (ii) Yes, proper drainage system exists.

D. Soil type and Soil analysis :

(i) Sandy loam and sandy. (ii) Chemical analysis and (iii) Mechanical analysis : Information—N.A.

E. No. of Experiments :

Paddy—6 ; Total=6.

13. Tobacco Research Station, Burganpad.

A. General Information to *D. Soil type and Soil analysis* :

Details :—N.A.

E. No. of Experiments :

Tobacco—4 ; Total=4.

14. Millet Research Station, Chandragiri.

A. General Information :

(i) In Chandragiri taluka of Chittoor district, 2·5 Km. from Chandragiri Rly. Stn. The topography of the experimental area is levelled lands. (ii) Low rainfall tract, having underground water potential. (iii) Established in 1962. (iv) Jan. to April,-Ragi ; May to Sept.-Paddy ; Oct. to Dec.-Paddy. (v) To select and study the suitability of improved varieties to the tract in Ragi and Jowar.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		July	
1	2	1	2	1	2	1	2	1	2	1	2	1	2
0·4	0·2	—	—	—	0·5	2·8	2·1	1·1	6·1	5·7	1·5	3·1	7·9

Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	
7·1	7·3	6·9	8·1	3·6	14·1	8·6	4·6	4·5	0·6	96.8

(Av. fortnightly rainfall in cm., based on the data for the period 1962-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Yes, Since inception ; lift irrigation. (ii) Yes, proper drainage system exists.

D. Soil type and Soil analysis :

(i) Broad soil types-Heavy black soils ; Depth-Very deep ; Colour-Black ; Structure-Clayey. (ii) Chemical and (iii) Mechanical analysis : Information—N.A.

E. No. of Experiments :

Jowar—5, *Ragi*—6 ; Total=11.

15. Suggarcane Liaison Farm, Chittoor.

A. General Information :

(i) In Chittoor Taluka of Chittoor district, 3·2 Km. from Chittoor Rly. Stn. with Lat.-13° 13′ N/Long.-79° 06′ E/Alt.-301 M. above m.s.l. The topography of the experimental area is slopy towards East. (ii) It represents *Rayalaseema* tract. (iii) Established in 1961. (iv) Paddy—Sugarcane ; Sugarcane—Ragi, (v) To conduct trials of various aspects of sugarcane cultivation and testing the suitability of the results obtained at sugarcane Res. Stn. Anakapalli.

B. Normal Rainfall :

Details—N.A.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Well irrigation available from the begining of the farm. (ii) Natural drainage.

D. Soil type and Soil analysis :

(i) Broad soil types Loams. ; Depth-60 cm. ; Structure—loose. (ii) Chemical analysis and (iii) Mechanical analysis : Details—N.A.

E. No. of Experiments :

Sugarcane—13 ; Total=13.

16. Agricultural Research Station, Darsi.

A. General Information :

(i) In Parkasam district, nearest Rly. Stn Kuruchedu. Levelled lands. (ii) Red sandy loams of Nagarjuna Sagar Project area (iii) Established in 1965. (iv) Cotton and Groundnut. (v) (a) To evolve high yielding short duration strains of bunch groundnut with high shelling out turn, high oil content, with positive response to high fertility conditions under restricted irrigation and suitable agronomic schedules for the red soils on the right canal side of Nagarjuna Sagar Project. (b) To breed a suitable Hisutum variety of Cotton with long staple of 25—26 m.m. and above combined with short duration and fair resistance to pests and diseases suitable for the *Kharj* irrigated red soils on the right canal side of Nagarjuna Sagar project.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
7·1	0·4	—	—	—	—	3·8	—	8·3	—	3·5	—	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
2	1	1	2	1	2	1	2	1	2	1	2	
6·1	21·8	1·2	8 2	0·7	11·0	4·6	1·2	31 7	3·8	0·3	—	113·7

(Fortnightly rainfall in cm. ; based on the data for the year 1966).

C. Irrigationand Drainage Facilities :

(i) (a) Yes, since inception. (b) By wells. (ii) Natural drainage.

D Soil type and Soil analysis :

(i) Red sandy soils. (ii) Chemical analysis and (iii) Mechanical analysis : Details—N.A

E. No. of Experiments :

Cotton—7 ; Total=7.

17. Govt. Agricultural Farm, Dindi.

A. General Information :

(i) In Devarakonda taluka of Nalgonda district, 78 Km. from Jadcherla Rly. Stn. with Long—78°41′ E/Lat.—16°32′ N/Alt.—366 m. above mean sea level. The topography of the experimental area is slopy. (ii) The topography contains Red *Chalka* soils with sand. (iii) Established in 1949. (iv) Paddy—paddy ; *Jowar*, Groundnut Redgram – Fallow ; Caster, *Jowar*, Groundnut and Red gram. (v) Breeding work on rice. Evolving high yielding varieties of Paddy, Caster and Groudnut. Cultural, manurial and varietal experiments on reclamation of saline soils and to determine suitable strains for the tract.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	0·1	0 2	0·6	0·4	0·7	1 0	0·4	1·4	3 9	4·0	
July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
3·6	7·5	4·5	4·6	8·4	12·2	4·6	4·8	1·4	0·1	0·1	—	64·5

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960–65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Canal, wells and pumpsets for dry lands. (ii) Drainage facility exists for wet lands.

D Soil type and Soils analysis :

(i) Broad soil types—*Chalka* soils of red colour, gravelly with alkaline patches 15 to 23 cm. deep, loose structure subject to leaching. (ii) Chemical analysis and (iii) Mechanical analysis : Information : N.A.

E. No. of Experiments :

Paddy—35, Redgram—4, Groundnut—4, Castor—4 ; Total—47.

18. Millet Research Station, Dronachalam.

A. General Information :

(i) In Kurnool district, nearest Rly. Stn Dronachalam. Plain topography. (ii) Semi—Arid Zone. (iii) Established in 1961. (iv) Millet crops. (v) To evolve high yielding sorghum hybrid varieties suitable to Ananthapur, Chittoor, Cuddapah and Kurnool districts of Andhra and to evolve suitable manurial and cultural practices.

B. Normal Rainfal.

Datails—N.A.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) No irrigation facilities. (ii) Natural drainage.

D. Soil type and Soil analysis :

(i) Soil type—Red soils ; Depth—up to 23 cm. ; Colour—Red and Reddish brown ; Structure—Loose gravely. (ii) Chemical analysis and (iii) Mechanical analysis : Intormation—N.A.

E. No. of Experiments :

Jowar—3 ; Total=3.

19. Cotton Research Sub-Station, Gudivada.

A. General Information :

(i) In Krishna district, nearest Rly. Stn. Gudivada. The topography of the experimental area is uniformly levelled. (ii) Black soils of Krishana district. (iii) Established in 1960. (iv) Paddy-Cotton. (v) Rice Fallow Cotton Scheme.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	0·1	—	0·1	1·1	2·4	0·7	1·2	1·5	4·0	5·3	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
9·5	7·7	10·9	11·3	12·8	13·4	6·7	8·2	2·9	—	0·4	—	101·0

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities ;

(i) (a) Available since inception of the farm. (b) Canal irrigation. (ii) Proper drainage.

D. Soil type and Soil analysis :

(i) Soil type—Black cotton soil ; Depth—deep ; Colour—Black. Structure—Clay loam to clayey. (ii) Chemical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Cotton—17 ; Total=17.

20. Agricultural Research Institute, Rajendra Nagar, Hyderabad.

A. General Information :

(i) In Hyderabad district, nearest Rly. Stn. Nampally. Levelled topography. (ii) Red and black soils of Telegana region. (iii) Established in 1927. (iv) Paddy-Paddy ; Legumes-Cereals. (v) Research on rice, millets, pulses, oilseeds, fruits and vegetables. Insects and pests of crops, plant diseases, manures and fertilizers, radio tracer work and agronomic experiments.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	—	1·5	0 7	0·7	0·2	2·0	0·7	2·3	8·4	
July		Aug		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
7·7	9·8	3·5	4·2	7·0	15 6	3·7	1·3	0·9	—	—	—	70·2

(Av. fortnightly rainfall in cm. ; based on the data for the years 1960, 61, 64 and 65).

C. Irrigation and Drainage Facilities :

(i) (a) Yes, since inception ; (b) Canal from Himayat sagar. (ii) Yes, available since 1968.

D. Soil type ann Soil analysis :

1. (i) Red sandy clay : (ii) Chemical analysis : PH 7·5 ; Moisture 3·93 ; Total $CaCo_3$ 0·25 ; Organic matter 0·71 ; TNfs O·8873 ; TN 0·1078. (iii) Mechanical analysis : Sand 59 96% ; Silt 7·04% ; Clay 31·70%.

2. (i) Red. (ii) Chemical analysis : pH 7·10 ; Moisture 3·87 ; Total $CaCo_3$ Nil ; Organic Matter 1·15 ; TNFS 0·0513 ; TN 0·0518. (iii) Mechanieal analysis : Sand 70·12% ; Silt 8·66% ; Clay 20·40%.

E. No. of Experiments :

Paddy-58, Wheat-2, Brinjal-5, French beans-3, Bhindi-3, Groundnut-12, Castor-4 ; Total=87.

21. Grape Research Station, Rajendranagar Hyderabad.

A. General Information :

(i) In Hyderabad district, about 20 Km. from Hyderabad Rly. Stn. The topography of the experimental area is slightly slopy towards south. (ii) Chalka soils of Telengana. (iii) Established in 1960. (iv) Grape. (v) To evolve high yielding grape varieties and suitable manurial, agronomical and cultural practices.

B. Normal Rainfall :

Same as Agricultural Research Institute, Rajender nagar, Hyderabad.

C. Irrigation and Drainage Facilities :

(i) (a) Available from 1966. (b) By wells. (ii) Well drained soils.

D. Soil type and Soil analysis :

(i) Broad soil type-Chalka ; Depth-1·82 m. ; Colour-Red. ; Structure Coarse. (ii) Chamical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments ;

Grape—9 ; Total=9.

22. Regional Oilseed Research Station, Kadiri.

A. General Information :

(i) In Kadiri taluka of Ananthapur district. Lat.-14 75° N. Long.—78 10°E, and altitude 613 m. above m.s.l. Bunding was done along the contours. Previously this farm was at Ananthapur. (ii) The soil and seasonal conditions obtainable on the station are mostly representative of the entire Rayalaseema region. (iii) Established in 1958. (iv) Groundnut,

castor, gingelly and safflower are the main crops in the cropping pattern. (v) To bring about improvement in oilseed crops of Rayalaseema region by evolving short duration, drought resistant varieties with high yield and oil content in the major oilseed crops, viz., groundnut and castor, besides advocating improved agronomic practices for general adoption by the ryots of the tract.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0·1	—	—	0·2	—	0.2	1·4	1°2	0·9	2·1	1·5	6·9

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2.	1	2	
1·0	4·8	3·5	5·1	6·7	6·0	1·8	8·2	4·5	1·7	0·9	0·1	57·8

(Av. fort nightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : No irrigation facilities available. (ii) No artificial drainags system is existing but the soils are sandy loam in texture and are well drained.

D. Soil type and Soil analysis :

(i) Red sandy loam about 23-30 cm. deep. (ii) Chemical analysis : pH.- 7·5 ; total soluble salts (electrical conductivity mm/hos)-0.41 ; organic carbon-0·42% ; total nitrogen-0·043% ; available potash-0·017%. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Groundnut-14, Caster-12, Mixed cropping-8 ; Total=34.

23. Maize Research Station, Karimnagar.

A. General Information :

(i) In Karimnagar taluka of Karimnagar district, 41 Km. from Peddapalli Rly. Stn. with Lat.—18° 25′ N/Long.—79° 05′ E/Alt.—518 M. above m.s.l. The topography of the experimental area in even, levelled and well laid out. (ii) Red Chalka and Sandy tract. (iii) Established in 1952. (iv) *Rabi* : Maize-fallow-maize ; Kharif : Maize-C.M.-maize. (v) To evolve suitable popcorn hybrids for maximisation to meet the growing demand of popcorn industry and to determine agronomic practices maize production.

B. Normal Rainfall :

Annual rainfall about 81 cm. Details-N.A

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : No irrigation facilities. (ii) Yes, proper drainage.

D. Soil type and Soil analysis :

(i) Broad soils types-Red Chalka and Sandy loam ; Depth-15 cm. ; Colour-Red : Structure-loose. (ii) PH.-6·8 to 7 6 ; EC-0·15 to 0·51 ; OC-low to Medium ; Available P_2O_5- 47·3 to 258·2 Kg/ha. ; N-0·039 to 0·1 Kg/ha. (iii) Mechanical analysis—N.A.

E. No. of Experiments :

Maize—19 ; Total=19.

24. Agriculture Research Station/Sesamum Research Station, Karimnagar.

A. General Information :

(i) and (ii) Same as Maize Res. Stn., Karimnagar. (iii) Established in 1959. (iv) Sesamum-fallow. (v) To evolve a high yielding variety with high oil content suitable for late sowing in sandy loams and to determine optimum cultures to get maximum yield.

B. Normal Rainfall :

Annual rainfall about 81 cm. Details—N.A.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : No irrigation facilities. (ii) No drainage system.

D. Soil type and Soil analysis :

(i) Broad soil type-Sandy loams ; Depth-10 cm. : Colour—Red ; Structure-loose. (ii) Chemical analysis : 6·8 to 7·3 ; Ec-0·15 to 0·18 ; OC—Very low to Medium high ; Available P_2O_5-2·01 to 70·6 Kg/ha. (very low to high). (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Gingelly—5, Mixed cropping—1 ; Total=6.

25. Vegetable Research Station, Kurnool.

A. General Information :

(i) In Kurnool taluka of Kurnool district, 3 Km. from Kurnool Rly. Stn. The topography of the experimental area is slopy towards East. (ii) It represents Deccan tract. (iii) Established in 1958. (iv) Vegetables grown in rotation with green manure crops. (v) To evolve high yielding disease and pest resistant varieties of Tomato, Bringal, Ladys fingeres, Bottle gourd and Beans suitable for growing in the various Veg. growing zones of Andhra pradesh and also to find out best cultural practices for high productivity for all the above vegetables.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
—	—	0·5	2·0	4·0	12·9	8·9	10·0	10·6	8·9	1·2	1·6	60·6

(Av. monthly rainfall in cm., based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) K.C. canal and lift irrigation from well. Facilities of irrigation by K.C. canal are available from the begining of the farm and irrigation by well from 1961. (ii) Yes.

D. Soil type and Soil analysis :

(i) Broad soil types—Black clay loam/Black loam ; Depsh—0·61 to 1·52 m.; Colour-Black; Structure—clay loam to loam. (ii) Chemical analysis ; Soluble E.C.--0·2 to 0·8 ; O.C.—0·54 to 1·03 % ; Available P_2O_5—2·2 to 39·2 Kg/ha. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Brinjal—5, Tomato—7, *Bhindi*—10 ; Total=22.

26. Millet Research Station Guntur/Millet Research Station, Lam, Guntur.

A. General Information :

(i) In Guntur taluka of Guntur district, at a distance of 8 Km. from Guntur Rly. Stn. and altitude 32 M. above mean sea level. The topogranphy is flat with slight gradient

towards North—West. (ii) Deep back soil tract. (iii) Established in 1923. (iv) Millets, chillies, cotton, pulses and groundnut are the main crops. (v) Programme of research is plant breeding work in millet crops like sorghum, pennisetum and setaria.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
0·4	—	0·1	—	—	0·2	0·6	0·4	0·6	1·1	5·0	8·3	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
7·5	9·0	7·3	9·7	13·9	11·5	3·6	7·7	3·8	—	—	0·1	90·8

(Av. fortnightly rainfall in cm., based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) Irrigation facilities are not available. (ii) There is no proper drainage system.

D. Soil type and Soil analysis :

(i) Deep black soil about 3·04 m. deep and sticky with calcium nodules. (ii) Chemical analysis : pH. 7·0 to 9·3, organic carbon 0·34 to 0·55 %, nitrogen 0·046 to 0·116 %, available P_2O_5—0·0002 to 0.0006 %, available K_2O—0·033 to 0·055 %, and moisture 9·5 to 10·7 %. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Jowar—1, Cotton—7, Chillies—11 ; Total=19.

27. Rice Research Station/Groundnut Research Station, Machilipatnam

A. General Information :

(i) In Bandar taluka of Krishna district, 3·2 Km. from Chilakalapudi Rly. Stn. with Lat.M16°11′ N/Long.—81°08′ E/Alt.l 83 M. above m.s.l. The topography of the experimental area is plains. (ii) Krishna Dalta tract. (iii) Established in 1958. (iv) Paddy—Groundnut ; Paddy—Paddy. (v) Breading suitable groundnut varieties and evolving agronomic practices for Groundnut and to evolve paddy varieties suitable for saline soils.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	0·1	0·6	0·8	—	—	1·7	0·1	0·2	1·1	7·2	7 1	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
9 0	10·2	7·4	11·5	14·8	12·1	6·3	14·2	6·3	0·9	1·1	0·3	113·0

(Av. fortnightly rainfall in cm., based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities:

(i) (a) and (b) Irrigation by Krishna canal since begining. (ii) Poor drainage system.

D. Soil type and Soil analysis :

(i) Soil type—Sandy loam : Depth—1·83 M. ; Colour—Blackish grey ; Structure—Sandy. (ii) Chemical analysis : N—0·02 to 0·03 % ; Moisture 0·7 to 0·8 % ; pH.—6·9 to 7·9 ; EC—0·25 to 0·68 ; OC—0·24 to 0·72 ; Available P_2O_5—0·0003 % to 0·0008 % ; Suitable K_2O—0·0006 % to 0·0078 %. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy—11, Groundnut—26 ; Total=37.

28. Millet Research Station, Madhira.

A. General Information :

(i) In Madhira taluka of Khammam district. ½ Km. from Madhira Rly. Stn. The topography of the experimental area is levelled. (ii) Represents light black cotton soils. (iii) Established in 1944. (iv) Green gram—*Jowar*, Chilleis—*Jowar* and Groundnut—*Jowar* are the croprotations fallowed. (v) To find out better improved and methods for millet crops.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
0·4	0·3	0·6	1·5	5·7	13·6	21·6	15·5	22·7	14·4	1·4	—	97·7

(Av. monthly rainfall in cm. is based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Tank irrigation. (ii) Natural drainage system exists.

D. Soil type and Soil analysis :

(i) N.A. (ii) Chemical analysis : P.H.—normal ; EC—normal ; Oc—low to medium ; P_2O_5—low. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Jowar 6 ; Total=6.

29. Agricultural Research Station, Maruteru.

A. General Information :

(i) In Tanuku taluka of West Godavari district, 13 Km. from Palacole Rly. Stn. with Lat.—16°38′ N/Long.—81°44′ E/Alt.—5·2 M. above m.s.l. The topography of the experimental area is plain. (ii) Godavari delta heavy black clay soil tract. (iii) Established in 1925. (iv) Paddy in 1st crop season (*Sarva*) followed by *Sannhemp* either for fodder or for green manuring and in 2nd crop season (*Dalva*), gingelly or groundnut. (v) Evolution of suitable for various tracts in the Krishna and the Godavari deltas and recommending better ogronomic practices.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
0·1	—	1·0	—	1·2	—	0·2	0.5	0.7	0·4	4·0		12·0	13·3	16·3	10·0	13·1	14·4	15·1	10·4	12·1	2·9	0·9	0·9	—	129·5

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) and (ii) Yes.

D. Soil type and Soil analysis :

(i) Soil types—Black clayey ; Depth—25 cm. ; Colour—Black ; Structure—Alluvial. (ii) Chemical analysis : PH.—7·3 to 7·9 ; EC—0·63 to 6·87 ; CO_3—Nil ; Available P_2O_5—6·9 to 22·6 Kg/ha. ; Available N—0·06 to 0·11 %. (iii) Mechanical analysis : Coarse sand—6 to 24 % ; Fine sand—2 to 6 % ; Silt—23 to 29 % ; Clay—47 to 65 %.

E. No. of Experiments :

Paddy—104 ; Total=104.

30. Plant Breeding Station, Mudhol.

A. General Information :

(i) In Mudhol taluka of Adilabad district about 5 Km. from Basar Rly. Stn. The land is uniformly levelled. (ii) Black clayey sets of Adilabad district. (iii) Established in 1934. (iv) Cotton—*Jowar*. (v) Breeding work on cotton and suitable cultural, manurial, agronomical aspects to realise meximum yields.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
0·9	1·0	1·0	1·2	1·4	16·4	28·9	21·6	18·2	5·0	1·3	0·1	97·0

(Av. monthly rainfall in cm., the period on which the data in based is not available).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) No irrigation facilities are available. (ii) Poor drainage system.

D. Soil type and Soil analysis :

(i) Soil type—clayey ; Depth—2·13 m. ; Colour –Black ; Structure—Clayey. (ii) Chemical analysis and (iii) Mechanical analysis ; N.A.

Cotton—12 ; Total=12.

31. Cotton Research Station, Nandyal.

A. General Information :

(i) In Nandyal taluka of Kurnool district, 2 Km. from Nandyal R.ly Stn. at on Alt—2·12 m. above m.s.l. The topography of the experimental area is plain. (ii) Heavy black cotton soils tract. (iii) Established in 1906. (iv) Cotton—*Jowar*, Rice, *Surya Mukhi*. (v) To evolve high yielding varieties in cotton and sorghum the two important crops of the tract and to develop appropriate cultural practices for these two crops and for *Surya Mukhi* and Rice.

B. Normal Rainfall

Jan.		Feb.		March		April		May		June		July		Aug.		Sept		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	—	0·5	0·6	1·5	1·5	1·4	2·2	6·6	6·0	5·8	8·4	5·9	10·7	9·1	10·4	5·1	5·1	2·0	0·7	2·1	—	85·6

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Yes, K.C. canal from the begining. (ii) Yes, proper drainage sistem exists.

D. Soil type and Soil analysis :

(i) Soil type—Heavy black cotton soil ; Depth—2·44 to 3·05 m. ; Colour—Black. (ii) Chemical analysis : (At 30 cm. depth) Moisture—7·56% ; Lime (CaO)—2·76% ; Mgo—1·46% ; K_2O—0·49% ; total P_2O_5—0·057 % ; Available P_2O_5—0·014% ; Available K_2O—0·033% ; N—0·033% ; pH. average 9·0. (iii) Mechanical analysis :

Surface soil	Sub-soil
0 to 30 cm.	30—60 cm.
Silt—23·3	23·0
Clay—45·7	48·3
Fine sand—14·9	13·8
Coarse sand—8·2	7·8
Loss on ignition—7·9	7·1

E. No. of Experiments.

Jowar-2, Cotton-45, mixed cropping-1 ; Total=48.

32. Cotton Sub-Centre, Narasaraopeta.

A. General Information to *D. Soil type and Soil analysis* :

Details : N.A.

E. No. of Experiments :

Cotton—1 ; Total=1.

33. Regional Rice Research Station Nellore.

A. General Information :

(i) In Nellore taluka of Nellore district, nearest railway station Nellore. The topography of the experimental area is plain. (ii) Alluvial soils tract. (iii) Established in 1961. (iv) Paddy paddy is the normal cropping pattern. (v) To evolve blast resistant high yielding paddy varieties suitable to the tract.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
0·5	—	—	0·5	—	—	0·4	0·5	1·4	2·5	2·3	2·6	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
4·1	5·1	5·7	5·7	9·5	7·2	4·4	21·9	22·8	10·4	5·0	1·2	113·7

(Av. fortnighly rainfall in cm., based on the data for the period 1960-65)

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Canal irrigation from Nellore tank and well since begining. (ii) No proper drainage system exists.

D. Soil type and Soil analysis :

(i) Broad soil type—Black alluvial ; Colour—Black ; Structure—Fine. (ii) Chemical analysis : pH.—7·7 to 9·0 ; EC mm hos/cm.—0·25 to 0·85 ; Organic Carbon—0·70 to 1·06% ; Total N—0·053 to 0·092% ; available P_2O_5—0·0007 to 0·0020% ; K_2O—0·020 to 0·033%. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy—23, Cotton—17 ; Total=40.

34 Turmeric Research Station, Peddapalem.

A. General Information :

(i) In Guntur district, nearest railway station is Tenali. The general topography of the experimental area is uniformly levelled. (ii) Krishna Delta tract. (iii) Established in 1955 (shifted to Anantharajupeta in 1968). (iv) Turmeric—Dry Paddy, Red Gram, Maize, Jowar. (v) To improve Turmeric cultivation is the main programme of research.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
0·5	—	—	—	—	6·0	—	0·1	1·6	0·4	4·2	4·6	3·5	29·5	2·2	10·3	2·0	9·7	0·6	0·7	6·7	2·5	3·6	0·8	89·5

(Av. fortnighly rainfall in cm., based on the data for the period 1966—67).

C. Irrigation and Drainage Facilities :

(i) (a) Yes, since inception. (b) Electric motor pumpset and filter point. (ii) Natural drainage system exists.

D. Soil type and Soil analysis :

(i) Soil type—clayey soils ; Colour—Black. (ii) Chemical analysis (in %) : Moisture—8·86 ; Nitrogen—0·089 ; Total P_2O_5—0·072 ; Available P_2O_5—0·0917 ; Total K_2O—0·0078 ; Lime—1·70. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Turmeric—20 ; Total=20.

35. Millet Research Station, Peddapuram.

A. General Information to D. Soil type and Soil analysis :

Details :- N.A.

E. No of Experiments :

Bajra - 1 ; Total=1.

36. Sugarcane Research Station, Perumallpalle.

A. General Information :

(i) In Chandragiri taluka of Chittoor district, 1 Km. from perumallpalle Rly. Stn. with Lat.—13° N/Long.—79° E/Alt.—201 M. above m.s.l. The topography of the experimental area

is plain. (ii) Low rainfall tract. (iii) Established in 1964. (iv) Sugarcane—Millets. (v) To select high yielding, good quality of cane suitable for the tract and for evolving appropriate cultural and manurial practices with a view to step up yields and to reduce cost of production. 2. To envolve high yielding millet strains suitable to the tract,

B. Normal Rainfall

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0·3	0·1	—	—	—	0·3	1·5	1·4	1·2	4·0	5·1	2.7

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
4 0	7·5	7·7	7·6	8·3	7·6	3·7	12·4	12·3	3·7	1·4	0·4	93·7

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65)

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Lift irrigation from wells with Electric motor since 1964. (ii) Natural drainage exists.

D. Soil type and Soil analysis :

(i) Soil type — Red sandy ; Depth — Very deep ; Colour — Red ; Structure — loose. (ii) Chemical analysis and (iii) Mechanical analysis : N A.

E. No. of Experiments :

Sugarcane—3 : Total=3,

37. Rice Research Sub-Station, Pulla.

A. General Information :

(i) In Eluru taluka of the West Godavari district situated at a distance of 8 km. from Pulla railway station. Climate—tropical ; Lat.—16°8′/Long.—81°22′/Alt. ·09 to 1.21 m. above m.s.l. (ii) It represents back clay type of tract. (iii) Established in 1950. (iv) Paddy after paddy is the normal cropping pattern. (v) (a) To evolve strains suitable to deep water conditions in main crop season and (b) To evolve short duration drought resistant paddy variety for second crop season.

B. Normal Rainfall :

Jan		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
0·1	..	1·9	0·5	0·1	—	0·2	0·3	1·0	1·5	6·1	6·3

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
11·2	11·1	9·0	16·0	9·7	14·2	6·4	7·6	0·4	0·1	0·1	0·1	103·9

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) Irrigated from the Eluru main canal since 1950. (ii) Drainage system is not good.

D. Soil type and Soil analysis:

(i) Black clayey soils upto 23 cm. deep. (ii) Chemical analysis : Moisture—5·62%, Lime—0·75%, K_2O—0·81%, P_2O_5—0·04%, available K_2O—0·04%, available P_2O_5—0·002% and nitrogen—0·089%. (iii) Mechanical analysis : Clay—82.77%, Salt—9·91%, fine sand—4·97% and coarse sand—2·32%.

E. No. of Experiments :

Paddy—22 ; Total—22.

38. Regional Rice Research Station, Ragolu.

A. General Information :

(i) In Srikakulam taluka of Srikakulam district, 9 Km. from Amadalavalasa Rly. Stn. with Lat.—18°24' N/Long.—83°84' E/Alt.—27 M. above m.s.l. The topography of the experimental area is flat and levelled. (ii) It is the rainfed area of Srikakulam and Visakapatnam region. (iii) Established in 1956. (iv) Paddy—Pulses. (v) To evolve improved strains of Rice and Millets. Working out suitable manurial doses for Rice and Millets. Demonstration of improved practices.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
0·2	0·3	0·1	—	0·5	0·2	1·1	1·5	1·2	4·7	2·4	5·0	4·4	9·0	4·4	11·3	8·5	8·5	7·5	21·1	0·8	0·2	1·0	1·2	95·1

(Av. fortnightly rainfall in cm. is based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Channel for the Nagavali River from, the begining. (ii) Well drained soils.

D. Soil type and Soil analysis :

(i) Soil types—Sandy clay loam ; Depth—1·21 to 2·42 M. ; Colour—Brown. (ii) Chemical analysis : pH—6·9 to 8·2 ; EC—0·1 to 0·6 ; O.C.—0·56 to 0·98% ; Available P_2O_5—0·0006 to 0·0051% ; Available N--0·045 to 0·09%. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy---16 ; Tatal=16.

39. State Seed Farm, Rallapadu.

A. General Information to *D. Soil type and Soil analysis* :

Details :—N.A.

E. No. of Experiments :

Paddy—6 ; Totatl=6.

40. Rice Fallow Cotton Scheme, Ramachrndra Puram.

A. General Information :

(i) In East Godavari district, nearest Rly. Stn. is Dwara Pudi. Plain topography. (ii) Central delta of Godavari district. (iii) Established in 1960. (iv) Paddy—Cotton. (v) Rice Fallow Cotton Scheme.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	3	1	2	1	2	1	2	1	2	
—	0·2	1·1	0·1	0·8	—	—	0·9	0·2	1·0	4·1	10·1	
July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
12·2	13·6	4·8	7·9	7·5	9·0	10·3	15·9	1·6	0·1	0·4	—	102·9

(Av fortnightly rainfall in cm. ; based on the data for the period 1960—63).

C. Irrigation and Drainage Facilities :

(i) (a) Available since inception. (b) Canal irrigation. (ii) Proper drainage.

D. Soli type and Soil analysis :

(i) Soil type—Black Cotton soils ; Colour—Black ; Structure—Clay loam to clayey (ii) Chemical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Cotton—11 ; Total=11.

41. Regional Agricultural Research Station, Rudrur.

A. General Information :

(i) In Bodhan taluka of Nizamabad district at a disiance of 10 Km. from Bodhan railway station with Lat. 18°38′ N/Long 77°51′ E/Alt. 404 m. above m.s.l. This station is situated on the western slope of a ridge. Ridges and valleys are met with alternately in this tract. In the upper land on the slopes of these hills and ridges are lighter *chalka* soils, reddish brown in colour and in the valley and lower part of the slopes, the heavier soils, clay loam are met. (ii) This station is situated in the heart of the Nizamsagar ayacut and is typical of the zone it represents. (iii) Established in 1932. (iv) Paddy after paddy and sugarcane after sugarcane are generally grown. More recently mosoon paddy followed by a light irrigated crop like groundnut in the summer crop season is being taken. (v) Research is undertaken on sugarcane, paddy, groundnut, vegetables, cotton and fruit crops on the agronomic, varietal, entomological and chemical aspects.

B. Normal Rainfall :

Jan.	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
0·4	0·6	1·1	3·6	2·9	22·4	37·5	40·0	20·7	22·2	1·9	1·0	154·3

(Av. monthly rainfall in cm. ; based on the data for the period of 10 yeers 1954—64).

C. Irrigation and Drainage Facilities :

(i) Irrigation facilities are available from the Nizamsagar canal since 1932. (ii) This station has established its own drainage system.

D. Soil type and Soil analysis :

(i) Two main types of soil occur in the region ; light sandy loam generally red in colour known as *chalka* and the dark coloured clay loams known as *regur*. *Chalka* soils are generally shallower than the *regur* which often go upto the depth of 2·45 to 3·05 m.

(ii) Chemical analysis :

Type	SiO_2	FiO_2	Al_2O_3	Fe_2O_3	MnO	CaO	K_2O
Chalka	70·0	0·30	13·0	5·35	0·05	1·80	4·40
Regur	73·0	0·50	10·0	5·35	0·15	1·25	1·75

Type	NaO	P_2O_5	pH.	Loss on ignition	Moisture
Chalka	1·90	0·035	7	3·00	2·25
Regur	0·75	0·020	8·4	4·75	5·15

(iii) Mechanical analysis :

Type	Coarse sand	Fine sand	Silt	Clay	Carbonate	Moisture	Loss in solution
Chalka	53	23	6	18	0	2	0·5
Regur	22	16	18	44	2	5	1·0

E. No. of Experiments :

Paddy—85, Sugarcane1—58, Cotton—4, Groundnut—20 ; Total = 167.

42. Fruit Research Station, Sangareddy.

A. General Information :

(i) In Sangareddy taluka of Medak district, at a distance of 22·4 Km. from Shankarpalli railway station. The experimental area under Annonancea and mango fruits is of red *chalka* type in levelled and terraced plots while that under *regur* type is a levelled land. Lat.—17°37′ N/Long.—78° 5′ E. (ii) Represents a predominantly red loam (*chalka*) soil with black or *regur* soil area and low lying lands suitable for paddy to a limited extent. (iii) Established in 1947. (iv) Being a fruit research station no particular crop rotation is followed. However, chillies and vegetable like Bhindi, Brinjal, Tomato, Cluster bean in *kharif* and *rabi*, *jowar* and *rabi* paddy to a limited extent are grown for seed multiplication. (v) Manurial, cultural and breeding trials for the selection of promising strain of chillies and vegetables and to conduct root stock propagation, manurial and cultural trials for evolving superior varieties of mango and *sitaphal*.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June	
1	2	1	2	1	2	1	2	1	2	1	2
—	—	0·1	0·4	—	1·3	0·9	0·5	1·0	2·3	2·8	5·9

July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
4·3	10·0	8·8	6·2	12·7	7·9	6·4	2·2	0·9	—	0·4	—	75·0

(Av. fortnightly rainfall in cm., is based on the data for the period 1960—64).

C. Irrigation and Drainage Facilities :

(i) Irrigation is done from wells and tanks. (ii) Open drainage is maintained wherever considered essential.

D. Soil type and Soil analysis

(i) Sandy loam (*chalka*) 0·30 to 0·61 m. deep, black *regur* and wet land. (ii) Chemical analysis : For *chalka* soils—N 0·043%, pH. 7·34, P_2O_5 7·42 Kg/ha. and K_2O 50.3 Kg/ha. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Maize—2, Total=2.

43. Agriculture Research Station/Sugarcane Liaison Farm, Samalkot.

A. General Information :

(i) In Kakinada taluka of East Godavari district, about 3 Km. from Samalkot Rly. Stn. with Lat. 17° 3′ N/Long. 82° 13′ E/Alt. 8·6 m. above m.s l. Plain topography. (ii) Black soils of coastal belt. (iii) Established in 1902. (iv) Paddy—Pulses—green manures is the normal cropping pattern. (v) At present it is variety testing and demonstration farm Started originally to evolve sugarcane varieties resistant to red Rot disease. Later on the scope of research work was enlarged to include improvement of crops like Rice, Banana and Pulses.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
0·7	0·3	0·8	1·1	6·2	13·9	26·9	16·7	19·5	31·3	3·2	0·3	120·9

(Av. monthly rainfall in cm. ; based on the data for the period of 10 years 1954—63).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Yes, mainly Godavari canal from inception, supplemented by bore well from a decade. (ii) Proper drainage exists.

D. Soil type and Soil analysis :

(i) Soil type—Heavy Black soils ; Depth—Deep ; Colour—Black ; Structure—Loamy. (ii) Chemical analysis : N—Medium to high, P_2O_5—Low to medium ; K_2O—High ; pH.—Ideal (7·0). (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy—65, Sugarcane—18 ; Total=83.

44. Banana Research Station/Sugarcane Liaison Farm, Tanuku.

A. General Information :

(i) In Tanuku taluka of West Godavari district, 3 Km. from Tanuku Rly. Stn. with Lat.—18°35′ to 18°52′ N/Long.—81°33′ to 81°35′ E/Alt.—8·5 m. above m.s.l. The topography of the experimental area is extremely uneven and low lying. (ii) Fertile, alluvial clays of Godavari delta with Calcium nodules. (iii) Established in 1958. (iv) Paddy—Sugarcane. (v) To test the recommendations from the Sugarcane Research Station, Anakapalle for their suitabilities in the particular region and to tackle local problems.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June								
1	2	1	2	1	2	1	2	1	2	1	2							
0·1	—	3·9	0 2	0·1	—	0·4	1·0	1·8	0·5	4·9	8·9							
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**						
1	2	1	2	1	2	1	2	1	2	1	2							
13·2	15·2	9·9	9·4	12·7	15·6	15·0	11·6	2·5	0·2	0·1	0·1	127·3						

(Av. fortnightly rainfall in cm., based on the data for the period (1960-64).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Canal from Godavari river. (ii) Exists but not efficient. Stagnated water will be pumped out by oil engines.

D. Soil type and Soil analysis :

(i) Soil types—Alluvial ; Depth—Very deep ; Colour—Greenish black. (ii) Chemical analysis : pH.—7·2 to 8·0. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Sugarcane—44, Banana—15 ; Total=59.

45. Rice Research Station, Tenali.

A. General Information :

(i) In Tenali taluka of Guntur district, 2 Km. from Tenali Rly. Stn. with Lat.—16° 15′ N/Long.—80° 38′ E/Alt.—11 m. above m.s.l. Well levelled topography. (ii) It represents Krishna Western Delta tract. (iii) Established in 1964. (iv) Paddy—Pulses. (v) To evolve suitable rice varieties that are resistant to Stem borer and to conduct Research on Agronomical, Cultural and Entomological problems connected with the control of Stem borer.

B. Normal Rainfall :

Details—N.A.

C. Irrigation and Drainage Facilitis :

(i) (a) and (b) : Irrigation by Krishna canal from the begining. (ii) Restricted Drainage.

D. Soil type aud Soil analysis :

(i) Soil types—Black Clay loam : Depth—upto 1·82 m. ; Colour—Black. (ii) Chemical analysis : pH.—7·8 to 8·5 ; EC—0·50 to 0·90 : OC—0·36 to 0·69 ; Available P_2O_5—2·2 to 30·3 Kg/ha. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy—5, Cotton—7 ; Total=12.

46. Rice Research Station, Utukur

A. General Information :

(i) In Cuddapah taluka of Cuddapah district, 8 Km. from Cuddapah Rly. Stn. (ii) Rayalaseema tract. (iii) Established in 1956. (iv) Paddy—Paddy. (v) Evolution of improved strains of rice under lift irrigation of Rayalaseema tract.

B. Normal Rainfall :

Details—N.A.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Lift irrigation available from 1960. (ii) No drainage facilities.

D. Soil type and Soil analysis :

(i) Soil type—Red loamy ; Depth—1.82 to 2.44 M. ; Colour—Red ; Structure—Loose.

E. No. of Experiments :

Paddy—3 ; Total=3.

47. Millets Research Station, Vizianagaram.

A. General Information :

(i) In Vizianagaram taluka of Vizag district, 3 Km. from Vizianagaram with Lat.—18°07′ N/Long.—83°27′ E/Alt.—96.9 M. above m.s.l. The topography of the experimental area is levelled. (ii) Red sandy loam tract. (iii) Established in 1954. (iv) Millets followed by pulses. G N followed by millets. (v) Evolution of hybrids and strains in Ragi. Bajra and Jowar.

B Normal Rainfall :

Ditails—N.A.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) : Well fitted with oil engine. Available since inception. (ii) Yes, proper drainage exists.

D. Soil type and Soil analysis :

(i) Soil types—Red sandy loams ; Depth—1.68 m. (ii) pH.—7.5 to 8.1 ; Soluble salts E.C. 0.2 to 0.3 ; O.C.—0·36 to 0·6 % ; Available P_2O_5—28·86 Kg/ha (iii) Mechanical analysis ; N.A.

E No. of Experiments :

Jowar—2, *Bajra*—2, *Ragi*—10 ; Total=14.

48. Sugarcane Liaison Farm, Vuyyur.

A. General Information :

(i) In Gannavaram taluka of Krishna district. 16 Km. from Indupalli Rly. Stn. with Lat.—16·4° N/Long—81° E/Alt —34·4 M. above m.s.l. The topography of the experimental area is plain. (ii) It represents Krishna Delta tract. (iii) Established in 1958. (iv) Sugarcane—Paddy. (v) Agronomical experiments on sugarcane.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	0·5	0·3	—	0·8	1·1	1·8	1·4	0·5	1·7	1·20	14·1	
July		Aug.		Sept.		Oct-		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
21·4	49·9	19·3	14·6	24·2	19·6	6·4	23·9	8 2	0·5	1·3	0 2	223·7

(Av. fortnightly rainfall in cm. ; based on the data for the 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Lift irrigation from Krishna Canal since inception. (ii) Natural drainage exists.

D. Soil type and Soil analysis :

(i) Soil type—Loamy ; Depth—1·32 to 2·44 m. ; Colour—Black. (ii) Chemical analysis pH.—7·2 to 8·3 ; Soluble E.C.—0·30 to 0·35 % ; Organic carbon—0·67 to 0·74 % ; Available P_2O_5—12·3 to 71·7 Kg/ha. (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Sugarcane—29 ; Total=29.

49. Agriculture Research Station, Warangal.

A. General Information :

(i) In Warangal taluka of Warangal district, 8 Km. from Warangal Rly. Stn. with Lat.—17°68′ N/Long.—79°20′ E/Alt.—268·5 m. above m.s.l. The topography as a whole is rolling since the station comprises of many blocks (ii) Eastern Telangana Region comprising of Warangal, Khammam, Nalgonda, Krimnagar and Adilabad distt. (iii) Established in 1933. (iv) (a) *Kharif* Wet Land ; Paddy—G.N. ; Dry Red gram—G.N. ; *Rabi*—Horse gram ; (b) Tabacco—Tabacco. (v) To evolve all fly resisting varieties. To study the rice Stemborer To study the improvement of Jowar at the Warangal region.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	0·8	0·5	0·7	1·9	1·0	0·2	0·5	7·0	7·8	
July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	
13·3	14·3	10·0	7·1	8·4	13·2	4·2	7·6	3·0	—	0·7	—	101·5

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Two rainfed tanks and wells exist since inception. (ii) No. proper drainage system. exists.

D. Soil type and Soil analysis :

(i) Soil types—Black soils ; Depth—Deep ; Colour—Black ; Structure—Loamy. (ii) Chemical analysis : pH.—7·0 to 8·2 ; E.C.—0·150 to 0·900 ; Available P_2O_5—0·9 to 38·5 Kg/ha. Available K_2O—56 to 560 Kg/ha. (iii) Mechanical analysis ; N.A.

E. No. of Experiments :

Paddy—46, Maize—1, Red gram—6, Tobocco—5, Groundnut—4 ; Total=62.

50. Rice Research Station, Wyra.

A. General Information :

(i) In Khammam district, nearest Rly. Stn. is Khammam. (ii) It represents Black soil tract. The topography of the experimental area is levelled. (iii) Established in 1958. (iv) paddy—Paddy. (v) To select and study the suitability of improved varieties in rice for the tract.

B. Normal Rainfall :

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
0·2	0·5	1·3	3·2	2·8	21·3	18·7	14·0	23·2	6·9	1·0	1·8	94·9

(Av. fortnightly rainfall in cm., based on the data for the period 1960-65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Irrigation from Wyra reservoir, available since inception. (ii) Natural drainage exists.

D. Soil type and Soil analysis :

(i) Soil types—Black clay soils. (ii) Chemical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy—5 ; Total=5.

51. Sugarcane Liaison Farm, Yelamanchili.

A. General Information :

(i) In Elamanchili taluka of Visakhapatnam district, 14 Km. from Elamanchili Rly. Stn. The topography of the experimental area is slopy. (ii) Clay loam soil tract (iii) Established in 1962. (iv) Paddy—Sugarcane. (v) To test whether the results of the Sugarcane Res Stn , Anakapalle suits the tract and to tackle the local problems.

B. Normal Rainfall :

Same as Oil seed Sub—Station, Yelamanchilli.

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Electric Motor available since inception. (ii) Drainage channels made every year.

D. Soil type and Soil analysis :

(i) Soil type—Clay loam ; Depth—1·83 to 2·13 m. ; Colour—Red ; Structure—Brown. (ii) Chemical analysis and (iii) Mechanical analysis ; N.A.

E. No. of Experiments :

Sugarcane—16 ; total=16.

52. Oil Seed Sub—Station Yelamanchili.

A. General Information :

(i) In Yelamanchili taluka of Vasakhapatnam district, 4·8 Km. from Yelamanchili Rly. Stn. The topography of the experimental area is slightly slopy from West to East. (ii) Sandy loam soil tract. (iii) Established in 1959. (iv) *Kharif* GN/Til ; *Rabi* Horsegram. (v) To evolve high yielding and high oil contains strains in groundnut and gingelly suitable for the tract and to advocate improved agronomic practices to the locality.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		
1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	—	—	—	0·1	0·1	0·4	0·2	0·3	0·1	
July		**Aug.**		**Sept.**		**Oct.**		**Nov.**		**Dec.**		**Total**
1	2	1	2	1	2	1	2	1	2	1	2	
0·6	0·6	0·2	0·6	1·1	1·7	0·9	2·4	0·3	0·2	—	—	9·8

(Av. fortnightly rainfall in cm. ; is based on the data for the period 1962—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Nil. (ii) Natural drainage.

D. Soil type and Soil analysis :

(i) Broad soil types—Sandy loams ; Depth—up to 1·82 m. ; Colour—Red. (ii) Chemical analysis and (iii) Mechanical analysis ; N.A.

E. No. of Experiments

Groundnut—12, Gingelly—6 ; Total=18.

53. Agriculture Demonstration cum-Research Farm/Project Development and Demonstration Farm/Oil Seed Research Station/M.A.E. centre, Yemmiganur.

A. General Information :

(i) In Adoni taluka of Kurnool district, 32 Km. from Adoni Rly. Stn. with Lat.—15° N/Long. 77° E. The topography of the experimental area is plain situated on the Banks of Tungabhadra. (ii) Kurnool Cuddapah tract. (iii) Established in 1955. (iv) Jowar—Cotton or Korra. (v) At present Demonstration and Project Development farm, previously it was to evolve suitable strains for the tract and also to develop Black soils in the Tungabhadra area and raising of crops that are suited to Black soils.

B. Normal Rainfall :

Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
—	—	—	—	1	1	1	1	1	3	3	5	5	5	5	6	5	9	3	4	1	—	2	—	61

(Av. fortnightly rainfall in cm. ; based on the data for the period 1960—65).

C. Irrigation and Drainage Facilities :

(i) (a) and (b) Before 1960—irrigation by wells afterwards by Tungabhadra river. (ii) Natural drainage system.

D. Soil type and Soil analysis :

(i)	Soil types	Black	Red	Mixed
	Depth	168 cm.	68 cm.	84 cm.
	Colour	Dark grayish	Reddish	Grayish brown
	Structure	Varying from blocky to platy	Blocky	Sub-angular blocky

(ii) Chemical analysis and (iii) Mechanical analysis : N.A.

E. No. of Experiments :

Paddy-18, Wheat-1, *Jowar*-5, Maize-1, Korra-3, Cotton-9, Groundnut-2, Gingelly-2 Total=41.

EXPERIMENTAL DATA

Crop Paddy (*Rabi*). **Ref :- A.P. 61(60).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the effect of N, P and K alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) N.A. (ii) Loam. (iii) 12.8.61. (iv) (a) 3 puddlings followed by levelling with levelling board. (b) Transplanting. (c) N.A. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Weeding and working with push hoe. (ix) 52·7 cm. (x) 10.12.61.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S : N_0=0 and N_1=50·4 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=50·4 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=50·4 Kg/ha.

N applied one month after planting, P_2O_5 and K_2O at the time of planting.

3. DESIGN ;

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×3·0 m. (b) 8·5 m.×2·4 m. (v) 30 cm.× 30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3138 Kg/ha. (ii) 551 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	2858	3110	2969	2999	2984
N_1	3110	3476	3333	3252	3293
Mean	2984	3293	3151	3125	3138
K_0	2997	3305			
K_1	2971	3280			

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(74).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—sugarcane. (b) Sugarcane. (c) N.A. (ii) Clay loam. (iii) 22.8.64. (iv) (a) 3 puddlings and levelling with levelling board. (b) Transplanting. (c) 3·4 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) AKP—4. (vii) Irrigated. (viii) Weeding and working push hoe. (ix) 68·7 cm. (x) 10·12.64.

2. TREATMENTS

3 times of applications of 33·4 Kg/ha. of N : T_1=In equal doses at the time of puddling and 30 days after planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days after planting.

3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 10·0m.×2·8 m. (b) 9·4 m.×2·3 m. (v) 30 cm.×25 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1964 only. (b) and. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3622 Kg/ha. (ii) 171·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3619	3538	3709

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(81).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the optimum time of application of N to Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—paddy. (b) Sugarcane. (c) N.A. (ii) Clayey loam. (iii) 26·8·62. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) N.A. (d) 15 cm.×15 cm. (e) 1. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Weeding. (ix) 89·5 cm. (x) 13.12.62.

2. TREATMENTS :

8 times of applications of 44·8 Kg/ha. of N : T_0=No application, T_1=Full dose 60 days after planting, T_2=Full dose 30 days after planting, T_3=$\frac{1}{2}$ dose 30 days after and $\frac{1}{2}$ dose 60 days after planting, T_4=Full dose at planting, T_5=$\frac{1}{2}$ dose at planting and $\frac{1}{2}$ dose 60 days after planting, T_6=$\frac{1}{2}$ dose at planting and $\frac{1}{2}$ dose 30 days after planting and T_7=$\frac{1}{3}$ at planting+$\frac{1}{3}$ 30 days after planting and $\frac{1}{3}$ 60 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×3·1 m. (b) 8·5 m.×2·4 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1962 only. (b) and. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1742 Kg/ha. (ii) 183 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1733	1731	1657	1722	1813	1844	1714	1723

Crop :- Paddy. **Ref :- A.P. 60(61), 61(151), 62(187), 63(162), 64(189), 65(60).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To find out the long range effect of continuous application of A/S and other forms of Nitrogenous manures on soil and crop performance in respect of Sugarcane and its rotational crops.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy. (b) *Ragi*. (c) As per treatments. (ii) Clayey loam. (iii) 19, 20.8.1960 ; 19.8.1961 ; 21.8.1962 ; 10.8.1963 ; 13.8.1964 ; 24.8.1965. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 15 cm. for 61(151) ; 25 cm. between rows for 62(187) ; 20 cm. × 20 cm. for 64(189) ; 15 cm. between rows for 65(60) ; 10 cm. between rows for others. (e) 2 to 3. (v) Nil. (vi) GEB —24. (vii) Irrigated. (viii) Hand weeding. (ix) 43 cm., N.A., 90 cm., 109 cm., 69 cm., N.A. (x) 1.12. 1960 ; 28.11,1961 to 3.12.1961 ; 3 to 6.12.1962 ; 29.11.1963 ; 2.12.1964 ; 29.11.1965.

2. TREATMENTS :

5 sources of 67·2 Kg/ha. of N : S_0=Control (N_0 N), S_1=A/S, S_2=G.N.C., S_3=F.Y.M. and S_4=A/S+ G,N.C. in 1 : 2 ratio.

3. DESIGN ;

(i) L. Sq. (ii) (a) 5. (b) 12 m. × 55 m. for 65(60) ; 12 m. × 55 m. for others. (iii) 5. (iv) (a) 12 m. × 11 m. (b) 10 m. × 6 m. for 65(60) ; 10 m. × 8 m. for others. (v) 100 cm. × 250 cm. for 65(60) ; 100 cm. × 150 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of paddy Blast for 60(61) ; No incidence for others. (iii) Grain yield. (iv) (a) 1951—contd. (b) and (c) Yes. (v) N.A (vi) Heavy gale on 29.10.1961 and heavy rain on 18.10.1961 for 61(151). (vii) Experiment is continued beyond 1965 and therefore individual years results are presented below.

5. RESULTS :

60(61)

(i) 3309 Kg/ha. (ii) 302·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	2825	3228	3620	3732	3138

C.D.=416·2 Kg/ha.

61(151)

(i) 3425 Kg/ha. (ii) 228·7 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treat ment	S_0	S_1	S_2	S_3	S_4
Av. yield	2948	3322	3470	3788	3595

C.D.=315·2 Kg/ha.

62(187)

(i) 2949 Kg/ha. (ii) 324·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	2477	2873	3058	3379	2959

C.D.=446·5 Kg/ha.

63(162)

(i) 3616 Kg/ha. (ii) 208·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	2953	3625	3956	3655	3892

C.D.=286·6 Kg/na.

64(189)

(i) 2590 Kg/ha. (ii) 175·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha,

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	2088	2607	2669	3027	2557

C.D.=241·2 Kg/ha.

65(60)

(i) 2955 Kg/ha. (ii) 151·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	2093	2948	3235	3299	3202

C.D.=209·5 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(50).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :--To study the relative merits of Ammo. Phos; A/s and Super individually and in combination as manures to Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-sugarcane. (b) Sugarcane. (c) 112 Kg/ha. N as A/s. (ii) (a) Clay loam. (iii) 14.7.65/3.9.65 (iv) (a) 3 Puddlings and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) 20 cm.×10 cm. (e) 2 to 3 per hill. (v) Nil. (vi) AKP–4. (vii) Irrigated. (viii) Weeding and working with push hoe. (ix) N.A. (x) 4.12.65.

2. TREATMENTS :

All combinations of (1) and (2)+4 extra treatments :

(1) 3 levels of N as A/S : N_0=0, N_1=33, and N_2=66 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33 and P_2=66 Kg/ha.

Extra treatments : M_1=16·5 Kg/ha. of N+16·5 Kg/ha. of P_2O_5, M_2=33 Kg/ha. of N+33 Kg/ha. of P_2O_5, M_3=49·5 Kg/ha. of N+49·5 Kg/ha. of P_2O_5, M_4=66 Kg/ha. of N+66 Kg/ha. of P_2O_5.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N·A. (iii) 4. (iv) (a) 8·0 m.×3·0 m. (b) 5·4 m.×2·5 m. (v) 130 cm. ×25 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Straw and grain yields. (iv) (a) 1965 only. (b) and. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4223 Kg/ha. (ii) 306 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. grain yield in Kg/ha.

M_1=4129, M_2=4443, M_3=4823 and M_4=4690 Kg/ha.

	P_0	P_1	P_2	Mean
N_0	3536	3652	3882	3690
N_1	4253	4295	4164	4237
N_2	4188	4188	4665	4347
Mean	3992	4045	4237	4091

C.D. for N marginal means=253·5 Kg/ha.

———

Crop :- Paddy (*Abi*). **Ref :- A.P. 64(145)**

Site :- Exploratory cum Demonstration Farm, Arakuvalley. **Type 'M'.**

Object :—To study the effect of different manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Black loamy. (iii) 26.7.64. (iv) (a) 2 Puddlings (b) Transplanting. (c) 52 Kg/ha. (d) 30 cm. × 20 cm. (e) 2. (v) G.L. applied on 10.7.64. vi) AKP—2. (vii) Irrigated. (viii) Hand weeding on 2.9.64, weeding, push hoeing on 11.9.64. (ix) 88·6 cm. (x) Dec. 64.

2. TREATMENTS :

3 manurial treatments : M_1=33·6 Kg/ha. of N as C/A/N in two eqal doses, 1st at the time of planting and the 2nd at the time of 1st weeding, $M_2=M_1+33·6$ Kg/ha. of P_2O_5 as B.M. at the time of planting and $M_3=M_2+33·6$ Kg/ha. of K_2O as Mur. Pot. at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 2·4 cents. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of case-worm was seen on 26.9.64. Endrin sprayed against stem borer on 30·8; Pytolon sprayed on 6·9, attack of Aphids on 25·10.64. (iii) Grain yield and tiller counts. (iv) (a) 1964 only. (b) and. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3110 Kg/ha. (ii) 382·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield	2872	3180	3278

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(252), 64(244),65 (138).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To compare the efficacy of Ammoniun Phosphate with other phosphatic fertilizers.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. for 63 ; As per treatments for 64, 65. (ii) Black cotton soil. (iii) N.A. ; N.A. ; 18, 19.7.65. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm×10 cm. (e) 2. (v) Nil. (vi) N.A. for 63, MTU—19 for 64 and MTU—19 for 65. (vii) Irrigated (viii) Hand weeding. (ix) N.A. (x) N.A. for 63, 64; 8.12.1965.

2. TREATMENTS:

All combinations of (1) and (2) +a control

(1) 3 phosphatic fertilizers : F_1=Super, F_2=Ammo. Phos and F_3=Nitro. Phos.

(2) 3 levels of fertilizers: L_1=34 Kg/ha of N+16 Kg/ha. of P_2O_5, L_2=50 Kg/ha. of N+25 Kg/ha. of P_2O_5 and L_3=67 Kg/ha. of N+34 Kg/ha. of P_2O_5.

All the fertilizers applied at the time of last puddling.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 123·6 ha. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) N.A. (iii) Growth measurements and yield of grain and straw. (iv) (a) 1963–66. (b) Yes. (c) Nil. (v) Yes. (vi) Heavy rainfall of 26 cm. on 21.10.63 and 22.10.63 for 63. Heavy ranifall for 64 on 14, 15, 16.9 64 ; Nil for 65. (vii) Since the experiment is continued beyond 1965 results of individual years are presented below.

5. RESULTS :

63(252)

(i) 708 Kg/ha. (ii) 159·2 Kg/ha. (iii) Main effect of L and control vs others, are highly significant. (iv) Av. yield of grain in Kg/ha.

Control=343 Kg/ha.

	L_1	L_2	L_3	Mean
F_1	570	809	917	765
F_2	533	803	739	692
F_3	655	788	924	789
Mean	586	800	860	749

C.D. for L marginal means=133·2 Kg/ha.
C D. for Control vs others=172·8 Kg/ha.

64(244)

(i) 797 Kg/ha. (ii) 164 8 Kg/ha. (iii) 'Control vs others' alone is highly significant. (iv) Av. yield of grain in Kg/ha.

Control=531 Kg/ha.

	L_1	L_2	L_3	Mean
F_1	805	849	704	786
F_2	818	944	760	841
F_3	762	855	942	853
Mean	795	883	802	827

C.D. for 'control vs. others' =178·9 Kg/ha.

65(138)

(i) 2732 Kg/ha. (ii) 310·4 Kg/ha. (iii) Control vs. others alone is highly significant. (iv) Av. yield of grain in Kg/ha.

Control=2242 Kg/ha.

	L_1	L_2	L_3	Mean
F_1	2809	2785	2769	2788
F_2	2948	2874	2847	2890
F_3	2652	2495	2899	2682
Mean	2803	2718	2838	2786

C.D. for 'Control vs. others'=336·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(200), 61(221), 62(253), 63(245).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object : -To study the effect of different sources of N on the yield of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy--Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 3.8.1960, 2.8.1961, 3.8.1962 and 29.7.1963. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (b) 15 cm.× 15 cm. (e) 2. (v) 34 Kg/ha. of P_2O_5 as Super. (vi) GEB-24. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 27.11.1960, 1.12.1961, 24·11.1962 and 3.12.1963.

2. TREATMENTS :

6 sources of 34 Kg/ha. of N : S_1=A/S, S_2=A/S/N, S_3=C/A/N, S_4=A/C, S_5=Urea and S_6=G.M.
N applied at puddling.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1 / 197·7 Kg/ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) 1960 to 1963. (b) Yes. (c) As under 5. Results. (v) Nil. (vi) Heavy rain sub merged the crop in 1963. (vii) Nil.

5. RESULTS :

(i) 2002 Kg/ha. (ii) 173·5 Kg/ha. (based on 75 d.f. made up of Treatments×years interaction and pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2	S_3	S_4	S_5	S_6
Av. yield	2050	2079	1903	2017	1968	1996

Years	S_1	S_2	S_3	S_4	S_5	S_6	Sig.	G.M.	S.E./plot
1960	2305	2421	2246	2294	2210	2212	N.S.	2281	157.2
1961	2714	2768	2687	2844	2846	2877	N.S.	2789	204.1
1962	2263	2184	1906	2258	1988	2113	*	2118	168.7
1963	919	941	773	673	829	785	N,S.	820	134.9
*Pooled	2050	2079	1903	2017	1968	1996	N.S.	2002	173.5

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(202), 61(223), 62(254), 63(246), 64(243) and 65(137).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To compare the effect of N,P,K fertilizers alone and in combinations and also effect of F.Y.M. on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 30.7.1960 ; 1.8.1961 ; 6.8.62 ; 31.7.63 ; 17.8.64 ; 16, 17.7.65. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) G.E B.—24 for 60, 61 ; Muvva sawani for 62, 63 ; SLO.—13 for 64 ; MTU.—19 for 65. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 21.11.1960 ; 1.12.1961 ; 12.12.1962 ; 24.12.63 ; 8.12.64 ; 8.12.65.

2. TREATMENTS :

10 manurial treatments : M_0=Control, M_1=50 Kg/ha. of N, M_2=50 Kg/ha. of N+50 Kg/ha. of P_2O_5, M_3= 50 Kg/ha. of N+50 Kg/ha. P_2O_5+50 Kg/ha. of K_2O, M_4=50 Kg/ha. of N+50 Kg/ha. of K_2O, M_5=50 Kg/ha. of P_2O_5+50 Kg/ha. of K_2O, M_6=50 Kg/ha. of P_2O_5, M_7=50 Kg/ha. of K_2O, M_8=50 Kg/ha. N as F.Y.M. and M_9=Manure mixture to supply 50 Kg/ha. of N+50 Kg/ha. of P_2O_5+50 Kg/ha. of N in two split doses.

N as A/S, P_2O_5 as Super and K_2O as Pot. Sul. were applied.

3. DESIGN:

(i) R.B.D. (ii) (a) 10. (b) 22·2 m.×48·6 m. (iii) 4. (iv) (a) 10·8 m.×4·8 m. (b) 10·0 m.×4·0 m. (v) 40 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Satisfatory. (ii) Nil. (iii) Growth measurements and yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) Nil. (vi) Nil. (vii) Since the expt. is contd beyond 1965 results of individual years are presented below.

5. RESULTS :

Years	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	G.M.	S.E./plot	Sig.
1960	1725	2175	2675	2744	2212	2344	2312	1750	2469	2712	2312	251.2	**
1961	2337	3112	3875	3981	3206	3406	3512	2469	3462	4137	3350	417.8	**
1962	2281	2681	3219	3125	2806	3012	2856	2469	2894	3175	2852	532.4	N.S.
1963	1988	2412	2489	2837	2319	2531	2444	2019	2706	2462	2419	445.2	N.S.
1964	212	294	381	319	250	287	319	256	306	544	317	238.4	N.S.
1965	2631	2956	3356	3250	3206	3087	2706	2662	2787	3681	3032	614.2	N.S.

Crop :- Paddy (*Kharif*). **Ref:- A.P. 61(230).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the effect of nutritional and harmonal sprays on the yield and growth of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) July, 1961. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm. × 25 cm. (e) 2. (v) 22 Kg/ha of N as A/S. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) Dec. 61.

2. TREATMENTS :

Main-plot treatments

10 harmonal treatments : T_0=Control (water sprays) T_1=Indole Acetic Acid 50 PPM, T_2=Indole Acetic Acid 100 PPM, T_3=Indole Actic Acid 150 PPM, T_4=Napthalene Acetic Acid 50 PPM, T_5=Napthalene Acetic Acid 100 PPM, T_6=Napthalene Acetic Acid 150 PPM, T_7=34 Kg/ ha. of N as Urea, T_8=45 Kg/ha. of N as Urea and T_9=56 Kg/ha. of N as Urea.

Sub-plot treatments

3 levels of sprays : S_1=4, S_2=6 and S_3=8 sprays.

3. DESIGN :

(i) Split-plot. (ii) (a) 10 main-plots/replication; 3 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/328·7 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2166 Kg/ha. (ii) (a) 863·7 Kg/ha. (b) 895·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	Mean
S_1	1841	2254	2262	2083	2179	2212	2255	2511	2535	2328	2246
S_2	1838	2244	2170	1964	2128	2081	2113	2452	2462	2254	2171
S_3	1789	2234	2066	1894	2009	1987	2068	2291	2362	2119	2082
Mean	1823	2244	2166	1980	2105	2093	2145	2418	2453	2234	2166

Crop :- Paddy. **Ref :- A.P. 61(231).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the effect of pre—treatment of seed with growth regulators and other substances on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Black soil. (iii) N.A. (iv) (a) 2 ploughings with country plough followed by puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm. × 25 cm, (e) 2. 22 Kg/ha. of N as A/S. (vi) MTU—22. (vii) Irrigated. (viii) 2 hand weedings, roguing at the time of seed setting. (ix) and (x) N.A.

2. TREATMENTS:

11 manurial treatments : M_0=Control (soaking in water), M_1=Indole Acetic Acid at 100 ppm. concentration, M_2=Indole Acetic Acid at 200 ppm. concentration, M_3=Indole Butyric Acid at 100 ppm. concentration, M_4=Indole Butyric Acid at 200 ppm. concentration, M_5=Naphthalene acetic acid at 100 ppm. concentration, M_6=Nephthalene Acetic Acid at 200 ppm. concentration, M_7=Potassium Bromide at 1% concentration, M_8=Potassium Bromide at 2% concentration, M_9=Potassium Mono Hydrogen Phosphate 1% concentration, M_{10}=Potassium Mono Hydrogen Phosphate 2% concentration.

The seeds were soaked for 24 hours before sowing on separate nursery beds in the solution of treatments and later the seedlings were transplanted to the experimental plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/247·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric data, yield of grain and straw. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3491 Kg/ha. (ii) 344·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	3434	3603	3469	3471	3483	3468	3440	3553	3590	3438	3452

Crop :- Paddy. **Ref :- A.P. 61(229).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object ;—To study the effect of nutritional and harmonal treatments on the yield and growth of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) N.A. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm.×25 cm. (e) 2. (v) Nil. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS;

8 manurial treatments : M_0=Control, M_1=N+P+Borax at 2000 ppm., M_2=N+P+Borax at 4000 ppm; M_3=N+P+Copper Sulphate at 2000 ppm., M_4=N+P+Copper Sulphate at 4000 ppm., M_5=N+P+Zinc Sulphate at 2000 ppm., M_6=N+P+Zinc Sulphate at 4000 ppm. and M_7=N+P alone.

34 Kg/ha. of P_2O_5 as Super at the time of planting and 34 Kg/ha. of N as A/S as top dressing 3 weeks after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/247·1 ha. (v) 50 cm.×50 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3103 Kg/ha. (ii) 271·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	2742	3070	3363	3158	3094	3060	3189	3151

Crop :- Paddy. (*Kharif*). **Ref :- A.P. 61(232).**

Site :- Agri. College Farm, Bapatla. **Type .- 'M'.**

Object : -To study the effect of pig manure on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments (ii) Black soil. (iii) 28.8.61 and gap filling on 10.9.61. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 2.12.1961.

2. TREATMENTS

6 manurial treatments : M_1=Pig manure+Super+N fertilizers (Ryots method), M_2=F.Y.M.+N fertilizer (Ryots method), M_3=Pig manure only, M_4=F.Y.M. only on N basis equal to pig manure (with P and K supplements), M_5=FYM with supplements P and K to equal pig manure and M_6=Green manure with supplement P and K to equal pig manure.

FYM and pig manure applied on 24.8.61 as 50 Kg/ha. of N, Super on 26.8.61, Potassium chloride applied as supplement to treat M_3, M_4, M_5, M_6 to equalise 50 Kg/ha. of P_2O_5 on 15.9.61. Urea was added as a top dressing to make up 67 Kg/ha. of N to the treatment M_1 and M_2 on 28.9.61.

3. DESIGN :-

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 1/197·9 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 507 Kg/ha. (ii) 497·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	594	774	509	430	633	102

Crop :- Paddy. (*Kharif*). **Ref :- A.P. 62(257).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the effect of pig manure and other manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 1.9.1962. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

6 manuriai treatments : M_1=A/S, M_2=Ammo. Phos., M_3=Pig manure, M_4=F.Y.M, M_5=Super digested compost and M_6=Green manure.

Organic manure (pig manure), F.Y.M., Super digested compost and green manure were applied on 28.8.62 ; A/S, Super, A/P (20: 20) were applied on 30, 31.8.1962 and 13.10.62 to make 50 Kg/ha. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 1/197·7 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth measurements ; yield of grain and straw. (iv) (a) 1962 only. (b) and (c) Nil, (v) to (vii) Nil.

5. RESULTS :

(i) 138 Kg/ha. (ii) 47·2 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	141	190	196	99	151	53

C.D.=71·1 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 64(246), 65(141).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the effect of Basic Slag (Thomas Phosphate) on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) N.A. ; 21.7.65. (iv) (a) Puddling with country plough and cleaning. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) F.Y.M. to supply 16 Kg/ha. of N ; 45 Kg/ha. of N as A/S half at puddling and half after 1st weeding. (vi) MTU-22. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) N.A., 7.12.65.

2. TREATMENTS :

All combinations of (1) and (2) + Control :

(1) 3 sources of P_2O_5: S_1=Super, S_2=Indian Basic Slag and S_3=Thomas Phosphate.

(2) 2 levels of P_2O_5 : P_1=34 and P_2=67 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247 ha. (v) N.A. (vii) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth measurements ; yield of grain and straw. (iv) (a) 1964-66. (b) and (c) Yes. (v) Nil. (vi) 1964 : Heavy rainfall of 80 mm ;. 100 cm. ; 105 mm. were recorded at 8·30 A.M. on 14, 15, 16.9.64 respectively. Floods from neighbourhood sub merged the fields for a week. Again for the second time floods from neighbourhood sub merged the crop for 8 days from 1.10.64 dapressing final yield. 1965 : Nil. (vii) Nil.

5. RESULTS :

64(246)

(i) 250·5 Kg/ha. (ii) 98·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Control mean=191·4 Kg/ha.

	S_1	S_2	S_3	Mean
P_1	278	266	235	260
P_2	290	266	228	261
Mean	284	266	232	261

65(141)

(i) 2631 Kg/ha. (ii) 503·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Control mean=2717. Kg./ha.

	S_1	S_2	S_3	Mean
P_1	2717	2563	2649	2643
P_2	2538	2600	2637	2591
Mean	2627	2581	2643	2617

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(208).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'M'.**

Object :—To find out the relative merits of the different types of N fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 24·7 CL/ha. of F.Y.M., 24·4 Kg/ha of N as A/S, 33·6 Kg/ha. of P_2O_5 as Super. (ii) (a) Sandy loams. (iii) 5.2.61/3.3.61 (iv) Dry ploughing once with iron plough, 2 times with country plough, 2 puddlings with country plough after letting in water, working wet land puddler once. (b) Transplanting. (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil (vi) 6522. (vii) Irrigated. (viii) Hand weeding. (ix) 2·4 cm. (x) 2.6.61.

2. TREATMENTS :

All combinations of (1) and (2) :

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.
(3) 3 levels of N : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 8·2 m.×5·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Stem Borer. (iii) Grain yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2156 Kg/ha. (ii) 342·5 Kg/ha. (iii) Interaction N×S is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_0	2529	2051	1675	2102	2089
N_1	2293	2261	1616	2529	2175
N_2	1849	2109	2671	2186	2204
Mean	2224	2140	1987	2272	2156

C.D. for body of N×S table=580·0 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(181).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'M'.**

Object :—To compare the merits of C/A/N and A/S at two levels of N.

1. BASAL CONDITIONS :

(i) (a) Paddy–Paddy. (b) Paddy. (c) N.A. (ii) (a) Sandy loams. (iii) 8.7.60 / 11.8.60. (iv) (a) Dry ploughing once with iron plough, once with country plough, puddling with country plough, working wet land puddler, trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) BCP-1. (vii) Irrigated. (viii) 2 hand weedings, working push hoe at fortnight intervals up to short blade stage. (ix) 132·4 cm. (x) 17.1.61.

2. TREATMENTS :

All combinations of (1) and (2) :

(1) 2 sources of N : S_1=A/S and S_2=C/A/N

(2) 2 levels of N : N_1=33·6 and N_2=50·4 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 9·1 m.×6·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Stem Borer. Spraying of Endrin. (iii) Grain yield. (iv) (a) 1960 only. (b) and. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2866 Kg/ha. (ii) 513·4 Kg/ha. (iii) None of the effects is significant. (vi) Av. yield of grain in Kg/ha.

	S_1	S_2	Mean
N_1	2766	2800	2783
N_2	2746	3153	2950
Mean	2756	2976	2866

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(184).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'M'.**

Object :—To test the efficacy of plantomine in increasing rice yelds in combination with G.M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy, (b) Groundnut and Horse gram. (c) 19·8 to 24·7 CL/ha. of F.Y.M. (ii) Sandy loams. (iii) 10.7.60 / 17·8·60. (iv) 2 dry ploughings with country plough, 2 puddlings with country plough after letting in water, trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L. of Glyrecedia. (vi) BCP—1. (vii) Irrigated. (viii) 3 hand weedings, working push hoe at fort nightly intervals up to short blade stage and gapfilling (ix) 132.3 Cm. (x) 23.1.61.

2. TREATMENTS :

7 margnal treatments : T_0=Control., T_1=50·4 Kg/ha. of N as G.M., T_2=50·4 Kg/ha. of N as A/S., T_3=24·7 Kg/ha. of N as G.M., T_4=24·7 Kg/ha. of N as A/S., T_5=24·7 Kg/ha. of N as G.M.+22·4 Kg/ha. of Plantomine., T_6=24·7 Kg/ha. of N as A/S+22·4 Kg/ha. of Plantomine.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) and (b) 7·9 m.×4·6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Stem Borer spraying of Endrin. (iii) Grain yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3437 Kg/ha. (ii) 308·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3357	3954	3199	3422	3694	3527	2905

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(183).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'M'.**

Object :—To test the efficacy of Plantomine in increasing the rice yield in combination with F.Y.M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Groundnut and Horse gram. (c) 19·8 to 24·7 C.L./ha. of F.Y.M. (ii) Sandy loam. (iii) 10.7.60/16.8.60 (iv) (a) 2 dry ploughings with country plough, 2 puddlings with country plough after letting in water, trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L. of Glyrecedia. (vi) BCP—1. (vii) Irrigated. (viii) 3 hand weedings, working push hoe at fortnightly inetrvals up to short blade stage and gapfilling. (ix) 132·3 cm. (x) 25.1.61

2. TREATMENTS :

7 manurial treatments : T_0=Control, T_1=50·4 Kg/ha. of N as F.Y.M; T_2=50·4 Kg/ha. of N as A/S., T_3=24·7 Kg/ha. of N as F.Y.M; T_4=24·7 Kg/ha. of N as A/S; T_5=24·7 Kg/ha. of N as F.Y.M.+22·4 Kg/ha. of Plantomine and T_6=24·7 Kg/ha. of N as A/S+22·4 Kg/ha. of Plantomine.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) and (b) 7·9 m.×4·6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Stem Borer. Spraying of Endrin was done. (iii) Grain yield. (iv) (a) 1960 only (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

3359 Kg/ha. (ii) 327·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3489	3343	3756	3172	3058	3224	3474

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(182).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'M'.**

Object: —To find out the relative merits of two Phosphatic manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy loams. (iii) 8.7.60/15.8.60. (iv) (a) 2 puddlings after letting in water with country plough, working wet land puddler twice and trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 15 cm. (e) 2. (v) Nil. (vi) BCP-1 (vii) Irrigated. (viii) 2 hand weedings, working push hoe at fortnight intervals up to short blade stage. (ix) 132·4 cm. (x) 16.1.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 sources of P_2O_5 at 33·6 Kg/ha. : S_1=Bone meal and S_2=Super.

(2) 2 methods of application : M_1=Broad casting and M_2=Placing in pellets.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m. × 4·6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Stem Borer and there was considerable set back in crop growth. Spraying of Endrin. (iii) Grain yields. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2281 Kg/ha. (ii) 218·6 Kg/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	Mean
S_1	2261	2164	2212
S_2	2584	2116	2350
Mean	2422	2140	2281

C.D. for M marginal means=247·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 63(10), 64(16).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To study the effect of different methods for the reclamation of alkaline soil and to study the effect of fertilizers application on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Red sandy loam. (iii) 9.8.1963, 2nd fortnight of July, 1964. (iv) (a) Puddling. (b) Transplanting. (c) 11 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) Nil. (vi) MTU—9. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 3rd week of Nov.

2. TREATMENTS :

Main-plot treatments :

2 levels of fertilizers : F_0=0 and F_1=50·4 Kg/ha. of N+25·2 Kg/ha. of P_2O_5

Sub-plot treatments :

13 treatments for soil reclamation : T_0=0, T_1=12·5 Q/ha. of Sulphur, T_2=25·1 Q/ha. of sulphar, T_3=75·3 Q/ha. of Gypsum, T_4=125·5 Q/ha. of Gypsum, T_5=56 Q/ha. Dhaincha as G.M., T_6=56 Q/ha. of Calotropis as G.M., T_7=Agremone maxican (Banttra method), T_8=56 Q/ha. of G.M. (leaf)+75·3 Q/ha. of Gypsum, T_9=56 Q/ha. of G.M. (leaf)+125·5 Q/ha. of Gypsum, T_{10}=112 Q/ha. of F.Y.M., T_{11}=Soil conditioner and T_{12}=Ripping.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 13 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 4·2 m. × 8·8 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin was sprayed. (iii) Grain yield. (iv) (a) 1963—64. (b) No. (c) As under 5 results. (v) and (vi) N.A. (vii) Both the error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

(i) 1112 Kg/ha. (ii) (a) 814·4 Kg/ha. (based on 11 d.f. composed of years × main-plot interaction and pooled error). (b) 443·2 Kg/ha, (based on 244 d.f. made up of different components of Treatments × years interaction and pooled error. (iii) Main effect of F is highly significant and that of T and interaction F × T are significant. (iv) Av. yield of grain in Kg/ha.

Mean table

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
F_0	889	740	934	690	940	1014	1094	1123	1149	1294	1332	772	658	972
F_1	946	1191	1481	1408	1333	1413	1134	571	1209	1653	1411	1275	1256	1252
Mean	918	965	1208	1049	1136	1213	1114	847	1179	1474	1371	1023	957	1112

C.D. for F marginal means=203·0 Kg/ha.
C.D. for T marginal means=253·6 Kg/ha.
C.D. for F means at the same level of T=399·0 Kg/ha.
C.D. for T means at the same level of F=358·2 Kg/ha.

Years	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Sig.
1963	881	1032	1356	998	1131	1086	976	716	1172	1528	1359	967	825	*
1964	955	900	1060	1101	1143	1342	1248	979	1187	1420	1384	1080	1030	*
Pooled	918	965	1208	1049	1136	1213	1114	847	1179	1474	1371	1023	957	*

F_0	F_1	Sig.	G.M.	S.E./main plot
867	1300	*	1084	890·0
1076	1205	N.S.	1141	555·0
972	1252	**	1112	814·4

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(108), 61(122), 62(150).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To find out the effect of deoiled cake along with other fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (iii) 8.6.60 ; 21.8.61, 20.8.62. (iv) (a) 3 puddlings with country plough. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 10 cm. (e) 2 to 3. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 hand weedings and working of weeder. (ix) 70 cm; 46 cm., 53 cm. (x) 29.11.60, 24.11.61, 27.11.62.

2. TREATMENTS:

All combinations of (1) and (2) + a control.

(1) 3 sources of 50·4 Kg/ha. of N: S_1 = G.N.C., S_2 = A/S, and S_3 = Deoiled cake.

(2) 2 methods of application of N : M_1 = N applied in 2 split doses and M_2 = N as single dose.

N.B. 28·0 Kg/ha. of P_2O_5 applied as Super in all treatments except control. All fertilizers applied by soil application.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) and (b) 7·0 m. × 5·8 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin. (iii) Yield of grain. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS ;

60(108)

(i) 1712 Kg/ha. (ii) 680·3 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean = 1785 Kg/ha.

	S_1	S_2	S_3	Mean
M_1	2125	1548	1962	1878
M_2	1422	1198	1944	1521
Mean	1774	1373	1953	1700

61(122)

(i) 1358 Kg/ha (ii) 461·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean = 1341 Kg/ha.

	S_1	S_2	Mean
M_1	1354	1064	1209
M_2	1145	1403	1274
Mean	1250	1234	1242

62(150)

(i) 1138 Kg/ha. (ii) 220·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean=1106 Kg/ha.

	S_1	S_3	Mean
M_1	1208	1182	1195
M_2	1066	1185	1126
Mean	1137	1184	1160

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(121), 62(149).**

Site :- Govt. Agri. Farm, Dindi. **Type 'M'.**

Object :—To find out the effect of deoiled cake alongwith other fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (iii) 2.1.61/11.2.61. (iv) (a) 3 puddlings with country plough and levelling with working gorru. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 3 weedings. (ix) 4 cm. for 61, 10 cm. for 62. (x) 25.5.61, 4.5.62.

2. TREATMENTS :

Same as in expt. no. 60(108) on page 18.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) and (b) 7·0 m.×5·8 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying B.H.C. and Endrin. (iii) Grain yield. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) S_3 not applied in 1962.

5. RESULTS :

61(121)

(i) 1198 Kg/ha. (ii) 254·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean=1157 Kg/ha.

	S_1	S_2	S_3	Mean
M_1	1268	1224	1194	1229
M_2	1434	834	1271	1181
Mean	1351	1029	1232	1205

62(149)

(i) 3411 Kg ha. (ii) 540·5 Kg/ha. (iii) None of the effect is significant. (iv) Av. yield of grain in Kg ha.

Control mean = 3682 Kg/ha.

	S_1	S_2	Mean
M_1	3524	3496	3510
M_2	3119	3394	3256
Mean	3322	3445	3383

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(119), 62(146), 63(234), 64(238).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object – To study the effect of different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy – Paddy. (b) Paddy. (c) 44·8 Kg/ha. of N as A.S + 17·9 Kg/ha. of P_2O_5 as Super for 61; As per treatments for others. (ii) *Chalka*. (iii) 2.1.61/8.3.61 ; 5.1.62/12.2.62 ; 15.3.63 ; 17.2.64. (iv) (a) 3 to 6 puddlings and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) 33·6 Kg/ha. of P_2O_5 as Super ; as per treatments for others. (vi) MTU—15. (vii) Irrigated. (viii) Interculturing and hand weeding. (ix) 4 cm. ; 10 cm. ; 6·7 cm. ; 0·5 cm. (x) 27.5.61 ; 4.6.62 ; 18.6.63 ; 21.5.64.

2. TREATMENTS ;

All combinations of (1) and (2) + a control (4 plots)

(1) 2 levels of N : N_1 = 33·6 and N_2 = 67·2 Kg/ha.

(2) 4 sources of N : S_1 = A.S, S_2 = A/S/N. S_3 = Urea and S_4 = C.A.N.

N applied in two equal doses at planting and 20 days after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 6·4 m. × 6·3 m. for 61, 62 ; 6·7 m. × 6·6 m. for 63, 64. (b) 1/247, ha. for 61, 62 ; 6·4 m. × 6·3 m. for 63, 64. (v) N.A. for 61, 62 ; 15 cm. × 15 cm. for 63, 64 (vi) Yes.

4. GENERAL .

(i) Satisfactory. (ii) Spraying BHC for 61, 62 ; Endrin for 63, 64. (iii) Yield of grain and straw. (iv) (a) 1961 – contd. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are hetrogeneous and treatments × years interaction is present.

5. RESULTS :

(i) 2177 Kg/ha. (ii) 732·6 Kg/ha. (based on 16 d.f. made up of treatments × years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean = 1846 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_1	2497	1936	2386	1925	2186
N_2	2247	2120	2362	2269	2250
Mean	2372	2028	2374	2097	2218

Years	N_1	N_2	Sig.	S_1	S_2	S_3	S_4	Sig.	G.M.	S.E./plot
1962	3888	4489	N.S.	4259	3755	4775	3695	N.S.	3994	547·0
1963	1868	1821	N.S.	1869	1681	1905	1924	N.S.	1672	336·0
1964	802	438	*	988	616	443	402	N.S.	705	406·0

Crop :- Paddy. **Ref :- A.P. 61(120), 62(147), 63(237).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To study the effect of different sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka.* (iii) 23.6.1961/21.8.1961 ; 29.6,62/21.8.62 ; 20.8.1963. (iv) (a) 3 to 5 puddlings and one levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm × 15 cm. (e) 2 to 3. (v) As per treatments. (vi) MTU—15 for 61, 62 ; HR—35 for 63. (vii) Irrigated. (viij) One to two hand weedings. (ix) 46 cm ; 55 cm. ; 31·9 cm. (x) 24.11.1961 ; 27.11.62 ; 4.12.1963.

2. TREATMENTS :

All combinations of (1) and (2)+a control (4 plots).

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.

(2) 2 levels of N : N_1=34 and N_2=68 Kg/ha.

A basal manuring of 34 Kg/ha. of P_2O_5 was given to all plots.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 6·4 m.×6·3 m. for 61, 62 ; 6·7 m.×6·6 m. for 63. (b) 1/247·1 ha. for 61, 62 ; 6·4 m.×6·3 m. for 63. (v) N.A. for 61, 62 ; 15 cm.×15 cm. for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying Endrin against gall fly. (iii) Yield of grain. (iv) (a) 1961—63. (b) Yes. (c) No. (v) and (vi) Nil. (vii) Error variances are homogeneous and treatments×years interaction is present.

5. RESULTS :

(i) 1186 Kg/ha. (ii) 467·1 Kg/ha. (based on 16 d.f. made up of treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean=1191 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_1	1153	1006	1329	1256	1188
N_2	1027	1267	1103	1343	1185
Mean	1090	1136	1226	1300	1186

Years	N_1	N_2	Sig.	S_1	S_2	S_3	S_4	Sig.	G.M.	S.E./plot
1961	1146	1401	*	1174	1182	1401	1337	N.S.	1258	217·0
1962	1151	871	*	851	1098	935	1160	N.S.	981	278·0
1963	1261	1288	N.S.	1245	1130	1312	1401	N.S.	1308	305·0

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(106), 61(117), 62(144), 63(288) 64(287), 65(220).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To find out the response of Paddy to different fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka.* (iii) 16.2.1960 ; 4.3.1961 ; 14.3.1962 ; 2.3.1963 ; 11.2.1964 ; 5.2.1965. (iv) (a) 3 to 4 puddlings and levelling with country gorru. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) As per treatments. (vi) HR-19 (early) for 1960, 1961 ; HR-5 (short) for 1962 ; MTU-15 for 1963, 64 and MTU-9 for 1965. (vii) Irrigated. (viii) Weeding with rotary weeder. (iv) 4 cm ; 4 cm ; 10 cm. ; for 1963 to 65—N.A. (x) 12.5.60 ; 23.5.1961 ; 15.6.1962 ; 31.5.1963 ; 13.5.1964 ; 14.5.1965.

2. TREATMENTS :

All combination of (1) and (2)+2 extra treatments (each of them in two plots).

(1) 4 sources of N at 56·0 Kg/ha. : S_1=G.M., S_2=Compost, S_3=G.N.C. and S_4=A/S.

(2) 2 levels of P_2O_5 as Super : P_0–0 and P_1=28·0 Kg/ha.

Extra treatments : T_0=Control and T_2=28·0 Kg/ha. of P_2O_5 as Super

S_1 and S_2 applied in one dose

S_3 and S_4 applied in two doses.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 7·9 m. ×6·4 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, tiller counts, yield of grain and straw. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

60(106)

(i) 2111 Kg/ha. (ii) 165·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha

T_0=1534 Kg/ha., T_1=1741 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	2319	2088	2697	1772	2219
P_1	2948	2515	2337	2107	2477
Mean	2634	2302	2517	1938	2348

61(117)

(i) 890 Kg/ha. (ii) 256 Kg/ha. (iii) Extra treatments vs. others is highly significant and main effect of S is significant. (iv) Av. yield of grain in Kg/ha.

T_0=651 Kg/ha., T_1=676 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	927	961	1195	525	902
P_1	1140	1447	1123	715	1106
Mean	1034	1204	1159	620	1004

62(114)

(i) 818 Kg/ha. (ii) 432 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

T_0=454 Kg/ha., T_1=797 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	1542	1025	1182	352	1025
P_1	779	1218	788	433	804
Means	1160	1122	985	392	915

63(288)

(i) 2415 Kg/ha. (ii) 230 Kg/ha. (iii) Extra treatments vs. others is highly significant. (iv) Av. yield of grain in Kg/ha.

T_0=2028 Kg/ha., T_1=2179 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	2662	2327	2472	2590	2351
P_1	2640	2372	2898	2595	2479
Mean	2651	2350	2690	2593	2415

64(287)

(i) 2188 Kg/ha. (ii) 354·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

T_0=2074 Kg/ha., T_1=2197 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	2158	1923	2963	1845	2222
P_1	2040	2001	2271	2303	2154
Mean	2099	1962	2616	2074	2188

65(220)

(i) 2930 Kg/ha. (ii) 885·5 Kg/ha. (ii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	Mean
R_1	2996	3756	2952	2147	2326	3220	3131	2862	1610	2952	2892
R_2	2684	2550	3756	3577	3220	3846	1073	3578	3130	3488	3012
Mean	2840	3153	3354	2862	2773	3533	2102	3220	2370	3220	2952

T_0=2840 Kg/ha., T_1=3153 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	3354	2773	2102	3370	2650
P_2	2862	3533	3220	3220	3209
Mean	3108	3153	2621	2795	2930

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(107), 61(118), 62(145), 63(287), 64(288), 65(221).**

Site :- Govt. Agri. Farm, Dindi. Type :- 'M'.

Object :—To find out the response of Paddy to different fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (iii) 3 rd week of July, 1960 ; 19.8.1961 ; 22.8.1962 ; 17.8.1963 ; 7.7.1964 ; 27.7.1965. (iv) (a) 3 to 4 puddlings and levelling with country gorru. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) Nil for 1960 ; As per treatments for others. (vi) HR-19 (early) for 1960, 61 ; MTU-15 (short) for 1962 ; HR- 35 for 1963, 64 and 65. (vii) Irrigated. (viii) Hand weeding and weeding with rotary weeder. (ix) 65 cm ; 46 cm. ; 55 cm. ; for 1963 to 65—N.A. (x) 2.11.1960 ; 25.11.1961 ; 23.11.1962 ; 7.12.1963 28.11.1964 ; 7.12.65.

2. TREATMENTS :

All combinations of (1) and (2) with 2 extra treatments (each of them in two plots).

(1) 4 sources of N at 56 0 Kg/ha. : S_1=G.M., S_2=Compost, S_3=G.N.C. and S_4=A/S.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=28·0 Kg/ha.

Extra treatments : T_0=Control and T_1=28·0 Kg/ha of P_2O_5 as Super.

S_1 and S_2 applied in one dose.

S_3 and S_4 applied in two doses.

3. DESIGN:

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 7.92 m. × 6·4 m. (v) Nil. (vi) Yes.

4 GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Height, tiller counts, yield of grain and straw. (iv) (a) 1956 –contd. (b) Yes. (c) N A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

60(107)

(i) 1696 Kg/ha. (ii) 373 Kg/ha. (iii) Extra treatments vs others is significant. (iv) Av. yield of grain in Kg/ha.

T_0=1361 Kg/ha., T_1=1556 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	1637	1785	1559	1771	1688
P_1	2112	1302	2459	1886	1940
Mean	1875	1544	2009	1828	1814

C.D. for extra treatments vs others=348·9

61(118)

(i) 703 Kg/ha. (ii) 202 Kg/ha. (iii) Extra treatments vs. others is significant. (iii) Av. yield of grain in Kg/ha.

T_0=547 Kg/ha., T_1=511 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	752	629	838	830	762
P_1	813	1037	972	447	817
Mean	782	833	905	638	790

62(145)

(i) 1928 Kg/ha. (ii) 213 Kg/ha. (iii) Extra treatments vs. others is significant. (iv) Av. yield of grain in Kg/ha.

T_0=1665 Kg/ha., T_1=1746 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	2123	2252	1791	2042	2052
P_1	1981	2182	2023	1925	2028
Mean	2052	2217	1907	1984	2040

63(287)

(i) 2624 Kg/ha. (ii) 420 Kg/ha. (iii) Main effect of P is significant and differences between extra treatments is highly significant. (iv) Av. yield of grain in Kg/ha.

T_0=1985 Kg/ha., T_1=2520 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	2612	2500	3149	2198	2405
P_1	3224	2685	3289	2819	2843
Mean	2918	2592	3219	2509	2624

64(288)

(i) 2944 Kg/ha, (ii) 348·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

T_0=2985 Kg/ha., T_1=3142 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	3131	2840	2862	2594	2858
P_1	3086	3131	2907	2996	3030
Mean	3108	2986	2886	2795	2944

65(221)

(i) 1728 Kg/ha. (ii) 430·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

T_0=1386 Kg/ha., T_1=2252 Kg/ha.

	S_1	S_2	S_3	S_4	Mean
P_0	1386	1297	2080	1485	1562
P_1	1364	2661	1610	1945	1895
Mean	1375	1979	1845	1715	1728

Crop :- Paddy. **Ref :- A.P. 65(259), 65(260).**

Site :- Agri. Res. Instt; Rajendranagar, Hyderabad. **Type :- 'M'.**

Object : —To study the crop response in relation to fertility as made out by organic matter content.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 9.6.65/7, 8.7.65 ; 14.12.65/24.1.66. (iv) (a) One wet ploughing, puddling 4 times and levelling. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm. ×15 cm. (e) 2. (v) As per treatments. (vi) HR—19. (vii) Irrigated. (viii) Working weeder thrice, 1 hand-weeding. (ix) Nil. (x) 13, 14.10.65 ; 30.4.66.

2. TREATMENTS :

6 manurial treatments : T_1=34 Kg/ha. of P_2O_5, T_2=67 Kg/ha. of N+50 Kg/ha. of P_2O_5, T_3= Glyricidia to supply 22 Kg/ha. of N+44 Kg/ha. of N+33 Kg/ha. of P_2O_5, T_4= Glyricidia to supply 22 Kg/ha. of N+67 Kg/ha. of N+50 Kg/ha. of P_2O_5, T_5= Well decomposed F.Y.M. at 22 Kg/ha. of N+44 Kg/ha. of N+33 Kg/ha. of P_2O_5, and T_6=Well decomposed F.Y.M. at 22 Kg/ha. of N+67 Kg/ha. of N+50 Kg/ha. of P_2O_5.

N applied as A/S and P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 89·0 Sq.m. (b) 80·9 Sq.m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed twice against stem borer. Parathion was also sprayed once. (iii) Height measurements, yield of grain and straw. (iv) (a) 1964-66. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

65(259)

(i) 4363 Kg/ha. (ii) 428·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	4109	4448	4466	4488	4356	4312

65(260)

(i) 3077 Kg/ha. (ii) 524·1 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2254	3261	2725	3808	3043	3372

C.D.=789·7 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(250).**

Site :- Agri. Res. Instt; Rajendranagar, Hyderabad. **Type :- 'M'.**

Object : To study the effect of Thomas Phosphate in comparison with Single Super Phos.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) *Chalka*. (iii) 29.7.65. (iv) (a) 4 ploughings and 2 puddlings. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm.×15 cm. (e) 2 (v) As per treatments. (vi) HR—35. (vii) Irrigated. (viii) Weeding with japanese weeder on 28.8.65, one hand weeding during Sept. 65. (ix) N.A. (x) Oct. 65.

2. TREATMENTS:

T_0=Control, T_1=Super single dose at 34 Kg/ha. of P_2O_5, T_2=Super double dose at 67 Kg/ha. of P_2O_5, T_3=Control, T_4=Control, T_5=Thomas Phosphate single dose at 34 Kg/ha. of P_2O_5, T_6=Thomas Phosphate double dose at 67 Kg/ha, of P_2O_5.

T_3+T_4 were treated as control as the Indian Basic Slag was N.A.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 80·9 sq. m. (v) Yes. (vi) Yes

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) 1965—66. (b) Yes. (c) Nil. (v) Not known. (vi) and (vii) Nil.

5. RESULTS :

(i) 3714 Kg/ha. (ii) 215 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield grain of in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3314	3815	3615	3467	3314	4085	4394

Crop :- Paddy (*Rabi*) **Ref :- A.P. 61 (9)**

Site :- Agri. Res. Instt., Rajendranagar, Hydarabad **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) Black cotton soil. (iii) 4.1·61/18.2.61. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 31.5.61

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=33·6 Kg/ha.

(2) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.

3. DESIGN

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 8·7 m.×7·6 m. (b) 8·4 m.×7·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1961—only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1650 Kg/ha. (ii) 175·0 Kg/ha. (iii) Main effects of N and S are highly significant. Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_0	—	—	—	—	966
N_1	1627	1689	1800	1295	1603
N_2	2539	2416	2502	2071	2382
Mean	2083	2053	2151	1683	—

C. D. for S marginal means=209·4 Kg/ha.
C. D. for N marginal means=148·1 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(15)**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad **Type 'M'.**

Object :—To study the comparative efficiency of different levels and concentration of Urea applied in puddle and as spray on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) *Chalka*. (iii) 20.6.60/11.7.60. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 13.10.60.

2. TREATMENTS :

All combinations of (1), (2) and (3)+3 extra treatments in each block.

(1) 3 levels of N as Urea : N_0=0, N_1=25·2 and N_2=50·4 Kg/ha.

(2) 3 levels of spraying of Urea : S_1=1, S_2=2 and S_3=3 sprays.

(3) 3 concentrations : C_1=1%, C_2=2% and C_3=3%.

Extra treatments : E_0=Control, E_1=25·2 Kg/ha. of N as Urea and E_2=50·4 Kg/ha. of N as Urea. Urea applied in the last puddle at planting in case of extra treatments.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 12 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 1/112·3 ha. (b) 1/117·6 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin spray as a preventive measure. (iii) Yield of grain. (iv) (a) 1960—only. (b) and (c) Nil. (v) and (vi) Nil. (vii) Mean yield figures for extra treatments separately are not available.

5. RESULTS:

(i) 1627 Kg/ha. (ii) 219 Kg/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in Kg/ha.

Extra treatments mean=1285 Kg/ha.

	S_1	S_2	S_3	C_1	C_2	C_3	Mean
N_0	1486	1503	1401	1445	1423	1521	1463
N_1	1570	1530	1766	1610	1717	1539	1622
N_2	1961	1912	1854	1828	1988	1912	1909
Mean	1672	1648	1674	1628	1709	1657	1665
C_1	1619	1663	1601				
C_2	1717	1641	1707				
C_3	1681	1641	1650				

C.D. for N marginal means=149 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(10).**

Site :- Agri. Res. Instt., Rajendra nagar, Hyderabad. **Type :- 'M'.**

Object :—To study the comparative efficiency of different levels and concentration of Urea applied in puddle and as spray on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (iii) 1.1.61/31.1.61. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 19, 22.5.61.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 60(15) on page 28.

4. GENERAL :

(i) Good. (ii) Endrin was sprayed as a preventive measure. (iii) Yield of grain. (iv) (a) 1961—only, (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1799 Kg/ha. (ii) 314·0 Kg/ha. (iii) Main effect of N, C, S and extra treatments vs. others are highly significant.

(iv) Av. yield of grain in Kg/ha.

Extra treatments	E_0	E_1	E_2
Av. yield	1098	1303	1903

	S_1	S_2	S_3	C_1	C_2	C_3	Mean
N_0	1347	1490	1432	1099	1468	1703	1423
N_1	1646	2028	2170	1886	1948	2010	1948
N_2	2135	2486	2557	2197	2397	2584	2393
Mean	1709	2001	2053	1727	1938	2099	1921
C_1	1752	1730	1699				
C_2	1579	1988	2246				
C_3	1797	2286	2215				

C.D. for N, C or S marginal means=212·0 Kg/ha,

C.D. for extra treatments vs. others=365·0 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(251).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To compare the efficiency of Ammo. Phos. with O.D.D.A. ; Nitro. Phos ; and Super.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) *Chalka.* (iii) 22.6.65. (iv) (a) Ploughing. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Hand weeding twice. (ix) N.A. (x) 12.10.65.

2. TREATMENTS :

All combinations of (1) and (2)+one control.

(1) 3 combinations of N and P : M_1=30 Kg/ha. of N+22·5 Kg/ha. of P_2O_5 ; M_2=45 Kg/ha. of N+33·8 Kg/ha. of P_2O_5 and M_3=60 Kg/ha. of N+45 Kg/ha. of P_2O_5.

(2) 3 sources of N and P : S_1=A.S and Super, S_2=Ammo. Phos. and S_3=Nitro. Phos.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 89·2 sq. m. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Slight attack of paddy stem borer was noticed on 7.8.65. Endrin was sprayed at 9 c.c./gallon of water. (iii) Grain yield. (iv) (a) 1965 –only. (b) and (c) Nil. (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 3138 Kg/ha. (ii) 259·8 Kg/ha. (iii) Only the effect due to extra vs. others is highly significant. (iv) Av. yield of grain in Kg/ha.

Control yield=2703 Kg/ha.

	M_1	M_2	M_3	Mean
S_1	3360	3136	3337	3278
S_2	3106	3167	3375	3216
S_3	3043	3012	3144	3066
Mean	3170	3105	3285	3186

C.D. for 'control vs. others'=280·5 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(13), 61(12), 62(11), 63(21), 64(20).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of N applied through organic and inorganic manures with and without Super on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Dark brown sandy loam. (iii) 6.6.1960/7, 8.7.1960 ; 5.5.1961/7.7.1961 ; 27.6.1962/3.8.1962 ; 1.6.1963/1.7.1963 ; 2.6.1964/2.7.1964. (iv) (a) 3 to 4 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm.×15 cm. (e) N.A. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 to 2 weedings. (ix) N.A., 12 cm., 87 cm., 65 cm., 68 cm. (x) 12.10.1960 ; 31.10.61 ; N.A., 9.10.1963 ; 10.10.1964.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_1=25 Kg/ha.

(2) 5 sources of 56 Kg/ha. of N : S_0=Control (No N), S_1=G. M., S_2=A/S, S_3=F.Y.M. and S_4=G.N.C.

Super broadcast at the time of last puddle, G.M. and F.Y.M. broadcast at second puddle. A/S and G.N.C. broadcast half at planting and half after one month.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) 39·0 m.×23·5 m. (iii) 2. (iv) (a) 4·9 m.×18·6 m. (b) 4·6 m.×18·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No incidence. Endrin was sprayed as a preventive measure. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. for 1965—N.A.

5. RESULTS :

60(13)

(i) 1714 Kg/ha. (ii) 293·0 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	759	2251	1681	1139	2170	1600
P_1	1031	2224	2387	1275	2225	1828
Mean	895	2237	2034	1207	2197	1714

C.D. for S marginal means=468·6 Kg/ha.

61(12)

(i) 1097 Kg/ha. (ii) 302 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_1	801	1125	869	894	1313	1000
P_2	910	1250	1369	1242	1199	1194
Mean	855	1187	1119	1068	1256	1097

62(11)

(i) 853 Kg/ha. (ii) 147·0 Kg/ha. (iii) Main effect of P is highly significant and that of S is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	537	747	673	823	904	737
P_1	689	963	1000	1005	1187	969
Mean	613	855	837	914	1045	853

C.D. for P marginal means=148·7 Kg/ha.
C.D. for S marginal means=235·1 Kg/ha.

63(21)

(i) 1565 Kg/ha. (ii) 338·0 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	1035	1815	1075	1628	1964	1503
P_1	1126	1808	1843	1296	2058	1626
Mean	1081	1811	1459	1462	2011	1565

C.D. for S marginal means=540·6 Kg/ha.

64(20)

(i) 854 Kg/ha. (ii) 289·0 Kg/ha. (iii) Main effect of S is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	395	993	307	1051	701	749
P_1	677	1215	841	561	1495	958
Mean	536	1104	724	806	1098	854

C.D. for S marginal means=462·2 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 60(14), 61(13), 62(12), 63(22), 64(21).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object:—To study the effect of N applied through organic and inorganic manures with and without Super on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Dark brown sandy loam. (iii) 22.12.1960/24.1.1961 ; 18.12.1961/30.1.1962 ; 24.12.1962/5.2.1963 ; 15.12.1963/21.1.1964 ; 6.12.1964/13.1.1965. (iv) (a) 3 to 4 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm.×15 cm. (e) N.A. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 to 2 weedings. (ix) N.A., 10 cm., 6 cm., 2 cm., 2 cm. (x) 5.5.1961 ; 1.5.1962 ; 7.5.1963 ; 17.4.1964 ; 21.4.1965.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_1=25 Kg/ha.

(2) 5 sources of 56 Kg/ha. of N: S_0=Control (No N), S_1=G.M., S_2=A/S, S_3=F.Y.M and S_4=G.N.C.

Super broadcast at the time of last puddle. G.M. and F.Y.M. broadcast at second puddle. A/S and G.N.C. broadcast half at planting and half after one month.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) 39·0 m.×23·5 m. (iii) 2. (iv) (a) 4·9 m.×18·6 m. (b) 4·6 m.×18·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No incidence for 63 ; Parathion sprayed as preventive measure for 64, Endrin sprayed as preventive measure for others. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. for 1965—N.A.

5. RESULTS:

60(14)

(i) 1668 Kg/ha. (ii) 423·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	1207	1953	1397	1153	2075	1557
P_1	1329	1627	1831	2170	1939	1779
Mean	1268	1790	1614	1661	2007	1668

61(13)

(i) 1183 Kg/ha. (ii) 318·0 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	715	1500	855	1163	1406	1128
P_1	911	1752	1196	888	1444	1238
Mean	813	1626	1025	1025	1425	1183

C.D. for S marginal means=508·6 Kg/ha.

62(12)

(i) 923 Kg/ha. (ii) 269·0 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Meaa
P_0	327	1556	719	710	1098	882
P_1	491	1626	1028	500	1173	964
Mean	409	1591	874	605	1136	923

C.D. for S marginal means=430·3 Kg/ha.

63(22)

(i) 495 Kg/ha. (ii) 156·0 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	243	701	374	336	537	438
P_1	257	806	491	397	803	551
Mean	250	753	433	367	670	495

C.D. for S marginal means=249·5 Kg/ha.

64(21)

(i) 2432 Kg/ha. (ii) 418·0 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	1441	2845	2153	2461	2968	2374
P_1	1734	2796	2997	2129	2792	2490
Mean	1587	2821	2575	2295	2880	2432

C.D. for S marginal means=668·6 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 63(28), 64(39).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To find out the response of Paddy to micro-nutrient elements applied through soil.

1. BASAL CONDITIONS :

(i) (a) Paddy - Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 22.7.63 ; 28.7.64. (iv) (a) 2 ploughings and 2 puddlings (b) Transplanting. (c) to (e) N.A. (v) 50·4 Kg/ha. of N+25·2 Kg/ha. of P_2O_5. (vi) HR—19 (vii) Irrigated. (viii) 1 to 2 weedings. (ix) 59 cm. ; 42 cm. (x) 29.10.63 ; 2.11.64.

2. TREATMENTS :

All combinations of (1), (2), (3), (4) and (5)+one extra treatment.

(1) 2 levels of Mn : A_0=0 and A_1=56 Kg/ha.
(2) 2 levels of Zn : B_0=0 and B_1=28 Kg/ha.
(3) 2 levels of Cu : C_0=0 and C_1=28 Kg/ha.
(4) 2 levels of Boron : D_0=0 and D_1=16·8 Kg/ha.
(5) 2 levels of Mo : E_0=0 and E_1=1·1 Kg/ha.
Extra treatment : F=370 Kg/ha. of Spartin.

3. DESIGN :

(i) 2^5 confd. (ii) (a) 9 plots/block and 4 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 1/247 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1963—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

63(28)

(i) 2034 Kg/ha. (ii) 466 Kg/ha. (iii) No effect is significant. (iv) Table of mean and differential responses (in Kg/ha.).

Factor	Mean response	Differential response									
		A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	183	—	—	242	124	56	310	272	94	162	204
B	212	272	—318	—	—	356	68	248	176	296	28
C	—173	—300	—46	30	—318	—	—	—108	—238	—80	268
D	173	262	84	208	136	238	108	—	—	172	172
E	—44	—64	—22	40	—128	50	—138	—44	—44	—	—

64(39)

(i) 1665 Kg/ha. (ii) 355 Kg/ha. (iii) Main effect of D is significant. (iv) Table of mean and differential responses (in Kg/ha.).

Factor	Mean response	Differential response									
		A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	106	—	—	78	134	122	90	—34	246	178	34
B	151	122	178	—	—	228	72	2	298	116	184
C	2	18	—14	80	—76	—	—	48	—44	110	—106
D	224	84	364	75	372	270	178	—	—	130	318
E	148	220	76	114	182	256	40	54	242	—	—

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(38), 64(40).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type .- 'M'.**

Object :—To study the response of Paddy to micro-nutrient elements applied through soil.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N+25·2 Kg/ha. of P_2O_5. (ii) Sandy clay loam. (iii) 20.2.64 ; 21.1.65. (iv) (a) 1 ploughing+2 puddlings. (b) Transplanting. (c) to (e) N.A. (v) 50·4 Kg/ha. of N as A/S+25·2 Kg/ha. of P_2O_5 as Super. (vi) HR—19. (vii) Irrigated. (viii) 1 weeding. (ix) 3 cm ; 2 cm. (x) 15.5.64 ; 1.5.65.

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 63(28) on page 34.

5. RESULTS :

64(38)

(i) 344 Kg/ha. (ii) 115 Kg/ha. (iii) Main effects of B and B are highly significant. Main effect of C and interactions B×C and B×D are significant. (iv) Table of mean and differential responses (in Kg/ha.)

Factor	Mean response	Differential response									
		A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	96	—	—	62	129	126	66	114	78	106	86
B	80	47	114	—	—	148	12	14	46	116	44
C	58	88	28	126	—10	—	—	20	96	50	66
D	52	70	34	—14	118	14	90	—	—	60	44
E	14	24	4	50	—22	6	22	22	6	—	—

64(40)

(i) 4169 Kg/ha. (ii) 645 Kg/ha. (iii) Main effect of C is significant and interaction A×C is highly signi-. ficant. (iv) Table of mean and differential responses (in Kg/ha.).

Differential response

Factor	Mean response	A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	178	—	—	285	71	—341	695	38	318	304	52
B	6	114	—100	—	—	160	—148	—102	112	34	—22
C	—334	—851	185	—178	—486	—	—	—186	—478	—37	628
D	234	94	374	127	341	380	88	—		144	322
E	—58	67	—185	—30	—86	238	—353	—147	30	—	—

Crop :- Paddy (*Abi*). **Ref :- A.P. 63(27), 64(36).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To find out the response of Paddy to micro-nutrients applied as foliar spray.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N+25·2 Kg/ha. of P_2O_5. (ii) Sandy loam. (iii) 30.7.63 ; 14.864. (iv) (a) 2 ploughings+3 puddlings. (b) Transplanting. (c) to (e) N.A. (v) N.A. (vi) HR - 19. (vii) Irrigated. (viii) 1 to 2 weedings. (ix) 59 cm. ; 42 cm. (x) 4.11.63 ; 7.10.64.

2. TREATMENTS :

All combinations of (1), (2), (3), (4) and (5)+a control.

(1) 2 levels of Mn : A_0=0 and A_1=11·2 Kg/ha.
(2) 2 levels of Zn : B_0=0 and B_1=11·2 Kg/ha.
(3) 2 levels of Cu : C_0=0 and C_1=11·2 Kg/ha.
(4) 2 levels of Boron : D_0=0 and D_1=5·6 Kg/ha.
(5) 2 levels of Mo : E_0=0 and E_1=0·6 Kg/ha.

Extra treatment: F=370 Kg/ha. of Spartin.

3. DESIGN :

(i) 2^5 confd. (ii) (a) 9 plots/block and 4 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/247 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1963—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

63 (27)

(i) 2265 Kg/ha. (ii) 289 Kg/ha. (iii) Interaction C×D is highly significant and interaction B×D is significant. (iv) Table of mean and differential responses (in Kg/ha.).

Differential response.

Factor	Mean Response	A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	65	—	—	88	42	36	94	44	86	—26	156
B	93	116	70	—	—	—16	202	—86	272	110	76
C	—47	—76	—18	—156	62	—	—	—304	210	—112	18
D	87	66	108	—92	266	—170	344	—	—	138	36
E	133	42	124	150	116	68	198	184	82	—	—

64 (36)

(i) 3727 Kg/ha. (ii) 1680 Kg/ha. (iii) Main effect of A and interaction A×E are significant. (iv) Table of mean and differential responses (in Kg/ha.).

Factor	Mean Response	Differential response									
		A		B		C		D		E	
		Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr	Ab	Pr
A	1073	—	—	1590	556	1254	892	824	1322	—6	2152
B	301	818	—216	—	—	382	220	268	334	728	—126
C	—721	—540	—902	—640	—862	—	—	—240	—1200	—1366	—76
D	594	345	843	561	627	1074	114	—	—	75	1113
E	539	—540	1618	966	112	—106	1184	20	1058	—	—

Crop :- Paddy. **Ref :- A.P. 65(254),**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the relative effects of organic and inorganic manures with and without P_2O_5.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy loams. (iii) 1, 2.7.65. (iv) (a) 3 puddlings. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 13.10.65.

2. TREATMENTS :

10 manurial treatments : T_0=Control, T_1=G.L. manure at 56 Kg/ha. of N, T_2=G.L. at 56 Kg/ha. of N+25 Kg/ha. of P_2O_5, T_3=56 Kg/ha. of N as A/S, T_4=56 Kg/ha. of N as A/S+25 Kg/ha. of P_2O_5, T_5=56 Kg/ha. of N as F.Y.M., T_6=56 Kg/ha. of N as F.Y.M.+25Kg/ha. of P_2O_5, T_7=G.N.C. at 56 Kg/ha. of N, T_8=G.N.C. at 36 Kg/ha. of N+25 Kg/ha. of P_2O_5 and T_9=25 Kg/ha. of P_2O_5.

P_2O_5 applied as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) 81·0 sq. m. (b) 77·1 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965—contd. (b) Yes. (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS:

(i) 2792 Kg/ha. (ii) 523·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	2144	3178	2809	2355	3201	2919	2306	3406	3451	2154

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(13), 63(24), 64(27).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effects of Phosphobacterin with and without P_2O_5 on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil for 62 ; Paddy—Paddy, for others. (b) Paddy. (c) N.A. for 62 ; As per treatments for others. (ii) Silty loam. (iii) N.A./1.8.1962 ; N.A./16.7.1963 ; N.A./16.7.1964. (iv) (a) 2 ploughings+2 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm. × 15 cm. (e) 2. (v) 6725 Kg/ha. of F.Y.M.+22·4 Kg/ha. of N as A/S. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 to 2 weedings. (ix) 79 cm., 59 cm., 48 cm. (x) 13.11.1962 ; 25, 26.10.1963 ; 23, 24.10.1964.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of Phosphobacterin : P_0=No Phosphobacterin and P_1=Phosphobacterin applied.

(2) 3 sources of 33·6 Kg/ha. of P_2O_5 : S_0=0 (No P_2O_5), S_1=Super and S_2=B.M.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/123·5 ha. (b) 1/141·2 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1962-64. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and interaction of Treatments × years is absent.

5. RESULTS :

Pooled results.

(i) 1693 Kg/ha. (ii) 260 0 Kg/ha. (based on 55 d.f. made up of various components of Treatment × years interaction and pooled error). (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	Mean
P_0	1597	1868	1571	1679
P_1	1726	1750	1647	1708
Mean	1662	1809	1609	1693

C.D. for S marginal means=150·6 Kg/ha.

Individual results.

Treatments	P_0	P_1	Sig.	S_0	S_1	S_2	Sig.	G.M.	S.E./plot
Years									
1962	1130	1241	N.S.	1156	1289	1112	N.S.	1186	190·0
1963	1165	1759	N.S.	1756	1919	1761	N.S.	1812	306·0
1964	2041	2124	N.S.	2073	2220	1954	N.S.	2082	306·0
Pooled	1679	1708	N.S.	1662	1809	1609	*	1693	260·0

Crop :- Paddy (*Tabi*). **Ref :- A.P. 63(23), 64(28).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. Type :- 'M'.

Object :—To study the effect of Phosphobacterin with and without P_2O_5 on Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Silty loam. (iii) N.A./8.2 1963 ; Dec. 1964/28.1.1965. (iv) (a) 1 to 2 ploughings+2 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm. × 15cm. for 63 ; 15 cm. × 10 cm. for 64. (e) 2. (v) 6725 Kg/ha. of F.Y.M+22·4 Kg/ha of N as A/S. (vi) HR—19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 3 cm., 2 cm. (x) 21.5.1963 ; 4.5.1965.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 2 levels of Phosphobacterin : P_0=No Phosphobacterin and P_1=Phosphobacterin applied.

(2) 3 sources of 33·6 Kg/ha. of P_2O_5 : S_0=0 (No P_2O_5), S_1=Super and S_2=B.M.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/123·5 ha. (b) 1/141·2 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—64. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is absent.

5. RESULTS :

63(23)

(i) 1388 Kg/ha. (ii) 117·0 Kg/ha. (iii) Main effects of P and S are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	Mean
P_0	1186	1345	1391	1307
P_1	1347	1500	1559	1469
Mean	1267	1422	1475	1388

C.D. for P marginal means=101·9 Kg/ha.
C.D. for S marginal means=124·8 Kg/ha.

64(28)

(i) 2321 Kg/ha. (ii) 297 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	Mean
P_0	1977	2621	2241	2280
P_1	2065	2630	2391	2362
Mean	2021	2625	2316	2321

C.D. for S marginal means=316·4 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(9).**

Site :- Agri. Res. Instt., Rajendra nagar, Hyderabad, **Type :- 'M'.**

Object :—To study the effect of Plantomine as an activator of manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) *Chalka*. (iii) 20. 6.60/26.7.60. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR–19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) Nov., 1960.

2. TREATMENTS :

7 manurial treatments : M_0=Control, M_1=50·4 Kg/ha. of N as F.Y.M., M_2=50·4 Kg/ha. of N as A/S, M_3=25·2 Kg/ha. of N as F.Y.M., M_4=25·2 Kg/ha. of N as A/S, M_5=M_3+ 22·4 Kg/ha. of Plantomine and M_6=M_4+22·4 Kg/ha. of Plantomine.

3. DESIGN :

(i) R.B.D. (i) (a) 7. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×6·4 m. (b) 7·0 m.×6·1 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960--only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1868 Kg/ha. (ii) 264·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1698	1698	2176	1910	1964	1681	1946

———

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(11).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of Plantomine as an activator of manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) *Chalka*. (iii) 22.12.60./25.1.61. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 16.10·61.

2. TREATMEMTS to 4. GENERAL :

Same as in expt. No. 60(9) on page 39.

5. RESULTS :

(i) 1913 Kg/ha. (ii) 259·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1504	1627	2441	1521	2017	1875	2406

C.D.=460·7 Kg/ha.

———

Crop :- Paddy (*Kharif*). **Ref :- A.P.60(10).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Oject :—To study the effect of Plantomine as an activator of manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) *Chalka*. (iii) 20.6.60./26.7.60. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) Nov., 1960.

2. TREATMENTS :

7 manurial treatments : M_0=Control, M_1=50·4 Kg/ha. of N as G.M; M_2=50·4 Kg/ha. of N as A/S, M_3=25·2 Kg/ha. of N as G.M; M_4=25·2 Kg/ha. of N as A/S, M_5=M_3+22·4 Kg/ha. of Plantomine and M_6=M_4+22·4 Kg/ha. of Plantomine.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×6·4 m. (b) 7·0 m.×6·1 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960—only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1860 Kg/ha. (ii) 321·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1592	2017	2211	2211	1628	1610	1751

Crop :- Paddy. **Ref :- A.P. 60(12).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of Plantomine as an activator of manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) *Chalka*. (iii) 22.12.60/25.1.61 (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) N.A. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.5.61.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 60(10) on page 40.

5. RESULTS :

(i) 2138 Kg/ha. (ii) 301·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1451	2547	2547	2069	2176	2229	1946

C.D.=535·6 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(11).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of Nitro—Phosphate processed by O.D.D.A. and P.E.C. at different levels and methods of placement.

1. BASAL CONDITIONS:

(i) (a) Paddy -Paddy. (b) Paddy. (c) N.A. (ii) Black cotton soil. (iii)4.1.61/21.2.61. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19(medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 5.6.61.

2. TREATMENTS :

All combinations of (1), (2) and (3)+4 extra treatments in each block :

(1) 3 sources of Nitro—Phosphate : S_1=Super, S_2=O.D.D.A. and S_3=P.E.C.

(2) 3 levels of Nitro—Phosphate : L_1=13·5 Kg/ha. of N+11·8 Kg/ha. of P_2O_5, L_2=26·9 Kg/ha. of N+23·5 Kg/ha. of P_2O_5 and L_3=53·8 Kg/ha. of N+47·1 Kg/ha of P_2O_5

(3) 3 methods of placement : M_1=Broadcasting, M_2=6 cm. below seed and M_3=Pellet application

Extra treatments : 4 levels of N : N_0=0, N_1=13·5, N_2=26·9 and N_3=53·8 Kg/ha.

3. DESIGN :

(i) 3^3 confd.+4 extra treatments in each block. (ii) (a) 13 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 7·0 m.×5·3 m. (b) 6·7 m.×5·0 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1960—only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 964 Kg/ha. (ii) 391·0 Kg/ha. (iii) Main effect of L is highly significant and N effect is significant. (iv) Av. yield of grain in Kg/ha.

N_0=472, N_1=963, N_2=953 and N_3=1031 Kg/ha.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
S_1	583	1053	1468	930	975	1200	1085
S_2	672	863	1412	897	1031	1019	982
S_3	953	785	1322	919	1165	975	1020
Mean	736	900	1401	915	1057	1065	1012
M_1	639	785	1322				
M_2	852	930	1390				
M_3	717	986	1491				

C.D. for L marginal means=262·7 Kg/ha.
C.D. for N marginal means=455·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65 (253).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object:—To demonstrate the use of known N fixing Blue Green Algae.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 1st week of July 1965/31.7.65. (iv) (a) 4 times ploughing, 2 puddlings. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) As per treatments. (vi) HR—35. (vii) Irrigated. (viii) Weeding in september. (ix) N.A. (x) 14.12.65.

2. TREATMENTS :

T_0=No manure, T_1=Partial soil sterilization, T_2=T_1+Algae. T_3=Fertilizer mixture, T_4=T_1+T_3+ Algae, T_5=A/s at 20 Kg/ha.

Fertilizer mixture is 1000 Kg. of basal dressing of lime, 20 Kg. of Super and 0·28 Kg. of Sodlium Molybdate.

3. DESIGN :
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 8·1 m.×6·0 m. (b) 7·7 m.×5·4.m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, height measurements and grain yield. (iv) 1965 - 1966. (b) No. (c) Nil. (v) Not known. (vi) and (vii) Nil.

5. RESULTS :

(i) 2275 Kg/ha. (ii) 384 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	2275	2481	2133	2208	2087	2467

Crop :- Paddy. **Ref :- A.P. 65(252)**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of Azotobacter on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy loams. (iii) 7.7.65. (iv) (a) Puddling and ploughing. (b) Transplanting. (c) 25 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) As per treatments. (vi) HR—35. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 18.10.65.

2. TREATMENTS :

T_0=Control, T_1=62·8 Q/ha. of F.Y.M., T_2=T_1+22 Kg/ha. of P_2O_5 as Super, T_3=Azotobacter, T_4=T_1+ Azotobacter and T_5=T_2+Azotobacter.

3. DESIGN :

(i)R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2317 Kg/ha. (ii) 326·9 Kg/ha. (ii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	2092	2348	2489	2383	2322	2268

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(32), 65(34).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad Type :- 'M'.

Object : —To study the effect of Azotobacter with and without manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Silty loam. (iii) 27.2.64 ; 28.1.65. (iv) (a) 1 ploughing+2 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm. × 15 cm. (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated (viii) Weedings. (ix) 3 cm., 2 cm. (x) 29.4 64 ; 4.5.1965.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 63 (26) given below.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) 1964—65. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results.

(i) 952 Kg/ha. (ii) 242·9 Kg/ha. (based on 35 d.f. made up of interaction of Treatments × years). (vi) Main effect of A is significant. (iv) Av. yield of grain in Kg/ha.

	M_0	M_1	M_2	Mean
A_0	758	905	896	853
A_1	918	1103	1134	1052
Mean	838	1004	1015	952

C.D. for A marginal means = 142·5 Kg/ha.

Results of individual years are given in Kg/ha.

Treatments	M_0	M_1	M_2	Sig.	A_0	A_1	Sig.	G.M.	S.E./plot
Years									
1964	750	1002	922	N.S.	738	1044	**	891	216·0
1965	927	1006	1108	N.S.	968	1059	N.S.	1014	252·0
Pooled	838	1004	1015	N.S.	853	1052	*	952	242·9

Crop :- Paddy. **Ref :- A.P. 63(26), 64(33).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. Type :- 'M'.

Object :—To study the effects of Azotobacter with and without manures on Paddy.

1 BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Silty loam. (iii) 10.7.63 ; 16.7.64. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm. × 15 cm. (e) 2. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 59 cm. ; 48 cm. (x) 25.10.63 ; 23.10.64.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of manuring : M_0=0, M_1=6277 Kg/ha. of F.Y.M. and $M_2=M_1+22{\cdot}4$ Kg/ha of P_2O_5 as Super.

(2) 2 levels of Azotobacter : A_0=No Azotobacter and A_1=Application of Azotobacter.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/123·5 ha. (b) 1/151·2 ha. (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1963—64. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 1947 Kg/ha. (ii) 273·0 Kg/ha. (based on 35 d.f. made up of interaction of Treatments×years+pooled error). (iii) Main effect of M only is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	Mean
A_0	1796	2030	2188	2005
A_1	1804	1954	1910	1889
Mean	1800	1992	2049	1947

C.D. for M marginal means=196·0 Kg/ha.

Individual results

Treatments	M_1	M_2	M_3	Sig.	A_0	A_1	Sig.	G.M.	S.E./plot
Years									
1964	2047	2277	2330	N.S.	2221	2215	N.S.	2218	315·0
1965	1553	1708	1769	N.S.	1788	1565	N.S.	1677	224·0
Pooled	1800	1992	2049	*	2005	1889	N.S.	1947	273·0

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63 (25), 64(30).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To compare the efficacy of Ammo. Phos. with other important phosphatic fertilizers on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil for 63 and as per treatments for 64. (ii) Black cotton soil. (iii) 4.7.63 ; 27.6.64. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm.×15 cm. (e) 2. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 59 cm ; N.A. (x) 10.10.63 ; 12. 10.64.

2. TREATMENTS :

All combinations of (i) and (2)+one control.

(1) 3 levels of fertilizers : L_1=33·6 Kg/ha. of N+25·2 Kg/ha. of P_2O_5, L_2=50 Kg/ha. of N+37·8 Kg/ha. of P_2O_5 and L_3=67·3 Kg/ha. of N+50·4 Kg/ha. of P_2O_5

(2) 3 sources of fertilizers : S_1=Super, S_2=Ammo. Phos ; and S_3=Nitro-Phosphate (O.D.D.A.).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 1/123·6 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight insect attack for which Endrin was sprayed for 63 ; Nil for 64. (iii) Grain yield. (iv) (a) 1963—64. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled Results.

(i) 2276 Kg/ha. (ii) 419·7 Kg/ha. (based on 63 d.f. made up of Treatments × years interaction and pooled error). (iii) Main effect of L, S and interaction L × S are significant. (iv) Av. yield of grain in Kg/ha.

Control mean=1444 Kg/ha.

	L_1	L_2	L_3	Mean
S_1	1780	2378	3040	2399
S_2	1834	2187	2661	2227
S_3	2058	2282	3093	2478
Mean	1891	2282	2931	2368

C.D. for marginal means=242·3 Kg/ha.

C.D. for the body of table=419·7 Kg/ha.

Individual Results

Treatments	S_1	S_2	S_3	Sig.	D_1	D_2	D_3	Sig.	Control	G.M.	S.E./plot
Years											
1963	2354	2166	2424	*	1634	2268	3042	**	1560	2240	386·0
1964	2445	2288	2531	N.S.	2147	2297	2821	**	1328	2312	390·0
Pooled	2399	2227	2478	*	1891	2282	2931	*	1444	2276	419·7

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(29), 65(31).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To compare the efficacy of Ammo. Phos. with other important phosphatic fertilizers on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Black cotton soil. (iii) 18.1.64; Jan. 65 (iv) (a) 1 ploughing, 3 to 4 puddlings. (b) Transplanting. (c) N.A. (d) 23 cm. × 15 cm. (e) 2. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 3 cm., N.A. (x) 24.4.64; April, 65.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 63(25), 64(30) on page 45.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1964–65. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled Results

(1) 3555 Kg/ha. (ii) 338·2 Kg/ha. (based on 63 d.f. made up of Treatments × years interaction and pooled error). (iii) Main effect of L, S and interaction L×S are significant. (iv) Av. yield of grain in Kg/ha.

Control mean=2652 Kg/ha.

	L_1	L_2	L_3	Mean
S_1	3576	3884	4090	3850
S_2	3180	3857	3928	3655
S_3	3135	3405	3842	3461
Mean	3297	3715	3953	3655

C.D. for marginal means=195·3 Kg/ha.
C.D. for the body of table=338·2 Kg/ha.

Individual Results

Treatments	S_1	S_2	S_3	Sig.	L_1	L_2	L_3	Sig.	Control	G.M.	S.E./plot
Years											
1964	3319	3122	2813	**	2743	3040	3472	**	1853	2962	289·0
1965	4381	4188	4107	**	3851	4391	4434	N.S.	3452	4148	368·0
Pooled	3850	3655	3461	*	3297	3715	3953	*	2652	3555	338·2

Crop :- Padby (*Abi*). **Ref :- A.P. 60(83), 61(85), 62 (103).**

Site .- Groundnut Res. Stn., Machilipatnam. **Type :- 'M'.**

Object :—To study the effect of different manures on the yield of Paddy and its residual effect on succeeding crop of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut—Paddy. (b) Groundnut. (c) Nil. (ii) Sandy loam. (iii) 18.6.1960/24.7.1960 ; 19.6.1961/18.7.1961 ; 22.6.1962/28.7.1962. (iv) (a) 6 ploughings for nursery+4 ploughings for main field. (b) Transplanting. (c) 149 Kg/ha. (d) 25 cm. × 25 cm. (e) 2 to 3. (v) 49·4 C.L./ha. of wood ash and 49·4 C.L./ha. of C.M. for nursery. (vi) SLO—13. (vii) Irrigated. (viii) 1 hand weeding for nursery and 2 hand weedings for main field. (ix) 80 cm., 118 cm., 161 cm. (x) 1st week of Nov. 1960 ; 23.11.1961 ; last week of Nov. 1962.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 2 levels of G.M. : G_0=0 and G_1=4483 Kg/ha.
(2) 2 levels of NP : M_0=0 and M_1=44·8 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super.
Manures applied as basal dressing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 40·7m.×34·1 m. (iii) 6. (iv) (a) 10·4 m.×4.8 m. (b) 9·4 m.×3·8m. (v) 51 cm.×51 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of rice hispa and rice stem borer. Spraying of Endrin 0·02% once and dusting of B.H.C. 10 % once. (iii) Grain yield. (iv) (a) 1960—1962. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction in present.

5. RESULTS:

Pooled results.

(i) 1815 Kg/ha. (ii) 228·3 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	G_0	G_1	Mean
M_0	1292	1699	1496
M_1	2019	2250	2134
Mean	1656	1974	1815

C.D. for M marginal means=322·5 Kg/ha.

Individual results.

Treatments	M_0	M_1	Sig.	G_0	G_1	Sig.	G.M.	S.E./plot
Years								
1960	1683	2703	**	2041	2345	N.S.	2193	292·9
1961	1544	1829	N.S.	1507	1867	N.S.	1687	440·0
1962	1259	1871	**	1419	1711	N.S.	1565	203·4
Pooled	1496	2134	**	1656	1974	N.S.	1815	228·3

Crop :- Paddy. **Ref :- A.P. 63(83), 64(163), 65(269)**

Site :- Groundnut Res. Stn., Machilipatnam Type 'M'

Object :—To study the residual effect of manuring Paddy on the succeeding crop of Groundnut.

1. BASAL CONDITIONS :

(a) (i) Groundnut—Paddy. (b) Groundnut. (c) Nil for 63; N.A. for others. (ii) Sandy loam. (iii) 4.6.63 /25 to 27.7.1963; 17.6.64/29.7.64; 14.8.1965. (iv) (a) 6 ploughings for nursery and 4 ploughings for main field. (b) Trensplanting (c) 150 Kg/ha. (d) 25 cm.×25 cm. (e) 2 to 3. (v) As per treatments. (vi) SLO—13. (vii) Irrigated. (viii) 1 to 2 hand weedings. (ix) 84·8 cm ; 88·2 cm ; N.A. (x) 18.11.63 ; 24.11.64 ; 29.11.1965.

2. TREATMENTS :

	Kharif Paddy	*Rabi* Groundnut
T_1	No Manure.	No manure
T_2	125 Q/ha. of C.M.+33·6 Kg/ha. of N as A/S +28 Kg/ha. of P_2O_5 as Super.	No manure.
T_3	Same as T_2	16.8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul.
T_4	125 Q/ha. of C.M.+50·4 Kg/ha. of N as A/S +61·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul.	No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. for 63, 64 ; 10·4 m.×19·3 m. for 65. (iii) 6. (iv) (a) 9.1 m.×4·6 m. for 63 ; 9·8 m.×4·6 m. for 64 ; 10·4 m.×4·3 m. for 65. (b) 8·5 m.×4·1 m. for 63 ; 7·9 m.×2.7 m. for 64 ; 9·7 m.×3·8 m. for 65. (v) 30 cm.×23 cm. for 63 ; 91 cm.×91 cm. for 64 ; 38 cm.×26 cm. for 65. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of rice Stem borer and Hispa. Controlled by spraying Endrin 0·02% and BHC 10% once for 63 ; Mild attack of stem borer, Endrin. 0·03% sprayed for 64 ; Nil for 65. (iii) Yield of grain and straw. (iv) (a) 1963—1965. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

63(83)

(i) 1618 Kg/ha. (ii) 289·1 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2+T_3	T_4
Av. yield	1196	1737	1922

C.D.=355·7 Kg/ha.

64(163)

(i) 2500 Kg/ha. (ii) 252 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2+T_3	T_4
Av. yield	1740	2679	2913

C.D.=310·0 Kg/ha.

65(269)

(i) 1746 Kg/ha. (ii) 490 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1085	1736	1926	2211

C.D.=602·8 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(57), 62(68).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different phosphatic fertilizers and different levels and methods of application on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil for 61, As per treatments+4483 Kg/ha of G.M. for 62. (ii) Heavy black soils. (iii) 9.1.61/19.2.61 ; 2.1.62/3.2.62. (iv) (a) 3 ploughings followed by digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. for 61 ; 20 cm. between rows for 62. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 8 cm., 5 cm. (x) 17.4.61, 23.5.62.

2. TREATMENTS :

All combinations of (1), (2) and (3)+4 extra treatments.

(1) 3 types of Phosphatic fertilizer : P_1=Super, P_2=Nitro. Phos. O.D.D.A. and P_3=Nitro. Phos. P.E.C.

(2) 3 levels of N fertilizers : L_1=13·5 Kg/ha. of N+11·8 Kg/ha. of P_2O_5, L_2=27 Kg/ha. of N+23·5 Kg/ha. of P_2O_5 and L_3=53·8 Kg/ha. of N+47 Kg/ha. of P_2O_5.

(3) 3 methods of application : M_1=By broadcasting, M_2=By putting the fertilizers 6 cm. below surface behind a light and shallow plough furrow. and M_3=By placement in the shape of pellets in between the rows.

Extra treatments : 4 levels of N as A/S: E_1=0, E_2=13·5, E_3=27 and E_4=53·8 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 13 plots/block and 3blocks/replication. (b) N.A. (iii) 2. (iv) (a) 7·9 m.×6·4 m. for 61 ; 9·6m.×5·3 m. for 62. (b) 7·6 m.×6. 1 m. for 61, 9.1 m.×4·9 m. for 62. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer and paddy blast. (iii) Grain yield. (iv) (a) 1961—62. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the the results of individual years are presented under 5 Results.

5. RESULTS:

61(57)

(i) 3013 Kg/ha. (ii) 183·7 Kg/ha. (iii) Main effects of L and E are highly significant. (iv) Av. yield of grain in Kg/ha.

E_1=2823, E_2=2856, E_3=3085 and E_4=3234.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
P_1	2938	3052	3117	3027	3068	3011	3036
P_2	2905	3043	3165	3043	3052	3018	3038
P_3	2808	3003	3141	2986	2970	2995	2984
Mean	2884	3033	3141	3019	3030	3008	3019
M_1	2865	3011	3182				
M_2	2856	3043	3190				
M_3	2930	3043	3052				

C.D. for L marginal means= 123·6 Kg/ha.

C.D. for E marginal means=214·0 Kg/ha.

62(68)

(i) 2055 Kg/ha. (ii) 319·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=1908, E_2=2123, E_3=2323 and E_4=2204

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
P_1	2147	1848	2058	2068	1811	2174	2018
P_2	1947	2300	2058	2120	2224	1962	2102
P_3	1779	1997	2024	1974	2044	1782	1933
Mean	1958	2048	2047	2054	2026	1973	2018
M_1	1863	2194	2105				
M_2	1994	2051	2034				
M_3	2014	1900	2002				

Crop :- Paddy (*Abi*). **Ref :- A.P. 61(59).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To compare the effect of Nitrophosphate processed by O.D.D.A. and P.E.C. methods at different levels and different methods of application on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sesbania-Paddy. (b) Sesbania. (c) Nil. (ii) Heavy black soils. (iii) 10.6.61/ 10.7.61. (iv) (a) 2 puddlings, digging and levelling. (b) Transplanting. (c) 24 kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 4483 kg/ha. of Sesbania and Glyricidia leaves. (vi) MTU-10. (vii) Irrigated. (viii) 2 hand weedings. (ix) 138 cm. (x) 9.12.61.

2. TREATMENTS :

Same as in expt. no. 61(57) on page 49.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 13 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·55 m.×5·28 m. (b) 9·14 m.×4·88 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer was moderate to severe. Treated with 1% Bordeaux mixture. (iii) Yield of grain. (iv) (a) 1961—N.A. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3016 kg/ha. (ii) 294·7 kg/ha. (iii) Main effects of P and L are highly significant and main effect of M is significant. (iv) Av. yield of grain in kg/ha.

E_1	E_2	E_3	E_4
3005	2997	3084	2634

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
P_1	3099	2894	2545	2743	2975	2817	2846
P_2	3084	3427	2916	2871	3370	3185	3142
P_3	3200	3163	3151	3128	3230	3156	3171
Mean	3128	3161	2871	2914	3192	3053	3054
M_1	3084	3076	2582				
M_2	3202	3247	3123				
M_3	3094	3158	2903				

C.D. for P, L or M marginal means=203·7 kg/ha.

———

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(60).**

Site :- Agri. Res. Stn; Maruteru. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-paddy. (b) Paddy. (c) N.A. (ii) Heavy black soils. (iii) 12.5.62/5.7.62. (iv) (a) 1 ploughing, 2 puddlings, digging and levelling. (b) Transplanting. (c) 2 4 kg/ha. (d) 20 cm.×20cm. (e) 2. (v) 4484 kg/ha. of G.L. (vi) MTU-19. (vii) Irrigated. (viii) 1 hand weeding. (ix) 137 cm. (x) 13.12.62.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S : N_0=0 and N_1=33·6 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=67·3 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·14 m.×6·10 m. (b) 8·74 m.×5·69 m. (v) 30 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1962 only. (b) and (c) Nil. (v) N.A. (vi) Continuous rainy weatner in the month of July delayed planting and there were heavy rains almost every day during the second half of October. (vii) Nil.

5. RESULTS :

(i) 2872 Kg./ha. (ii) 243·2 Kg/ha. (iii) Main effect of K is highly significant and N×K interaction is significant. (iv) Av yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	2738	3038	2660	3115	2888
N_1	2874	2836	2776	2934	2885
Mean	2806	2937	2718	3024	2872
K_0	2625	2612			
K_1	2987	3062			

C.D. for K marginal means =178·8 Kg/ha.

C.D. for the body of N×K table =252·9 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 63(62).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy. (c) As per treatments. (ii) Heavy black soils. (iii) 10.1.63/12.2.63. (iv) (a) 3 puddlings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU-9. (vii) Irrigated. (viii) 1 hand weeding. (ix) 2 m. (x) 11.5.63.

2. TREATMENTS :

Same as in expt. no. 62(60) on page 51.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·14 m.×6·10 m. (b) 8·84 m.×5·79 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer and paddy blast. Endrin and 1% Bordeaux mixture sprayed. (iii) Yield of grain and fodder. (iv) (a) 1962 (Abi)—1963(Tabi). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2253 Kg/ha. (ii) 99·4 Kg/ha. (iii) Main effect of P alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	P_0	P_1	Mean
K_0	2246	2242	2204	2284	2244
K_1	2218	2306	2200	2324	2262
Mean	2232	2274	2202	2304	2253
P_0	2181	2223			
P_1	2283	2325			

C.D. for P marginal means=72·9 Kg./ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 60(124).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To test the efficacy of A/C as a fertilizer applied to paddy crop as compared to A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 2242 Kg/ha. of G.L.+168·1 Kg/ha. of Super+168·1 Kg/ha. of A/S. (ii) Heavy black soils. (iii) 16.2.1960. (iv) (a) 3 puddlings, corners dug and bunds were trimmed. (b) Transplanting (c) 34 Kg/ha. (d) 15 cms.×15 cms. (e) 2. (v) N.A. (iv) MTU-15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 7 cm. (x) 11.5.1960.

2. TREATMENTS :

6 manurial treatments : T_0=Control, T_1=33·6 Kg./ha. of P_2O_5 as Super, $T_2=T_1+33·6$ Kg/ha. of N as A/S, $T_3=T_1+50·4$ Kg/ha. of N as A/S, $T_4=T_1+33·6$ Kg/ha. of N as A/C and $T_5=T_1+50·4$ Kg/ha. of N as A/C.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·3 m. (b) 8·8 m.×4·0 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3793 Kg./ha. (ii) 202·0 Kg./ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg./ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	3124	3262	4177	4028	4102	4064

C.D.=304·4 Kg./ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(155)**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of Ash and P_2O_5 on lodging.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Pusa savani Bhendi. (c) 16·1 C.L./ha. of F.Y.M. ; 168·1 Kg/ha. of Super before final puddling. (ii) (a) Heavy black soil. (iii) 27.6.64/3.7.64. (iv) (a) 4 puddlings with country plough, digging corners, trimming of bunds. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm. × 15 cm. (e) 2. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) 1 hand weeding. (x) 182 cm. (x) 29.11.64.

2. TREATMENTS :

13 manurial treatments: T_0=Control (2 plots), T_1=33·6 Kg/ha. of N, T_2=50·4 Kg/ha. of N, T_3=67·2 Kg/ha. of N, T_4=33·6 Kg/ha. of P_2O_5, T_5=50·4 Kg/ha. of P_2O_5, T_6=67·2 Kg/ha. of P_2O_5, T_7=16·8 Kg/ha. of K_2O, T_8=25·2 Kg/ha. of K_2O, T_9=33·6 Kg/ha. of K_2O, $T_{10}=T_1+T_4+T_7$, $T_{11}=T_2+T_5+T_8$ and $T_{12}=T_3+T_6+T_9$.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 3·2 m. × 10·2 m. (b) 3·0 m. × 10·0 m. (v) 8 cm. × 10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Plots receiving A/S alone were the first to lodge (ii) Incidence of rice stem borer was moderate to severe. Crop was sprayed with Endrin. (iii) Yield of grain and straw. (vi) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3455 Kg/ha. (ii) 216·4 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	3217	3667	3583	3650	3300	3617	3500	3333	3283	3083	3817	3500	3600

C.D.=405·2 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(34).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of Ash and P_2O_5 on lodging.

1. BASAL CONDITIONS :

(i) (a) Paddy —Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black soils. (iii) 17.5.65/9.7.65. (iv) (a) Puddling with country plough, digging of corners, trimming of bunds and levelling. (b) Transplanting. (c) 23·5 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) Nil. (vi) MTU —10. (vii) Irrigated. (viii) 1 hand weeding 30 days after planting. (ix) 90·4 cm. (x) N.A.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels N as A/S : N_0=0, N_1=33·6, N_2=63·7 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6, P_2=67·3 Kg/ha.
(3) 3 levels of K_2O A/S : K_0=0, K_1=33·6, K_2=67·3 Kg/ha.

K_2O was applied as Ash as top dressing. N and P_2O_5 as A/S and Super were applied in two split doses, half at final puddling and the remaining half one month after planting.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 Plots/block and 3 blocks/replicetion.(b) N.A. (iii) 2. (iv) (a) 8·2 m.×4·2 m. (b) 8·0 m.×4·0 m. (v) 10 cm.× 10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. Spraying of Endrin. (iii) Yield of grain and straw. (iv) (a) 1965 only. (b) and. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3182 Kg/ha. (ii) 345·6 Kg/ha. (iii) Main effect of N is highly significant and Y component of NPK interaction is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	3547	3622	3318	3542	3432	3513	3496
N_1	3271	3734	3232	3052	3385	3198	3312
N_2	2672	2734	2812	2943	2635	2641	2740
Mean	3163	3363	3121	3179	3151	3117	3182
K_0	3068	3339	3131				
K_1	3432	3055	2967				
K_2	2990	3096	3266				

C.D. for N marginal means=237·8 Kg/ha.

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(157).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To classify by strains as ear number and ear weight.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 67·2 Kg/ha. of N as A/S and 40·4 Kg/ha. of P_2O_5 as Super. (ii) (a) Heavy black soils. (iii) 24.5.64/9.7.64. (iv) (a) 3 puddlings with country plough, digging of corners and trimming of bunds. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 33·6 Kg/ha. of P_2O_5 as Super and 67·2 Kg/ha. of K_2O as Mur. Pot. (vi) MTU—10. (vii) Irrigated (viii) 1 hand weeding 30 days after planting. (ix) 236 cm. (x) 4.12.64.

5. TREATMENTS :

3 manurial treatments : T_1=16·8 Kg/ha. of N at planting+16·8 Kg/ha. of N one month after planting, T_2=33·6 Kg/ha. of N one month after planting and T_3=33·6 Kg/ha. of N 20 days before general flowering.
N applied as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 3·2 m.×8·0 m. (b) 3·0 m×7·8 m. (v) 8 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of rice Stem borer was moderate to severe. The crop was sprayed with Endrin (iii) Mean effective tillers/hill, mean weight of panicles/hill, grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3745 Kg/ha. (ii) 176·5 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3781	3549	3905

C.D. = 189·3 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(159).**

Site : Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object : To study the effect of top dressing the crop with P_2O_5 and K_2O

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black soils. (iii) 31.12.64/1.2.65. (iv) (a) 3 puddlings followed by digging of corners, trimming of bunds and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 10 cm. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding 21 days afer planting. (ix) N.A. (x) 6.5.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and N_2=67·2 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 8·1 m. × 4·4 m. (b) 8 0 m. × 4·2 m. (v) 5 cm. × 8 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) The nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. The incidence of rice stem borer was moderate to severe. The crop was sprayed with Endrin. (iii) Grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) Not known. (vi) and (vii) Nil.

5. RESULTS :

(i) 2244 Kg/ha. (ii) 240·7 Kg/ha. (iii) Main effect of N is highly significant and interaction P × K is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	2392	2443	2296	2308	2405	2418	2377
N_1	2538	2244	2467	2244	2499	2506	2416
N_2	1996	1922	1903	1843	1910	2068	1940
Mean	2309	2203	2222	2132	2271	2331	2244
K_0	2331	2031	2033				
K_1	2406	2304	2104				
K_2	2189	2274	2529				

C.D. for N marginal means = 165·5 Kg/ha.
C.D. for the body of (PK) table = 286·8 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(39), 61(50), 62(56).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Ooject :—To compare the effect of application of Urea through soil and by spraying on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy for 60, 62; Paddy-Sesbania-Paddy for 61. (b) Paddy for 60, 62 ; Sesbania for 61. (c) As per treatments for 60, 62 ; Nil for 61. (ii) Heavy black soil. (iii) 10.6.60/26.7.60 ; 10.6.61/18.7.61 ; 26.5.62/28.7.62. (iv) (a) 2 to 3 puddlings, digging and levelling for 60, 61 ; 2 ploughings, digging and levelling for 62. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm. × 15 cm. (e) 2. (v) 4484 Kg/ha. of G.L.+168 Kg/ha. of Super. (vi) MTU-10. (vii) Irrigated. (viii) 1 hand weeding. (ix) 116 cm ; 138 cm ; 133 cm. (x) 8.12.60 ; 5.12.61 ; 7.12.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 levels of N as Urea . N_0=0, N_1=28 and N_2=56 Kg./ha.

(2) 2 methods of application : M_1=Soil apolication and M_2=Spraying.

N_1 applied at planting through soil and 20 days after planting, and spraying of N_2 done half at planting and half one month after planting through soil, N_2 sprayed half 20 days after planting and half 40 days after planting. Water is sprayed in treatment N_0 M_2.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 6·7 m. × 4·6 m. (b) 6·4 m. × 4·1 m. (v) 15 cm. × 25 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Moderate incidence of rice Stem borer for 60, 61 and treated with Endrin spray ; Nil for 62. (iii) Yield of grain. (iv) (a) 1960—62. (b) Yes. (c) As under 5. Results. (v) and (vi) N.A (vii) Error variances are homogeneous and interaction of Treatments × years is absent.

5. RESULTS :

Pooled results

(i) 2500 Kg/ha. (ii) 249·2 Kg/ha. (based on 55 d.f. made up of interaction of Treatments × years + pooled error) (iii) Main effect of N is significant. (iv) Av. yield of grain in Kg/ha.

C.D. = 204·0 Kg/ha.

	N_0	N_1	N_2	Mean
M_1	2457	2723	2378	2519
M_2	2518	2558	2365	2480
Mean	2488	2640	2372	2500

C.D. for N marginal means = 144.25 Kg/ha.

Individual results.

Treatments	M_1	M_2	Sig.	N_0	N_1	N_2	Sig.	G.M.	S.E./plot
Years									
1960	2615	2595	N.S.	2682	2769	2364	*	2605	201·9
1961	2663	2731	N.S.	2629	2825	2636	N.S.	2697	305·6
1962	2281	2116	N.S.	2152	2328	2115	N.S.	2198	238·8
Pooled	2519	2480	N.S.	2488	2640	2372	*	2500	249·2

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(45), 62(46), 63(64).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :— To compare the effect of application of Urea through soil and by spraying on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments+4484 Kg/ha. of G.L.+168 Kg/ha. of Super for 61 and 62 ; 7229 Kg/ha. of G.L.+168 Kg/ha. of Super for 63. (ii) Heavy black soil. (iii) 6.1.61/9.2.61 ; 6.1.62/6.2.62 ; 31.12.62/5.2.63. (iv) (a) 2 to 3 ploughings, puddling and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 4484 Kg/ha. of G.L.+168 Kg/ha. of Super for 61 ; Nil for others. (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 6 cm. ; 4 cm. ; 2 cm. (x) 11 5.61 ; 17.5.62 ; 16.5.63.

2. TREATMENTS :

Same as in expt. no. 60(39), 61(50), 62(56) on page 57.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 6·7 m.×4·6 m. (b) 6·4 m.×4·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer, Paddy blast. Endrin+Bordeaux mixture 1% sprayed. (iii) Yield of grain. (iv) (a) 1961—63. (b) Yes. (c) As under 5. Results. (v) N.A (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS:

Pooled results

(i) 2618 Kg/ha. (ii) 221·4 Kg/ha. (based on 55 d.f. made up of interaction of Treatments×years+pooled error). (iii) None of the effect is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	Mean
M_1	2601	2703	2510	2605
M_2	2574	2603	2716	2631
Mean	2588	2653	2613	2618

Individual results

Treatments	M_1	M_2	Sig.	N_0	N_1	N_2	Sig.	G.M.	S.E./plot
Years									
1961	2959	2992	N.S.	3026	3048	2854	*	2976	161·5
1962	2275	2273	N.S.	2310	2284	2228	N.S.	2274	238·6
1963	2580	2629	N.S.	2428	2628	2758	*	2604	200·9
Pooled	2605	2631	N.S.	2588	2653	2613	N.S.	2618	221·4

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(44), 62(49), 63(63).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of organic manures and inorganic fertilizers on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy for 61, 62 ; Paddy-Fallow-Paddy for 63 (b) Paddy. (c) As per treatments for 61, 62 ; N.A. for 63 (ii) Heavy black soil. (iii) 6.1.61/9.2.61 ; 6.1.62/5.2.62 ; 10.1.63/8.2.63. (iv) (a) 2 puddlings, digging and levelling for 61(64) ; 3 puddlings, digging and levelling for 62(49), 63(63). (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. for 61(44), 63(63) ; 25 cm.×15 cm. for 62(49). (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 6 cm. ; 4 cm. ; 2 cm. (x) 18.5.61 ; 17.5.62 ; 17.5.63.

2. TREATMENTS :

Same as in expt. no. 60(37) given below.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 6·1 m.×4·9 m. (b) 5·8 m.×4·6 m. (v) 15 cm.×15m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer, Paddy blast. Endrin and 1%Bordeaux mixture sprayed. (iii) Grain and fodder yield. (iv) (a) 1961 – 1963. (b) Yes. (c) As under 5. Results. (v) to (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 2359 Kg/ha. (ii) 195·5 (based on 99 d.f. made up of interaction of Treatments×years+pooled error). Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	2189	2185	2601	2369	2340	2626	2572	2200	2295	2215

C.D.=158·6 Kg/ha.

Individual results.

Treatments / Years	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
1961	2323	2412	2918	2522	2491	2938	2952	2382	2492	2360
1962	2021	1870	2233	2174	2127	2156	2272	1887	2014	1973
1963	2222	2272	2652	2411	2403	2783	2493	2332	2378	2313
Pooled	2189	2185	2601	2369	2340	2626	2572	2200	2295	2215

Sig.	G.M,	S.E./plot
**	2579	222·3
N.S.	2073	192·4
**	2426	165·8
**	2359	195·5

—·—

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(37), 61(48), 62(51).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different manurial treatments on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 22·4 Kg/ha. of N as A/S+28 Kg/ha. of P_2O_5 as Super. (ii) Heavy black soil. (iii) 10.6.60/22.7.60 ; 14.6.61/17.7.61 ; 9.6.62/30.7.62. (iv) (a) 2 to 3 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm.×10 cm. (e) 2. (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) 1 hand weeding. (ix) 114 cm ; 131 cm ; 131 cm. (x) 24.11.60 ; 30.11.61 ; 26.11.62.

2. TREATMENTS :

10 manurial treatments : M_0=Control, M_1=33·6 Kg/ha. of N as F.Y.M., M_2=33·6 Kg/ha. of N as A/S, M_3=M_1+33·6 Kg/ha. of P_2O_5 as Super, M_4=M_3+33·6 Kg/ha. of P_2O_5 as Super, M_6=M_5=33·6 Kg/ha. of K_2O as Pot. Sul., M_7=33·6 Kg/ha. of P_2O_5 as Super, M_8=33·6 Kg/ha. of K_2O as Pot. Sul. and M_9=M_7+M_8.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 6·1 m.×4·9 m. (b) 5·6 m.×4·6 m. (v) 25 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Moderate incidence of paddy Stem borer, treated with Endrin spray for 60, 61 ; Nil for 62. (iii) Yield of grain. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

60(37)

(i) 3273 Kg/ha. (ii) 217·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	3321	3172	3349	3344	3194	3268	3336	3278	3188	3276

61(48)

(i) 2941 Kg/ha. (ii) 415·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha,

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	2982	2828	2652	3040	3095	2965	2672	2970	3123	3080

62(51)

(i) 1816 Kg/ha. (ii) 187·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	1721	1562	1913	1786	1838	1957	2014	1873	1800	1699

Crop :- Paddy (*Abi*). **Ref :- A·P. 60(40).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To compare the effects of different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments (ii) Heavy black soils (iii) 10.6.60/23.7.60. (iv) (a) 3 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU—10. (vii) Irrigated. (viii) 1 hand weeding. (ix) 114 cm. (x) 30.11.60.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=44·8 Kg/ha. of N as C/A/N applied 14 days after planting+33·6 Kg/ha. of P_2O_5 as Super, M_2=44·8 Kg/ha. of N as C/A/N applied in two equal doses 14 days after planting and one month ater planting+33·6 Kg/ha. of P_2O_5 as Super, M_3=22·4 Kg/ha. of N as C/A/N applied in two equal doses 14 days after planting and one week before flowering+33·6 Kg/ha. of P_2O_5 as Super and M_4=44·8 Kg/ha. of N as A/S in two equal doses at planting and one month after planting+33·6 Kg/ha. of P_2O_5 as Super applied as basal dressing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 6·7 m.×5·5 m. (b) 6·3 m.×5.1 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Moderate incidence of Stem borer. Treated with Endrin spray. (iii) Yield of grain and fodder. (iv) (a) 1958–1961. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3143 Kg/ha. (ii) 131·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2818	3099	3192	3415	3191

C.D.=158·3 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(43).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To compare the effect of different sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black soil. (b) N.A. (iii) 6.1.61/4.2.61. (iv) (a) 2 puddlings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU –15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 6 cm. (x) 7.5.61.

2. TREATMENTS :

Same as in expt. No. 60 (40) on page 60.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 6·7 m.×5·5 m. (b) 6·4 m.×5·2 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Incidence of Stem borer and paddy Blast. Endrin and 1 % Bordeaux mixture sprayed. (iii) Yield of grain and fodder. (iv) 1958–1961. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2620 Kg/ha. (ii) 184·1 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1961	2553	2655	2751	3180

C.D.=221·7 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 62(67).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To compare the effect of bulky organic manures with F.Y.M. on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy wheat Paddy. (b) Wheat. (c) Nil. (ii) (a) Heavy black soils. (iii) 23.11.62/28.12.62. (iv) (a) 3 puddlings and followed by digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 168 Kg/ha. of Super+67·3 Kg/ha. of K_2O as Pot. Sul.+44·8 Kg/ha. of N as A/S. (vi) N.A. (vii) Irrigated. (viii) 1 hand weeding. (ix) 4 cm. (x) 17.4.63.

2. TREATMENTS :

3 manurial treatments : M_1=3363 Kg/ha. of Paddy straw, M_2=3363 Kg/ha of G.L. and M_3=24·7 C.L./ha. of F.Y.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 8·8 m.×4·6 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer and paddy blast. Endrin and 1 % Bordeaux mixture sprayed (iii) Yield of grain. (iv) (a) 1962 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3330 Kg/ha. (ii) 121·7 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield	3093	3464	3434

C.D.=276·0 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref : A.P. 64(156).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object : —To study the effect of manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 24·7 C.L./ha. of F.Y.M.+173 Kg/ha. of Super. (ii) Heavy black soils. (iii) 31.12.64/1.2.65. (iv) (a) Puddling with country plough, trimming of bunds, spreading of clods. (b) Transplanting (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 4483 Kg/ha. of G.L.+168·1 Kg/ha. of Super+67·2 Kg/ha. of K_2O. as Mur. pot. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) N.A. (x) 7.5.65.

2. TREATMENTS :

3 manurial treatments : T_1=22·4 Kg/ha. of N at planting+22·4 Kg/ha. of N one month after, T_2=44·8 Kg/ha. of N one month after planting and T_3=44·8 Kg/ha. of N 20 days before general flowering

N applied as A/s.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 8·1 m.×3·2 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The germination and growth of the seedlings was satisfactory. The nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. The incidence of rice stem borer was moderate to servere. The crop was sprayed with Endrin. (ii) Mean effective tillers/hill, mean weight of panicles/hill. (iii) Grain and straw yield. (iv) (a) 1964 only. (b) and (c) Nil (v) to (vii) Nil.

5. RESULTSg :

(i) 2539 Kg/ha. (ii) 203·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3553	2439	2626

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(42).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different sources and levels of N in combination with P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Heavy black soil. (iii) 10.6.60/23.7.60. (iv) (a) 3 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) 1 hand weeding. (ix) 116 cm. (x) 8.12.60.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=33·6 Kg/ha. of P_2O_5 as Super, $M_2=M_1+33·6$ Kg/ha. of N as A/S, $M_3=M_1+50·4$ Kg/ha. of N as A/S, $M_4=M_1+33·6$ Kg/ha. of N as A/C and $M_5=M_1+50·4$ Kg/ha. of N as A/C.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·3 m. (b) 8·6 m.×4·0 m. (v) 25 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Moderate incidence of Stem borer. Treated with Endrin spray. (iii) Yield of grain and fodder. (iv) (a) 1957—1961. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2782 Kg/ha. (ii) 102·7 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2619	2686	2868	2968	2712	2838

C.D.=154·8 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(42).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different sources and levels of N in combination with P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Heavy black soils. (iii) 6.1.61/5.2.61. (iv) (a) 3 puddlings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 6 cm. (x) 12.5.61.

2. TREATMENTS :

Same as in expt. no. 60(42) on page 63.

3. DESIGN

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·3 m. (b) 8·8 m.×4·0 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer and paddy Blast. Endrin +1% Bordeaux mixture sprayed. (iii) Yield of grain and fodder. (iv) (a) 1957—1961. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2694 Kg/ha. (ii) 212·5 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2002	2400	2722	3061	2890	3086

C.D.=320·2 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(57), 63(86).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62 ; application of urea for 63. (ii) Heavy black soil. (iii) 12.5.1962/27.6.1962 ; 9.6.1963/10.7.1963. (iv) (a) 3 ploughings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62 ; 4483 Kg/ha. of G.L. for 63. (vi) MTU-12. (vii) Irrigated. (vii) 1 hand weeding. (ix) 137 cms ; 119 cms. (x) 20.12.1962 ; 12.12.1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting+½ one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) and (c) No. (v) N.A. (vi) Heavy rains during second half of October. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS:

(i) 2455 Kg/ha. (ii) 508·5 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2483	2396	2486

Individual results.

Treatments	T_1	T_2	T_3	Sig.	G.M.,	S.E./plot
Years						
1962	2301	2076	2421	N.S.	2266	355·3
1963	2665	2715	2552	N.S.	2644	190·3
Pooled	2483	2396	2486	N.S.	2455	508·5

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(54), 63(89).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62(54); Nil for 63(89). (ii) Heavy black soil. (iii) 12.5.1962/27.6.1962 ; 22.5.1963/9.7.1963. (iv) (a) 3 ploughings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62(54); 4483 Kg/ha. of §G.L. for 63(89). (vi) MTU-10. (vii) Irrigated. (viii) 1 hand weeding. (ix) 137 cms ; 123 cms. (x) 18.12.1962 ; 5.11.1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting+½ one month after, T_2=Full dose one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) As under 5. Results (v) N.A. (vi) Heavy rains during second half of October 1962. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS:

Pooled results.

(i) 2488 Kg/ha. (ii) 247·3 Kg/ha. (based on 30 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2702	2408	2353

C.D.=178·5 Kg/ha.

Individual results.

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	1739	1482	1556	N.S.	1592	269·3
1963	3665	3335	3150	**	3383	202·8
Pooled	2702	2408	2353	**	2488	247·3

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(50), 63(106).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. for 62(50) ; As per treatments for 63(106). (ii) Heavy black soil. (iii) 12.5.1962/27.6.1962 ; 15.5.1963/9.7.1963. (iv) (a) 1 ploughing+2 to 3 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4484 Kg/ha. of G.L.+ 168 Kg/ha. of Super+67·2 Kg/ha. of K_2O as Pot. Sul. for 62(50) ; 2242 Kg/ha. of G.L. of Sesbania+ 168 Kg/ha. of Super+67·2 Kg/ha. of K_2O as Pot. Sul. for 63(106). (vi) MTU-1. (vii) Irrigated. (viii) 1 hand weeding. (ix) 133 cm. ; 123 cm. (x) 27.11.1962 ; 22.11. 1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting and half one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains during the second half of October, 1962. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 2462 Kg/ha. (ii) 276·1 Kg/ha. (based on 30 d.f. made up of pooled error and Treatment×years interaction. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2707	2332	2347

C.D.=199·3 Kg/ha.

Individual results.

Treatments	T_1	T_2	T_3	Sig.	G.N.	S.E./plot
Years						
1962	2457	2027	2209	N.S.	2231	318.0
1963	2957	2637	2485	**	2693	213.8
Pooled	2707	2332	2347	**	2462	276.1

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(159), 63(84).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To find out the efficacy of Basic slag as compared to Super for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sesbania—Paddy for 62(59) ; Paddy—Paddy for 63(84). (b) Sesbania for 62(59) ; Paddy for 63(84). (c) Nil for 62(59) ; As per treatments for 63(84). (ii) Heavy black soil. (iii) 12.5.1962/21.7.1962. ; 11.6.1963/26.7.1963. (iv) (a) 2 to 3 puddlings. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 6000 Kg/ha. of G.L.+168 Kg/ha. of Super for 62(59); Nil for 63(84). (vi) MTU—19 (vii) Irrigated. (viii) 1 hand weeding. (ix) 137 cm. ; 119 cm. (x) 19.12.62 ; 9.12.1963.

2. TREATMENTS:

6 manurial treatments : M_0=Control, M_1=33·6 Kg/ha. of N as A/S, $M_2=M_1+33·6$ Kg/ha. of P_2O_5 as Basic slag, $M_3=M_1+67·3$ Kg/ha. of P_2O_5 as Basic slag, $M_4=M_1+33·6$ Kg/ha. of Super and $M_5=M_1+67·3$ Kg/ha. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) N.A. (iii) 4. (iv) (a) 9·6 m.×6·5 m. for 62(59) ; 9·1 m.×6·7 m. for 63(84). (b) 9·1 m.×6·1 m. for 62(59) ; 8·7 m.×6·3 m. for 63(84). (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961—1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains during second half of October. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 2544 Kg/ha. (ii) 140·7 Kg/ha. (based on 35 d.f. made up of pooled error and Treatment×years interaction. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2634	2565	2532	2424	2514	2594

Individual results.

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years									
1962	1552	1554	1498	1385	1427	1619	N.S.	1506	115.4
1963	3715	3576	3565	3462	3602	3569	N.S.	3582	167.4
Pooled	2634	2565	2532	2424	2514	2594	N.S.	2544	140.7

Crop :- Paddy (*Tabi*). **Ref :- A.P. 62(47), 62(62), 63(85).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To find out the efficacy of Basic slag as compared to Super for Paddy crop.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4484 Kg/ha. of G.L.+168 Kg/ha. of Super for 62(47) ; 2745 Kg/ha. of G.L.+168 Kg/ha. of Super for 62(62) ; As per treatments for 63(85). (ii) Heavy black soil. (iii) 21.1.1962/18.2.1962 ; 31.12.1962/6.2.1963 ; 30.12.1963/2.2.1964. (iv) (a) 2 to 3 ploughings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm.×20 cm. for 63(85) ; 15 cm×15 cm. for others. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding. (ix) (ix) 1 cm., 2 cm., Nil. (x) 10.5.1962 ; 11.5.1963 ; 27.4.1964.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=33·6 Kg/ha. of N as A/S, $M_2=M_1+33·6$ Kg/ha. of P_2O_5 as Basic slag, $M_3=M_1+67·3$ Kg/ha. of P_2O_5 as Basic slag, $M_4=M_1+33·6$ Kg/ha. of P_2O_5 as Super and $M_5=M_1+67·3$ Kg/ha. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×6·1 m. for 62(47) ; 9·6 m.×6·5 m. for 62(62) ; 9·1 m.×6·7 m. for 63(85). (b) 8·8 m.×5·8 m. for 62(47) ; 9·1 m.×6·1 m. for 62 (62) ; 8·7 m.×6·3 m. for 63(85). (v) 15 cm.×15 cm. for 62(47) ; 20 cm.×20 cm. for others. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Incidence of stem borer and paddy blast for 62(47). Endrin and Bordeaux mixture sprayed ; No incidence for 63(85). (iii) Grain yield. (iv) (a) 1961—1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Errors are homogeneous. Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 2514 Kg/ha. (ii) 294·2 Kg/ha. (based on 10 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2376	2511	2510	2542	2565	2579

Individual results.

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years									
1962	1911	1863	1903	1880	1853	2050	N.S.	1911	105.8
1962	2609	3121	3162	3170	3213	3090	*	3061	126.5
1963	2603	2550	2466	2576	2629	2598	N.S.	2570	119.2
Pooled	2376	2511	2510	2542	2565	2579	N.S.	2514	294.2

Crop :- Paddy (*Tabi*). **Ref :- A.P. 63(85).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To find out the residual effect of Basic slag applied to Paddy crop

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Heavy black soil. (iii) 30.12.63/2.2.64. (iv) (a) Puddling thrice, trimming of bunds, digging of corners and spreading of clods. (b) Transplanting. (c) 33·6 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding 21 days after transplanting. (ix) Nil. (x) 27.4.64.

2. TREATMENTS :

Same as in expt. no. 62(47) on page 67.

3. DESIGN :-

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m. × 6·7 m. (b) 8·8 m. × 6·3 m. (v) 20 cm. × 20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1961—63. (b) Nil. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2570 Kg/ha. (ii) 109·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2603	2550	2466	2576	2629	2598

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(154), 64(161).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To test the efficacy of bulky organic manures for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 318·8 Kg/ha. of Green matter (*Sesbania*)+168·1 Kg/ha. of Super for 63(154); 49·4 C.L./ha. of F.Y.M. for 64(161). (ii) Heavy black soil. (iii) 18.11.1963/28.12.1963; 17.12.1964/7.1.1965. (iv) (a) Puddling, digging and levelling (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 45 Kg/ha. of N as A/S+27·2 Kg/ha. P_2O_5 as Super+67·0 Kg/ha. of K_2O as Mur. Pot. for 63(154); Nil for 64(161). (vi) MTU-15 for 63(154); SLO-16 for 64(161). (vii) Irrigated. (vii) 1 hand weeding. (ix) 2 cms; N.A. (x) 2.5.1964; 28.3.1965.

2. TREATMENTS:

5 manurial treatments : T_0=Control, T_1=3362 Kg/ha. of Paddy straw applied 15 days before planting, T_2=3362 Kg/ha. of Paddy straw applied 7 days before planting, T_3=24·7 C.L./ha. of F.Y.M. applied 7 days before planting and T_4=3362 Kg/ha. of G.L. applied 7 days before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 11·3 m.×3·8 m. for 63(154); 9·3 m.×4·6 m. for 64(161). (b) 11·0 m.×3·6 m. for 63(154); 9·0 m.×4·4 m. For 64(161). (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence for 63 (154). for 64(161) incidence of rice stem borer for which Endrin was sprayed twice to nursery and once to main crop. (iii) Grain yield. (iv) (a) 1963 —1964. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous. Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 3110 Kg/ha. (ii) 679·9 Kg/ha. (based on 4 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2994	3060	3122	3258	3116

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years								
1963	2682	2994	2950	2658	2697	*	2142	199.1
1964	3306	3170	3293	3858	3534	**	3432	302.7
Pooled	2994	3060	3122	3258	3116	N.S.	3110	679.9

Crop :- Paddy (*Tabi*). **Ref :- A.P. 63(61), 64(86).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 63(61); As per treatments for 64(86). (ii) Heavy black soil. (iii) 10.1.1963/11.2.1963 ; 6.1.1964/3.2.1964 (iv) (a) 4 ploughings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cms.×10 cms. (e) 2. (v) Nil for 63(61); 4483 Kg/ha. of G.L. for 64(86). (vi) MTU-9. (vii) Irrigated. (viii) 1 hand weeding. (ix) 2 cms; Nil. (x) 20.5.1963; 28.4.1964.

2. TREATMENTS :

3 times of application of 44·8 Kg/ha. of N : T_1=Half dose at planting+½ dose one month after planting, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 7·9 m.×1·7 m. for 63(61) ; 8·3 m.×1·7 m. for for 64(86). (b) 7·6 m.×1·5 m. for 63(61) ; 8·0 m.×1·5 m. for 64(86). (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer and paddy blast for 63(61) for which Endrin and 1% Bordeaux mixture were sprayed ; No incidence for 64(86). (iii) Grain yield. (iv) (a) 1963—1964. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1393 Kg/ha. (ii) 556·9 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	1372	1265	1541

Individual results

Treatments	T_1	T_2	T_3	Sig.	G.M·	S.E./plot
Years						
1963	2015	1716	1913	*	1881	204·9
1964	730	816	1169	*	905	214.5
Pooled	1372	1266	1541	N.S.	1393	556.9

Crop :- Paddy (*Tabi*). **Ref :- A.P. 62(63), 64(85).**

Site :- Agri. Res. Stn., Maruteru, **Type :- 'M'**

Object :—To study the effect of different times of applIcation of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil for 62(63) ; As per treatments for 64(85). (ii) Heavy black soil. (iii) 31.12.1962/5.2.1963 ; 6.1.1964/2.2.1964. (iv) (a) 4 ploughings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil for 62(63) ; 4483 Kg/ha. of G.L. for 64(85). (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 2 cms ; Nil. (x) 14.5.1963 ; 27.4.1964.

2. TREATMENTS :

3 times of application of 44·8 Kg/ha. of N : T_1=Half dose at planting+½ dose one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 7·9 m.×1·7 m. for 62(63) ; 8·3 m.×1·8 m. for 64(85). (b) 7·6 m.×1·5 m. for 62(63) ; 8·0 m.×1·5 m. for 64(85). (v) 15 cms.×10 cms. for 62(63) ; 15 cm.×15 cms. for 64(85). (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer. Nurseries were sprayed with Endrin 15 days after sowing and once again just before planting. 1% Bordeaux mixture was sprayed against the spread of blast disease for 62(63) only. (iii) Grain yield. (iv) (a) 1962-1964. (b) No. (c) As under 5. results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous. Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 2227 Kg/ha. (ii) 268·7 Kg/ha. (based on 2 d.f. made up of Treatment × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2261	2134	2285

Individual results.

Treatments	T_0	T_1	T_2	Sig.	G.M.	S.E./plot
Years						
1962	2952	2697	2878	* *	2842	127.2
1964	1570	1572	1692	N.S.	1611	158.1
Pooled	2661	2134	2285	N.S.	2227	268.7

Crop :- Paddy (*Tabi*). **Ref :- A.P. 62(61), 63(87).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62(61) ; As per treatments for 63(87). (ii) Heavy black soil. (iii) 31.12.1962/4.2.1963 ; 30.12.1963/2.2.1964. (iv) (a) 3 to 4 ploughings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cms. × 10 cms. (e) 2. (v) Nil for 62(61) ; 4483 Kg/ha. of G.L. for 63(87). (vi) MTU-20. (vii) Irrigated. (viii) 1 hand weeding. (ix) 2 cms., Nil. (x) 18.5.1963 ; 8.5.1964.

2. TREATMENTS :

3 times of application of 44·8 Kg/ha. of N : T_1=Half dose at planting+½ dose one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 7·9 m. × 1·7 m. for 62(61) ; 8·3 m. × 1·7 m. for 63(87). (b) 7·6 m. × 1·5 m. for 62(61) ; 8·0 m. × 1·5 m. for 63(87). (v) 15 cms. × 10 cms. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer and paddy blast for 62(61) for which Endrin and 1% Bordeaux mixture were sprayed ; No incidence for 63(87). (iii) Grain yield. (iv) (a) 1962—1964. (b) No. (c) As under 5. Results (v) N.A. (vi) Nil. (vii) Error variances are homogeneous. Treatments. × years interaction is present.

5. RESULTS :

Pooled results.

(i) 2840 Kg/ha. (ii) 1073·8 Kg/ha. (based on 2 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2802	3076	2642

Individual results.

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	3332	3240	2650	*	3074	150.4
1963	2271	2913	2634	*	2606	101.4
Pooled	2802	3076	2642	N.S.	2840	1073 8

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(53), 63(90).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62(53); Nil for 63(90). (ii) Heavy black soil. (iii) 12.5.1962/27.6.1962 ; 9.6.1963/10.7.1963. (iv) (a) 3 ploughings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62(53); 4483 Kg/ha. of G.L. for 63(90). (vi) MTU-7. (vii) Irrigated. (viii) 1 hand weeding. (ix) 137 cm. ; 119 cm. (x) 18.12.1962 ; 9.12.1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting+½ one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains during second half of October. (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

62(53)

(i) 1960 Kg/ha. (ii) 475·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	1939	2082	1859

63(90)

(i) 2667 Kg/ha. (ii) 248·9 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2894	2662	2445

C.D.=266·9 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(52), 63(91).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62(52) ; As per treatments for 63(91). (ii) Heavy black soil. (iii) 4.5.1962/25.6.1962 ; 2.5.1963/9.7.1963. (iv) (a) 3 ploughings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L. for 63(91) ; Nil for 62(52). (vi) MTU-3. (vii) Irrigated. (viii) 1 hand weeding. (ix) 132 cm ; 123 cm. (x) 31.10.1962 ; 1.11.1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting+½ one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains during the second half of October. (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

62(52)

(i) 2301 Kg/ha. (ii) 237·8 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2328	2462	2114

C.D.=255·1 Kg/ha.

63(91)

(i) 1575 Kg/ha. (ii) 320·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	1646	1604	1476

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(58), 63(88).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62(58) ; Organic and inorganic fertilizers were applied for 63(88). (ii) Heavy black soil. (iii) 12.5.1962/28.6.1962 ; 29.5.1963/10.7.1963. (iv) (a) 3 ploughings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62(58) ; 4483 Kg/ha. of G.L. for 63(88). (vi) MTU-19. (vii) Irrigated. (viii) 1 hand weeding. (ix) 137 cm ; 122 cm. (x) 29.12.1962 ; 7.12.1963.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N : T_1=Half dose at planting+½ dose one month after, T_2=Full dose applied one month after planting and T_3=Full dose applied 20 days before general flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·1 m.×1·8 m. (b) 7·7 m.×1·5 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains during second half of October. (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

62(58)

(i) 2783 Kg/ha. (ii) 235·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2780	2630	2939

63(88)

(i) 3122 Kg/ha. (ii) 122·9 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3101	2995	3270

C.D.=131·7 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 65(33).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To test the relative merits of application of Urea to Rice crop by spraying against the usual practice of applying the fertilizers to the soil.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy (MTU-1 Bulk). (c) 32·1 C.L./ha. of F.Y.M. and 173 Kg/ha. of Super. (ii) Heavy black soils. (iii) 11.1.65/19.2.65. (iv) (a) Puddling with county plough, digging of corners, trimming of bunds and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) 1·5 cm. (x) 15.5.65.

2. TREATMENTS :

5 cultural treatments : T_0=Control, T_1=30 Kg/ha. of N as A/S by soil application, T_2=30 Kg/ha. of N as Urea by soil application, T_3=15 Kg/ha. of N as Urea by foliar spray and T_4=30 Kg/ha. of N as Urea by foliar spray.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 6·3 m.×3·2 m. (b) 6·0 m.×3·0 m. (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stemborer. Spraying of Endrin. (iii) Yield of grain and straw. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2782 Kg/ha. (ii) 165·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2493	2674	2924	2824	2994

C.D.=254·9 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(41),61(51).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To study the effect of different levels of N and P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy - Sunhemp for 60 ; Paddy—Paddy for 61. (b) Sunhemp for 60 ; Paddy for 61. (c) Nil for 60 ; N.A. for 61, (ii) Heavy black soil. (iii) 14.5.60/4.7.60 ; 10.5.61/1.7.61. (iv) (a) 2 ploughings, 2 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. to 34 Kg/ha. (d) 25 cm.×25 cm. (e) 2. (v) 4484 Kg/ha. of G.L.+30 C.L./ha. of C.M. for 60 (41) ; 1681 Kg/ha. of G.L.+168 Kg/ha. of Super for 61 (51). (vi) MTU.—19. (vii) Irrigated. (viii) 1 to 2 hand weedings. (ix) 117 cm. ; 139 cm. (x) 28.12.60; 20.12.61.

2. TREATMENTS :

All combination of (1) and (2)

(1) 2 levels of N as A/S: N_0=0 and N_1=33·6 Kg/ha.

(2) 2 lvels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

P_2O_5 applied before planting, half dose of N at planting+half one month after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 9·1m.×6·1 m. (b) 8·6m.×5·8 m. (v) 25 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of stem borer. Endrin sprayed. (iii) Grain yield. (iv) (a) 1960—61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatment×years interaction is present.

5. RESULTS :

Pooled result

(i) 2997 Kg/ha. (ii) 424·7 Kg/ha. (based on 3 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	Mean
P_0	2944	2994	2969
P_1	3068	2982	3025
Mean	3006	2988	2997

Individual results.

Treatments	P_0	P_1	Sig.	N_0	N_1	Sig.	G.M.	S.E./plot
Years								
1960	3745	3600	N.S.	3696	3648	N.S.	3672	287·4
1961	2193	2451	*	2316	2328	N.S.	2322	172·2
Pooled	2969	3025	N.S.	3006	2988	N.S.	2997	424·7

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(125).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'M'.**

Object :—To find out the efficacy of C/A/N as fertilizer as compared to A/S to Paddy crop.

1 BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2242 Kg/ha. of G.L.+168·1 Kg/ha. of Super+168·1 Kg/ha. of A/S. (ii) Heavy black. Soil (iii) 15.2.60. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) As per treatments. (vi) MTU—15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 7cm. (x) 12.5.60.

2. TREATMENTS :

5 manurial treatments : T_0=Control (no manure), T_1=44·8 Kg/ha. of N as C/A/N 14 days after planting, T_2=33·6 Kg/ha. of N as C/A/N 14 days after planting+11·2 Kg/ha. of N as C/A/N one month after planting, T_3=11·2 Kg/ha. of N as C/A/N 14 days after planting, +22·4 Kg/ha. of N as C/A/N on month after planting and T_4=44·8 Kg/ha. of N as A/S ($\frac{1}{2}$ dose at planting and $\frac{1}{2}$ dose 14 days after planting).

Treatments T_1 to T_4 received 33·6 Kg/ha. of P_2O_5 as Super as basal dressing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 6·7 m.×5·5 m. (b) 6·4 m.×5·2 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2771 Kg/ha. (ii) 140·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2272	2709	2780	2859	3237

C.D.=168·7 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 60(186).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To study the effect of N, P and K in different combinations on Paddy yields.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Phosphatic trial. (ii) Sandy loams. (iii) 30.1.60/25,26, 27.2.60 (iv) (a) 2 puddlings with country plough, working wet land puddler twice, trimming of bunds and digging corners. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) BCP—1 (vii) Irrigated. (viii) 2 hand weedings, working push hoe at fortnightly intervals upto short blade stage. (ix) Nil. (x) 23.5.60.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S : N_1=45 and N_2=60 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_1=45 and P_2=60 Kg/ha.

(3) 3 levels of K_2O as Mur. of Pot. : K_0=0 and K_1=30 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of mealy bug and stem borer. (iii) Grain yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2696 Kg/ha. (ii) 741 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	K_0	K_1	P_1	P_2	Mean
N_1	2672	2743	2689	2679	2684
N_2	2684	2553	2625	2687	2656
Mean	2678	2648	2657	2683	2696
P_1	2591	2643			
P_2	2765	2653			

Crop :- Paddy. **Ref :- A.P. 63 (228).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To study the effect of N,P and K on the yield of Paddy.

1 BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Sandy loams. (iii) 22.1.63/8.3.63. (iv) (a) 2 puddlings, trimming of bunds and digging corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 hand weedings and working push hoe at fortnightly intervals upto short blade stage. (ix) 1 cm. (x) 27.5.63.

5. TREATMENTS :

15 combinations of N, P and K as A/S, Super and Mur. Pot. at three levels 0, 34 and 67 Kg/ha. each : $T_0=N_0P_0K_0$, $T_1=N_0P_0K_1$, $T_2=N_0P_0K_2$, $T_3=N_1P_1K_0$, $T_4=N_1P_1K_1$, $T_5=N_1P_1K_2$, $T_6=N_1P_2K_0$, $T_7=N_1P_2K_1$, $T_8=N_1P_2K_2$, $T_9=N_2P_1K_0$, $T_{10}=N_2P_1K_1$, $T_{11}=N_2P_1K_2$, $T_{12}=N_2P_2K_0$ $T_{13}=N_2P_2K_1$ and $T_{14}=N_2P_2K_2$.

N.B. The suffixes 0, 1 and 2 denote 0, 34 and 67 Kg/ha. respectively of the respective fertilizer.

3. DESIGN:

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) and (b) 7·6 m.×2·4 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2361 Kg/ha. (ii) 441 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	2298	2535	2008	2747	2393	2107	2462	2415

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Av. yield	2338	2524	2340	2603	2784	1619	2241

Crop :- Paddy. **Ref :- A.P. 62(240), 63(229).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To find out the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. for 62(240) ; 4483 Kg/ha. of G.L., 34 Kg/ha. of N as A/S and 34 Kg/ha. of P_2O_5 as Super for 63. (ii) Sandy loams. (iii) 8.7.62/4, 5.8.62 ; 12.8.63/19.6.63. (iv) (a) Puddling twice, trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 15 cm. (e) 2. (v) Nil. (vi) BCP-1. (vii) Irrigated. (viii) 2 hand weedings and working push hoe at fortnightly intervals upto shoit blade stage. (ix) 120 cm. ; 73 cm. (x) 21.12.62 ; 25.1.64.

2. TREATMENTS :

15 combinations of N, P and K as A/S, Super and Mur. Pot. at three levels 0, 34 and 67 Kg/ha. each : $T_0=N_0\ P_2\ K_0$, $T_1=N_0\ P_0\ K_1$, $T_2=N_0\ P_0\ K_2$, $T_3=N_1\ P_1\ K_0$, $T_4=N_1\ P_1\ K_1$, $T_5=N_1\ P_1\ K_2$, $T_6=N_1\ P_2\ K_0$, $T_7=N_1\ P_2\ K_1$, $T_8=N_1\ P_2\ K_2$, $T_9=N_2\ P_1\ K_0$, $T_{10}=N_2\ P_1\ K_1$, $T_{11}=N_2\ P_1\ K_2$, $T_{12}=N_2\ P_2\ K_0$, $T_{13}=N_2P_2\ K_1$, $T_{14}=N_2\ P_2\ K_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) and (b) 7·6 m. × 2·4 m. for 62(240) ; 4·3 m. × 4·0 m. for 63(229). (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—63 (Modified in 62). (b) No. (c) As under 5. Results. (v) to (vii) N.A.

5. RESULTS :

Pooled results.

(i) 1325 Kg/ha. (ii) 328·8 Kg/ha. (based on 70 d.f. made up of Treatments × years interaction + pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1396	1591	1334	1421	1400	1261	1251	1214

T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
1376	1392	1282	1316	1386	1086	1172

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}
Years											
1962	2157	2417	2397	2085	2273	2309	1893	1838	2167	2377	2171
1963	635	765	272	757	526	213	609	591	584	406	394
Pooled	1396	1591	1334	1421	1400	1261	1251	1214	1376	1392	1282

T_{11}	T_{12}	T_{13}	T_{14}	Sig.	G.M.	S.E./plot
2159	2496	1809	2004	N.S.	2170	350.0
473	276	363	480	N.S.	480	278.0
1316	1386	1086	1172	N.S.	1325	328.8

Crop :- Paddy. **Ref :- A.P. 63(231).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object—To find out the relative merits of different types of nitrogeneous fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 22·4 Kg/ha. of N as A/S, 359 Kg/ha. of Super. (ii) Sandy loam. (iii) 26.1.63/23.3.63. (iv) (a) 2 dry ploughings, 2 puddlings with country plough and trimming of bunds and levelling. (b) Transplanting. (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) 6522. (vii) Irrigated. (viii) 2 hand weedings, push hoe working once and gap filling. (ix) 1 cm. (x) 2.6.63.

2. TREATMENTS :

All combinations of (1) and (2)+control (4 plots).
(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.
(2) 2 levels of N : N_1=33·6 and N_2=67·2 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×2.7 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of blast. (iii) Grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1777 Kg/ha. (ii) 346·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_1	1809	1721	1908	1571	1752
N_2	1920	1851	2120	1728	1905
Mean	1364	1786	2014	1650	1828

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(238), 63(227), 64(231).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for 62(238) 44·8 Kg/ha. of N as A/S+35·9 Kg/ha. of P_2O_5 as Super for 63(227) ; N.A. for 64(231). (ii) Sandy loam. (iii) 8.7.1962/11.9.1962 ; 29.7.1963/9.9.1963 ; 13.7.1964/18.8.1964. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 24·7 C.L./ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super for 64(231) ; N A. for others. (vi) BCP—1. (vii) Irrigated. (viii) 1 to 2 hand weedings, gap filling and working push hoe. (ix) 94 cm ; 76 cm ; N.A. (x) 24.1.1963 ; 28.1.1964 ; 2.2.1965.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=Half at planting+½ after one month, T_2=Full dose one month after planting and T_3=Full dose one month before flowering or at short blade stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 6·1 m.×6·1 m. for 62(238) ; 7·6 m. ×1·5 m. for 63(227) ; 6·1 m.×6·1 m. for 64(231). (b) 6·1 m.×6·1 m. for 62(238) ; 7·6 m.×1·5 m. for 63(227) ; 5·5 m.×5·3 m. for 64(231). (v) 30 cm.×41 cm. for 64(231) ; Nil for others. (vi) Yes.

4. GENERAL :

(i) Good for 63(227) ; Satisfactory for others. (ii) Mild attack of blast for 62(238) ; incidence of stem borer for 63(227) for which Endrin was sprayed. Srvere attack of gall fly and stem borer for 64(231) for which Endrin was sprayed thrice at 1 oz. in 4 gallons of water. (iii) Grain yield. (iv) (a) 1962—1964. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains in October for 62(238). (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

62(238)

(i) 2280 Kg/ha. (ii) 210·5 Kg/ha. (iii) Treatment differences are highly significant. (vi) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2060	2543	2237

C.D.=225·8 Kg/ha.

63(227)

(i) 3308 Kg/ha. (ii) 408·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3229	3337	3358

64(231)

(i) 2343 Kg/ha. (ii) 204·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2299	2428	2303

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(238), 64(233), 65(75).**

Site :- Reg. Rice Res. Stn., Nellore. **Type -: 'M'.**

Object :—To study the optimum time of application of different levels and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 4.9.63 ; 18.8.64 ; 25.9.65. (iv) (a) 2 ploughings and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. for 63(238), 60(75) ; 15 cm.×10 cm. for 64(233). (e) 2. (v) Nil for 63(239), 24·7 C.L./ha. of F.Y.M. and 33·6 Kh/ha. of P_2O_5 as Super for 64(233). (vi) M—1834 for 63(238), 64(233) and BCP-6 for 65(75). (vii) Irrigated. (viii) 1 hoeing and weeding. (ix) 77·9 cm. in 63(238), 77·6 cm. in 64(233), and 66·3cm. in 65(75). (x) 20.1.64, 1.2.65 and 3.2.1966.

2. TREATMENTS :

All combinations of (1), (2) and (3)+one control.

(1) 2 levels of N : N_1=33·6 and N_2=67·2 Kg/ha.

(2) 2 sources of N : S_1=A/S and S_2=C./A./N.

(3) 3 times of application : T_1=At puddling, T_2=25 days after planting and T_3=At short blade stage (one month before flowering).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 3 for 63, 4 for others. (iv) (a) For 63 N.A., 6·1 m.×3·1 m. for 64. (b) 5·3 m.×2·4 m. and 9·1 m.×2·4 m. for 65. (v) 40·7 cm.×30·5 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin. (iii) Grain yield. (iv) (a) 1963—1965. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 3478 Kg/ha. (ii) 481 Kg/ha. (based on 14 d.f. made up of interaction of Treatment components with years). (iii) Main effect of T alone is highly significant. (iv) Av yield of grain in Kg/ha.

	T_1	T_2	T_3	S_1	S_2	Mean
N_1	3385·6	3599·3	3515·0	3535·0	3465·0	3500·0
N_2	3266·3	3842·0	3259·6	3453·6	3458·3	3456·0
Mean	3326·0	3720·6	3387·3	3494·3	3461·6	3478·0
S_1	3361·3	3577·3	3441·3			
S_2	3290·6	3764·0	3330·3			

Control mean yield—N.A.

Individual results.

Treatments	N_1	N_2	Sig.	S_1	S_2	Sig.
Years						
1963	4249	4327	N.S.	4357	4219	N.S.
1964	2798	2814	N.S.	2733	2879	**
1965	3453	3227	N.S.	3393	3287	**
Pooled	3500	3456	N.S.	3494	3462	N.S.

T_1	T_2	T_3	Sig.	G.M.	S.E./plot
4124	4604	4138	**	4272	250·1
2790	2872	2756	N.S.	2787	229·0
3066	3686	3268	N.S.	3367	601·1
3326	3721	3387	**	3478	481·0

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(225).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super. (ii) (a) Sandy loam. (iii) 15.2.63, 24, 25.3.63. (iv) (a) 2 dry ploughings, 2 puddlings. (b) Transplanting (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) 6522. (vii) Irrigated. (viii) 2 hand weedings, gap filling, working of push hoe at fortnightly intervals upto short blade stage of the crop (ix) 3.43 cm. (x) 4.6.63.

2. TREATMENTS:

3 times of application of 44·8 Kg/ha. of N as A/S: T_1=Half at the time of planting and the remaining half month after planting, T_2=Entire dose one month after planting and T_3=Entire dose one month before flowering or at short blade stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 7·6 m.×1·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Blast, (iii) Grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2798 Kg/ha. (ii) 259·9 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3156	2619	2618

———

Crop :- Paddy (*Kharif*). **Ref : A.P. 60(187), 61(209).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4483 Kg/ha. of G.L., 34 Kg/ha. of N as A/S and 34 Kg/ha. of P_2O_5 as Super for 60 ; N.A. for 61. (ii) Sandy loam. (iii) 8.7.60/10.8.60 ; 13.7.61/31.8.61. (iv) (a) 2 puddlings and ploughings. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) BCP—1. (vii) Irrigated. (viii) 2 hand weedings, working of push hoe at fortnightly intervals upto short blade stage. (ix) 144 cm ; 84 cm. (x) 16.1.61 ; 27.1.62.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S: N_1=34 and N_2=67 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_1=34 and P_2=67 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot : K_0=0, K_1=34 and K_2=67 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 9·1 m.×2·7 m. for 60; 9·1 m.×3·1 m. for 61. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Bug and rice Stem borer for 60; N.A. for 61. (iii) Yield of grain. (iv) (a) 1960—61. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 2935 Kg/ha. (ii) 358·3 Kg/ha. (based on 53 d.f. made up of Treatments×years interaction and pooled error). (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	K_0	K_1	K_2	P_1	P_2	Mean
N_1	3070	3112	2983	3090	3020	3055
N_2	2889	2794	2763	2894	2737	2815
Mean	2980	2953	2873	2992	2878	2935
P_1	3056	3048	2872			
P_2	2902	2858	2874			

C.D. for N marginal means=168·8 Kg/ha.

Individual results :

Treatments	N_1	N_2	Sig.	P_1	P_2	Sig.	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
Years												
1960	2360	2073	N.S.	2288	2145	N.S.	2297	2252	2101	N.S.	2216	405
1961	3750	3558	N.S.	3696	3612	N.S.	3662	3655	3645	N.S.	3654	319
Pooled	3055	2815	**	2992	2878	N.S.	2980	2953	2873	N.S.	2935	358

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(165).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To find out the best manurial combination which will give higher yields.

1. BASAL CONDITIONS :

(1) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Clay loams. (iii) 26.5.61/29.6.61. (iv) Puddling with country plough, trimming of bunds and digging of corners. (b) Transplanting. (c) 49 Kg/ha (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) PLA-2. (vii) Irrigated. (viii) Hand weeding. (ix) 115 cms (x) 27.12.61.

2. TREATMENTS :

All combinations of (1), (2) and (3)+Control :

(1) 2 levels of N as C/A/N : N_1=16·8 and N_2=33·6 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_1=16·8 and P_2=33·6 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

Fertilizers were applied in single dose as basal dressing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 8·0 m.×3·4 m. (b) 7·6 m.×3·1 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, height measurements and grain yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1110 Kg/ha. (ii) 208·7 Kg/ha. (iii) Main effect of K, 'control. vs. others' are highly significant. (iv) Av. yield of grain in Kg/ha.

Control mean=815 Kg/ha.

	K_0	K_1	K_2	P_1	P_2	Mean
N_1	926	1114	1246	1108	1083	1095
N_2	1098	1134	1293	1076	1274	1175
Mean	1012	1124	1270	1092	1178	1135
P_1	879	1170	1228			
P_2	1145	1078	1311			

C.D. for K marginal means =149·8 Kg/ha.
C.D. for 'control vs. others' =219·4 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(46), 62(176), 63(177).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62; As per treatments for others. (ii) Clay loam. (iii) 7.1.1961/22.2.1961; N.A., 11.1.1963/19.2.1963. (iv) (a) 2 to 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. for 61; 49 Kg/ha. for others. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) PLA—2 for 62; PLA-1 for others. (vii) Irrigated. (viii) 1 to 2 hand weedings. (ix) 7 cm., 10 cm., 1 cm. (x) 4.5.1961; 14.5.1962; 5.5.1963.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as C/A/N : N_1=16·8 and N_2=33·6 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_1=16·8 and P_2=33·6 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot.: K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

Besides the above combinations a control plot was included for 62 and 63.

3. DESIGN :

(i) R.B.D. (ii) (a) 12 for 61; 13 for others. (b) N.A. (iii) 4. (iv) (a) 9·5 m.×3·4 m. for 61; 9.5 m.×3·3 m. for others. (b) 9·1 m.×3·1 m. (v) 15 cm.×15 cm. for 61; 15 cm.×10 cm. for others. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961-1963 (modified in 1962). (b) No. (c) As under. 5. Results. (v) N.A. (vi) Drought conditions prevailed at the fog end of the crop season for 61. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 3043 Kg/ha. (ii) 312·4 Kg/ha. (based on 81 d.f. made up of pooled error and various components of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/hg.

Control mean=2891 Kg/ha.

	K_0	K_1	K_2	P_1	P_2	Mean
N_1	3089	2984	2942	3032	2978	3005
N_2	3073	3172	2998	3050	3112	3081
Mean	3081	3078	2970	3041	3045	3043
P_1	3046	3039	3039			
P_2	3116	3117	2901			

Individual results

Treatments	K_0	K_1	K_2	Sig.	N_1	N_2	Sig.	P_1	P_2	Sig.	G.M.	S.E./plot
Years												
1961	2228	2600	2366	N.S.	2306	2490	N.S.	2382	2413	N.S.	2398	497·3
1962	2426	2428	2264	N.S.	2334	2411	N.S.	2380	2365	N.S.	2355	289·5
1963	3737	3728	3676	N.S.	3676	3752	N.S.	3703	3724	N.S.	3711	316·6
Pooled	3081	3078	2970	N.S.	3005	3081	N.S.	3041	3045	N.S.	3043	312.4

Crop :- Paddy (*Dalwa*). **Ref :- A.P. 60(2).**

Site :- Rice. Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 112 Kg/ha. of Super+56 Kg/ha. of C/A/N. (ii) Clay. (iii) 2.1.60/16.2.60. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) N.A. (e) 2. (v) Nil. (vi) PLA-1 (early). (vii) Irrigated. (viii) Weeding. (ix) 4·4 cm. (x) 10.5.60.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N_1=50·6 and N_2=67·3 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_1=50·6 and P_2=67·3 Kg/ha.

Sub-plot treatments :

3 levels of K_2O : K_0=0, K_1=33·6 and K_2=67·3 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 3·1 m.×6·1 m. (b) 2·7 m.×5·8 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) The crop was severely attacked by Blast. Control measures were taken. (iii) Tiller counts and yield of grain. (iv) (a) 1960-only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 635 Kg/ha. (ii) (a) 315·0 Kg/ha. (b) 171·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	K_0	K_1	K_2	P_0	P_1	Mean
N_1	718	642	629	624	702	663
N_2	555	657	606	598	614	606
Mean	637	650	618	611	658	635
P_0	649	614	570			
P_1	624	685	665			

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(189).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To find out the best manurial combination which will give higher yields.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 56 Kg/ha. of C/A/N and 112 Kg/ha. of Super. (ii) Clay loams. (iii) 14.6.60/14.7.60. (iv) (a) Thorough puddling with country plough, weeding and levelling. (c) 33·6 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) PLA-2. (vii) Irrigated. (viii) Hand weeding twice. (ix) 117·5 cm. (x) 29.12.60.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S: N_1=16·8 and N_2=33·6 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

Fertilizers were applied by soil application at planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 6·1$_4$ m.×4·6 m. (b) 5·8 m.×4·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Low yields due to flood damage. (ii) Nil. (iii) Tiller counts, height measurements and grain yield. (iv) (a) 1960—61. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2372 Kg/ha. (ii) 70·7 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	K_0	K_1	K_2	P_0	P_1	Mean
N_1	2567	2065	2349	2389	2265	2327
N_2	2191	2271	2790	2478	2357	2417
Mean	2379	2168	2570	2434	2311	2372
P_0	2556	2315	2430			
P_1	2203	2021	2710			

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(96).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. (ii) Clay loams. (iii) 15.1.64/16.2.64. (iv) 3 puddlings with country plough, removing of weeds, spreading of clods, trimming of bunds and digging of corners. (b) Transplanting. (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) PLA—1. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 1.5.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=16·8 and N_2=33·6 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

N, P and K applied at planting.

3. DESIGN :

(i) 3^3 Confd. (NPK confd). (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 1/454·8 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1962 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2426 Kg/ha. (ii) 252·3 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	2352	2493	2530	2441	2491	2446	2459
N_1	2283	2446	2347	2427	2362	2288	2359
N_2	2560	2461	2362	2439	2444	2503	2462
Mean	2398	2467	2413	2436	2432	2412	2426
K_0	2392	2577	2388				
K_1	2399	2486	2412				
K_2	2407	2343	2488				

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(243), 64(174).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'M'.**

Object :—To classify strains as ear number and ear weight.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. for 62 ; As per treatments for 64. (ii) Clay loams. (iii) 15.5.62/28.6.62 ; 16.5.64/4.7.64. (iv) (a) Puddling with Country plough. (b) Transplanting. (c) 49·4 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L. 33·6 Kg/ha. of P_2O_5 as Super and 67·3 Kg/ha. Pot. Sul. as basal dressing for 62 ; 38·6 Kg/ha. of P_2O_5 as Super+67·2 Kg/ha. of K_2O Mur. Pot. for 64. (vi) PLA—2. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. for 62 ; 82 cm. for 64. (x) N.A.for 62 ; 25, 26.12.64 for 64.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as C/A/N : T_1=½ at planting+½ one month after planting, T_2= Full dose in single dose one month after planting and T_3=Full dose of N in single dose one month before flowering.

3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. for 62 ; 9·8 m.×5·5 m. for 64. (iii) 8. (iv) (a) 1·8 m.×8·1 m. for 62 ; 9·8 m.×1·8 m. for 64. (b) 1·5 m.×7·7 m. for 62 ; 9·4 m.×1·5 m. for 64. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield for 62 ; Tiller counts, height measurements, and grain yield for 64. (iv) (a) 1962—64 (Expt. for 1963—N.A.). (b) No. (c) As under 5. Results. (v) N.A. (vi) Flood in August, Oct. 1963 ; sudden and unprecedent flood in collair. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1547 Kg/ha. (ii) 887·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatments	T_1	T_2	T_3
Av. yield	1693	1405	1544

Individual results

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	2084	1646	1498	N.S.	1743	460·0
1964	1302	1164	1589	N.S.	1352	365·5
Pooled	1693	1405	1544	N.S.	1547	887·1

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(72), 61(71).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'M'.**

Object :—To find out the optimum dose of N and P for Paddy crop.

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow—Paddy for 60, 61. (b) Fallow for 60, 61. (c) Nil. (ii) Clay loams. (iii) 20.6.60/10.8.60 to 12.8.60 ; 16.6.61/14, 15.8.61. (iv) (a) Puddling thrice, levelling and trimming of bunds. (b) Transplanting. (c) 48 Kg/ha. (d) 20 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) BAM—3. (vii) Irrigated. (viii) Push hoeing, weeding and rouging. (ix) 86 cm. ; 69 cm. (x) 12.12.60 ; 3.12.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N : N_0=No N, N_1 =22·4 Kg/ha. of N at planting, N_2=22·4 Kg/ha. of N in two doses, ½ at planting and ½ one month after planting, N_3=44·8 Kg/ha. of N at planting and N_4=44·8 Kg/ha. of N in two doses, ½ at planting and ½ one month after planting.

(2) 3 levels of P_2O_5 : P_0=O, P_1=22·4 and P_2=44·8 Kg/ha.

N and P_2O_5 as A/S and Super were applied respectively.

3. DESIGN·

(i) Fact. in R.B.D. (ii) (a) 15. (b) 60 m.×20 m. (iii) 4 (iv) (a) N.A. (b) 8·8 m.×7·4m. (v) N.A. (vi) Yes.

4. GENERAL :

(ii) Normal. (ii) Nil for 61 ; Dusting of BHC. 10% once for 60. (iii) Height measurements, tiller counts, yield of grain and fodder. (iv) (a) 1960—61. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 2816 Kg/ha. (ii) 163·9 Kg/ha. (based on 98 d.f. made up of Treatments×years interaction+Pooled error). (iii) Main effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	2447	2929	3034	2999	3033	2888
P_1	2500	2457	2709	2780	3012	2692
P_2	2980	2756	2910	2766	2922	2867
Mean	2642	2714	2884	2848	2989	2816

C.D. for N marginal means =93·8 Kg/ga.
C.D. for P marginal means =72·5 Kg/ha.
C.D. for the body of N×P table=82·0 Kg/ha.

Individual results.

Treatments	N_0	N_1	N_2	N_3	N_4	Sig.	P_0	P_1	P_2	Sig.	G.M.	S.E./ plot
Years												
1960	2863	2964	3072	3058	3218	**	3087	2919	3099	**	3035	179·0
1961	2421	2464	2696	2639	2760	**	2689	2464	2635	**	2596	148·0
Poolee	2642	2714	2884	2848	2989	**	2888	2692	2867	**	2816	163·9

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(30).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'M'.**

Object :—To find out the most renumerative manurial schedule for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Pulses—Paddy. (b) Pulses. (c) Nil. (ii) Clay loam. (iii) 22.6.65/19.7.65. (iv) (a) 3 Puddlings with country plough and levelling with levelling board. (b) Transplanting. (c) 35 Kg/ha. (d) 20 cm.×15 cm. (e) 2 to 3. (v) 2500 Kg/ha. of G.L. of Glyrecedia. (vi) BAM—3 (late). (vii) Irrigated. (viii) Gap filling, working with push hoe once and 1 hand weeding. (ix) 81 cm. (x) 9.12.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

((1) 3 levels of N : N_0=0, N_1=67·2 and N_2=134·5 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

Full dose of P_2O_5 ; K_2O and 1/4 dose of N as Urea were applied as basal dressing by incorporating in the puddle on 8.7.65, 5/12 dose os N as A/S was applied one month after planting and 4/12 dose of N as A/S was applied one month before flowering.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 3 blocks/replication and 9 plots/block. (b) 56·4 m.×6·0 m. (iii) 2. (iv) (a) and (b) 6·0 m.×6·0 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin and Copson were sprayed as preventive measure. (iii) Height of plants, tiller counts and grain yield. (iv) (a) 1965—contd. (b) Yes. (c) Nil. (v) N.A. (vi) Rainfall was not properly distributed during the months of June and Nov. 65. (vii) Nil.

5. RESULTS

(i) 2923 Kg/ha. (ii) 495·6 Kg/ha. (iii) Main effect of N is highly significant. N×P interaction is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	4130	3176	3669	3676	3686	3613	3658
N_1	2686	2712	3076	2770	3025	2680	2825
N_2	2149	2441	2265	2269	2407	2178	2285
Mean	2988	2776	3003	2905	3039	2824	2923
K_0	2818	2844	3053				
K_1	2928	2928	3263				
K_2	3219	2557	2694				

C.D. for N marginal means=342·6 Kg/ha.

C.D. for body of N×P table=593·8 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 61(2), 62(2), 64(1).**

Site :- State Seed Farm, Rallapadu. **Type :- 'M'.**

Object :—To study the effect of different levels, sources and times of application of P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments for 62 ; Nil for others. (ii) Red soil. (iii) 9.10.61 ; 29.9.62 ; 10.10. 64. (iv) (a) Puddlings. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) 33·6 Kg/ha. of N at puddling+16·8 Kg/ha. of N one month after planting for 64 and Nil for others. (vi) BCP—2 (late). (vii) Irrigated. (viii) Weeding. (ix) 107 cm., 50 cm., 93 cm. (x) 10.1.62 ; 30.1.63 ; 5.2.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control in each block.

(1) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·2 Kg/ha.

(2) 4 soureces of P_2O_5 : S_1=Super, S_2=Mono-Ammo. Phos., S_3=Nitro Phos (O.D.D.A.) and S_4=Rock Phos.

(3) 2 times of application : T_1=Full dose at puddling and T_2=Half dose at puddling+half dose one month after planting.

Nitrogen contents of the compound fertilizers were adjusted.

3. DESIGN :

(i) $4\times2^2+2$ confd. (ii) (a) 9 plots/block and 2 blocks/replication (b) N.A. (iii) 3. (iv) 1/228·7 Kg/ha. (b) 1/247 ha. (v) one row all round (vi) Yes.

4. GENERAL :

(i) Normal. Lodging in the middle of December for 62. (ii) Endrin sprayed as precautionary measure for 62. Incidence of Blast for others for which control measures were taken. (iii) Brometric data and yield of grain. (iv) (a) 1961—64 (Not conducted in 1963). (b) Yes. (c) As under 5. Results. (v) Samalkot and Yemmiganur. (vi) Heavy rains during October for 62. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled Results

(i) 1768 Kg/ha. (ii) 611·6 Kg/ha. (based on 22 d.f. made up of various components of Treatments×years interaction. (iii) Main effect of S and control vs. others are significant. (iv) Av. yield of grain in Kg/ha.

Control=1277 Kg/ha

	S_1	S_2	S_3	S_4	T_1	T_2	Mean
P_1	1851	2050	1744	1432	1758	1780	1769
P_2	2016	2081	2012	1446	1925	1853	1889
Mean	1934	2066	1878	1439	1841	1817	1829
T_1	2012	2067	1929	1357			
T_2	1856	2064	1827	1521			

C.D. for S marginal means=299·1 Kg/ha.

C.D. for control mean and mean of others=396·8 Kg/ha.

Individual results

Treatments	P_1	P_2	Sig.	S_1	S_2	S_3	S_4	Sig.	T_1	T_2
Years										
1961	1988	2250	N.S.	2405	2504	2325	1243	**	2155	2083
1962	2049	2129	N.S.	2042	2403	2067	1843	**	2086	2092
1964	1271	1288	N.S.	1355	1290	1243	1231	N.S.	1283	1276
Pooled	1769	1889	N.S.	1934	2066	1878	1439	*	1841	1817

Sig.	Control	Sig.	G.M.	S.E./plot.
N.S.	1191	**	2016	422.0
N.S.	1441	**	2017	354 0
N.S.	1198	N.S.	1271	218.0
N.S.	1277	*	1768	611.6

Crop :- Paddy (*Abi*). **Ref :- A.P. 61(1), 62(1), 64(13).**

Site :- State Seed Farm, Rallapadu. **Type :- 'M'.**

Object :—To study the effect of different sources of Phosphate fertilizers with different soil amendments on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil for 61 ; As per treatments for others. (ii) Red soil. (iii) N.A./8.10.1961 ; N.A./28.9.1962 ; N.A./9.10.1064. (iv) (a) Puddlings. (b) Transplanting. (c) N.A. (d) 20 cm.×10. cm. (e) 2. (v) Nil. (vi) BCP—2 (late). (vii) Irrigated. (viii) Weeding. (ix) 107 cm. ; 50 cm., 93 cm. (x) 6.2.1962 ; 31.1.1963 ; 5.2.1965.

2. TREATMENTS :

Main-plot treatments :

4 sources of P : S_1=Super, S_2=Mono-Ammo. Phos.; S_3=Nitro—Phos. and S_4=Rock Phos.

Sub-plot treatments :

4 soil amendments : T_0=Control (No amendment), T_1=1121 Kg/ha. of G.L., T_2=1121 Kg/ha. of F.Y.M. and T_3=Phosphobacterin.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 Main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 1/228·7 ha. (b) 1/247 ha. (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Normal. Lodging in the middle of December for 62. (ii) Endrin sprayed as precautionary measure for 62. Incidence of Blast for others for which control measures were taken. (iii) Grain yield. (iv) (a) 1961—1964 (Not conducted in 1963). (b) Yes. (c) Nil. (v) Samalkot and Yemmiganur. (vi) Heavy ains in the month of December for 62 and 64. (vii) Sub-plot error Variances are heterogeneous and hence the results of individual years are presented.

5. RESULTS :

61(1)

(i) 2367 Kg/ha. (ii) (a) 673·0 Kg/ha. (b) 465·0 Kg/ha. (iii) Main effects of S and T are highly significant. (vi) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2154	2430	2316	1591	2123
T_1	2525	3153	2257	2135	2517
T_2	2653	2847	2423	2669	2648
T_3	2464	2570	2255	1429	2179
Mean	2449	2750	2313	1956	2367

C.D. for comparison of S marginal means=414·1 Kg/ha.
C.D. for comparison of T marginal means=305·6 Kg/ha.

62(1)

(i) 2319 Kg/ha. (ii) (a) 492·0 Kg/ha. (b) 387·0 Kg/ha. (iii) Main effects of S and T are significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2510	2417	2197	1962	2272
T_1	2985	2656	2286	2203	2533
T_2	2183	2399	2052	2179	2203
T_3	2446	2378	2392	1875	2268
Mean	2526	2463	2232	2055	2319

C.D. for comparison of S marginal means=302·6 Kg/ha.
C.D. for comparison of T marginal means=223·4 Kg/ha.

64(13)

(i) 1267 Kg/ha. (ii) (a) 297·0 Kg/ha. (b) 241·0 Kg/ha. (iii) None of the effects is significant (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2510	1231	1215	1120	1199
T_1	1244	1589	1153	1330	1329
T_2	1223	1301	1326	1293	1286
T_3	1231	1326	1203	1264	1256
Mean	1232	1362	1224	1252	1267

Crop : Paddy (*Kharif*). **Ref :- A.P. 61(142), 62(162) 63,(158).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To compare O.D.D.A; P.E.C.—Nitro-Phosphates with A/S and Super on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) N.A./21.7.1961 ; 20.6.1962/25, 29.7.1962; N.A./19, 20.7.1963. (iv) (a) 2 ploughings+2 to 3 puddlings. (b) Transplanting. (c) 40 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 94 cm., 87 cm., 93 cm. (x) 11.10.1961 ; 16 to 18.10.1962 ; 30.9.1963 and 2.10.1963.

2. TREATMENTS :

All combinations of (1), (2) and (3)+4 extra treatments in each block.

(1) 3 sources of fertilizers : P_1=Single Super, P_2=O.D.D.A. (20-20-0) and P_3=P.E.C. (16-14-0).

(2) 3 levels of fertilizers : L_1=13·4 Kg/ha. of N+11·8 Kg/ha. P_2O_5, of L_2=26·9 Kg/ha. of N+23·5 Kg/ha. of P_2O_5 and L_3=53·8 Kg/ha. of N+47·1 Kg/ha. of P_2O_5

(3) 3 methods of application : M_1=Broadcasting, M_2=6·5 cm. below seed and M_3=Pellet application.

Extra treatments : 4 levels of N as A/S : N_0=0, N_1=13·4, N_2=26·7 and N_3=53·8 Kg/ha. Half the dose of N and full dose of P_2O_5 were applied at planting. The other half dose of N was applied one month after planting.

3. DESIGN :

(i) 3^3 confd. (W and X components were confounded). (ii) (a) 13 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·2 m.×5·5 m. (b) 8·3 m.×4·9 m. (v) 45 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Stem borer and Gall fly for 61 for which Endrin was sprayed. No incidence for others but Endrin was sprayed for 62. (iii) Grain yield. (iv) (a) 196I—1963. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS:

61(142)

(i) 664 Kg/ha. (ii) 218·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

N_0=640, N_1=565, N_2=622, N_3=585

	P_1	P_2	P_3	M_1	M_2	M_3	Mean
L_1	565	697	584	716	509	621	615
L_2	753	753	565	659	640	772	690
L_3	810	829	659	735	734	829	766
Mean	709	760	603	703	628	741	691
M_1	716	810	866				
M_2	546	640	829				
M_3	866	697	527				

62(162)

(i) 953 Kg/ha. (ii) 127·0 Kg/ha. (iii) Main effect of N is significant and 'N vs. others' is highly significant. (iv) Av. yield of grain in Kg/ha.

N_0=789, N_1=810, N_2=893, N_3=1017

	P_1	P_2	P_3	M_1	M_2	M_3	Mean
L_1	831	955	955	979	952	810	914
L_2	1120	955	955	1037	1017	976	1010
L_3	1016	1017	1080	1078	1080	955	1038
Mean	989	976	997	1031	1016	914	987
M_1	953	1080	939				
M_2	1073	979	868				
M_3	939	997	934				

C.D. for comparison of two N means=147·9 Kg/ha.

63(158)

(i) 471 Kg/ha. (ii) 80·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

N_0=436, N_1=436, N_2=457, N_3=457

	P_1	P_2	P_3	M_1	M_2	M_3	Mean
P_1	415	498	498	436	477	498	470
P_2	477	457	498	477	498	457	477
P_3	602	415	469	448	519	519	495
Mean	498	457	488	454	494	491	481
M_1	477	456	428				
M_2	519	457	518				
M_3	498	457	519				

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(158), 63(149).**

Site :- Reg. Agri. Res. Stn., Ruduur. **Type :- 'M'**

Object :—To ascertain the feasilbility of introducing G.M. crop in between two Paddy cropping seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—paddy. (b) Paddy. (c) As per treatments. (ii) *Regur*. (iii) 22.5.1962/4, 5.7.1962 ; N.A./26, 27.6.1963. (iv) (a) 3 ploughings+puddling. (b) Japanese method. (c) 37 Kg/ha. (d) 25 cm.×20 cm. (e) 2 to 4. (v) 67·2 Kg/ha. of N as A/S. (vi) RDR—4 (late). (vii) Irrigated. (viii) 1 to 2 hand weedings+working weeder. (ix) 118 cm., 115 cm. (x) 21 to 27.11.1962 ; 22 11.1963.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 types of G.M. crops: M_1=*Dhaincha*, M_2=*Sunhemp* and M_3=*Sesbania*.

(2) 3 dates of sowing of G.M. crops : D_1=A week before Paddy harvest, D_2=At Paddy harvest and D_3=A week after Paddy harvest.

(3) 2 methods of application of 33·6 Kg/ha. of P_2O_5 as Super: P_1=To G.M. crops and P_2=To Paddy crop.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. Lodging was observed in some plots. (ii) No incidence. spraying of Endrin. (iii) Grain yield. (iv) (a) 1962—1964. (1964. is of different season). (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

62(158)

(i) 4553 Kg/ha. (ii) 337·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	P_1	P_2	Mean
M_1	4403	4618	4465	4413	4576	4495
M_2	4433	4710	4465	4473	4596	4535
M_3	4710	4618	4557	4557	4700	4628
Mean	4515	4649	4496	4481	4624	4553
P_1	4433	4557	4453			
P_2	4596	4739	4537			

63(149)

(i) 3209 Kg/ha. (ii) 701·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	P_1	P_2	Mean
M_1	3140	3387	2770	3140	3058	3099
M_2	3756	3048	3079	3448	3140	3294
M_3	3202	3140	3356	3140	3325	3233
Mean	3366	3192	3068	3243	3174	3209
P_1	3510	3222	2996			
P_2	3222	3161	3140			

Crop :- Paddy (*Rabi*). **Ref :- A.P. 62(157), 63(148), 64(149).**

Site :- Reg. Agri. Res. Stn, Rudrur. **Type :- 'M'.**

Object :— To ascertain the feasibility of introducing G.M. crop in between two Paddy cropping seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) *Regur*. (iii) N.A./10, 11.2.196 2 ; N.A./12.2 1963 ; N.A./23, 24.1.1964. (iv) (a) 2 to 3 ploughings. (b) Japanese method. (c) 37 Kg/ha. (d) 25 cm.×20 cm. (e) 2 to 4. (v) 50·4 Kg/ha. of N as A/S. (iv) RDR—7 (early). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 16 cm; 5 cm; 2 cm. (x) 16, 18.5.1962 ; 10, 13.5.1963 ; 22, 25.4.1964.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 types of G.M. crops : M_1=*Dhaincha*, M_2=*Sunhemp* and M_3=*Sesbania*.

(2) 3 dates of sowing of G.M. crop : D_1=A week before Paddy harvest, D_2=At Paddy harvest and D_3=A week after Paddy harvest.

(3) 2 methods of application of 33·6 Kg/ha. of P_2O_5 as Super : P_1=To G.M. crops and P_2=To Paddy crop.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence. Endrin was sprayed for 63 and 64. (iii) Grain yield. (iv) (a)1962—1964. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

62(157)

(i) 2812 Kg/ha. (ii) 212·0 Kg/ha. (iii) Main effect of P is highly significant and interaction D×P is significant. (iv) Av. yeld of grain in Kg/ha.

	D_1	D_2	D_3	P_1	P_2	Mean
M_1	2832	2894	2864	2669	3057	2863
M_2	2802	2770	2801	2646	2936	2791
M_3	2617	2987	2739	2627	2935	2781
Mean	2750	2884	2801	2647	2976	2812
P_1	2568	2566	2708			
P_2	2832	3202	2894			

C.D. for P marginal means=149·2 Kg/ha.
C.D. for means in the body of D×P table=258·1 Kg/ha.

63(148)

(i) 2053 Kg/ha. (ii) 1320· Kg/ha. (iii) Main effects of M, P and interaction M×D and P×D are significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	P_1	P_2	Mean
M_1	2124	2155	1847	2012	2073	2042
M_2	1940	2124	1876	1970	1991	1980
M_3	2248	2032	2126	2135	2135	2135
Mean	2104	2104	1950	2039	2066	2053
P_1	2217	1991	1909			
P_2	1991	2217	1991			

C.D. for P marginal means =92 8 Kg/ha.
C.D. for M marginal means =113·7 Kg/ha.
C.D. for means in M×D or P×D table=160·8 Kg/ha.

64(149)

(i) 2183 Kg/ha. (ii) 402·1 Kg/ha. (iii) None of the effets is significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	P_1	P_2	Mean
M_0	2448	2309	1847	2196	2207	2201
M_1	1678	2263	2217	2022	2083	2053
M_2	2325	2155	2404	2284	2349	2294
Mean	2150	2242	2155	2155	2210	2183
P_1	2248	2042	2176			
P_2	2053	2443	2135			

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(141), 62(61),63(157).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To compare O.D.D.A. and P.E.C. Nitro—Phosphates with A/S and Super on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67·2 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super for 61 ; As per treatments for others. (ii) Black soil. (iii) 28.1.1961/22, 23.2.1961 ; 15.1.1962/12, 16.2.1962 ; 18.1.1963/2, 115.2.1963. (iv) (a) 1 to 2 ploughings+2 to 3 puddlings. (b) Transplanting. (c) 40 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 1 to 2 hand weedings and running weeder. (ix) 1 cm., 16 cm., 7 cm. (x) 14, 15.5.1961 ; 5.5.1962; 2nd week of May, 1963.

2. TREATMENTS :

All combinations of (1), (2) and (3)+4 extra treatments in each block.

(1) 3 sources of fertilizers : P_1=Single Super, P_2=O.D.D.A (20-20-0) and P_3=P.E.C (16-14-0).

(2) 3 levels of fertilizers : L_1=13·4 Kg/ha. of N+11·8 Kg/ha. of P_2O_5, L_2=26·9 Kg/ha. of N+23·5 Kg/ha. of P_2O_5 and L_3=53·8 Kg/ha. of N+47·1 Kg/ha. of P_2O_5.

(3) 3 methods of application : M_1=Broadcasting, M_2=6·5 cm. below seed and M_3=Pellet application.

Extra treatments : 4 levels of N as A/S : N_0=O, N_1=13·4, N_2=26·7 and N_3=53·8 Kg/ha.

Half the dose of N and full dose of P_2O_5 were applied at planting. The other half dose of N was applied one month after planting.

3. DESIGN :

(i) 3^3 confd. (W and X components are confd.) (ii) (a) 13 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·2m.×5·5 m. (b) 8·3 m.×4·9 m. (v) 45 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Heavy infestation of water weed for 61 which were removed and Endrin sprayed ; Endrin sprayed for Stem borer for others. (iii) Grain yield. (iv) (a) 1961—1963. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 950 Kg/ha. (ii) 244·1 Kg/ha. (168 d.f. made up of pooled error and various components of Treatments×years interaction). (iii) Main effects of N, L, P and interaction L×P are highly significant. (vi) Av. yield of grain in Kg/ha.

N_0=645, N_1=698, N_2=855, N_3=1102.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
P_1	741	1186	1395	1141	1193	988	1107
P_2	741	838	1161	867	903	970	913
P_3	695	739	975	849	778	782	803
Mean	726	921	1177	952	958	913	941
M_1	730	973	1154				
M_2	744	931	1198				
M_3	703	859	1178				

C. D. for L or P or N marginal means=160·3 Kg/ha.
C. D. for means in L×P table=277·6 Kg/ha.

Individual results.

Treatments	P_1	P_2	P_3	Sig.	L_1	L_2	L_3	Sig.
Years 1961	1294	954	866	**	772	998	1344	**
1962	1114	996	838	**	817	989	1142	**
1963	914	789	706	*	588	775	1045	**
Pooled	1107	913	803	**	726	921	1177	**

M_1	M_2	M_3	Sig.	N_0	N_1	N_2	N_3	Sig.	G.M.	S.E./plot
1023	1136	955	N.S.	753	848	1111	1582	*	1049	244
983	983	983	N.S.	664	768	747	1038	**	928	247
851	754	803	N.S.	519	477	706	685	**	740	201
952	958	913	N.S.	645	698	855	1102	—	905	244

Crop :- Paddy (*Tabi*). **Ref :- A. P. 63(267), 64(268), 65(200).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the optimum time for application of N to Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. for 63 ; As per treatments for others. (ii) *Chalka*. (iii) 19.2.63, 19.2.64, 1.3.65. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cms.×15 cms. (e) 2 to 3. (v) 4000 Kg/ha. of G.L. +25 Kg/ha. of P_2O_5 as Super+50 Kg/ha. of K_2O as Mur. Pot. (vi) RDR—4. (vii) Irrigated. (viii) Hand weedings. (ix) N.A. (x) 18.5.63, 2.5 64, and 24.5 65.

2. TREATMENTS :

50 Kg/ha. of N as A/S : T_1=Half dose at puddling before planting and half dose 30 days after planting, T_2=Full dose 30 days after planting. and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N. A. (iii) 8. (iv) (a) 8·5 m.×3·4 m. (b) 7·9 m.×2·8m. (v) 30 cm.×30cm. (vi) Yes.

4. GENERAL :

(i) Satisfactroy. (ii) Heavy incidence of Stem borer, 3 sprays of Endrin. (iii) Grain yield. (iv) (a) 1963–65 (b) Yes. (c) As under 5... Results.. (v) and (vi). Nil. (vii) Error variances are heterogeneous and Treatments×years Interaction is present.

5. RESULTS :

Pooled results.

(i) 1108 Kg/ha. (ii) 743·2 Kg/ha. (based on 4 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (vi) Av. yield of grain in Kg/ha.

Treatmets	T_1	T_2	T_3
Av. yield	1092	1008	1225

Individual results

Treatments	T_1	T_2	T_3	Sig.	G M.	S.E./plot
Year 1963	704	621	1335	**	887	160·3
1964	1547	1351	1267	N.S.	1388	302·6
1965	1025	1054	1071	N.S.	1050	131·8
Pooled	1092	1008	1225	N.S.	1108	743·2

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(136), 62(159), 63(151), 64(151).**

Site :- Reg. Agri. Res. Stn., Rudrur. Type :- 'M'.

Object :—To trace the nutrient uptake in Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy–Paddy. (b) Paddy. (c) N.A. for 61; As per treatments for others. (ii) Black clay. (iii) 27.6.61/16, 17.7.61 ; 20.6.62/20.7.62 ; N.A./14.7.63 ; 8.6.64/8.7.64. (iv) (a) 1 to 2 ploughings and 1 to 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. for 61 ; 37 Kg/ha. for others. (d) 15 cm.×15cm. (e) 2 to 3. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 1 to 3 hand weedings and running weeder. (ix) 85 cm., 127 cm., 93 cm., 63 cm. (x) 5 to 7.10.61 ; 13.10.62 ; 26 to 30.9.63; 2.10 64.

2. TREATMENTS :

All combinations of (1) and (2) + a control Lo (3 plots).

(1) 3 levels of manure : L_1=22·4 Kg/ha. of N+22·4 Kg/ha. of P_2O_5, L_2=44·8 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 and L_3=67·2 Kg/ha. of N+67·2 Kg/ha. of P_2O_5.

(2) 3 methods of application : M_1=Full dose at planting, M_2=N applied ½ at planting+½ after 21 days and full dose of P at planting and M_3=N and P applied ½ at planting and ½ after 21 days.

N applied as A/S and P_2O_5 as Super.

3. DESIGN :

(i) Fact. in R. B. D. (ii) (a) 12. (b) 58·5 m.×18·3 m. (iii) 3. (iv) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961—64. (b) Yes. (c) As under 5. Results. (v)N. A. (vi) Nil. (vii) Errors are heterogeneous and Treatments × years interaction is present.

5. RESULTS:

Pooled results.

(i) 1235 Kg/ha. (ii) 267·1 Kg/ha. based on 24 d.f. made up of various components of Treatments × years interaction).

(iii) Main effect of L alone is highly significant. (iv) Av. yield of grain in Kg/ha.

L_0=589

	L_1	L_2	L_3	Mean
M_1	1107	1522	1828	1486
M_2	964	1503	1818	1428
M_3	1022	1440	1851	1438
Mean	1031	1488	1832	1450

Individual results

Years	M_1	M_2	M_3	Sig.	L_1	L_2	L_3	Sig.
1961	1167	1123	1061	N.S.	813	1204	1334	**
1962	1546	1492	1615	*	1053	1492	2108	**
1963	1232	1149	1204	N.S.	876	1231	1478	**
1964	1998	1950	1871	N.S.	1382	2027	2410	**
Pooled	1486	1428	1438	N.S.	1031	1488	1832	**

Control.	G.M.	S.E./plot
503	964	116.0
588	1310	104.0
493	1020	87.0
773	1648	225.0
589	1235	267.1

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(123), 61(134).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'**

Object :—To study the effect of deoiled cake on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N. A. for 60; As per treatments for 61. (ii) Black clay. (iii) 24.7.60; 25, 26.7.61. (iv) (a) Ploughings and puddlings. (b) Japanese method. (c) 25 Kg/ha. for 60; 37 Kg/ha. for 61. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) RDR—2. (vii) Irrigated. (viii) 2 hand weedings and running the weeder once. (ix) 48 cm., 85 cm. (x) 8.11.60; 2nd week of October, 61.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 3 sources of N at 50·4 Kg/ha. of N : S_1=G. N. C., S_2=A/S and S_3=Deoiled cake.

(2) 2 methods of application of N : M_1=In split doses : ½ at planting+½ one month after planting and M_2=Full dose at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 66·1 m.×13·7 m. (iii) 3. (iv) (a) 9·4 m.×4·6 m. (b) 9·1 m.×4·3 m. (v) 15cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Gallfly and Stem borer to the extent of 10% and 5% respectively for 60 ; No incidence for 61 but Endrin was sprayed. (iii) Grain yield. (iv) (a) 1960—61. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(ii) 2238 Kg/ha. (ii) 286·4 Kg/ha. (based on 30 d.f. made up of pooled error and Treatments×years interaction). (iii) Only 'control *vs.* others' is highly significant. (iv) Av. yield of grain in Kg/ha.

Control=1773

	S_1	S_2	S_3	Mean
M_1	2354	2190	2441	2328
M_2	2344	2286	2274	2301
Mean	2349	2238	2358	2315

C.D. for control *vs.* others=257·9 Kg/ha.

Individual results

Treatments	M_1	M_2	Sig.	S_1	S_2	S_3	Sig.	Control	G.M.	S.E./plot
Years										
1960	1957	1924	N.S.	1947	1840	2034	N.S.	1608	1893	316·0
1961	2700	2678	N.S.	2752	2635	2680	N.S.	1938	2581	244·0
Pooled	2328	2301	N.S.	2349	2238	2358	N.S.	1773	2238	286·4

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(133).**

Site :- Res. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of deoiled cake on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Black clay. (iii) 3.2.61. (iv) (a) Puddling with country plough. (b) Japanese method. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) RDR-2. (vii) Irrigated. (viii) Gap filling and 2 weedings. (ix) 1 cm. (x) 24.5.61.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 60(123) and 61(134) on page 100.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin on 11.4.61. (iii) Tiller counts and yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1370 Kg/ha. (ii) 348·0 Kg/ha. (iii) Control vs others is highly significant. (iv) Av. yield of grain in Kg/ha.

Control=814

	S_1	S_2	S_3	Mean
M_1	1589	1462	1782	1511
M_2	1279	1531	1434	1415
Mean	1434	1346	1608	1463

C.D. for control vs. others =409·5 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(121), 61(130).**

Site :- Reg. Agri. Res. Stn; Rudrur. **Type :- 'M'.**

Object :—To study the effect of Plantomine on the yield of Paddy incorporated with F.Y.M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Experiment on rotational application of P_2O_5 was conducted for 60 ; As per treatments for 61. (ii) Black clay. (iii) 6.7.60/30, 31.7.60 ; 25.6.61/26 to 28.7.61. (iv) (a) 2 ploughings and 2 to 4 puddlings. (b) Japanese method. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) RDR-7 (early). (vii) Irrigated. (viii) 2 hand weedings and running of Japanese weeder. (ix) 46 cm. ; 85 cm. (x) 23 to 25.10.60 ; 16, 17.10.61.

2. TREATMENTS :

7 manurial treatments : T_0=Control, T_1=50·4 Kg/ha. of N as F.Y.M., T_2=50·4 Kg/ha. of N as A/S, T_3=24·6 Kg/ha. of N as F.Y.M., T_4=24·6 Kg/ha. of N as A/S, T_5=24·6 Kg/ha. of N as F.Y.M.+22·4 Kg/ha. of N through Plantomine and T_6=24·6 Kg/ha. of N as A/S+22·4 Kg/ha. of N through Plantomine.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 42·7 m.×14·6 m. (iii) 3. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts and grain yield. (iv) (a) 1960-1961. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) As Error variances are heterogeneous and Treatments×years interaction is absent. Results of individual experiments have been presented under 5. Results.

5. RESULTS :

60(121)

(i) 915 Kg/ha. (ii) 227·1 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	745	857	1452	670	987	782	912

C.D. = 404·0 Kg/ha.

61(130)

(i) 1716 Kg/ha. (ii) 76·9 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1192	1620	2458	1471	1862	1434	1974

C.D. = 136·8 Kg/ha.

———

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(129).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of Plantomine on the yield of Paddy incorporated with F.Y M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black clay. (iii) 28.1.61/23.2.61. (iv) (a) 1 ploughing with country plough ; 4 puddlings with country plough. (b) Japanese method. (c) 37 Kg/ha. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) Nil. (vi) RDR-7 (early). (viii) 2 hand weedings. (ix) 1 cm. (x) 11, 22.5.61.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 60(121) and 61(130) on page 102.

4. GENERAL :

(i) Satisfactory. (ii) Spraying with Endrin against Paddy Stem borer on 7.4.61. (iii) Tiller counts and yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 966 Kg/ha. (ii) 316·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	782	1061	1359	708	857	987	1006

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(152), 65(193).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To trace the up take at N, P and K at different stages of plant growth.

1. BASAL CONDITIONS :

(i) (a) N.A. for 64 ; Paddy-Paddy for 65. (b) Wheat for 64 ; Paddy for 65. (c) 50·4 Kg/ha. of N as A/S+67·0 Kg/ha. of P_2O_5 as Super for 64 ; as per treatments for 65. (ii) Black cotton soil. (iii) 2.6.64/29.7.64 ; N.A./10.7.65. (iv) (a) 2 to 3 ploughings and 1 Puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) Nil. (vi) RDR-4 (late). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 70 cm. ; N.A. (x) 28.11.64 ; 29.11.65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=34 and N_2=67 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=25 and P_2=50 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=17 and K_2=34 Kg/ha.

All manures applied as broadcast. ½ dose of N and full doses of P and K applied on 29.7.1964 and ½ dose of N applied on 28.8.64 for 64. ½ dose of N and full doses of P and K applied on 8.7.65 and ½ dose of N applied on 21.8.65 for 65.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 6·1 m.×9·4 m. (b) 5·8 m.×9·1 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 64 ; Mild attack of Stem borer. 0·04% Endrin sprayed. Symptoms of Blight were noticed. A mixture of Streptocyclin and Capton ware sprayed for 65. (iii) Tiller counts and yield of grain. (iv) (a) 1964-66. (b) Yes. (c) Nil. (v) No. (vi) N.A. for 64 ; Drought for 65. (vii) From Nov. 1965 irrigation was in adequate for 65.

5. RESULTS :

64(152)

(i) 3089 Kg/ha. (ii) 273·0 Kg/ha. (iii) N effect is highly significant. Interaction P×K is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	2541	2872	2817	2651	2715	2864	2743
N_1	3383	3187	3281	3218	3210	3423	3284
N_2	3210	3210	3297	3352	3076	3289	3239
Mean	3045	3090	3132	3074	3000	3192	3089
K_0	3265	2958	2998				
K_1	2801	3163	3037				
K_2	3068	3148	3360				

C.D. for N marginal means =187·8 Kg/ha.
C.D. for body of P×K table =325·3 Kg/ha.

65(193)

(i) 2551 Kg/ha. (ii) 384·5 Ka/ha. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1795	2142	2457	2110	2079	2205	2142
N_1	2614	2614	2740	2551	2645	2771	2645
N_2	2803	3023	2771	2897	2488	3212	2866
Mean	2394	2582	2645	2519	2394	2740	2551
K_0	2362	2457	2740				
K_1	2299	2293	2614				
K_2	2551	3023	2614				

C.D, for N or P marginal means=264·6 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(120), 61(128), 62(154), 63(146), 64(148), 65(190).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the performance of organic manures and fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black clay loam. (iii) 24.5.60/4, 8.7.60 ; N.A./28, 29.6.61 ; 22.5.62/3.7.62 ; 20.5.63/20.6.63 ; N.A./20.6.64 ; N.A./1.7.65. (iv) (a) 1 to 3 ploughings and 1 to 3 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 25 cm.×20 cm. (e) 2 to 3. (v) Nil. (vi) RDR-4(late). (vii) Irrigated. (viii) 2 to 4 weedings. (ix) 76 cm., 111 cm., 127 cm., 132 cm., 70 cm ; N.A. (x) 18, 19.11.60 ; 29.11.61 ; 18 to 20.11.62 ; 28.11.63 ; 13.11.64 ; 26.11.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_1=28·0 Kg/ha.

(2) 5 sources of N at 56·0 Kg/ha. of N : S_0=Control, S_1=F.Y.M., S_2=G.M., S_3=G.N.C. and S_4=A/S.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) 30·5 m.×24·4 m. (iii) 2. (iv) (a) and (b) 12·2 m.×6·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging in some plots for 63 and 64. (ii) Incidence of Stem borer for 62, controlled by spraying Endrin twice ; Attack of leaf tip-drying for 63 ; No incidence for others. (iii) Grain yield. (iv) (a) 1953-contd. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) As the expt. is continued, results of individual years have been presented.

5. RESULTS :

60(120)

(i) 1523 Kg/ha. (ii) 124·0 Kg/ha. (iii) P effect is highly significant. S effect and interaction S×P are significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	183	1587	1648	1343	92	971
P_1	1495	2075	2227	2349	2227	2075
Mean	839	1831	1937	1846	1159	1523

C.D. for P marginal means =125·3 Kg/ha.
C.D. for S marginal means =198·1 Kg/ha.
C.D. for body of table =280·5 Kg/ha.

61(128)

(i) 2233 Kg/ha. (ii) 189·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	549	2624	1922	1922	793	1562
P_1	2014	2990	3235	3204	3082	2905
Mean	1281	2807	2579	2563	1937	2233

C.D. for P marginal means =191·1 Kg/ha.
C.D. for S marginal means =302·2 Kg/ha.
C.D. for body of table = 427·5 Kg/ha.

62(154)

(i) 908 Kg/ha. (ii) 86 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	107	1097	610	290	214	464
P_1	1068	1556	1361	1526	1251	1352
Mean	587	1327	985	908	733	908

C.D. for P marginal means = 87·1 Kg/ha.
C.D. for S marginal means =137·5 Kg/ha.
C.D. for body of table =194·5 Kg/ha.

63(146)

(i) 1667 Kg/ha. (ii) 219·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	269	1749	1277	1606	672	1115
P_1	1683	2422	2286	2824	1883	2220
Mean	976	2086	1782	2215	1278	1667

C.D. for P marginal means =221·4 Kg/ha.
C.D. for S marginal means =350·1 Kg/ha.
C.D. for body of table =495·4 Kg/ha.

64(148)

(i) 2900 Kg/ha. (ii) 382·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	336	3734	2624	2439	555	1938
P_1	3061	3969	3800	4675	3800	3861
Mean	1698	3852	3212	3557	2178	2900

C.D. for P marginal means = 386·3 Kg/ha.
C.D. for S marginal means = 610·9 Kg/ha.
C.D. for body of table = 864·1 Kg/ha.

65(190)

(i) 1746 Kg/ha. (ii) 254·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	185	2622	1244	976	101	1025
P_1	1748	2757	2488	2824	2522	2468
Mean	966	2690	1866	1900	1312	1746

C.D. for P marginal means = 257·0 Kg/ha.
C.D. for S marginal means = 406·2 Kg/ha.
C.D. for body of table = 574·5 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(119), 61(127), 62(153), 63(145), 64(147), 65(189).**

Site :- Reg. Agri. Res. Stn., Rudrur. Type :- 'M'.

Object :—To compare the performance of organic manures and fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black clay loam. (iii) N.A./5.2.60 ; N.A./4.2.61 ; N.A./29.1.62 ; N.A./30.1.63 ; N.A./11.1.64; N.A./30.1.65. (iv) (a) 1 to 2 ploughings and 2 to 3 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 25 cm. × 20 cm. (e) 2 to 3. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 1 to 3 weedings. (ix) 9 cm ; 1 cm ; 26 cm ; 5 cm ; 2 cm ; N.A. (x) 13.5.60 ; 10, 13, 19.5.61 ; 10, 21.5.62 ; 9, 19.5.63 ; 25.4.64; 8.5.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_1=28·0 Kg/ha.

(2) 5 sources of N at 56·0 Kg/ha. of N : S_0=Control, S_1=F.Y.M., S_2=G.M., S_3=G.N.C. and S_4=A/S.

N.B. : Treatments applied before planting.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 10. (b) 30·5 m.×24·4 m. (iii) 2. (iv) (a) and (b) 12·2 m.×6·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence for 60; Endrin sprayed for 61; Attack of Stem borer for others for which Endrin was sprayed thrice for 64 and twice for others. (iii) Yield of grain. (iv) (a) 1953-contd. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) As the expt. is continued, results of individual years have been presented.

5. RESULTS:

60(119)

(i) 1205 Kg/ha. (ii) 241 Kg/ha. (iii) P effect is highly significant. S effect and interaction P×S are significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	198	1007	1129	946	70	670
P_1	1282	1190	2258	2014	1953	1739
Mean	740	1099	1693	1480	1011	1205

C.D. for P marginal means =243·8 Kg/ha.
C.D. for S marginal means =385·4 Kg/ha.
C.D. for body of table =545·1 Kg/ha.

61(127)

(i) 1263 Kg/ha. (ii) 161·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	152	1343	1404	1282	183	873
P_1	854	1159	2258	2136	1861	1653
Mean	503	1251	1831	1709	1022	1263

C.D. for P marginal means =162·8 Kg/ha.
C.D. for S marginal means =257·4 Kg/ha.
C.D. for body of table =364·2 Kg/ha.

62(153)

(i) 726 Kg/ha. (ii) 46 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	122	702	641	641	183	458
P_1	610	885	1099	1159	1221	995
Mean	366	793	870	900	702	726

C.D. for P marginal means =46·6 Kg/ha.
C.D. for S marginal means =73·5 Kg/ha.
C.D. for body of table =104·0 Kg/ha.

63(145)

(i) 1100 Kg/ha. (ii) 174 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	135	1009	673	807	101	545
P_1	1144	1278	2220	2018	1615	1655
Means	640	1144	1446	1412	858	1100

C.D. for P marginal means =176·0 Kg/ha.
C.D. for S marginal means =278·2 Kg/ha.
C.D. for body of table =393·6 Kg/ha.

64(147)

(i) 1230 Kg/ha. (ii) 333·0 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	352	1144	1144	975	303	784
P_1	875	1480	1951	2018	2052	1675
Mean	614	1312	1548	1496	1178	1230

C.D. for P marginal means =336·8 Kg/ha.
C.D. for S marginal means =532·5 Kg/ha.
C.D. for body of table =753·2 Kg/ha.

65(189)

(i) 2326 Kg/ha. (ii) 155.7 Kg/ha. (iii) All effects are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	235	1631	420	740	134	632
P_1	1193	1765	1714	1933	1866	1694
Mean	714	1698	1067	1336	1000	2326

C.D. for P marginal means =157·4 Kg/ha.
C.D. for S marginal means =249·0 Kg/ha.
C.D. of body of table =357·0 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(122), 61(132).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of Plantomine on the yield of Paddy incorporated with G.M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Experiment on roatational application of P_2O_5 was conducted for 60; As per treatmen s for 61. (ii) Black clay. (iii) 7.7.60./30, 31.7.60; 25.6.61/26 to 28.7.61. (iv) (a) 2 to 3 plc ughings and 2 to 4 puddlings. (b) Japanese method. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) RDR-7 (early). vii) Irrigated. (viii) 2 hand weedings and running of Japanese weeder. (ix) 46 cm., 85 cm (x) 24 10.60; 16, 17.10.61.

2. TREATMENTS :

7 manurial treatments : T_0=Control, T_1=50·4 Kg/ha. of N as G.M., T_2=50·4 Kg/ha. of N as A/s, T_3=24·6 Kg/ha. of N as G.M., T_4=24·6 Kg/ha. of N as A/S, T_5=24·6 Kg/ha. of N as G.M.+22·4 Kg/ha. of N through Plantomine and T_6=24·6 Kg/ha. of N as A/S +22·4 Kg/ha. of N through Plantomine.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) 42·7 m.×14·6 m. (iii) 3. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960–61. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. R SULTS:

Pooled results

1312 Kg/ha. (ii) 241·8 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	968	1527	1611	1034	1406	1285	1350

C.D.=591.7 Kg/ha.

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig.	G.M.	S.E./plot
Years										
1960	670	950	1136	689	950	894	1024	*	902	144·7
1961	1266	2104	2086	1378	1862	1676	1676	**	1721	76·3
Pooled	968	1527	1611	1034	1406	1285	1350	*	1312	241·8

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(131).**
Site : Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of Plantomine on the yield of Paddy incorporated in the G.M. and A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Black clay. (iii) 28.1.61/23.2.61. (iv) (a) 1 ploughling and 3 puddlings. (b) Japanese method. (c) 37 Kg/ha. (d) 15 cm ×15 cm. (e) 2 to 3, (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 hand weedings. (ix) 1 cm. (x) 11, 22.5.61.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 60(122) and 61(132) on page 109.

4. GENERAL :

(i) Satisfactory. (ii) Spraying with Endrin against Paddy Stem borer on 7.4.61. (iii) Tiller counts, flowering data and yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 819 Kg/ha. (ii) 337·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	540	894	894	614	931	931	931

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(126).**

Site :- Reg. Agri. Res Stn., Rudrur. **Type :- 'M'.**

Object :—To study the residual effects of deep placement of manures.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 26.6.60/10.7.60. (iv) (a) 1 ploughing and 2 puddlings. (b) Japanese method. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) HR-19 (medium). (vii) Irrigated. (viii) Hand weeding. (ix) 62 cm. (x) 26.10.60.

2. TREATMENTS :

15 manurial treatments : T_1=Control (4 plots), T_2=50·0 Kg/ha. of N in puddle, T_3=50·0 Kg/ha. of N smeared, T_4=24·4 Kg/ha. of N smeared+25·8 Kg/ha. of N one week after planting, T_5=24·6 Kg/ha. of N in puddle+25·8 Kg/ha. of N one week after planting, T_6=33·6 Kg/ha. of P_2O_5 in puddle, T_7=33·6 Kg/ha. of P_2O_5 smeared, $T_8=T_2+T_6$, $T_9=T_2+7_7$, $T_{10}=T_3+T_6$, $T_{11}=T_3+T_7$, $T_{12}=T_4+T_6$, $T_{13}=T_4+T_7$, $T_{14}=T_5+T_6$ and $T_{15}=T_5+T_7$.

N as A/S, P_2O_5 as Super; Treatments applied to the Paddy crop in Rabi 1959-60.

3. DESIGN :

(i) R.B.D. (ii) 18 (4 control plots in each replication). (iii) 2. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 908 Kg/ha. (ii) 690 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	517	559	503	754	670	670	1145	782

Treatment	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	T_{15}
Av. yield	587	1006	810	782	698	894	782

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(127).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the rotational application of Phosphoric acid to Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 28, 29.1.60. (iv) (a) 3 wet ploughings (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) Nil. (vi) RDR-7 (medium). (vii) Irrigated. (viii) Gap filling, weeding. (ix) 8 cm. (x) 5, 6.5.60.

2. TREATMENTS :

12 manurial treatments : T_0=No manure (3 plots), T_1=42 Kg/ha. of P_2O_5 every season, T_2=56 Kg/ha. of N every season, T_3=224 Kg/ha. of P_2O_5 during 1st season and 56 Kg/ha. of N+14 Kg/ha. of P_2O_5 every season, T_4=112 Kg/ha. of P_2O_5 during 1st season and 56 Kg/ha. of N+28 Kg/ha. of P_2O_5 every season, T_5=56 Kg/ha. of N+42 Kg/ha. of P_2O_5 every season, T_6=224 Kg/ha. of P_2O_5 initially and 56 Kg/ha. of N+28 Kg/ha. of P_2O_5 every season, T_7=112 Kg/ha. of P_2O_5 initially and 56 Kg/ha. of N+42 Kg/ha. of P_2O_5 every year, T_8=56 Kg/ha. of N+56 Kg/ha. of P_2O_5 every season, T_9=224 Kg/ha. of P_2O_5 initially and 56 Kg/ha. of N+42 Kg/ha. of P_2O_5 every season, T_{10}=56 Kg/ha. of N+84 Kg/ha. of P_2O_5 every year and T_{11}=56 Kg/ha. of N+112 Kg/ha. of P_2O_5 every year.

N as A/S, P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) 42·7 m.×29·3 m. (iii) 4. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts and yield of grain. (iv) (a) 1957-60. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1409 Kg/ha (ii) 334 K/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ah.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	544	1324	1308	1355	1755	1570
Treatment	T_6	T_7	T_8	T_9	T_{10}	T_{11}
Av. yield	1740	1709	2109	1478	1786	1955

C.D. for comparison of means excluding control=476·8 Kg/ha.

C.D. for comparison of control with other means=389·3 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(271), 65(186).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the optimum combination of N, P and K.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 64 ; As per trentments for 65. (ii) Black cotton soil. (iii) 2.6.64/2.7.64 ; 25.6.65/25.7.65. (iv) (a) 2 dry ploughings and 2 wet ploughings with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 3 to 4. (v) 1724 Kg/ha. of G.L. of Dhaincha. (vi) MTU-3 (Basangi)-Medium. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 26.10.64 ; 2.11.65.

2. TREATMENTS:

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_1=56, N_2=74 and N_3=93 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_1=56, P_2=74 and P_3=93 Kg/ha.

(3) 2 levels of K_2O as Mur. of Pot. : K_0=0 and K_1=93 Kg/ha.

Super and Mur. of Pot. applied before planting. A/S applied in two split, doses-one at planting and the other one month after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 14·6 m.×6·1 m. (b) 14·0 m.×5·8 m. (v) 30 cm.×15 cm. (vi) Yes,

4. GENERAL :

(i) Satisfactory. (ii) Attack of Paddy Stem borer. (iii) Grain yield. (iv) (a) 1964—66. (b) Yes. (c) Nil. (v) Nil. (vi) Nil for 64, drought for 65. (vii) As the expt. is continued, beyond '65, the results of individual years have been presented.

5. RESULTS:

64(271)

(i) 4200 Kg/ha. (ii) 428·2 Kg/ha. (iii) Main effects of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	K_0	K_1	Mean
N_1	3987	3942	3788	3972	3839	3906
N_2	4155	3984	4308	4195	4103	4149
N_3	4519	4524	4589	4482	4606	4544
Mean	4220	4150	4228	4216	4183	4200
K_0	4319	4053	4278			
K_1	4122	4248	4179			

C.D. for N marginal means=368·8 Kg/ha.

65(186)

(i) 3567 Kg/ha. (ii) 241·7 Kg/ha. (iii) Main effect of N and interaction N×P are highly significant. Main effect of P is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	K_0	K_1	Mean
N_1	3141	3280	3172	3234	3162	3198
N_2	3973	3372	3850	3839	3624	3732
N_3	3342	3819	4158	3819	3726	3772
Mean	3485	3490	3726	3631	3504	3567
K_0	3572	3511	3809			
K_1	3398	3470	3644			

C.D. for N or P marginal means=208·2 Kg/ha.
C.D. for body of N×P table =360·6 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 60(218), 61(252).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To find out the efficacy of C/A/N.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments+34 Kg/ha. of N and 34 Kg/ha. of P_2O_5 to the plots receiving N. (ii) *Chalka*. (iii) 23.5.60/11.7.60 ; N.A. (iv) (a) Dry ploughing followed by wet ploughing. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. for 64; 25 cm.×20 cm. for 65. (e) 2 to 3. (v) Nil. (vi) RDR-4(late) for 64; RDR-7 (early) for 65. (vii) Irrigated. (viii) Hand weeding and rotary weeding. (ix) N.A. (x) 15.11.60 ; N.A.

2. TREATMENTS :

5 times of application of 45 Kg/ha. of N : T_0=Control (No manure), T_1=Full dose after 14 days of planting, $T_2=\frac{1}{2}$ dose after 14th day and $\frac{1}{2}$ dose on 30th day after planting, $T_3=\frac{1}{4}$ dose on 14th day+$\frac{1}{2}$ dose on 30th day+$\frac{1}{4}$ dose 7 days before flowering and $T_4=\frac{1}{2}$ dose as A/S at the time of transplanting+$\frac{1}{2}$ dose as A/S on 30th day after transplanting.

N was applied as C/A/N in treatments T_1, T_2 and T_3. 34 Kg/ha. of P_2O_5 as Super was applied as basal dose to all plots excepting control plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/197·7 ha. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—61. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As the varieties are different, results for individual years have been presented.

5. RESULTS :

60(218)

(i) 2260 Kg/ha. (ii) 228·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2032	2294	2264	2361	2346

61(252)

(i) 983 Kg/ha. (ii) 234·3 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	742	839	1039	1097	1195

C.D.=282·2 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(275), 63(268), 64(269).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of time of application of A/S on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62; 34 Kg/ha. of N+34 Kg/ha. of P_2O_5+4483 Kg/ha. of G.L. for others. (ii) *Chalka*. (iii) June/July. (iv) (a) Dry ploughing followed by wet ploughing with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 34 Kg/ha. of P_2O_5+4483 Kg/ha. of G.L. (vi) RDR-4. (vii) Irrigated. (viii) Hand weeding and rotary weeding. (ix) N.A. (x) 30.11.62 ; 5.12.63 ; 25.11.64.

2. TREATMENTS :

3 times of application of 34 Kg/ha. of N as A/S : T_1=Half dose at Puddling+½ dose 30 days after planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·2 m.×3·0 m. (b) 7·6 m.×2·4 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—64. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) As the error variances are heterogeneous and Treatments×years interaction is absent ; results of individual years have been presented.

5. RESULTS :

62(275)

(i) 3233 Kg/ha. (ii) 298·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3304	3182	3211

63(268)

(i) 1363 Kg/ha. (ii) 499·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	1383	1520	1187

64(298)

(i) 3760 Kg/ha. (ii) 930·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	4023	3235	4023

Crop :- Paddy. **Ref :- A.P. 64(272), 65(187).**

Site :- Reg. Agri. Res. Stn. Rudrur. **Type :- 'M'.**

Object :—To study the effect of Ammonium Phosphate on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 64 and as per treatments for 65. (ii) Black soil. (iii) N.A. (iv) (a) Dry ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 3 to 4. (v) and (vi) N.A. (vii) Irrigated. (vii) Hand weeding and running of paddy weeder. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)+one control.

(1) 3 levels of N and P : L_1=34 Kg/ha. of N+34 Kg/ha. of P_2O_5, L_2=50 Kg/ha. of N+50 Kg/ha. of P_2O_5 and L_3=67 Kg/ha. of N+67 Kg/ha. of P_2O_5.

(2) 3 sources of N and P : P_1=A/S+Super, P_2=Ammo. Phos. and P_3=Nitro—Phosphate(O.D.D.A.).

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/122 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1964—Contd. (b) No. (c) Nil. (v) Nil. (vi) Nil for 64, drought for 65. (vii) Expt. No. 64(272) pertains to Rabi season and expt. No. 65(187) for the Kharif season.

5. RESULTS :

64(272)

(i) 1720 Kg/ha. (ii) 392·6 Kg/ha. (iii) Main effects of P, L and 'control vs. others' are highly significant. (iv) Av. yield of grain in Kg/ha.

Control=792 Kg/ha.

	L_1	L_2	L_3	Mean
P_1	1768	1776	2438	1994
P_2	1798	1996	2347	2047
P_3	1090	1501	1692	1427
Mean	1552	1758	2159	1823

C.D. for P or L marginal means=328·9 Kg/ha.
C.D. for 'control vs. others' =425·8 Kg/ha.

65(187)

(i) 2213 Kg/ha. (ii) 476·8 Kg/ha. (iii) Main effects of P and control vs. others are highly significant. Main effect of L is significant. (iv) Av. yield of grain in Kg/ha.

Control=1341 Kg/ha.

	L_1	L_2	L_3	Mean
P_1	2225	2713	3018	2652
P_2	2286	2682	2591	2520
P_3	1372	1890	2012	1757
Mean	1961	2428	2540	2310

C.D. for P or L marginal means=399·3 Kg/ha.
C.D. for 'control vs. others' =517·1 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(191).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To assess the optimum time of application of N to Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 74 Kg/ha. of N as A/S+56 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 17.7.65. (iv) (a) 1 ploughing and 3 puddlings by victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 3 to 4. (v) 336 Kg/ha. of G.M. applied on 13.7.65. 56 Kg/ha. of P_2O_5 as Super applied on 17.7.65. (vi) MTU—3. (vii) Irrigated. (viii) 2 hand weedings and Japanese weeder used 2 times. (ix) N.A. (x) 13.11.65.

2. TREATSMENTS :

All combinations of (1) and (2)

(1) 2 levels of K_2O as Mur. Pot. : K_0= 0and K_1=74 Kg/ha.

(2) 8 times of application of N at 74 Kg/ha. of N as Urea : T_0=Control (no manure), T_1=Full dose applied 35 days after planting, $T_2=\frac{1}{2}$ dose applied each after 35 and 70 days of planting, $T_3=\frac{1}{2}$ dose applied after 35 days+$\frac{1}{4}$ dose each applied after 70 and 100 days of planting, $T_4=\frac{1}{2}$ dose applied after 35 days +$\frac{1}{4}$ dose applied after 70 days and $\frac{1}{8}$ dose applied after 100 days of planting, $T_5=\frac{1}{2}$ dose applied after 35 days+$\frac{1}{8}$ dose applied after 70 days and $\frac{1}{8}$ dose applied after 100 days of planting, $T_6=\frac{1}{3}$ dose each applied after 35, 70 and 100 days after planting and $T_7=\frac{1}{3}$ dose applied after 35 days+$\frac{1}{2}$ dose applied after 70 days and $\frac{1}{6}$ dose applied after 100 days of planting.

Mur. of Pot. applied on 17.7.65.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 2. (iv) (a) 10·1 m.×7·6 m. (b) 9·8 m.×7·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer to the extent of 14% and nigligble incidence of Gall fly. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) Nil. (vi) Drought during the year. (vii) From Nov. onwards irrigation was in adequate.

5. RESULTS :

(i) 3904 Kg/ha. (ii) 774·7 Kg/ha. (iii) Main effect of T is highly significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
K_0	1121	4554	4168	4694	4308	4414	3818	3258	3792
K_1	2802	3713	3993	5009	3643	4414	4799	3748	4015
Mean	1962	4134	4080	4852	3976	4414	4308	4503	3904

C.D. for T marginal means= 1166·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(43), 61(109).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 9.6.60/18.7.60; 9.6.61/18.7.61 (iv) (a) 3 to 4 ploughings, puddlings and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 4484 Kg/ha. of G.L. for 60 ; Nil for 61. (vi) MTU—19. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 85 cm. ; 104 cm (x) 30.12.60 ; 2. 12.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N_0=0 and N_1=33·6 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 8·5 m.×4·9 m. (b) 8·1 m.×4·5 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of Stem borer and treated with Endrin spray. (iii) Yield of grain. (iv) (a) 1960-61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Dry and hot weather during the month of July and excessive rains during the month of August. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 2441 Kg/ha. (ii) 703·8 Kg/ha. (based on 3 d.f. made up of Treatments×years interaction. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	Mean
N_0	2316	2549	2432
N_1	2408	2493	2450
Mean	2362	2521	2441

Individual results

Treatments	N_0	N_1	Sig	P_0	P_1	Sig.	G.M.	S.E./plot
Years								
1960	3144	2972	**	2992	3124	*	3058	157·4
1961	1721	1929	**	1732	1917	*	1824	101·2
Pooled	2432	2450	N.S.	2362	2521	N.S.	2441	703·8

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(43).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of ash on lodging of Paddy crop.

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) Clay loams. (iii) 23.4.65 ; 3,4.7.65. (iv) (a) 4 ploughings, puddling and levelling with levelling board. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 59 cm. (x) N.A.

2. TREATMENTS:

T_0=Control, T_1=33·6 Kg/ha. of N as A/S, T_2=50·4 Kg/ha. of N as A/S, T_3=67·2 Kg/ha. of N as A/S, T_4=33·6 Kg/ha. of P_2O_5 as Super, T_5=50·4 Kg/ha. of P_2O_5 as Super, T_6=67·2 Kg/ha. of P_2O_5 as Super, T_7=16·8 Kg/ha. of K_2O as ash, T_8=25·2 Kg/ha. of K_2O as ash, T_9=33·6 Kg/ha. of K_2O as ash, T_{10}=33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+16·8 Kg/ha. of K_2O as ash, T_{11}=50·4 Kg/ha. of N as A/S+50·4 Kg/ha. of P_2O_5 as Super+25·2 Kg/ha. of K_2O as ash and T_{12}=67·2 Kg/ha. of N as A/S+67·2 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as ash.

3. DESIGN:

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 13·4 m.×3·1 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1964—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 3175 Kg/ha. (ii) 789 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	3197	3482	2936	3099	2813	2732	3180	3082	3058	3246

Treatment	T_{10}	T_{11}	T_{12}
Av. yield	3384	3547	3515

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(16).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application and sources of N on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy – Fallow – Paddy. (b) Fallow. (c) Nil. (ii) Heavy alluvial. (iii) 9.6.60/14.7.60. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) GEB—24 (late). (vii) Irrigated. (viii) 1 weeding. (ix) 86 cm. (x) 13.12.60.

2. TREATMENTS:

5 manurial treatments: M_0=Control (no manure), M_1=44·8 Kg/ha. of N as C/A/N applied 14 days after planting+33·6 Kg/ha. of P_2O_5 as Super, M_2=44·8 Kg/ha. of N as C/A/N in two equal doses, half dose 14 days after planting and half dose one month after planting +33·6 Kg/ha. of P_2O_5 as Super, M_3=44·8 Kg/ha. of. N as C/A/N in three doses, $\frac{1}{4}$ dose 14 days after planting, $\frac{1}{2}$ dose one month after planting and $\frac{1}{4}$ dose one week before flowering+33·6 Kg/ha. of P_2O_5 as Super and M_4=44·8 Kg/ha. of N as A/S applied as in M_2+33·6 Kg/ha. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×9·1 m. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Satisfactory: (ii) Nil. (iii) Yield of grain. (iv) (a) 1958—60. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2807 Kg/ha. (ii) 342·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2807	2787	2848	2909	2685

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(4).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different levels, sources and times of application of phosphatic fertilizers on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (iii) Alluvial soil. (iii) 1.11.61/19.12.61. (iv) (a) Ploughings puddling. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) Nil. (vi) Eswara Kora (short duration). (vii) Irrigated. (viii) Weedings. (ix) 113 cm. (x) March, 1962.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control plot in each block.

(1) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·3 Kg/ha.

(2) 4 sources of P_2O_5 : S_1=Super, S_2=Mono. Ammo. Phos., S_3=Nitro-Phos. (O.D.D.A.) and S_4=Rock Phos.

(3) 2 times of application : T_1=Full dose at puddling and T_2=Half dose at puddling and half one month after planting.

3. DESIGN:

(i) $4\times2^2+2$ confd. (ii) (a) 9 plots/block and 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/494·3 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Paddy Blast ; sprayed Bordeaux Mixture and Endrin. (iii) Height, tiller counts and yield of grain. (iv) (a) 1961-only. (b) and (c) Nil. (v) Rallapadu and Yemmigannur. (vi) and (vii) Nil.

5. RESULTS :

(i) 4526 Kg/ha. (ii) 328·0 Kg/ha. (iii) Interaction S×P alone is significant. (iv) Av. yield of grain in Kg/ha.

Control=4571 Kg/ha.

	S_1	S_2	S_3	S_4	T_1	T_2	Mean
P_1	4417	4399	4632	4647	4492	4556	4524
P_2	4437	4805	4632	4204	4566	4472	4519
Mean	4427	4602	4632	4425	4529	4514	4521
T_1	4400	4672	4509	4535			
T_2	4454	4532	4755	4315			

C.D. for body of S×P table=3844 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(4), 64(2).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different levels, sources and times of application of phosphatic fertilizers on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments for 62 ; Nil for 64. (ii) Alluvial soils. (iii) 9.6.62/25.7.62 ; N.A./August, 64. (iv) (a) Ploughings and Puddlings. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) Nil for 62 ; 50·4 Kg/ha. of N as A/S for 64. (vi) SLO-13 (late). (vii) Irrigated. (viii) Weeding. (ix) 122 cm., 115 cm. (x) 16.11.62 ; 9.12.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control plot in each block.

(1) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·2 Kg/ha.

(2) 4 sources of P_2O_5 : S_1=Super, S_2=Mono-Ammo. Phos., 3_3=Nitro–Phos. (O.D.D.A.) and S_4=Rock Phos.

(3) 2 times of application : T_1=Full dose at puddling and T_2=Half dose at puddling and half one month after planting.

Nitrogen content of compound fertilizers was adjusted.

3. DESIGN :

(i) $4\times2^2+2$ confd. (ii) (a) 9 plots/block and 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 1/233 ha. for 62 ; 1/229 ha. for 64. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging in October for 62 and in November for 64. (ii) No incidence for 62, Attack of Gall fly and Stem borer for 64. Endrin was sprayed in both years. (iii) Height of plants, tiller counts and grain yield. (iv) (a) 1961-64 (Expt. not conducted in 1963). (b) No. (c) As under 5. Results. (v) Rallapadu and Yemmiganur. (vi) Crop was affected by abnormal rains. (vii) Error variances are heterogeneous and Treatments×years interaction is present in respect of P×S and T×S tables.

5. RESULTS :

Pooled results

(i) 1957 Kg/ha. (ii) 143·4 Kg/ha. (based on 11 d.f. made up of various components of treatment×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=1932

	S_1	S_2	S_3	S_4	Mean
P_1	1930	2110	1996	1828	1966
P_2	1900	1994	1948	1980	1956
Mean	1915	2052	1972	1904	1961
T_1	1899	2050	2008	1862	1955
T_2	1930	2054	1936	1945	1966

Individual results

Treatments	P_1	P_2	Sig.	P_1	P_2	P_3	P_4	Sig.
Years								
1962	2728	2748	N:S.	2719	2889	2641	2703	*
1964	1204	1163	N.S.	1111	1214	1303	1105	**
Pooled	1966	1956	N.S.	1915	2052	1972	1904	N.S.

T_1	T_2	Sig.	Control	G.M.	S.E./plot
2727	2749	N.S.	2745	2739	198·0
1182	1184	N.S.	1119	1175	115·0
1955	1960	N.S.	1932	1957	143·4

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(37).**

Site :- Agri. Res. Stn., Samalkot. **Type :- M'.**

Object :—To study the effect of different sources of phosphatic fertilizers with different types of soil amendments on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (ii) Alluvial soil. (iii) 1.11.61/23.12.61. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) Nil. (vi) *Eswara Kora* (short duration). (vii) Irrigated. (viii) Weeding. (ix) 113 cm. (x) 26,27.3.62.

2. TREATMENTS :

Main-plot treatments :

4 phosphatic fertilizers: S_1=Super., S_2=Mono-Ammo. Phos., S_3=Nitro.-Phos (O.D.D.A.) and S_4=Rock Phos.

Sub-plot treatments :

4 soil Amendments : T_0=Control (No amendment), T_1=1120 Kg/ha. of G.L. organic matter T_2=1120 Kg/ha. of F.Y.M. and T_3=Phospho-bacterin.

Dose of P_2O_5 N.A.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main—plots/rep. and 4 sub-plots/main—plot. (b) N.A. (iii) 6. (iv) (a) and (b) 1/494·2 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Paddy Blast observed, Precautionary measures were taken to prevent attack of Stem borer. (iii) Biometric data and yield of grain. (iv) 1961-only. (b) and (c) Nil. (v) Rallapadu and Yemmiganur. (vi) Heavy rains affected the crop. (vii) Nil.

5. RESULTS :

(i) 4634 Kg/ha. (ii) (a) 491·0 Kg/ha. (b) 329·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	4548	4808	4463	4464	4571
T_1	5059	4613	4556	4812	4760
T_2	4527	4540	4530	4636	4558
T_3	4849	4586	4744	4408	4647
Mean	4746	4637	4573	4580	4634

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(3), 64(3).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different sources of phosphatic fertilizers with different types of soil amendments.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Alluvial soil. (iii) 9.6.62/27.7.62 ; N.A./18.8.64. (iv) (a) Puddling. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) Nil. (vi) SLO-13 (late). (vii) Irrigated. (viii) Weeding. (ix) 122 cm ; 115 cm. (x) Nov, 62 ; 9.12.64.

2. TREATMENTS:

Main-plot treatmeats :

4 phosphotic fertilizers: S_1=Super, S_2=Mono-Ammo. Phos., S_3=Nitro-Phos. (O.D.D.A.) and S_4=Rock Phos.

Sub-plot treatments :

4 soil amendments : T_0=Control (No amendment), T_1=1121 Kg/ha. of G.L. organic matter, T_2=1121 Kg/ha. of F.Y.M. and T_3=Phosphobacterin.

Dose of P_2O_5 : N.A.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 1/233·1 ha. for 62 ; 1/228·8 ha. for 64. (b) 1/247·1 ha. for 62 ; 1/228·8 ha. for 64. (v) N.A. for 62 and Nil for 64. (vi) Yes.

4. GENERAL:

(i) Good, lodged in November. (ii) Endrin was sprayed as a precautionary measure for 62 ; Endrine sprayed against Stem borer attack for 64. i ii) Biometric data and yield of grain for 62 ; Tiller counts, height measurements and yield of grain for 64. (iv) (a) 1962-64 (Expt. not conducted in 1963). (b) No. (c) Nil. (v) Rallapadu and Yemmiganur. (vi) South-West monsoon affected the crop. (vii) Sub-plot error variances are heterogeneous, results of individual years have been given under 5.Results.

5. RESULTS :

62(3)

(i) 2341 Kg/ha. (ii) (a) 241·0 Kg/ha. (b) 189·0 Kg/ha. (iii) Main effect of T is highly significant and that of S is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2321	2553	2289	2279	2361
T_1	2302	2405	2273	2285	2316
T_2	2250	2341	2068	2344	2251
T_3	2417	2593	2431	2314	2439
Mean	2323	2473	2265	2305	2341

C.D. for S marginal means=148·2 Kg/ha.
C.D. for T marginal means=109·1 Kg/ha.

63(3)

(i) 1500 Kg/ha. (ii) (a) 48·0 Kg/ha. (b) 67·0 Kg/ha. (iii) Main effect of S, T and interaction S×T are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	1654	1547	1483	1298	1495
T_1	1727	1519	1467	1451	1541
T_2	1418	1475	1672	1438	1501
T_3	1470	1494	1441	1448	1463
Mean	1567	1509	1516	1409	1500

C.D. for S marginal means =29·6 Kg/ha.
C.D. for T marginal means =38·6 Kg/ha.
C.D. for T means at the same level of S=77·4 Kg/ha.
C.D. for S means at the same level of T=72·4 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(100).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To Study the effect of Plantomine as nitrogeneous fertilizer on the yield of Paddy crop when used in conjection with F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Leguminous crop-Paddy. (b) Leguminous crop. (c) N.A. (ii) Clay loams. (iii) 17.6.60/30.7.60. (iv) (a) 3 ploughings with country plough, puddling and levelling with levelling board. (b) Transplanting. (c) 37 1 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) SLO –15 (late). (vii) Irrigated (viii) 2 to 3 hand weedings. (ix) 84·5 cm. (x) 27.11.60.

2. TREATMENTS:

6 nitrogeneous treatments: T_0=Control, T_1=50·4 Kg/ha. of N as A/S, T_2=50·4 Kg/ha. of N as F.Y.M. T_3=24·7 Kg/ha. of N as A/S, T_4=24·7 Kg/ha. of N as F.Y.M. and T_5=T_4+22·4 Kg/ha. of Plantomine.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 12·2 m.×7·3 m. (b) 9·2 m.×7·0 m. (v) 147 cm. at both ends and one row on one side. (vi) Yes.

4. GENERAL:

(i) Plantomine had a slightly depressing effect on the crop growth as well as on the tillering capacity of the plants. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) N.A. (vi) Dry and hot weather during the month of July and excessive rains during the month of August. (vii) Nil.

5. RESULTS:

(i) 4707 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	4495	4376	4707	5118	4908	4636

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(111).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

object :—To study the effect of Plantomine as nitrogeneous fertilizer on the yield of Paddy crop when used in conjection with F.Y.M. or A/S.

1. BASAL CONDITIONS :

(i) (a) Leguminous crop—Paddy. (b) Leguminous crop. (c) N.A. (ii) Clay loams. (iii) 9.6.61/19.7.61. (iv) (a) 3 ploughings with country plough, puddling and levelling with levelling board. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) SLO–15 (late). (vii) Irrigated (viii) 2 to 3 hand weedings. (ix) 104 cm. (x) 15.12.61.

2. TREATMENTS:

7 nitrogeneous treatments : T_0=Control, T_1=50·4 Kg/ha. of N as F.Y.M., T_2=50·4 Kg/ha. of N as A/S, T_3=24·7 Kg/ha. of N as F.Y,M., T_4=24·7 Kg/ha. of N as A/S, T_5=T_3+22·4 Kg/ha. of Plantomine and T_6=T_4+22·4 Kg/ha. of Plantomine.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 12·2 m.×7·3 m. (b) 9·2 m.×7·1 m. (v) 147 cm. at both ends and one row on one side. (vi) Yes.

4. GENERAL ;

(i) Satisfactory, lodging after flowering. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2543 Kg/ha. (ii) N.A. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3230	2244	1997	2491	2686	2661	2491

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(101).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of Plantomine as nitrogeneous fertilizer on the yield of Paddy crop when used in conjection with G.N.C.

1. BASAL CONDITIONS :

(i) (a) Leguminous crop-Paddy. (b) Leguminous crop. (c) N.A. (ii) (a) Clay loams. (iii) 17.6.60/30.7.60. (iv) (a) 3 ploughings, puddling and levelling with levelling board. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) SLO—15 (late). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 84·5 cm. (x) 27.11.60.

2. TREATMENTS :

6 nitrogeneous treatments : T_0=Control, T_1=50·4 Kg/ha. of N as A/S, T_2=50·4 Kg/ha. of N as G.N.C., T_3=24·7 Kg/ha. of N as A/S, T_4=24·7 Kg/ha. of N as G.N.C. and T_5=T_4+22·4 Kg/ha. of N as Plantomine.

3. DESIGN and 4. GENERAL :

Same as in expt. No. 60(100) on page 124.

5. RESULTS :

(i) 4466 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	4141	4119	4848	4636	4319	4730

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(110).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of Plantomine as nitrogeneous fertilizer on the yield of Paddy crop when used in conjection with G.M. or A/S.

1. BASAL CONDITIONS :

(i) (a) Leguminous crop—Paddy. (b) Leguminous crop. (c) N.A. (ii) Clay loams. (iii) N.A. (iv) (a) 3 ploughings with countrv plough, puddling and levelling with levelling board, (b) Transplanting (c) 37 Kg/ha. (d) 20 cm. ×20 cm. (e) 2. (v) Nil. (vi) SLO—15 (late). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 104 cm. (x) N.A.

2. TREATMENTS :

7 nitrogeneous treatments : T_0=Control, T_1=50·4 Kg/ha. of N as G.M., T_2=50 4 Kg/ha. of N as A/S, T_3=24·7 Kg/ha. of N as G.M., T_4=24 7 Kg/ha. of N as A/S, T_5=T_3+22·4 Kg/ha. of Plantomine and T_6=T_4+22·4 Kg/ha. of Plantomine.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 61(111) on page 124.

5. RESULTS :

(i) 3605 Kg/ha. (ii) N.A. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2538	4015	3474	3768	3598	3796	4043

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(44), 63(4).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of SLO—2 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow for 62. ; Paddy for 63. (c) Nil for 62 ; 2242 Kg/ha. of G.L.+168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S for 63. (ii) Clayey loam. (iii) 9.6.62/14.7.62 ; 5.6.63/2.7.63. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+67·3 Kg/ha. of K_2O as Mur. Pot for 62 ; 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 63. (vi) SLO—2(medium). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. 104 cm. (x) 22.11.62 ; 22.11.63.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=½ dose at planting+½ dose after 21 days of planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. for 62 ; 6·1 m.×1·6 m. for 63. (b) 7·6 m.×1·5 m. for 62 ; 6·1 m.×1·6 m. for 63. (v) N.A. for 62 ; Nil. for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging before harvest. (ii) Attack of Stem borer. (iii) Grain yield. (iv) (a) 1962—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains in October, at the time of flowering for 63. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 3863 Kg/ha. (ii) 755·7 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3973	3818	3798

Individual results

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	2648	2852	2551	N.S.	2684	375·4
1963	5298	4784	5046	**	5043	173·0
Pooled	3973	3818	3798	N.S.	3863	755·7

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(69), 63(7).**

Site :- Agri. Res. Stn; Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of BAM—3 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow for 62; Paddy for 63. (c) Nil for 62; 2242 Kg/ha. of G.L.—168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S for 63. (ii) Clayey loam. (iii) 9.6.62/8.7.62; 5.6.63/2.7.63. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil. for 62; 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 63. (vi) BAM—3 (medium). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) N.A ; 104 cm. (x) 7.12.62 ; 26.11.63.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=½ dose at planting+½ dose after 21 days of planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. for 62 ; 6·1 m.×1·6 m. for 63. (b) 7·6 m.×1·5 m. for 62 ; 6·1 m.×1·6 m. for 63. (v) N.A. for 62 ; Nil for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. lodging for 63. (ii) Severe Smut incidence after flowering for 62; Attack of Stem borer for 63. (iii) Tiller counts and grain yield (iv) (a) 1962—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains in October, at the time of flowering for 63. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 3923 Kg/ha. (ii) 939·4 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3907	3886	3976

Individual results

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	2160	2183	1846	N.S.	2063	554·7
1963	5654	5589	6106	N.S.	5784	453·0
Pooled	3907	3886	3976	N.S.	3923	939·4

Crop :- Paddy *Kharif*). **Ref :- A.P. 62(73), 63(5), 64(11).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of SLO—13 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow for 62 ; Paddy for others. (c) Nil for 62. 2242 Kg/ha. of G.L.+168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S for 63 ; 168 Kg/ha. of Super+56 Kg/ha. of A/S for 64. (ii) Clayey loam. (iii) 31.4.62/25.6.62 ; 5.6.63/2.7.63 ; 18.6.64/18.7.64. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62 ; 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 63 ; 170 Kg/ha. of Super+98·4 Kg/ha. of Mur. Pot. for 64 (vi) SLO—13 (medium). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) N.A. ; 104 cm. ; 109 cm. (x) 24.11.62 ; 26.11.63 ; 17.11.64.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=½ dose at planting+½ dose after 21 days of planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. for 62 ; 6·1 m.×1·6 m. for 63 ; 1/704 ha. for 64. (b) 7·6 m.×1·5 m. for 62 ; 6·1 m.×1·6 m. for 63 ; 1/704 ha. for 64. (v) N.A. for 62 ; Nil. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence for 64 : Attack of Stem borer for others. (iii) Grain yield. (iv) (a) 1962—64. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains in October, at the time of flowering for 63. (vii) As error variances are heterogeneous and Treatment×years interaction is absent ; results of individual years have been presented under 5. Results.

5. RESULTS :

62(73)

(i) 4004 Kg/ha. (ii) 463·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	4015	3918	4080

63(5)

(i) 5741 Kg/ha. (ii) 141·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	5913	5654	5654

C.D.=151·4 Kg/ha.

64(11)

(i) 3913 Kg/ha. (ii) 459·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3867	3887	3985

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(71), 63(8).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of GEB—24 variety of Paddy.

1. BASAL CONDITIGNS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow for 62 ; Paddy for 63. (c) Nil for 62 ; 2242 Kg/ha. of G.L.+168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S for 63. (ii) Clayey loam. (iii) N.A., 5.6.1963/2.7.63. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62 ; 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+ 33·6 Kg/ha. of K_2O as Mur. Pot. for 63. (vi) GEB—24 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) N.A., 104 cm. (x) N.A., 5.12.63.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=½ dose at planting+½ dose after 21 days of planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. for 62 ; 6·1 m.×1·6 m. for 63 (b) 7·6 m.×1·5 m. for 62 ; 6·1 m.×1·6 m. for 63. (v) N.A. for 62 ; Nil or 63. (vi) Yes.

4. GENERAL :

(i) Good for 62 ; Satisfactory but lodging before harvest for 63. (ii) No incidence for 62 ; Attack of Stem borer for 63. (iii) Tiller counts for 63 only and grain yield for both the years. (iv) (a) 1962—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains during October, at the time of flowering for 63. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 3784 Kg/ha. (ii) 956·8 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3828	3834	3690

Individual results

Treatments	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years						
1962	2944	2743	2329	*	2672	411·1
1963	4712	4925	5051	N.S.	4896	359·0
Pooled	3828	3834	3690	N.S.	3784	956·8

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(74), 63(6).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different times of application of N on the yield of SLO-15 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-follow-Paddy. (b) Fallow for 62 ; Paddy for 63. (c) 2242 Kg/ha. of G.L.+168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S for 63. (ii) Clayey loam. (iii) 9.6.62/7.7.62 ; 5.6.63/2.7.63. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) Nil for 62 ; 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 63. (vi) SLO-15 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) N.A ; 104 cm. (x) 26.11.62 ; 27.11.63.

2. TREATMENTS :

3 times of application of 33·6 Kg/ha. of N as A/S : T_1=½ dose at planting+½ dose after 21 days of planting, T_2=Full dose 30 days after planting and T_3=Full dose 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. for 62 ; 6·1 m.×1·6 m. for 63. (b) 7·6 m.×1·5 m. for 62 ; 6·1 m.×1·6 m. for for 63. (v) N.A. for 62 ; Nil for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging. (ii) Attack of Stem borer. (iii) Grain yield. (iv) (a) 1962-1963. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains in October, at the time of flowering for 63. (vii) As the error variances are heterogeneous and Treatments×years interaction is absent, results of individual years have been presented under 5. Results.

5. RESULTS:

62(74)

(i) 3094 Kg/ha. (ii) 479·5 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3433	3283	2565

C.D.=514·2 Kg/ha.

63(6)

(i) 5564 Kg/ha. (ii) 2466·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	5913	5016	5762

———

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(9).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of times of application of N on the yield of SLO-16 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy. (c) 168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S. (ii) Clayey loam. (iii) 20.1.64/18.2.64. (iv) (a) 3 puddlings with country plough. (b) Transplanting. (c) N.A. (d) 15 cm.×10 cm. (e) 2. (v) 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super+67·3 Kg/ha. of K_2O as Mur. Pot. (vi) SLO-16 (short duration). (vii) Irrigated. (viii) Gap filling and weeding. (ix) 7 cm. (x) 5, 10.4.64.

2. TREATMENTS :

3 times of application of 44·8 Kg/ha. of N as A/S : T_1=½ dose at planting and ½ dose after 21 days of planting, T_2=Full dose applied 30 days after planting and T_3=Full dose applied 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 1/731·9 ha. (b) 1/861·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory, lodged before harvest. (ii) Nil. (iii) Height, tiller counts and yield of grain. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) N.A.

5. RESULTS :

(i) 2755 Kg/ha. (ii) 280·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	3114	2457	2694

C.D.=273·0 Kg/ha.

———

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(10).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of times of application of N on the yield of SLO-19 variety of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow–Paddy. (b) Paddy. (c) 168 Kg/ha. of Super+22·4 Kg/ha. of N as A/S. (ii) Clayey loam. (iii) 20.1.64/18.2.64. (iv) (a) Puddlings with country plough. (b) Transplanting. (c) N.A. (d) 15 cm.×10 cm. (e) 2. (v) 3363 Kg/ha. of G.L.+33·6 Kg/ha. of P_2O_5 as Super.+67·3 Kg/ha. of K_2O as Mur. Pot. (vi) SLO-19(short duration). (vii) Irrigated. (viii) Gap filling and weeding. (ix) 7 cm. (x) 5, 10.4.64.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 65(9) on page 130.

5. RESULTS :

(i) 2350 Kg/ha. (ii) 385·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	2794	2181	2074

C.D.=412·9 Kg/ha.

———

Crop :- Paddy (*Rabi*). **Ref :- A.P. 62(197).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To asses the relative merits of the application of three bulky organic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 25 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 28.11.62/28.12.62. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) 167 Kg/ha. of P_2O_5 and 68 Kg/ha. of K_2O. (vi) MTU-15. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 23.4.63.

2. TREATMENTS :

3 manurial treatments : M_1=125·5 Q/ha. of F.Y.M., M_2=33·6 Q/ha. of G.L. and M_3=33·6 Q/ha. of Paddy straw.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 10·1 m. × 4·6 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) to (vii) N.A.

5. RESULTS :

(i) 3768 Kg/ha. (ii) 414·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield	3729	4072	3504

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(65), 64(65).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To asses the relative efficacies of different bulky organic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loams. (iii) 28.11.63/28.12.63 ; 17.12.64/7.1.65. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 10 cm. (e) 3. (v) Nil. (vi) N.A. for 63 ; SLO-16 for 64. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 1 cm ; 6 cm. (x) 5.4.64 ; 29.3.65.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no application), M_1=3363 Kg/ha. of Paddy straw applied 7 days before planting, M_2=3363 Kg/ha. of Paddy straw applied 15 days before planting, M_3=24·7 C.L./ha. of F.Y.M. 7 days before planting and M_4=3363 Kg/ha. of G.L. 7 days before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/239·3 ha. for 63 ; 8·1 m. × 5·0 m. for 64. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1963-64. (b) No. (c) Nil. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 2903 Kg/ha. (ii) 363·3 Kg/ha. (based on 44 d.f. made up of pooled error and Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2874	2849	2762	2975	3056

Individual results

Treatments	M_0	M_1	M_2	M_3	M_4	Sig.	G.M.	S.E./plot
Years								
1963	3590	3820	3546	3650	3751	N.S.	3671	307·9
1964	2157	1878	1979	2300	2360	N.S.	2135	401·6
Pooled	2874	2849	2762	2975	3056	N.S.	2903	363·3

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(44), 61(52).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object : —To study the relative efficiencies of different nitrogenous fertilizers on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 23.6.60/23.7.60; 9.6.61/12.7.61. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) SLO-16. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 81 cm. for 60; N.A. for 61. (x) 11.10.60; 28.9.61.

2. TREATMENTS:

All combinations of (1) and (2)+a control.

(1) 3 sources of 50·4 Kg/ha. of N : S_1=G.N.C., S_2=A/S and S_3=Deoiled cake.

(2) 2 methods of application : M_1=Single dose and M_2=Split-dose.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 8·5 m.×4·9 m, (v) N.A. (vi) Yes.

4. GENERAL :

(i) Crop lodged completely after flowering. (ii) Heavy incidence of Stem borer. Endrin sprayed. (iii) Yield of grain. (iv) (a) 1960-61. (b) No. (c) Nil. (v) N.A. (vi) Dry and hot weather during the month of July; excessive rains during the month of August caused undue vegetative growth and severe lodging for 60; Nil for 61. (vii) Error variances are heterogeneous and Treatmeats×years interaction is present.

5. RESULTS :

Pooled results :

(i) 2471 Kg/ha. (ii) 490·9 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=2261.

	S_1	S_2	S_3	Mean
M_1	2223	2784	2464	2491
M_2	2527	2726	2310	2521
Mean	2375	2755	2387	2506

Individual results

Treatments	S_1	S_2	S_3	Sig.	M_1	M_2	Sig.	G.M.	S.E./plot
Years									
1960	2102	2503	2310	N.S.	2369	2240	N.S.	2330	304·3
1961	2650	3006	2465	N.S.	2612	2802	N.S.	2611	164·8
Pooled	2375	2755	2387	N.S.	2491	2521	N.S.	2471	490·9

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(70), 63(1).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 7.6.62/5.7.62 ; 4.6.63/5.7 63. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 4483 Kg/ha. of G.L. (vi) MTU—19 (late). (vii) Irrigated. (viii) 2 to 3 hand weedings and intercultures. (ix) N.A. for 62 ; 104 cm. for 63. (x) 16.12.62 ; 10.12.63.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S : N_0=0 and N_1=33·6 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=67·3 Kg/ha.

A/S was applied in two equal doses, half at the time of planting and the other half at the time of 1st weeding one month after transplanting. P_2O_5 and K_2O were applied a day prior to transplanting.

3. DESIGN :

(i) Fact. in R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·1 m. × 5·2 m. for 62 ; 5·1 m. × 9·1 m. for 63. (b) 8 7 m. × 4·8 m. for 62 ; 4·7 m. × 8·7 m. for 63. (v) 20 cm. × 20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 62; Satisfactory but lodged particularly at grain ripening stage for 63. (ii) Nil for 62 ; Mild incidence of Stem borer for 63. (iii) Height measurements, tiller counts and yield of grain. (iv) (a) 1962—63. (b) No. (c) Nil. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 3303 Kg/ha. (ii) 414·3 Kg/ha. (based on 48 d.f. made up of pooled error and Treatments × years interaction). (iii) N × P interaction is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	3536	3226	3299	3464	3382
N_1	3144	3306	3175	3274	3224
Mean	3340	3266	3237	3369	3303
K_0	3264	3210			
K_1	3416	3322			

C.D. for body of N × P table=296·0 Kg/ha.

Individual results

Treatments	N_0	N_1	Sig.	P_0	P_1	Sig.
Years						
1962	3092	3122	N.S.	3050	3164	N.S.
1963	3671	3327	*	3630	3368	N.S.
Pooled	3382	3224	N.S.	3340	3266	N.S.

K_0	K_1	Sig.	G.M.	S.E./plot
3044	3170	N.S.	3107	388·3
3430	3568	N.S.	3499	382·0
3237	3369	N.S.	3303	414·3

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(75), 63(2).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow for 62 ; Paddy for 63. (c) Nil for 62 ; 2242 Kg/ha. of G.L.+168 Kg/ha. of Super+33·6 Kg/ha. of N as A/S for 63. (ii) Clayey loam. (iii) 14.6.62/24.7.62 ; 6.6.63/10.7.63. (iv) (a) Ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. for 62 ; N.A. for 63. (d) 15 cm.×15 cm. (e) 2. (v) 33·6 Kg/ha. of N as A/S. (vi) SLO-15 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) N.A ; 134 cm. (x) 27.11.62 ; 30.11.63.

2. TREATMENTS :

All combinations of (1) and (2)+2 controls.

(1) 2 sources of P_2O_5 : S_1=Basic slag and S_2=Super.
(2) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·3 Kg/ha.

Super was applied at the time of transplanting and Basic slag as fine powder five days before transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 11·3 m.×4·0 m. (b) 11·0 m.×3·7 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Crop growth satisfactory, partial lodging after flowering for 62 ; Good, crop pre-lodged in the third week of Oct. due to heavy rains. Setting was badly affected for 63. (ii) Crab and Gall fly attack observed. Considerable attack by Stem borer, leaf eating cater pillers. Endrin sprayed for 62 ; Nil for 63. (iii) Yield of grain and fodder for 62 ; Height measurement, tiller counts and yield of grain for 63. (iv) (a) 1962—63. (b) Yes. (c) Nil. (v) Nil. (vi) Heavy rains after flowering affected the yield for 62 ; Heavy rainfall in October for 63. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 2046 Kg/ha. (ii) 198·8 Kg/ha. (based on 21 d.f. made up of pooled error and Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=2072

	P_1	P_2	Mean
S_1	2232	1940	2086
S_2	1912	2048	1980
Mean	2072	1994	2033

Individual results

Treatments	P_1	P_2	Sig.	S_1	S_2	Sig.	Control	Sig.	G.M.	S.E./plot
Years										
1962	1831	1622	*	1745	1709	N.S.	1884	N.S.	1779	129·2
1963	2313	2365	N.S.	2399	2279	N.S.	2261	N.S.	2313	233·0
Pooled	2072	2994	N.S.	2072	1994	N.S.	2072	N.S.	2046	198·8

Crop :- Paddy (*Kharif*). **Ref :- A.P.64 (12).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'M'.**

Object : —To study the effect of different levels and sources of P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 3363 Kg/ha. of G.L.+168 Kg/ha. of Super+33·6 Kg/ha. of N as A/S. (ii) Clayey loam. (iii) 23.8.64/11.9.64. (iv) (a) Ploughings, puddling and levelling. (b) Transplanting. (c) N.A. (d) 15 cm.×10 cm. (e) 2. (v) 16·8 Kg/ha. of N as F.Y.M.+44·8 Kg/ha. of N as A/S (vi) MTU-15 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 60 cm. (x) 12.12 64.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·3 Kg/ha.

(2) 3 sources of P_2O_5 : S_1=Super., S_2=Basic slag (Indian) and S_3=High grade basic slag (Thomos Phosphate).

S_1 applied at puddling and S_2 and S_3 15 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 6·1 m.×11·9 m. (b) 5·5 m.×11·3 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Poor growth. (ii) Severe attack of Stem borer. Endrin sprayed. (iii) Height of plants, tiller counts and yield of grain. (iv) (a) 1964 only. (b) and (c) Nil. (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 876 Kg/ha. (ii) 96·0 Kg/ha. (iii) S×P interaction is significant. (iv) Av. yield of grain in Kg/ha.

Control=925

	S_1	S_2	S_3	Mean
P_1	800	812	1010	874
P_2	913	857	812	861
Mean	857	834	911	868

C.D. for body of table=100·8 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(208), 65(173).**

Site :- Agri. Res. Stn; Tenali. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the incidence of Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Pulses-Fallow. (b) Fallow. (c) Nil. (ii) Black loam to clay. (iii) 17.7.64/7.8.64 ; 24.5.65/21.7.65, (iv) (a) 1 to 2 ploughings with country plough and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) MTU-19. (vii) Irrigated. (viii) Hand weeding. (ix) 9 cm. for 64; N.A. for 65. (x) 16.12.64 ; 12.12.65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S : N_0=0 and N_1=45 Kg/ha.

(2) 2 levels of P_2O_5 as Super: P_0=0 and P_1=67 Kg/ha.

(3) 2 levels of K_2O as Mur. Pot. : K_0=0, and K_1=67 Kg/ha.

N.B. N applied in 2 equal doses $\frac{1}{2}$ dose at planting and $\frac{1}{2}$ dose 1 month after planting. Super. and Mur. Pot. applied as basal dressing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 11·8 m.×9·9 m. (b) 11·0 m.×9·1 m. (v) 40 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Normal for 64, Poor for 65. (ii) Incidence of Stem borer for 64. Very severe incidence of Stem borer at ear head stage for 65. (iii) Grain yield. (iv) (a) 1964—66. (b) No. (c) Nil.(v) to (vii) Nil.

5. RESULTS :

64(208)

(i) 1365 Kg/ha. (ii) 178·0 Kg/ha. (iii) Main effect of N is highly significant and P×K interaction is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	1494	1434	1410	1518	1464
N_1	1266	1266	1250	1282	1266
Mean	1380	1350	1330	1400	1365
K_0	1411	1249			
K_1	1349	1451			

C.D. for N marginal means=131·0 Kg/ha.

C.D. for P×K table =185·1 Kg/ha.

65(173)
(i) 76 Kg/ha. (ii) 47·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	101	63	88	76	82
N_1	71	71	68	74	71
Mean	86	67	78	75	76
K_0	97	59			
K_1	75	75			

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(94), 62(112), 63(97).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 10.6.61/3.8.61 ; 2.7.62/1.8.62 ; 14.6.63/3.8.63. (iv) (a) 2 to 4 ploughings, puddling and levelling. (b) Transplanting. (c) 30 Kg/ha. for 63 ; 34 Kg/ha. for others. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 to 2 hand weedings and working with paddy weeder. (ix) 63 cm., 95 cm., 91 cm. (x) 26.10.61 ; 30.10.62 ; 5.11.63.

2. TREATMENTS :

All combinations of (1) and (2)+control (4 plots).

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=C/A/N and S_4=Urea.
(2) 2 levels of N : N_1=33·6 and N_2=67·2 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 8·8 m.×4·6 m. (v) 15 cms. on either side. (vi) Yes.

4. GENERAL :

(i) Poor for 63 and good for others. (ii) No incidence. Endrin was sprayed for 61 and 63. (iii) Grain yield. (iv) (a) 1961–63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Errors variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1381 Kg/ha. (ii) 273·3 Kg/ha. (based on 14 d.f. made up of Treatments×years interaction). (iii) Main effect of N is significant. (iv) Av. yield of grain in Kg/ha.

Control=801

	S_1	S_2	S_3	S_4	Mean
N_1	1719	1471	1313	1574	1519
N_2	2029	1942	1560	1763	1824
Mean	1874	1706	1436	1668	1671

C. D. for N marginal means=239·3 Kg/ha.

Individual results

Treatments	N_1	N_2	Sig.	S_1	S_2	S_3	S_4
Years							
1961	1485	1938	**	1691	1815	1526	1815
1962	2471	2821	**	3253	2636	2183	2513
1963	602	715	N.S.	679	670	601	678
Pooled	1519	1824	*	1874	1706	1436	1668

Sig.	Control	G.M.	S.E./plot
N.S.	907	1444	242·0
**	1175	2156	292·0
N.S.	322	545	173·0
.N.S	801	1381	273·3

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(95), 62(I13), 63(224).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To find out the manurial value of different fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 12.12.61/12.1.62 ; 13.12.62/24.1.63 ; 27.12.63/30.1.64. (iv) (a) 3 to 4 ploughings, 2 puddlings and levelling. (b) Transplanting. (c) 25 Kg/ha. for 63 ; 34 Kg/ha. for others. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) HR—19 (early). (vii) Irrigated. (viii) 1 to 2 hand weedings and working Paddy weeder. (ix) 15 cm;5 cm., 1 cm. (x) 10.4.62 ; 16.4.63 ; 16.4.64.

2. TREATMENTS :

All combinations of (1) and (2)+control (4 plots).

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.

(2) 2 levels of N : N_1=33·6 and N_2=67·2 Kg/ha.

3. DES IGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 8·8 m.×4·6 m. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No incidence but Endrin was sprayed. (iii) Yield of grain and straw. (iv) (a) 1960—63 (Expt. failed in 1960). (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1290 Kg/ha. (ii) 286·7 Kg/ha. (based on 14 d.f. made up of Treatments×years interaction). (iii) Main effect of S is significant. (iv) Av. yield of grain in Kg/ha.

Control=900

	S_1	S_2	S_3	S_4	Mean
N_1	1525	1127	1236	1704	1398
N_2	1717	1278	1401	1896	1573
Mean	1621	1202	1318	1800	1485

C.D. for S marginal means=355·1 Kg/ha.

Individual results

Treatments	N_1	N_2	Sig.	S_1	S_2	S_3	S_4
Years							
1961	2598	2763	N.S.	2887	2434	2227	3175
1962	1153	1256	N.S.	1565	576	1153	1523
1963	443	700	**	412	597	700	576
Pooled	1398	1573	N.S.	1621	1202	1318	1800

Sig.	Control	G.M.	S.E./plot
*	1856	2406	520·0
*	536	981	189·0
N.S.	309	484	177·4
*	900	1290	286·7

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(87), 61(96), 62(114), 63(99).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil for 60 and Paddy-Paddy for others. (b) Paddy. (c) 24·7 C.L./ha. of F.Y.M. for 60; As per treatments for 61 and 62 and N.A. for 63. (ii) *Chalka*. (iii) 12.6.60/21.7.60; 14.6.61/29.7.61; 2.7.62/20.7.62; 4.6.63/30.6.63. (iv) (a) 3 ploughings and levelling. (b) Transplanting. (c) 24·7 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU-15 (early) for 61 and HR-5 (early) for others. (vii) Irrigated. (viii) Hand weeding and working Paddy weeder. (ix) N.A; 6[illegible]·4 cm ; 95·4 cm ; 90·6 cm. (x) 1.11.60; 9.11.61; 30.10.62 and 22.10.63.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 3 sources of N at 50·4 Kg/ha. : S_1=G.N.C., S_2=A/S and S_3=De-oiled cake.

(2) 2 methods of application of N : T_1=Full dose at planting and T_2=In split doses, applied at planting and one month after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 8·8 m.×4 6 m. (v) 15 cm. on each side along length. (vi) Yes.

4. GENERAL :

(i) Good for 63 and normal for the rest. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1960—63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 2324 Kg/ha. (ii) 605·3 Kg/ha. (based on 18 d.f. made up of Treatments × years interaction). (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

Control=1556

	S_1	S_2	S_3	Mean
T_1	2868	2256	2466	2530
T_2	2506	2290	2328	2374
Mean	2687	2273	2397	2452

C.D. for S marginal means=366·4 Kg/ha.

Individual results

Treatments	S_1	S_2	S_3	Sig.	T_1	T_2	Sig.
Years							
1960	1884	2170	2582	**	2182	2245	N.S.
1961	2722	2145	2515	N.S.	2640	2282	N.S.
1962	2100	1647	1442	**	1839	1620	*
1963	4035	3131	3048	**	3459	3350	N.S.
Pooled	2687	2273	2397	*	2530	2374	N.S.

Control	Sig.	G.M.	S.E./plot
1197	**	2069	314
1320	**	2298	544
1070	**	1636	207
2639	N.S.	3295	595
1556	N.S.	2324	605

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(97), 63(223).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments for 61 and N.A. for 63. (ii) *Chalka*. (iii) 12.12.61/16.1.62 ; 27.12.63/29.1.64. (iv) (a) 3 ploughings, levelling and puddling. (b) Transplanting. (c) 24·7 Kg/ha. (d) 15 cm × 15 cm. (e) 2. (v) Nil. (vi) MTU-15 (early) for 61 and HR-5 (early) for 63. (vii) Irrigated. (viii) Working Paddy weeder and hand weeding. (ix) 14·6 cm ; 0·9 cm. (x) 28.4.62; 16.4.64.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 3 sources of N at 50·4 Kg/ha. : S_1=G.N.C., S_2=A/S and S_3=De-oiled cake.

(2) 2 methods of application of N: T_1=Full dose at planting and T_2=In split doses, applied at planting and one month after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. for 61 and 9·7 m.×4·6 m. for 63. (b) 8·8 m.×4·6 m. for 61 and 8·8 m.×4·6 m. for 63. (v) 15 cm. for 61 and 46 cm. for 63 discarded on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Spraying of Endrin. (iii) Yield of grain and straw. (iv) (a) 1961-63 (Expt. failed in 1962). (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1416 Kg/ha. (ii) 504·0 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=824

	S_1	S_2	S_3	Mean
T_1	1773	1732	1236	1580
T_2	1483	1546	1320	I450
Mean	1628	1639	1278	1515

Individual results

Treatments	S_1	S_2	S_3	Sig.	T_1	T_2	Sig.
Years							
1961	2639	2515	2062	**	2474	2337	N.S.
1963	618	762	494	N.S.	686	563	N.S.
Pooled	1628	1639	1278	N.S.	1580	1450	N S.

Control	Sig.	G.M.	S.E./plot
1237	**	2238	275·0
412	N.S.	594	191·3
824	N.S.	1416	504·0

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(84), 61(90), 62(108), 63(98) and 64(229).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different levels of P and sources of N alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil for 60 and Paddy-Paddy for others. (b) Nil for 60 and Paddy for others. (c) Nil for 60, As per treatments for others. (ii) Black soil. (iii) 29.6.60/31.7.60 ; 28.6.61/8.8.61 ; 2.7.62/2.8.62 ; 14.6.63/3.8.63 ; 19.6.64/18.8.64. (iv) (a) 3 to 4 ploughings, 2 puddlings and levelling. (b) Transplanting. (c) 25 to 30 Kg/ha. (d) 15 cm.×15 cm. (e) 1 to 2. (v) Nil. (vi) HR-19 (early). (vii) Irrigated. (viii) Hand. weeding and working Paddy weeder. (ix) N.A. ; 129 cm ; 92 cm ; 91 cm. and 87 cm. (x) 24.10.60 ; 8.11.61 ; N.A; 5.11.63; 5.11.64.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments (2 plots each).

(1) 4 sources of N at 56·0 Kg/ha. : S_1=A/S, S_2=F.Y.M., S_3=G.M. and S_4=G.N.C.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=28·0 Kg/ha.

Extra treatments : E_0=0 and E_1=28·0 Kg/ha. of P_2O_5 as Super.

Fertilizers and manures were applied before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) 9·1 m.×5·3 m. (b) 8·5 m.×4·7 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Infection of Gall fly, Endrin sprayed. (iii) Grain and straw yield. (iv) (a) 1960—64. (b) Yes. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1566 Kg/ha. (ii) 439·5 Kg/ha. (based on 36 d.f. made up of Treatments×years interaction). (iii) Main effect of 'S' is highly significant. (iv) Av. yield of grain in Kg/ha.

E_0=900; E_1=1114

	S_1	S_2	S_3	S_4	Mean
P_0	2209	1466	1475	1759	1728
P_1	2547	1726	1619	1963	1964
Mean	2378	1596	1547	1861	1846

C.D. for S marginal means=281·2 Kg/ha.

Individual results

Treatments	S_1	S_2	S_3	S_4	Sig.	P_0	P_1	Sig.
Years								
1960	3262	2784	2728	2728	**	2601	3150	**
1961	1395	744	868	1209	**	992	1116	N.S.
1962	3645	1915	1853	2903	**	2409	2749	**
1963	1480	1171	923	915	**	1115	1129	N.S.
1964	2108	1364	1364	1550	**	1352	1538	**
Pooled	2378	1596	1547	1861	**	1728	1964	N.S.

E_0	E_1	Sig.	G.M.	S.E./plot
1406	1631	**	2424	188
186	372	**	796	129
1612	1860	**	2298	271
615	714	**	970	187
682	992	N.S.	1343	290
900	1114	N.S.	1566	439

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(89), 62(109).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different levels of P and sources of N alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 12.12.61/12.1.62; 13.12.62/24.1.63. (iv) (a) 4 ploughings 2 puddlings and levelling. (b) Transplanting (c) N.A. (d) 15 cm. × 15 cm. (e) 1. (v) Nil. (vi) HR-19. (vii) Irrigated. (viii) Working Paddy weeder and hand weeding. (ix) 14·6 cm ; 5·5 cm. (x) 10.4.62 and 16.4.63.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments (2 plots each).

(1) 4 sources of N at 56·0 Kg/ha. : S_1=A/S, S_2=F.Y.M., S_3=G.M. and S_4=G.N.C.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=28·0 Kg/ha.

Extra treatments : E_0=0 and E_1=28 0 Kg/ha. of P_2O_5 as Super.

Fertilizers and manures applied before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 32·0 m. × 9·1 m. (iii) 2. (iv) (a) 9·1 m. × 5·3 m. (b) 8·5 m. × 4·7 m. (v) 30 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Spraying of Endrin. (iii) Yield of grain. (iv) (a) 1961-62. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatment × years interaction is present.

5. RESULTS:

Pooled results

(i) 2077 Kg/ha. (ii) 707·9 Kg/ha. (based on 9 d.f. made up of Treatment × years interaction). (iii) Main effect of 'S' is highly significant. (iv) Av. yield of grain in Kg/ha.

E_0=1334, E_1=1506

	S_1	S_2	S_3	S_4	Mean
P_0	3016	1928	2648	1772	2341
P_1	3460	2028	2572	1826	2471
Mean	3238	1978	2610	1799	2406

C.D. for S marginal means=750Kg/ha.

Individnal results

Treatments	S_1	S_2	S_3	S_4	Sig.	P_0	P_1	Sig.
Years								
1961	4367	2592	3739	2172	**	3163	3299	N.S.
1962	2109	1364	1425	1426	**	1519	1643	N.S.
Pooled	3238	1978	2610	1799	**	2341	2471	N.S.

E_0	E_1	Sig.	G.M.	S.E./plot
1799	2021	**	2791	213
868	992	**	1364	166
1334	1506	N.S.	2077	770·9

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(5).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the effect of different sources of phosphatic fertilizers with different types of soil amendments on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (ii) Black cotton soil. (iii) 10.10.61/21.11.61. (vi) (a) Ploughings and Puddling. (b) Transplanting. (c) N.A. (d) 20 cm. × 10 cm. (e) 2. (v) Nil. (vi) PLA-1 (medium). (vii) Irrigated. (viii) Weeding. (ix) 55 cm. (x) 9.3.62.

2. TREATMENTS :

Main-plot treatments :

4 phosphatic fertilizers : S_1=Super., S_2=Mono-Ammo. Phos., M_3=Nitro-Phos. (O.D.D.A.) and S_4=Rock Phos.

Sub-plot treatments :

4 soil amendments : T_0=Control (No amendment), T_1=1121 Kg/ha. of G.L., T_2=1121 Kg/ha. of F.Y.M. and T_3=Phospho bacterin.

Dose of P_2O_5 : N.A.

3. DES IGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 4 sub-plots/main-plot. (b) N.A. (iii) 9. (iv) (a) 1/233·1 ha. (b) 1/247·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Endrin sprayed. (iii) Biometric data and yield of grain. (iv) (a) 1961—only. (b) and (c) Nil. (v) Rallapadu and Samalkot. (vi) and (vii) Nil.

5. RESULTS :

(i) 1976 Kg/ha. (ii) (a) 706·0 Kg/ha. (b) 507·0 Kg/ha. (iii) Main effect of T is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2557	2045	1804	1748	2039
T_1	2473	1982	2249	2501	2301
T_2	1705	1410	1141	1748	1501
T_3	2247	2152	1827	2021	2062
Mean	2245	1897	1755	2005	1976

C.D. for T marginal means=292·8 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(5), 64(14).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object : —To study the effect of different sources of phosphatic fertilizers with different soil amendments on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black cotton soil. (iii) 12.6.62/25.7.62 ; N.A./3.7.64. (iv) (a) Ploughings and puddling. (b) Transplanting. (c) N.A. (d) 20 cm.×10 cm. (e) 2. (v) Nil. (vi) GEB-24 (late). (vii) Irrigated. (viii) Weeding. (ix) 94 cm., 67 cm. (x) Dec. 62 ; 20.12.64.

2. TREATMENTS :

Main-plot treatments :

4 phosphatic fertilizers : S_1=Super., S_2=Mono-Ammo. Phos., M_4=Nitro-Phos. (O.D.D.A.) and S_4=Rock Phos.

Sub-plot treatments :

4 soil amendments : T_0=Control (no amendment), T_1=1121 Kg/ha. of G.L., T_2=1121 Kg/ha. of F.Y.M. and T_3=Phospho bacterin.

Dose of P_2O_5 : N.A.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 1/219 ha. (b) 1/247 ha. (v) One row discarded. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No incidence for 62 but Endrin was sprayed ; Attack of Stem borer for 64 for which Endrin was sprayed twice. (iii) Biometric data and yield of grain. (iv) (a) 1962–64 (Expt. not conducted in 1963). (b) No. (c) Nil. (v) Rallapadu and Samalkot. (vi) Nil. (vii) As sub-plot error variances are heterogeneous, results of individual years have been presented under 5. Results.

5. RESULTS :

62(5)

(i) 4700 Kg/ha. (ii) (a) 424·0 Kg/ha. (b) 322·0 Kg/ha. (iii) Main effects of S and T are highly significant. Interaction S×T is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	4759	4698	4582	4527	4641
T_1	5064	5359	4253	5063	4935
T_2	4695	4693	4095	4225	4427
T_3	4884	5020	4703	4575	4795
Mean	4851	4943	4408	4597	4700

C.D. for S marginal means=260·8 Kg/ha.
C.D. for T marginal means=185·8 Kg/ha.
C.D. for T means at the same level of S=371·8 Kg/ha.
C.D. for S means at the same level of T=404·4 Kg/ha.

64(14)

(i) 2469 Kg/ha. (ii) (a) 512·0 Kg/ha. (b) 423·0 Kg/ha. (iii) Main effect of S is significant and that of T is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
T_0	2510	3064	2502	2315	2598
T_1	2716	2850	3017	2463	2761
T_2	2393	2267	2100	1754	2129
T_3	2603	2545	2197	2214	2390
Mean	2555	2681	2454	2187	2469

C.D. for S marginal means=315·0 Kg/ha.
C.D. for T marginal means=244·2 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 61(6).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the effect of different levels, sources and time of application of phosphatic fertilizers on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black cotton soil. (iii) 10.10.61/18.11.61. (iv) (a) Ploughings and puddling. (b) Transplanting. (c) N.A. (d) 20 cm. × 10 cm. (e) 2. (v) Nil. (vi) PLA—1 (medium). (vii) Irrigated. (viii) Weeding. (x) 55 cm. (x) 28.2.62.

2. TREATMENTS:

All combinations of (1), (2) and (3)+one control in each block.

(1) 4 sources of P_2O_5 : S_1=Super., S_2=Mono-Ammo. Phos., S_3=Nitro—Phos. (O.D.D.A.) and S_4=Rock Phos.

(2) 2 levels of P_2O_5 : P_1=33·6 and 67·2 Kg/ha.

(3) 2 times of application : T_1=Full dose at puddling and T_2=$\frac{1}{2}$ dose at puddling+$\frac{1}{2}$ dose one month after planting.

3. DESIGN:

(i) $4\times2^2+2$ confd. (ii) (a) 2 blocks/replication and 9 plots/block. (b) N.A. (iii) 3. (iv) (a) 1/228·8 ha. (b) 1/247·1 ha. (v) One row discarded. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Endrin sprayed as a preventive measure. (iii) Biometric data and yield of grain. (iv) (a) 1961—only. (b) and (c) Nil. (v) Samalkot and Rallapadu. (vi) and (vii) Nil.

5. RESULTS :

(i) 1745 Kg/ha. (ii) 319·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=1547

	S_1	S_2	S_3	S_4	T_1	T_2	Mean
P_1	1554	1946	1840	1801	1789	1781	1785
P_2	1775	1780	1920	1543	1650	1859	1755
Mean	1664	1863	1880	1672	1720	1820	1770
T_1	1550	1868	1745	1717			
T_2	1778	1859	2015	1627			

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(6), 64(4).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object ;—To study the effect of different levels, sources and time of application of phosphatic fertilizers on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments for 62; Nii for 64. (ii) Black cotton soil. (iii) 12.6.62, 22.7.62 ; N.A./August, 64. (iv) (a) Ploughings and puddling. (b) Transplanting. (c) N.A. (d) 20 c n. × 10 cm. (e) 2. (v) Nil. (vi) GEB-24 (late). (vii) Irrigated. (viii) Weeding. (ix) 94 cm. ; 67 cm. (x) 8 to 10. 12.62 ; 15.12.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)+one control in each block.

(1) 4 sources of P_2O_5 : S_1=Super, S_2=Mono-Ammo. Phos., S_3=Nitro-Phos (O.D.D.A.) and S_4=Rock Phos.

(2) 2 levels of P_2O_5 : P_1=33·6 and P_2=67·2 Kg/ha.

(3) 2 times of application : T_1=Full dose at puddling and T_2=½ dose at puddling and ½ dose one month after planting.

3. DESIGN :

(i) $4\times2+2^2$ confd. (ii) (a) 9 plots/block ; 2 block/replication. (b) N.A. (iii) 3. (iv) (a) 1/228·8 ha. for 62 ; 1/218.7 ha. for 64. (b) 1/247·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Stem borer attack for 64. Endrin sprayed in both years. (iii) Biometric data and yield of grain. (iv) (a) 1962—64 (Expt. not conducted in 1963). (b) No. (c) Nil. (v) Rallapadu and Samalkot. (vi) N.A. (vii) As error variances are heterogeneous and Treatments×years interaction is absent, results of individual years have been presented under 5. Results.

5. RESULTS :

62(6)

(i) 4022 Kg/ha. (ii) 368·0 Kg/ha. (iii) Main effect of S and 'control vs. others' are highly significant. Main effect of P is significant. (iv) Av. yield of grain in Kg/ha.

Control=3183

	S_1	S_2	S_3	S_4	T_1	T_2	Mean
P_1	4197	4202	3689	3968	3963	4065	4014
P_2	4308	4769	3744	4143	4143	4339	4241
Mean	4253	4485	3717	4055	4053	4202	4127
T_1	4019	4445	3749	4000			
T_2	4487	4526	3684	4110			

C.D. for S marginal means =304·5 Kg/ha.
C.D. for P marginal means =215·4 Kg/ha.
C.D. for control mean and mean for others=442·5 Kg/ha.

64(4)

(1) 1611 Kg/ha. (ii) 238·0 Kg/ha. (iii) Main effect of S and 'control vs. others' are highly significant. (iv) Av. yield of grain in Kg/ha.

Control=787

	S_1	S_2	S_3	S_4	T_1	T_2	Mean
P_1	1672	1797	1627	1507	1597	1705	1651
P_2	1835	2100	1738	1429	1752	1798	1775
Mean	1753	1948	1682	1468	1675	1751	1713
T_1	1783	1837	1538	1540			
T_2	1723	2060	1826	1396			

C.D. for S marginal means=197·3 Kg/ha.
C.D. for control mean and mean for others=286·2 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(159), 61(178), 62(203), 63(193).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To determine the optimum requirements of N, P and K for paddy in Tungabhadra Project Area.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) *Pillipesara* (G.M.) for 60 ; Fallow for others. (c) Nil. (ii) Black soil. (iii) 14.6.60/19.7.60 ; 14.6.61/13.7.61 ; 9.6.62/7.7.62 ; 15.6.63/25.7.63. (iv) (a) 3 puddlings with country plough, levelling with *palla gorru*, trimming of bunds, digging of corners and spreading of clods. (b) Transplanting. (c) 37 Kg/ha. (d) 25 cm.×10 cm. (e) 2. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) 2 weedings and 2 push hoeings. (ix) 429 cm ; 440 cm ; 400 cm. ; 53 cm (x) 2.12.60 ; 24.11.61 ; 29.11.62 ; 6.12.63.

2. TREATMENTS :

T_0=No manure, T_1=Green manure at 4483 Kg/ha., $T_2=T_1+45$ Kg/ha. of N as A/S, $T_3=T_1+34$ Kg/ha. of P_2O_5 as Super, $T_4=T_1+67·0$ Kg/ha. of P_2O_5 as Super, $T_5=T_2+34$ Kg/ha. of P_2O_5 as Super, $T_6=T_2+67$ Kg/ha. of P_2O_5 as Super, $T_7=T_5+34$ Kg/ha. of K_2O as Mur. Pot. and $T_8=T_6+34$ Kg/ha. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 20 m.×12·5 m. ; 15 m.×11·0 m. ; N.A. ; N.A. (iii) 3. (iv) (a) 12·5 m.×2·2 m. ; 11·0 m.×1·7 m. ; N.A. ; N.A. (b) 12 m.×2·1 m. ; 10·7 m.×1·5 m. ; 1·5 m.×10·7 m. ; 10·7 m.×1·5 m. (v) 25 cm.×5 cm ; 15 cm.×8 cm ; N.A ; N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960—63. (b) Yes, only for 62 and 63. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 3374 Kg/ha. (ii) 454·7 Kg/ha. (based on 24 d.f. made up of Treatments×years interaction. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2435	2898	3698	3183	3128	3725	3712	3848	3736

C.D.=383·1 Kg/ha.

Individual resuls

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Years									
1960	2790	3022	3836	2906	3139	4127	4127	4243	4069
1961	3063	3894	4702	4099	4087	4789	4685	4934	4435
1962	2906	3499	4680	4406	4040	4417	4399	4696	4789
1963	981	1178	1574	1321	1248	1568	1639	1517	1652
Pooled	2435	2898	3698	3183	3128	3725	3712	3848	3736

Sig.	G.M.	S.E./plot
**	3584	340
**	4299	261
**	4204	300
**	1409	61
**	3374	454.7

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(179), 62(201), 63(192).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the effect of different sources and levels of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Black soils. (iii) 15.6.61/24, 25.7.61 ; 9.6.62/10.7.62 ; 15 6.63/24.7.63. (iv) (a) 3 puddlings with country plough, levelling with *palla gorru*, digging of corners and trimming of bunds. (b) Transplanting. (c) 37 Kg/ha. (d) 25 cm.×10 cm. for 61, 20 cm.×15 cm. for 62, Rows 20 cm. apart for 63. (e) 2. (v) 34 Kg/ha. of P_2O_5. (vi) GEB-24. (vii) Irrigated. (viii) 2 weedings. (ix) 44 cm ; 40 cm ; 5 cm. (x) 10.12.61 ; 28.11.62 ; 2.12.63.

2. TREATMENTS :

All combinations of (1) and (2)+control (4 plots).

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.

(2) 2 levels of N : N_1=34 and N_2=67 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 13·6 m.×41·4 m. (iii) 3. (iv) (a) 13·6 m.×3·5 m. (b) 13·3 m.×3·1 m. (v) 15 cm.×20 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1961–63. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 2697 Kg/ha. (ii) 408·7 Kg/ha. (based on 91 d.f. made up of pooled error and Treatments × years interaction). (iii) Main effect of M and control vs. others are highly significant. (iv) Av. yield of grain in Kg/ha.

Control=2222

	S_1	S_2	S_3	S_4	Mean
N_1	2627	2576	2752	2667	2655
N_2	3391	3154	3175	3134	3214
Mean	3009	2865	2963	2900	2934

C.D. for N marginal means=191·6 Kg/ha.

C.D. for 'control vs. others'=165·9 Kg/ha.

Individual results

Treatments	N_1	N_2	Sig.	S_1	S_2	S_3	S_4	Sig.
Years								
1961	2510	2846	N.S.	2890	2627	2578	2616	N.S.
1962	2966	3493	*	3312	3052	3345	3212	N.S.
1963	2490	3302	**	2824	2916	2966	2873	N.S.
Pooled	2655	3214	**	3009	2865	2963	2900	N.S.

Control	Sig.	S.E./plot	G.M.
1981	**	419·7	2445
2445	**	489·4	2968
2239	**	299·1	2676
2222	**	408·7	2697

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(160), 61(177), 62(202).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the effect of different sources and levels of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 4483 Kg/ha. of G.L.+224 Kg/ha. of Super.+448 Kg/ha. of G.N.C.+ 112 Kg/ha. of A/S for 60 ; 224 Kg/ha. of Super.+336 Kg/ha. of A/S for 61 ; 224 Kg/ha. of Super.+224 Kg/ha. of A/S for 62. (ii) Black soil. (iii) 23.12.60/24.1.61 ; 25.12.61/6, 7.2.62 ; 24.12.62/5.2.63. (iv) (a) 3 puddlings, levelling with *Pall gorru*, trimming of bunds, digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 34 Kg/ha. of P_2O_5. (vi) TKM-6. (vii) Irrigated. (viii) 2 weedings. (ix) 2 cm ; 30 cm., 9 cm. (x) 3.5.61 ; 5.5.62 ; 4.5.63.

2. TREATMENTS :

All combinations of (1) and (2) + control (4 plots).

(1) 2 levels of N : N_1=34 and N_2=67 Kg/ha.

(2) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=Urea and S_4=C/A/N.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 42 m. × 12·8 m. for 61 ; N.A. for others. (iii) 3. (iv) (a) 13·6 m. × 3·4 m. for 60 ; 12·8 m. × 3·5 m. for 61 ; 12·9 m. × 3·5 m. for 62. (b) 13·3 m. × 3·1 m. for 60 ; 12·5 m. × 3·2 m. for 61 ; 12·7 m. × 3·2 m. for 62. (v) 15 cm. × 15 cm. for 60 and 61 ; 15 cm. × 10 cm. for 62. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960—62. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS:

Pooled results

(i) 1943 Kg/ha. (ii) 552·1 Kg/ha. (based on 91 d.f. made up of pooled error and Treatments × years interaction). (iii) Main effect of N and 'control vs. others' are highly significant. (iv) Av. yield of grain in Kg/ha.

Control=1698

	S_1	S_2	S_3	S_4	Mean
N_1	1849	2005	1728	1718	1825
N_2	2323	2434	2485	1985	2307
Mean	2086	2220	2106	1851	2066

C.D. for N marginal means=258·9 Kg/ha.

C.D. for 'control vs. others'=224·3 Kg/ha.

Individual results

Treatments	N_1	N_2	Sig.	S_1	S_2	S_3	S_4	Sig.
Years								
1960	1448	1938	**	1768	1984	1726	1293	N.S.
1961	2009	2437	*	2428	2491	2283	1689	N.S.
1962	2019	2546	N.S.	2062	2184	2309	2573	N.S.
Pooled	1825	2307	**	2086	2220	2106	1851	N.S.

Control	Sig.	G.M.	S.E./plot
1571	N.S.	1652	441·5
1664	**	2037	416·1
1860	N.S.	2141	666·5
1698	**	1943	552·1

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63, 64(M.A.E.).**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type II : To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) N.A. (ii) Sandy loam. (iii) 9.9.63 ; 24.7.64. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) MTU—15(135 days). (vii) Irrigated. (viii) and (ix) N.A. (x) 3.12.63 ; 22.10.64.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4).

(1) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.
(4) 2 levels of F.Y.M. : F_0=0, F_1=56·4 Kg/ha.

Super; F.Y.M. and Mur. Pot. were applied in one dose before puddling (18.7.60) and A/S was applied in two doses 3 and 6 weeks after planting.

5. DESIGN :

(i) $3^3 \times 2$ confd. (ii) (a) 9 plots/block, 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 15·1 m. × 10·1 m. (b) 10·1 m. × 8·1 m. (v) 2·5 m. × 1 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1963-contd. (Expt. for 65-N.A.). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1963

(i) 1171 Kg/ha. (ii) 397·9 Kg/ha. (iii) No effect is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	1073	1168	1273	1114	1213	1187

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	1223	1189	1102	1169	1174

1964

(i) 1375 Kg/ha. (ii) 291·9 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	1380	1443	1303	1445	1301	1380

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	1268	1370	1487	1292	1459

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60, 61, 62, 63, 64(M.A.E.).**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type II : To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Sandy loam. (iii) 6.6.60/20.7.60 ; 15.5.61/7.7.61 ; N.A. ; 20.6.63. ; 22.6 64. (iv) (a) 3 puddlings and spading by *mummaties*. (b) Transplating (c) 33·6 Kg/ha. (d) 20 cm. × 10 cm. (e) N.A. (v) As per treatments. (vi) SLO-13(198 days) ; MTU-10(180 days) ; SLO-13(170 days). (vii) Irrigated. (viii) 2 weedings followed by push hoeing. (ix) N.A. (x) 30.11.60 ; 3.12.61 ; N.A; 15.11.63 ; 12.11.64.

2. TREATMENTS and 3. DESIGN :

Same as in type II expt. no. 63(M.A.E.) conducted at Dindi Farm.

4. GENERAL :

(i) Good. (ii) Stem borer attack controlled by spraying Endrin 1 oz. in 4 gallons of water three times. (iii) Yield of grain and straw. (iv) (a) 1956-contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1960

(i) 3048 Kg/ha. (ii) 423·3 Kg/ha. (iii) Main effect of K is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	2924	3048	3173	2937	2988	3219

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	2776	3126	3243	2992	3105

C.D. for K means=345·3 Kg/ha.

1961

(i) 3068 Kg/ha. (ii) 118·1 Kg/ha. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	2924	3111	3170	2902	3096	3207

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	2883	3121	3204	2970	3167

C.D. for N, P or K means=96·3 Kg/ha.

1962

(i) 2884 Kg/ha. (ii) 103·4 Kg/ha. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	2601	2917	3135	2666	2962	3024

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	2772	2863	3017	2766	3002

C.D. for N, P or K means=84·3 Kg/ha.

1963

(i) 3345 Kg/ha. (ii) 436·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	3402	3321	3315	3253	3470	3315

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	3253	3265	3520	3282	3410

1964

(i) 4029 Kg/ha. (ii) 166·3 Kg/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2
Av. yield	3694	3996	4397	4000	4020	4067

Treatment	K_0	K_1	K_2	F_0	F_1
Av. yield	3993	4008	4086	3974	4087

C.D. for N means=135·7 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60, 61, 62, 63(M.A.E).**

Site :- M.A.E. centre, Yemmiganur. **Type :- 'M'.**

Object : --Type-II : To study the effect of N, P, K and F.Y.M on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 9.6.60/25/7/60 ; 18.6.61/25.7.61 ; 9.6.62/17.7.62 ; 16.7.63. (vi) (a) 3 wet ploughings before planting and one dry ploughing. (b) Line planting. (c) 22·4 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) F.Y.M; Super and Mur. Pot. were applied before puddling. (vi) GEB-24 (160 days duration). (vii) Irrigated. (ix) 34·5 cm. (x) 15.12.1960 ; 12.12.61 ; 14.12.62 ; 14.12.63.

2. TREATMENTS : and 3. DESIGN:

Same as in Type II expt no. 63, 64(MAE) Conducted at Dindi Farm on page 135.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959-contd (expts for 64, 65-N.A.) (b) No. (c) Nil. Dindi, Maruteru. (vi) to (vii) Nil.

5. RESULTS :

1960

(i) 1570 Kg/ha. (ii) 318·2 Kg/ha. (iii) Main effects of N and P are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1
Av. yield	1132	1498	2079	1120	1716	1873	1668	1536	1505	1517	1622

C.D. for N or P means=224·1 Kg/ha.

1961

(i) 2427 Kg/ha. (ii) 237·2 Kg/ha. (iii) Main effect of N, P are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1
Av. yield	1701	2370	3209	1886	2675	2720	2485	2370	2425	2238	2616

C.D. for N or P means=167·1 Kg/ha.

1962

(i) 2233 Kg/ha. (ii) 368·0 Kg/ha. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1
Av. yield	1578	2136	2985	1659	2428	2612	2233	2199	2268	2148	2316

C.D. for N or P means=259·2 Kg/ha.

1963

(i) 2259 Kg/ha. (ii) 406·4 Kg/ha. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1
Av. yield	1596	2292	2889	1670	2486	2622	2193	2317	2267	2063	2455

C.D. for N or P means=286·3 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60, 61(MAE).**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type v : To study the effect of different times of application of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) 5.6.61/24.7.60. (iv) (a) 3 puddlings. (b) Transplanting (c) 34 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) 5604 Kg/ha. of F.Y.M+22·4 Kg/ha. of P_2O_5. (vi) MTU—10. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 31.11.60.

2. TREATMENTS:

All combinations of (1) and (2)+a control

(1) 2 sources of 44·8 Kg/ha. of N : S_1=A/S and S_2=Urea.

(2) 7 times of application : T_1=Full dose before planting, T_2=Full dose at planting, T_3=Full dose at tillering, T_4=½ before planting+½ at tillering, T_5=½ at planting+½ at tillering, T_6=⅓ before planting+⅓ at tillering+⅓ at flowering and T_7=⅓ at planting+⅓ at tillering+⅓ at flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·4 m. (b) 8·5 m.×3·8m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—1961. (b) N.A. (c) Nil. (v) Yemmiganur. (vi) N.A. (vii) Nil.

5. RESULTS :

1960

(i) 3913 Kg/ha. (ii) 197·0 Kg/ha. (iii) Main effects of T and S are significant. (iv) Av. yield of grain in Kg/ha.

Control=2545 Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	S_1	S_2
Mean yield	3605	3199	3891	3993	3448	5256	4684	4097	3924

C.D. for T means=233 Kg/ha.

1961

(i) 3423 Kg/ha. (ii) 114·1 Kg/ha. (iii) Main effect of T is significant. (iv) Av. yield of grain in Kg/ha.

Control=2514 Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	S_1	S_2
Mean yield	3750	3270	3750	3090	3420	3960	3630	3546	3560

C.D. for T means=135 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(MAE).**

Site :- M.A.E Centre, Maruteru. **Type :- 'M'.**

Object :—Type v : To study the effect of different times of application on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) G.M. (c) Nil. (ii) Medium black. (iii) 16.1.61/10.2.61. (iv) (a) 4 puddlings. (b) Broadcasting. (c) 34 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) 5604 Kg/ha of F.Y.M.+22·4 Kg/ha. of P_2O_5. (vi) SLO–16. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 23.4.61.

2. TREATMENTS and 3. DESIGN :

Same as in Type V experiment no. 60, 61 (M.A.E.) conducted at Maruteru (*kharif*) on page 156.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—1960. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4300 Kg/ha. (ii) 512·3 Kg/ha. (iii) Main effect of T is significant. (iv) Av. yield of grain in Kg/ha.

Control=2674 Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	S_1	S_2
Mean yield	4573	3734	3919	4352	4020	5422	4896	4419	4413

C.D. for T means=606 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62 to 65(M.A.E).**

Site :- M.A.E Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type v (a) : To study the effect of method of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) Medium black. (iii) 30.7.62 ; N.A. for 63 and 64 ; 11.6.65/21.8.65. (iv) (a) 4 ploughings. (b) Broadcast for 63 ; Transplanting for 65. (c) 22 Kg/ha. (d) 25 cm.×25 cm. (e) N.A. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) MTU—15 for 63 ; MTU-9 for 65; N.A. for others. (vii) Irrigated. (viii) 2 hand weedings ; 2 hand weedings and 2 hoeings for 65. (ix) N.A. (x) 23.11.62 ; N.A. for 63 and 64 ; 26.11.65.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 3 levels of N : N_1=33·6, N_2=50·4 and N_3=67·2 Kg/ha.

(2) 4 methods of application : M_1=Broadcast just before last puddling and incorporated in the soil (sub-surface application), M_2=Broadcast at planting, M_3=Broadcast half at planting and ½ about a month after planting and M_4=Application in the form of pellets about three weeks after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1962-1966. (b) N.A. (c) Nil. (v) Maruteru, Yemmiganur. (vi) and (vii) Nil.

5. RESULTS :

1962

(i) 1203 Kg/ha. (ii) 451·1 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=720 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	1240	1360	1102	1270	1380	1273	1077

1963

(i) 986 Kg/ha. (ii) 199·6 Kg/ha. (iii) Main effect of M is significant. (iv) Av. yield of grain in Kg/ha.

Control=638 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	999	927	872	1260	935	1123	986

C.D.=236 Kg/ha.

1964

(i) 2281 Kg/ha. (ii) 346·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=2451 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	2108	2211	2311	2439	2292	2262	2248

1965

(i) 1841 Kg/ha. (ii) 366·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha

Control=1469 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	1907	1865	1811	1907	1802	1778	2040

———

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63 and 64(M.A.E).**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type v (a) : To study the effect of method of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) 16, 17.2.63 ; 18.2.64. (iv) (a) 4 ploughings. (b) Transplanting. (c) 22 Kg/ha. (d) 20 cm.×20 cm. (e) N.A. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) MTU-15. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 21, 22.5.63 ; 25.5.64.

2. TREATMENTS : and 3. DESIGN :

Same as in expt. Type v (a) no 62(M.A.E) conducted at Dindi Farm (*Kharif*) on page 157.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1962-1966 (1963 and 65 N.A.) (b) N.A. (c) Nil. (v) Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

1962

(i) 2659 Kg/ha. (ii) N.A. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=2220 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	2825	2652	2484	2820	2750	2680	2656

1964

(i) 1943 Kg/ha. (ii) 540·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=2116 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	1780	1980	2119	1832	1889	1961	1933

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63 to 65(M.A.E).**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type v (a) : To study the effect of method of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy–Paddy. (b) Paddy. (c) As per treatments. (ii) Medium black. (iii) 16.5.63/22.6.63 ; 11.7.64 ; 13.6.65/16.7.65. (iv) (a) Ploughing. (b) Transplanting, Broadcasting 65. (c) 34 Kg/ha. (d) 20 cm.×20 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M; 33·6 Kg/ha. of P_2O_5 as Super. (vi) SLO—13. (vii) Irrigated. (viii) weeding (ix) N.A. (x) N.A. ; 28.11.64 ; 20.11.65.

2. TREATMENTS :

Same as in expt. Type v (a) no 62 (M.A.E.) Conducted at Dindi Farm on page 157.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1963-1965. (b) N.A. (c) Nil. (v) Dindi Yemmiganur. (vi) and (vii) Nil.

5. RESULTS :

1963

(i) 4143 Kg/ha. (ii) 924·3 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=4762 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	3790	4199	4137	4239	3877	4069	4329

1964

(i) 3814 Kg/ha. (ii) 64·9 Kg/ha. (iii) Main effects of M and N are significant. (iv) Av. yield of grain in Kg/ha.

Control=3825 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	3793	3784	3904	3773	3810	3872	3759

C.D.=54·1 Kg/ha. C.D.=46.9 Kg/ha.

1965

(i) 3708 Kg/ha. (ii) 130·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=3370 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	3720	3674	3773	3777	3745	3761	3702

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64, 65(M.A.E).**

Site :- M.A.E Centre, Maruteru. **Type :- 'M'.**

Object :— v (a) : To study the effect of method of application of N on Paddy.

1. BASAL CONDITIONS :

(i) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Medium black. (iii) 12.1.64/3.2.64; 13.1.65/8.2.65. (iv) (a) Ploughings. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M. (vi) SLO —16. (vii) Irrigated. (viii) 2 weedidgs. (ix) N.A. (x) 18.4.64 ; 25.4.65.

2. TREATMENTS : and 3. DESIGN :

Same as in expt. Type v (a) no. 62(M.A.E) conducted at Dindi Farm on page 157.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1964-1966. (b) N.A. (c) Nil. (v) Dindi Farm. (vi) N.A. (vii) Nil.

5. RESULTS :

1964

(i) 3260 Kg/ha. (ii) 66·6 Kg/ha. (iii) Main effects of M and N are significant. (iv) Av. yield of grain in Kg/ha.

Control=2038 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	3270	3386	3490	3302	3153	3388	3545

C.D.=55·5 Kg/ha.

1965

(i) 3983 Kg/ha. (ii) 91·0 Kg/ha. (iii) N.A. (iv) Av.yield of grain in Kg/ha.

Control=2687 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	3988	4166	4176	4033	3941	4104	4228

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62, 63, 65(M.A.E.)**

Site :- M.A.E. Centre, Yemmiganur. **Type :- 'M'.**

Object :—Type V(a) :—To study the effect of method of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 22·4 Kg/ha. of P_2O_5+33·6 Kg/ha. of N. (ii) Medium black. (iii) 21.7.62 ; 24.7.63 ; 16.8.65. (iv) (a) 2 ploughings and puddlings ; 2 dry ploughings and 2 wet ploughings for 65. (b) Transplanting. (c) 22 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) 33·6 Kg/ha. of P_2O_5 as Super. (vi) GEB-24. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 15.12.62 ; 13.12.63 ; 15.12.65.

2. TREATMENTS and 3. DESIGN :

Same as in expt. Type V(a) no. 62(M.A.E.) conducted at Dindi Farm on page.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1962—66 (N.A. for 64). (b) N.A. (c) Nil. (v) Dindi, Maruteru. (vi) and (vii) N.A.

5. RESULTS :

1962

(i) 2320 Kg/ha. (ii) 299·2 Kg/ha. (iii) Main effects of M and N are significant. (iv) Av. yield of grain in Kg/ha.

Control=2030 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	2500	2060	2367	2450	2149	2321	2559

C.D.=249·4 Kg/ha. C.D.=216·0 Kg/ha.

1963

(i) 1900 Kg/ha. (ii) 198·8 Kg/ha. (iii) Main effects of M and N are significant. (iv) Av. yield of grain in Kg/ha.

Control=1213 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	1730	1841	1976	2282	1686	2018	2170

C.D.=165·7 Kg/ha. C.D.=143·5 Kg/ha.

1965

(i) 1923 Kg/ha. (ii) 310·7 Kg/ha. (iii) Main effects of M and N are significant. (iv) Av. yield of grain in Kg/ha.

Control=1559 Kg/ha.

Treatment	M_1	M_2	M_3	M_4	N_1	N_2	N_3
Mean yield	2016	1915	2038	1841	1772	1978	2111

C.D.=259 Kg/ha. C.D.=224·3 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(M.A.E)**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type VI :—To find out the source and method of application of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) 6.6.60/20.7.60. (iv) (a) 3 puddlings. (b) Transplanting (c) 34 Kg/ha. (d) 20 cm.×10 cm (e) N.A. (v) 5604 Kg/ha. of F.Y.M. (vi) MTU-1. (vii) Irrigated. (viii) 2 weedings. (ix) N.A, (x) 30.11.60.

2. TREATMENTS:

All combinations of (1), (2) and (3)+one control in each block.

(1) 2 levels of P_2O_5 : P_1=22·4 and P_2=44·8 Kg/ha.

(2) 3 methods of application : M_1=Broadcast at puddling time, M_2=Dipping the seedlings in mud slush mixed with the fertiliser before transplanting and M_3=Application of the fertiliser in the form of pellets.

(3) 3 sources of P_2O_5 :S_1=Super, S_2=Ammo. Phos. and S_3=Dical Phos.

3. DESIGN :

(i) 3^2×2 Fact. Confd. (ii) (a) 7 plots/block and 3 blocks/replication. (b) N.A (iii) 4. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1959-60. (b) N.A. (c) Nil. (v) Chalavi. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 3557 Kg/ha. (ii) 307·1 Kg/ha. (iii) Main effect of P is significant. (iv) Av. yield of grain in Kg/ha.

Control=2278 Kg/ha.

Treatment	M_1	M_2	M_3	S_1	S_2	P_1	P_2
Mean yield	3528	3830	3635	3647	3681	3535	3794

C.D.=212·9

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(M.A.E.)**

Site :- M.A.E. Centre, Yemmiganur. **Type :- 'M'.**

Object :—Type VI:—To find out the source and method of application of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) 24.6.60/8.8.60. (iv) (a) 3 ploughings, puddlings and levelling. (b)Transplanting. (c) 22 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 12.12.60.

2. TREATMENTS:

Same as in expt. Type V :—no. 60(M.A.E.) Maruteru on page 162.

3. DESIGN :

(i) $3^2 \times 2$ Fact. confd. (ii) (a) 7 plots/block and 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 876 Kg/ha. (ii) 192·8 Kg/ha. (iii) Main effect of S is significant. (iv) Av. yield of grain in Kg/ha.

Control=544 Kg/ha.

Treatment	M_1	M_2	M_3	S_1	S_2	S_3	P_1	P_2
Mean yield	927	890	977	973	1023	798	904	958

C.D.=110·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 61, 62(M.A.E.)**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type IX—To compare Nitro—Phosphate by O.D.D.A . and P.E.C. processes at different levels and different methods of application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 6.8.61 ; 10.8.62. (iv) (a) 4 ploughings. (b) Transplanting. (c) Nil. (d) 25 cm.×25 cm. (e) N.A. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) N.A. ; 21.11.62.

2. TREATMENTS :

All combinations of (1) ; (2) and (3)+4 extra treatments in each block.

(1) 3 sources of fertilisers : S_1=Super, S_2=Nitro.—Phos. O.D.D.A. and S_3=Nitro—Phos. (P.E.C.)

(2) 3 levels of fertiliser : L_1=13·4 Kg/ha. of N+11·8 Kg/ha. of P_2O_5, $L_2=2L_1$ and $L_3=4L_1$.

(3) 3 methods of placement : M_1=Broadcasting at puddling time, M_2=Dipping the seedlings in mud slush mixed with fertiliser before transplanting ; M_3=In the form of pellets to be placed near the roots.

Extra treatments : N_0=0, N_1=13·4, N_2=26·9 and N_3=53·8 Kg/ha. of N.

3. DESIGN :

(i) 3^3+4 Fact. confd. (ii) (a) 13 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1961—62. (b) N.A. (c) Nil. (v) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

1961

(i) 1729 Kg/ha. (ii) 359·3 Kg/ha. (iii) Main effect of M and L are significant. (iv) Av. yield of grain in Kg/ha.

N_0=1448, N_1=1411, N_2=1549 and N_3=1679

Treatment	S_1	S_2	S_3	M_1	M_2	M_3	L_1	L_2	L_3
Mean yield	1875	1795	1792	1651	1774	2038	1685	1780	1998

C.D.=233 Kg/ha. C.D.=233 Kg/ha.

1962

(i) 1190 Kg/ha. (ii) 281·6 Kg/ha. (iii) Main effect of M is significant (iv) Av. yield of grain in Kg/ha.

N_0=1400, N_1=1240, N_2=1040 and N_3=1300 Kg/ha.

Treatment	S_1	S_2	S_3	M_1	M_2	M_3	L_1	L_2	L_3
Mean yield	1160	1213	1123	1203	863	1430	1130	1143	1223

C.D.=190·0 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62, 63, 64(M.A.E.)**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type X :—To study the effect of N, P and G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) N.A ; 20.5.63/2.7.63 ; 10.7.64. (iv) (a) 3 ploughings and puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm.×20 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M. (vi) MTU-10. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) N.A ; 15.11.63 ; 21.11.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)+an extra treatment T=NPK in each block.

(1) 3 levels of G.M. : G_0=No G.M., G_1=G.M. raised and ploughed *in-situ* and G_2=G.M. raised with application of 35 Kg/ha. of P_2O_5 and ploughed *in—situ.*

(2) 3 levels of N as A/S : N_0=0, N_1=17·5 and N_2=35 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=35 and P_2=70 Kg/ha.

Extra treatment : T=NPK through artificial fertilizers equivalent to those obtained from G.M.

3. DESIGN :

(i) 3^3+1 confd. (ii) (a) 3 blocks/replication and 10 plots/block. (b) N.A. (iii) 2. (iv) (a) 1/100 ha. (b) 1/125 ha. (v) and (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1962—64. (b) N.A. (c) Nil. (v) Yemmiganur. (vi) N.A. (vii) Nil.

5. RESULTS :

1962

(i) 3038 Kg/ha. (ii) 101·4 Kg/ha. (iii) Main effect of N and P are significant. (iv) Av. yield of grain in Kg/ha.

T=3190 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	2928	3035	3100	2969	3027	3067	2982	3007	3074

C.D.=68 Kg/ha. C.D.=68 Kg/ha.

1963

(i) 3722 Kg/ha. (ii) 287·7 Kg/ha. (iii) Main effects of N and P are significant. (iv) Av. yield of grain in Kg/ha.

T=3762 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	3802	3771	3578	3581	3967	3603	3624	3711	3816

C.D.=193 Kg/ha. C.D.=193 Kg/ha.

1964

(i) 3371 Kg/ha. (ii) 119·2 Kg/ha. (iii) Main effects of N, P and G are significant. (iv) Av. yield of grain in Kg/ha.

T=3641 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	3081	3488	3454	3400	3275	3348	3272	3275	3476

C.D.=80 Kg/ha. C.D.=80 Kg/ha. C.D.=80 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62, 63, 65(M.A.E.)**

Site :- M.A.E. Centre, Yemmiganur. **Type :- 'M'.**

Objects :—Type X :—To study the effect of N, P and G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 22·4 Kg/ha. of P_2O_5+33·6 Kg/ha. of N. (ii) Red soil. (iii) N.A.; 12.8.63; 26.8.65. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting. (c) 22 Kg/ha. (d) 20 cm.×10 cm. (e) N.A. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) N.A; 21.12.63; 10.12.65.

2. TREATMENTS :

Same as in expt. Type X no. 62(M.A.E.) conducted at Maruteru on page 164.

3. DESIGN :

(i) 3^3+1 confd. (ii) (a) 10 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 1/100 ha. (b) 1/125 ha. (v) and (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1962—65 (64 N.A.). (b) N.A. (c) Nil. (v) Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

1962

(i) 1024 Kg/ha. (ii) 250·4 Kg/ha. (iii) Main effects of N, P and G are significant. (iv) Av. yield of grain in Kg/ha.

T=1029 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	754	972	1344	938	992	1139	971	911	1187

C.D.=168 Kg/ha. C.D.=168 Kg/ha. C.D.=168 Kg/ha.

1963

(i) 2753 Kg/ha. (ii) 158·2 Kg/ha. (iii) Main effects of N, P and G are significant (iv) Av. yield of grain in Kg/ha.

T=4563 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	2256	2506	2891	2253	2524	2877	1729	2823	3100

C.D.=106·0 Kg/ha. C.D.=106·0 Kg/ha. C.D.=106·0 Kg/ha.

1965

(i) 1440 Kg/ha. (ii) 360·7 Kg/ha. (iii) Main effects of P and G are significant. (iv) Av. yield of grain in Kg/ha.

T=359 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	P_2	G_0	G_1	G_2
Mean yield	1441	1498	1577	1281	1426	1809	710	1792	2014

C.D.=242 Kg/ha. C.D.=242 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63 to 65(M.A.E.)**

Site :- M.A.E. Centre ; Dindi Farm. **Type :- 'M'.**

Object :--Type XI :—To determine the response of micro—nutrients application and to study the relative merits of the two methods of application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (iii) Sandy loam. (iii) 27.7.63 ; 26.7.64 ; 11.6.65/14 7.65. (iv) (a) 2 ploughings and puddling, and 3 ploughings for 65. (b) Transplanting. (c) 22 Kg/ha. (d) 25 cm.×25 cm. (e) N.A. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 hand weedings ; 2 hand weedings and 2 hoeings for 65. (ix) N.A. (x) 4.12.63 ; 29.10.64.

2. TREATMENTS :

15 micronutrient treatments : T_0=Control (no fertiliser), T_1=NPK applied to soil only, $T_2=T_1$+Spartan at 395 Kg/ha. by soil application, $T_3=T_1$+Manganese as Manganese Sulphate at 60 Kg/ha., $T_4=T_1$+Zn as Zinc Sulphate at 30 Kg/ha. $T_5=T_1$+Cu as Copper Sulphate at 30 Kg/ha., $T_6=T_1$+Boron as Borax at 17·5 Kg/ha., $T_7=T_1$+Molybedenum as Sodium Molybedate at 1·25 Kg/ha., $T_8=T_1$+Mn+Zn+Cu+BO+MO, $T_9=T_1$+Manganese as Manganese Sulphate at 17·5 Kg/ha., $T_{10}=T_1$+Zn as Zinc Sulphate at 12·5 Kg/ha., $T_{11}=T_1$+Cu as Copper Sulphate at 12·5 Kg/ha., $T_{12}=T_1$+Boron as Borax at 6·2 Kg/ha., $T_{13}=T_1$+Molybedenum as Sodium Molybdate at 0·62Kg/ha. and $T_{14}=T_1$+Mn+Zn+Cu+BO+MO.

Treatments T_2 to T_8 by soil application and T_9 to T_{14} by foliar spray. T_1=33·6 Kg/ha. of N+33·6 Kg/ha. of P_2O_5+33·6 Kg/ha. of K_2O for 63, 64 and 35 Kg/ha. of each N, P and K for 65.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1963—66. (b) N.A. (c) Nil. (v) Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

1963

(i) 821 Kg/ha. (ii) 318·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	968	924	659	655	942	783	793	883

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	1050	658	818	924	740	683	831

1964

(i) 1847. (ii) 346·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	1639	1881	1718	1911	1823	1750	1929	1873

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	1876	1701	2158	2028	2056	1513	1847

1965

(i) 1793 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	1771	1934	1890	1735	1938	1583	1773	1662

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	1928	1728	1875	2060	1875	1580	1565

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(M.A.E.)**

Site :- M.A.E., Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type XI :—To determine the response of micro—nutrients application and to study the relative merits of the two methods of application.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Sandy loam. (iii) 14.2.64. (iv) and (v) N.A. (vi) MTU-15. (vii) Irrigated (viii) and (ix) N.A. (x) 24.5.64.

2. TREATMENTS :

Same as in expt. Type XI no 63 to 65(M.A.E.) conducted at Dindi Farm (Kharif) on page 166.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

1964

(i) 2842 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	2934	2456	2656	2644	2856	3045	2889	2667
Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	
Mean yield	2778	2822	3145	3078	3189	2445	3022	

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63 to 65(M.A.E.).**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type XI :—To determine the response of micro—nutrients application and to study the relative merits of the two methods of application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Medium black. (iii) 30.6.63 ; 9.7.64 ; 24.5.65/26.6.65. (iv) (a) N.A. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm. × 20 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M. (vi) MTU-3 ; SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 16.10.63 ; 26.9.64 ; 13.11.65.

2. TREATMENTS :

Same as in expt. Type XI no. 63 to 65(M.A.E.) conducted at Dindi Farm on page 166.

3. DESIGN:

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1963—65. (b) N.A. (c) Nil. (v) Dindi Farm. (vi) N.A. (vii) Nil.

5. RESULTS :

1963

(i) 3274 Kg/ha. (ii) 142·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	2703	2843	3680	4168	3156	3139	2912	3680
Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	
Mean yield	3034	3261	2895	4255	3139	3087	3156	

C.D.=200·8 Kg/ha.

1964

(i) 3889 Kg/ha. (ii) 69·4 Kg/ha. (iii) Treatment differences are highly significant (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	3395	3869	3937	3720	3780	4052	3967	3848
Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	
Mean yield	4073	3898	3915	4044	3932	3865	4035	

C.D.=98·1 Kg/ha.

1965

(i) 3763 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	3596	3592	3832	3749	3811	3754	3831	3730

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	3849	3714	3834	3793	3837	3707	3821

———

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63 to 65(M.A.E.)**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type XI :—To determine the response of micro—nutrients application and to study the relative merits of the two methods of application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Medium black. (iii) N.A. ; 1.2.64 ; 13.1.65/1.2.65. (iv) (a) Ploughings and 3 puddlings, (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M. (vi) SLO-16. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 18.4.64 ; 21.4.64 ; 21.4.65.

2. TREATMENTS :

Same as in expt. Type XI no. 63 to 65(M.A.E.) conducted at Dindi Farm on page 167.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1963 - 65. (b) N.A. (c) Nil. (v) Dindi Farm. (vi) N.A. (vii) Nil.

5. RESULTS :

1963

(i) 3523 Kg/ha. (ii) 216·1 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	2444	3574	3719	3695	3648	3667	3612	3602

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	3749	3454	3628	3581	3465	3341	3660

C.D.=305·6 Kg/ha.

1964

(i) 3691 Kg/ha. (ii) 315·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	2622	3684	3796	3747	3801	3806	3805	3743

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	3813	3739	3752	3739	3792	3747	3780

C.D.=445·5 Kg/ha.

1965

(i) 3690 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean yield	2617	3688	3749	3816	3764	3787	3754	3722

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Mean yield	3762	3804	3747	3786	3822	3788	3737

Crop :- Paddy. **Ref :- A.P. 65(M.A.E.)**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'M'.**

Object :—Type xii – : To study the effect of different fertiliser treatments and their methods of application on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) 11.6.65/24.7.65. (iv) (a) 1 ploughing and 2 puddlings. (b) Transplanting. (c) 22 Kg/ha. (d) 25 cm. × 25 cm. (e) N.A. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 15.11.65.

2. TREATMENTS :

Main-plot treatments :

4 fertiliser treatments: F_1=44·8 Kg/ha. of N as A/S, F_2=22·4 Kg/ha. of P_2O_5 as Super, F_3=44 8 Kg/ha of N+22·4 Kg/ha. of P_2O_5 and F_4=44·8 Kg/ha. of N+22·4 Kg/ha. of P_2O_5 +22·4 Kg/ha. of K_2O.

Sub-plot treatments :

All combinations of (1) and (2)+2 extra treatments

(1) 3 methods of application : M_1=Soil application ; M_2=Foliar application and M_3=Soil application and Foliar application.

(2) 2 levels of application : L_1=½ dose and L_2=full dose.

Extra treatments : C_1=water spray and C_2=absolute control.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1965-1966. (b) N.A. (c) Nil. (v) Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2001 Kg/ha. (ii) (a) 749·8 Kg/ha. (4) 1101·0 Kg/ha. (iii) No effects is significant. (iv) Av yield of grain in Kg/ha.

C_1=1835 and C_2=2134 Kg/ha.

	L_1M_1	L_2M_1	L_1M_2	L_2M_2	L_1M_3	L_2M_3	Mean
F_1	2654	2533	2407	1351	2060	2592	2266
F_2	2008	1939	1380	2060	2200	1875	1894
F_3	2190	2067	1850	1713	2102	1990	1985
F_4	1292	2466	1706	1779	2105	1927	1879
Mean	2036	2226	1836	1726	2117	2096	2006

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(M.A.E.)**

Site :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type xii : —To study the effect of different fertiliser treatments and their methods of application on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Medium black. (iii) 20.5.65/23.6.65. (iv) (a) 3 ploughings. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm. × 20 cm. (e) N.A. (v) 56 Q/ha. of F.Y.M. (vi) SLO—13. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 24.11.65.

2. TREATMENTS :

Same as in expt. Type (xii) no. 65(M.A.E) conducted of Dindi Farm on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) N.A. (v) N.A., (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) Dindi Farm. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 3728. (ii) (a) 108·9 Kg/ha. (b) 211·3 Kg/ha. (iii) Main effects of F and interaction (LM) are significant. (iv) Av. yield of grain in Kg/ha.

C_1=3520 and C_2=3471 Kg/ha.

	L_1M_1	L_2M_1	L_1M_2	L_2M_2	L_1M_1	L_2M_2	Mean
F_1	3934	3849	3769	3824	3845	3837	3843
F_2	3656	3729	3560	3717	3661	3488	3635
F_3	3803	4109	3759	3845	3795	3793	3862
F_4	3973	4102	3876	3764	3835	3802	3881
Mean	3841	3947	3741	3788	3784	3730	3805

C.D. for F marginal means=71 Kg/ha.
C.D. for LM marginal means=133 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 65(M.A.E).**

Site, :- M.A.E. Centre, Maruteru. **Type :- 'M'.**

Object :—Type XII :—To study the effect of different fertiliser treatments and their methods of application on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Medium black. (iii) to (x) N.A.

2. TREATMENTS :

Same as in expt. Type xii no. 65(M.A.E) conducted at Dindi Farm on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 3261 Kg/ha. (ii) (a) 91·9 Kg/ha. (b) 354·3 Kg/ha. (iii) Main effects of F and (LM) are signiffcant. (iv) Av. yield of grain in Kg/ha.

C_1=3045 and C_1=2752 Kg/ha.

	L_1M_1	L_2M_1	L_1M_2	L_2M_2	L_1M_3	L_2M_3	Mean
F_1	3509	3694	3284	3302	3314	3334	3406
F_2	2914	2979	2922	2922	2938	2941	2936
F_3	3689	3723	3424	3401	3648	3681	3594
F_4	3639	3695	3526	3556	3562	3571	3591
Mean	3438	3523	3289	3295	3365	3382	3382

C.D. for F marginal means=60 Kg/ha.
C.D. for LM marginal means=223 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 1964 (S.F.T.) for Karimnagar, 62, 64, 65 (S.F.T.) for Warangal 62, 63, 64, 65 (S.F.T.)for others.**

District :- Chittoor, Guntur, Krishna, Srikakulam, Visakhapatnam Nellore, Hyderabad, Karimnagar, Mehboobnagar, Warangal. **Type :- 'M'.**

Object : –To study the response curve of important cereals, oil seeds, and cash crops to nitrogen applied singly and in combination with other nutrients.

1. BASAL CONDITION :

(i) (a) to (c) N.A. (ii) Deep black for Guntur, Red and black for Krishna, Red Sandy for others. (iii) to (vi) N.A. (vii) Irrigated (viii) to (x) N.A.

2. TREATMENTS :

N_0 =Control (no manure).
N_1 =35 Kg/ha. of N.
N_2 =70 Kg/ha. of N.
P_1 =35 Kg/ha. of P_2O_5.
N_1P_1 =35 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_2P_1 =70 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_2P_2 =70 Kg/ha. of N+70 Kg/ha. of P_2O_5.
$N_2P_2K_1$ =70 Kg/ha. of N+70 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O.

N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(a) and (ii) A selected district is divided into four agriculturally homogeneous zones based on climate, soil, cropping pattern, etc. In each zone one block is selected at random. A block normally consists of a group of 50-100 villages. In each block 36 experiments are conducted in a year of which 11 are of type A_1, 11 of type A_2, 11 of type A_3 and 3 are of type C. The eleven experiments under type A_1, A_2 and A_3 are distributed as 3 on a *Kharif* cereal, 3 on a *rabi* cereal, 3 on a cash crop and 2 on oilseed. All the three type—C experiments are conducted on a legume crop. For the purpose of conducting the A_1, A_2 and A_3 experiments 11 villages are randomly selected in each block and in each village 3 experiments one each of type A_1, A_2 and A_3 are laid out. For conducting the three type C trials three villages are randomly selected in each block. (iii) (a) 1/100 ha. (b) 1/200 ha. (iv) Yes.

4. GENERAL :

(i) to (iii) N.A. (iv) (a) 1964 for Karimnagar, 1962 to 66 (63 N.A. for Waranagal, 1962 to 65 for Chittoor, Visakhapatnam. Mehboobnagar, 1962 to 66for others. (b)N A. (c) Nil.(v) to (vii) N.A.

5. RESULTS:

Chittoor

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	243	348	245	318	433	559	628	48·8

Control yield=2419 Kg/ha. ; No. of trials=10.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	190	230	164	253	358	379	458	35·0

Control yield=2064 Kg/ha. ; No. of trials=12.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	340	341	307	419	512	521	797	78·0

Control yield=3205 Kg/ha. ; No. of trials=8.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	315	229	438	416	454	757	573	141·5

Control yield=3085 Kg/ha. ; No. of trials=6.

Guntur

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	146	332	38	332	482	594	631	54·3

Control yield=1269 Kg/ha. ; No. of trials=3.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	177	255	134	452	548	598	672	163·6

Control yield=2450 Kg/ha. ; No. of trials=2.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	406	645	470	752	816	1016	1076	51·0

Control yield=1864 Kg/ha. ; No. of trials=13.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	202	328	200	400	532	622	777	52·7

Control yield=1291 Kg/ha. ; No. of trials=11.

Krishna

62 (S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av response of grain in Kg/ha.	414	744	252	671	831	927	1086	87·6

Control yield=2119 Kg/ha. ; No. of trials=8.

63(S F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	691	873	419	967	1128	1205	1527	115·0

Control yield=2267 Kg/ha. ; No. of trials=10.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	387	524	215	431	642	736	826	110·0

Control yield=1987 Kg/ha. ; No. of trials=15.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	208	287	169	424	489	640	820	72·5

Control yield=2446 Kg/ha. ; No. of trials=16.

Srikakulam

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	20	677	184	455	539	850	887	83·4

Control yield=2136 Kg/ha. ; No. of trials=9.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2N_1$	S.E.
Av. response of grain in Kg/ha.	146	40	107	208	382	408	514	123·8

Control yield=2257 Kg/ha. ; No of trials=11.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	173	289	1	189	393	331	429	97·0

Control yield=2295 Kg/ha. ; No. of trials=12.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	80	413	—45	143	216	300	354	48·8

Control yield=2252 Kg/ha. ; No of trials=12.

Visakhapatnam

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	253	467	132	385	545	610	700	38·5

Control yield=2229 Kg/ha. ; No of trials=12.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	452	598	295	391	759	846	892	99·0

Control yield=1789 Kg/ha. ; No. of trials=12.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	229	416	121	265	396	388	501	45·0

Control yield=1831 Kg/ha. ; No. of trials=9.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	269	420	172	382	520	529	637	45·2

Control yield=1522 Kg/ha.; No. of trials=11.

Nellore

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	133	298	175	286	354	420	442	93·0

Control yield=1881 Kg/ha. ; No. of trials=10.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	128	234	94	182	278	387	375	54·0

Control yield=1596 Kg/ha. ; No. of trials=6.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	141	247	180	267	421	519	680	69·0

Control yield=1869 Kg/ha. ; No. of trials=12.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. respouse of grain in Kg/ha.	148	4	—181	—92	6	249	399	236·0

Control yield=2320 Kg/ha. ; No of trials=6.

Warangal

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	255	367	219	331	454	533	645	49 4

Control yield=2290 Kg/ha. ; No of trials=9.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	736	481	281	711	808	875	1127	158·0

Control yield=3005 Kg/ha . ; No. of trials=12.

65(S F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	198	314	240	455	360	556	397	77·3

Control yield=2675 Kg/ha. ; No. of trials=9.

Hyderabad

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	283	529	—41	412	518	678	1026	137·8

Control yield=2226 Kg/ha. ; No. of trials=6.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	198	322	36	307	332	518	612	147·2

Control yield=1503 Kg/ha. ; No. of trials=12.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	446	648	74	586	643	777	1092	93·0

Control yield=2135 Kg/ha. ; No. of trials=5.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	—795	—8	—182	54	191	—677	448	73·6

Control yield=1964 Kg/ha. ; No. of trials=4.

Karimnagar

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	83	420	183	518	503	1118	1137	225·0

Control yield=1467 Kg/ha. ; No. of trials=2.

Mehboobnagar

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	—77	209	126	394	595	410	884	203·0

Control yield=1142 Kg/ha. ; No. of trials=3.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	239	388	150	339	537	634	783	77·6

Control yield=1678 Kg/ha. ; No of trials=8.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	240	620	77	628	560	993	1282	148·0

Control yield=2283 Kg/ha. ; No of trials=3.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	139	200	173	250	236	233	399	61·1

Control yield=971 Kg/ha. ; No. of trials=3.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 64 (S.F.T.)for Karimnagar, 63, 64, 65 (S.F.T.) for Mehboobnagar; 62, 64, 65(S.F.T.) for Warangal; 62, 63, 64, 65 (S.F.T.) for others.

Site :- District : Chittoor, Guntur, Krishna, Nellore, Srikakulam, Visakhapatnam, Hyderabad, Warangal, Mehboobnagar, Karimnagar.

Type :- 'M'.

Object:—To study the response curve of important cereals, oil seeds and cash crops to Phosphorous applied singly and in combination with other nutrients.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black for Guntur, red and black for Krishna red sandy for others. (iii) to (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

N_0 =Control (no manure).
N_1 =35 Kg/ha. of N.
P_1 =35 Kg/ha. of P_2O_5.
P_2 =70 Kg/ha. of P_2O_5.
N_1P_1 =35 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_1P_2 =35 Kg/ha. of N+70 Kg/ha. of P_2O_5.
N_2P_2 =70 Kg/ha. of N+70 Kg/ha. of P_2O_5.
$N_2P_2K_2$=70 Kg/ha. of N+70 Kg/ha. of P_2O_5+70 Kg/ha. of K_2O.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (*Kharif*). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) (a) 64 for Karimnagar 62 to 66 (63 N.A.) for Warangal 63 to 65 for Mehboobnagar, 62 to 65 for Chittoor, Visakhapatnam. Hyderabad, 62 to 66 for others. (v) to (vii) N.A.

5. RESULTS :

Chittoor

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	259	197	248	341	416	562	627	39·7

Control yield=2328 Kg/ha. ; No. of trials=9

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	125	122	159	284	308	402	440	37·3

Control yield=2213 Kg/ha. ; No. of trials=12

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	186	200	300	303	264	314	382	118·0

Control yield=3482 Kg/ha. ; No. of trials=8

65(S F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E
Av. response of grain in Kg/ha.	423	334	457	814	948	667	1206	123·4

Control yield=3085 Kg/ha. ; No. of trials=6

Guntur

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	132	65	169	340	452	593	746	137·7

Control yield=1581 Kg/ha. ; No. of trials=2

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	236	683	818	1300	1525	1029	1772	544·7

Control yield=2935 Kg/ha. : No. of trials=2

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	435	338	482	742	818	975	1071	59·0

Control yield=1833 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	150	88	205	338	439	561	741	51·1

Control yield=1302 Kg/ha. ; No. of trials=11

Krishna

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	267	251	439	621	749	851	1066	87·5

Control yield=2253 Kg/ha. ; No. of trials=8

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	380	260	359	624	745	1100	1376	67·8

Control yield=2304 Kg/ha. ; No. of trials=10

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	253	150	197	284	358	599	781	66·0

Control yield=2059 Kg/ha. ; No. of trials=15

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	187	292	360	444	380	585	717	58·2

Control yield=2349 Kg/ha. ; No. of trials=16

Srikakulam

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	456	262	352	558	649	545	723	65·3

Control yield=1975 Kg/ha. ; No. of trials=8

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	194	84	160	259	390	554	644	32·8

Control yield=2063 Kg/ha. ; No. of trials=11

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	121	120	103	209	307	456	474	84·0

Control yield=2205 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	99	38	111	112	149	459	561	84·7

Control yield=1901 Kg/ha. ; No. of trials=12

Visakhapatnam

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S E.
Av. response of grain in Kg/ha.	370	197	213	487	529	755	836	31·7

Control yield=2041 Kg/ha. ; No. of trials=12

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	271	55	88	310	339	536	659	49·0

Control yield 1971 Kg/ha. ; No. of trials=11.

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	198	21	107	266	287	454	531	22·0

Control yield=1807 Kg/ha. ; No. of trials=8

65(S F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	266	—13	180	351	414	504	602	78·8

Control yield=1561 Kg/ha. ; No. of trials=11

Nellore

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	178	144	310	259	406	501	588	87·4

Control yield=1926 Kg/ha. ; No. of trials=10

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_1K_2$	S.E.
Av. response of grain in Kg/ha.	196	143	293	314	430	548	683	50·2

Control yield=2113 Kg/ha. ; No. of trials=12

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	129	166	234	291	333	387	604	60·0

Control yield=1898 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	196	199	419	399	544	628	788	48·1

Control yield=1967 Kg/ha. ; No. of trials=6

Hyderabad

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	347	—430	—297	—222	227	681	707	85·7

Control yield=2988 Kg/ha. ; No. of trials=4

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	220	107	265	598	612	816	1016	51·7

Control yield=1345 Kg/ha. ; No. of trials=8

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	387	212	601	734	908	948	1264	117·0

Control yield=2396 Kg/ha. ; No. of trials=5

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	274	185	261	394	602	763	898	143·0

Control yield=1839 Kg/ha. ; No. of trials=4

Warangal

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	394	200	303	474	518	733	800	108·1

Control yield=2363 Kg/ha. ; No. of trials=8

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	183	408	436	370	668	599	781	230·0

Control yield=3392 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	271	190	395	374	492	633	668	96·9

Control yield=2721 Kg/ha. ; No. of trials=10

Karimnagar

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	176	137	596	743	506	876	1058	194·0

Control yield=1937 Kg/ha. ; No. of trials=2

Mehboobnagar

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	—7	2	270	367	411	602	1052	149·2

Control yield=2020 Kg/ha. ; No. of trials=9

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	75	7	166	268	455	612	1004	172·0

Control yield=2999 Kg/ha. ; No. of trials=3

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	178	183	228	262	260	297	412	60·0

Control yield=923 Kg/ha. ; No. of trials=9

Crop :- Paddy (*Kharif*)

A.P. 1963, 64, 65 (S.F.T.) for Mehboobnagar, 62, 64, 65 (S:F.T.) for Warangal 1962, 64, (S.F.T.) for Karimnagar, 62 63, 64 (S.F.T.) for Visakhapatnam 62, 63, 64, 65 (S.F.T.) for others.

District : Chittoor, Guntur, Krishna, Nellore, Srikakulam, Visakhapatnam, Hyderabad, Karimnagar, Warangal, Mehboobnagar.

Object :—To study the response curve of important cereals, oil seeds and cash crops to Potash applied singly and in combination with other nutrients.

1. BASAL CONDITIONS

(i) N.A. (ii) Deep black for Guntur, Red and black for Krishna, Red sandy for others. (iii) to (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS:

N_0 =Control (No manure).
N_1 =35 Kg/ha. of N.
K_1 =35 Kg/ha. of K_2O.
K_2 =70 Kg/ha. of K_2O.
N_1K_1 =35 Kg/ha. of N+35 Kg/ha. of K_2O.
N_1K_2 =35 Kg/ha. of N+70 Kg/ha. of K_2O.
N_2K_2 =70 Kg/ha. of N+70 Kg/ha. of K_2O.
$N_1P_1K_1$ =35 Kg/ha. of N+ 35 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Kharif). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 63 to 65 for Mehboobnagar, 62 to 66 (63 N.A.) for Warangal, 62 to 64 (63N.A.) for Karimnagar, 62 to 64 for Visakhapatnam, 62 to 65 for Chittoor, 1962 to 66 for others. (v) to (vii) N.A.

5. RESULTS :

Chittoor

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	282	120	135	287	326	469	458	34·4

Control yield=2075 Kg/ha. ; No. of trials=11.

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	182	124	156	253	269	374	400	33·7

Control yield=1789 Kg/ha. ; No. of trials=10

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	322	213	254	318	370	412	427	68·0

Control yield=3073 Kg/ha. ; No. of trials=8.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	274	132	333	430	459	566	731	72·9

Control yield=2892 Kg/ha. ; No. of trials=7

Guntur

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	366	200	212	353	379	498	625	102·5

Control yield=2080 Kg/ha. ; No. of trials=3

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	179	—10	0	162	246	330	515	79·3

Control yield=2224 Kg/ha. ; No. of trials=2

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	392	140	255	512	575	713	863	57·0

Control yield=1740 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	231	75	175	329	403	517	593	51·5

Control yield=1100 Kg/ha, ; No. of trials=12

Krishna

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	308	249	398	661	696	834	990	98·5

Control yield=2110 Kg/ha. ; No. of trials=8

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	360	213	326	643	708	808	1030	92·2

Control yield=1899 Kg/ha. ; No. of trials=10

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	154	80	183	336	359	541	717	67·0

Control yield=1736 Kg/ha. ; No. of trials =14

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	103	59	161	222	376	506	595	93·7

Control yield=2364 Kg/ha. ; No. of trials=16

Nellore

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	196	135	305	307	415	479	521	66·4

Control yield=1817 Kg/ha. ; No. of trials=9

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E
Av. response of grain in Kg/ha.	251	253	389	428	446	592	578	53·5

Control yield=1992 Kg/ha ; No. of trials=14

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	166	144	344	304	366	499	528	57·0

Control yield=1794 Kg/ha. ; of trials=10

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	131	214	351	383	510	626	617	58·4

Control yield=1885 Kg/ha. ; No. of trials=6

Srikakulam

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	359	00	156	312	376	521	532	116·5

Control yield=1972 Kg/ha. ; No. of trials=8

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	242	134	81	216	298	948	409	53·0

Control yield=2063 Kg/ha. ; No. of trials=11

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	212	49	108	282	284	317	331	76·0

Control yield=2189 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	165	109	130	214	239	275	335	61·3

Control yield=1951 Kg/ha. ; No. of trials=12

Visakhapatnam

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	313	147	171	436	461	652	767	59·6

Control yield=2133 Kg/ha. ; No. of trials=12

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	272	81	125	343	359	580	484	33·2

Control yield=1881 Kg/ha. ; No. of trials=12

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	212	68	195	232	264	416	395	51·0

Control yield=1914 Kg/ha. ; No. of trials=8

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	300	110	171	355	385	458	488	35·9

Control yield=1505 Kg/ha. ; No. of trials=11

Hyderabad

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	456	157	261	473	411	622	652	178·4

Control yield=1744 Kg/ha. ; No. of trials=6

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	209	50	127	258	289	337	552	49·2

Control yield=1459 Kg/ha. ; No. of trials=10

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	292	85	282	470	649	795	723	178·0

Control yield=2222 Kg/ha. ; No. of trials=4

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	122	28	71	388	257	396	529	304

Control yield=706 Kg/ha. ; No. of trials=3

Karimnagar

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	312	334	115	616	429	1188	1548	243·7

Control yield=2104 Kg/ha. ; No. of trials=2

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	218	410	286	234	413	1142	1213	163·0

Control yield=2042 Kg/ha. ; No. of trials=2

Warangal

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	252	109	130	299	304	504	514	46·5

Control yield=2004 Kg/ha. ; No. of trials=9

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	391	85	333	598	621	672	1100	139·0

Control yield=3265 Kg/ha. ; No. of trials=12

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	409	243	465	554	595	734	819	72·4

Control yield=2436 Kg/ha. ; No. of trials=10

Mehboobnagar

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	169	98	222	493	593	707	1060	106·7

Control yield=1494 Kg/ha. ; No. of time=8

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	173	92	570	736	910	1004	1414	208·0

Control yield=1901 Kg/ha. ; No. of trials=3

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	98	151	143	144	187	172	249	38·7

Control yield=821 Kg/ha. ; No. of trials=3

Crop :- Paddy (*Kharif.*) **Ref :- A.P. 62, 63 (S.FT.) for Guntur, 62**
Site :- Guntur, Hyderabad. **(S.F·T.) for Hyderabad. Type :- A.**

Object :— To study the response curve of important cereals, oil seeds and cash crops to nitrogen applied and in combination with other nutrients.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black for Guntur and Red Sandy for others. (iii) to (vi) N.A. (vii) Un-irrigated. (viii) to (x) NA.

2. TREATMENTS :

N_0=Control (no manure).
N_1=35 Kg/ha. of N.
N_2=70 Kg/ha. of N.
P_1=35 Kg/ha. of P_2O_5.
N_1P_1=35 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_2P_1=70 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_2P_2=70 Kg/ha. of N+70 Kg/ha. of P_2O_5.
$N_2P_2K_1$=70 Kg/ha. of N+70 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O,
N applied as A/S, P_2O_5 as Supper and K_2O as Mut. Pot.

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Kharif). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 62 to 63 for Guntur, 62 for Hyderabad. (v) to (vii) N.A.

5. RESULTS :

Guntur

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	229	506	262	447	—66	773	798	148·1

Control yield=2267 Kg/ha. No. of trials=3.

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	186	340	143	262	266	460	597	59·7

Control yield=1598 Kg/ha. No. of trials=6.

Hyderabad

62 (S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. respons of grain in Kg/ha.	587	686	575	666	613	945	509	470·1

Control yield=1592 Kg/ha. No. of trials=2

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62, 63 (S.F.T.) for Guntur.**
Site :- Guntur. **Type :- 'M'**

Object :— To study the response curve of important cereals, oil seeds and cash crops to Phosphorous applied singly and in combination with other nutrients.

1. BASAL CGNDITIONS :

(i) (a) to (c) N.A. (ii) Deep black for Guntur Red Sand for other. (iii) to (vi) N.A. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS :

N_0=Control (no manure).
N_1=35 Kg/ha. of N.
P_1=35 Kg/ha. of P_2O_5.
P_2=70 Kg/ha. of P_2O_5.
N_1P_1=35 Kg/ha. of N+35 Kg/ha. of P_2O_5
N_1P_2=35 Kg/ha. of N+70 Kg/ha. of P_2O_5.
N_2P_2=70 Kg/ha. of N+70 Kg/ha. of P^2O_5.
$N_2P_2K_2$=70 Kg/ha. of N+70 Kg/ha. of P_2O_5 and +70 Kg/ha. of K_2O

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Karif). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 62 to 63. (v) to (vii) N.A.

5. RESULTS :

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	316	446	130	304	317	655	582	185·9

Control yield=1865 Kg/ha. ; No. of trials=4.

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	127	57	105	206	248	373	368	43·5

Control yield=1529 Kg/ha. ; No. of trial=6.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62, 63 (S.F.T) for Guntur.**

Site :- Guntur. **Type :- 'M'.**

Object :—To study the response curve of important cereals, oilseeds and cash crops to Potash applied singly and in combination with other nutrients.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black (iii) to (vi) N.A. (vii) Un-irrigated. (viii) to (x) N.A.

2. TREATMENTS :

N_0=Control (no manure).
N_1=35 Kg/ha. of N.
K_1=35 Kg/ha. of K_2O.
K_2=70 Kg/ha. of K_2O.
N_1K_1=35 Kg/ha. of N+35 Kg/ha. of K_2O.
N_1K_2=35 Kg/ha. of N+70 Kg/ha. of K_2O.
N_2K_2=70 Kg/ha. of N+70 Kg/ha. of K_2O.
$N_1P_1K_1$=35 Kg/ha. of N+35 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O.
N applied as A/S, P_2O_5 as Super and K_2O as Mut. Pot.

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (kharif). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 62 to 63 for (v) to (vii) N.A.

5. RESULTS :

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	N_2	P_2K_2S.E.
Av. response of grain in Kg/ha.	148	193	236	240	358	254	642	172·3

Control yield=2209 Kg/ha. ; No. of trials=5.

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	164	93	165	250	211	400	485	49·4

Control yield=1412 Kg/ha. ; No. of trials=6.

Crop :- Paddy (*Rabi*).

A.P. 62, 63 (S.F.T.) for Warangal, 62, 63, 65 (S.F.T.) Nellore 62, 65 (S.F.T.) for Hyderabad, 64, 65 (S.F.T.) for Chittoor 62, 63, 64, 65 (S.F.T.) for Karimnagar, 63, 64,65 for others.

Site :- Krishna, Chittor, Guntur, Nellore, Hyderabad, Karim nagar, Narangal.

Type:- 'A'.

Object :—To study the response curve of important cereals, oilseeds and cash crops to Nitrogen applied singly and in combination with other nutrients.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black for Guntur, Red and black for Krishna, red sandy for others. (iii) to (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

N_0=Control (no manure).
N_1=35 Kg/ha. of N.
N_2=70 Kg/ha. of N.
P_1=35 Kg/ha. of P_2O_5.
N_1P_1=35 Kg/ha. of N+55 Kg/ha. of P_2O_5.
N_2P_1=70 Kg/ha. of N+35 Kg/ha. of P_2O_5.
N_2P_2=70 Kg/ha. of N+70 Kg/ha. of P_2O_5.
$N_2P_2K_1$=70 Kg/ha. of N+70 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Kharif) on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 64 to 66 for Chittoor, 62, to 66 (64 N.A.) for Nellore, 62 to 66 (63, 64 N.A.) for Hyderabad, 62 to 65 for Karimnagar, 62 to 66 (64, 65 N.A.) for Warangal, 63 to 66 for others. (v) to (vii) N.A.

5. RESULTS :

Krishna

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	32	131	177	237	270	507	520	117·2

Control yield=3413 Kg/ha. ; No. of trials=3

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	75	243	105	158	329	448	490	44·0

Control yield=1989 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. respons of grain in Kg/ha.	174	300	151	292	432	617	751	60·9

Control yield=2003 Kg/ha. ; No. of trials=5

Chittoor

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	409	355	144	316	263	421	441	95·0

Control yield=3630 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	526	674	282	697	909	998	1208	105·4

Control yield=3733 Kg/ha. ; No. of trials=3

Guntur

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. respons of grain in Kg/ha.	293	460	261	455	581	714	821	126·9

Control yield=2305 Kg/ha. ; No. of trials=3.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	166	295	156	328	600	760	806	122·0

Control yield=1764 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	335	685	392	600	1204	1376	1767	76.3

Control yield=1274 Kg/ha. ; No. of trials=2.

Nellore

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	128	234	94	182	278	387	375	54·0

Control yield=1596 Kg/ha. ; No. of trials=6.

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	164	210	229	272	282	330	410	91·7

Control yield=2909 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	133	117	197	266	334	573	532	64·3

Control yield=2138 Kg/ha. ; No. of trials=5.

Hyderabad

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	657	815	325	881	1050	793	974	165·5

Control yield=2095 Kg/ha. ; No. of trials=8.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	489	1083	273	699	1303	1385	1506	28·8

Control yield=1933 Kg/ha. ; No. of trials=5.

Karimnagar

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	567	848	83	584	924	1188	1242	80·9

Control yield=1748 Kg/ha. ; No. of trials=12.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	474	678	317	616	849	1102	1188	66·4

Control yield=1821 Kg/ha. ; No. of trials=9.

64(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	367	568	183	561	823	1067	1165	95·0

Control yield=1945 Kg/ha. ; No. of trials=12.

65(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	288	424	178	451	549	777	867	43·4

Control yield=2017 Kg/ha. ; No. of trials=15.

Warangal

62(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	248	445	160	469	467	565	709	74·2

Control yield=1951 Kg/ha. ; No. of trials=11.

63(S.F.T.)

Treatment	N_1	N_2	P_1	N_1P_1	N_2P_1	N_2P_2	$N_2P_2K_1$	S.E.
Av. response of grain in Kg/ha.	300	395	111	277	674	738	912	125·3

Control yield=1554 Kg/ha. ; No. of trials=7.

Crop :- Paddy (*Rabi*).

Ref : - A.P. 62, 63 (S.F.T.) for Warangal, 64, 65 (S.F.T.) for Chittoor. 62 (S.F.T.) for Mehboobnagar, 62, 63, 65) (S.F.T.) for Nellore, 62, 63, 64, 65 (S.F.T.) for Karimnagar, 63, 64, 65 (S.F.T.) for others.

Site :- District : Krishna, Chittoor, Guntur, Nellore, Hyderabad, Karimnagar, Warangal, MehboobNagar.

Type 'M'.

Object :— Type A_2 : To study the response curve of important cereals, oilseeds and cash crops to Phosphorous applied singly and in combinations with other nutrients.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii)Deep black for Guntur, red and black for Krishna, red sandy for others. (iii) to (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

N_0=Control (no manure).
N_1=35 Kg/ha. of N.
P_1=35 Kg/ha. of N.
P_2=70 Kg/ha. of P_2O_5
N_1P_1=35 Kg/ha. of N+35 Kg/ha. of P_2O_5
N_1P_2=35 Kg/ha. of N+70 Kg/ha. of P_2O_5.
N_2P_2=70 Kg/ha. of N+70 Kg/ha. of P_2O_5.
$N_2P_2K_2$=70 Kg/ha. of N+70 Kg/ha. of P_2O_5+70 Kg/ha. of K_2O.

3. DIGEN :

Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Kharif) on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 62 to 66 (64,65 N.A.) for Warangal, 64 to 66 for Chittoor, 62 to 66 (63, 64 N.A.) for Hyderabad, 62 to 66 (63, 64, 65 N.A.) for Mehboobnagar, 62 to 66 (64 N.A.) for Nellore, 62 to 65 for Karimnagar, 63 to 66 for others. (v) to (vii) N.A.

5. RESULTS :

Krishna

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	230	507	217	434	665	790	579	244·7

Control yield=2358 Kg/ha. ; No. of trials=3.

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	23	—3	144	154	266	332	504	77 0

Control yield=2309 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	166	90	227	206	330	481	656	49·1

Control yield=2031 Kg/ha. ; No. of trials=7.

Chittoor

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	744	566	817	777	705	850	1653	332·0

Control yield=3248 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	925	770	840	1005	1120	1310	1484	106·4

Control yield=3300 Kg/ha. ; No. of trials=3.

Guntur

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	185	152	135	345	346	505	619	122·2

Control yield=2343 Kg/ha. ; No. of trials=3.

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	224	175	280	492	583	837	921	69·0

Control yield=1982 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	280	307	535	746	962	1582	1635	56·0

Control yield=1452 Kg/ha. ; No. of trials=3.

Nellore

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	152	77	173	198	217	302	390	36·7

Control yield=1654 Kg/ha. ; No. of trials=8.

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg)ha.	133	171	316	351	357	481	510	139·6

Control yield=2925 Kg/ha. ; No. of trials=3.

65(S F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	186	288	331	345	469	581	684	57·6

Control yield=1625 Kg/ha. ; No. of trials=5.

Hyderabad

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	563	547	658	913	854	1176	1179	149·2

Control yield=2354 Kg/ha. ; No. of trials=9.

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	433	246	380	678	839	1362	1474	188·1

Control yield=1891 Kg/ha. ; No. of trials=4.

Karimnagar

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. eesponse of grain in Kg/ha.	400	232	318	667	632	734	1242	135·8

Control yield=2152 Kg/ha. ; No. of trials=10.

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	486	282	392	616	616	939	1136	74·1

Control yield=2024 Kg/ha. ; No. of trials=9.

64(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	381	190	267	630	702	1089	1241	44·0

Control yield=1612 Kg/ha. ; No. of trials=12.

65(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	208	175	278	421	575	694	875	46·0

Control yield=2091 Kg/ha. ; No. of trials=13.

Warangal

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S·E.
Av. response of grain in Kg/ha.	251	53	42	357	486	576	588	44·9

Control yield=2030 Kg/ha. ; No. of trials=11.

63(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	390	164	268	457	531	761	919	125·6

Control yield=1461 Kg/ha. ; No. of trials=7.

Mehboobnagar

62(S.F.T.)

Treatment	N_1	P_1	P_2	N_1P_1	N_1P_2	N_2P_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	365	217	340	769	659	1127	1327	196:4

Control yield=2813 Kg/ha. ; No. of trials=5.

Crop :- Paddy (*Rabi*).

Ref :- A.P. 64, 65 (S.F.T.) for Chittor, 62, 63, 65 (S.F.T) for Nellore 62; 63 (S.F.T.) for Warangal; 62, 63, 64, 65 for (S.F.T.) Karimnagar; 62, 65 (S.F.T.) for Hyderabad 62 (S.F.T.) for Mehboobnagar, 63, 64, 65 for others

Site :- District : Krishna, Chittoor, Guntur, Nellore, Hyderabad Karimnagar, Warangal, Mehboobnagar.

Type :- 'M'.

Object :—Type A_2 : To study the response curve of important cereals, oilseed and cash crops to Potash applied singly and in combiation with other nutrients.

1. BASAL CONDITIONS :

(i) N.A. (ii) Deep black for Guntur Red and black for Krishna, Red sandy for others. (iii) to (vi) N.A. (vii) Irrigated. (viii) to (x) N A.

2 TREATMENT :

N_0 =Control (No manure).
N_1 =35 Kg/ha. of N.
K_1 =35 Kg/ha. of K_2O.
K_2 =70 Kg/ha. of K_2O.
N_1K_1 =35 Kg/ha. of N+35 Kg/ha. of K_2O.
N_1K_2 =35 Kg/ha. of N+70 Kg/ha. of K_2O.
N_2K_2 =70 Kg/ha. of N+70 Kg/ha. of K_2O.
$N_1P_1K_1$=35 Kg/ha. of N+35 Kg/ha. of P_2O_5 +35 Kg/ha. of K_2O.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :
Same as in expt. no. 64 (S.F.T.) for Karimnagar for Paddy (Kharif). on page 172.

4. GENERAL :

(i) to (iii) N.A. (iv) 64 to 66 for Chittoor, 62 to 66 (64 N.A.) for Nellore, 62 to 65 for Karimnagar, 62 to 63 for warangal, 62 to 66 (63, 64 N.A.) Hyderabad, 62 for Mehboobnagar for 63 to 66 for others. (v) to (vii)N.A.

5. RESULTS :

Krishna

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	39	72	72	112	177	289	98	47·2

Control yield=3268 Kg/ha. ; No. of trials=3.

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_2P_2K_2$	S.E.
Av. response of grain in Kg/ha.	135	138	260	322	398	507	586	61·0

Control yield=1910 Kg/ha. ; No. of trials=4.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	182	40	199	283	423	617	700	44·7

Control yield=1926 Kg/ha. ; No. of trials=7.

Chittoor

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	546	421	421	665	606	751	784	136·0

Control yield=3452 Kg/ha. ; No. of trials=3.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	110	174	142	166	57	590	350	282·9

Control yield=4022 Kg/ha. ; No. of trials=3.

Guntur

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	451	145	347	463	467	537	900	67·7

Control yield=2029 Kg/ha. ; No. of trials=3.

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	134	65	282	320	399	517	475	80·0

Control yield=1568 Kg/ha. ; No. of trials=3.

65(S F.T)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	365	237	218	575	593	1057	1150	188·5

Control yield=1305 Kg/ha. ; No. of trials=2.

Nellore

62(S F.T)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	172	86	148	178	223	387	318	50·3

Control yield=1540 Kg/ha. ; No. of trials=7.

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	38	163	164	193	333	346	372	86·7

Control yield=2082 Kg/ha.; No. of trials=3.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	—182	125	201	303	413	459	447	99·5

Control yield=2184 Kg/ha. ; No of trials=5.

Hyderabad

62(S.F.T.)

Treatmemt	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	422	423	423	808	867	1012	1246	133·9

Control yield=2036 Kg/ha. ; No. of trials=7.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	768	110	86	768	1070	1465	873	180·7

Control yield=2171 Kg/ha. ; No. of trials=3.

Karim Nagar

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	418	—129	—121	564	572	806	965	62·5

Control yield=1801 Kg/ha. ; No. of trials=11.

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	492	134	303	634	652	1101	957	64·6

Control yield=1736 Kg/ha. ; No. of trials=9.

64(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	394	141	170	537	660	933	1003	75·0

Control yield=1629 Kg/ha. ; No. of trials=10.

65(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	216	128	244	423	459	635	708	38·0

Control yield=1891 Kg/ha. ; No. of trials=12.

Warangal

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	183	101	77	253	383	581	630	107·6

Control yield=1808 Kg/ha. ; No. of trials=7.

63(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/ha.	210	132	183	557	371	466	879	78·3

Control yield=1556 Kg/ha. ; No. of trials=7.

Mhboobnagar

62(S.F.T.)

Treatment	N_1	K_1	K_2	N_1K_1	N_1K_2	N_2K_2	$N_1P_1K_1$	S.E.
Av. response of grain in Kg/aa.	778	419	591	769	663	1050	1204	131·1

Control yield=1841 Kg/ha. ; No. of trials=4.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(237), 65(82).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'MV'.**

Object :—To find out the best manurial schedule for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Pillipesara* for 64 ; Fallow for 65. (c) Nil. (ii) Black soil. (iii) 18.5.64/7.6.64 ; 20.5.65/5.7.65. (iv) (a) Dry ploughing and puddling with country plough. (b) Transplanting. (c) N.A. (d) 20·3 cm.×15·2 cm. (e) 3 for 64 ; 2 for 65. (v) Nursery was given a common basal dressing of 123·6 C.L./ha. F.Y.M. ; 22·4 Kg/ha. of N as A/S, 112·1 Kg/ha. of P_2O_5 as Super, 56·0 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.
(2) 3 levels of P_2O_5 as Super: P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. ; K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

Sub-plot treatments :

2 varieties : V_1=MTU—10 and V_2=GEB—24.

N was given in two equal doses. 1st just half before transplanting and 2nd half one month after transplanting P_2O_5 and K_2O were applied in the final puddling.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 9 main-plot/block ; 3 blocks/replication and 2 sub-plot/main-plot. (b) N.A. (iii) 2. (iv) (a) 8·8 m.×5·5 m. (b) 8·4 m.×5·2 m. (v) 20 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, height and yield (iv) (a) 1964—66. (b) No. (c) Nil. (v) N.A. (vi) Unprecedent rain fall of 20 cm. on 27.9.64 for 64 ; maximum temperature of 45·5 ° C for 65. (vii) Since the expt. is continued, the results of individual years are presented below.

5. RESULTS :

64 (237)

(i) 3221 Kg/ha. (ii) (a) 381·2 Kg/ha. (b) 264·2 Kg/ha. (iii) Main effect of N and interaction N×P×K are significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
V_1	2950	3244	3333	3106	3274	3148	3178	3114	3237	3176
V_2	3188	3400	3210	3183	3366	3252	3370	3225	3207	3267
Mean	3069	3322	3272	3144	3320	3200	3274	3170	3222	3221
K_0	3020	3437	3366	3101	3398	3321				
K_1	3059	3156	3291	3076	3225	3200				
K_2	3128	3378	3160	3257	3333	3076				
P_0	2879	3324	3235							
P_1	3042	3452	3464							
P_2	3286	3193	3118							

C.D. for N marginal means=186·2 Kg/ha.

65(82)

(i) 3505 Kg/ha. (ii) (a) 464·5 Kg/ha. (b) 365·1 Kg/ha. (iii) Main effects of N, P and V are highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
V_0	3417	3766	3850	3299	3704	4030	3815	3618	3600	3678
V_1	3114	3457	3425	2738	3529	3729	3435	3412	3148	3332
Mean	3266	3612	3638	3018	3616	3880	3625	3515	3374	3505
K_0	3398	3712	3763	3272	3729	3872				
K_1	3324	3576	3647	2978	3595	3976				
K_2	3074	3548	3501	2807	3526	3791				
P_0	2753	3111	3193							
P_1	3333	3721	3793							
P_2	3709	4003	3926							

C.D. for N or P marginal means=227·1 Kg/ha.
C.D. for V marginal means=144·1 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(80).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'MV'.**

Object :—To study the effect of N on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) N.A. (ii) Clayey loam. (iii) 26.8.62. (iv) (a) Ploughing, puddling thrice and levelling. (b) Transplanting. (c) N.A. (d) 20 cm.×20 cm. (e) 1. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 89·5 cm. (x) 12.12.62.

2. TREATMENTS :

Main-plot treatments :

4 varieties : V_1=AKP—2, V_2=AKP—3, V_3=AKP—4 and V_4=AKP—7.

Sub-plots treatments

3 times of application of 33·6 Kg/ha. of N : T_1=In equal doses at the time of puddling and 30 days after planting, T_2=In one dose 30 days after planting and T_3=In one dose, 20 days before general flowering.

3. DESIGN :

(i) Split—plot. (ii) (a) 4 main-plots/replication and 3 sub-plots/main—plot. (b) N.A. (iii) 4. (iv) (a) 7·9m.×1·8 m. (b) 7·6 m.×1·5 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1962—N.A. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4774 Kg/ha. (ii) (a) 757 Kg/ha. (b) 319 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
T_1	3671	5100	6501	5577	5212
T_2	4007	4554	5366	5155	4770
T_3	3390	3558	5030	5380	4339
Mean	3689	4404	5632	5371	4774

C.D. for V marginal means=698·9 Kg/ha.

Crop :- Paddy (*Second crop*). **Ref :- A.P. 65(99).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'MV'.**

Object : – To study the effect of N, P and K on different varieties of Paddy.

1. BASAL CONDITION :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Clay loams. (iii) 7.12.65. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 25 to 30 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) N.A. (v) 6.4.66 and 3.5.66.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 varieties : V_1=SLO—16, V_2=RDR—7 and V_3=TN—1.

(2) 3 levels of manures: M_1=60 Kg/ha. of N+30 Kg/ha. of P_2O_5+30 Kg/ha. of K_2O, M_2=90 Kg/ha. of N+45 Kg/ha. of P_2O_5+45 Kg/ha. of K_2O. and M_3=120 Kg/ha. of N+60 Kg/ha. of P_2O_5+60 Kg/ha. of K_2O.

N applied as A/S, P_2O_5 applied as Amno. Phos. and K_2O as Mur. Pot.

3. DESIGN .

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 4·1 m.×4·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3362 Kg/ha. (ii) 1266 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	Mean
V_1	1672	1983	4746	2800
V_2	3241	3744	3034	3340
V_3	3448	3862	4529	3947
Mean	2787	3196	4103	3362

Crop :- Paddy (*Abi*). **Ref :- A.P. 60(38).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'MV'.**

Object :— To study the effect of different levels of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sunhemp-Paddy. (b) Sunhemp. (c) Nil. (ii) Heavy black soil. (iii) 14.5.60/23.6.60. (iv) (a) 2 ploughings, 2 puddlings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15cm. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) 112 cm. (x) 29, 30.10.60.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 varieties : V_1=MTU -3, V_2=IJ—1701 and V_3=HR—104.

(2) 3 levels of N : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.

(3) 3 levels of P_2O_5 : P_0=0, P_1=22·4 and P_2=44 8 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·8 m.×4·6 m. (b) 9·5 m ×4·3 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Moderate incidence of Stem borer, treated with Endrin spray. (iii) Yield of grain and fodder. (iv) (a) 1958-60. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3413 Kg/ha. (ii) 373·8 Kg/ha. (iii) Main effects of V and N are highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
V_1	4163	4111	3768	3956	4036	4051	4014
V_2	3886	3690	3342	3525	3778	3615	3639
V_3	2794	2447	2517	2644	2573	2541	2586
Mean	3614	3416	3209	3375	3462	3402	3413
P_0	3596	3422	3107				
P_1	3627	3431	3329				
P_2	3619	3394	3192				

C.D. for V or N marginal means=258·4 Kg/ha.

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(84).**

Site :- Agri. Res. Stn; Maruteru. **Type :- 'MV'.**

Object :—To study the effect of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 61·8 C.L./ha. of C.M. and 168·1 Kg/ha. of Super. (ii) Heavy black soils. (iii) 10.1.64/7.2.64. (iv) (a) Puddling 4 times, digging of corners, trimming of bunds, spreading of clods and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding 21 days after transplanting. (ix) N.A. (x) 3.5.64.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 varieties: V_1=MTU—9, V_2=MTU—15, and V_3=MTU – 20.

(2) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

P_2O_5 applied at planting, N in three split doses at the time of planting, at 20 days age and at 40 days age by broadcasting.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 7·7 m.×7·1 m. (b) 7·4 m.×6·9 m. (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1951 Kg/ha. (ii) 262·9 Kg/ha. (iii) Main effects of V is highly signification and that of N is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
V_1	1935	1418	1082	1594	1320	1527	1478
V_2	2106	1945	1576	1824	1947	1856	1876
V_3	2592	2582	2323	2328	2540	2629	2499
Mean	2211	1982	1660	1915	1936	2004	1951
P_0	2155	1925	1663				
P_1	2068	1992	1747				
P_2	2410	2029	1574				

C.D. for V or N marginal means=181·7 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(192).**

Site :- Reg. Agri. Res. Stn; Rudrur. **Type :- 'MV'.**

Object :— To study the effect of different levels of fertilizers on long duration varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 20.5.65/20.6.65. (iv) (a) Plouging and 2 puddlings. (b) Japanese method. (c) 34 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 1st week of Nov. and 1st week of Dec. '65.

2. TREATMENTS:

Main-plot treatments :

4 manurial treatments: M_1=74 Kg/ha. of N+56 Kg/ha. of P_2O_5, M_2=86 Kg/ha. of N+68 Kg/ha. of P_2O_5, M_3=99 Kg/ha. of N+80 Kg/ha. of P_2O_5 and M_4=111 Kg/ha. of N+99 Kg/ha. of P_2O_5.

Sub-plot treatments :

4 varieties : V_1=RDR—4, V_2=MTU—3, V_3=HR—35 and V_4=T. cross.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/252·5 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4269 Kg/ha. (ii) (a) 459·6 Kg/ha. (b) 667·7 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	Mean
V_1	3983	4652	4072	4135	4211
V_2	4703	4072	4716	4545	4509
V_3	3238	3327	3554	3131	3313
V_4	4760	5227	5056	5133	5044
Mean	4171	4319	4349	4236	4269

C.D. for V marginal means=479·3 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 60 (46).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'MV'.**

Object :— To study the effect of application of N as a foliar spray as against the usual method of soil application.

1. BASAL CONDITIONS :

(i) (a) Paddy-Follow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 27.6.60 and 1.7.60/26.7.60. (iv) (a) 3 ploughings, 1 puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 112 Kg/ha. of P_2O_5. (vi) As per treatments. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 79·6 cm. (x) 12.10.60 to 2.11.60.

2. TREATMENTS:

Main-plot treatments :

3 varieties : V_1=SLO–15, V_2=SLO–8 and V_3=SLO–16.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 2 methods of application of N : M_1=Foliar application and M_2=Soil application.

(2) 3 levels of N as Urea : N_0=0, N_1=16·8 and N_2=33·6 Kg/ha.

In case of spraying, fertilizer was dissolved in water at 450 litres/ha. Spraying was done only once one month after planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 6 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 7·0 m.×2·8 m. (b) 6·4 m.×2·4 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Undue vegetative growth. Crop lodged after flowering. (ii) Incidence of Stem borer. Treated with Endrin spray. (iii) Yield of grain. (iv) (a) 1959-N.A. (b) No. (c) Nil. (v) N.A. (vi) Dry and hot weather in the month of July and excessive rains during the month of August. (vii) Nil.

5. RESULTS :

(i) 2823 Kg/ha. (ii) (a) 431·1 Kg/ha. (b) 369·0 Kg/ha, (iii) Main effect of V is highly significant and main effect of N is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	M_1	M_2	Mean
N_0	3340	2278	1685	2474	2455	2462
N_1	4199	2589	2092	3045	2875	2960
N_2	4273	2661	2197	3072	3015	3044
Mean	3967	2509	1991	2864	2782	2823
M_1	4044	2545	2003			
M_2	3890	2474	1979			

C.D. for V marginal means=226·4 Kg/ha.
C.D. for N marginal means=173·6 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 1965(202).**
Site :- Asri. Res Stn., Warangal. **Type :- 'MV'.**

Object ;— To study the performance of different varieties of Paddy under 3 levels of N.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black *chalaka*. (iii) 30.6.65/27.8.65. (iv) (a) Working country plough 3 to 4 times and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 280 Kg/ha. of Super. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding and working Paddy weeder 2 times. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 3 levels of N as A/S : N_1=45, N_2=67 and N_3=90 Kg/ha.
(2) 5 varieties : V_1=C. 3988, V_2=C. 3989, V_3=MTU—3, V_4=SLO—3 and V_5=HR—35.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) and (b) N.A. (iii) 2. (iv) (a) 9·1 m.×3·7 m. (b) 8·7m.×3·3 m (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Gallfly. (iii) % incidence of Gallfly and grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2340 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	Mean
N_1	2008	2041	2036	2143	2707	2187
N_2	2581	1942	2107	2204	2679	2303
N_3	3002	2403	2154	2174	2923	2531
Mean	2530	2129	2099	2174	2770	2340

— —

Crop :- Paddy. **Ref :- A.P. 65(70).**

Site :- Rice Res. Stn., Wyra. **Type :- 'MV'.**

Object :—To study the effect of fertilizers on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 34 Kg/ha. of P_2O_5 as Super + 56 Kg/ha. of N as A/S. (ii) Black. (iii) 26.6.65/17.8.65. (iv) (a) 2 dry ploughlings, 2 puddlings and levellings with gorru. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2 to 3/hill. (v) Nil. (vi) As per treatments (vii) Irrigated (viii) One weeding after 21 days of planting. (ix) 66 cm. (x) 19.11.65 to 15.12.65.

2. TREATMENTS :

Main-plot treatments

2 manurial treatments : M_1=33 Kg/ha. of P_2O_5 as Super+33 Kg/ha. of K_2O as Mur. Pot.+60 Kg/ha. of N as A/S and M_2=50 Kg/ha. of P_2O_5 as Super+50 Kg/ha. of K_2O as Mur. Pot.+100 Kg/ha. of N as A/s.

Sub- plot treatments

11 varieties : V_1=3989, V_2=3988, V_3=369, V_4=385, V_5=431, V_6=417, V_7=6538, V_8=T-141, V_9=T-90, V_{10}=T-1242 and V_{11}=HR-35 (control).

3. DESIGN :

(i) Split-plots. (ii) (a) 2 main-plots/rep. 11 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 4·6 m. × 2·3 m. (b) 4·3 m. × 2·3 m. (v) 15 cm. on either side breadthwise. (vi) Yes.

4. GENERAL :

(i) Good. (iii) Moderate attack of Stem borer, Parathion was sprayed at the rate of 28 gms in 27 litres. (iii) Grain yield, no. of tillers, height of plants. (iv) (a) 1965 only (b) and (c) Nil. (v) No. (vii) Nil.

5. RESULTS :

(i) 4744 Kg/ha (ii) (a) 501 Kg/ha. (b) 1021 Kg/ha. (iii) Main effect of V alone is highly significant. (vi) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
M_1	4321	4295	5318	6622	3068	3324	6085	2045	4167	6008	5753	4637
M_2	4091	4474	3937	5727	2710	5471	5343	2915	6008	6136	6545	4851
Mean	4206	4385	4628	6175	2889	4398	5714	2480	5088	6072	6149	4744

C.D. for V marginal means=1505·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(234), 62(259), 63(250).**

Site :- College of Agri. ; Bapatla. **Type :- 'C'.**

Object :—To find out the optimum spacing for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black alluvial soil. (iii) N.A. (iv) (a) Puddling with country plough. (b) Transplanting (c) 24 Kg/ha. (d) As per treatment. (e) 2. (v) 126 Q/ha. of F.Y.M. ; 28 Kg/ha. of P_2O_5 as Super. (vi) SLO —13. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

2 spacings : S_1=15 cm.×8 cm. and S_2=15 cm.×15 cm.

3. DESIGN :

(i) R.B D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) N.A. (b) 0·01 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961 to 1963. (b) N.A. (c) As under 5. Results. (v) and (vi) Nil. (vii) As S.E./plot of 1961 is N.A., therefore interaction of Tretments with years is taken as the error.

5. RESULTS :

Pooled results

(i) 2166 Kg/ha. (ii) 231·8 Kg/ha. (based on 2 d.f. made up of Treatment×years interaction). (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2
Av. yield	2291	2042

C.D.=234·9 Kg/ha.

Individual results

Treatments	S_1	S_2	Sig.	G.M.	S.E./plot
Years					
1961	2410	2270	N.S.	2340	N.A.
1962	2176	1883	**	2030	155·3
1963	2286	1973	**	2130	214·4
Pooled	2291	2042	*	2166	231·0

Crop :- Paddy. **Ref :- A.P. 60(185).**

Site :- Reg. Rice Res. Stn., Buchireddipalem. **Type :- 'C'.**

Object :—To assess the relative merits of dibbling against transplanting and broadcasting.

1. BASAL CONDITIONS :

(i) (a) Paddy - Paddy. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.7.60/14.8.60. (iv) (a) Puddling twice, ploughing twice and trimming of bunds. (b) As per treatments. (c) 37 Kg/ha. (d) 25 cm.×10 cm. (e) 3. (v) 4483 Kg/ha. of G.L., 33·6 Kg/ha. of N as A/S and 22·4 Kg/ha of P_2O_5 as Super. (vi) BCP—1. (vii) Irrigated. (viii) 2 hand weedings, working push hoe at fortnightly intervals up to short blade stage. (ix) and (x) N.A.

2. TREATMENTS :

4 methods of sowing : M_1=Broad casting, M_2=Transplanting, M_3=Dibbling seed treated with cowdung M_4=Dibbling sprouted seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×4·6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of Mealy bug and Rice Stem borer. (iii) Grain yield. (iv) (a) 1957—60. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 2044 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3	M_4
Av. yield	1343	2777	1952	2106

Crop :- Paddy (*Tabi*). **Ref :. A.P. 60(17).**

Site :- Govt. Agri. Farm, Dindi **Type :- 'C'.**

Object :—To study the effect of different spacings and number of seedlings on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 50·4 Kg/ha. of N+25·2 Kg/ha. of P_2O_5. (ii) Sandy *chalka*. (iii) 7.1.60. (iv) (a) 5 puddlings. (b) Transplanting. (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HR—5 (medium). (vii) Irrigated. (viii) Hand weeding and running of Japanese weeder. (ix) Nil. (x) 6.5.60.

1. TREATMENTS :

All combinations of (1) and (2)

(1) 4 seedlings/hill : R_1=1, R_2=2, R_3=3 and R_4=4 seedlings/hill.

(2) 4 spacings : S_1=15 cm.×15 cm., S_2=20 cm.×20 cm., S_3=25 cm.×25 cm. and S_4=30 cm.×30. cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) 51·8 m.×13·7 m. (iii) 4. (iv) (a) and (b) 6·1 m.×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—60. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS ;

(i) 1935 Kg/ha. (ii) 388·0 Kg/ha. (iii) Main effects of R and S are highly significant. (iv) Av. yield of grain in Kg/ha.

	R_1	R_2	R_3	R_4	Mean
S_1	2167	2731	2815	3325	2759
S_2	1861	2334	2509	2441	2286
S_3	1006	1633	1449	1678	1441
S_4	1014	1258	1433	I304	1252
Mean	1512	1989	2051	2187	1935

C.D. for S or R marginal means=276·5 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(14), 63(29), 64(14).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'C'.**

Object :—To determine the optimum spacing and number of seedlings per hill for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62 ; 67·3 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for 63 ; 67·3 Kg/ha. of N as Urea+33·6 Kg/ha. of P_2O_5 as Super for 64. (ii) Black soil. (iii) 8.6.62/10 to 12.7.62 ; 23.5.63/8 to 10.7.63 ; 2.6.64/4 to 7.7.64. (iv) (a) One ploughing and puddling. (b) Transplanting. (c) 30 Kg/ha. (d) and (e) As per treatments. (v) 4484 Kg/ha. of G.M. for 64 ; 4484 Kg/ha. of G.L. for others. (vi) HR-35(late). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 8.12.62 ; 6.12.63 ; 6 to 8.12.64.

2. TREATMENTS :

62

All combinations of (1) and (2).

(1) 4 spacings : S_1=15 cm.×15 cm., S_2=20 cm.×20 cm., S_3=25 cm.×25 cm. and S_4=30 cm.×30 cm.

(2) 6 numbers of seedlings per hill : R_1=1, R_2=2, R_3=3, R_4=4, R_5=5 and R_6=6.

63 and 64

All combinations of (1) and (2) with one extra treatment.

(1) 3 spacings : S_1=15 cm.×15 cm., S_2=20 cm.×20 cm. and S_3=25 cm.×25 cm.

(2) 3 numbers of seedlings per hill : R_1=2, R_2=3 and R_3=4.

Extra treatmnnt : E=Ryot's method of cultivation.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 24 for 62 ; 10 for others. (b) N.A. (iii) 3 for 62 ; 4 for others. (iv) (a) 15·2 m.×6·1 m. for 64 ; N.A. for others. (b) 1/269·1 ha. for 62 ; 1/115·6 ha. for S_1, 1/118·5 ha. for S_2, 1/121·5 ha. for S_3 and 1/124·6 ha. for others. (v) N.A. for 64 ; one row alround for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 62 ; Good for others. (ii) Nil. (iii) Grain yield. (iv) (a) 62—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

62(14)

(i) 2688 Kg/ha. (ii) 481·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	R_1	R_2	R_3	R_4	R_5	R_6	Mean
S_1	3435	2745	2886	1697	2590	1993	2558
S_2	2289	3148	2442	2384	2653	3131	2675
S_3	2970	2866	2808	2662	2586	2534	2738
S_4	2837	2902	2746	2781	2751	2673	2782
Mean	2883	2915	2721	2381	2665	2583	2688

Pooled results for

63(29) and 64(14)

(i) 3538 Kg/ha. (ii) 517·0 Kg/ha. (based on 63 d.f. made up of pooled error and Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E=3398

	S_1	S_2	S_3	Mean
R_1	3140	3509	3495	3381
R_2	3720	3510	3742	3657
R_3	3710	3752	3402	3621
Mean	3523	3590	3546	3553

Individual results

Treatments	R_1	R_2	R_3	Sig.	S_1	S_2	S_3
Years							
1963	3899	4222	4096	N.S.	4035	4077	4104
1964	2864	3093	3147	N.S.	3011	3104	2998
Pooled	3381	3657	3621	N.S.	3523	3590	3546

Sig.	G.M.	S.E./plot
N.S.	4020	502·0
N.S.	3056	521·0
N.S.	3538	517·0

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(15).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'C'.**

Object :—To determine the optimum age of seedlings to be transplanted for the long duration strains of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 67·3 Kg/ha. of N+33·6 Kg/ha. of P_2O_5. (ii) Black soil. (iii) 30.6.62/As per treatments. (iv) (a) Ploughing and puddlings (b) Transplanting. (c) 30 Kg/ha. (d) 20 cm × 20 cm. (e) 2 to 3. (v) N.A. (vi) HR-35. (vii) Irrigated. (viii) and (ix) N.A. (x) 8.12.62 and 16.12.62.

2. TREATMENTS :

4 dates of transplanting : T_1=25 days after sowing (24.7.62), T_2=35 days after sowing (4.8.62), T_3=45 days after sowing (14.8.62) and T_4=55 days after sowing (24.8.62).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247·1 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, no. of tillers and yield of grain. (iv) (a) 62-only. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3178 Kg/ha. (ii) 158·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	3151	3432	3074	3054

C.D.=253·0 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(16), 63(31).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'C'.**

Object :—To find out the optimum time of working of rotary weeder after transplanting long duration Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 67·3 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 10.6.62/8, 9.7.62 ; 23.5.63/5, 6.7.63. (iv) (a) Ploughing and puddlings. (b) Transplanting. (c) to (e) N.A. (v) N.A. (vi) HR-35 (late). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 7.12.62 ; 4.12.63.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 stages of working of rotary weeder : S_1=Upto 25 days before flowering, S_2=Upto 15 days before flowering and S_3=Upto flowering.

(2) 3 intervals of working of rotary weeder : I_1=At weekly interval, I_2=At two weeks interval and I_3=At four weeks interval.

Extra treatments : E_1=Hand weeding thrice during the crop growth and E_2=Ryot's method.

3. DESIGN:

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) N.A. for 62 ; 9·1 m.×3·1 m. for 63 (b) 1/285 ha. for 62 ; 8·7 m.×2·6 m. for 63. (v) N.A. for 62 ; 20 cm.×20 cm. for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962-63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Errors variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 4655 Kg/ha. (ii) 875·0 Kg/ha. (based on 10 d.f. made up of various components of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=5245, E_2=4506

	S_1	S_2	S_3	Mean
I_1	4669	4378	4618	4555
I_2	4852	4458	4596	4635
I_3	4839	4568	4474	4627
Mean	4787	4468	4563	4606

Individual results.

Treatments	S_1	S_2	S_3	Sig.	I_1	I_2	I_3	Sig.
Years								
1962	5015	4360	4599	N.S.	4574	4710	4691	N.S.
1963	4558	4575	4527	N.S.	4536	4561	4563	N.S.
Pooled	4787	4468	4563	N.S.	4555	4635	4627	N.S.

E_1	E_2	Sig.	G.M.	S.E./plot
5607	5249	N.S.	4798	693·0
4883	3763	**	4511	378·0
5245	4506	N.S.	4655	875.0

Crop :- Paddy. **Ref :- A.P. 65(74).**

Site :- Rice Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :—To determine optimum age, spacing and number of seedlings under medium saline conditions for Paddy crop.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 5.1.65/10.2.65. (iv) (a) Puddling, levelling, thinning of bunds and digging of corners. (b) Transplanting. (c) 35 to 45 Kg/ha. (d) and (e) As per treatments. (v) 224 Kg/ha. of Super+112 Kg/ha. of A/S as basal and 112 Kg/ha. of A/S as top dressing. (vi) C-1327. (vii) Irrigated. (viii) 2 hand weedings. (ix) 6·5 cm. (x) 27.5.65.

2. TREATMENTS:

Main-plot treatments :

All combinations of (1) and (2).

(1) 3 spacings : S_1=15 cm.×10 cm., S_2=15 cm.×15 cm. and S_3=15 cm.×20 cm.

(2) 2 ages of seedlings : A_1=25 and A_2=30 days old.

Sub-plot treatments :

No. of seedings/hill : P_1=2, P_2=3 and P_3=4 seedlings/hill.

3. DESIGN:

(i) Split-plot. (ii) (a) 6 main-plots/replication; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1·5 m.×6 m. (b) Varies according to spacings. (v) 30 cm. on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Endrin was sprayed as a precautionary measure. (iii) Yield, no. of tillers and plant height. (iv) (a) 1964-contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 128 Kg/ha. (ii) (a) 572 Kg/ha. (b) 315 Kg/ha. (iii) Interaction S×P alone is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	S_1	S_2	S_3	Mean
A_1	1256	1179	1236	1205	1278	1189	1224
A_2	1429	1381	1204	1457	1115	1442	1338
Mean	1343	1280	1220	1331	1197	1315	1281
P_1	1468	1471	1053				
P_2	1038	1359	1193				
P_3	1522	1010	1414				

C.D. for P means at the same level of S=319·7 Kg/ha.

C.D. for S means at the same level of P=437·6 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(73).**

Site :- Rice Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :— To determine optimum age, spacing and no. of seedlings under low saline conditions for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 4, 5.2.65. (iv) (a) Puddling, levelling, thinning of bunds and digging of corners, (b) Transplanting. (c) 35 to 45 Kg/ha. (d) and (e) As per treatments. (v) 224 Kg/ha. of Super+112 Kg/ha. of A/S as basal and 112 Kg/ha. of A/S as top dressing. (vi) C-1327. (vii) Irrigated. (viii) 2 hand weedings. (ix) 6·5 cm. (x) 27.5.65.

2. TREATMENTS to 4. GENERAL :
Same as in expt. no. 65(74) on page 213.

5. RESULTS :

(i) 2653 Kg/ha. (ii) (a) 664 Kg/ha. (b) 493 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	S_1	S_2	S_3	Mean
A_1	2470	2844	2557	2673	2669	2529	2624
A_2	2655	2640	2750	2739	2794	2511	2681
Mean	2562	2742	2654	2706	2732	2520	2653
S_1	2751	2710	2657				
S_2	2467	2718	3011				
S_3	2469	2732	2293				

Crop :- Paddy (*Abi*). **Ref :- A.P. 64(99), 65(71).**

Site :- Rice Res, Stn., Machilipatnam. **Type :- 'C'.**

Object :— To determine the optimum spacing, age and no. of seedlings for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 112 Kg/ha. of A/S, 224 Kg/ha. of Super as basal and 112 Kg/ha. of A/S as top dressing for 64 ; N.A. for 65. (ii) Sandy loam. (iii) 4.7.64/14.8.64 ; 30.6.65/12.8.65. (iv) (a) 4 to 5 puddlings with country plough, levelling with ladder, trimming of bunds, spreading of clods. (b) Transplanting. (c) 35 Kg/ha. to 45 Kg/ha. (d) to (e) As per treatments. (v) 112 Kg/ha. of A/S, 224 Kg/ha. of Super as basal and 112 Kg/ha. of A/S as top dressing. (vi) C—87 (Co 18 × Kuthir). (vii) Irrigated. (viii) 2 hand weedings. (ix) 90·8 cm. ; 68·1 cm. (x) 23.11.64 ; 6.12.65.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2).

(1) 3 spacings : S_1=20 cm. × 10 cm., S_2=20 cm. × 15 cm. and S_3=20 cm. × 20 cm.

(2) 2 ages of seedlings : A_1=40 and A_2=50 days.

Sub-plot treatments :

No. of seedlings/hill : P_1=2, P_2=3 and P_3=4 seedlings/hill.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 3·0 m. × 1·5 m. (b) According to spacing. (v) 30 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Normal for 64 ; Satisfactory for 65. (ii) Incidence of Rice Stem borer, dipping of seedling in Endrin 0·02% sotution three times ; Rice Stem borer attack in 65 also but control measure is N.A. (iii) Yield of grain. (iv) (a) 1964-contd. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. is continued.

5. RESULTS :

64(99)

(i) 383 Kg/ha. (ii) (a) 260.2 Kg/ha. (b) 261·1 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	S_1	S_2	S_3	Mean
A_1	454	415	364	428	374	432	411
A_2	345	436	288	312	470	286	356
Mean	399	425	326	370	422	359	383
S_1	400	349	360				
S_2	409	531	325				
S_3	389	396	292				

65(71)

(i) 1308 Kg/ha. (ii) (a) 381 Kg/ha. (b) 286 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	S_1	S_2	S_3	Mean
A_1	1178	1416	1507	1376	1493	1232	1367
A_2	1236	1323	1188	1497	1180	1069	1249
Mean	1207	1370	1348	1437	1337	1151	1308
S_1	1315	1491	1506				
S_2	1298	1491	1223				
S_3	1009	1128	1315				

Crop :- Paddy. **Ref :- A.P. 65(72).**

Site :- Rice Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :— To determine optimum age, spacing and no. of seedlings under medium saline conditions for Paddy crop.

1. BASAL CONDITIONS:
(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 7.8.65/End of Aug., 65. (iv) (a) Puddling, levelling, thinning of bunds and digging of corner. (b) Transplanting. (c) 35 to 45 Kg/ha. (d) and (e) As per treatments. (v) 224 Kg/ha. of Super+112 Kg/ha. of A/S as basal and 112 Kg/ha. of A/S as top dressing. (vi) C 87 (Co 18×Kuthir). (vii) Irrigated. (viii) 2 hand weedings. (ix) 53·5 cm. (x) 6.12.65.

2. TREATMENTS and 3. DESIGN:
Same as in expt. no. 64(99) on page 215.

4. GENERAL :

(i) Satisfactory. (ii) High incidence of Rice Stem borer resulted in low yields. (iii) Yield, No. of tillers and plant height. (iv) (a) 1964-contd. (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1983 Kg/ha. (ii) (a) 619 Kg/ha. (b) 507 Kg/ha. (iii) None of the effects in significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	S_1	S_2	S_3	Mean
A_1	2056	2046	2157	2062	2381	1816	2086
A_2	1816	1812	2010	1877	1857	1903	1879
Mean	1936	1929	2084	1970	2119	1860	1983
S_1	1909	1935	2066				
S_2	1872	2125	2360				
S_3	2030	1726	1825				

Crop :- Paddy (*Abi*). **Ref :- A.P. 61(49), 62(55), 63(107).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'C'.**

Object : - To study the effect of different timings of operation of rotary cultivation in the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy-*Sesbania*-Paddy for 61 ; Paddy-Paddy for others. (b) *Sesbania* for 61 ; Paddy for 62 ; *Sunhemp* for 63. (c) 168 Kg/ha. of Super+112 Kg/ha. of A/S for 62; Nil for others. (ii) Heavy black soil. (iii) 3.6.61/15.7.61 ; 7.6.62/28.7.62 ; 3.6.63/29.7.63. (iv) (a) 1 ploughing+2 puddings, digging and levelling. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 em. for 63 ; 20 cm.×20 cm. for others. (e) 2. (v) 5124 Kg/ha. of G.L.+168 Kg/ha. of Super+56 Kg/ha. A/S for 61 ; Nil for 62 ; 1681 to 2242 Kg/ha. of Glyricidia leaf+168 Kg/ha. of Super for 63. (vi) MTU—10. (vii) Irrigated. (viii) As per treatments. (ix) 139 cm. ; 128 cm. ; 122 cm. (x) 10.12. 1961 ; 12.12.1962 ; 26.11.1963.

2. TREATMETS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 stages of working push hoe: S_1=Upto 25 days before flowering, S_2=Upto 15 days before flowering and S_3=Upto flowering.

(2) 3 intervals of working push hoe : I_1=At weekly interval, I_2=At 2 weeks interval and I_3=At four weeks interval.

Extra treatments : E_1=Line planting without interculture with push hoe and E_2=Bulk planting by local method.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 11·0 m.×2·6 m. for 61 ; N.A. for 62 ; 7·7 m.×2·7m. for 63. (b) 10·4 m.×2·2 m. for 61 ; 7·3 m.×2·4 m. for others. (v) 30 cm.×20 cm. for 61; N.A. for 62 ; 20 cm.×15 cm. for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer was moderate to severe for 61 for which Endrin was sprayed. No incidence for others. (iii) Grain yield. (iv) (a) 1961-63. (b) No. (c) Nil. (v) N.A. (vi) Heay rains in July and October for 62; Heavy rains in October for 63. (vii) Error variances are heterogeneous and Treatments×years interaction is absent, hence individual results are presented under 5. Results.

5. RESULTS :

61(49)

(i) 3719 Kg/ha. (ii) 415·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=3769, E_2=3611 Kg/ha.

	I_1	I_2	I_3	Mean
S_1	3618	3627	3710	3652
S_2	3921	3455	3972	3783
S_3	3507	4066	3667	3746
Mean	3682	3716	3783	3727

62(55)

(i) 1475 Kg/ha. (ii) 176·2 Kg/ha. (iii) Main effect of I alone is significant. (iv) Av. yield of grain in Kg/ha.

E_1=1334, E_2=1549 Kg/ha.

	I_1	I_2	I_3	Mean
S_1	1549	1444	1612	1535
S_2	1570	1322	1528	1473
S_3	1416	1317	1587	1440
Mean	1512	1361	1576	1483

63(107)

(i) 3555 Kg/ha. (ii) 412·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_2=3728, E_3=3889 Kg/ha.

	I_1	I_2	I_3	Mean
S_1	3371	3462	3525	3453
S_2	3392	3896	3420	3569
S_3	3259	3707	3455	3474
Mean	3341	3688	3467	3499

Crop :- Paddy (*Tabi*). **Ref :- A.P. 62(48), 63(60), 64(94).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'C'.**

Object :— To study the effect of different timings of operation of rotary cultivation in the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 5124 Kg/ha. of G.L.+168 Kg/ha. of Super+56 Kg/ha. of A/S for 62 ; N.A. for others. (ii) Heavy black soil. (iii) 2.1.1962/3.2.1962 ; 10.1.1963/11.2.1963 ; 6.1.1964/4.2.1964. (iv) (a) 2 to 4 puddlings, digging and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15cm.×10 cm. for 64 ; 20 cm.×10 cm. for others. (e) 2. (v) 4483 Kg/ha. of G.L. (*Sesbamia*) for 64;Nil for others. (vi) MTU—15. (vii) Irrigated. (viii) As per treatments. (ix) 5 cm., 2 cm., Nil. (x) 25.5.1962, 12.5.1963, 1.5.1964.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 stages of working push hoe : S_1=Upto 25 days before flowering, S_2=Upto 15 days before flowering and S_3=Upto flowering.

(2) 3 intervals of working push hoe : I_1=At weekly interval, I_2=At 2 weeks interval and I_3=At four weeks interval.

Extra treatments : E_1=Line planting without interculture with push hoe and E_2=Bulk planting by local method.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 11·0 m.×2·7 m. for 62 ; N.A. for 63 ; 6·3 m.×2·4 m. for 64. (b) 10·9 m.×2·2 m. for 62 ; 6·1 m.×2·5 m. for 63 ; 6·0 m.×2·2 m. for 64 (v) 5 cm.×20 cm. for 62 ; N.A. for 63 ; 15 cm.×10 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence for 64; Incidence of Stem borer and Paddy Blast for others for which Endrin and 1% Bordeaux mixture were sprayed. (iii) Grain yield. (iv) (a) 1961—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatment × years interaction is absent.

5. RESULTS :

(i) 2529 Kg/ha. (ii) 208·8 Kg/ha. (based on 110 d.f. made up of pooled error and various components of Treatments × years interaction). (iii) Difference between extra treatments and interaction 'E vs. others' is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2534, E_2=2340 Kg/ha.

	S_1	S_2	S_3	Mean
I_1	2628	2613	2560	2600
I_2	2602	2548	2422	2524
I_3	2550	2528	2493	2524
Mean	2593	2563	2492	2549

C.D. for E means=169·0 Kg/ha.

C.D. for E vs. others=93·4 Kg/ha.

Treatments	S_1	S_2	S_3	Sig.	I_1	I_2	I_3	Sig.	E_1	E_2
Years										
1962	2647	2558	2561	N.S.	2645	2545	2576	N.S.	2509	2494
1963	3033	2994	2999	N.S.	3141	2941	2944	**	3123	2686
1964	2100	2138	1914	*	2015	2086	2051	N.S.	1970	1841
Pooled	2593	2563	2492	N.S.	2600	2524	2524	N.S.	2534	2340

Sig.	G.M.	S.E./plot
N.S.	2573	191·3
**	2990	172·4
N.S.	2024	224·0
*	2529	208·8

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(155), 64(158), 65(31).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'C'.**

Object :—To find out the utility of Rotary cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 14459 Kg/ha., 4132 Kg/ha. and 11199 Kg/ha. of G.L. for 63, 64 and 65 respectively + 168 Kg/ha. of Super. (ii) Heavy black soil. (iii) 24.11.63/25.12.63, 15.12.64/5.1.65 and 15.12.65/6.1.66. (iv) (a) Puddling with country plough, trimming of bunds. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 10 cm. for 63, 20 cm. × 10 cm. for others. (e) 2. (v) N.A. (vi) MTU—15 for 63, SLO—16 for others. (vii) Irrigated. (viii) As per treatments. (ix) 2 cm. for 63, N.A. for others. (x) 30.4.64, 27.3 65 and 29.3.66.

2. TREATMENTS :

4 interculturing treatment : T_1=Local method of Bulk planting, T_2=Line planting without interculture, T_3=2 intercultures on 20th and 35th days after planting and T_4=3 intercultures on 20th, 35th and 50th day after planting.

Note : For 63 ; T_3=30th and 45th days after planting and T_4=30 th, 45th and 60th day after planting and for 65 T_4=20th. 30th and 50th day after.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 11·4 m.×3·9 m. for 63, 9·0 m.×4·4 m. for 64 and 11·0 m.×3·6 m. for 65, (b) 11·0m.×37m. for 63,8·9m.×4·3m. for 64, 10·8m.×3·5m. for 65.(v) 15 cm.×10 cm., 8 cm.×5 cm. and 75 cm.×5 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Incidence of Stem borer, spraying of Endrin. (iii) Grain yield. (iv) (a) 1963—65 (treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

63(155)

(i) 2678 Kg/ha. (ii) 423 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2620	2607	2701	2782

64(158)

(i) 3214 Kg/ha. (ii) 336·3 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2556	3442	3333	3524

C.D.=413·6 Kg/ha.

65(31)

(i) 3412 Kg/ha. (ii) 420·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain n Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	3331	3452	3391	3475

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(239), 63 (226).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'C'.**

Object :—To study the best time for intercultivation with push hoe up to 3 stages.

1. BASAL CONDITIONS :

(i) Paddy—Paddy. (b) Paddy. (c) N.A. for 62 ; 67·2 Kg/ha. of N and G.L.+35·9 Kg/ha. of P_2O_5 (ii) Sandy loam. (iii) 8.7.62/24.8.62 ; 20.7.1963/30, 31.8.63 ; 1.9.1963. (iv) (a) Dry ploughing twice, puddling twice, levelling and spreading of clods and trimming of bunds. (b)Transplanting. (c) 37 Kg/ha (d) 20 cm.×15 cm. (e) 2. (v) N.A. (vi) BCP—1. (vii) Irrigated. (viii) As per treatments. (ix) 94 cm. ; 77 cm. (x) 28.1.1963 ; 23.1.1964.

2. TREATMENTS:

All combinations of (1) and (2)+2 extra treatments

(1) 3 stages of working push hoe : T_1=25 days before flowering, T_2=15 days before flowering and T_3=Up to flowering.

(2) 3 intervals of working push hoe : I_1=At weekly interval, I_2=At fortnightly interval and I_3=At an interval of one month.

Extra treatments : E_1=Bulk planting (Local method) and E_2=Line planting without interculture.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 2 for 62 ; 4 for 63. (iv) (a) and (b) 11·0 m.×3·1 m. for 62 ; 11·0 m.×2·6 m. for other. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. for 62 ; Incidence of Stem borer and Endrin sprayed. (iii) Yield of grain. (iv) (a) 1962–1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. for 63 but heavy rain fall during Oct, 1962 for 62. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 2941 Kg/ha. (ii) 436·6 Kg/ha. (based on 50 d.f. made up of Treatments×years interaction and pooled error). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2984 and E_2=2992 Kg/ha.

	I_1	I_2	I_3	Mean
T_1	2806	3001	3047	2951
T_2	2941	3001	2889	2944
T_3	2686	3114	2891	2897
Mean	2811	3039	2942	2931

Individual results

Treatments	T_1	T_2	T_3	Sig.	I_1	I_2	I_3
Years							
1962	1677	1321	1561	N.S.	1613	1330	1617
1963	3588	3755	3565	N.S.	3410	3893	3605
Pooled	2951	2944	2897	N.S.	2811	3039	2942

Sig.	E_1	E_2	Sig.	G.M.	S.E./plot
N.S.	1449	1869	N.S.	1545	392·7
N.S.	3752	3553	N.S.	3639	417·3
N.S.	2984	2992	N.S.	2941	436·6

Crop :- Paddy (*Dalwa*). **Ref :- A.P. 60(1)**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'C'.**

Object :—To find out the optimum spacing for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy–Paddy. (b) Paddy. (c) 112 Kg/ha. of Super+56 Kg/ha. of C/A/N. (ii) Clayey soil. (iii) 2.1.60/14.2.60. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) 112 Kg/ha. of Super+112 Kg/ha. of C/A/N. (vi) PLA—1 (early). (vii) Irrigated. (viii) Hand weeding and working rotary push hoe twice. (ix) 4 cm. (x) 27.4.60.

2. TREATMENTS :

3 spacings : S_1=20 cm.×20 cm., S_2=20 cm.×10 cm. and S_3=Local method.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 14·6 m.×11·0 m. (b) 14·3 m.×10·7 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stem borer attack, spraying with 0 03% Endrin. Blast attack was also observed. (iii) Yield of grain. (iv) (a) 1957–1961 (Treatments changed in 1961). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 706 Kg/ha. (ii) 176·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2	S_3
Av. yield	544	811	762

———

Crop :- Paddy (*Dalwa*). **Ref :- A.P. 61(47).**

Site :- Rice. Res. Sub-Stn , Pulla. **Type :-'C'.**

Object ;— To find out the optimum spacing for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 112 Kg/ha. of C/A/N+112 Kg/ha. of Super. (ii) Clay loam. (iii) 3.1.61/18.2.61. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) and (e) As per treatments. (v) 112 Kg/ha. of Super+112 Kg/ha. of C/A/N. (vi) PLA—1. (vii) Irrigated. (viii) 2 weedings. (ix) 7 cm. (x) 4.5.61.

2. TREATMENTS:

4 spacings : S_1=20 cm.×10 cm. with 2 seedlings/hole, S_2=90 cm.×20 cm. with 2 seedlings/hole, S_3=15cm.×15 cm. with 2 seedlings/hole and S_4=Local method of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 14·6 m.×6·4 m. (b) 14·3 m.×6·1 m. (v) 15cm.×15cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller counts, plant height and grain yield. (iv) (a) 1957—1961 (Treatments modified in 61). (b) No. (c) N.A. (v) and (vi) N.A. (vii) Drought conditions prevailed at the fog end of the crop season.

5. RESULTS.

(i) 1540 Kg/ha. (ii) 249·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1786	1481	1403	1491

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(240), 64(95), 65(13).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'C'.**

Object :—To find out the optimum spacing and seedling for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. (ii) Clay loam. (iii) N.A. for 63, 3.1.64/5.2.64 ; 4.1.65/16.2.65. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 49·4 Kg/ha. (d) and (e) As per treatments. (v) 44·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 64 ; 22·4 Kg/ha. of N as C/A/N for 65 and 56 Kg/ha. of C/A/N, 112 Kg/ha. of Super as basal dressing for 63. (vi) PLA-I. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) N.A. for 63, 27.4.64, 20.5.65.

2. TREATMENTS :

All combination of (1) and (2)i

(1) 5 spacings : S_1=15 cm.×10 cm., S_2=15 cm.×15 cm., S_3=20 cm.×10 cm., S_4=20 cm.×15 cm. and S_5=Local method.

(2) No. of seedlings/hill : H_1=1 and H_2=2.

S_3=20 cm.×15 cm. and S_4=20 cm.×20 cm. for 63.

3. DESIGN :

(i) Fact. in R.B.D. (ii) 10. (b) N.A. (iii) 4. (iv) (a) N.A. for 63 ; 6·1m.×3.1m, for 64 ; 7·8m.×2·7m. for 65 (b) 9·7 m.×4·3 for 63 ; 6·1 m.×3·1m. for 64 and 7·3.n.×2·4 m. for 65. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1963—65 (Treatments modified for 63). (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error Variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results of 64 and 65

(i) 1825 Kg/ha. (ii) 344 Kg/ha. (based on 9 d.f. made up of Treatments×years interaction). (iii) Main effect of 'P' is highly significant and that of 'S' is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_1	1837	1879	1602	1663	1452	1687
P_2	2127	2098	2034	1797	1765	1964
Mean	1982	1988	1818	1730	1608	1825

C.D. for P marginal means=173·9 Kg/ha.

C.D. for S marginal means=275·1 Kg/ha.

63 (240)

(i) 2903 Kg/ha. (ii) 1763 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	S_4	Mean
P_1	2852	2990	2249	2817	2614	2705
P_2	2837	3378	3395	2938	2958	3101
Means	2844	3184	2822	2878	2788	2903

Treatments	S_0	S_1	S_2	S_3	S_4	Sig.	P_1	P_2	Sig.	G.M.	S.E./plot
Years											
1964	2726	2699	2430	2376	2050	**	2304	2608	**	2456	85·7
1965	1239	1278	1206	1084	1166	N.S.	1070	1320	N.S.	1195	240·2
Poolee	1982	1988	1818	1730	1608	*	1687	1964	**	1825	344 0

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(105).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'C'.**

Object :—To find out the optimum spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (iii) 2.6.63/16.7.63. (iv) (a) 3 puddlings with country plough, removing of weeds, spreading of clods, trimming of bunds and digging of corners. (b) Transplanting. (c) 49·4 Kg/ha. (d) As per treatments. (e) 2. (v) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. (vi) PLA-2. (vii) Irrigated. (viii) 2 hand weedings. (ix) 104·9 cm. (x) 23.12.63.

2. TREATMENTS :

All combinations of (1) and (2)+control (Local method).

(1) 2 spacings between rows : R_1=15, R_2=20 cm.

(2) 2 spacings between hills : P_1=10 and P_2=15 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 24·7 m.×9·1 m. (iii) 4. (iv) (a) and (b) 9·1 m.×4·6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) The crop in general was affected due to stagnation of water during Sept. and Oct. 63. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) Nil. (vii) Floods in Aug. and Oct. 63.

5. RESULTS :

(i) 745 Kg/ha. (ii) 261·9 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control mean=530 Kg/ha.

	R_1	R_2	Mean
P_1	774	721	747
P_2	910	794	852
Mean	842	757	800

Crop :- Paddy (*Rabi*). **Ref :- A.P. 65(223).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'C'.**

Object :—To find out suitable spacing and age of seedlings during 2nd crop season.

1. BASAL CONDITIONS :

(i) (a) Paddy-pulses. (b) Pulses. (c) Nil. (iii) Sandy clay loam to clay loam. (iii) 11, 18, 25.1.65/15.2.65. (iv) (a) Puddling thrice with country plough. (b) Transplanting. (c) 25 Kg/ha. (d) As per treatments. (e) N.A. (v) 75 C.L./ha. of F.Y.M. by surface application on 7.2.65 ; 125 Kg/ha. of A/S, 150 Kg/ha. of Super as basal dose on 13.2.65 and 63 Kg/ha. of A/S as top dressing on 4.3.65. (vi) N.A. (viii) Irrigated. (viii) Hand weeding once. (ix) 2·7 cm. (x) 10 to 18.5.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 ages of seedlings : $A_1=3$, $A_2=4$, $A_3=5$ weeks.

(2) 2 spacings : $S_1=15$ cm. $\times 10$ cm. and $S_2=15$ cm. $\times 15$ cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 9·6 m. $\times$ 12·3 m. (iii) 4. (iv) (a) and (b) 3 m. $\times$ 6 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory, lodging in all treatments after flowering. (ii) Incidence of Paddy Stem borer, spraying Endrin thrice. (iii) Effective tiller counts, plant height and yield of grain. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2941 Kg/ha. (ii) 133·0 Kg/ha. (iii) Main effect of A alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	A_1	A_2	A_3	Mean
S_1	2840	3035	2965	2947
S_2	2736	3035	3035	2935
Mean	2788	3035	3000	2941

C.D. for A marginal means = 141·7 Kg/ha.

———

Crop :- Paddy (*Abi*). **Ref :- A.P. 64(75).**

Site :- Reg. Rice. Res. Stn., Ragolu. **Type :- 'C'.**

Object :—To find out the relative merits of drill sowing and transplanting with and without G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy-Pulses-Paddy. (b) Pulses. (c) Nil. (ii) Sandy clay loam. (iii) 16.7.64/12.9.64. (iv) (a) Puddling thrice with country plough and levelling once with levelling board. (b) As per treatments. (c) 23·5 Kg/ha. for transplanting and 33·6 Kg/ha. for drilling. (d) 20 cm. $\times$ 10 cm. for transplanting and 20 cm. $\times$ 15 cm. for drilling. (e) 2 to 3. (v) 125 Kg/ha. of each of A/S and Super by surface application on 11.9.64 and 62 Kg/ha. of Super as top dressing on 13.10.64. (vi) BAM-3. (vii) Irrigated. (viii) Hand weeding and one push hoeing. (ix) 70·2 cm. (x) 15.12.64.

2. TREATMENTS :

4 cultural treatments : C_1=Drill sowing of Paddy in second fortnight of June followed by intercultivation and hand weeding, C_2=Drill sowing of Paddy and broadcasting *Dhaincha* in second fortnight of June, 64 incorporating the G.M. in Aug., 64 followed by intercultivation and hand weeding, C_3=Sowing *Dhaincha* in the second fortnight of June incorporating the G.M. and transplanting Paddy in Aug., 64 from a nursery sown in second fortnight of June and C_4=Transplanting Paddy in Aug., 64 with the seedlings sown in the second fortnight of June, 64.

G M. applied at 2500 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 24·4 m.×11·5 m. (iii) 3. (iv) (a) and (b) 11·5 m.×6·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Germination, stand and crop growth satisfactory and lodging after grain formations. (ii) Nil. (iii) Height measurements, tiller counts and yield of grain and straw. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) Nil. (vii) Planting was delayed by one month due to continuous rains.

5. RESULTS :

(i) 2096 Kg/ha. (ii) 237 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	C_1	C_2	C_3	C_4
Av. yield	1606	2305	2426	2048

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(15).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'C'.**

Object :—To study the timing of operation of rotary cultivation in the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Green gram-Paddy. (b) Green gram. (c) Nil. (ii) Clay loam. (iii) 15.6.63/3.8.63. (iv) (a) Ploughing and levelling. (b) Transplanting. (c) N.A. (d) 20 cm.×15 cm. (e) 2. (v) 2471 Kg/ha. of G.L.+124 Kg/ha. of Super.+185 Kg/ha. of A/S. (vi) BAM-3 (medium). (vii) Irrigated. (viii) 1 weeding+as per treatments. (ix) 96 cm. (x) 3.12.63.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 stages of working push hoe : S_1=Upto 25 days before flowering, S_2=Upto 15 days before flowering and S_3=Upto flowering.

(2) 3 intervals of working push hoe : I_1=At one week interval, I_2=At two weeks interval and I_3=At four weeks interval.

Extra treatment : E_1=Line planting with no intercultivation and E_2=Ryots method of bulk planting. (Local method)

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 11. (b) 29·2 m.×20·0 m. (iii) 4. (iv) (a) 20·0 m.×2·2 m. (b) 19·8 m.×2·0 m. (v) 10 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1963-only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2421 Kg/ha. (ii) 186·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2392 and E_2=2575 Kg/ha.

	I_1	I_2	I_3	Mean
S_1	2446	2469	2528	2481
S_2	2268	2375	2417	2353
S_3	2399	2350	2412	2387
Mean	2371	2398	2452	2407

Crop :- Paddy. **Ref :- A.P. 60(219), 61(253), 62(271), 63(266).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To determine optimum spacing and number of seedlings per hill for maximum production.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) 69 Kg/ha. of N+35 Kg/ha. of P_2O_5 for 60 and 61 and 67 Kg/ha. of N+34 Kg/ha. of P_2O_5 for the rest. (ii) Clay loam. (iii) 23.5.60/4, 5.7.60 ; 23.5.61/3.7.61 ; 21.5.62/10.7.62 ; 21.5.63/28 to 30.6.63. (iv) (a) Dry ploughing followed by wet ploughing with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) and (e) As per treatments. (v) 69 Kg/ha. of N as A/S+35 Kg/ha. of P_2O_5 as Super for 60 and 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 for the rest. (vi) RDR-4 (late). (vii) Irrigated. (viii) Hand weeding and rotary weeding. (ix) N.A. (x) 15.10.60 ; 25 to 28.11.61 ; 15 to 17.11.62 ; 3rd week of Nov., 63.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 spacings : S_1=15 cm.×15 cm., S_2=20 cm.×20 cm. and S_3=25 cm.×25 cm.

(2) 3 numbers of seedlings/hill : N_1=2, N_2=3 and N_3=4 seedlings/hill.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3 for 60 and 4 for the rest. (iv) (a) Nil. (b) 9·1 m.×6·1 m. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Rat damage was observed for 60 and nil for the rest. (iii) Yield of grain. (iv) (a) 60-63. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

(i) 3613 Kg/ha. (ii) 568·8 Kg/ha. (based on 112 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	N_1	N_2	N_3	Mean
S_1	3292	3181	3090	3188
S_2	3778	3799	3731	3769
S_3	4067	3807	3773	3882
Mean	3712	3596	3531	3613

C.D. for S marginal means=237·9 Kg/ha.

Treatments	S_1	S_2	S_3	Sig.	N_1	N_2	N_3	Sig.	G.M.	S.E.'plot
Years										
1960	3676	4022	3704	N.S.	3922	3714	3767	N.S.	3801	484·2
1961	4255	4852	4860	N.S.	5051	4510	4406	N.S.	4656	691·1
1962	2847	3714	3916	**	3572	3483	3423	N.S.	3492	407·3
1963	2094	2553	3004	**	2357	2705	2588	N.S.	2550	566·0
Pooled	3188	3769	3882	**	3712	3596	3531	N.S.	3613	568·8

Crop :- Paddy. **Ref :- A.P. 60(220), 61(254), 62(272).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To find out the optimum number of seedlings and spacing for getting higher yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 52 Kg/ha. of N+26 Kg/ha. of P_2O_5. (ii) *Chalka.* (iii) 30.1.60/28.2.61 ; 25.1.61/25.2.61 ; 17.1.62/12.2.62. (iv) (a) Dry ploughing followed by wet ploughing with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) and (e) As per treatments. (v) 52 Kg/ha. of N as A/S+26 Kg/ha. of P_2O_5 as Super at planting and 30 days after planting. (vi) RDR-7(early). (vii) Irrigated. (viii) Hand weeding and weeding with rotary weeder. (ix) N.A. (x) April 60; 2.5.61 ; 4.5.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 spaeings : S_1=15 cm.×10 cm., S_2=15 cm.×15 cm. and S_3=15 cm.×20 cm.

(2) No. of seedlings/hill : H_1=2, H_2=3 and H_3=4 seedlings/hill.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3 for 60, 61 ; 4 for 62. (iv) (a) N.A. (b) 9·1 m.×4·6 m. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height measurements and grain yield. (iv) (a) 60-62. (b) N.A. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

(i) 1918 Kg/ha. (ii) 295·2 Kg/ha. (based on 72 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	H_1	H_2	H_3	Mean
S_1	2035	2021	2038	2031
S_2	1929	2159	2057	2048
S_3	1634	1755	1908	1766
Mean	1866	1978	2001	1948

C.D. for S marginal means=152·1 Kg/ha.

Treatments	S_1	S_2	S_3	Sig.	H_1	H_2	H_3	Sig.	G.M.	S.E/plot
Years										
1960	1272	1245	1018	N.S.	1159	1201	1174	N.S.	1178	235.3
1961	2041	2032	1813	N.S.	1934	1988	1964	N.S.	1962	368·3
1962	2593	2663	2289	**	2344	2554	2648	*	2515	287·1
Pooled	2031	2048	1766	**	1866	1978	2001	N.S.	1948	295·2

Crop :- Paddy. **Ref :- A.P. 60(221), 61(255), 62(273).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object : –To find out the optimum number of seedlings and spacing for getting higher yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 56 Kg/ha. of N+26 Kg/ha. of P_2O_5. (ii) *Chalka.* (iii) 25.5.60/25.6.60 ; 25.5.61/25.5.61 ; 22.6.62/21, 22, 23.7.62. (iv) (a) Dry ploughing followed by wet ploughing with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) and (e) As per treatments. (v) 52 Kg/ha. of N as A/S+24 Kg/ha. of P_2O_5 as Super. (vi) RDR-7 (early). (vii) Irrigated. (viii) Hand weeding and weeding with rotary weeder. (ix) N.A. (x) 3.9.60 ; 7, 8.9.61 ; 5.10.62.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 60 (220), 61 (254), 62 (272) on page 228.

5. RESULTS :

Pooled results.

(i) 1921 Kg/ha. (ii) 261·8 Kg/ha. (based on 72 d.f. made up of pooled error and Treatments × years interaction). (iii) Main effect of H alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	H_1	H_2	H_3	Mean
S_1	1697	1930	2023	1883
S_2	1831	1892	2064	1929
S_3	1978	1906	1971	1952
Mean	1835	1909	2019	1921

C.D. for H marginal means = 134·9 Kg/ha.

Individual results.

Treatments	T_1	T_2	T_3	Sig.	H_1	H_2	H_3	Sig.	G.M.	S.E./plot
Years										
1960	1534	1429	1387	N.S.	1467	1399	1485	N.S.	1450	179·7
1961	2279	2451	2456	N.S.	2249	2344	2595	*	2396	254·5
1962	1848	1912	1997	N.S.	1802	1967	1988	N.S.	1919	280·2
Pooled	1883	1929	1952	N.S.	1835	1909	2019	**	1921	261·8

Crop :- Paddy. **Ref :- A.P. 62(276), 63(269).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To study the effect of the timing of the operation of rotary cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 62, 4483 Kg/ha. of green leaf+67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super. (ii) *Chalka*. (iii) 3rd week of May. (iv) (a) 2 ploughings. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) 4483 Kg/ha of grain leaf+67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super for 62 and 34 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super for 63. (vi) RDR-4(late). (vii) Irrigated. (viii) 2 weedings and Hoeings. (ix) N.A. (x) 3rd week of Nov.

2. TREATMENTS :

Same as in expt. no. 62(16), 63(31) on page 212.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 11·0 m.×2·6 m. (b) 10·6 m.×2·2 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of Stem borer. (iii) Grain yield. (iv) (a) 62 to 63. (b) Yes. (c) As under 5. Results. (v) Rajendranagar. (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 2508 Kg/ha. (ii) 467·6 Kg/ha. (based on 70 d.f. made up of pooled error and Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2569 and E_2=2314 Kg/ha.

	S_1	S_2	S_3	Mean
I_1	2357	2502	2459	2439
I_2	2561	2549	2164	2425
I_3	2576	2852	2684	2704
Mean	2498	2634	2436	2523

In dividual results·

Treatments	S_1	S_2	S_3	Sig.	I_1	I_2	I_3	Sig.
Years								
1962	3185	3406	3047	N.S.	3052	3002	3584	*
1963	1810	1863	1824	N.S.	1827	1847	1823	N.S.
Pooled	2498	2634	2436	N.S.	2439	2425	2704	N.S.

E_1	E_2	Sig.	G.M.	S.E./plot
3645	3213	N.S.	3252	475·2
1494	1415	N.S.	3763	423·3
2569	2314	N.S.	2508	467·6

Crop :- Paddy. **Ref :- A.P. 64(64), 65(112).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'C'.**

Object :—To assess the effect of intercultivation of Paddy with a ratory weeder.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow for 64 ; Paddy for 65. (c) Nil. for 64 ; N.A. for 65. (ii) Clay loam. (iii) 15.12.64/5.1.65 ; 15.12.65/5.1.66. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 15 cm. (e) 3. (v) Nil. (vi) SLO –16. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 26.3.65 ; 30.3.66.

2. TREATMENTS :

4 cultural treatments : T_1=Ryot's method of bulk planting (local method), T_2=Line planting without interculture, T_3=2 intercultures 20 days and 35 days after planting and T_4=3 intercultures 20,35 and 50 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 8 m. × 5 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1963—65 (Expt. failed in 1963). (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatment × years interaction is absent.

5. RESULTS:

Pooled results

(i) 2173 Kg/ha. (ii) 337·7 Kg/ha. (based on 33 d.f. made up of pooled error and Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2176	2084	2182	2250

Individual results

Treatments	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years							
1964	1003	1001	1102	1097	N.S.	1051	326·8
1965	3350	3167	3262	3404	N.S.	3296	372·3
Pooled	2176	2084	2182	2250	N.S.	2173	337·7

Crop :- Paddy (*Abi*). **Ref :- A.P. 62(72), 63(3).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'C'.**

Object :—To study the effect of different timing of operation of rotary cultivation in the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) Paddy—Fallow—Paddy. (b) Fallow for 62 ; Paddy for 63. (c) Nil. for 62 ; 160 Kg/ha. of Super+56 Kg/ha. of A/S for 63. (ii) Clayey loam. (iii) 30.4.62/22.6.62 ; 4.6.63/12.7.63. (iv) (a) 4 ploughings and levelling for 62 ; puddlings with country plough for 63. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 5604 Kg/ha. of G.M. (*sesbamia*)+168 Kg/ha. of Super+56 Kg/ha. of A/S. (vi) SLO—13. (vii) Irrigated. (viii) As per treatments. (ix) N.A. for 62 ; 104 cm. for 63. (x) 16.11.1962 ; 20.11.1963.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments

(1) 3 phases of intercultivation by push hoe : S_1=25 days before flowering, S_2=Up to 15 days before flowering and S_3=Up to flowering stage.

(2) 3 interval of intercultivation : I_1=At weekly interval, I_2=At 2 weeks interval and I_3=At four weeks interval.

Extra treatments :

E_1=Line planting without intercultivation and E_2=Ryot's method of bulk planting (local method).

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 2·6 m.×11·0 m. (b) 2·2 m.×10·6 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory, lodging due to heavy rains. (ii) Attack of Stem borer and Gallfly ; Endrin was sprayed as a control measure. (iii) Plant height and yield of grain. (iv) (a) 1962–1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains and severe winds before flowering for 62. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

(i) 2551 Kg/ha. (ii) 228·4 Kg/ha. (based on 70 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of I alone is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2570 and E_2=2747 Kg/ha.

	I_1	I_2	I_3	Mean
S_1	2516	2403	2658	2526
S_2	2530	2558	2545	2544
S_3	2323	2493	2716	2511
Mean	2456	2485	2640	2527

C.D. for 1 marginal means=131·7 Kg/ha.

Treatments	I_1	I_2	I_3	Sig.	S_1	S_2	S_3	Sig.
Years								
1962	2351	2359	2492	N.S.	2431	2421	2350	N.S.
1963	2562	2611	2787	*	2620	2668	2671	N.S.
Pooled	2456	2485	2640	*	2526	2544	2511	N S.

E_1	E_2	Sig.	G.M.	S.E./plot
2503	2503	N.S.	2419	254·0
2637	2992	*	2682	218·0
2570	2747	N.S.	2551	228·4

Crop :- Paddy. **Ref :- A.P. 65(77).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'C'.**

Object :—To study the effect of age of seedlings and number of seedlings per hill on the incidence of Stem borer.

1. BASAL CONDITIONS :

(i) (a) Pulses—paddy. (b) Pulses. (c) Nil. (ii) Clay loam. (ii) 24.5.65/4, 14, 24.7.65. (iv) (a) Dry ploughings and spade working after letting in water. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) As per treatments. (v) 28 Kg/ha. of N+45 Kg/ha. of P_2O_5 in the shape of fertilizer mixture. (vi) MTU—19. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 79·1 cm. (x) 18.12.65.

2. TREATMENTS :

Main-plot treatments

3 ages of seedlings : A_1=40, A_2=50 and A_3=60 days old seedlings.

Sub-plot treatments

No. of seedlings/hill : S_1=1, S_2=2, S_3=3 and S_4=4 seedlings/hill.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 4 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) and (b) 11·0 m.×3·7 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) % Stem borer incidence and grain yeild. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 885 Kg/ha. (ii) (a) 65 Kg/ha. (b) 44 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	Mean
A_1	715	610	802	709
A_2	950	855	1080	962
A_3	676	742	947	788
Mean	780	736	943	820

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(177).**

Site :- Rice Res. Stn., Utukur. **Type :- 'C'.**

Object :—To find out if deep ploughing and close planting have any effect on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Fallow. (c) Nil. (ii) Red loamy soil. (iii) 4.7.62/4.9.62. (iv) (a) As per treatments. (b) Transplanting. (c) 37 Kg/ha. (d) As per treatments. (e) 2. (v) Nil. (vi) BCP—2. (vii) Irrigated. (viii) Hand weeding. (ix) 72 cm (x) 27.1.63.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 methods of ploughing : M_1=Deep ploughing and M_2=Normal ploughing.

(2) 2 spacings : S_1=15 cm.×15 cm. and S_2=20 cm.×15 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 6·4 m.×6·3 m. for S_2 ; 6·3 m.×6·3 m. for S_1 (b) 6·0 m.×6·0 m. for S_2 ; 6·0 m.×6·0 m. for S_1 (v) 15 cm.×15 cm. for S_2 ; 20 cm.×15 cm. for S_1 (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin against early Stem borer. (iii) Tiller counts, height measurements and grain yield. (iv) (a) to (c) No. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3928 Kg/ha. (ii) 4461 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Control=3889 Kg/ha.

	S_1	S_2	Mean
M_1	3945	4139	4042
M_2	3945	3722	3834
Mean	3945	3930	3938

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(178), 63(179).**

Site :- Rice Res. Stn., Utukur. **Type :- 'C'.**

Object: —To determine the optimum intervals for operating rotary weeder and to study the critical period upto which the weeder could be advantageously worked for obtaining increased yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) *Sunhemp* (G.M.) for 62; *Dhaincha* (G.M.) for 63. (c) Nil. (ii) Red sandy loam for 62 ; Red loamy for 63. (iii) 2.7.62/1.8.62 ; 8.7.63/13.8.63. (iv) (a) 3 puddlings, ploughing and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 4483 Kg/ha. of G.L.+224·2 Kg/ha. of Super for 62; 1255 Q/ha. of F.Y.M.+224·2 Kg/ha. of A/S+224·2 Kg/ha. of Super for 63. (vi) GEB—24 (medium). (vii) Irrigated. (viii) 1 hand weeding. (ix) 72 cm. ; 59 cm. (x) 28.11.1962 ; 10.11.1963.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments

(1) 3 intervals of working weeder : I_1=At weekly interval, I_2=At fortnightly interval and I_3=At monthly interval.

(2) 3 times of working with weeder : T_1=Upto 25 days before flowering, T_2=Upto 15 days before flowering and T_3=Upto flowering.

Extra treatments : E_1=Line planting without interculture and E_2=Bulk planting by *Ryot's* method (local method).

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 11·2 m.×3·0 m. (b) 10·8 m.×2·6 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin against Paddy Stem borer. (iii) Grain yield. (iv) (a) 1962—1963. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 4909 Kg/ha (ii) 462·4 Kg/ha. (based on 70 d.f. made up of pooled error and Treatments × years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=4964, E_2=4764 Kg/ha.

	I_1	I_2	I_3	Mean
T_1	5031	4898	4942	4957
T_2	4876	4919	4849	4881
T_3	5009	4897	4853	4920
Mean	4972	4905	4881	4919

Individual results.

Treatments	I_1	I_2	I_3	Sig.	T_1	T_2	T_3	Sig.
Years								
1962	5240	5239	5236	N.S.	5135	5355	5224	N.S.
1963	4704	4570	4526	N.S.	4778	4407	4615	N.S.
Pooled	4972	4905	4881	N.S.	4957	4881	4920	N.S.

E_1	E_2	Sig.	G.M.	S.E./plot
4854	4897	N.S.	5172	407·8
5075	4632	N.S.	4646	473·3
4964	4764	N.S.	4909	462.4

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(274).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'C'.**

Object: —To study the timing of operations of rotary cultivation in Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) *Chalka*. (iii) 29.6.62/16.8.62. (iv) (a) 3 ploughings in the country plough and levelling. (b) Transplanting (c) 34 Kg/ba. (d) 20 cm.×20 cm. (e) 2 to 3. (v) N.A. (vi) HR—35. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 6.12.62.

2. TREATMENTS :

Same as in expt. no. 62(178), 63(179) on page 234.

Working is done with push hoe instead of weeder.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) and (b) N.A. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2895 Kg/ha. (ii) 316·0 Kg/ha. (iii) Extra treatments are highly significant. (iv) Av. yield of grain in Kg/ha.

E_1=3395, E_2=2382 Kg/ha.

	S_1	S_2	S_3	Mean
T_1	3020	2913	3128	3020
T_2	3079	2807	2812	2899
T_3	2649	2701	2965	2772
Mean	2916	2807	2968	2897

C.D. for extra treatment mean=456·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62(199), 63(190).**

Site :- Rice Res. Stn., Wyra. **Type :- 'C'.**

Object :—To find out optimum spacing with optimum number of seedlings for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 45 Kg/ha. of N+34 Kg/ha. of P_2O_5. (ii) Black soil (iii) 10.6.62/22.7.62; 17.6.63/6.8.63. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting (c) 37 Kg/ha. (d) and (e) As per treatments. (v) 125·5 Q/ha. of F.Y.M.+45 Kg/ha. of N+34 Kg/ha. of P_2O_5. (vi) HR-35(late). (vii) Irrigated. (viii) Hand weeding and working push hoe. (ix) N.A. (x) 4.12.62 ; 7.12.63.

2. TREATMENTS :

A ll combinations of (1) and (2).

(1) 4 seedlings : S_1=1, S_2=2, S_3=3 and S_4=4 per hill.
(2) 3 spacings : R_1=15 cm.×15 cm., R_2=20 cm.×20 cm. and R_3=25 cm.×25 cm.

3. DESIGN :

(i) R B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1942 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stem borer attack for 62 and 2·8 Kg/ha. of Endrin was was sprayed as 1 oz Endrin in 3 gallons of water. No incidence for 63. (iii) Grain yield. (iv) (a) 62-64 (Expt. conducted in 64 vitiated). (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 2447 Kg/ha. (ii) 679·6 Kg/ha. (based on 11 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
R_1	2406	2430	2419	2189	2361
R_2	2520	2528	2334	2609	2498
R_3	2529	2364	2454	2584	2483
Mean	2485	2441	2402	2461	2447

Individual results

Treatments	S_1	S_2	S_3	S_4	Sig.	R_1	R_2	R_3	Sig.	G.M.	S.E./plot
Years											
1962	2563	2582	2475	2718	N.S.	2645	2719	2389	*	2585	114·0
1963	2407	2299	2330	2204	N.S.	2077	2277	2577	N.S.	2278	512·0
Pooled	2485	2441	2402	2461	N.S.	2361	2498	2483	N.S.	2447	679·6

Crop :- Paddy. **Ref :- A.P. 62(198), 63(191).**

Site :- Rice Res. Stn., Wyra. **Type :- 'C'.**

Object :—To study the time of operation of the rotary weeder for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 45 Kg/ha. of N+34 Kg/ha. of P_2O_5. (ii) Black soil. (iii) 10.6.62/25.7.62 ; 17.6.63/1.8.63. (iv) (a) 2 ploughings+2 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 125·5 Q/ha. of F.Y.M.+45 Kg/ha. of N+34 Kg/ha. of P_2O_5. (vi) HR-35. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 3.12.62 ; 3.12.63.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 times of working push hoe : T_1=Upto 25 days before flowering, T_2=Upto 15 days before flowering and T_3=Upto flowering.

(2) 3 intervals of working push hoe : I_1=At weekly intervals, I_2=At fortnightly intervals and I_3=At monthly intervals.

Extra treatments : E_1=Line planting without any intercultivation and E_2=Ryot's method of bulk planting. (Local method).

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 40·5 sq. m. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory for 62 ; Unsatisfactory for 63. (ii) Nil. (iii) Grain yield. (iv) (a) 62-63. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 2040 Kg/ha. (ii) 491·5 Kg/ha. (based on 30 d.f. made up of Treatments×years interaction and pooled error). (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=2164 and E_2=2138 Kg/ha.

	I_1	I_2	I_3	Mean
T_1	1989	1903	2131	2008
T_2	1779	1884	2174	1946
T_3	2199	1890	2193	2094
Mean	1989	1892	2166	2016

Individual results

Treatments	I_1	I_2	I_3	Sig	T_1	T_2	T_3	Sig.
Years								
1962	2541	2640	2767	N.S.	2483	2644	2821	N.S.
1963	1433	1145	1565	N.S.	1532	1248	1367	N.S.
Pooled	1989	1892	2166	N.S.	2008	1946	2094	N.S.

E_1	E_2	Sig.	G.M.	S.E./plot
2896	2916	N.S.	2696	458·0
1433	1359	N.S.	1385	600·0
2164	2138	N.S.	2040	491·5

Crop :- Paddy. **Ref :- A.P. 62(194), 63(194).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'C'.**

Object :—To study the timing of operation of rotary push hoe on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 9.6.62/13.7.62 ; 15.6.63/19.7.63. (iv) (a) Puddling with country plough, levelling, trimming of bunds and digging of corners. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 224 Kg/ha. of Super, 224 Kg/ha. of A/S as basal and 112 Kg/ha. of A/S as top dressing for 62 ; 125·5 Q/ha. of F.Y.M., 36 Kg/ha. of P_2O_5, 22 Kg/ha. of N as basal and 22 Kg/ha. of N as top dressing for 63. (vi) GEB-24. (vii) Irrigated. (viii) Weeding twice. (ix) N.A. for 62 ; 5 cm. for 63. (x) 11.12.62 ; 2.12.63.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 times of working push hoe : T_1=Upto to 25 days before flowering, T_2=Upto 15 days before flowering and T_3=Upto flowering.

(2) 3 interval of working : I_1=Weekly interval, I_2=Fortnightly interval and I_3=Monthly interval.

Extra treatments are : E_1=Line planting without any intercultivation and E_2=Ryots method of bulk planting. (Local method).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 11. (b) N.A. for 63 ; 29·6 m. × 11 m. for 62 (iii) 4. (iv) (a) 11·0 m. × 2·6 m. (b) 10·6 m. × 2·2 m. (v) 20 cm. × 20 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 62 to 63. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Extra treatment means N.A. for 1963 hence the results of individual years are presented under 5. Results.

5. RESULTS :

62(194)

(i) 3506 Kg/ha. (ii) 588 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_1=3319 and E_2=3999 Kg/ha.

	I_1	I_2	I_3	Mean
T_1	3570	3234	3147	3317
T_2	3579	3846	3454	3626
T_3	3413	3338	3666	3472
Mean	3521	3473	3422	3472

63(194)

(i) 3944 Kg/ha. (ii) 511 Kg/ha. (iii) Main effect of I alone is highly significant. (iv) Av. yield of grain in Kg/ha.

E_1 and E_2=N.A.

	I_1	I_2	I_3	Mean
T_1	3376	3905	4433	3906
T_2	3664	3953	4236	3951
T_3	3851	3756	4385	3997
Mean	3630	3872	4351	3951

C.D. for I marginal means=426·0 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(20).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CV'.**

Object :—To findout optimum spacing for medium duration strains under late planted conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Sugarcane. (c) N.A. (ii) Loamy. (iii) 14.7.65/5.9.65. (iv) (a) Puddling twice and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) As per treatments. (e) 2. (v) 20 Kg/ha. of N as A/S+20 Kg/ha. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings with push hoe. (ix) 58·8 cm. (x) 10.12.65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 spacings between rows : S_1=15, S_2=20, S_3=25 cm.

(2) 2 spacings within rows : R_1=10, R_2=20 cm.

(3) 2 varieties : V_1=BAM-3 and V_2=GEB 24.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 12 m.×4 m. (b) 9·0 m.×3·2 m. (v) 150 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965-contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3013 Kg/ha. (ii) 393 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. grain yield in Kg/ha.

	V_1	V_2	R_1	R_2	Mean
S_1	2688	3262	2893	3057	2975
S_2	2647	3287	3030	2904	2967
S_3	2774	3418	3184	3007	3096
Mean	2703	3322	3036	2989	3013
R_1	2783	3288			
R_2	2622	3357			

C.D. for V marginal means=231·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(21).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CV'.**

Object :—To find out the optimum time of planting.

1. BASAL CONDITIONS :

(i) (a) Sugarcane – Paddy. (b) Sugarcane. (c) 112 Kg/ha. of N as A/S. (ii) Loam. (iii) As per treatments. (iv) (a) Puddling twice, levelling with *patti*. (b) Transplanting. (c) 37 Kg/ha. (d) 10 cm. × 15 cm. (e) 2. (v) 20 Kg/ha. of N as A/S + 20 Kg/ha. of P_2O_5 as Super. Top dressed with 20 Kg/ha. of N 30 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings with push hoe. (ix) 49·1 cm. (x) 14, 27.11.65, 6, 15. 25.12.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 varieties : V_1=CH–45, V_2=AKP–4 and V_3=Vizianagaram.

(2) 3 dates of sowing/planting : S_1=1.8.65/1.9.65, S_2=16.8.65/16.9.65 and S_3=1.9.65/1.10.65,

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) 10 m. × 22·5 m. (iii) 8. (iv) (a) 10·0 m. × 2·5 m. (b) 9·6 m. × 2·5 m. (v) 20 cm. on side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of Blast was noted. Sprayed with fungicide 0·5% at 3954 litres/ha. (iii) Grain yield. (iv) (a) 1965 – Contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2568 Kg/ha. (ii) 304 Kg/ha. (iii) Main effects of V and S and their interaction are highly significant. (iv) Av. grain yield in Kg/ha.

	V_1	V_2	V_3	Mean
S_1	2322	3025	2669	2672
S_2	2560	2960	2530	2683
S_3	2590	2264	2194	2349
Mean	2491	2750	2464	2568

C.D. for V or S marginal means=175·8 Kg/ha.
C.D. for body of V × S table =304·7 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(30).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'CV'.**

Object —To determine the optimum age of seedling to be transplanted for the long duration varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 33 6 Kg/ha. of N+33·6 Kg/ha of P_2O_5. (ii) Black soil. (iii) 16.6.63/As per treatments. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 30 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) 4484 Kg/ha. of G.M. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) N,A. (x) 19.11.63.

2. TREATMENTS :

Main-plot treatments:

3 dates of planting : D_1=16.7.63, D_2=31.7.63 and D_3=16.8.63.

Sub-plot treatments :

3 late varieties : V_1=HR—35, V_2=MTU—10 and V_3=RDR—4.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replicatio ı, 3 sub-plots/main-plot. (b) N.A (iii) 6. (iv) (a) 12·2 m.×7·5 m. (b) 11·8 m.×7·1 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iil) Yield of grain. (iv) (a) 1963—1964 (modified in 1964). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2773 Kg/ha. (ii) (a) 310·0 Kg/ha. (b) 295·0 Kg/ha. (iii) Main effect of D is highly significant and V effect is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	Mean
D_1	2775	2375	2473	2451
D_2	2805	2703	314 1	2883
D_3	3121	2703	2866	2897
Mean	2900	2594	2827	2773

C.D. for D marginal means=230·1 Kg/ha.
C.D. for V marginal means=200·7 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(42).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'CV'.**

Object :—To determine the optimum age of seedlings to be transplanted for the long duration varieties of Paddy.

1. BASAL CON DITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67·3 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 30.5.64/As per treatments. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 30 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 18.11 to 15.12.64.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D_1=30.6.64, D_2=16, 17.7.64 and D_3=31.7.64.

Sub-plot treatments :

3 late varieties : V_1=HR—35, V_2=MTU—10 and V_3=RDR—4.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 3 sub-plots/main-plot. (b) N.A. (iii) 6, (iv) (a) 12·2 m.×7·3 m. (b) 11·8 m.×6·9 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Good, lodging in V_1 and V_2 varieties. (ii) Nil. (iii) Yield of grain. (iv) (a) 1963—1964 (modified in 1964, (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3500 Kg/ha. (ii) (a) 350·0 Kg/ha. (b) 444·0 Kg/ha. (iii) Main effect of D alone is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	Mean
D_1	3736	3632	3665	3678
D_2	3479	3390	3146	3338
D_3	3427	3674	3353	3485
Mean	3547	3565	3388	3500

C.D. for D marginal means=267·3 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 62(66).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'CV'.**

Object :— To find out the optimum age of seedlings for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Wheat-Paddy. (b) Wheat. (c) Nil. (ii) Heavy black soils. (iii) 10, 21.11.62; 1.12.62/26.12.62 (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.× 15 cm. (e) 2. (v) 168 Kg/ha. of Super+56 Kg/ha. of A/S. (vi) As per treatments. (vii) Irrigated. (viii) 1 hand weeding. (ix) Nil. (x) 23.3.63, 3, 11 and 10.4 63.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 varieties : V_1=MTU—15, V_2=TKM—6 and V_3=C—289.

(2) 3 ages of seedlings : A_1=25, A_2=35 and A_3=45 days old.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 9·5 m.×1·8 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Incidence of Stem borer and Paddy Blast. Endrin and 1%Bordeaux mixture sprayed. (ii) No. (iii) Nil (iv) (a) 1962 only. (b) and (c) Nil. (v) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4156 Kg/ha. (ii) 436·9 Kg/ha. (iii) Main effects of V and A are highly significant and interaction V×A is significant. (iv) Av. yield of grain in Kg/ha.

	A_1	A_2	A_3	Mean
D_1	5280	4832	4375	4828
D_2	4497	3362	2182	3347
D_3	5047	4641	3189	4292
Mean	4941	4278	3249	4156

C.D. for V or A marginal means =368·1 Kg/ha.
C.D. for comparison of two means in the body of V×A table=637·8 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(160).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'CV'.**

Object : – To find out the optimum age of seedlings suitable to early second crop season.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 11199 Kg/ha. of *Sesbania*, 173 Kg/ha. of Super. (ii) Heavy black soils. (iii) 7, 17.12.64/6.1.65. (iv) (a) Puddling with country plough, digging of corners, timming of bunds, and spreading of clods. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) N.A. (x) 20, 23.3.65 ; 3, 10, 16.4.65.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 3 varieties : V_1=MTU–15, V_2=TKM–6 and V_3=SLO–16.
(2) 2 ages of seedlings at planting : A_1=20 and A_2=30 days.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 9·0 m.×4·4 m. (b) 8·9 m.×4·3 m. (v) 8 cm.×5 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) The incidence of Rice Stem borer was moderate to severe the crop was sprayed with Endrin. (iii) % dead hearts, % of white ears, yield of grain. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2842 Kg/ha. (ii) 242·6 Kg/ha. (iii) Main effects of A, V and interaction A×V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	Mean
A_1	2730	3210	3244	3061
A_2	3090	3133	1646	2623
Mean	2910	3172	2445	2842

C.D. for V marginal means=203·9 Kg/ha.
C.D. for A marginal means=166·6 Kg/ha.
C.D. for bodyof V×A table=288·4 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(153).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'CV'.**

Object :— To find out the age of seedling best suited for cold weather for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 144·6 Q/ha. of green matter (*Sesbania*) and 168·1 Kg/ha. of Super. (*ii*) Heavy black soils. (*iii*) 10, 21.11.62, 1.12.62/26.12.63. (*iv*) (a) Puddling with Country plough, digging of corners, trimming of bunds, spreading of clods of levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) As per treatments. (*vii*) Irrigated. (*viii*) 1 hand weeding 21 days after planting. (ix) 2 cm. (x) 31.3.64, 5.5.64.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=MTU—15 and V_2=TKM—6.

(2) 3 ages of seedlings : A_1=25, A_2=35 and A_3=45 days.

3. DESGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 11·4 cm.×3·9 m. (b) 11·1 m.×3·7 m. (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Germination and growth of the seedling was satisfactory. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1963 only. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

Grain yield

(i) 3267 Kg/ha. (ii) 327·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	A_1	A_2	A_3	Mean
V_1	3241	3349	3159	3250
V_2	3489	3222	3142	3284
Mean	3365	3286	3150	3267

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(104).**

Site :- Rice Res. Stn., Pulla. **Type :- 'CV'.**

Object :—To find out the optimum date of planting for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 27.5.63/As per treatments. (iv) (a) 3 puddlings with country plough, removing of weeds and spreading of clods, trimming of bunds and digging of corners. (b) Transplanting. (c) 49·4 Kg/ha. (e) 20 cm.×10 cm. (e) 2. (v) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) 109·0 cm. (x) 7.12.63.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 varieties : V_1=PLA—2, V_2=PLA—4, V_3=SLO—13 and V_4=AR. 108—1

(2) 3 dates of planting : D_1=25.6.63 (early), D_2=6.7.63 (normal) and D_3=15.7.63 (late).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 11·4 m.×12·7 m. (iii) 4. (iv) (a) 6·1 m.×1·5 m.. (b) 6·1 m.×1·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) The early planted units have established well except SLO—13 which suffered badly due to Paddy Blast. (iii) Yield of grain and straw. (iv) (a) 1962—63. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) The early and normal planting were able to resist the first floods received in Aug, 63. Both normal and late planted units were badly damaged by the second flood recieved in Oct, 63.

5. RESULTS :

(i) 477·1 Kg/ha. (ii) 210·3 Kg/ha. (iii) Main effects of D and V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	824	362	675	1026	722
D_2	610	305	317	683	479
D_3	286	156	214	267	231
Mean	573	274	402	659	477

C.D. for D marginal means=151·5 Kg/ha.

C.D. for V marginal means=174·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(23).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CV'.**

Object : —To study the effect of different dates of plan ting on different medium varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Green gram—Paddy. (b) Green gram. (c) Nil. (ii) Clay loam. (iii) 8.7.64/As per treatments. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2. (v) 2471 Kg/ha. of G.L.+124 Kg/ha. of Super+185 Kg/ha. of A/S. (vi)-As per treatments. (vii) Irrigated (viii) Weeding. (ix) 95 cm. (x) 17.12.64.

2. TREATMENTS :

Main-plot treatments

3 dates of planting : D_1=25.7.64 (early) with a spacing of 20 cm.×15 cm., D_2=16.8.64 (medium) with a spacing of 20 cm.×10 cm. and D_3=6.9.64 (late) with a spacing of 15 cm.×10 cm.

Sub-plot treatments

4 medium varieties : V_1=C—9895, V_2=C—9907, V_3=SLO—15 and V_4=BAM—3.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/653·7 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1964—only. (b) and (c) Nii. (v) to (vii) Nil.

5. RESULTS :

(i) 3362 Kg/ha. (ii) (a) 280·0 Kg/ha. (b) 218·0 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	3220	3422	3867	3385	3433
D_2	3141	3106	3462	3535	3311
D_3	3153	3123	3623	3314	3303
Mean	3171	3217	3651	3411	3362

C.D. for V marginal means=146·6 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(22)**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CV'.**

Object :—To study the relative performance of different varieties of Paddy planted on different dates.

1. BASAL CONDITIONS :

(i) (a) Green gram—Paddy. (b) Green gram. (c) Nil. (ii) Clay loam. (iii) 17.7.64/As per treatments. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2. (v) 2471 Kg/ha. of G.L.+124 Kg/ha. of Super+185 Kg/ha. of A/S. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) 95 cm. (x) 19.12.64.

2. TREATMENTS :

Main-plot treatments

2 dates of planting : D_1=17.8.64 with a spacing of 20 cm.×10 cm. and D_2=10.9.64 (late) with a spacing of 15 cm.×10 cm.

Sub-plot treatments

5 late varieties : V_1=C—1673, V_2=C—1897, V_3=Indian Sandow, V_4=BAM—6 and V_5=MTU—19.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/627·6 Kg/ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of Stem borer. Endrin sprayed. (iii) Yield of grain. (iv) (a) 1964—only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2794 Kg/ha. (ii) (a) 272·0 Kg/ha. (b) 241·0 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	Mean
D_1	2619	3015	2409	3323	2740	2821
D_2	2701	2864	2387	3160	2721	2767
Mean	2660	2939	2398	3241	2731	2794

C.D. for V marginal means=248·7 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(73), 61(70), 62(94).**

Site :- Reg. Rice. Res. Stn., Ragolu. **Type :- 'CV'.**

Object—To find out optimum spacing and date of planting for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy–Fallow—Paddy for 60, 61 ; Nil. for 63. (b) Fallow for 60, 61 ; Nil. for 63. (c) Nil. (ii) Sandy clay loam. (iii) 22.6.60/As per treatments 9.7.61/As per treatments ; 20.6.62/As per treatments. (iv) (a) Puddling thrice with country plough, levelling with levelling board and trimming of bunds. (b) Transplanting. (c) 48 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) 2241·7 Kg/ha. of G.L.+112·1 Kg/ha. of Super+168·1 Kg/ha. of N as A/S for 60, 61 ; 2471 Kg/ha. of G.L.+123·6 Kg/ha. of Super+123·6 Kg/ha. of N as basal dose and 123·6 Kg/ha. of N as A/S as top dressing. (vi) As per treatments. (vii) Irrigated. (viii) Push hoeing and hand weeding once. (ix) 86 cm. ; 60·0 cm. ; 112·7 cm. (x) 16 12.60 ; 3.12.61 ; 9.12.62.

2. TREATMENTS :

Main-plot treatments

3 dates of planting : D_1=1st August, D_2=16th August and D_3=31st. August.

Sub-plot treatments

All combinations of (1) and (2)

(1) 4 varieties : V_1=BAM—3, V_2=SLO—13, V_3=SLO—15 and V_4=MTU—19.

(2) 3 spacings : S_1=20 cm. × 20 cm., S_1=20 cm. × 15 cm. and S_3=20 cm. × 10 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 12 sub-plots/main-plot. (b) N.A. (iii) 3. (v) (a) 8·5 m. × 2·4 m. (b) 8·1 m. × 2·1 m. (v) 20 cm. or either side along lenth (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Height measurements, tiller counts and yield of grain. (iv) (a) 1960—62 (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances for sub-plot are heterogeneous hence results of individual years are presented under 5. Results.

5. RESULTS :

60(73)

(i) 2582 Kg/ha. (ii) (a) 704·7 Kg/ha. (b) 427·0 Kg/ha. (iii) Main effect of D is significant and interaction D × V is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	S_1	S_2	S_3	Mean
P_1	2848	2220	3129	3296	2690	2774	3156	2873
P_2	2551	2838	2656	2642	2651	2779	2736	2722
P_3	2211	2215	2146	2032	2172	2158	2125	2151
Mean	2537	2424	2644	2723	2504	2571	2672	2582
M_1	2360	2411	2638	2943				
M_2	2554	2335	2677	2716				
M_3	2697	2525	2617	2849				

C.D. for D marginal means=460·8 Kg/ha.
C.D. for V means at the same level of D=402·2 Kg/ha.
C.D. for D means at the same level of V=570·0 Kg/ha.

61(70)

(i) 2691 Kg/ha. (ii) (a) 315·0 Kg/ha. (b) 172·4 Kg/ha. (iii) Main effect of V is highly significant and that of D and S are significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	S_1	S_2	S_3	Mean
D_1	2835	2466	2766	3041	2776	2692	2848	2772
D_2	2544	2250	2493	2711	2442	2480	2575	2449
D_3	2788	2551	2753	3113	2792	2796	2814	2801
Mean	2722	2416	2671	2955	2670	2656	2746	2691
S_1	2689	2501	2591	2901				
S_2	2710	2315	2664	2937				
S_3	2768	2431	2757	3026				

C.D. for D marginal means=206·0 Kg/ha.
C.D. for V marginal means=93·7 Kg/ha.
C.D. for S marginal means=81·1 Kg/ha.

62(94)

(i) 2028 Kg/ha. (ii) (a) 269·8 Kg/ha. (b) 221·1 Kg/ha. (iii) Main effects of D, V, S are highly significant and interaction D×V is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	S_1	S_2	S_3	Mean
D_1	2086	1875	2123	2675	2089	2215	2265	2190
D_2	2028	1699	2084	2541	1905	2164	2196	2088
D_3	1510	1770	1751	2190	1662	1774	1979	1805
Mean	1875	1781	1986	2490	1885	2051	2147	2028
S_1	1712	1646	1833	2349				
S_2	1884	1810	2021	2488				
S_3	2028	1888	2104	2568				

C.D. for D marginal means=176·5 Kg/ha.
C.D. for V marginal means=120·3 Kg/ha.
C.D. for S marginal means=104·1 Kg/ha.
C.D. for V means at the same level of D=208·2 Kg/ha.
C.D. for D means at the same level of V=249·0 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 64(76).**

Site :- Reg. Rice. Res. Stn., Ragolu. **Type :-'CV'**

Object: — To study the effect of different times of planting on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Rice-Fallow-Rice. (b) Fallow. (c) Nil. (ii) Sandy clay loam. (iii) As per treatments. (iv) (a) Puddling thrice with country plough and levelling once with levelling board. (b) Transplanting. (c) 48 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) 2000 Kg/ha. of G.L., 20 Kg/ha. of P_2O_5 as Super, 20 Kg/ha. of N as A/S by surface application on 25.7.64, 16.8.64, 6.9.64 and 10 Kg/ha. of N as A/S as top dressing on 25.8.64, 16.9.64, 6.10.64. (vi) As per treatments. (vii) Irrigated. (viii) 1 hand weedlng. (ix) 73·6 cm. (x) 17.12.64.

2. TREATMENTS :

Main-plot treatments :

3 times of planting : T_1=Early planting 8.7.64/25.7.64 with 20 cm.×15 cm. spacing, T_2=Medium planting 16.7.64/16.8.64 with 20 cm.×10 cm. spacing and T_3=Late planting 16.7.64/6,9.64 with 15 cm.×10 cm. spacing.

Sub-plot treatments :

4 varieties : V_1=9895, V_2=9907, V_3=SLO—15 and V_4=BAM—3.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 4 sub-plots/main-plot. (b) 60·3 m.×20·1 m. (iii) 6. (iv) (a) 4·2 m.×3·7 m. (b) 1/640·7 ha. (v) N.A. (vi) Yes.

4. GENERAL :

Germination and stand good and crop growth satisfactory. (ii) Slight damage by Stem borer. (iii) Height measurements, tiller counts and yield of grain fodder. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3362 Kg/ha. (ii) (a) 257·2 Kg/ha. (b) 211·4 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
T_1	3219	3422	3867	3385	3473
T_2	3140	3204	3461	3435	3310
T_3	3153	3123	3622	3311	3302
Mean	3171	3250	3650	3377	3362

C.D. for V marginal means=142·2 Kg/ha.

Crop :- Paddy (*Abi*). **Ref :- A.P. 64(77).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CV'.**

Object :— To study the effect of different times of planting of different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 17.7.64/As per treatments. (iv) (a) Puddling twice with country plough and levelling once with levelling board. (b) Transplanting. (c) 25 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) 2500 Kg/ha. of G.L., 20 Kg/ha. of P_2O_5 as Super, 20 Kg/ha. of N as A/S by soil application as basal dressing and 17.8.64/8.9.64 and 10 Kg/ha. of N as A/S as top dressing on 5.10.64. (vi) As per treatments. (vii) Irrigated. (viii) 1 hand weeding on 18.9.64. (ix) 70·2 cm. (x) 19.12.64.

2. TREATMENTS :

Main-plot treatments :

2 times of planting : T_1=Early planting (17.8.64) with 20 cm.×10 cm. spacing and T_2=Late planting (10.9.64) with 15 cm.×10 cm. spacing.

Sub-plot treatments :

5 varieties : V_1=C—1673, V_2=C—1897, V_3=Indian sandow, V_4=BAM—6 and V_5=MTU—19.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 5·1 m.×3·3 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Germination and stand good ; growth satisfactory. (ii) Negligible damage by Stem borer, light incidence of Helminthosporium. (iii) Height measurements, tiller counts, yield of grain and straw. (iv) (a) 1964 only. (c) and (b) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 2794 Kg/ha. (ii) (a) 266·5 Kg/ha. (b) 259·0 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	Mean
T_1	2619	3014	2409	3323	2740	2821
T_2	2701	2863	2386	3160	2720	2766
Mean	2660	2938	2398	3242	2730	2794

C.D. for V marginal means=264·8 Kg/ha.

Crop :- Paddy (*Khrif*). **Ref :- A.P. 65(28).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CV'.**

Object :— To find out a suitable short duration varieties for late broadcasting condition.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Pulses. (c) Nil. (ii) Clay loam. (iii) As per treatments. (iv) (a) Puddling with country plough twice, levelling with levelling board. (b) Transplanting. (c) 25 Kg/ha. (d) N.A. (e) I. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 3 hand weedings. (ix) 49·2 cm. (x) 12.11.65 to 31.12.65.

2. TREATMENTS :

Main-plots treatments :

3 dates of sowing : D_1=15.8.65, D_2=1.9.65 and D_3=15.9.65.

Sub-plot treatments :

24 varieties : V_1=PLA—1, V_2=TKM—6, V_3=RDR—7, V_4=CO—29, V_5=CH—45, V_6=TN—1, V_7=SLO—12, V_8=SLO—16, V_9=SLO—19, V_{10}=MTU—9, V_{11}=MTU—15, V_{12}=C—3318, V_{13}=C—3343, V_{14}=A—4452, V_{15}=C—4538, V_{16}=A—4837, V_{17}=C—1032 V_{18}=C—1661, V_{19}=C—1664, V_{20}=C—1667, V_{21}=C—386, V_{22}=C—420, V_{23}=C—12172 and V_{24}=Chittada.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 24 sub-plots/main-plot. (b) 38·1 m.×27·6 m. (iii) 2. (iv) (a) 9 m.×4·5 m. (b) 9 m.×4·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, height counts and yield of grain. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) Distribution of rainfall was sparse during the months of June, November '65. (vii) Nil.

5. RESULTS :

Grain yield

(i) 1530 Kg/ha. (ii) (a) 197·5 Kg/ha. (b) 543·9 Kg/ha. (iii) Main effects of V and D are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8
D_1	2309	1451	348	2527	1184	2336	2377	1759
D_2	2279	2186	1889	1588	926	1601	1627	1643
D_3	820	642	341	1194	432	704	636	179
Mean	1803	1426	859	1770	847	1547	1547	1194

V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}	V_{15}	V_{16}
1484	2416	1725	1006	1070	1801	1793	2295
1943	2559	2390	2268	1804	2469	2185	2457
343	1488	1074	1599	352	1038	377	860
1257	2154	1730	1624	1075	1769	1452	1871

V_{17}	V_{18}	V_{19}	V_{20}	V_{21}	V_{22}	V_{23}	V_{24}	Mean
2660	2284	2877	2753	1253	1851	2204	2606	1932
2481	1222	1309	1826	1611	2528	944	2423	1924
1167	395	304	422	406	867	1305	705	735
2103	1300	1497	1667	1090	1749	1484	1914	1530

C.D. for D marginal means=173·4 Kg/ha.

C.D. for V marginal means=627·4 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(29).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CV'.**

Object :—To find suitable variety of paddy for different times of Planting.

1. BASAL CONDITIONS :

(i) (a) Paddy-Pulses. (b) Pulses. (c) Nil. (ii) Clay loam. (iii) 16.6.65/As per treatments. (iv) (a) Puddling with country plough twice, levelling with levelling board. (b) Japanese method. (c) N.A. (d) 20 cm.×15 cm. (e) 2 to 3. (v) 5000 Kg/ha. of G.L. of glyrecidia applied before puddling, 20 Kg/ha. of N as A/S, 45 Kg/ha. of P_2O_5 as Super, 45 Kg/ha. of K_2O as Mur. Pot. in the last puddle, 40 Kg/ha. of N as A/S as top dressing on 18.8.65 and 40 Kg/ha. of N as A/S as top dressing on 17.9.65. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding once and push hoeing seven times. (ix) 82·5 cm. (x) 13, 14, 28.12.65.

2. TREATMENTS :

Main-plot treatments :
(1) 3 dates of planting : D_1=16.7.65, D_2=16.8.65 and D_3=16.9.65.

Sub-plot treatments :
(2) 8 varieties : V_1=BAM-3, V_2=SLO-15, V_3=C-9895, V_4=C-9907, V_5=MTU-19, V_6=BAM-6, V_7=C-1673 and V_8=C-1897.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 8 sub-plots/main-plot. (b) 48·5 m.×21·3 m. (iii) 4. (iv) (a) and (b) 6·9 m.×5·8 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good but pre-lodging was noticed in 1st and 2nd plantings. (ii) Spraying Endrin at 20 gm. in 18 litres and Fytalon at 500 gm. in 90 litres and dusting BHC 10% at 30 Kg/ha. (iii) Tiller counts, height counts and yield of grain. (iv) (a) 1965-only. (b) and (c) Nil. (v) N.A. (vi) Distribution of rain fall during the months of June, Nov. was very sparse. (vii) Nil.

5. RESULTS :

(i) 2971 Kg/ha. (ii) (a) 979·4 Kg/ha. (b) 742·9 Kg/ha. (iii) Main effect of D is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	3604	3787	5216	4378	3053	3215	3944	3489	3836
D_2	3393	4524	5899	4017	3787	2405	2890	2261	3397
D_3	1357	1722	1481	1710	1548	2122	1657	1854	1681
Mean	2785	3344	3532	3368	2796	2581	2830	2335	2971

C.D. for D marginal means=599·0 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 61(180)**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'CV'.**

Object :—To find out suitable age of seedlings for transplanting Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 25 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 27.11.61/22, 27.12.61 1, 6, 11, 16.1.62. (iv) (a) Puddling thrice. (b) As per treatments. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 3. (v) 169 Kg/ha. of P_2O_5+68 Kg/ha. of K_2O. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 25,31.3.62.

2. TREATMENTS :

Main-plot treatments :

3 varieties : V_1=MTU-15, V_2=MTU-9 and V_3=PLA-1.

Sub-plot treatments :

6 ages of seedlings : S_1=Wet nursery of 25 days, S_2=Wet nursery of 35 days, S_3=Wet nursery of 45 days, S_4=Semi-dry nursery of 30 days, S_5=Semi-dry nursery of 40 days and S_6=Semi-dry nursery of 50 days.

3. DESIGN :

(i) Split-Plot. (ii) (a) 3 main-plots/replication and 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 6 m.×1·5 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961-contd. (modified). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2773 Kg/ha. (ii) (a) 774 Kg/ha. (b) 535 Kg/ha. (iii) Main effects of V and S are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	S_4	S_5	S_6	Mean
V_1	4443	2960	3633	4098	2694	2201	3338
V_2	3237	1372	2212	3283	1843	1181	2188
V_3	3738	2013	2309	3598	2723	2371	2792
Mean	3806	2115	2718	3660	2420	1918	2773

C.D. for V marginal means=546·6 Kg/ha.
C.D. for S marginal means=440·3 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62(196).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'CV'.**

Object :--To find out the optimum age of seedlings for each of the standard varieties.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 25 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 10.11.62, 21.11.62, 1.12.62/26.12.62. (iv) (a) Puddling thrice. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) F.Y.M. at 125·5 Q/ha., 169 Kg/ha. of P_2O_5, 68 Kg/ha. of K_2O and 24 Kg/ha. of N as A/S given in main field and 62·8 Q/ha. of F.Y.M. in nursery. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 9, 13.4.63.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 3 varieties: V_1=C-289, V_2=TKM-6 and V_3=MTU-15.
(2) 3 ages of seedlings : S_1=25, S_2=35 and S_3=45 days.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 4·6 m.×3·1 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin (standard dose) is sprayed 15 days after sowing, 3 weeks after sowing and finally a day before pulling out the seedlings from nursery as a precautionary measure. A spraying is given on 10th day after planting and subsequently at intervals of 15 days till last week of Jan. (iii) Plant height and grain yield. (iv) (a) 1962-contd. (treatments were modified every year). (b) No. (c) Nil. (v) Maruteru. (vi) and (vii) Nil.

5. RESULTS :

(i) 3137 Kg/ha. (ii) 465 Kg/ha. (iii) Main effects of V and S are highly significant. (iv) Av. grain yield in Kg/ha.

	S_1	S_2	S_3	Mean
V_1	2853	2829	2422	2701
V_2	3636	2871	2500	3002
V_3	3898	3702	3523	3708
Mean	3462	3134	2815	3137

C.D. for V or S marginal means=313·2 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(64).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'CV'.**

Object :—To find out the optimum age of seedlings for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 26.11.63/26.12.63. (iv) (a) 3 ploughings, 1 puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm × 10 cm. (e) 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) Nil. (x) 23.3.64 to 3.4.64.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=MTU-15 and V_2=TKM-6.

(2) 3 ages of seedlings : A_1=25, A_2=35 and A_3=45 days old.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/269·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1962-contd. (Treatments were modified every year). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3672 Kg/ha. (ii) 197·7 Kg/ha. (iii) Main effects of A, V and interaction A×V are highly significant. (iv) Av. yield of grain in Kg/ha.

	A_1	A_2	A_3	Mean
V_1	3739	3548	2889	3392
V_2	3907	4062	3889	3953
Mean	3823	3805	3389	3672

C.D. for V marginal means =172·0 Kg/ha.
C.D. for A marginal means =210·7 Kg/ha.
C.D. for body of A×V table=297·9 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(63).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'CV'.**

Object :—To find out the optimum age of seedlings for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 17.12.64/6.1.65. (iv) (a) 3 ploughings, 1 puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×10 cm. (e) 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) Nil. (x) 31.3.65 to 18.4.65.

2. TREATMENTS :

All combinations of (1) and (2)

(i) 3 varieties : V_1=MTU—15, V_2=TKM—6 and V_3=SLO—16

(2) 2 ages of seedlings : A_1=20 and A_2=30 days old.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 4·1 m.×10·0 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1962—contd (treatments were modified every year). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2071 Kg/ha. (ii) 278·3 Kg/ha. (iii) Main effects of A and V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	Mean
A_1	2913	2239	1470	2207
A_2	2943	1824	1038	1935
Mean	2928	2032	1254	2 71

C.D. for A marginal means=191·2 Kg/ha.
C.D. for V marginal means=234·0 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(104). 62(142).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'CV'.**

Object :—To study the effects of spacing, manuring and interculturing as under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (iii) N.A. (ii) Sandy. (iii) 12.1.60/12.2.60 ; 13.1.61/14.2.62 (iv) (a) 4 puddling with country plough, and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) As per treatments. (iv) MTU—9 (early). (vii) Irrigated. (viii) As per treatments. (ix) 4 cm for 60, 10 cm. for 62, (x) 12.5.60, 31.5.62.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of manuring : M_1=24·6 Kg/ha. of N+12·3 Kg/ha. of P_2O_5 in one dose at planting, M_2=24·6 Kg/ha. of N+36·5 Kg/ha. of P_2O_5+23·5 Kg/ha. of N top dressed on 20th and 40th day after planting and M_3=72 Kg/ha. of N+36 Kg/ha. of P_2O_5 in one dose at planting.

(2) 2 spacings : S_1=15 cm.×15 cm., S_2=25 cm.×25 cm.

(3) 2 metheds of interculture : I_1=2 hand weedings and I_3=4 weedings with Japanese weeder.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N A. (iii) 4. (iv) (a) and (b) 9·1 m.×7·3 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960 to 62, (1961 failed). (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances one heterogeneous and Treatments×years interaction is absent. Hence individual results are presented.

5. RESULTS :

60(104)

(i) 724 Kg/ha. (ii) 285 Kg/ha. (iii) Main effects of M and S are highly significant and interaction M×S is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	I_1	I_2	Mean
S_1	1000	1345	592	1014	944	979
S_2	594	443	368	436	500	468
Mean	797	894	480	725	722	724
I_1	724	953	498			
I_2	870	835	462			

C.D. for M marginal means=205·2 Kg/ha.
C.D. for S marginal means=167·7 Kg/ha.
C.D. for body of M×S table=220·5 Kg/ha.

62(142)

(i) 2509 Kg/ha. (ii) 671·0 Kg/ha. (iii) Main effect of M, S are highly significant and interaction M×S is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	I_1	I_2	Mean
S_1	2654	3472	2891	3053	2959	3006
S_2	2230	2595	1216	2018	2009	2014
Mean	2442	3033	2053	2535	2484	2509
I_1	2429	3069	2107			
I_2	2455	2998	2000			

C.D. for M marginal means=483·6 Kg/ha.
C.D. for S mhrginal means=394·9 Kg/ha.
C.D. for body of M×S table=684·1 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- 63(290).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'CM'.**

Object :—To study the factors in Japanese method of Paddy cultivation.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Chalha. (iii) 22.8.63. (iv) (a) 3 ploughings and one levelling. (b) Broadcasting. (c) 31 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) As per treatments. (vi) MTU—9. (vii) Irrigated. (viii) Weeding for lines. (ix) N.A. (x) 4.12.63.

2. TREATMENTS:

12 cultural cm. marginal treatments : $T_1=N_1P_1S_1C_1$, $T_2=N_1P_1S_1C_2$, $T_3=N_1P_1S_2C_1$, $T_4=N_1P_1S_2C_2$ $T_5=N_1P_2S_1C_1$, $T_6=N_1P_2S_1C_2$, $T_7=N_1P_2S_2C_1$, $T_8=N_1P_2S_2C_2$ $T_9=N_2P_2S_1C_2$, $S_{10}=N_2P_2S_1C_2$, $T_{11}=N_2P_2S_2C_1$, $T_{12}=N_2P_2S_2C_2$

Where N_1=0·3 Kg/ha., N_2=1·0 Kg/ha. of urea, P_1=0·5 Kg/ha., P_2=1·5 Kg/ha. of Super, S_1=10 cm.×15 cm., S_2=25 cm.×15 cm. spacing, T_1=2 hand weedings. and T_2=4 weedings with Japanese weeder.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 87·8 m.×9·1 m. (iii) 4. (iv) (a) and (b) 7·3 m.×9·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed twice. (iii) Grain and straw yields. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 950 Kg/ha. (ii) 253·1 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	916	798	679	899	1154	1086	1375	950

Treatment	T_9	T_{10}	T_{11}	T_{12}
Av. yield	713	1340	849	645

C.D.=428·3 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 63(289), 64(285).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'CM'.**

Object :—To evolve the factor in Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) *Chalka*. (iii) 19.3.63, 22.2.64. (iv) (a) 3 ploughings and one levelling. (b) Transplanting. (c) 37 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) As per treatments. (vi) MTU—9. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 19.6.63, 25.5.64.

2. TREATMENTS :

$T_1=N_1P_1S_1C_1$, $T_2=N_1P_1S_1C_2$, $T_3=N_1P_1S_2C_1$, $T_4=N_1P_1S_2C_2$, $T_5=N_1P_2S_1C_1$, $T_6=N_1P_2S_1C_2$, $T_7=N_1P_2S_2C_1$, $T_8=N_1P_2S_2C_2$, $T_9=N_2P_2S_1C_1$, $T_{10}=N_2P_2S_1C_2$, $T_{11}=N_2P_2S_2C_1$, and $T_{12}=N_2P_2S_2C_2$.

Where $N_1=0{\cdot}32$, $N_2=1{\cdot}0$ Kg of Urea, $P_1=0{\cdot}45$, $P_2=1{\cdot}47$ Kg. of Super. $S_1=10$ cm.×15 cm., $S_2=25$ cm.×25 cm. ; $T_1=2$ hand weedings and $T_2=4$ weedings with Japanese weeder.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 87·8 m.×9·1 m. (iii) 4. (iv) (a) and (b) 7·3 m.×9·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed twice. (iii) Grain yield. (iv) (a) 1963 and 64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interactions is absent.

5. RESULTS

Pooled results.

(i) 825 Kg/ha. (ii) 422·4 Kg/ha. (based on 77 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differenees are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1264	1052	552	662	1383	925	441	628

Treatment	T_9	T_{10}	T_{11}	T_{12}
Av. yield	1027	849	441	679.

C.D.=421·1 Kg/ha.

Individual results.

Treatments	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Sig.	G.M.	S.E./plot
Years															
1962	1476	1222	713	832	1460	984	424	798	1103	832	271	993	*	921	472·0
1963	1052	882	390	492	1307	865	458	458	950	865	611	424	*	730	393·6
Pooled	1264	1052	552	662	1383	925	441	628	1027	849	441	679	**	825	422·4

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(105), 61(116), 62(143).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'CM'.**

Object :— To study the effects of spacing, manuring and interculture as under the Japanes method of cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy. (iii) 3rd week of June for 60 and 61 and 9.7.62 for 62. (iv) (a) One dry ploughing, 4 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) As per treatments. (vi) HR-35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 69 cm. for 60, 48 cm. for 61 and 55 cm. for 62. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2) and (3).

(1) 3 levels of manuring : M_1=24·6 Kg/ha. of N+12·3 Kg/ha. of P_2O_5 in one dose at planting, M_2=24·6 Kg/ha. of N+36 Kg/ha. of P_2O_5+23·5 Kg/ha. of N top dressed on 20th and 40th day after planting and M_3=72 Kg/ha. of N+36 Kg/ha. of P_2O_5 in one dose at planting.

(2) 2 spacings : S_1=15 cm.×15 cm. and S_2=25 cm.×25 cm.

(3) 2 methods of interculture : I_1=2 hand weeding and I_2=4 weedings with Japanes weeder.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 9·1 m.×7·3 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (iii) Nil. (iii) Grain yield. (iv) (a) 1960 to 62. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variance are heterogeneous and Treatments×years interaction is absent. Hence individual results are presented.

5. RESULTS :

60 (105)

(i) 2485 Kg/ha. (ii) 740 Kg/ha. (iii) None of the effects are significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	I_1	I_2	Mean
S_1	2320	2983	2735	2607	2751	2679
S_2	2224	2608	2039	2342	2239	2290
Mean	2272	2795	2387	2475	2495	2485
I_1	2259	2819	2346			
I_2	2285	2772	2428			

61 (116)

(i) 1803 Kg/ha. (ii) 340 Kg/ha. (iii) Main effect of 'M' is significant and that of 'S' is highly significant. (iv) Av. yield of grain in Kg/na.

	M_1	M_2	M_3	I_1	I_2	Mean
S_1	1885	2389	2305	2207	2179	2193
S_2	1403	1648	1187	1479	1347	1413
Mean	1644	2018	1746	1843	1763	1803
I_1	1639	2048	1841			
I_2	1649	1989	1651			

62 (143)

(i) 2012 Kg/ha. (ii) 666·0 Kg/ha. (iii) Main effect of M is significant and that of 'S' is highly significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	I_1	I_2	Mean
S_1	2425	2831	1616	2533	2048	2291
S_2	2155	1695	1349	1762	1705	1733
Mean	2290	2263	1482	2148	1876	2012
I_1	1923	2680	1570			
I_2	2387	1846	1395			

Crop :- Paddy (*Dalwa*). **Ref :- A.P. 60(3).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'CM'.**

Object :— To study the effect of different levels of N along with intercultivation on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 112 Kg/ha. of A/S+112 Kg/ha. of C/A/N. (ii) Clayey soil. (iii) 9.1.60/20.2.60. (iv) (a) 3 puddlings. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) PLA-1 (early). (vii) Irrigated. (viii) Hand weeding and intercultivation with rotatory push hoe. (ix) 41 cm. (x) 10.5.60.

2. TREATMENTS :

Main-plot trea tments :

2 levels of drainage and intercultivation : D_1=No drainage and no intercultivation and D_2=Well drained and intercultivated.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 2 levels of N : N_0=0 and N_1=33·6 Kg/ha.

(2) 3 levels of N : S_1=A/S, S_2=Urea and S_3=G.N.C.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 8·2 m.×4·0 m. (b) 7·9 m.×3·7 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Blast attack was noticed. Control measures taken. (ii) Height measurements, tillers counts and yield of grain. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) to (vii) Nil.

5. RESULTS :

(i) 689 Kg/ha. (ii) (a) 225·0 Kg/ha. (b) 162·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	N_0	N_1	Mean
D_1	799	804	680	652	761	707
D_2	789	466	806	656	687	671
Mean	794	635	743	654	724	689

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(24).**

Site :- Reg. Rice Res. Stn., Ragolu. **Type :- 'CM'.**

Object :— To study the effect of different cultivation practices with and without G.M. on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 2471 Kg/ha. of G.L.+185 Kg/ha. of A/S. (ii) 16.7.64/12.9.64. (iv) (a) 3 puddlings and levelling. (b) As per treatments. (c) N.A. (d) 20 cm.×10 cm. (2) 2. (v) 185 Kg/ha. of A/S. (vi) BAM-3 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 95 cm. (x) 15.12.64.

2. TREATMENTS :

T_1=Sowing *Dhaincha* in 2nd fortnight of June incorporating the G.M. and transplanting Paddy in August, T_2=Drill sowing of Paddy, *Dhaincha* broadcast in second fortnight of June, incorporating the G.M. in August followed by hand weeding and intercultivation, T_3=Drill sowing of Paddy in second fortnight of June followed by intercultivation and hand weeding and T_4=Transplanting in August in a fallow land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/147·1/ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller counts and yield of grain. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2097 Kg/ha. (ii) 293·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2427	2305	2049	1606

Crop :- Paddy. **Ref :- A.P. 63(270).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CM'.**

Object :—To study the effect different times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (ii) *Chalka.* (iii) 14.6.63/12.7.63. (iv) (a) Dry ploughing followed by wet ploughing with victory plough. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×10 cm. (e) 2 to 3. (v) 4483 Kg/ha. of G.L. and 67 Kg/ha. of P_2O_5 as super. (vi) RDR-2 (medium). (vii)) Irrigated. (viii) Hand weeding and rotary weeding. (ix) N.A. (x) 22.10.63.

2. TREATMENTS :

3 times of application of 34 Kg/ha. of N as A/S : T_1=Half at puddling (at planting) and remaining half 30 days after planting, T_2=Total N 30 days after planting and T_3=Total N 20 days before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 8·3 m.×3·1 m. (b) 8·0 m.×2·4 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height measurements, tiller counts, and grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vi) Nil.

5. RESULTS :

(i) 853·8 Kg/ha. (b) 127·2 Kg/ha. (iii) Treatment differences are not significant (iv) Av. yield grain in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	904·2	800·4	856 8

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(45).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'CM'.**

Object :—To study the residual effects of different methods of Paddy cultivation on succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 9.6.60/19.7.60. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanting. (c) 40 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) Nil. (vi) SLO-15. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 85 cm. (x) 4.12.60.

2. TREATMENTS:

3 methods of cultivation : M_1=Local improved : Transplanting at 2 seedlings/dill with a spacing of 20 cm.×20 cm. Manuring at 4484 Kg/ha. of G.L.+56 Kg/ha. of A/S+112 Kg/ha. of Super. 3 weedings were given, M_2=Japanese method : transplanting at 3 to 4 seedlings/hill with a spacing of 25 cm.×25 cm. Manured 6725 Kg/ha. of C.L. and 15 C.L./ha. of F.Y.M. 3 intercultivation were given and M_3=Chinese method : Transplanting at 2 seedlings/hill with a spacing of 13 cm.×15 cm. Manured with 500 Q/ha. of F.Y.M.+44·8 Kg/ha. of P_2O_5 as Super+44·8 Kg/ha. of K_2O as Pot. Sul.+44·8 Kg/ha. of N as A/S. 2 intercultivations and the irrigated water changed daily.

Treatments applied to previous Paddy crop.

3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 9·1 m.×9·1 m. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Poor. Crop lodged after flowering. (ii) Heavy incidence of Stem borer. Treated with Endrin spray. (iii) Yield of grain and fodder. (iv) (a) 1959-60. (b) No. (c) Nil. (v) N.A. (vi) Dry and hot weather during the month of July and excessive rains in the month of August. (vii) Nil.

5. RESULTS:

(i) 2595 Kg/ha. (ii) 178·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield	2676	2532	2577

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(85), 61(92), 62(110), 63(96).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'CM'.**

Object :—To study the effect of spacing, interculturing and manures on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) 24·7 C.L./ha. of F.Y.M. for 60., As per treatments for others. (ii) *Chalka.* (iii) 7.6.60/21.7.60; 9.6.61/29.7.61; 26.5.62/19.7.62; 25.5.63/29.6.63. (iv) (a) 3 ploughings and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) As per treatments for 60; Nil for others. (vi) HR-35 (late). (vii) Irrigated. (viii) As per treatments (ix) N.A.; 70·6 cm.; 101·8 cm.; 90·6 cm. (x) 30.11.60; 5.12.61; 29.11.62; 5.12.63.

2. TREATMENTS:

All combinations of (1), (2) and (3).

(1) 3 manurial treatments : M_1=24·7 Kg/ha. of N as Urea+12·3 Kg/ha. of P_2O_5 as Super applied in the last puddle, M_2=24·7 Kg/ha. of N+35·9 Kg/ha. of P_2O_5 applied in the last puddle and 23·5 Kg/ha. of N each applied 40 days and 80 days after planting and M_3=71·7 Kg/ha. of N+35·9 Kg/ha. of P_2O_5 applied in the last puddle.

(2) 2 spacings : S_1=15 cm.×10 cm. and S_2=25 cm.×25 cm.

(3) 2 weedings : W_1=2 hand weedings and W_2=4 intercultures with Japanese weeder.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×9·1 m. (b) 9·1 m.×9·0 m. (v) 7 cm. on either side along breadth, (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin twice. (iii) Yield of grain and straw. (iv) (a) 1955-65 (64, 65 N.A. and treatments modified in 60). (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results.

(i) 2588 Kg/ha. (ii) 633·0 Kg/ha. (based on 27 d.f. made up of Treatments × years interaction). (iii) Main effects of M, S and W are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	W_1	W_2	Mean
M_1	2026	2262	2085	2203	2144
M_2	2387	2831	2476	2241	2609
M_3	2928	3092	2831	3189	3010
Mean	2447	2728	2464	2711	2588
W_1	2384	2544			
W_2	2510	2912			

C.D. for M marginal means=229·6 Kg/ha.
C.D. for S or W marginal means=187·6 Kg/ha.

Individual results.

Treatments	M_1	M_2	M_3	Sig.	S_1	S_2	Sig.	W_1	W_2	Sig.	G.M.	S.E./plot
Years												
1960	2324	2624	3059	**	2529	2809	N.S.	2637	2701	N.S.	2669	161
1961	1828	2058	2249	**	2014	2076	N.S.	2014	2076	N.S.	2045	243
1962	1710	2501	3154	**	2331	2579	**	2270	2640	**	2455	128
1963	2714	3253	3579	**	2914	3450	**	2935	3429	**	3182	246
Pooled	2144	2609	3010	**	2447	2728	**	2464	2711	**	2588	633

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(93), 62(111).**
Site :- Agri. Res. Stn., Warangal. **Type :- 'CM'.**

Object :—To study the effect of weeding, spacing and manure on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (iii) 9.12.61/20.1.62 ; 13.12.62/28.1.63. (iv) (a) Ploughing and levelling thrice. (b) Transplanting. (c) 33·6 Kg/ha. (d) As per treatments. (e) 2 to 3. (v) As per treatments for 61 ; Nil for 62. (vi) PLA-1. (vii) Irrigated. (viii) As per treatments. (ix) 14·6 cm ; 5·4 cm. (x) 25.4.62 ; 29.4.63.

2. TREATMENTS:

All combinations of (1), (2) and (3).

(1) 3 manurial treatments : M_1=24·7 Kg/ha. of N as Urea+12·3 Kg/ha. of P_2O_5 as Super applied in the last puddle, M_2=24·7 Kg/ha. of N+35·9 Kg/ha. of P_2O_5 applied in the last puddle and 23·5 Kg/ha. of N each applied 40 and 80 days after planting and M_3=71·7 Kg/ha. of N+35·9 Kg/ha. of P_2O_5 applied in the last puddle.

(2) 2 spacings : S_1=15 cm.×10 cm. and S_2=25 cm.×25 cm.

(3) 2 weedings : W_1=2 hand weedings and W_2=4 intercultures with Japanese weeder.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×9·1 m. (b) 9·1 m.×9·0 m. (v) 7 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin as a control measure. (iii) Yield of grain and straw. (iv) (a) 55-65 (season changed and 64, 65 N.A.). (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatment×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 1112 Kg/ha. (ii) 197·2 Kg/ha. (based on 75 d.f. made up of pooled error and 'Treatments×years' interaction). (iii) Main effects of M, S and W are highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	W_1	W_2	Mean
M_1	912	987	874	1024	949
M_2	996	1126	936	1186	1061
M_3	1261	1389	1254	1397	1325
Mean	1056	1167	1021	1202	1112
W_1	927	1116			
W_2	1186	1219			

C.D. for S or W marginal means=80·3 Kg/ha.

C.D. for M marginal means =98·4 Kg/ha.

Individual results.

Treatments	M_1	M_2	M_3	Sig.	W_1	W_2	Sig.
Years							
1961	1352	1514	1709	**	1409	1641	**
1962	547	608	942	**	634	764	**
Pooled	949	1061	1325	**	1021	1202	**

S_1	S_2	Sig.	G.M.	S.E./plot
1464	1586	N.S.	1525	211
649	749	*	699	160
1056	1167	**	1112	197·2

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(M.A.E.).**

Site :- M.A.E. Centre, Chalvai. **Type :- 'CM'.**

Object :—Type VII : To study the effect of manures and cultural practices on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red loam. (iii) As per treatments. (iv) (a) 4 ploughings. (b) and (c) N.A. (d) and (e) As per treatments. (v) 5604 Kg/ha. of F.Y.M. (vi) MTU-19. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREAMENTS :

Main-plot treatments :

All combinations of (1), (2) and (3).

(1) 3 dates of planting : D_1=15 days before normal, D_2=Normal and D_3=15 days after normal.

(2) 3 spacings : S_1=15 cm.×15 cm., S_2=20 cm.×20 cm. and S_3=25 cm.×25 cm.

(3) 3 rates of planting : R_1=2, R_2=4 and R_3=6 seedlings/hole.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 2 levels of N : N_0=0 and N_1=44·8 Kg/ha.

(2) 2 levels of P_2O_5 : P_0=0 and P_1=44·8 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/block; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (iii) N.A. (iii) Yield of grain. (iv) (a) 56-60. (b) N.A. (c) Nil. (v) Yemmiganur and Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 3371 Kg/ha. (ii) (a) 289·1 Kg/ha. (b) 298·8 Kg/ha. (iii) Main effects of D, R and P are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	S_1	S_2	S_3	R_1	R_2	R_3
Mean yield	3403	3454	3256	3421	3384	3308	3472	3256	3388

C.D.=166·7 Kg/ha. C.D.=166·7 Kg/ha.

Treatment	N_0	N_1	P_0	P_1
Mean yield	3373	3369	3311	3431

C.D.=117·4 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 62(M.A.E.).**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'CM'.**

Object :—Type VII : To study the effect of manures and cultural practices on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) N.A./As per treatments. (iv) (a) Ploughing and puddlings. (b) Transplanting. (c) 22 Kg/ha. (d) and (e) As per treatments. (v) 5604 Kg/ha. of F.Y.M. (vi) MTU—15. (vii) Irrigated. (viii)) 2 hand weedings. (ix) N.A. (x) 25.5.63, 15.6.63, 17.6.63.

2. TREATMENTS :

Same as in expt. no. 60(M.A.E.) Chalvai on page 265.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication, 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 1/198 Kg/ha. (b) 1/247 Kg/ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1500 Kg/ha. (ii) (a) 358·1 Kg/ha. (b) 213·5 Kg/ha. (iii) Main effects of D,R, N, and P are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	S_1	S_2	S_3
Mean yield	842	2137	1521	1462	1602	1436

C.D.=206·5 Kg/ha.

Treatment	R_1	R_2	R_3	N_0	N_1	P_0	P_1
Mean yield	1371	1665	1464	1388	1612	1382	1618

C.D.=206·5 Kg/ha. C.D.=83·9 Kg/ha. C.D.=83·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61, 62, 63(M.A.E).**

Site :- M.A.E. Centre, Maruteru. **Type :- 'CM'.**

Object :—Type VII : To study the effect of manures and cultural practices on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) N.A./As per treatments. (iv) (a) 3 ploughings. (b) N.A. (c) 28 to 39 Kg/ha. (d) and (e) As per treatments. (v) 5604 Kg/ha. of F.Y.M. (iv) SLO—13. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 15.10.63.

2. TREATMENTS :

Same as in expt. no 60 (M.A.E.) Chalvai on page 265.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/block ; 3 block/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—63 (1960 N.A.) (b) N.A. (c) Nil. (v) Chalvai and Yemmiganur. (vi) N.A. (vii) Nil.

5. RESULTS:

61(M.A.E.)

(i) 3284 Kg/ha. (ii) (a) 122·0 Kg/ha. (b) 86·0 Kg/ha. (iii) Main effects of D, S, R, P and N are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	S_1	S_2	S_3	R_1	R_2	R_3
Mean yield	3440	3328	3083	3176	3348	3328	3173	3385	3294

C.D=70·3 Kg/ha. C.D.=70·3 Kg/ha. C.D.=70·3 Kg/ha.

Treatment	N_0	N_1	P_0	P_1
Mean yield	3004	3564	3084	3484

C.D.=33·8 Kg/ha. ; C.D.=33·8 Kg/ha. ;

62(M.A.E.)

(i) 3266 Kg/ha (ii) (a) 752·7 Kg/ha. (b) 1043·5 Kg/ha. (iii) Main effect of D is significant. (iv) Av. yield of grain in Kg/ha.

Treatments	D_1	D_2	D_3	S_1	S_2	S_3	R_1	R_2	R_3
Mean yield	3718	3226	2854	3270	3229	3300	3265	3265	3269

C.D.=434 Kg/ha.

Treatment	N_0	N_1	P_0	P_1
Mean yield	3133	3400	3196	3336

63(M.A.E.)

(i) 3260 Kg/ha. (ii) (a) 1420·7 Kg/ha. (b) 475·3 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	S_1	S_2	S_3
Mean yield	3090	3462	3228	3083	3302	3395

Treatment	R_1	R_2	R_3	N_0	N_1	P_0	P_1
Mean yield	3327	3408	3045	3321	3199	3229	3291

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(M.A.E.)**

Site :- M.A.E. Centre, Yemmiganur. **Type :- 'CM'.**

Object :—Type VII : To study the effect of manures and cultural practices on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) D_1=9.6.60/16.7.60, D_2=24.6.60/31.7.60, D_3=10.7.60/15.8.60. (iv) (a) Puddlings and levellings. (b) Transplanting. (c) 22 Kg/ha. (d) and (e) As per treatments. (v) 5604 Kg/ha. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 8.12.60, 13.12.60, 14.12.60.

2. TREATMENTS :

Same as in expt. no 60 (M.A.E.) Chalvai on page 265.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 blocks/replication ; 9 main-plots/block and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 1/198 ha. (b) 1/247 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1959—60. (b) N.A. (c) Nil. (v) Chalvai, Maruteru. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1053 Kg/ha. (ii) (a) 316·3 Kg/ha. (b) 170·5 Kg/ha. (iii) Main effects of D,N and P are significant. (iv) Av. yield of grain in Kg/ha.

Treatments	D_1	D_2	D_3	S_1	S_2	S_3	R_1	R_2	R_3
Mean yield	1189	922	1048	1120	1028	1011	1037	1051	1071

C.D.=182·5 Kg/ha.

Treatment	N_0	N_1	P_0	P_1
Mean yield	775	1347	968	1143

C.D.=67 Kg/ha. C.D.=67 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(97).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'CMV'.**

Object :— To find out the effect of different spacings and manurial doses on the yield of different varieties.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 30.12.65/23, 24.1.66. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 25 to 30 Kg/ha. (d) As per treatments. (e) 2. (v) and (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 spacings : S_1=10 cm.×10 cm., S_2=10 cm.×15 cm. and S_3=10 cm.×20 cm.

Sub-plot treatments :

3 manurial doses : M_1=60 Kg/ha.of N+30 Kg/ha. of P_2O_5+30 Kg/ha. of K_2O, M_2=90 Kg/ha. of N+45 Kg/ha. of P_2O_5+45 Kg/ha. of K_2O and M_3=120 Kg/ha. of N+60 Kg/ha. of P_2O_5+60 Kg/ha. of K_2O.

Sub-sub-plot treatments :

12 varieties : V_1=ADT—27, V_2=*Chianan*—2, V_3=*Taichung*—65, V_4=*Tairan*—3, V_5=*Kaohsiang*—22, V_6=SLO—16, V_7=RDR—7, V_8=PLA—1, V_9=TKM—6, V_{10}=CH—45, V_{11}=HR—67 and V_{12}=TN—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 12 sub-sub plots/sub-plot and 3 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 3·1 m.×1·6 m. for S_1, 3·1 m.×1·5 m. for S_2, 3·1 m.×1·4 m. for S_3. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 5468 Kg/ha. (ii) (a) 301·9 Kg/ha. (b) 1078·8 Kg/ha. (c) 1001·6 Kg/ha. (iii) Main effects of S, M and V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	Mean
S_1	5486	6967	5785	7347	6427	4039	5365	5021	5424	5586	5636	7633	5893
S_2	5065	6480	4500	7025	5937	3481	5267	4343	5219	4731	5971	6392	5368
S_3	5287	4925	4987	6503	6534	3180	3957	4718	5162	4973	4964	6532	5144
Mean	5279	6124	5091	6959	6299	3567	4863	4694	5268	5097	5524	6852	5468

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	Mean
M_1	4796	5805	4315	5940	5428	3255	3925	4864	5035	4397	4316	5944	4835
M_2	5870	6382	5049	7084	7204	3597	5341	4071	5483	5454	6080	7141	5730
M_3	5172	6185	5907	7850	6267	3848	5323	5147	5287	5438	6175	7472	5839
Mean	5279	6124	5091	6959	6299	3567	4863	4694	5268	5099	5524	6852	5468

	M_1	M_2	M_3	Mean
S_1	5416	6088	6175	5893
S_2	4890	5311	5901	5368
S_3	4199	5790	5442	5144
Mean	4835	5730	5839	5468

C.D. for S marginal means=216·4 Kg/ha.
C.D. for M marginal means=440·0 Kg/ha.
C.D. for V marginal means=663·8 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 63 to 65(M.A.E.)**

Site :- M.A.E. Centre, Dindi Farm. **Type :- 'CMV'.**

Object: Type XIII :— To study the effect of dates of planting and levels of N, P and K on different varieties of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) 44·8 Kg/ha. of N+22·4 Kg/ha. of P_2O_5 for 63, N.A. for others. (ii) Medium black. (iii) As per treatments. (iv) (a) 1 ploughing and 2 puddlings. (b) Transplanting. (c) N.A. (d) 25 cm.×25 cm. (e) N.A. (v) 60 Q/ha. of F.Y.M. (vi) MTU-15. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) As per treatments.

2. TREATMENTS:

Main-plot treatments :

All combinations (1), (2) and (3).

(1) 3 dates of sowing : D_1=Two weeks before normal date of planting, D_2=Normal date of planting and D_3=Two weeks after normal date of planting.

(2) 3 varieties : V_1=Local standard, V_2=Indica-Japanica—1 variety and V_3=Indica-Japanica—2 variety.

(3) 3 levels of N : N_0=0, N_1=50 and N_2=100 Kg/ha.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 2 levels of P_2O_5 : P_0=0 and P_1=70 Kg/ha.

(2) 2 levels of K_2O : K_0=0, and K_1=50 Kg/ha.

3. DESIGN :

(i) $3^3 \times 2^2$ split-plot confd. (ii) (a) 9 main-plots/block ; 3 block/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 1/200 ha. (b) 1/250 ha. (v) and (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1963-66. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

63(M.A.E.)

(i) 2667 Kg/ha. (ii) (a) and (b) N.A. (iii) Main effects of V, N and P are significant. (iv) Av yield of grain in Kg/ha.

Treatment	V_1	V_2	V_3	D_2	D_3	D_3
Main yield	2540	2980	2480	2634	2658	2709

C.D. for V or N means=429 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	K_0	K_1
Main yield	2259	2420	3322	2513	2821	2601	2733

C.D.=238 Kg/ha.

64(M.A.E.)

(i) 1571 Kg/ha. (ii) (a) and (b) N.A. (iii) Main effect of V is significant. (iv) Av. yield of grain in Kg/ha.

Treatment	V_1	V_2	V_3	D_1	D_2	D_4
Main yield	942	1983	1788	1620	1825	1268

C.D =662 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	K_0	K_1
Main yield	1334	1721	1658	1587	1555	1542	1600

65(M.A.E.)

(i) 1383 Kg/ha. (ii) (a) and (b) N.A. (iii) Main effects of V, D or N are significant. (iv) Av. yield of grain in Kg/ha.

Treatmen	V_1	V_2	V_3	D_1	D_2	D_3
Main yield	769	1665	1715	1230	1578	1348

C.D. for V, D or N marginal means=265 Kg/ha.

Treatment	N_0	N_1	N_2	P_0	P_1	K_0	K_1
Main yield	1176	1473	1500	1339	1427	1388	1378

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(257).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'I'.**

Object :—To assess the water requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 9.6.65/7, 8.7.65. (iv) (a) One plouhing, puddling four times and levelling. (b) Transplanting. (c) 25 Kg/ha. (d) 20 cm.×10 cm. (e) 2. (v) 45 Kg/ha. of N as A/S+67 Kg/ha. of P_2O_5 as Super+45 Kg/ha. of K_2O as Pot. Sul. at planting and 45 Kg/ha. of N as A/S applied as top dressing. (vi) HR-35. (vii) Irrigated. (viii) Weeding and mulching. (ix) N.A. (x) 9, 10.12.65.

2. TREATMENTS :

4 irrigational treatments : T_1=Maintenance of semi-dry condition, T_2=Immersion with 2·5 cm., T_3=Immersion with 5 cm. and T_4=Immersion with 7·6 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 10·4 m×7·3 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin and Copper mixture sprayed thrice as a precautionary measure. (iii) Grain yield. (iv) (a) 1965-66. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2779 Kg/ha. (ii) 169·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2672	2850	2790	2805

Crop :- Paddy (*Rabi*). **Ref A.P. :- 65(258).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'I'.**

Object :— To assess the water requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 14.12.65/24.1.66. (iv) (a) One ploughing, puddling four times and levelling. (b) Transplanting. (c) 25 Kg/ha. (d) 20 cm.×10 cm. (e) 2. (v) 45 Kg/ha. of N as A/S+67 Kg/ha. of P_2O_5 as Super+45 Kg/ha. of K_2O as Pot. Sul. at planting and 45 Kg/ha. of N as A/S applied as top dressing, (vi) HR-19. (vii) Irrigated (viii) Weeding and mulching. (ix) N.A. (x) 24.4.66.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 65(257) on page 270.

4. GENERAL :

(i) Satisfactory. (ii) Parathion sprayed twice as a precautionary measure. (iii) Yield of grain. (iv) (a) 1965-66. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2766 Kg/ha. (ii) 180·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	2809	2736	2723	2796

Crop :- Paddy (*Kharif*). **Ref :- A P. 61(56), 62(79).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To study the effect of weedicidal treatments on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Sugarcane. (c) N.A. (ii) Clay loam. (iii) N.A./16.8.61 ; N.A./29.8.62. (iv) (a) Puddling thrice and levelling with board. (b) Transplanting. (c) N.A. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 4604 Kg/ha. of G.M.+126 Kg/ha. of Super and 42 Kg/ha. of A/S applied at planting. (vi) GEB-24. (vii) Irrigated. (viii) As per treatments. (ix) 52·7 cm ; 89·5 cm. (x) 12.12.61 ; 25.12.62.

2. TREATMENTS :

7 weedicidal treatments : W_0=Unweeding, W_1=Hand weeding W_2=Rotary push hoe weeding, W_3=Fernoxone at 4·5 Kg/ha., W_4=W_3+1·1 Kg/ha. of Mowron, W_5=Dowpon at 4·5 Kg/ha. and W_6=Simzine at 4·5 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×3·0 m. (b) 8·6 m.×2·4 m. (v) 30 cm.×28 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of of grain. (iv) (a) 61-62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and 'Treatments×years' interaction is present.

5. RESULTS :

Pooled results.

(i) 3515 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction. (ii) 992·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	W_0	W_1	W_2	W_3	W_4	W_5	W_6
Av. yield	4100	3489	3250	3517	3418	3369	3459

Individual results.

Treatments	W_0	W_1	W_2	W_3	W_4	W_5	W_6	Sig.	G.M.	S.E./plot
Years										
1961	5211	4092	3642	4428	4539	3810	4707	*	4347	616
1962	2900	2886	2859	2607	2298	2928	2211	N.S.	2683	468
Pooled	4100	3489	3250	3517	3418	3369	3459	N.S.	3515	992.9

Crop :- Paddy. **Ref :- A.P. 63(253).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :—To test Paddy new cultures for their reaction to synthetic insecticides.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) N.A. (iv) (a) Puddling with country plough and cleaning. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

5 varieties : V_1=Culture-3343, V_2=C-9895, V_3=C-1781, V_4=C-9907 and V_5=H-19.

Sub-plot treatments :

5 insecticidal treatments : T_0=Control, T_1=Endrin 0·03%, T_2=Parathion 0·05%, T_3=DDT-0·032% and T_4=BHC-0·10%.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 3·7 m.×3·1 m. (b) 3·1 m.×2·4 m- (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Growth measurements and grain yield. (iv) (a) 63 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rainfall depressed the final yield. (vii) Nil.

5. RESULTS :

(i) 1567 Kg/ha. (ii) (a) 435·4 Kg/ha. (b) 248·7 Kg/ha. (iii) Main effect of V alone is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	Mean
V_1	736	1159	2439	2336	1302	1594
V_2	867	1137	2529	2134	1617	1657
V_3	921	549	2179	2471	1572	1538
V_4	790	822	2097	2174	1752	1527
V_5	742	1119	2075	2269	1392	1519
Mean	811	957	2264	2277	1527	1567

C.D. for V marginal means=540·5 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(205).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object:—To control weed growth in Paddy fields by spraying different herbicides at different concentrations as post planting treatments.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A./16.8.61. (iv) (a) Puddling with country plough and spades. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2 to 3. (v) 44·8 Kg/ha. of N as A/S in two equal doses as basal dressing and at 2 months after planting. (vi) MTU-19. Irrigated. (viii) As per treatments. (ix) 87·7 cm. (x) 11.12.61.

2. TREATMENTS :

All combination of (1) and (2)+2 extra treatments.

(1) 4 herbicides: H_1=Fernoxone, H_2=Agroxone, H_3=Hedanol and H_4=Dicotox.

(2) 4 levels of herbicides : L_1=220, L_2=336, L_3=448 and L_4=672 gm/ac.

Extra treatments : E_0=Control, and E_1=Hand weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247·1 ha. (v) Nil. (vi) Yes.

4 GENERAL:

(i) Satisfactory. (ii) Spraying Endrin 2 to 3 times as a prophylactic measure. (iii) Weed counts, tiller counts, height measurements and yield of grain. (iv) (a) 61 only. (b) and (c) Nil. (v) N.A. (vi) Summer was severe with high temperature and low humidity from April to May '61. (vii) Nil.

5. RESULTS :

(i) 1127 Kg/ha. (ii) N.A. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

E_0=1067 and E_1=1100 Kg/ha.

	H_1	H_2	H_3	H_4	Mean
L_1	1038	1352	919	1159	1117
L_2	996	1282	1223	1102	1151
L_3	1203	1063	991	1162	1105
L_4	1228	1181	1038	1186	1158
Mean	1116	1219	1043	1152	1133

Crop :- Paddy. **Ref :- A.P. 62(209).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object:—To control weed growth in Paddy fields by spraying different herbicides at different concentrations.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 23.8.62. (iv) (a) Puddling with country plough and spade. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses one before planting and another at the age of 2 months. (vi) MTU-19. (vii) Irrigated. (viii) and (ix) Nil. (x) 22.12.62.

2. TREATMENTS :
Same as in expt. no. 61(205) on page 273.

3. DESIGN :
(i) R B.D. (ii) (a) 18. (b) N.A. (iii) 4. (iv) (a) and (b) 40·5 sq. m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed 2 to 3 times as a precautionary measure. (iii) Weed counts and grain yield. (iv) (a) 1961-62. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 634 Kg/ha. (ii) 135 Kg/ha. (iii) None of the effects is significant. (iv) Av. grain yield in Kg/ha.

E_0=620, E_1=647

	L_1	L_2	L_3	L_4	Mean
H_1	840	635	642	675	698
H_2	536	615	563	596	578
H_3	603	680	717	529	662
H_4	675	680	502	655	628
Mean	664	653	606	614	634

Crop :- Paddy. **Ref :- A.P. 62(250), 63(276).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :—To study the efficacy of different concentrations of Endrin and Parathion in reducing Stem borer infestation.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) 25.6.62/10.8.62 ; 26.6.63/8.8.63. (iv) (a) Puddling with country plough and working spade. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 175 Kg/ha. of Super, 84 Kg/ha. of A/S on 14.8.62 and 84 Kg/ha. of A/S on 22.9.62 for 62 and 49 Kg/ha. of Urea on 4.10.63 for 63. (vi) MTU-19. (vii) Irrigated. (viii) Hand weeding (ix) N.A. (x) 12.12 62 ; 24, 25.12.63.

2. TREATMENTS:

9 insecticidal treatments : T_0=Control (water spray), T_1=Folidol (Parathion) 0·1%, T_2=Folidol (Parathion) 0·075%, T_3=Folidol (Parathion) 0·050%, T_4=Folidol (Parathion) 0·025%, T_5=Endrin 0·05%, T_6=Endrin 0·04%, T_7=Endrin 0·03% and T_8=Endrin 0·02%.

Dates of spraying : 22, 27. 1062 ; 5, 11.11.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·9 m.×7·6 m. for 62 ; 7·5 m.×7·5 m. for 63. (b) 7·6 m.×7·3 m. for 62 ; 7·5 m.×7·5 m. for 63. (v) 15 cm.×15 cm. for 62 ; Nil for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Incidence of Stem borer and grain yield. (iv) (a) 1962-63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains during Oct. 63. (vii) Error variances in case of the grain yield are heterogeneous and the Treatments×years interaction is absent. Hence results of individual years are presented. Error variances in case of Stem borer incidence are homogeneous and the Treatments×years interaction is absent.

5. RESULTS :

Grain yield

62(280)

(i) 915 Kg/ha. (ii) 139·9 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	573	1062	888	887	810	1205	1126	933	756

C.D.=204·2 Kg/ha.

63(276)

(i) 1187 Kg/ha. (ii) 258·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1024	1308	1308	1242	1148	1266	1221	1127	1042

Incidence of Stem borer

Pooled results.

(i) 32·6°. (ii) 3·77° (based on 56 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. % of Stemborer incidence in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence in degrees	40·3	29·4	31·2	31·7	35·6	28·2	30·8	32·2	33·7

Individual results (in degrees).

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
Years												
1962	57·3	46·9	50·0	51 0	52·3	42·4	46·4	49·2	50·9	**	49·6	2·9
1963	23·3	11·8	12·3	12·4	18·8	14·1	15·2	15·2	16·6	*	15·5	4·3
Pooled	40·3	29·4	31·2	31·7	35·6	28·3	30·8	32·2	33·7	N.S.	32·6	3 8

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(198), 64(226), 65(37)**

Site :- Agri. College farm, Bapatla. **Type :- 'D'.**

Object :— To control weed growth in Paddy by spraying different herbicides at different concentrations one month before planting Paddy seedlings.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A./ 9.8 63, N.A./7.8.64, N.A./20.8.65. (iv) (a) Puddling and cleaning. (b) Transplanting. (c) 24 Kg/ha. (d) 25 cm. × 15 cm. for 63 ; 25 cm. × 25 cm. (e) 2 to 3. (v) 44·8 Kg/ha. of N as A/s in two equal doses. (vi) MTU-22 for 64 ; SLO-13 for others. (vii) Irrigated. (viii) As per treatments. (ix) 74 cm. ; 103 cm. ; N.A. (x) 3.12.63 ; 18.12.64 ; 22,11.65.

2. TREATMENTS :

14 weedicidal treatments : W_0=Cantrol, W_1=Hand weeding, W_2=22·4, W_3=11·2, W_4=6·6 Kg/ha. of Fernoxone, W_5=11·2, W_6=5·6, W_7=2·8 Kg/ha. of Dowpan, W_8=4·9, W_9=3·7, W_{10}=2·5 Kg/ha. of weedon LV- 4, W_{11}=4·9, W_{12}=3·7 and W_{13}=2·5 Kg/ha. of Eptam.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) and (b) 40·5 sq. m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Endrin sprayed 2 to 3 times as precautionary measure. (iii) Grain yield. (iv) (a)1963-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Severe summer with high temperature and low humidity for 64 and 65. Excessive rains during September, October for 62. (vii) Since S.E. of 64 is N.A. there fore interaction of Treatments × years is taken as the error.

5. RESULTS :

Pooled results.

(i) 457 Kg/ha. (ii) 122·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	W_0	W_1	W_2	W_3	W_4	W_5	W_6
Av. yield	394	479	533	467	488	492	420

Treatment	W_7	W_8	W_9	W_{10}	W_{11}	W_{12}	W_{13}
Av. pield	436	448	437	380	484	458	488

Individual results.

Treatments	W_0	W_1	W_2	W_3	W_4	W_5	W_6	W_7	W_8	W_9	W_{10}	W_{11}	W_{12}	W_{13}	Sig.	G.M.	S.E./plot.
Years																	
1963	383	435	623	556	455	558	482	383	482	507	420	479	469	393	N.S.	473	147
1964	398	484	440	398	415	423	368	378	415	385	306	494	489	472	N.A.	419	N.A.
1965	402	518	536	448	594	494	411	547	446	418	413	479	415	598	N.S.	480	100·8
Pooled	394	479	533	467	400	492	420	436	448	437	380	484	458	488	N.S.	457	122·1

Crop :- Paddy. **Ref :- A.P. 64(245), 65(140).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the effect of various leaf powders on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Black soil. (iii) 5.8.64 ; 6.8.65. (iv) (a) Puddling with country plough and clearing. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 16 Kg/ha. of N as A/S, 45 Kg/ha. of P_2O_5 as Super as basal and 22 Kg/ha. of N as A/S as top dressing. (vi) MTU-25 ; SLO-13. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 11.12.64 ; 22.11.65.

2. TREATMENTS :

6 leaf powder treatments at 1121 Kg/ha. : T_1=Argemane Mexicana, T_2=Purgamea glablora, T_3=Glyricidia meculata, T_4=Azaridicta indica, T_5=Butea frondosa and T_6=Tawarindus indicus.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4. (iv) (a) and (b) 1/247·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth measurements, yield of grain and straw. (iv) (a) 1964-66. (b) Yes. (c) Nil. (v) Nil. (vi) Heavy rainfall for 64 on 14 to 16.9.64 ; Nil for 65. (vii) Experiment is continued beyond 1965.

5. RESULTS :

64 (245)

(i) 405 Kg/ha. (ii) 91·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	488	303	383	420	426	408

65 (140)

(i) 3050 Kg/ha. (ii) 316·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3120	3076	3039	3138	2939	2965

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(201), 61(222).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the effect of different pesticides on the yield of Paddy.

3. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 30.7.60 ; 5.8.61. (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (vi) Nil. (vi) MTU-19. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 14.12.60 ; 6.12.61.

2. TREATMENTS :

T_0=Control, T_1=Endrin ·03%+Fungimar 21 gm. / 5 litres, T_2=Endrin ·03%+Cupravit 21 gm. / 5 litres, T_3=Endrin 03%+Bordeau mixture 1%, T_4=Parathion ·024%+Fungimar 28 gm. / 5 litres, T_5=Parathion ·025%+Cupravit 21 gm./5 liters, T_6=Parathion ·025%+Bordeau mixture 1%, T_7=Parathion ·025% alone, T_8=Endrin 0·03% alone, T_9=Fungimar 21 gm. / 5 litres alone, T_{10}=Cupravit 21 gm. / 5 litres alone and T_{11}=Bordeau mixture 1% alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (b) N.A. (iii) 3. (iv) 6·1 m. × 6·2 m. for 60 ; 7·3 m. × 4·9 m. for 61. (b) 5·5 m. × 5·5 m. for 60 ; 6·7 m. × 4·3 m. for 61. (v) 30 cm. × 30 cm. (x) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960 to 61. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results.

(i) 1776 Kg/ha. (ii) 760·1 Kg/ha. (55 d.f. mode up of pooled error and interaction Treatments × years). (iii) Treatment differences are not significant. (iv) Av. grain yield in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1690	1942	1717	1900	1617	1935

Treatment	T_6	T_7	T_8	T_9	T_{10}	T_{11}
Av. yield	1843	1514	1829	1764	1715	1845

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}
Years												
1960	5205	5949	5329	6074	5206	5454	5950	5330	6074	5701	6074	6073
1961	6007	6939	6062	6533	5527	7386	6282	4716	6062	6007	5308	6183
Pooled	5606	6444	5695	6303	5366	6420	6116	5023	6068	5854	5691	6128

Sig.	G.M.	S.E./plot.
N.S.	5701	803·2
N.S.	6084	819·4
N.S.	5893	760·1

Crop :- Paddy. **Ref :- A.P. 60(199).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the effect of different chemicals on the growth and yield Paddy.

1. BASAL CGNDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 3.8.60. (iv) Puddling with country plough and levelling. (b) Transplanting (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU-19. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

6 chemicals treatments : T_0=Control, T_1=BHC 5%, T_2=DDT 5%, T_3=Heptachlor 3%, T_4=Aldrin 5% and T_6=A/S+Super.

All chemicals were applied in dust form at 112 Kg/ha. by mixing with wet soil and the soil was uniformly spread through the field on 3.8.60.

3. DESIGN :

(i) R.B,D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 7·9 m.×6·1 m. (b) 7·3 m.×5·5 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RELULTS :

(i) 2177 Kg/ha. (ii) 162·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	2228	2088	2228	2173	2116	2228

Crop :- Paddy. **Ref :- A.P. 61(228).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :—To study the effect of insecticides in controlling Paddy Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) N.A: (iv) (a) Puddling with country plough. (b) Transplanting. (c) 24 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) Nil. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

8 insecticidal treatments : T_0=Control, T_1=17, T_2=34, T_3=50 and T_4=67 Kg/ha. of Thuricide dust, T_5=Thuricide (W P.) at 2·7 Kg/272 litres, T_6=Endrin 0·03 % and T_7=Parathion 0·5 %

Insecticides applied on 15, 28.10.61.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 8.8 m.×5·5 m. (b) 8·2 m.×4·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) % Incidence of Stem borer and yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

1. Yield of grain.

(i) 1446 Kg/ha. (ii) 209 7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1554	1410	1373	1482	1302	1266	1590	1591

2. Incidence of Stem borer

(i) 38.1 degree (ii) 3·32 degrees. (iii) Treatment differences are not significant. (iv) Av. incidence in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean incidence	37·7	38·3	38·5	39·7	40·0	37·7	36·3	36·4
Transformed								
Back values	37·4	38·4	38·8	40·8	41·4	37·4	35·1	35·2

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(164).**

Site .- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :—To find out the efficacy of different herbicides as post planting treatment in Paddy fields in controlling weeds.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A./15.8.60. (iv) (a) Puddling with country plough and spading. (b) Transplanting (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) N.A. (v) 44·8 Kg/ha. of N as A/S in two equal doses before planting and at 2 months age of the crop. (vi) MTU—19. (vii) Irrigated. (viii) Nil. (ix) 69·6 cm. (x) 10.12.60.

2. TREATMENTS :

7 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=11·2, T_3=5·6, T_4=2 8 Kg/ha. of Dowpon, T_5=11·2, T_6=5·6 Kg/ha. of Fernoxone.

Treatments applied on 8.9. 1960.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247·1 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin 2 to 3 times prophylactic measure. (iii) Weed counts, height, tiller counts and grain yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1201 Kg/ha. (ii) 479·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1009	1625	1037	1009	1289	925	1513

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(184).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object : To find out the efficacy of different herbicides as post planting treatment in Paddy fields in controlling weeds.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A./28.7.61. (iv) (a) Puddling with country plough and spading. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses before planting and at 2 months age of the crop. (vi) MTU—19. (vii) Irrigated. (viii) Nil. (ix) 107·9 cm. (x) 10.12.61.

2. TREATMENTS :

7 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=11·2, T_3=5·6 Kg/ha. of Fernoxone T_4=22·4, T_5=18·3 and T_6=12·2 litres/ha. of Weedone—L.V. 4

Treatments applied on 30.9.61.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247·1 ha. (v) Nil. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Spraying Endrin 2 to 3 times as prophylactic measure. (iii) Weed counts, height, tiller counts and grain yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3919 Kg/ha. (ii) 202·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3707	4448	3954	4201	3707	3707	3707

C.D.=300·9 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(207).**

Site :- Agri. College Farm. Bapatla. **Type :- 'D'.**

Object :—To find out the efficacy of herbicides in controlling weed growth when applied as foliar spray one month after planting.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow –Paddy. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A/28.8 62. (iv) (a) Puddling with country plough and spade. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) 44 8 Kg/ha of N as A/S in two equal doses before planting and at 2 months age of the crop. (vi) MTU—19. (vii) Irrigated. (viii) Nil. (ix) 65 4 cm. (x) 23.12.62.

2. TREATMENTS :

7 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=Hand weeding+interculture with Japanese weeder, T_3=Weedone-64. at 11·2 litres/ha., T_4=Weedone-64. 16·8 litres/ha., T_5=Weedone-L.V. 4. at 11·2 litres/ha. and T_6=Weed-one at 16·6 litres/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a and (b) 1/247·1 ha. (v) Nil. (vi) Yes.

4. GENERAL :

Satisfactory. (ii) Endrin spraying 2 to 3 times as precautionary measure. (iii) Weed counts, heights, tiller counts and grain yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 140·7 Kg/ha. (ii) 804 0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av yield	1127	1369	1460	1673	1423	1478	1322

———

Crop : Paddy (*Kharif*). **Ref :- A.P. 64(224).**

Site :- Agri. College Farm, Bapatla. **Type 'D'.**

Object :— To find out the efficacy of different doses of P.C.P. as post planting treatment in Paddy fields in controlling weed growth and to compare grain yield with hand weeding and control.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) N.A. 18.8.64. (iv) (a) Puddling with spades and cleaning. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2 to 3. (v) 44·8 Kg/ha. of N as A/S in two equal doses as basal and at 2 months age of the crop. (vi) MTU-22. (vii) Irrigated (viii) As per treatments. (ix) 102·8 cm (x) N.A.

2. TREATMENTS :

5 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=PCP at 112·1 Kg/ha., T_3=PCP at 89·7 Kg/ha. and T_4=PCP at 70·1 Kg/ha.

PCP at different concentrations was applied on 14.8.64.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 1/247.1 . (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Spraying of Endrin 2 to 3 times as a prophylactic measure. (iii) Weed counts, tiller counts, height measurements and yield of grain. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) Summer was sever with high temperature and low humidity from April to May. (vii) Nil.

5. RESULTS :

(i) 1248 Kg/ha. (ii) 236·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1331	1341	1211	1255	1100

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(180).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To control weed growh in Paddy field by spraying different herbicides at different concentrations one month after planting.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (il) Clay loam. (iii) N.A./21.8.60. (iv) (a) Puddling with country plough and spading. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm. × 25 cm. (e) 2 to 3. (v) 44·8 Kg/ha. of N as A/S in 2 equal doses as basal and at 2 months age of the crop. (vi) MTU-19. (vii) Irrigated. (viii) As per treatments. (ix) 69·5 cm. (x) 8.12.60.

2. TREATMENTS :

14 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=24, T_3=16, T_4=8 oz AE of Fernoxone, T_5=24, T_6=16, T_7=8 oz AE of Agroxone, T_8=24, T_9=16, T_{10}=8 oz AE of Hedonal, T_{11}=24, T_{12}=16 and T_{13}=8 oz AE of Decotox.

Date of spraying of herbicides : 21.9.60.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) and (b) 1|247·1 ha. (v) Nil. (vi) Yes.

GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin 2 to 3 times. (iii) Weed counts, tiller counts, height measurements and yield of grain. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

RESULTS :

(i) 1169 Kg/ha. (ii) 324·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

eatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
yield	1976	1075	1456	1110	901	1075	1075

tment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
eld	1040	1352	971	901	1388	1075	971

C.D.=466·4 Kg/ha.

Paddy. **Ref :- A.P. 62(208).**

gri. College Farm, Bapatla. **Type :- 'D'.**

find out the efficiency of different herbicides in controlling weed growth in Paddy fields n they are sprayed one month before transplanting Paddy seedlings.

1 BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 23.7.62. (iv) (a) Puddling with country plough and spade. (b) Transplanting. (c) 23 5 Kg/ha. (d) 25 cm. × 15 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses one before planting and the other at the age of 2 months. (vi) MTU-19. (vii) Irrigated. (viii) Nil. (ix) 72·3 cm. (x) 24.12.62.

2. TREATMENTS :

14 weed controlling treatments : T_0=Control, T_1=Hand weeding, T_2=11·2, T_3=5·6 and T_4=2·8 Kg/ha. of Dowpan, T_5=22·4, T_6=11·2, T_7=5-6 Kg/ha. of Fernoxone, T_8=22·4 T_9=16 8, T_{10}=11·2 litres/ha. of Tributan, T_{11}=22 4, T_{12}=16·8 and T_{13}=11·2 litres/ha. of weedon L.V.-4.

3. DESIGN :

(i) R B D (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 40·4 sq. m. (b) 40·4 sq. m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed two to three times. (iii) Weed counts, eight, tiller counts and grain yield. (iv) (a) 1962 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1241 Kg/ha. (ii) 255 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	660	761	1554	1396	1320	1374	1421

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	1337	1250	1206	1441	1320	1176	1156

C D.=362·8 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 63(199), 64(225), 65(36).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object : To control the weed growth in Paddy fields using both Agronomical and chemical treatments.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow for 64, 65 ; Paddy for 63. (c) N.A. (ii) Clay loam. (iii) 16.8.63 N.A./7.8.64 ; N.A./19.8.65. (iv) (a) Puddling with country plough and spade. (b) Transplanting. (23·5 Kg/ha. (d) 25 cm. × 15 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses one befc planting and another at the age of 2 months of the crop. (vi) SLO-13. (vii) Irrigated. (viii) As per treatmer (ix) 73 9 cm. ; 102·8 cm ; N.A. (x) 2.12.63 ; 17.12.64 ; 22.11.65.

2. TREATMENTS :

Main-plot treatments :

8 agronomical cum weeding treatments : M_1=Continuous submergence till grain tillering wi weeding, M_2=Continuous submergence till grain t and weeding with Japanese weeder, M_3=Kept moi light irrigation every 2 to 3 days in the absence of r no submergence and no weeding, M_4=Same as M_3 b ing done by weeder, M_5=Irrigated when cracks d Irrigated every 5-6 days the absence of rains and no M_6=Same as M_5 and hand weeding also done. M_7 in M_3 above but given preplanting EPTC at 3 M_8=Same as in M_5 above but given preplanting 3lb/ac.

Sub-plot treatments :

4 chemical treatments : S_0=No post emergence treatment, S_2=Sodium salt of MCPA at 2 lb ae./ac, 4-6 weeks after planting, S_2=3,4-DPA at 3 lb ae./ac. when grass weeds are in 2 to 4 leaf stage and S_3=Sodium salt of MCPA at 2lb ae./ac 4 to 6 weeks after sowing+3, 4-PPA at 3lb ae/ac. when grass weeds are in 2-4 leaf stage.

3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (ii) 3. (iv) (a) 40·5 sq. m. for 63 ; 1/247·1 ha. for others. (b) 40·5 sq. m. for 63 ; 1/247·1 ha. for others. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin sprayed as a precautionary measure. (iii) Weed counts and yield of grain. (iv) (a) 1963 to 65. (b) No. (c) Nil. (v) and (vi)Nil. (vii) Sub-plot error variances are heterogeneous. Hence the results of individual years are presnted under 5. Results.

5. RESULTS :

63(199)

(i)379 Kg/ha. (ii) (a) 56 Kg/ha. (b) 541 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	Mean
S_0	405	336	361	415	375	353	393	368	376
S_1	426	353	358	388	400	308	483	361	385
S_2	321	351	452	410	418	439	338	418	393
S_3	398	306	380	341	336	426	336	363	361
Mean	387	344	388	388	382	381	387	377	379

64(223)

(i) 1257 Kg/ha. (ii) (a) 689·4 Kg/ha. (b) 1710·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	Mean
S_0	1228	1347	1311	1389	1145	1315	1133	1216	1261
S_1	1735	1733	972	913	1047	1080	1292	1279	1256
S_2	1433	1434	1148	1359	1379	1174	1249	1250	1303
S_3	1375	1329	1174	1105	1151	1250	1019	1258	1208
Mean	1443	1461	1151	1192	1180	1205	1173	1251	1257

65(36)

(i) 1590 Kg/ha. (ii) (a) 306·2 Kg/ha. (b) 273·4 Kg/ha. (iii) Main effect of T alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	Mean
S_0	1812	1782	1435	1270	1989	1683	1651	1408	1629
S_1	2407	1492	1342	1544	1441	1501	1107	1226	1508
S_2	2053	2346	1339	1507	1719	1451	1381	1175	1621
S_3	2200	1773	1370	1264	1717	1593	1450	1445	1602
Mean	2118	1848	1372	1396	1716	1557	1397	1314	1590

C.D. for S marginal means=158·8 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(261).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'D'.**

Object :—To study the efficacy of different weedicides.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Sandy clay loam. (iii) 5.8.65. (iv) (a) One ploughing. and puddling. (b) Transplanting. (c) 25 Kg/ha. (d) 20 cm.×10 cm. (e) 2. (v) 67 Kg/ha. of N as A/S +67 Kg/ha of P_2O_5 as Super+34 Kg/ha. yf K_2O as Mur. pot. (vi) HR—35. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 25.12.65.

2. TREATMENTS :

7 weedicidal treatments : T_0=No weeding, T_1=Hand weeding only, T_2=Working rotary weeder, T_3=Stam F-34 at 3 Kg/ha., T_4=Stam F-34 at 6 Kg/ha., T_5=2,4 D at 2 Kg/ha. and T_6=2, 4-D at 2 Kg/ha.

3. DESIGN :

(i) R B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 26·7 sq. m. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

1048 Kg/ha. (ii) 165·2 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	872	1221	1197	1007	882	1051	11·5

C.D.=245·4 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- 65(98).**

Site :- Agri. Res. Stn., Rajendranagar Hyderabad. **Type :- 'D'.**

Object :—Insecticidal trial. with gamma BHC.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Clay loam. (iii) 30.12.65/31.1.66, 1.2.66. (iv) (a) to (c) N.A. (d) 15 cm.×15 cm. (e) 2. (v) 230 Kg/ha. of N as A/S+30 Kg/ha. of P_2O_5 applied on 31.1.66 as basal. 30 Kg/ha. of N on 2.3.66 and 20 Kg/ha. of N+20 Kg/ha. of P_2O_5 on 18.3.66. as top dressing. (vi) HR—67. (vii) to (ix) N.A. (x) 16, 17.5.66.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 methods of application : M_1=Foliar spraying and M_2=Applied through irrigation water.

(2) 4 Chemical : C_1=Lindane, C_2=Folidol, C_3=Basudin and C_4=Endrin.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 22·0 m.×3·5 m. (b) 21·7 m.×3·2 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) No. of tillers, egg masses, No. of dead hearts, yield of grain and straw. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4612 Kg/ha. (ii) 328·8 Kg/ha. (iii) Main effect of is significant and 'extra vs. others' is highly significant. (iv) Av. yield of grain in Kg/ha.

Control=3563 Kg/ha.

	C_1	C_2	C_3	C_4	Mean
M_1	4352	4630	4700	5103	4696
M_2	4865	4544	4704	5051	4791
Mean	4608	4587	4702	5077	4743

C.D. for C marginal means=339·3 Kg/ha.

C.D. for 'extra vs. others'=360·0 Kg/ha.

Crop :- Paddy. **Ref:- A.P. 63(265).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To find out the efficacies of different chemicals in controlling Stem borer of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 7·6.63/26.7.63. (iv) (a) Puddling three times with country plough, trimming of bunds, digging cornes and spreading clods. (b) Transplanting (c) 28 Kg/ha. (d) 25 cm×15 cm. (e) 2. (v) 1260 Kg/ha. of F.Y.M. 170·5 Kg/ha. of Super, 112 Kg/ha. of A/S at planting. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding 2 times.
(ix) N.A. (x) 10.12.63.

2. TREATMENTS :

6 chemical treatments : T_0=Control, T_1=Endrin 0·05 %+Tenaco, T_2=Endrin 0·05 %, T_3=Tenace only, T_4=Sevin and T_5=Telodrin 0·047 %

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×5·5 m. (b) 8·2 m.×4·9 m. (v) 46 cm.×30 cm. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) Nil. (vi) Severe cyclone prevailed from 22 to 25.10.63, heavy rain fall from 18 to 24.10.63 (vii) Nil.

5. RESULTS :

(i) 2916 Kg/ha. (ii) 512·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	2630	3414	3098	2559	2696	3097

Crop :- Paddy. **Ref :- A.P. 60(211), 61(246).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To find out the effects of mechanical removal of Rice Stem borer egg masses in controlling the pest.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2242 to 3363 Kg/ha. of green leaf and 168 Kg/ha. of Super and 56 Kg/ha. A/S. (ii) Black soil. (iii) 10.1.60/10.2.60 ; 12.1.61/22.2.61. (iv) (a) Puddling twice and spreading clods. (b) Transplanting. (c) 28 Kg/ha. (d) 20 cm.×15 cm. for 60 ; 15 cm.×15 cm. for 61. (e) 2. (v) 5995 Kg/ha. of green leaf of sumhemp, 168 Kg/ha. of Super, 56 Kg/ha. of A/S at planting. (vi) Sl O—19. (vii) Irrigated. (viii) 2 Hand weedings. (ix) N.A. (x) 25.5.1960 ; 19.5.1961.

2. TREATMENTS :

T_0=Control, T_1=Removal of eggs masses perodicaly once in 5 days from the nursery stage to harvest.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 9·1 m.×6·1 m. (b) 8·5 m.×5·5 m. (v) 42 cm.×30 cm. for 60 and 28 cm.×28 cm. for 61. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield. (iv) (a) 1960 to 61. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence individual results are presented.

5. RESULTS:

60(211)

(i) 1802 Kg/ha. (ii) 305·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av. yield	1771	1834

61(246)

(i) 886 Kg/ha. (ii) 131·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av. yield	878	894

Crop :- Paddy (*Tabi*). **Ref :- A.P. 61(86).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To study the incidence of Rice Stem borer under different manurial doses.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy (c) 44·8 Kg/ha. of by N+28·0 Kg/ha. of P_2O_5. (ii) Heavy black soil. (iii) 6.1.61/11.2.61 (iv) (a) Puddling thrice followed trimming of bunds, digging of corners and levelling in the month of January. (b) Transplanting. (c) 33·6 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L.+29·7 C.L./ha. of C.M. (vi) MTU-9. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) 6·4 cm. (x) 14.5.61.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=33·6 Kg/ha. of P_2O_5 as Super, M_2=33·6 Kg/ha. of N as A/S and $M_3=M_1+M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 6·1 m.×4·3 m. (b) 5·8 m.×4·0 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Germination and growth of seedlings was satisfactory. (ii) Incidence of Stem borer and attack of Paddy Blast noticed ; Endrin and 1% Bordeaux mixture sprayed. (iii) Yield of grain and fodder. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 2591 Kg/ha. (ii) 457·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3
Av. yield	2591	2591	2586	2596

Crop :- Paddy (*Abi*). **Ref :- A.P. 63(92).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To study the incidence of Rice Stem borer under the different manurial doses.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) Heavy black soil. (iii) 9.6.63/19.7.63. (iv) (a) *Sesbania* was raised and ploughed in *situ*, puddling thrice, spreading of clods and levelling with levelling board. (b) Transplanting. (c) 33·6 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 4483 Kg/ha. of G.L. (vi) MTU-19. (vii) Irrigated. (viii) 1 hand weeding 30 days after transplanting. (ix) 118·6 cm. (x) 14.12.63.

2. TREATMENTS :

All combinations of (1), (1) and (3).

(1) 2 levels of N as A/S : N_0=0 and N_1=33·6 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=134·5 Kg/ha.

N, P and K applied by broadcasting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×6·1 m. (b) 8·7 m.×5·7 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Rice Stem borer ; Control measures N.A. (iii) Yield of grain and % of white ears. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) Heavy rain fall of 29·2 cm. from 18 to 24.10.63. (vii) Nil.

5. RESULTS :

(i) 2128 Kg/ha. (ii) 365·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	2026	2257	2098	2185	2142
N_1	2078	2152	2009	2221	2115
Mean	2052	2204	2054	2203	2178
K_0	2077	2030			
K_1	2027	2378			

Incidence of Stem borer.

(i) 32·6 degrees. (ii) 5·8 degrees. (iii) None of the effects is significant (iii) Mean incidence in degrees.

	P_0	P_1	K_0	K_1	Mean
N_0	31·52	32·48	34·28	29·73	320·0
N_1	33·77	32·55	32·79	33·53	33·16
Mean	32·64	32·51	33·53	31·63	32·58
K_0	32·82	34·23			
K_1	32·46	30·80			

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(82).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To study the incidence of Rice Stem borer under different manurial doses.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Manuring as per treatments. (ii) Heavy black soils. (iii) 6.1.64/ 3, 4.2.64. (iv) (a) Puddling 4 times, digging of corners, trimming of bunds, spreading of clods and hand weeding. (b) Transplanting. (c) 33 6 Kg/ha. (d) 10 cm.×10 cm. (e) 2. (v) Nil. (vi) MTU-9. (vii) Irrigated. (viii) 1 hand weeding 21 days after transplanting. (ix) Nil. (x) 2.5.64.

2. TREATMENTS :

Same as in expt. no. 63 (92) on page 289.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·0 m.×6·0 m. (b) 8·7 m.×5·8 m. (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Rice Stem borer. Nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. (iii) Yield of grain and % of white ears. (iv) (a) 1963-64. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 875 Kg/ha. (ii) 187·3 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	1221	1227	1222	1226	1224
N_1	555	497	449	603	526
Mean	888	862	836	914	875
K_0	859	812			
K_1	917	912			

C.D. for N marginal means=137·7 Kg/ha.

Incidence of rice Stem borer.

(i) 31·7 degrees. (ii) 8·3 degrees. (iii) Main effect of N alone is highly significant. (iv) Mean infestation in degrees.

	P_0	P_1	K_0	K_1	Mean
N_0	24·45	23·55	23·00	25·00	24·00
N_1	36.02	42·70	42·92	35·80	39·36
Mean	30·23	33·12	32·96	30·40	31·68
K_0	31·32	34·60			
K_1	29·15	31·64			

C.D. for N marginal means=2·92 degrees.

— — —

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(152).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To minimise the number of sprayings keeping in view the efficiency of plant protection measures.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 14459 Kg/ha. of *Sesbania* green matter and 168·1 Kg/ha. of Super. (ii) Heavy black soils. (iii) 25.11.63/25.12.63. (iv) (a) 3 puddling with country plough, digging of corners, trimming of bunds and spreading of clods and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) 2 cm. (x) 2.4.64.

2. TREATMENTS :

6 spraying treatments: T_0=Control, T_1=8 sprayings (3 in nursery+5 in main field), T_2=3 spraying (1 in nursery+2 in main field), T_3=4 spraying (1 in nursery+3 in main field), T_4=5 sprayings (1 in nursery+4 in main field and T_5=2 sprayings (1 in nursery+1 in main field).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4 (iv) (a) N.A. (b) 11·1 m.×5·5 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. Moderate to severe incidence of Stem borer and Paddy Blast damage due to neck infection. The crop was treated with a general spray of 1% Bordeaux mixture. (iii) Yield of grain and straw. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2552 Kg/ha. (ii) 366·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	2068	2475	2667	2855	2790	2455

Crop :- Paddy (*Rabi*). **Ref :- A.P. 63(156).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To minimise the cost of spraying by minimising the number of sprayings keeping in view the efficiency of plant protection measures.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 16813 Kg/ha. of *Sesbania* green matter and 168·1 Kg/ha. of Super. (ii) Heavy black soils. (iii) 25.11.63/25.12.63. (iv) (a) Puddling with country plough, digging of corners, trimming of bunds, spreading of clods and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) SLO-16. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) 2 cm. (x) 24.3.64.

2. TREATMENTS :

Same as in expt. no. 63 (152) on page 291.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 10·2 m.×3·9 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nurseries were sprayed with Endrin 15 days before sowing and once again just before pulling. Moderate to severe incidence of Stem borer and Paddy Blast. (iii) Grain and straw yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1992 Kg/ha. (ii) 540·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1985	2092	1948	1878	2061	1988

Crop :- Paddy (*Rabi*). **Ref :- A.P. 62(65).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object : To study the effect of different numbers of Endrin spraying on Paddy against Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy. (c) N.A. (ii) Heavy black soil. (iii) 25.11.62/25.12.62. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 1 hand weeding. (ix) 4 cm. (x) 18.4.63.

2. TREATMENTS :

6 number of sprayings with Endrin : S_0=0 (no spraying), S_1=1, S_2=2, S_3=3, S_4=4 and S_5=5 sprayings. Endrin spraying is done for 31.1.63 to 13.3.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 11·4 m. × 5·8 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer was negligibe in all the plots. Endrin spray as per treatments. (iii) Yield of grain. (iv) (a) 1962 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3396 Kg/ha. (ii) 250·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	3277	3440	3359	3481	3296	3522

Crop :- Paddy (*Abi*). **Ref :- A.P. 63(93).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To test the efficacy of 2-4-D weedicide for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 7319·9 Q/ha. of green matter, 168·1 Kg/ha. of Super just before last puddling and 56·0 Kg/ha. of A/S just before planting. (ii) Heavy black soil. (iii) 22·5·63./13.7.63 (iv) (a) Puddling thrice, spreading of clods, trimming of bunds and levelling. (b) Transplanting (c) 23·5 Kg/ha. (d) 15 cm. × 10 cm. (e) 2. (v) *Sesbania* was raised and was puddled in *situ* at 8105 Kg/ha. and 168·1 Kg/ha. of Super just before final puddling. (vi) MTU-10. (vi) Irrigated. (viii) As per treatments. (iv) 122·6 cm. (x) 29.11.63.

2. TREATMENTS :

3 weedicidal treatments : T_0=Control, T_1=Spraying weedicide 2-4-D, 30 days after planting at 1·1 Kg/ha. ; and T_2=Hand weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 11·0 m. × 7·3 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1963-64 (season is different in 64). (b) No. (c) N.A. (v) N.A. (vi) Heavy rainfall of 29·2 cm. from 18 to 24.10.63. (vii) Nil.

5. RESULTS:

(i) 3670 Kg/ha. (ii) 282·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2
Av. yield	3636	3723	3650

Crop :- Paddy (*Tabi*). **Ref :- A.P. 64(83).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :— To test the efficacy of 2-4-D weedicide for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy, (b) Paddy. (c) 8105 Kg/ha. of green matter and 168·1. Kg/ha. of Super. (ii) Heavy black soil. (iii) 6.1.64/5.2.64. (iv) (a) Puddling thrice, spreading of clods, trimming of bunds and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) Nil. (vi) MUT-15. (vii) Irrigated. (viii) As per treatments. (ix) Nil. (x) 28.4.64.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 63 (93) on page 293.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. Nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. (iii) Yield grain and straw. (iv) (a) 1963 to 64 (Season different in 64). (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS:

(i) 2113 Kg/ha. (ii) 113·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2
Av. yield	2034	2157	2149

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(154).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To test the efficacy of 2—4—D in controlling weeds.

1. BASAL CONDITIONS :

(i) (a) Paddy –Paddy. (b) Paddy. (c) 168·1 Kg/ha. of Super and 56 Kg/ha. of A/S as basal dressing. (ii) Heavy black soil. (iii) 9.5.64/1.7.64. (iv) (a) 4 puddlings with country plough. Corners were dug and the bunds were trimmed. (b) Transplanting. (c) 24 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 1848 Kg/ha. of G.L. of *Sesbaina* and 173 Kg/ha. of Super in the final puddling. (vi) MTU—10. (vii) Irrigated. (viii) As per treatments. (ix) 236 cm. (x) 30.11.64.

2. TREATMENTS :

4. weed controlling treatments : T_0=Control, T_1=Spraying 2—4—D at 1·1 Kg/ha before planting, T_2=Spraying 2—4—D at 1·1 Kg/ha. one month after planting and T_3=Hand weeding once.

3. DESIGN :

(i) R.B D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 3 m.×6 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Rice Stem borer was moderate to severe, the crop was sprayed with Endrin. (iii) Yield of grain and straw. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5155 Kg/ha. (ii) 350·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	5167	5148	5111	5194

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(162).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To minimise the cost of spraying by minimising the number of sprayings keeping in view the efficiency of plant protection measures.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 1747 Kg/ha. of Glyrecidia, 6632 Kg/ha. of *Sesbania* and 173 Kg/ha. of Super. (ii) Heavy black soil. (iii) 13.12.64/3.1.65. (iv) (a) Puddling with country plough, digging of corners, trimming of bunds, spreading of clods and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) SLO 16. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) N.A. (x) 26.3.65.

2. TREATMENTS :

4 Spraying treatments : T_0=Control, T_1=One spraying in nursery on 27.12.64, one spraying main field on 13.2.65; T_2=One spraying in nursery on 27.12.64, two sprayings in main field on 29.1.65, 13.2.65 and T_3=One spraying in nursery on 27.12.64, three sprayings in main field on 13, 29.1.65 and 13.2.65.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 12·8 m.×5·7 m. (b) 12·6 m.×5·6 m. (v) 8 cm.×5 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. The nurseries were sprayed with Endrin 15 days after sowing and once again just before pulling. The incidence of Rice Stem borer was moderate to severe. (ii) The crop was sprayed with Endrin (iii) % of white ears, cirphis cater piller, Yield of grain. (iv) (a) 1964—65 (treatments modified). (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2703 Kg/ha. (ii) 481·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	2247	2516	2906	3142

Crop :- Paddy (*Rabi*). **Ref :- A.P. 65(32).**

Site :- Agri. Res. Stn., Maruteru. **Type : 'D'.**

Object :—To reduce the number of sprayings to minimise the cost of spraying.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 1199 Kg/ha. of G.M. of *Sesbania* and 173 Kg/ha. of Super. (ii) Heavy black soil. (iii) 13.12.65/4.1.66. (iv) (a) Puddling with country plough, digging of corners, trimming of bunds and levelling. (b) Transplanting. (c) 33·6 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) SLO—16. (vii) Irrigated. (viii) 1 hand weeding 21 days after planting. (ix) N.A. (x) 29.3.66, 11.4.66.

2. TREATMENTS :

T_0=Control (no spraying), T_1=One spraying in nursery on 27.12.65, one spraying in main field on 18.1.66, T_2=One spraying in nursery on 27.12.65 and two sprayings in the main field on 18.1.66, 2.2.66, T_3=One spraying in nursery on 27.12.65 and three sprayings in the main field on 18.1.66,2, 17.2.66.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 12·8 m.×5·7 m. (b) 12·6 m.×5·6 m. (v) 8 cm.×5 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) As per treatments. (iii) Yield of grain and straw. (iv) (a) 1964—65 (modified). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3348 Kg/ha. (ii) 530·7 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_3	T_2
Av. yield	2558	3542	3533	3757

C.D.=731·3 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62(212), 61(247).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To find out the effects of mechanical removal of Rice Stem borer egg masses in controlling the pest.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4483 Kg/ha. of G.L.+126 Kg/ha. of bone meal for 60 and 1569 Kg/ha. of G.L. of *Sunhemp*+168 Kg/ha. of Super+112 Kg/ha. of N as A/S for 61. (ii) Black soil. (iii) 5.5.60 and 26.5.61. (iv) (a) Puddling twice and spreading clods. (b) Transplanting. (c) 28 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 168 Kg/ha. of Super for 60 and 4483 Kg/ha. of G.L. + 168 Kg/ha. of Super+112 Kg/ha. of A/S. for 61. (vi) MTU—19. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 11.12.60 and 18.12.61.

2. TREATMENTS :

T_0=Control, T_1=Removal of egg masses periodically once in 5 days from the nursery stage to harvest.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 9·1m.×5·2m., 12·2 m.×4·6 m. (b) 8·3 m.×4·6., 11·6 m.×3·8 m., (v) 40 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield. (iv) (a) 1960 to 61. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

60(212)

(i) 1376 Kg/ha. (ii) 172 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av. yield	1331	1421

61(247)

(i) 951 Kg/ha. (ii) 372 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av. yield	884	1017

Crop :- Paddy. **Ref :- A.P. 60(214), 61(249), 62(268).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To study the effect of time of sowing on the degree of infection of Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4700 Kg/ha. of G.L.+168 Kg/ha. of Super+56 Kg/ha. of A/s for 60, N.A. for others. (ii) Black soil. (iii) As per treatments. (iv) (a) Puddling thrice with Country plough. (b) Transplanting. (c) 28 Kg/ha. (d) 20 cm. × 15 cm. (e) 2. (v) 3026 Kg/ha. of G.L. for 60, N.A. for 61, 168 Kg/ha. of Super+56 Kg/ha. of A/S at planting+56 Kg/ha. of A/S after 30 days of planting. (vi) SLO—19. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 25.9.60, 6, 13, 15, 31.10.60 ; 18, 30.9.61, 21.10.61, 16.11.61 ; 18.9.62, 1, 19.10.62, 13.11.62 and 7.12.62.

2. TREATMENTS :

For 60(214)

8 dates of sowing : D_1=3.7.60, D_2=18.7.60, D_3=3.8.60, D_4=18.8.60, D_5=3.9.60, D_6=20.9.60, D_7=6.10.60 and D_8=19.10.60.

For 60(249)

8 dates of sowing : D_1=19.5.61, D_2=3.6.61, D_3=18.6.61, D_4=3.7.61, D_5=18.7.61, D_6=3.8.61, D_7=19.8.61 and D_8=3.9.61.

For 62(268)

8 dates of sowing : D_1=14.6.62, D_2=24.6.62, D_3=13.7.62, D_4=24.7.62, D_5=9.8.62, D_6=24.8.62, D_7=12.9.62 and D_8=15.10.62.

3. DESIGN :

(i) R.B.D. (ii) (a) and (b) N.A. (iv) (a) 9·14 cm. × 5·49 cm. (b) 8·31 cm. × 4·57 cm. (v) 42 cm. × 30 cm. (vi) Yes.

4. GENERAL INFORMATION :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain Yield. (iv) (a) 56 to 62 (dates are different) (b) No. (c) Nil. (v) to (vi) Nil. (vi) and (vii) D_6, D_7 and D_8 plots failed.

5. RESULTS :

60(214)

(i) 1757 hights. (ii) 331·5 Kg/ha. (iii) Treatment difference and highly significant. (iiv) Av yield of grain in Kg/ha.

Treatment :	D_1	D_2	D_3	D_4	D_5
Av. yield	2652	2345	2097	1603	89

61(249)

(i) 315 Kg/ha. (ii) 128·9 Kg/ha. (iii) Treatment differences are highly significan . (iv) Av yield of Kg/ha.

Treatmcnt:	D_1	D_2	D_3	D_4	D_5
Av yield	718	559	133	51	112

C.D.=198·5 Kg/ha.

62(268)

(i) 680 Kg/ha. (ii) 70·9 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment :	D_1	D_2	D_3	D_4	D_5
Av. yield	941	954	830	544	131

C.D.=109·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 60(215), 61(250), 62(268), 63(263).**

Site :- Agri. Res. Stn., Maruteru. **Type 'D'.**

Object :—To study the effect of insecticides in Controlling Stem borer.

1. BASAL CONDITION :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 470·1 Kg/ha. of Grean Leaf, 168 Kg/ha. of Super, 56 Kg/ha of A/S. for 60, N.A. for others. (ii) Black soil. (iii) 15.5.60, 12.6.61, 2.7.62 and 7.6.63. (iv) (a) Puddling 3 times with country plough. (b) Transplanting. (c) 28 Kg/ha. (d) 20 cm.×15 cm. (e) Nil. (v) 2242 Kg/ha. green leaf+16 Kg/ha. Super for 60, 4483 Kg/ha. of grean leaf+168 Kg/ha. of Super +112 Kg/ha. of A/S. for 61, N.A. for 62, and 25 cwt. of F.Y.M.+170·5 Kg/ha. of Super+112Kg/ha.of A/S. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 27.12.60, 23.12.61, 18.12.62, N.A. for 63.

2. TREATMENTS :

9 insecticides treatments : T_0=O (Control), T_1=Parathion 0·1%, T_2=Parathion 0·075%, T_3=Parathion 0·50% T_4=Parathion 0.025%, T_5=Endrin 0·05%, T_6=Endrin 0·04%, T_7=Endrin 0·03%, and T_8=Endrin 0·02%.

No spraying given in Nursery.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A (iii) 4. (iv) 7·6 m.×7·3 m. for 1960, 1961 and 1962, 7·6 m.×7·8 m., for 1963. (b) 6·7 m.×6·6 m. for 60, 61, 62; 7·2 m.×6·9 m. for 63. (v) 46 cm.×36 cm. for 1960, 62, 36 cm.×30 cm. for 1961 and 20 cm.×36 cm. for 1963. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (li) Incidence of Stem borer. (iii) Grain yield and % infestation of Stem borer. (iv) (a) 1960—1963. (b) No. (c) As under 5. Results. (v) Nil. (vi) Continuous rains during July 62 and continuous heavy rains during Oct. 62. There was heavy rainfall during 18 to 24.10.63 and cyclone during the crop period of 63. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results.

(i) 1948 Kg/ha. (ii) 922·0 Kg/ha. (based on 24 d.f. made up of Treatments × years interaction). (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2230	2114	2165	2010	1971	1851	1848	1629	1548

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
Years												
1960	3248	3251	3223	3333	2962	2835	3097	3246	2760	N.S.	3106	376·3
1961	2714	2383	2006	1181	1889	999	766	678	221	**	1426	373·5
1962	936	891	877	1062	919	888	809	717	688	N.S.	865	295·8
1963	2024	2209	2555	2464	2116	2780	2718	2274	2524	N.S.	2396	532·8
Pooled	2230	2184	2165	2010	1971	1851	1848	1729	1548	N.S.	1948	922·0

Incidence of Stem borer.

60(215)

(i) 21·03 degrees. (ii) 2·81 degrees. (iii) Treatment differences are highly significant. (iv) Mean % incidence in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence degrees.	28·87	18·14	19·68	21·79	22·36	18·99	18·01	19·13	22·34

C.D.=4·09 degrees.

61(250)

(i) 51·73 degrees. (ii) 4·76 degrees. (iii) Treatment differences are highly gignificant. (iv) Mean% incidence in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence in degrees.	32·06	40·32	48·94	59·96	44.62	50·02	56.70	61·32	71·60.

C. D.=6·94 degress.

62(268)

(i) 52·60 degrees. (ii) 7·68 degrees. (iii) Treatment differences are not significant. (iv) Mean % incidence in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence in degrees.	45.26	47·50	55·53	54·57	46·03	54·76	52·79	56·79	60·17

Crop :- Paddy. **Ref :- A.P. 60(212), 61(247).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To find out the effect of mechanical removal of Rice Stem borer egg masses in controlling the pest.

1. BASAL CONITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4483 Kg/ha. of G.L.+126 Kg/ha. of B.M. for 60 ; 1569 Kg/ha. of G.L. of *Sunhemp*; 168 Kg/ha. of Super and 112 Kg/ha. of A/S for 61. (ii) Black soil. (iii) 5.5.60/18.7.60 ; 26.5 61/20.7.61. (iv) (a) Puddling twice with country plough and digging of corners and spreading of clods. (b) Transplanting. (c) 28 Kg/ha. (d) 20 c.m. × 15 cm. (e) 2. (v) 168 Kg/ha. of Super ; 4481 Kg/ha. of G.L. of *Sesbamia*, 168 Kg/ha. of Super, 112 Kg/ha. of A/S at planting. (vi)MTU—19. (vii) Irrigated (viii) Hand weeding. (ix) N.A. (x) 11.12.60 ; 18.12.1961.

2. TREATMENTS :

T_0=Control, T_1=Removal of egg masses periodically once in 5 days from the nursery stage to harvest.

3. DESIGN :

Pooled results.

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 9·1 m. × 5·2 m. ; 12·2 m. × 4·6 m. (b) 8·3 m. × 4·6 m. ; 11·6 m. × 3·8 m. (v) 40 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield. (iv) (a) 1960—61. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interactions is present.

5. RESULTS ;

(i) 1163 Kg/ha. (ii) 386·3 Kg/ha. (based on 1 d.f. made up Treatments × years interaction. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatments	T_0	T_1
Av. yield	1152	1174

Individual results.

Treatments	T_0	T_1	Sig.	G.M.	S.E./plot
Years					
1960	1421	1331	N.S.	1376	172.1
1961	884	1017	N.S.	951	371.9
Pooled	1152	1174	N.S.	1163	386.3

Crop :- Paddy. **Ref :- A.P. 60(213), 61(248), 62(267).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To study the effect of time of sowing on the incidence of Rice Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2242 Kg/ha. of green leaf+56 Kg/ha. of A/S+40 C.L./ha. of F.Y.M. for 1960, N.A. for others. (ii) Black soil. (iii) As per treatments. (iv) (a) Puddling twice with country plough. (b) Transplanting. (c) 28 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) 4483 Kg/ha. of C.L. of *Sunhemp* for 60, 168 Kg/ha. of Super+112 Kg/ha. of A/S for 61, 168Kg/ha. of Super for 62. (vi) SLO—19. (vii) Irrigated. (viii) 3 hand weedings. (ix) N.A. (x) N.A for 60 ; 28.4.62, 2, 26, 31.5 62 ; 16, 25.4.63, 3, 14.5.63 and 5.6.63 for 62.

2. TREATMENTS :

5 dates of planting : 60(213) : D_1=11.1.61, D_2=25.1.61, D_3=7.2.61, D_4=22.2.61 and D_5=15.3.61.
61(248) : D_1=10.1.62, D_2=24.1. 62, D_3=7.2.62, D_4=22.2.62 and D_5=13.3.62.
62(267) : 18.1.63, D_2=30.1.63, D_3=13.2.63, D_4=28.2.63 and D_5=15.3.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 12·2 m.×4·6 m ; 13·7 m.×3·7 m. ; 9·1 m.×6·1 m. (b) 11·6 m.×4 0 m. ; 13·1 m.×3·1 m. ; 8·5 m.×5·5 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield and infestation of Stem borer. (iv) (a) 1960 to 62 (dates modified). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Grain yield

60(213)

(i) 1707 Kg/ha. (ii) 492·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	1259	1321	2179	2027	1748

61(248)

(i) 639 Kg/ha. (ii) 132·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	106	344	1513	998	234

C.D.=203·9 Kg/ha.

62(267)

(i) 959 Kg/ha. (ii) 294·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	466	1432	1569	1216	111

C.D.=453·9 Kg/ha.

Stem borer incidence

60(213)

(i) 30·2 degrees. (ii) 2·4 degrees. (iii) Treatment differences are highly significant. (iv) Mean% incidence in degrees.

Treatment	D_1	D_2	D_3	D_4	D_5
Mean % incidence in degrees	66·0	55·1	12·5	11·8	5·7

C.D.=3·8 degrees

61(248)

(i) 31·1 degrees. (ii) 3·4 degrees. (iii) Treatment differences are highly significant. (iv) Mean%infestation in degrees.

Treatment	D_1	D_2	D_3	D_4	D_5
Mean % incidence in degrees	64·3	48·5	16·3	13·5	13·0

C.D.=5·3 degrees.

62(267)

(i) 15·5 degrees. (ii) 2·3 degrees. (iii) Treatment differences are highly significant. (iv) Mean%incidence in degrees.

Treatment	D_1	D_2	D_3	D_4	D_5
Mean % incidence in degrees	31·9	26·3	7·1	4·1	8·3

C.D.=3·6 degrees

———

Crop :- Paddy. **Ref :- A.P. 60(210).**

Site :- Agri. Res. Stn., Maruteru. **Type :- 'D'.**

Object :—To study the effect of insecticides in controlling Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2242 to 4483 Kg/ha. of G.L., 168 Kg/ha. of Super. (ii) Black soil. (iii) 13.1.60/19.2.60. (iv) (a) Puddling 3 times with country plough, trimming of bunds, digging of corners and spreading clods. (b) Transplanting. (c) 28 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 5995 Kg/ha. of G.L. of *Sunhemp*, 168 Kg/ha. of Super, 56 Kg/ha. of A/S before planting. (vi) SLO—19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 19.5.60.

2. TREATMENTS :

Same as in expt. no. 60(227) on page .

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 12·2 m.×4·6 m. (b) 11·4 m.×4·0 m. (v) 42 cm.×30 cm. (vi) Yes.

4, GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) Grain yield. (iv) (a) 1956—1960. (b) No. (v) Nil. (vi) Nil. (vii) Since sub-plot treatmentss are same for each main plot treatments therefore the expt. is analysed as R.B.D. separalety for each main plot treatment

5. RESULTS :

Endrex.

(i) 2235 Kg/ha. (ii) 521·9 Kg/ha. (iii) Treatment difference are not significant. (vi) Av. yield of grain in Kg/ha.

Treatment :	E_0	E_1	E_2	E_3	E_4
Av. yield :	2032	2395	2321	2144	2284

Folidol

(i) 2044 Kg/ha. (ii) 289·1 Kg/ha. (iii) Treatment differences are not significant. Av. yield of grain in Kg/ha.

Treatment :	F_0	F_1	F_2	F_3	F_4
Av. yield :	1938	2189	2105	2027	1962

———

Crop :- Paddy. **Ref :- 61(251), 62(270), 63(264).**

Site :- Agri. Res. Stn., Maruteru. **Type 'D'.**

Object :—To study the efficacy of different chemicals in controlling Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy - Paddy. (b) Paddy. (c) 4483 Kg/ha. of G.L. of *Sesbania*, 168 Kg/ha. of Super, 56 Kg/ha. of A/S for 61 ; Nil for others. (ii) Black soil. (iii) 10.1.61/28.2.61 ; 10.1.62/15.2.62 ; 17.1.63/22.2.63. (iv) (a) Puddling three times with country plough, trimming of bunds, digging corners and spreading of clods. (b) Transplanting. (c) 28 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 4483 Kg/ha. of G.L. of *Sunhemp*, 168 Kg/ha. of Super+56 Kg/ha. of A/S before planting for 61 ; 168 Kg/ha of Super, 56 Kg/ha. of A/S for 62 ; 168 Kg/ha. of Super+112 Kg/ha. of A/S for 63. (vi) SLO -19. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 19.5.61 ; 24.5.62 ; 9.5.63.

2. TREATMENTS :

9 chemical treatments : T_0=Control, T_1=0·1%, T_2=0·075%, T_3=0·05%, T_4=0·025% of Parathion, T_5=0·05%, T_6=0·04%, T_7=0·03% and T_8=0·02% of Endrin.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 8·2 m.×7·9 m. ; 7·9 m.×7·5 m. ; 7·6 m.×7·0 m. (b) 7·6 m.×7·3 m. ; 7·2 m.×6·9 m. ; 7·0 m.×6·5 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) % infestation of stem borer and grain yield. (iv) (a)1961—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) N.A. (vii) Error variances are homogeneous and Treatments×years interaction is absent in the case of grain yield.

5. RESULTS :

Grain yield

Pooled result.

(i) 1867 Kg/ha. (ii) 287·2 Kg/ha. (based on 88 d.f. made up of pooled error and interaction of Treatments×years. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_4	T_5	T_6	T_7	T_8	
Av. yield	1905	1914	1833	1703	2006	2040	1846	1851	1603

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
Years												
1961	1318	1685	1644	1380	1349	1721	1621	1578	1565	N.S.	1540	313.7
1962	1672	1431	1409	1324	1727	1686	1593	1518	1065	N.S.	1492	276.5
1963	2724	2627	2445	2406	2941	2713	2623	2456	2178	*	2561	222.8
Pooled	1905	1914	1833	1703	2006	2040	1946	1851	1603	*	1887	287.2

Incidence of Stem borer

62(270)

(i) 16·9 Kg/ha. (ii) 2·2 Kg/ha. (iii) Treatment differences are significant. (iv) Mean %incidence in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence in degrees	15·69	17·04	17·34	17·09	15·03	14·80	16·74	16·96	21·59

C.D.=3·16 degrees.

63(264)

(i) 15·00 degrees. (ii) 2·36 degrees. (iii) Treatment differences are significant. (iv) Mean % incidence in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean % incidence in degrees	13·42	14·90	13·93	16·36	11·79	13·93	16·83	16·06	17·77

C.D=3·45 degrees.

Crop :- Paddy (*Kharif*). **Ref :- AP. 65(69)**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'D'.**

Object : –To study the control of Paddy Blast by anti biotics.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy nursery. (c) Nil. (ii) Sandy loam. (iii) 3.9.65/12.10.65. (iv) (a) Ploughing three with country plough and puddling twice. (b) Transplanting. (c) 37·0 kg/ha. (d) 15cm×10cm. (e) 2. (v) 22·42 Kg/ha of N as F.Y.M., 44·8 Kg/ha of N as AlS, 56·0 Kg/ha of P_2O_5 as Super as basal on 12·10 65 ; 22·4 Kg/ha.of N as top dressing on 31·10·65 and 22·4 Kg/ha. of N as top dressing on 10.11.65. (vi) Co-13. (vii) Irrigated. (viii) Hand weeding twice. (ix) N.A. (x) 7.1.66.

2. TREATMENTS :

4 antibiotic treatments : T_0=Control, T_1=Bordeux mixture 1%, T_2=C.R.R.I. Anti biotic and T_3=Aureo fungin.

3 sprayings at an interval of 10 days at tillering phase and two at an interval of 5 days at the time of flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 7·32 m.×6·10 m. (v) Nil (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight incidence of Blast in control plots. (iii) Grain yield. (iv) (a) 1965—N.A. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 684 Kg/ha. (ii) 84·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	622	740	723	650

Crop :- Paddy (*Kharif*). **Ref :- A.P. 65(68).**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'D'.**

Object :—To fix up the best fungicide for control of Blast.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Mono Ammonium Sulphate to supply 7·8 Kg/ha. of N, 33·6 Kg/ha of P_2O_5 and 25·8 Kg/ha. of N as A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 17.7.65/27.9.65. (vi) Ploughing twice with country plough and puddling twice. (b) Transplanting. (c) 37·0 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 50·4 Kg/ha. of P_2O_5 as Super ; 168 Kg/ha. of N as A/S as basal on 27.9.65 and 28·0 Kg/ha. of N as A/S as top dressing on 20.10.65. (vi) BCP-I. (vii) Irrigated. (viii) Working rotary weeder. (ix) N.A. (x) 3.2.66.

2. TREAMENTS :

4 fungicidal treatments : T_0=Control T_1=Bordeaux mixture 1% T_2=Ceresan at 2·2 Kg/ha. and T_3=Blitox 0·5%

Spraying and dusting of chemicals on nursery was done on 2.9.65 and spraying as per schedule on 15.12.65 and 4.1.66.

DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of Blast. (iii) Grain yield. (iv) (a) 1965—N.A. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17·96 Kg/ha. (ii) 687·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield.	1722	1973	1812	1677

Crop :- Paddy. **Ref :- A.P. 62(230).**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'D'.**

Object :—To fix the best fungicide for control of Blast.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (ii) Sandy loam. (iii) 22.1.63/11, 13. 3.63. (iv) (a) Dry ploughing twice and puddling twice. (b) Transplanting. (c) 49·4 Ka/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings, working push hoe at fortnightly intervals upto short blade stage and gap filling. (ix) 1 cm. (x) 28.5.63.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=MTU.—9 and V_2=6522.

(2) 4 fungicidal treatments : To—control, T_1,=Bordeaux mixture, T_2=Blitox, T_3=Ceresan at 16-8 Kg/ha. T_4=Ceresan at 22·4 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×3·0 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satistactory. (ii) Incidence of Blast. (iii) Grain yield. (iv) (a) 1960—64 (modified). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1735 Kg/ha. (ii) 721·3 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	Mean
V_1	1512	1671	1573	1524	1624	1581
V_2	2111	1931	1791	2135	1476	1889
Mean	1812	1801	1682	1830	1550	1735

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(207).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'D'.**

Object :— To study the efficacy of fungicides in controlling *Piricularia*

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 24·7 C.L./ha. of F.Y.M., 22·4 Kg/ha. of N as A/S, 33·6 Kg/ha. of P_2O_5 as Super. (ii) Sandy loam. (iii) 1.8.61/11.9.61. (iv) (a) Dry ploughing twice, puddling twice, working with wett and puddler twice, trimming of bunds, digging of corners and removing grass stubbles. (b) Transplanting. (c) 37·0 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 4483 to 5604 Kg/ha. of G.L. puddled in *situ* 224·1 Kg/ha. of Super, 11·2 Kg/ha. of N as A/S as basal. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and rouging. (ix) 84 cm. (x) 20, 30.1.62.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 5 fungicidal treatments : T_0=Control, T_1=Bordeaux mixture, T_2=Blitox, T_3=Hexasan and T_4=Ceresan.

(2) 2 varieties : V_1=5352 and V_2=BCP—1

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 6·1 m.×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Leaf roller was noticed in a less severe form BHC was dusted. Stem borer was also noticed. Endrin was sprayed. (iii) Grain yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6194 Kg/ha. (ii) 1226·9 Kg/ha. (iii) Main effect of V alone is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	Mean
V_1	5616	5702	5667	6071	5281	5667
V_2	6222	7064	7147	7802	5364	6700
Mean	5919	6383	6407	6936	5322	6194

C.D. for V marginal means=796·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62(242), 63(239).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'V'.**

Object :— To study the efficacy fungicides in controlling *Piricularia*.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 30.7.62/7, 8.9.62 ; 29.7.63/14.9.63. (iv) (a) Dry ploughing twice and puddling twice. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×15 cm. (e) 2. (v) 24·7 C.L./ha. of F.Y.M.+22·4 Kg/ha. of N as A/S, 33.6 Kg/ha. of P_2O_5 as Super as basal dressing+44·8 Kg/ha. of A/S as top dressing in two equal doses one month after planting and 2nd dose one month before flowering ; Nil for others. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and gap filling. (ix) 118·4 cm ; 75·9 cm. (x) 2.2.63 ; 24.1.64.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 5 fungicidal treatments : T_0=Control, T_1=Bordeaux mixture, T_2=Blitox 0·5% (28gm. in 9·1 litres of water), T_3=Ceresan 16·8 Kg/ha. and T_4=Ceresan at 22·4 Kg/ha.

(2) 2 varieties : V_1=5352 and V_2=BCP—1.

Chemicals were sprayed thrice during the life period of crop ie a week before transplanting, 20 days before flowering and 15 days after flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4 for 62; 3 for 63. (iv) (a) N.A. (b) 6·1 m.×3·1 m. for 62; 4·6 m.×3·1 m. for 63. (v) 40 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962-63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 2163 Kg/ha. (ii) 313·5 Kg/ha. (based on 54 d.f. made up of pooled error and Treatments×years interaction. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	Mean
V_1	1965	1862	2174	1831	2079	1982
V_2	2428	2381	2473	2192	2248	2344
Mean	2196	2122	2323	2012	2163	2163

C.D. for V marginal means=151·0 Kg/ha.

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	Sing.	V_1	V_2
Years								
1962	1934	2116	2254	2140	2078	**	1858	2212
1963	2548	2129	2416	2248	2332	**	2148	2521
Pooled	2196	2122	2323	2012	2163	**	1982	2344

Sig.	G.M.	S.E./plot
N.S.	2335	50.8
N.S.	2335	363.7
N.S.	2163	313.5

Crop :- Paddy. **Ref :- A.P. 64(232).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'D'.**

Object :— To fix the best fungicide for the control of Blast.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 29.7.64/22.9.64. (iv) (a) Dry ploughing 2 to 3 times, puddling with country plough, working wet land puddler. (b) Transplanting. (c) 37·0 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding once, push hoe working twice, and gap filling. (ix) 67·9 cm. (x) 4.2.65.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 2 varieties : V_1=5352 and V_2=BCP—1.

(2) 4 fungicidal treatments : T_0=Control, T_1=Bordeaux mixture 1%, T_2=Blitox 0·5% and T_3=Ceresan at 2·2 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 10·7 m.×3·7 m. (b) 10·0 m.×3·4 m. (v) 30 cm.×15 cm. (vi) Nil.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Blast. (iii) Grain yield. (iv) (a) 1964 only (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1504 Kg/ha. (ii) 246·8 Kg/ha. (iii) None of the effects is significant, (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	Mean
V_1	1483	1631	1549	1668	1583
V_2	1290	1520	1349	1542	1425
Mean	1386	1576	1449	1605	1504

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(98).**

Site :- Rice. Res. Sub-Stn., Pulla. **Type -:' D'.**

Object :— To find out the effect of spraying Endrin on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. (ii) Clay loam. (iii) 15.1.64/12.2.64. (iv) (a) 3 puddlings with country plough, removing of weeds, spreading of clods, trimming of bunds and digging of corners. (b) Transplanting. (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (iv) Nil. (x) 29.4.64.

2. TREATMENTS :

Main-plot treatments :

4 times of spraying Endrin : T_0=No spraying, T_1=Spraying 15 days after planting, T_2=Spraying 15 and 30 days after planting and T_3=Spraying 15, 30 and 45 days after planting.

Sub-plot treatments :

3 varieties : V_1=PLA—1, T_2=MTU—9 and V_3=MTU—15.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot. (b) 23·3 m.×6·1 m. (iii) 4. (iv) (a) and (b) 6·1 m.×1·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Pest and diseases—Nil ; Control measures—As per treatments. (iii) Yield of grain and straw. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2744 Kg/ha. (ii) (a) 275·7 Kg/ha. (b) 234·4 Kg/ha. (iii) Main effect of V and interaction T×V are highly significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	Mean
V_1	3337	3458	3127	2892	3204
V_2	2287	1968	2474	2312	2260
V_3	3097	2784	2466	2730	2769
Mean	2907	2737	2689	2645	2744

C.D: for V marginal means=171·1 Kg/ha.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(97), 65(14).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'D'.**

Object:—To study the effect of 2, 4—D Fernoxone on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha of K_2O as Mur. Pot. for 64 ; N.A. for 65. (ii) Clay loam. (iii) 3.1.64/12.2.64 ; 4.1.65/13.2.65. (iv) (a) 3 puddlings with country plough, removing of weeds, spreading of clods, trimming of bunds and digging of corners for 64 ; 2 puddlings with country plough, removing of weeds, spreading of clods and levelling for 65. (b) Transplanting. (c) 49·4 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. for 64 ; 22·4 Kg/ha. of N as C/A/N as basal dressing for 65. (vi) PLA—1. (vii) Irrigated. (viii) As per treatments. (ix) Nil ; N.A. (x) 28.4.64 ; 19.5.65.

2. TREATMENTS:

5 spacing treatments : T_0=Control, T_1=Spacing 2, 4—D Fernoxone 15 days before planting, T_2=Spacing 2, 4—D Fernoxone 15 days after planting, T_3=Spacing 2, 4—D Fernoxone 30 days after planting, T_4=Hand weeding

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) 9·5 m.×6·1 m. ; N.A. (iii) 4. (iv) (a) 6·1 m.×1·5 m. ; 6·4 m.×1·7 m. (b) 6·1 m.×1·5 m. (v) Nil. ; 15 cm.× 10 cm. (vi) Yes.

4. GENERAL:

(i) Normal for 64 ; satisfactory, but there was scroching effect on the tillage and set back in growth for 65. (ii) Nil. (iii) Yield of grain. (iv) (a) 1964—contd. (b) No. (c) As under 5. Results. (v) to (vii) Nil.

5. RESULTS:

Pooled results.

(i) 2368 Kg/ha. (ii) 1039·5 Kg/ha. (based on 4 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Individual results.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2653	2689	1993	2462	2045

Treatments	M_0	M_1	M_2	M_3	M_4	Sig.	G.M.	S.E./plot
Years								
1964	3532	3708	2357	3380	3434	**	3282	165·7
1965	655	1774	1670	1628	1544	**	1454	200·8
Pooled	2653	2689	1993	2462	2045	N.S.	2368	1039·5

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(173).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'D'.**

Object :—To find out the effect with Endrin spraying on the flowering duration of the popular varieties.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 31.12.64/8.2.65. (iv) (a) 2 puddlings with country plough, removing weeds and spreading of clods and levelling. (b) Transplanting. (c) 49 Kg/ha. (d) 15 cm.×10 cm. (e) 2. (v) 22·4 Kg/ha. of N as C/A/N. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) 1 cm. (x) 19.5.65.

2. TREATMENTS :

Same as in expt. no. 64(98) on page 308.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 6·4 m.×1·7 m. (b) 6·1 m.×1·5 m. (v) 15 cm.×10 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, height measurements and grain yield. (iv) (a) 1963—64. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1921 Kg/ha. (ii) (a) 374·6 Kg/ha. (b) 358·1 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_0	S_1	S_2	S_3	Mean
V_1	2005	2247	1889	2562	2176
V_2	1760	1612	1596	1878	1712
V_3	1938	1857	1789	1924	1886
Mean	1901	1905	1758	2121	1921

C.D. for V marginal means=261·3 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 60(227).**

Site :- Rice Res. Sub-Stn., Pulla. **Type :- 'D'.**

Object :—To study the efficacy of different concentrations of chemicals in reducing Stem borer infestation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50 Kg/ha. of N+34 Kg/ha. of P_2O_5+34 Kg/ha. of K_2O. (ii) Clay loam. (iii) 9.1.60/11.2.60. (iv) (a) 3 puddlings with country plough, removing weeds, spreading of clods trimming bunds, and digging corners. (b) Transplanting. (c) 49 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 45 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Mur. pot. (vi) SLO—19. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 10.5.60.

2. TREATMENTS:

Main-plot treatments

2 chemicals : M_1=Folidol and M_2=Endrin.

Sub-plot treatments

5 concentrations : F_0=Folidol 0·0 % spray, E_0=Endrin 0·0 % spray.
F_1=Folidol 0·1 % spray, E_1=Endrin 0·05 % spray.
F_2=Folidol 0·075 % spray, E_2=Endria 0·04 % spray.
F_3=Folidol 0·05 % spray, E_3=Endrin 0·03 % spray.
F_4=Folidol 0·025 % spray, E_4=Endrin 0·02 % spray.

Dates of spraying in the nursery is 20.1.60 and 6.2.60.
Dates of spraying in the planting is 15, 21.3.60.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 7·5 m.×7·5 m. (v) N.A.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) % infestation of Stem borer. (iv) (a) 1956—60. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Sub-plots treatments are not sameTherefore the experiment is analysed as R.B.D. seperately for each main-plot treatments.

5. RESULTS :

Folidol

(i) 19·3 degrees. (ii) 3·1 degrees. (iii) Treatments differences are not significant. (iv) Mean % infestation in degrees.

Treatment	F_0	F_1	F_2	F_3	F_4
Mean infestation % in degrees	22·3	18·4	17·5	19·0	19·1

Endrin

(i) 19·8 degrees. (ii) 2·4 degrees. (iii) Treatment differences are highly significant. (iv) Av.% incidence in degrees.

Treatment	E_0	E_1	E_2	E_3	E_4
Mean % incidence in degrees	24·4	17·8	17·8	19·6	19·1

C D.=2·9 degrses.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 64(220), 65(15).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To study the effect of spraying chemicals in reducing the Rice Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 50 Kg/ha. of N as A/S+25 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 16.6.64/24.7.64,/16.6.65/24.7.65. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 33·5 Kg/ha. N as A/S+34 Kg/ha. of P_2O_5 as Super at the time of transplanting and 33·5 Kg/ha. of N after 45 days. (vi) RDR—4 (long duration). (vii) Irrigated. (viii) Hand weeding and hoeing. (ix) N.A. (x) 1.12.64, 25.11.65.

2. TREATMENTS :

9 chemical spraying treatments : T_0=Water, T_1=Sevin 0·15 %, T_2=Telodrin 0·05 %, T_3=Endrin 0·1 % T_4=Arthio 0·1 %, T_5=Rogor 0·1 %, T_6=Endrrn 0·04 %, T_7=Thiodan 0·05 % and T_8=Dimecion 0·1 %

454 to 680 litres/ha. were sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·3 m.×6·3 m. (v) 60 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, % of white ear heads and grain yield. (iv) (a) 1964—65. 1965—66 *Kharif*. (b) No. (c) Nil. (v) Nil. (vi) Warangal. (vii) Yield for the treatment T_4 is N.A. for 1964.

5. RESULTS :

64(220)

(i) 4008 Kg/ha. (ii) 514 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	3925	4051	4270	4145	N.A.	3661	4145	4176	3693

65(15).

% of white ear heads at harvest.

(i) 4·9°. (ii) 2·0.° (iii) Treatment differences are not significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. incidence in degrees	5·9	5·6	4·8	5·0	6·0	5·4	2·2	4·6	4·3

Grain yield

(i) 3949 Kg/ha. (ii) 336·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	3829	4331	3882	3776	3988	3856	4093	3988	3803

Crop :- Paddy. **Ref :- A.P. 63(219).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To study the effect of spraying chemicals in reducing Rice stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 67 Kg/ha. of N as A/S+34 Kg/ha. P_2O_5 as Super. (ii) Black soil. (iii) 20.12.63/23.1.64. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 50 Kg/ha. of N as A/s+25 Kg/ha. of P_2O_5 as Super at the last puddle. (vi) RDR—7 (short duration). (vii) Irrigated. (vii) Hand weeding and hoeing. (ix) N.A. (x) 22.4.64 to 5.5.64.

2. TREATMENTS :

9 spraying treatments : T_0=N_0 spray, T_1=carboryl (sevin) a.c. 0·15% ai, T_2=Telodrin at ·05% a,i T_3=Thiometon (Ekatin) at 0·10% ae, T_4=Formothion (Anthio) at 0·10% ac., T_5=Rogor at 0·10% ai., T_6=Endrin at 0·04% T_7=Thiodan ·05%, and T_8=Water spray.

Dates of spray : 18.1.64 ana 6.2.64.

3. DESIGN:

(i) R.B.D. (ii) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9m.×6·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, % white ear heads and grain yield. (iv) (a) 63—64 (Treatments modified in 1964). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

% white ear heads at harvest.

(i) 25·58 degrees. (ii) 7·26 degrees. (iii) Treatment differences are not significant. (iv) Av. % of white ear heads given in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	32·18	22·18	24·62	27·85	27·62	28·38	20·38	25·00	21·50

Grain yield

(i) 586 Kg/ha. (ii) 212 Kg/ha. (iii) Treatment differences are highly significant. (vi) Av. grain yield in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	229	267	951	312	519	193	1373	1136	290

C.D.=309·4 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 64(219).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type 'D'**

Object :—To study the effect of spraying chemicals in reducing Rice Stem borer incidence.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 16.12.64/27, 28.1.65. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 (v) 40 Kg/ha. of N as A/S+27 Kg/ha. of P_2O_5 as Super +27 Kg/ha. of K_2O as Mur. Pot.+4497 Kg/ha. of G.L./ha. applied at last puddle. (vi) RDR—7 (short duration). (vii) Irrigated. (viii) Hand weeding and hoeing. (ix) N.A. (x) 3.5.65.

2. TREATMENTS:

9 spraying treatments: T_0=water, T_1=Sevin at 0·15%, T_2=Telodrin at 0·5% T_3=Ekatin at 0·10% T_4=Anthio at 0·1% T_5=Rogor at 0·10% T_6=Endrin at 0·04% T_7=Thiodan 0·05%, and T_8=Dimecron at 0·1%.

Dates of sprayings: 22.1.65, 11.2.65. 100 to 150 gallons were sprayed/ha.

3. DESIGN:

(i) R.B.D. (ii) 9 (b) N.A. (iii) 4. (iv) (a) 7·5 cm.×7·5 cm. (b) 6·9 cm×6·9 cm (v) 31 cm×31 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (ii) Tiller counts, % white ear heads, grain yield. (iv) (a) 63—64 (Treatments modified in 64) (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

% white ear heads at harvest.

(i) 7·3 degrees (ii) 3·9 degrees. (iii) Treatment differences are not significant. (iv) Av. % of white ear heads in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestoin.	9·0	10·1	5·0	9·5	8·9	6·9	4·6	5·5	6·0

Grain yield.

(i) 864 Kg/ha. (ii) 41 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. grain yield in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield.	304	819	2165	317	211	317	1637	1584	423

C.D.=59·8 Kg/ha.

Crop :- Paddy (Rabi) **Ref :- A.P. 60(128), 61(140), 62(229).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type 'D'**

Object: —To study the chemical control measures of Paddy Stem-borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. for 60 ; 67·2 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for others. (ii) Black soil. (iii) 18.12.60/30, 31.1.61 ; 19.12.61/27, 29.1.62 ; 20.12.62/27 to 29.1.63. (iv) (a) Ploughing+3 puddlings. (b) Transplanting. (c) 34 Kg/ha. for 60 ; 37 Kg/ha. for others. (d) 15 cm.×15 cm, (e) 2 to 3 (v) 50·4 Kg/ha. of N as A/S+25·2 Kg/ha. of P_2O_5 as Super. (vii) RDR—7 (early) (vii) Irrigated. (viii) Hand weeding. (ix) 1 cm ; ×16 cm ; N.A. (x) 4 to 9, 20.5.61 ; 3, 12,5.62 ; 14, 20.5.63.

2. TREATMENTS :

9 sraying treatments : T_0=Control, T_1=0·1 %, T_2=0·075%, T_3=0·05%, T_4=0·025% of Folidol-E-605, T_5=0·05%, T_6=0·04%, T_7=0·03% and T_8=0·02% of Endrix shell.

2 spraying were done in nursery and 2 spraying after transplanting. 4·546 c.c./gallon of water was sprayed at 100 to 150 gallons/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) White earhead count at harvest and grain yield. (iv) (a) 1960-62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present in both the cases.

5. RESULTS :

Pooled results.

Grain yield

(i) 949 Kg/ha. (ii) 713·0 Kg/ha. (based on 16 d.f. made up of Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	419	647	536	507	468	1540	1548	1524	1349

C.D.=616·9 Kg/ha.

Infestation of white earheads

(i) 17·46 degrees. (ii) 6·62 degrees. (based on 16 d.f. made up of Treatments×years interaction.) (iii) Treatment differences are significant. (iv) Mean % infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	18·36	18·46	17·43	23·83	13·80	12·26	14·53	17·83	20·66

C.D.=5·72 degrees.

Individual results.

Grain yield

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
years												
1960	238	436	704	387	322	2231	2172	2243	1695	**	1159	299
1961	787	1073	572	811	739	1384	1646	1456	1599	**	1119	298
1962	231	432	333	324	342	1005	825	873	753	**	569	156
Pooled	419	647	536	507	468	1540	1548	1524	1349	**	949	713·0

Infestation of white earheads in degrees

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
years												
1960	20·11	17·67	18·61	25·36	10·34	12·52	15·51	21·86	17·62	*	17·73	5·85
1961	15·76	16·44	14·46	24·72	10·58	13·99	11·57	16·94	24·77	**	16·70	3·31
1962	18·20	21·30	19·20	21·40	20·50	10·29	16·50	14·60	19·60	*	17·93	3·76
Pooled	18·36	18 46	17·43	23·83	23·80	12·26	14·53	17·83	20·66	*	17·46	6·62

Crop :- Paddy. **Ref:- A.P. 60(143), 61(137), 62(160), 63(218).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :— To study the effect of different concentrations of Folidol and Endrex shell on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50 Kg/ha. of N as A/S+25 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 19.6.60/26, 27.7.60 ; 18.6.61/24, 25,7.61 ; 16.6.62/23, 24.7.62 and 16.6.63/23.7.63. (iv) (a) Dry ploughing and 2 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. for 61, 62 ; 20 cm.×20 cm. for 60, 63. (e) 2 to 3. (v) 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super applied at the last puddle. (vi) RDR-4. (vii) Irrigated. (viii) Hand weeding. (ix) 48 cm. ; 105 cm. ; 127 cm. N.A. (x) 27.11.60 ; 5.12.61 ; 3.12.62 ; 2.12.63.

2. TREATMENTS :

T_0=Control, T_1=0·10%, T_2=0·075%, T_3=0·050%, and T_4=0·025% of Folidol E—605, T_5=0·05%, T_6=0·4% T_7=0·04% and T_8=0·02% of Endrex shell.
Intensity and quantity sprayec N.A.

3. DESIGN ;

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Rice Stem borer, control measures as per treatments. (iii) Grain yield and % white ear heads. (iv) (a) 1960-63. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances for yield character is heterogeneous and Treatments×years interaction is present. Error variances for infestation are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :
Pooled results.
(i) 2440 Kg/ha. (ii) 565·9 Kg/ha. (based on 24 d.f. made up of Treatments×years interaction). (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2035	2344	2201	2419	2195	2841	2717	2661	2548

C.D.=413·0 Kg/ha.

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
years 1960	1063	1553	1691	1692	1609	2663	2579	2357	2330
1961	2795	2507	2387	2866	2724	2842	2700	2676	2508
1962	2357	2571	2404	2476	2214	2771	2476	2523	2476
1663	1928	2746	2324	2641	2234	3090	3116	3090	2878
Pooled	2035	2344	2201	2419	2195	2841	2717	2661	2548

Sig.	G.M.	S.E./plot
**	1949	389·7
N.S.	2667	341·0
N.S.	2474	252·0
**	2672	232·0
**	2440	565·9

60(143)

Infestation of white ear heads at harvest in degrees.

(i) 19·52 degrees. (ii) 3·08 degrees. (iii)) Treatment differences are significant. (iv) Av. % white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean angle	24·1	19·8	18·1	20·0	21·7	14·6	17·1	18·1	22·3

C.D.=4·50 degrees.

Dead hearts in degrees.

(i) 10·39 degrees. (ii) 5·83 degrees. (iii) Treatment differences are significant. (iv) Av. % white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	10·95	9·13	7·60	10·00	13·75	18·60	7·32	5·85	10·35

C.D.=8·50 degrees.

62(160)

White ear heads in degrees.

(i) 11·91 degrees. (ii) 2·47 degrees. (iii) Treatment differences are significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	14·85	11·67	11·42	12·35	14·46	8·66	12·00	9·30	12·47

C.D.=3·61 degrees.

63(218)

(i) 18·51 degrees. (ii) 2·70 degrees. (iii) Treatment differences are highly significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	28·90	17·15	18·35	17·85	22·72	13·25	14·35	14·60	19·45

C.D.=3·94 degrees.

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(129), 61(139).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :— To study the effect of mechanical removal of egg masses on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. for 60 ; 67·2 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for 63. (ii) Black soil. (iii) 20.12.60/1.2 61 ; 20.12.61/30, 31.1.62. (iv) (a) Ploughing and 2 puddlings. (b) Transplanting. (c) 34 Kg/ha. for 60 ; 34 Kg/ha. for 61. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 50·4 Kg/ha. of N as A/S+25·2 Kg/ha. of P_2O_5 as Super. (vi) RDR-7 (early) for 60 ; HR-19 (medium) for 61. (vii) Irrigated. (viii) 1 hand weeding. (ix) 1 cm. ; 16 cm. (x) 12, 23.5.61 ; 17.5.62.

2. TREATMENTS :

2 cultural treatments : T_0=Control and T_1=Egg masses found and removed.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) At planting, 100 seedlings in nursery uprooted to study the infestation of Stem borer. (iii) White earhead percentage at harvest and grain yield. (iv) (a) 1960-61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent in both the cases.

5. RESULTS :

Pooled results.

1. **Grain yield**

(i) 656 Kg/ha. (ii) 121·4 Kg/ha. (based on 23 d.f. made up of Treatments × years interaction and pooled error). (iii) Treatment differences is highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av: yield	596	716

C.D. at 5%=72·5 Kg/ha.

2. **Infestation of earheads**

(i) 17·82 degrees. (ii) 2·63 degrees. (based on 23 d.f. made up of pooled error and Treatments × years) interaction. (iii) Treatment difference is not significant. (iv) Av. infestation of earheads in degrees.

Treatment	T_0	T_1
Mean infestation	17·10	18·55

Individual results

1. **Grain yield**

Treatments	T_0	T_1	Sig.	G.M.	S.E./plot
years					
1960	436	549	*	492	121
1961	755	883	*	819	127
Pooled	596	716	**	656	121·4

2. **Infestation of earheads**

Treatments	T_0	T_1	Sig.	G.M.	S.E./plot
Years					
1960	18·35	18·70	N.S.	18·52	2·61
1961	17·75	18·40	*	17·08	2·46
Pooled	17·10	18.55	N.S.	17·80	2 63

Crop :- Paddy (*Kharif*). **Ref :- A.P. 61(138).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :— To study the effect of mechanical removal of egg masses on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S+25·2 Kg/ha. of P_2O_5 as Super. (ii) Balck soil. (iii) 17.6.61/23.7.61. (iv) (a) One dry ploughing and 3 puddlings. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 15 cm. (e) 2 to 3. (v) 67·2 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super. (vi) RDR-4 (late). (vii) Irrigated. (viii) 1 hand weeding. (ix) 105 cm. (x) 2.12.61.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 60(129) on, page 317.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer at planting by uprooting 100 seedlings at random in nursery and examined them for infestation. Dead hearts production during growth. (iii) Yield of grain. (iv) (a) 1960-61. (b) No. (c) Nil. (v) to (vii) Nil.

5 RESULTS :

Grain yield

(i) 2592 Kg/ha. (ii) 169·0 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1
Av. yield	2594	2589

Infestation of dead hearts

(i) 10·34 degrees. (ii) 2·99 degrees. (iii) Treatment difference is not significant. (iv) Mean % infestation in degrees.

Treatment	T_0	T_1
Mean infestation in degrees	10·01	10·67

Crop :- Paddy (*Rabi*). **Ref :- A.P. 60(130).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To determine the most suitable period of sowing in the two crop seasons for short duration variety with a view to reduce Shoot borer infestation.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S and 25·2 Kg/ha. of P_2O_5 as Super. (ii) Clay loams. (iii) As per treatments. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) 67·2 Kg/ha. of N as A/S + 33·6 Kg/ha of P_2O_5 as Super, (vi) RDR—7 (short). (vii) Irrigated. (viii) Hand weeding. (ix) 67 cm. (x) 24.9.60, 5 and 17.10.60, 8.11.60, 2 and 21.12.60, 7 and 19,1.61.

2. TREATMENTS

8 dates of sowing/transplanting : D_1=22,5.60/22.6.60, D_2=8.6.60/7.7.60, D_3=26.6.60/22.7.60, D_4=7.7.60/6.8.60, D_5=22.7.60/22.8.60, D_6=7.8.60/7.9.60, D_7=22.8.60/22.9.60 and D_8=7.9.60/7.10.60.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (lv) (a) 7·5 m. × 7·5 m. (b) 6 9 m. × 6·9 m. (v) 30 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Dead heart counts, white earhead count and yield of grain. (iv) (a) 59 to 62. treatments modified every year. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1874 Kg/ha. (ii) 462 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
Av. yield	2240	2303	1514	2060	2805	2190	1246	631

C.D.=679·5 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 61(200).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object : -To determine suitable periods of sowing to reduce Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super. (ii) Clay loam. (iii) As per treatments. (iv) (a) Ploughing and puddling, (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 50 Kg/ha. of N+25 Kg/ha of P_2O_5 applied at the last puddle as A/S and Super. (vi) RDR—7 (short duration). (vii) Irrigated. (viii) Hoeing, hand weeding and gap filling. (ix) N.A. (x) 2nd, 5th, 21st May 1962, 4th and 12th June 1962.

2. TREATMENTS:

6 dates of sowing/transplanting : D_1=7.12.61/1.21.62, D_2=22.12.61/22.1.62, D_3=7.1.62/7.2.62, D_4=22.1.62/22.2.62, D_5=7.2.62/7.3.62 and D_6=22.2.62/22.3.62.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (iii) Nil. (iii) Tiller counts, population counts, % WEH at harvest and yield of grain. (iv) (a) 1959—62 (treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

% White ear heads at harvest

(i) 15·70°. (ii) 3·97°. (iii) Treatment differences are highly significant. (iv) Av. % of white ear heads in degrees.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Mean incidence	14·43	23·07	19·66	11·33	12·47	13·25

C.D.=5·98 degrees.

Grain yield

(i) 923 Kg/ha. (ii) 202 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatments	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	682	959	719	1270	1680	241

C.D.=304·3 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 62(231).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object : — To determine suitable periods of sowing with the most susceptible long duration variety with a view to reduce Stem borer incidence.

1. BASAL CONDITIONS :

(i) Paddy-Paddy. (b) Paddy. (c) 50Kg/ha. of N+25Kg/ha. of P_2O_5 as A/S and Super respectively. (ii) Black soil. (iii) As per treatments. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 67 Kg/ha. of N+34 Kg/ha. of P_2O_5 as A/S and Super respectively. ½ N+ P_2O_5 were applied at the time of transplantation and the other ½ N 45 days there after. (vi) RDR-4 (long duration). (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 13, 17, 24.11.62; 10, 14, 22.12.62, 7.1.63 and 20.2.63.

2. TREATMENTS :

8 dates of sowing transplantation : D_1=15.6.62/22.6.62, D_2=1.6.62/7.7.62, D_3=15.6.62/22.7.62, D_4=1.7.62/7.8.62, D_5=15.7.62/22.8.62, D_6=1.8.62/7.9.62, D_7=15.8.62/22.9.62 and D_8=1.9.62/7.10.62.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, % white earheads and grain yield. (iv) (a) 1959-62 (Treatments modified every year). (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) The crop transplanted on 7.10.62 has given no yield as the crop was not fully flowered and there was no grain setting in the earheads.

5. RESULTS :

% white earheads at harvest.

(i) 10·56 degrees. (ii) 3·02 degrees. (iii) Treatment differences are highly significant. (iv) Av. % of white earheads in degrees.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
Mean incidence	19·27	14·70	11·82	9·90	9·55	6·90	6·67	5·70

C.D.=4·43 degrees.

Grain yield

(i) 1951 Kg/ha. (ii) 875 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. grain yield in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7
Av. yield	2587	2539	2492	2060	1701	1557	718

C.D.=444·1 Kg/ha.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(131).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object : — To test the efficacy of using egg masses free nurseries on subsequent infestation on planted crop and increase in yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 49·4 Kg/ha. of N as A/S+25·2 Kg/ha. of P_2O_5 as Super. (ii) Clay loam. (iii) 17.6.60/21.7.60. (iv) (a) 2 ploughings and puddlings. (b) Transplanting. (c) 40 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 67·2 Kg/ha. of N as A/S+and 33·6 Kg/ha. of P_2O_5 as Super at the time of planting. (vi) RDR-4 (late). (vii) Irrigated. (viii) Gap filling, hand weeding and working with weeder. (ix) 63 cm. (x) 29.11 60.

2. TREATMENTS :

2 methods of planting : T_1=Transplanting from nurseries completly freed from egg masses, by removing them and T_2=Transplanting form nurseries not freed from egg masses.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 7·5 m.×7·5 m. (b) 6·7 m.×6·7 m. (v) 40 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stem borer incidence noticed. (iii) Incidence of Stem borer at planting by up rooting 100 seedlings at random in the nursery and examined for borer incidence. Dead heart production during the growth and yield of grain at harvest. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS:

Grain yield

(i) 2040 Kg/ha. (ii) 274 Kg/ha. (iii) Treatment differences is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2
Av. yield	2045	2036

Perecentage of white eartheads at hervest in degrees.

(i) 21·0 degrees. (li) 3·08 degrees. (iii) Treatment differences is not significant. (iv) Av. % white earheads in degrees.

Treatment	T_1	T_2
Av. % white ear-heads in degrees	20·5	21·5

Crop :- Paddy. **Ref :- A.P. 61(185).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object :— To find out the efficiency of different herbicides as post planting treatment in Paddy field in controlling weeds.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 15.7.61. (iv) (a) Ploughing with country plough. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses one before planting and one at the age of 2 months. (vi) SLO-13. (vii) Irrigated. (vlii) Nil. (ix) 103·9 cm. (x) 26.11.61.

2. TREATMENTS:

4 weed controlling treatments: T_0=Control, T_1=Handweeding+cultural method, T_2=Fenoxone (1·1 Kg/ha. of acid equivalent/ha.) once, T_3=Fenoxone (1·1 Kg/ha. of aid equivalent/ha.) twice.

Spraying done on 20.8.61.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40·5 sq. m. (v) Nil. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Endrin was sprayed as on prophylactic measure. (ii) Weed counts, height, tiller counts and grain yield. (iv) (a) 1960-62 (treatments modified in 1961). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3768 Kg/ha. (ii) 513 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	3954	3707	3954	3459

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 63(205), 64(234), 65(42).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object :—To control weed growth by spraying different herbicides at different concentrations one month before transplanting Paddy seedlings.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Paddy for 63 ; Fallow for others. (c) Nil. (ii) Clay loam. (iii) 22.7.63 ; N.A./13.9.64 ; N.A./27.7.65. (iv) (a) 3 ploughings, 1 puddling and levelling. (b) Transplanting. (c) 24 Kg/ha. for 63 ; 37 Kg/ha. for others. (d) 25 cm. × 25 cm. for 63 ; 20 cm. × 20 cm. for others (e) 2. (v) 44·8 K/gha. of N as A/S for 63 ; N.A. for others. (vi) SLO—13. (vii) Irrigated. (vili) As per treatments. (ix) 104 cm. ; 96 cm. ; 59 cm. (x) 26.11.63 ; 25.11.64 ; 21.11.65.

2. TREATMENTS :

14 weedicidal treatmets : T_0=Control, T_1=Hand weeding, T_2=22·4, T_3=11·2, T_4=5·6 Kg/ha. of Fernoxone, T_5=11·2, T_6=5·6, T_7=2·8 Kg/ha. of Dowpan, T_8=4·9, T_9=3·7, T_{10}=2·5 gm./ha. of Weedone LV-4, T_{11}=4·9, T_{12}=3·7 and T_{13}=2·5 gm./ha. of Eptam.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) and (b) 40·5 sq. m. 63 ; 1/494·1 ha. for others. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No incidence. Endrin was sprayed as a prophylactic measure for 63. (iii) Grain yield. (iv) (a) 1963-65. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) The error variances are heterogeneous and Treatments × years interaction is absent. There fore results of individual years are presented under 5. Results.

5. RESULTS :

63(205)

(i) 3432 Kg/ha. (ii) 378 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3257	3385	3336	3259	3126	3632	3526

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	3442	3699	3600	3519	3422	3390	3459

64(250)

(i) 947 Kg/ha. (ii) 298 6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	816	942	1128	960	890	1077	908

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	893	1143	1023	914	899	877	794

65(42)

(i) 4349 Kg/ha. (ii) 108 7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	3978	4443	4725	4517	4443	4527	4280

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	4062	4660	4512	4403	4216	4146	3978

C.D. at 5% = 155·2 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 60(228), 61(260), 62(282), 63(282).**

Site : Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object :—To study the effect of insecticides in controlling Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Leguminous Crop-Paddy. (b) Leguminous crop. (c) Nil. (ii) Clay loam. (iii) 15.6.60/25.7.60 ; 23.6.61/3 8 61. ; 18.6.62/28.7.62 ; 25.6.63/29.7.63. (iv) (a) 3 ploughings with country plough followed by puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) N.A. (v) 168 Kg/ha. of Super before planting and 112 Kg/ha. of A/S 15 days after planting. (vi) MTU—19. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 20.12.60 ; N.A. ; 17.12.62 ; 21.12.63.

2. TREATMENTS :

9 insecticidal treatments : To=Control (water spray), T_1=0·1%, T_2=0·075%, T_3=0.050%, T_4=0·025% Parathion, T_5=0·05%, T_6=0·04%, T_7=0·03% and T_8=0·02% Endrin.

Insecticides sprayed in the last week of October.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·9 m. × 7·9 m. for 60 ; 7·6 m. × 7·6 m. for 61, 62 ; 7·3 m. × 7·3 m. for 63. (b) 7·5 m. × 7·5 m. for 60 ; 6·9 m. × 6·9 m. for 61, 62 ; 6·9 m. × 6·9 m. for 63. (v) 20 cm. × 20 cm. for 60, 63 ; 35 cm. × 35. cm. for 61, 62. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 60, 61, 62 ; Poor for 63. (ii) Severe incidence of Gallfly and Stem borer. (iii) % infestation of Stem borer and grain yield. (iv) (a) 60-63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rainfall of 50 cm. for 63 in October ; Nil for others. (vii) Error variances for grain yield is heterogeneous and Treatments × years interaction is present. Error variances for infestation is also heterogeneous and Treatments × years inte- action is absent.

5. RESULTS:

Grain Yield

Pooled results.

(i) 2206 Kg/ha. (ii) 277·3 Kg/ha. (based on 24 d.f. made up of 'Treatments × years' interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av yield	1788	2307	2231	2073	1952	2662	2420	2188	2225

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Sig.	G.M.	S.E./plot
years 1960	2714	3222	3154	3051	2992	3399	3280	2907	3051	**	3085	142·5
1961	830	1159	956	914	956	1478	1117	1191	1090	*	1077	84·0
1962	1426	1897	2107	1736	1619	2650	2137	1947	2114	**	1959	277·0
1963	2181	2950	2707	2592	2235	3199	3144	2704	2641	**	2706	294·9
Pooled	1788	2307	2231	2073	1952	2662	2420	2188	2224	**	2206	277·3

Infestation.

60(228)

(i) 11·13 degree. (ii) 0·97 degrees. (iii) Treatment differences are highly significant. (iv) Av. % infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. infestation	14·31	10·35	10·97	11·08	11·21	8·31	10·44	11·32	12·17

C.D.=1.40 degrees.

61(260)

(i) 23·34 degrees. (ii) 2·10 degrees. (iii) Treatment differences are significant. (iv) Av. % of infestation in degrees.

Treatmeat	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. infestation	26·70	24·15	23·13	23·78	22·08	23·70	22·33	21·45	22·78

C,D.=3·05 degrees.

62(282)

(i) 21·36 degrees. (ii) 3·49 degrees. (iii) Treatment differences are highly significant. (iv) Av. % infestation in degrees,

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. infestation	29·78	20·01	21·00	25·23	20·95	18·01	19·79	17·86	19·65

C.D.=5·1 degrees.

63(282)

(i) 14·68 degrees. (ii) 1·6 degrees. (iii) Treatment differences are significant. (iv) Av.% infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. infestation	17·9	14·1	14·8	14·1	14·9	14·2	13·6	13·9	14·6

C.D. = 2·33 degrees.

Crop :- Paddy. (*Rabi*) **Ref :- A.P. 61(261), 61(262), 62(283).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object :—To study the efficacy of different concentrations of chemicals in reducing Stem borer infestation.

1. BASAL CONDITIONS :

(i) (a) Paddy-Leguminous crop-Paddy. (b) Leguminous crop. (c) Nil. (ii) Clay loam. (iii) 10.1.61/18.2.61 ; 26.12.61/24 1.62 ; 25.12.62/23.1.63. (iv) (a) 3 ploughings with country plough followed by puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 168 Kg/ha. of Super + 56 Kg/ha. of Super for 61 and 61 ; 20 Kg/ha. of A/S in nursery and 136 Kg/ha. of A/S of planting. (vi) SLO-19. (vii) Irrigated. (viii) 2 to 3 hand weedings (ix) N.A. (x) 26.4.61 to 9..5.61 ; 19 to 25.5.62. for 61 ; N.A. for 62.

2. TREATMENTS :

9 chemical treatments : To=Control (water spray), T_1=0·1%, T_2=0·075%, T_3=0·05%, T_4=0·025% of Parathion, T_5=0·05%, T_6=0·04%, T_7=0·03% and T_8=0·02% of Endrin.

Chemical sprayed on 5, 11.2.1961 for 61, 2, 7.2.1962 for 61, and 2, 7.2.1963 for 62.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m. × 7·8 m. for 61 ; 7·32 m. × 6·10 m. for 62. (b) 6·7 m. × 7·0 m. for 61 ; 6·48 m. × 5·26 m. for 62. (v) 40 cm. × 40 cm. for 61 ; 42 cm. × 42 cm. for 62. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) % infestation of Stem borer and grain yield. (iv) (a) 61 to 62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present in both the cases (Viz. grain yield and infestation).

5. RESULTS :

Pooled results.

Grain yield

(i) 2642 Kg/ha. (ii) 365·0 Kg/ha. (based on 16 d.f. made up of Treatments × years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2194	2826	2553	2444	2399	3182	2846	2592	2745

Infestation of Stem borer

(i) 10·99 degrees. (ii) 2·22 degrees. (based on 16 d.f. made up of Treatments × years interaction). (iv) Treatment differences are significant. (iv) Mean % infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	13·73	10·36	11·03	11·53	11·63	9·46	10·56	10·30	10·30

Individual results.

Grain Yield

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Years									
1961	1106	1274	1270	1205	1135	1509	1414	1315	1361
1961	2472	3604	3200	2851	2800	3954	3435	3158	3305
1962	3003	3601	3190	3277	3265	4081	3688	3303	3567
Pooled	2194	2826	2553	2444	2399	3182	2846	2592	2754

Sig.	G.M.	S.E./plot
*	1288	130·3
**	3198	200·1
**	3442	196·7
**	2642	365·0

Infestation of Stem borer

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
years									
1961	19.42	13·02	14·80	14·49	14·21	11·65	12.54	12·56	13 59
1961	12·65	6.90	9.53	11.25	12.25	9·00	10·63	10·63	9.43
1962	9·23	8·17	8.79	8·90	8·48	7·82	8·58	7·68	7·90
Pooled	13·77	10 36	11·03	11·53	11·63	9.46	10·56	10·30	10·30

Sig.	G.M.	S.E./plot
**	14.03	15·3
*	10·56	1·24
N.S.	8·40	1·23
*	10·99	22·2

Crop :- Paddy. **Ref :- A.P. 63(277).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'**

Object :—To find out the optimum time of planting for control of Stem borer incidence and for higher yield.

1. BASAL CONDITIONS :

(i) (a) Paddy–Leguminous Crop—Paddy. (b) Leguminous Crop. (c) Nil. (ii) Clay loam. (iii) As per treatments. (iv) (a) 3 ploughings with country plough followed by puddling and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 168 Kg/ha. of Super before planting. (vi) SLO—19. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 19.9.63 to 24.1.64.

2. TREATMENTS :

8 dates of sowing/planting : D_1=28.5.63/28.6.63 ; D_2=13.6.64/13.7.63 ; D_3=28.6.63/28.7.63 ; D_4=14.7.63/14.8.63 ; D_5=30.7.63/30.8.63 ; D_6=16.8.63/16.9.63 ; D_7=1.9.63/1.10.63 and D_8=16.9.63/16.10.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·3 m.×7·3 m. (b) 6·9 m.×6·9 m. (v) 20 cm ×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer. (iii) % Infestation of Stem borer and grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) Heavy rain fall of 50·1 cm. during rainy days in October 63. (vii) Nil.

5. RESULTS :

Grain yield

(i) 1463 Kg/ha. (ii) 94·3 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
Av. yield	2127	1937	1692	1660	1544	1223	985	534

C.D.=138·7 Kg/ha.

Infestation

(i) 11·0 degrees. (ii) 1·14 degrees. (iii) Treatment differences are highly significant. (iv) Mean % infestation in degrees.

Treatments	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
Av. yield	9·18	13·12	13·03	10·75	10·60	11·89	11·49	7·91

C.D.=1·68 degrees.

Crop :- Paddy (*Kharif*). **Ref :- A.P. 60(165), 62(213).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object : —To find out the efficiency of herbicides as post planting treatment in controlling weeds in Paddy fields.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 13.7.60, 7.7.62. (iv) (a) Ploughing with country plough. (b) Transplanting. (c) 23·5 Kg/ha. (d) 25 cm.×15 cm. (e) 2. (v) 44·8 Kg/ha of N as A/S in two equal doses one before planting and another at the age of 2 months. (vi) SLO—13. (vii) Irrigated. (viii) Nil. (ix) N.A. for 60 ; 122·1 cm. for 62. (x) 24.11.60, 25.11.62.

2. TREATMENTS :

5 weed controlling treatments : T_0=Control (unweeded), T_1=Hand weeding, T_2=Hand weeding+cultural operations with Japanese push hoe, T_3=Ferroxone at 1·1 Kg/ha. of acid equivalent applied once and T_4=Ferroxone at 1·1 Kg/ha. of acid equivalent applied twice.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40·5 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed as a prophyliatic measure. (iii) Weed counts, height, tiller counts and yield of grain. (iv) (a) 1960—62 (Expt. for 1961 N.A.) (b) No. (c) Presented under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS

Pooled Results

(i) 3749 Kg/ha. (ii) 432·5 (based on 4 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	3771	3919	3918	3552	3587

Indvidual Results

Treatments	T_0	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years								
1962	4483	4708	4764	4035	4147	*	4427	344
1963	3059	3131	3072	3069	3027	N.S.	3072	509
Pooled	3771	3919	3918	3552	3587	N.S.	3749	432·5

Crop :- Paddy (*Rabi.*). **Ref :- A.P. 62(195), 63(189).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object :—To find out the minimum number of Endrin sprayings necessary for protecting the Paddy crop against Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 25 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 25.11.62/25.12.62. (iv) (a) 3 puddlings (b) Transplanting. (c) 34 Kg/ha. (d) 15 cm. × 15 cm. for 62 and 15 cm. × 10 cm. for 63. (e) 3. (v) 45 Kg/ha. of N in two equal doses one at planting and the other after one month +169 Kg/ha of P_2O_5 and 68 Kg/ha. of K_2O. (vi) MTU—15. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 23.4.63 ; 3.4.64.

2. TREATMENTS :

6 spraying treatments with Endrin : T_0=No spraying, T_1=30 prayings in nursery and 5 sprayings in main field, T_2=1 spraying in nursery and 2 sprayings in main field, T_3=1 spraying in nursery and 3 spraying in main field, T_4=1 spraying in nursery and 4 sprayings in main field and T_5=1 spraying in nursery and 1 spraying main field.

28 gm. of Endrin in 18 litres of water was used.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 400 sq. m. for 62 ; 58·2 sq. m. for 63. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1962—63. (b) No. (c) Presented. under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled Results

(i) 3531 Kg/ha. (ii) 365·3 Kg/ha. (based on 35 d.f. made up of pooled error and Treatments × years interaction.) (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	3462	3617	3479	3490	3564	3574

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	Sig.	G.M.	S.E./plot
Years									
1962	3714	4082	3744	3963	3907	3803	N.S.	3869	294
1963	3210	3152	3215	3017	3221	3346	N.S.	3194	440
Pooled	3462	3617	3479	3490	3564	3574	N S.	3531	365

Crop :- Paddy (*Rabi*). **Ref :- A.P. 64(66), 65(111).**

Site :- Agri. Res. Stn., Samalkot. **Type :- 'D'.**

Object : –To find the optimum number of Endrin sprayings on Paddy against Stem borer.

1 BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 13.12.64/3.1.65 ; 13.12.65/3.1.66. (iv) (a) 3 puddlings, ploughing and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm. × 10 cm. (e) 3. (v) Nil. (vi) SLO–16. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 4 cm. ; N.A. (x) 23.4.65 ; 29.3.66.

2. TREATMENTS :

4 spraying treatments with Endrin : S_0=Control, S_1=One spraying in the nursery and one the main field, S_2=One spraying in the nursery and two in the main field and S_3=One spraying in the nursery and three in the main field.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 15·2 m. × 5·0 m. for 64 ; 60·7 sq. m. for 65. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Stem borer, Endrin sprayed as per treatments. (iii) Yield of grain. (iv) (a) 1964—65. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) As the error variances are heterogeneous and Treatments × years interaction is absent, results of individual years are given under 5. Results.

5. RESULTS :

64(66)

(i) 1630 Kg/ha. (ii) 259·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3
Av. yield	1544	1240	1826	1908

C.D.=356·8 Kg/ha.

65(111)

(i) 3341 Kg/ha. (ii) 94·8 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3
Av. yield	3193	3229	3424	3516

C.D.=130·6 Kg/ha.

Crop :- Paddy. **Ref :- A.P. 65(174).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'D'.**

Object :—To determine the method of application of insecticides for control of Paddy Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 25.5.65/16.8.65. (iv) (a) 2 dry ploughings with country plough, working with spade after letting in water. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 33 Kg/ha. of N and 55 Kg/ha. of N as Paddy fertilizer mixture as basal dressing and top dressing. (vi) MTU—19. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 18.12.65,

2. TREATMENTS :

Main-plot treatments

2 methods of application : N_1=Foliar and N_2=Soil application.

Sub-plot treatment

6 Insecticidal treatments :

Foliar	Soil application.
F_0=Control,	S_0=Control,
F_1=Dimecrow at I c.c./litre.	S_1=Dimecrow 100 at 618 cc/litre
F_2=Gamma BHC 20 % EC at 1·5 cc/litre	S_2=Gamma. BHC 20 %EC at 20 Kg/ha.
F_3=Folidol E-605 1c.c./litre.	S_3=Folidol E-605 at 1235 c.c./Kg/ha.
F_4=Rogor 30 % EK at I c.c./litre.	S_4=Rogor 30 % EC at 1235 c.c./Kg/ha.
F_5=Endrex 20 % EC at 2·7 CA/litre	S_5=Endrex 20 % EC at 4 Kg/ha.

Foliar applications on 24, 30.9.65 and 20, 26.10.65.

Soil application on 24.9.65 and 27.10.65.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication. ; 6 sub-plots/main plot. (b) N.A. (iii) 2. (iv) (a) 8·9 m.×4·5 m. (b) 8·3 m.×3·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Incidence of rice Stem borer. (iii) % Incidence of Stem borer and yield of grain. (iv) 1965 only. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Since sub-plot treatments are not same for each main-plot treatment therefore it is analysed as R.B.D. for each main-plot separately.

5. RESULTS :

Folior application

(i) 122 Kg/ha. (ii) 76·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	F_0	F_1	F_2	F_3	F_4	F_5
Av. yield	98	54	109	138	112	220

Soil aplication

(i) 237 Kg/ha. (ii) 294·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	105	482	147	393	34	260

Crop :- Paddy. **Ref :- A.P. 65(78).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'D'.**

Object :— To compare the IRRI method of Stem borer control with other methods.

1. BASAL CONDITIONS :

(i) (a) Pulse after Paddy. (b) Pulse. (c) Nil. (ii) Clay loam. (iii) 25.5.65/24, 25, 26.7.65. (iv) (a) 2 dry ploughings and spade working after letting in water. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 28 Kg N+45 Kg P_2O_5/ha. in the shape of Paddy fertilizer mixture. (vi) MTU-19. (vii) Irrigated. (viii) Weeding, top dressing and hoeing. (ix) 79·1 cm. (x) 4 to 16.12.65.

2. TREATMENTS :

T_0=Control. T_1=Soil application of Gamma BHC at 12 kg a.i.,/ha. T_2=Soil application of Tech. BHC at 12 Kg a,i.,/ha. T_3=Soil application of Heptachlon at 25 Kg a.i.,/ha. T_4=Soil applicaion of Heptachlon at 25 Kga.i.,/ha. T_5=Soil application of Thimmet at 12 Kg of 10 % granules/ha., T_6=Soil application Thimmet at 25 Kg/ha. of 10%T_7=Foliar of Gamma BHC at 0·05%, T_8=Folior spray of Gamma BHC at 0·10%, T_9=Foliar spray of Tech BHE at 0.313%, T_{10}=Foliar spray of Tech. BHC at 0·625%, T_{11}=Foliar spray of Endrian at 0·04%, T_{12}=Foliar spray of Phosphamiden at 0·05%, T_{13}=Foliar spray of Phospamiden at 0·10%. N_{14}=Foliar spray of carboryl at 0·15%, T_{15}=Foliar spray of carboryl at 03%. T_{16}=Foliar spray of Thiodam at 0·05%, T_{17}=Foliar spray of Thiodam at 0·10%.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) 1821 sq. m. (iii) 3. (iv) (a) 1 sq. m. (b) 82 sq. m. (vi) 2 guard rows kept (vi) Yes.

4. GENERAL:

(i) Satisfactoy. (ii) Attack of Stem borer and sprayings as per schedule. (iii) Yield of grain and straw. (b) 1965 only. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 867 Kg/ha. (ii) 312 Kg/ha. (iii) Treatment difference are highly signification. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	582	1610	893	515	527	438	419	653	962

Treatment	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	T_{15}	T_{16}	T_{17}
Av. yield	984	1017	1238	958	947	680	954	947	1285

C.D.=520·0 Kg/ha.

Crop :- Paddy(*Kharif*). **Ref :- A.P. 63(274), 64(276).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To find out the optimum dates of planting in controlling Gall fly for short duration varieties.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 10th of June to 10th of July. (iv) (a) 2 ploughings and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2 to 3. (v) 49 Kg/ha. of N as Urea in 2 doses, at planting and one month after planting 40 Kg/ha. of P_2O_5 as Super 2471 Kg/ha. of green leaf 12·6 Tonnes/ha. of F.Y.M. at planting. (b) As per treatment. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 10·9·63 to 19.11.63 and 6 to 30.11.63.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D_1=31.7.63, 1.8.63, D_2=4, 5.8.63, D_3=12.8.63 for 63.
D_1=11, 12.8.64, D_2=19, 20.8.64, D_3=25, 26.8.64 for 64.

Sub-plot treatments :

8 varieties : V_1=HR−5, V_2=HR—19, V_3=HR—47, V_4=HR—67, V_5=PRB—7, V_6=PTB—8, V_7=SLO −19 and cul 289.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 8 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 6·7 m.×6·2 m. (b) 6·5 m.×5·8 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Gall fly. (iii) % age of Gall incidence ; grain in yield. (iv) (a) 1963-64 (Treatments are modified in 64). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Grain yield

63(274)

(i) 1349 Kg/ha. (ii) (a) 311 Kg/ha. (b) 258 Kg/ha. (iii) Main effect of V interaction D, V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	1270	1169	1090	791	1789	1868	1100	1579	1332
D_2	1542	773	1062	1174	1950	1712	680	1374	1283
D_3	1151	1354	1300	993	1302	2100	796	1179	1272
Mean	1388	1099	1151	986	1680	1893	859	1377	1349

C.D. for V marginal means =187·8 Kg/ha.
C.D. for means at the same level of V =342·0 Kg/ha.
C.D. for D means at the same level of V=342·0 Kg/ha.

64(274)

(i) 1300 Kg/ha. (ii) (a) 335 Kg/ha. (b) 245 Kg/ha. (iii) Main effects D and V are highly significant. and interaction D×V is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	1404	1090	1082	862	2002	2187	852	1693	1396
D_2	1584	1297	1302	1344	2024	1804	1043	1483	1485
D_3	1001	820	684	880	1411	1643	734	978	1019
Mean	1330	1069	1023	1029	1812	1878	876	1385	1300

C.D. for D marginal means =172·7 Kg/ha.
C.D. for V marginal means =178·3 Kg/ha.
C.D. for V means at the same level of D=308·9 Kg/ha.
C.D. for D means at the same level of V=336·2 Kg/ha.

Incidence of gall fly in degrees

62(274)

(i) 7·0 degrees. (ii) (a) 5·7 degrees. (b) 2·7 degrees. (iii) Main effects of D and V are highly signlficant. (iv) Av. % infestation in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	7.4	8.3	10.1	6·0	3·9	7·7	9·5	6·4	7·4
D_2	10·1	9.5	10·9	9·2	3·9	12.3	8 3	7·5	9·0
D_3	5 9	5·5	6·7	6·6	0·0	6·8	3.4	3·4	4·8
Mean	7·8	7·8	9·2	7·3	2·6	8·9	7·1	5·8	7·0

C.D for D marginal means=2.93 degrees.
C.D. for V marginal means=1·97 degrees.

64(276)

(i) 8·79 degrees. (ii) (a) 8·99 degrees. (b) 2·65 degrees. (iii) Main effeet of V interaction D×V are highl significant. Main effect of D is significant. (iv) Av. % infestation in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	8·00	5·52	7·04	5.42	1·14	6·68	3·42	5.04	5·28
D_2	9·56	9·66	9·82	9·74	10·88	2·28	8·68	8·68	8·66
D_3	14·86	12·82	11·42	10·94	9·74	12·48	15·46	11·60	12·42
Mean	10.81	9·33	9·43	8·70	7·25	7·15	9.19	8·44	8·79

C.D. for D marginal means =4·09 degrees.
C.D. for V marginal means =1.93 degrees.
C.D. for V means at the same level of D=3·33 degrees.
C.D. for D means at the same level of V=5·20 degrees.

Crop :- Paddy. **Ref :- A.P. 63(272), 64(274).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To find out the optimum date of planting of paddy for controlling Gall fly.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 25.5.63 to 25.6.63 and 25.5.64 to 10.6.64. (iv) (a) 2 ploughings and levellings. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 49 Kg/ha. of N as Urea in 2 doses at planting and one month after planting 40 Kg/ha. of P_2O_5 as Super, 2471 Kg/ha. of green leaf at 12-6 tonnes/ha. of F.Y.M. at planting. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 31.10 to 5.12.63 ; 9.11 to 9.12.64.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D_1=2.8.63, D_2=3, 4.8.63 and D_3=13.8.63 for 63.
D_1=13, 14.8.64, D_3=20.8.64 and D_2=26.8.64 for 64.

Sub-plot treatments :

8 varieties : V_1=HR—1, V_2=AKP—2, V_3=SLO—8, V_4=SLO—9, V_5=Bobbili ganklu, V_6=Luchalu V_7=U.P. Basamati and V_8=RDR–4.

3. DESIGN :

(i) Split-plot. (ii) 3 main-plots/replication, 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 6·7 m.×6·2 m. (b) 6·4 m.×5·8 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of gall fly. (iii) % as of incidence and grain yield. (iv) (a) 1963 and 64 (Treatments modified). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Grain yield

63(272)

(i) 1708 Kg/ha. (ii) (a) 375·7 Kg/ha. (b) 239·7 Kg/ha. (iii) Main effect of V is highly significant of D is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	1900	1789	1060	2090	1483	2278	1374	2464	1805
D_2	1878	1685	1236	2155	1495	1522	1576	2367	1739
D_3	1552	1572	1270	1977	1305	1660	1285	2009	1579
Mean	1777	1682	1189	2074	1428	1820	1412	2280	1708

C.D. for D marginal means=229·8 Kg/ha.
C.D. for V marginal means=195·5 Kg/ha.

64(274)

(i) 1627 Kg/ha. (ii) (a) 427·3 Kg/ha. (b) 237·4 Kg/ha. (iii) Main effects of V and D are highly significant. and interaction V×N is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	1305	1411	1436	2002	1292	1720	1391	2614	1646
D_2	1910	1888	1404	2056	2071	1826	1609	2066	1854
D_3	1201	1109	1018	1614	1376	1601	1132	1989	1380
Mean	1472	1469	1286	1891	1580	1716	1877	2223	1627

C.D. for D marginal means =261·3 Kg/ha.
C.D. for V marginal means =193·7 Kg/ha.
C.D. for V means at the same level of D=338·8 Kg/ha.
C.D. for D means at the same level of V=424·7 Kg/ha.

Incidence of Gall fly in degrees

64(274)

(i) 14·93 degrees. (ii) (a) 3·76 degrees. (b) 2·30 degrees. (iii) All effects are highly significant. (iii) Av. incidence of Gall fly in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	18·30	14·38	15·80	16·10	17·25	13·40	18·63	19·75	16·70
D_2	16·40	10·63	16·10	14·08	13·53	16·40	15·95	21 85	15·62
D_3	11·33	7·15	12·88	12·70	12·90	12·43	16·20	14·30	12·48
Mean	15·34	10·72	14·92	14·29	14·56	14·07	16·92	18·63	14·93

C.D. for D marginal means =2·30 degrees.
C.D. for V marginal means =1·87 degrees.
C.D. for V means at the same level of D=3·24 degrees.
C.D. for D means at the same level of V=3·89 degrees.

Incidence of Gall fly

63(272)

(i) 10 4 degrees. (ii) (a) 5·26 degrees. (b) 2·63 degrees. (iii) Main effects of D and V highly significant. (iv) Av. % of incidence in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
D_1	18·6	7·4	13 9	17·2	15·2	10·7	16·3	14·8	14.0
D_2	12·6	5·7	11·0	9.9	13·1	6·3	13·5	13·2	10·7
D_3	6·4	1·4	9·9	5·5	7·5	2·7	8·7	9·0	6·4
Mean	11 9	4 8	11·6	10 9	11·9	6·6	12 9	12·4	10·4

C.D. for D marginal means=3·21 degrees.

C.D. for V marginal means=2·13 degrees.

Crop :- Paddy. **Ref :- A.P. 63(273), 64(275).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To study the optimum date of planting in controlling Gall fly.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 25th of June. (iv) (a) Tractor ploughing and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2-3. (v) 49 Kg/ha. of N as Urea in two split doses at planting and one month after planting 40 Kg/ha. of P_2O_5 as Super+2471 Kg/ha. of green leaf+12·6 Tonnes/ha. of F Y.M. at planting. (v) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 25th of Nov.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D_1=27, 28.7.63, D_2=16.8.63 and D_3=9·8.63 for 63.
D_1=8, 9.8.64, D_2=17.8.64 and D_3=22, 23.8.64 for 64.

Sub-plot treatments :

6 varieties : V_1=MTU—3, V_2=3778, V_3=NGL—5, V_4=CP—9, V_5=SLO—17 and V_6=Palasannla.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 6 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 6·7 m.×6·2 m. (b) 6·4 m.×5·7 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Gall fly. (iii % incidence of Gall fly and grain yield. (iv) (a) 1963-64 (Treatmant modified). (b) No. (c) Nil. (v) and (vi) Nil. (vii) Gall fly incidence for 63 N.A.

5. RESULTS :

Grain yield

63(273)

(i) 1376 Kg/ha. (ii) (a) 31·3 Kg/ha. (b) 259·8 Kg/ha. (iii) Main effect of D, V are highly significant and interaction D×V is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	2441	1814	1604	1134	1769	1950	1785
D_2	1890	1663	1090	694	714	1221	1212
D_3	1631	1673	1038	551	766	1129	1131
Mean	1987	1717	1244	793	1083	1433	1376

C.D. for D marginal means =191·1 Kg/ha.
C.D. for V marginal means =189·6 Kg/ha.
C.D. for V means at the same level of D=378·9 Kg/ha.
C.D. for D means at the same level of V=354·8 Kg/ha.

64(275)

Grain yield.

(i) 1268 Kg/ha. (ii) (a) 236 Kg/ha. (b) 180 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	1994	1960	875	596	1510	492	1238
D_2	1478	1774	909	613	596	1554	1154
D_3	2061	1779	1337	801	1169	1332	1413
Mean	1844	1838	1040	670	1092	1126	1268

C.D. for D marginal means =140·4 Kg/ha.
C.D. for V marginal means =131·2 Kg/ha.
C.D. for V means at the same level of D=227·6 Kg/ha.
C.D. for D means at the same level of V=250·4 Kg/ha.

% incidence of Gall fly in degrees

(i) 8·14 degrees. (ii) (a) 7·20 degrees. (b) 3·42 degrees. (iii) Main effects of V, D are highly significant and interaction D×V is significant. (iv) Av. % incidence of Gall fly in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	14·92	11·56	1·14	6·00	8·58	15·80	9·65
D_2	7·44	3·90	2·28	11·86	2·28	8·38	6·02
D_3	13·86	7·52	2·76	12·24	5·52	10·68	8·75
Mean	12·07	7·66	2·06	10·03	5·46	11·62	8·14

C.D. for D marginal means =4·29 degrees.
C.D. for V marginal means =2·50 degrees.
C.D. for V means at the same level of D=4·32 degrees.
C.D. for D means at the same level of V=5·81 degrees.

Crop : Paddy (*Kharif*). **Ref :- A.P.62(234)**

Site :-Agri. Res. Stn., Warangal **Type :- 'D'.**

Object :—To study the effect of spraying chemicals in reducing the Rice Stem borer incidence.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67Kg/ha. of N+34 Kg/ha. of P_2O_5 as A/S and Super respectively. (ii) Loamy. (iii) 23.12.62/3, 4.2.63. (iv) (a) Ploughing and puddling., (b) Transplanting. (c) 37 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 50 Kg/ha. of N+25 Kg/ha. of P_2O_5 as A/S and Super applied at last puddle. (vi) RDR—7 (short duration). (vii) Irrigated. (viii) Weeding. (ix) 1·9 cm. (x) 18, 19.4.63.

2. TREATMENTS :

9 spraying treatments : T_0=No spray, T_1=0·10%, T_2=0·075%, T_3=0·050%, T_4=0.025% of Paramar (Folidol E—605), T_5=0·05%, T_6=0·04%, T_7=0·03% and T_8=0·02% of Endrex.

The quantity sprayed is 454 to 681 litres/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) N.A. (iii) Tiller counts, % white ear heads. (iv) (a) 1962 only. (b) and (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS :

%white ear heads at harvest

(i) 12·06 degrees. (ii) 1·20 degrees. (iii) Treatment differences are highly significant. (iv) Av. % white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	16·9	9·5	12·1	11·1	11·8	11·4	11·7	12·9	11·1

C.D.=1·75 degrees.

———

Crop :- Paddy (*Kharif*). **Ref :- A.P. 62(232), 64(221).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D.'**

Object :- To study the effect of spraying chemicals is reducing Rice Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 6.6.62/23.7.62 ; 16.6.63/26, 27.7.63. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 33·5 Kg/ha. of N+34 Kg/ha. P_2O_5 as A/S and Super respectively applied at last puddle and 33·5 Kg/ha. of N at first hand weeding. (vi) RDR—4. (vii) Irrigated. (viii) Hand weeding. (ix) 102 cm ; 68·6 cm. (x) 18.11.62 ; 26, 27.11.63.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 62(234) given above.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) % white ear heads and grain yield. (iv) (a) 62—63. (b) No. (c) As under 5. Results. (v) Rudrur. (vi) Nil. (vii) Error variances for grain yield are heterogeneous and Treatments×years is absent. Error variances for white ear heads infestation are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

1. Grain yield.

62(232)

(i) 156 Kg/ha. (ii) 14 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	151	168	145	148	150	170	152	167	155

63(221)

(i) 168 Kg/ha. (ii) 32·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	152	197	202	147	173	167	155	156	163

% of white ear heads.
Pooled results.
(i) 6·73 degrees. (ii) 2·97 degrees(based on 6 d.f.made up of pooled error and Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Mean% infestation in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean infestation	9·05	6·60	7·80	5·90	6·45	5·70	6·20	6·75	6·15

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Years 1962	8·58	7·50	8·10	7·40	6·60	7·02	6·08	6·60	5·40
1963	9·53	5·70	7·50	4·40	6·30	4·38	6·32	6·90	6.90
Pooled	9·05	6·60	7·80	5·90	6·45	5·70	6·20	6.75	6·15

Sig.	G.M.	S.E./plot
N.S.	7·03	3·48
N.S.	6·44	2·60
N.S.	6·73	2·97

Crop :- Paddy. **Ref :- 64(221).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :- To study the effect of spraying chemicals in reducing Rice Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super. (ii) Loamy. (iii) 22.6.64/19 to 22.8.64. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) 56 Kg/ha. of N as A/S+36 Kg/ha. of P_2O_5 as Super+22 Kg/ha. of K_2O as Mur. Pot. $\frac{1}{2}$ N+P_2O_5+K_2O were applied at last puddle and $\frac{1}{2}$ N+4483 Kg/ha. of G.L. at 1st hand weeding. (iv) RDR—4 (long duration). (vii) Irrigated. (viii) Weeding and hoeing. (ix) 87·5 cm. (x) 4, 8.12.64.

2. TREATMENTS :

9 sprayings : T_0=Water spray, T_1=Endrin ·04 %, T_2=Carbaryl 0·15 %, T_3=Formothion 0·10 %, T_4=Phosphamidon 0·10 %, T_5=Rogor 0·10 %, T_6=Thiometon 0·10 %, T_7=Telodrin 0·10 % and T_8=Thiodan 0·05 %.

Quantity sprayed is 454 to 681 litres/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m ×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, % of white ear heads and grain yield. (iv) (a) 1962—65 (treatments modified). (b) No. (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS :

% of white ear heads in degrees.

(i) 15·0 degrees. (ii) 2·5 degrees. (iii) Treatment differences are not significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean incidence	17·0	16·4	13·4	14·9	15·6	12·8	15·5	15·4	13·7

Grain yield

(i) 101 Kg/ha. (ii) 84·5 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	97	112	89	94	95	105	98	110	108

Crop :- Paddy. **Ref :- 64(222).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :—To study the effect of spraying chemicals in reducing Rice Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 56 Kg/ha. of N as A/S+36 Kg/ha. of P_2O_5 as Super+22 Kg/ha. of K_2O as Mur. Pot.+4483 Kg/ha.of G. L. (ii) Loamy. (iii) 19.12.64/26, 27.1.65. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 40 Kg/ha. of N as A/S+27 Kg ha. of P_2O_5 as Super+28 Kg/ha. of K_2O as Mur. Pot.+4483 Kg/ha. of G.L. applied at last puddle. (vi) RDR-7. (vii) Irrigated. (ix) 5·0 cm. (x) 15 to 17.4.65.

2. TREATMETS :

9 sprayings : T_0=Water spray, T_1=Endrin (shell) 0·04 % at 4 c.c. in 2 litres of water, T_2=Sevin (Carbaryl) 0·15 % at 6 gm in 2 litres of water, T_3=Anthio (Formothion) 0·1 % at 8 c.c. in 2 litres of water, T_4=Dimecron (Phosphamidon) 0·1%at 2 c.c. in 2 litres of water, T_5=Rogor (Di-ithoate) 0·1 % at 6·7 c.c. in 2 litres of water, T_6=Ekatin (Thiometon) 0·1 % at 8 c.c. in 2 litres of water, T_7=Telodrin 0·05 % at 6·7 c.c. in 2 litres of water, T_8=Thiodan 0·05 % at 2·86 c.c in 2 litres of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller counts, % white ear heads and grain yield. (iv) (a) 1962 65 (Treatments modified). (b) No. (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS :

Grain yield

(i) 113 Kg/ha. (ii) 25·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	59	217	65	73	118	70	177	161	80

% white ear heads in degrees

(i) 36·7 degrees. (ii) 8·2 degrees. (iii) Treatment differences are not significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. incidence	39·1	30·6	40·7	43·6	33·9	42·4	33·3	27·8	39·0

Crop :- Paddy. **Ref :- 65(16).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :—To find out the effect of spraying chemicals in reducing the Rice Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 40 Kg/ha. of N as A/S+27 Kg/ha. of P_2O_5 as Super+28 Kg/ha. of K_2O as Mur. Pot.+4483 Kg/ha. of G.L. (ii) Loamy. (iii) 12.6.65/30, 31.7.65. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 1. (v) 56 Kg/ha. of N as A/S+36 Kg/ha. of P_2O_5 as Super+22 Kg/ha. of K_2O as Mur. Pot. $\frac{1}{2}$ N+P_2O_5+K_2O were applied at last puddling and the other $\frac{1}{2}$ N at the 1st hand weeding. (vi) RDR—4. (vii) Irrigated. (viii) Hoeing and hand weeding. (ix) 79·2 cm. (x) 8, 9, 10.12.65.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 64(222) on page 340.

5. RESULTS :

% white ear heads in degrees

(i) 13·5 degrees. (ii) 2·3 degrees. (iii) Treatment differences are not significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean incidence	14·4	10·6	12·9	13·2	13·1	10·9	16·4	15·4	14·7

C.D.=3·3 degrees

Grain yield

(i) 2635 Kg/ha. (ii) 834 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2588	2482	2667	2509	2720	3063	2826	2482	2377

Crop :- Paddy. **Ref :- A.P. 65(201).**

Site :- Agri. Res. Stn., Warangal. **Type 'D'.**

Object :— To test the effect of new insecticides against Rice Gall midge (Gallfly).

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy (b) Paddy. (c) N.A. (ii) Black *chalka*. (iii) N.A. (iv) (a) Working country plough 3 to 4 times and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2. (v) N.A (vi) HR –35. (vii) Irrigated. (viii) Hand weeding 2 times and working paddy weader 2 times. (ix) and (x) N.A.

2. TREATMENTS :

9 insecticidal treatments : T_0=Control, T_1=Endrin 0·02%, T_2=Thiodan 0·05%, T_3=Lindane 0·05%, T_4=Parathion 0·02%, T_5=Carbaryl 0·1%, T_6=Telodrin 0·02%, T_7=Phospamidon 0·02% and T_9=Formothion 0·05%.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Gall fly. (iii) % incidence of Gall fly and grain yield. (iv) (a) 1962-65 (Treatments modified). (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Grain yield

(i) 1362 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1600	1957	1836	1577	1468	1188	972	950	713

Incidence of Gall fly

(i) 8·4 %. (ii) and (iil) N.A. (iv) Av. % of incidence of Gall fly.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Mean incidence	9·0	8·0	7·4	7·5	8·7	7·5	7·2	10·6	9·8

Crop :- Paddy. **Ref :- A.P. 63(271), 64(273).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To find out the optimum date of planting in controlling Gall fly for Krishna Katukalu series.

1. BASAL CONDITIONS :

(i) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 25th May to 25th June. (iv) (a) 2 ploughings and levelling. (b) Transplanting. (c) 37 Kg/ha. (d) 20 cm. × 20 cm. (e) 2 to 3. (v) 49 Kg/ha. of N as Urea in 2 doses, at planting and one month after planting. 40 Kg/ha. of P_2O_5 as Super, 2471 Kg/ha. ofgreen leaf 12·6 Tonnes/ha. ofF.Y.M. at planting. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 23.11.63 to 6.12.63 ; 1st to 10th Dec. 64.

2. TREATMENTS :

Main-plot treatments :

D_1=5th of July, D_2=20 July and D_3=5th of Aug.

Sub-plot treatments :

7 varieties : V_1=MTU—5, V_2=MTU—10, V_3=SLO—5, V_4=Cul.—9895, V_5=Cul.—9907, V_6=KTK—9896 and V_7=KTK—10203.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 6·7 m.×6·1 m. (b) 6·3 m.×5·7 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Low incidence of Gall fly for 63 and high for 64. (iii) % incidence of Gall fly for 64 only ; grain yield for both the years. (iv) (a) 1963-64. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Main as well as sub-plot treatment error variances are homogeneous and Treatments×years interaction is present in main-plot treatments and absent in sub-plot treatments.

5. RESULTS :

Grain yield

Pooled results

(i) 1626 Kg/ha. (ii) (a) 1214·1 Kg/ha. (based on 1 d.f. made up of 'Treatments×years' interaction). (b) 260·1 Kg/ha. (based on 126 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of D, V and interaction V×D are significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	2000	2372	2304	1990	1944	1980	1882	2068
D_2	1580	1616	1402	1651	1491	1460	1267	1496
D_3	1184	1227	1612	1213	1241	1359	1364	1314
Mean	1588	1378	1773	1618	1559	1600	1504	1626

C.D. for D marginal means =2916·0 Kg/ha.
C.D. for V marginal means =148·7 Kg/ha.
C.D. for V means at the same level of D=257·5 Kg/ha.
C.D. for D means at the same level of V=630·1 Kg/ha.

Individual results.

Treatments	D_1	D_2	D_3	Sig.	V_1	V_2	V_3	V_4	V_5	V_6	V_7
Years											
1963	1832	1506	1385	**	1480	1619	1756	1571	1574	1548	1474
1964	2303	1485	1244	**	1697	1857	1790	1666	1544	1652	1535
Pooled	2068	1496	1314	N.S.	1588	1738	1773	1618	1559	1600	1504

Sig.	S.E./Main-plot	S.E./Sub-plot	G.M.
N.S.	268·5	366·6	1574
*	236·7	485.0	1677
*	1214.1	153·1	1626

Incidence of Gall fly

64(273)

(i) 17·27 degrees. (ii) (a) 6·62 degrees. (b) 3·43 degrees. (iii) Main effect of D is highly significant and main effect of V is significant. (iv) Mean % incidence of Gall fly in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	20·00	19·13	25·28	19·93	22·48	20·78	20·58	21·16
D_2	17 83	13·88	17·35	15·58	18·50	17·93	18·40	17·06
D_3	11 68	11·23	16·98	11·35	14·58	14·80	14·35	13·59
Mean	16·57	14·74	19·87	15·62	18·52	17·83	17·77	17·27

C.D. for D marginal means=4·38 degrees.

C.D. for V marginal means=2·81 degrees.

Crop :- Paddy. **Ref :- A.P. 63(275), 64(277).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To find out the optimum date of planting in controlling Gall fly in Paddy crop.

1. BASAL CONDITIONS:

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 25·5.63, 10, 25.6.63 ; 25.5.64, 10, 25.6.64. (iv) (a) Ploughing with tractor for 63 ; ploughing with country plough and levelling for 64. (c) 37 Kg/ha. (d) 20 cm.×20 cm. (e) 2 to 3. (v) 49 Kg/ha. of N as Urea in two split doses at planting and one month after planting for 63 ; 40 Kg/ha. of P_2O_5 as Super+2471 Kg/ha. of G.L. and 126 Q/ha. of F.Y.M. at planting for 64. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding ; working paddy weeder. (ix) N.A. (x) N.A. for 63 ; 2 to 22.12.64.

2. TREATMENTS:

Main-plot treatments:

3 dates of planting : D_1=5th July, D_2=20th July and D_3=5th August.

Sub-plot treatments :

12 varieties : V_1=AKP—3, V_2=MTU—21, V_3=SLO—4, V_4=SLO—10, V_5=SLO—11, V_6=BAM -6, V_7=Culture GEB—4388, V_8=Jadasamba, V_9=Cul. Kon. 421415, V_{10}=Cul.—10656, V_{11}=Cul. 1673—2—2 and V_{12}=HR—35.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication;12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 6·7 m.×6·1m. (b) 6·3 m.×5·7 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Low incidence of Gallfly. (iii)%incidence of Gallfly and yield of grain. (iv) (a)1963to64. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Main as well as sub-plot treatment error variances are homogeneous and Treatments×years interaction is present in both.

5. RESULTS :

Grain yield

Pooled results.

(i) 1823 Kg/ha. (ii) (a) 1559·5 Kg/ha. (based on 2 d.f. made up of 'Treatments×years' interaction). (b) 452·9 Kg/ha. (based on 33 d.f. made up of Treatments×years interaction). (iii) Main effect of V alone is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	Mean
D_1	2170	2133	2833	2106	2090	2559	2071	2048	2092	2580	2206	2200	2257
D_2	1490	1374	1868	1396	1549	1705	1605	1624	1693	1916	1822	1895	1661
D_3	1334	1439	1530	1383	1396	1545	1574	1568	1664	1652	1687	1826	1550
Mean	1665	1649	2077	1628	1678	1936	1750	1747	1816	2049	1906	1974	1823

Individual results.

Treatments	D_1	D_2	D_3	Sig.	S.E./plot	G.M.
Years						
1963	2582	1672	1669	**	492·0	1974
1964	1933	1651	1431	**	384·2	1671
Pooled	2257	1661	1550	N.S.	1559·5	1823

Treatments	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}
Years												
1963	1674	1727	2127	1778	1865	1979	1926	2070	2118	2157	2112	2161
1964	1656	1571	2027	1479	1492	1893	1574	1423	1515	1942	1699	1787
Pooled	1665	1649	2077	1628	1678	1936	1750	1747	1816	2049	1906	1974

Sig.	S.E./plot	G.M.
**	186·5	1974
**	224·6	1671
*	452·9	1823

% incidence of Gall fly

64(277)

(i) 14·13 degrees. (ii) (a) 6·52 degrees. (b) 2·82 degrees. (iii) Main effect of V alone is highly significant. (iv) Mean incidence of Gall fly in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8
D_1	12·75	15·28	15·80	14·30	10·10	14·83	18·28	11·30
D_2	13·65	16·80	14·98	13·70	12·53	13·10	17·98	13·25
D_3	12·20	15·53	11·98	12·65	8·90	7·15	14·15	10·70
Mean	12·87	15·87	14·25	13·54	10·51	11·69	16·80	11·75

	V_9	V_{10}	V_{11}	V_{12}	Mean
D_1	14·43	14·43	15·18	21·75	14.87
D_2	13·48	15·58	15·65	20.93	15·13
D_3	11.13	12·55	13·85	17·93	12·39
Mean	13·01	14·18	14·88	20·20	14·13

C.D. for V marginal means=2·29 degrees.

Crop :- Paddy. **Ref :- A.P. 62(233).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :— To determine suitable periods of sowing with the most susceptible short duration varieties with a view to reduce Rice Stem borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) N.A. (ii) Loamy. (iii) As per treatments. (iv) (a) Ploughing and puddling. (b) Transplanting. (d) 37 Kg/ha. (d, 15 cm.×15 cm. (e) 2. (v) 50 Kg/ha. of N+25 Kg/ha. of P_2O_5 as A/S and Super applied at last puddle. (vi) RDR-7 (short duration). (vii) Irrigated. (viii) Hand weeding, (ix) 2·7 cm. (x) 9,17, 25.4.63 and 22.5.63.

2. TREATMENTS :

6 dates of sowing nursery/transplanting : D_1=7.12.62/7.1.63, D_2=22.12.62/22.1.63, D_3=7.1.63/7.2.63, D_4=22.1.63/7.3.63, D_5=7.2.63/7.3.63 and D_6=22.2.63/22.3.63.

3. DESIGN :

(i) R.B.D (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Population, % white earheads and grain yield. (iv) (a) 1962-63. (b) No. (c) Nil. (v) Rudrur. (vi) Nil. (vii) Crop under the treatments D_4, D_5 and D_6 damaged completely by Root rot.

5. RESULTS :

% of white ear heads

(i) 10·57 degrees. (ii) 1·94 degrees. (iii) Treatment differences are highly significant. (iv) % white ear-heads in degrees.

Treatment	D_1	D_2	D_3
Mean infestation indegrees	6·90	12·50	12·30

C.D.=3·35 degrees.

Grain yield

(i) 74 Kg/ha. (ii) 30 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3
Av. yield	99	63	61

———

Crop :- Paddy. **Ref :- 63(220).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'D'.**

Object :—To find out optimum time of sowing in reducing the incidence of Rice Stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) 50 Kg/ha. of N as A/S+25 Kg/ha. of P_2O_5 as Super. (ii) Loamy. (iii) As per treatments. (iv) (a) 3 tlmes ploughing and levelling. (b) Transplanting. (c) 34 Kg/ha. (d) 20 cm.×20 cm. (e) 2. (v) 67 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super applied at last puddle. (vi) RDR--7. (vii) Irrigated. (viii) Hoeing and hand weeding. (ix) 90.7 cm. (x) 10.9.63 ; 4, 22.10.63 ; 6, 14.11.63 and 3, 21.12.63 .

2. TREATMENTS :

8 dates of sowing/transplanting : D_1=22.5.63/23.6.63, D_2=7.6.63/7.7.63, D_3=22.6.63/23.7.63, D_4=7.7.63/7.8.63. D_5=22.7.63/22.8.63, D_6=7.8.63/7.9.63, D_7=22.8.63/22.9.63 and D_8=7.9.63/7.10.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·5 m.×7·5 m. (b) 6·9 m.×6·9 m. (v) 31 cm.×31 cm. (vi) Yes.

4. GENERAL ;

(i) Poor. (ii) Nil. (iii) % while ear heads and grain yield. (iv) (a) 1962–63. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Data for the last treatment was not recorded due to severe attack of Root rot disease.

5. RESULTS :

% of white ear heads

(i) 4·30 degrees. (ii) 1·20 degrees. (iii) Treatment differences are highly significant. (iv) Av. % of white ear heads in degrees.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Mean infestation in degrees	0	0	0	5·70	8·00	6·70	9·68

C.D.=1·78 degrees.

Grain yield

(i) 101 Kg/ha. (ii) 58·5 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	263	165	93	55	68	48	20

C.D.=87·0 Kg/ha.

Crop :- Wheat (*Rabi*). **Ref :- A.P. 63(73), 64(251), 65(146).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'C'.**

Object :—To find out the best sowing date for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sunhemp* for 63, 64 : *Pillipesara* for 65. (c) 11·2 Kg/ha. of N+22·4 Kg/ha. of P_2O_5 for 63 and 65 ; Nil for 64. (ii) Black soil. (iii) As per treatments. (iv) (a) 3 to 5 ploughings and working *gorru*. (b) Drilling for 63 ; Dibbling for others. (c) 78 Kg/ha. (d) 23 cm.×5 cm. (e) 1 (c) 11208 Kg/ha. of G.M. (*Sunhemp*) was incorporated, 33·6 Kg/ha. of P_2O_5 +22·4 Kg/ha of K_2O as basal dressing with 22·4 Kg/ha. of N. Additional 44·8 Kg/ha. of N at 40 days and 22·4 Kg/ha. of N at 55 days age of crop for 63, 64 ; 26000 Kg/ha. of *Pillipesara* (G.M.) ploughed in before sowing. 30 Kg/ha. of P_2O_5 as Super, 30 Kg/ha. of N as A/S, 20 Kg/ha. of K_2O as Sul. Pot. at the time of sowing 60 Kg/ha. of N as A/S as top dressing at 30 and 45 days age of crop for 65. (vi) NP-710. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 16.2.64 to 10.4.64 ; N.A. for others.

2. TREATMENTS :

6 dates of sowing : D_1=1st November, D_2=16th November, D_3=1st December, D_4=16th December, D_5=1st January and D_6=16th January.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 54·9 m.×18·3 m. for 63 ; N.A. for others. (iii) 4. (iv) (a) 7·0 m.×6·4 m. for 63 ; 8·5 m.×6·7 m. for others. (b) 6·6 m.×6·1 m. for 63 ; 8·1 m.×6·1 m. for others. (v) 23cm.×15 cm. for 63 ; 23 cm.×30 cm. for others. (vi) Yes.

4. GENERAL :

(i) Normal for 63 ; Satisfactory for others. (ii) Nil. (iii) Yield of grain. (iv) (a) 1963-1965. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results.

(i) 996 Kg/ha. (ii) 380·4 Kg/ha. (based on 10 d.f. made up of Treatments × years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	1838	1526	1242	828	303	238

C.D. = 346·0 Kg/ha.

Individual results.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	G.M.	S.E/plot	Sig.
Years									
1963	1314	964	657	369	43	35	564	47.0	**
1964	1984	1730	1525	793	479	432	1157	114 0	**
1965	2216	1883	1544	1322	386	247	1266	202·6	**
Pooled	1838	1526	1242	828	303	238	996	380·4	**

Crop :- Wheat. **Ref :- A.P. 64(198).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'IM'.**

Object :—To study the optimum requirements of water and levels of N for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Millets—Groundnut (Castor)—Wheat. (b) and (c) N.A. (ii) Black soil. (ii) 2.11.64. (iv) (a) Repeated blade harrowings. (b) Drilling. (c) 74 Kg/ha. (d) 23 cm. between rows. (e) 1 (v) 125·5 Q/ha. of compost, 74 Kg/ha. of P_2O_5 as Super. Manure was applied to soil by working blade harrow. (vi) Local glumed wheat. (vii) As per treatments. (viii) Interculturing and hand weeding. (ix) 3·2 cm. (x) 8.2.65.

2. TREATMENTS :

Main-plot treatments :

3 irrigational schedules : I_1=5 cm. once in two weeks, I_2=5 cm. once in 3 weeks and I_3=8 cm. once in 3 weeks.

Sub-plot treatments :

4 manurial treatments : M_1=49, M_2=74, M_3=99 Kg/ha. of N and M_4=99 Kg/ha. of N+49 Kg/ha. of K_2O.

N as C/A/N and K_2O as Mur. Pot. were applied. 2/3 N applied on 19.12.64 and ⅓ in January as top dressing.

3. DESIGN ;

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 14·0 m. × 1·6 m. (v) and (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Attack by Jassids and the pest was controlled by spraying Endrin at 28 gm in 18 litres of water on 26, 27.11.64. (iii) Growth measurements, no. of tillers and grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2453 Kg/ha. (ii) (a) 520 Kg/ha. (b) 649 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	Mean
I_1	2620	2748	2707	2356	2608
I_2	2289	2665	2515	2360	2457
I_3	2526	2177	2075	2402	2295
Mean	2478	2530	2432	2373	2453

Crop :- Wheat. **Ref :- A.P. 65(246).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'D'.**

Object :—To test the efficiency of different fungicides in controlling Wheat Rust.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black loam. (iii) 1st fortnight of Nov. 1965. (iv) (a) 2 deep ploughings followed by discing and harrowing. (b) Dibbling. (c) 80 Kg/ha. (d) 23 cm. × 10 cm. (e) 2. (v) N.A. (vi) Mysore local. (vii) Irrigated. (viii) 2 weedings and one hoeing. (ix) N.A. (x) March 1st week 1966.

2. TREATMENTS :

8 fungicidal treatments : T_0=Control, T_1=Esso-406, T_2=Cosan, T_3=Wettable Sulphur, T_4=Sulphur dust, T_5=Melphex dodine, T_6=Copramat, T_7=Dithane–331.

The sprayings were given at 15 days interval commencing from 1st appearence of Rust. Rust incidence was estimated prior to each spray.

3. DESIGN :

(i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/1765·04 ha. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Rust and leaf Blight. (iii) % of Rust incidence. (iv) (a) 65—N.A (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

% incidence of Rust

(i) 37·3 degrees (ii) 25 7 degrees (iii) Treatment differences are not significant. (iv) Mean infestation in degrees.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. incidence in degrees.	53·7	46·3	22·3	27·4	30·5	52·9	48·8	16·3

Crop :- Wheat. **Ref :- A.P. 65(247).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'D'.**

Object :—To test the Rust reaction and yield performance of different varieties under different levels of N.

1. BASAL CONDITIONS :
(i) (a) Nil. (b) and (c) N.A. (ii) Black loam. (iii) 1st fortnight of Nov. 65. (iv) (a) Two deep ploughings followed by discing and harrowing. (b) Hand dibbling. (c) 80 Kg/ha. (d) 20 cm. × 10 cm. (e) 2. (v) 134 Kg/ha. of N as A/S+68 Kg/ha. of P_2O_5 as Super+44 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings, one hoeing 20 days after sowing. (ix) N.A. (x) 1st week of March, 1966.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 16 varieties : V_1=Local, V_2=NP—17, V_3=NP—839, V_4=NP—872, V_5=Lerma Rojo, V_6=C—306, V_7=NP—852, V_8=Sonora 64, V_9=NP—884, V_{10}=NP—862, V_{11}=RS—31—1, V_{12}=HYL—65, V_{13}=Sonora 63, V_{14}=NP—876, V_{15}=K—68 and V_{16}=C—303.
(2) 2 levels of N as A/S : N_1=45 and N_2=90 Kg/ha.

3. DESIGN :
(i) Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 6. (iv) (a) and (b) N.A. (v) 2 rows alround the plot. (vi) Yes.

4. GENERAL :
(i) Satisfactory. (ii) Rust and Leaf Blight. (iii) Yield of grain. (iv) (a) 1965—N.A. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :
(i) 2402 Kg/ha. (ii) N.A. (iii) Main effects of V and M are significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}
N_1	1675	2068	2212	2256	2417	1992	1942	1539	2338	2031	2459	2063
N_2	1579	1675	2686	2987	2530	2498	2273	1715	2790	2429	2777	5666
Mean	1627	1871	2449	2642	2473	2245	2107	1627	2564	2230	2618	3864

	V_{13}	V_{14}	V_{15}	V_{16}	Mean
N_1	2187	1932	2466	2461	2127
N_2	2634	3022	2790	2800	2678
Mean	2410	2477	2628	2630	2402

C.D. for N marginal means=N.A.
C.D. for V marginal means=N,A.

Crop :- Jowar. **Ref :- A.P. 65(62).**
Site :- Millet Res. Stn., Adilabad. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K fertilizers.

1. BASAL CONDITIONS :
(i) (a) Cotton—*Jowar*. (b) Cotton. (c) 24·7 C.L./ha. of F.Y.M. (ii) Clay loam. (iii) 21.7.65. (iv) (a) Two ploughings followed by three harrowings. (b) Hand dibbling. (c) 12 Kg/ha. (d) 30 cm. × 15 cm. (e) 1. (v) Nil. (vi) Pj—36. (vii) Irrigated. (viii) Thinning, hoeing and weeding. (ix) 37·8 cm. (x) 17.11.65.

2. TREATMENTS :
All combinations of (1), (2) and (3):
(1) 3 levels of N as A/S : N_0=0, N_1=49, N_2=99 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=49, P_2=99 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=49, K_2=99 Kg/ha.
½ N+P_2O_5+K_2O were applied as basal and the other ½ N at the 30th day after sowing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 81 sq. m. (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Straw and grain yields. (iv) (a) 1965—contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 893 Kg/ha. (ii) 10·0 Kg/ha. (iii) Main effect of N and interactions N×P, P×K, N×K and N×P×K are highly significant and main effect of P is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	581	551	710	638	592	612	614
N_1	911	1055	937	952	937	1014	968
N_2	1112	1004	1173	993	1189	1107	1096
Mean	868	870	940	861	906	911	893
K_0	834	854	896				
K_1	896	875	947				
K_2	875	880	978				

C.D. for P marginal means =4·7 Kg/ha.
C.D. for means in the body of N×P, P×K or N×K table=8·1 Kg/ha.

Crop :- Jowar. **Ref :- A.P. 65(136).**

Site :- Soil Cons. Res. Stn., Ananthapur. **Type :- 'M'.**

Object :—To determine the optimum dose of fertilizer for Jowar crop.

1. BASAL CONDITIONS :

(i) (a) *Jowar*-Fallow-*Jowar*. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 18.6.65. (iv) (a) Ploughing once with country plough, harrowing once with blade harrow. (b) Drilling. (c) 7 Kg/ha. (d) 23 cm. (e) 1. (v) Nil. (vi) D—340. (vii) Un-irrigated. (viii) Intercultivation once with *Metla guntaka* and harrowing once with hand hoe. (ix) N.A. (x) 9.12.65.

2. TREATMENTS :

5 manurial treatments : F_0=No fertilizer, F_1=F.Y.M. at 12 C.L./ha., F_2=F.Y.M. at 25 C.L./ha., F_3=22 Kg/ha. of N as A/S+22 Kg/ha. of P_2O_5 as Super+22 Kg/ha. of K_2O as Pot. Sul. F_4=F.Y.M. at 12 C.L./ha.+22 Kg/ha. of N as A/S+22 Kg/ha. of P_2O_5 as Super+22 Kg/ha. of K_2O as Pot. Sul. and F_5=F_3+F.Y.M. at 25 C.L./ha.

Inorganic fertilizers are applied as basal dressing by drilling. F.Y.M. was applied as basal dressing in plough furrow.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 15·2 m.×15·2 m. (b) 14·0 m.×14·0 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Ear head bug at grain setting stage. Dusting BHC 10% at grain forming stage. (iii) Grain yield. (iv) (a) 1965—1968. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 103 Kg/ha. (ii) 31·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	77	118	119	95	106	100

Crop :- Jowar. **Ref : - A.P. 65(132).**

Site :- Soil Cons. Res. Stn., Ananthapur. **Tope :- 'M'.**

Object :—To determine the optimum dose of N and P for Jowar applied by placement 5 cm. below the seed and 5 cm. to the side.

1. BASAL CONDITIONS :

(i) (a) *Jowar*-Fallow-Jowar. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 12.6.65. (iv) Ploughing once with country plough, harrowing once with blade harrow. (b) Drilling. (c) 7 Kg/ha. (d) 23 cm. (e) 1. (v) Nil. (vi) N—12 (vii) Un-irrigated. (viii) Interculture once with *Metla guntaka*, harrowing once with hand hoe. (xi) N.A. (x) 15, 16.10.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=22$ and $N_2=45$ Kg/ha.

(2) 4 levels of P_2O_5 as Super : $P_0=0$, $P_1=22$, $P_2=45$ and $P_3=67$ Kg/ha.

Fertilizers were applied by drilling as basal.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 12·19 m.×9·14 m. (b) 10·97 m.×7.92 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Ear head bug at grain formation stage and dusting BHC 10% at grain formation stage. (iii) Grain yield. (iv) (a) 1965-1969. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 136 Kg/ha. (ii) 59·5 Kg/ha. (iii) Main effects of N and P are highly significant. Interection N×P is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	P_3	Mean
N_0	32	46	62	68	52
N_1	53	106	108	260	132
N_2	223	269	147	259	224
Mean	103	140	106	196	136

C.D. for N marginal means=42·8 Kg/ha.
C.D. for P marginal means=49·5 Kg/ha.
C.D. for body of N×P table=85·5 Kg/ha.

Crop :- Jowar (*Kharif*). **Ref :- A.P. 65(172),**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'M'.**

Object ;—To a suitable NPK contribution for Jowar.

1. BASAL CONDITIONS :

(i) (a) *Ragi-Jowar*-green manure. (b) *Ragi*. (c) 12 C.L./ha. of C.M. (ii) (a) Heavy black soil. (iii) 7.3.65. (iv) (a) 5 ploughings with country plough. (b) Hand dibbling. (c) 10 Kg/hn. (d) 46 cm.×15 cm. (e) 1. (v) Nil. (vi) Co-18 (medium). (vii) Irrigated. (viii) 2 hand weedings and hoeings. (ix) 15·8 cm. (x) 28.6.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (in each block).

(1) 3 levels of N as A/S : N_1=22, N_2=45 and N_3=67 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_1=22, P_2=45 and P_3=67 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_1=22, K_2=45 and K_3=67 Kg/ha.

3. DESIGN ;

(i) 3^3 confd. (ii) (a) 10 plots/block ; 3 blocks/replication. (b) 25 m.×24 m. (iii) 3. (iv) (a) 5·0 m.×4·0 m. (b) 4·1 m.×3 m. (v) 45 cm.×15 cm. (v) Yes.

4. GENERAL :

(i) Normal. (ii) Atack of Shoot borer fly. Spraying Endrin. (iii) Yield of grain and straw. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 433 Kg/ha. (ii) 46·8 Kg/ha. (iii) Maln effects of N, P are significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	K_1	K_2	K_3	Mean
N_1	390	382	304	348	325	405	359
N_2	665	443	322	466	408	456	460
N_3	405	525	513	448	522	474	481
Mean	487	450	380	421	418	445	433
K_1	415	427	420				
K_2	483	411	360				
K_3	461	512	359				

C.D. for N or P marginal means=32·4 Kg/ha.

———

Crop :- Jowar (*Kharif*). **Ref :- A.P. 60(99), 61(108), 62(128).**

Site :- Millet Res. Stn.,Madhira. **Type :- 'M'.**

Object : — To find out the optimum requirement of N, P, K alone and in combination for Jowar crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow for 60 ; Paddy for 61 ; Jowar for 62. (c) Nil for 60 ; N.A. for 61 ; 123·6 Kg/ha. of N as A/S. (iii) Light black for 60 ; 61; black clay loam for 62. (iii) 7.10.60, ; 16.9.61 ; 24.9.62. (iv) (a) 2 ploughings, working danti and *gorru* twice for 60 ; 4 ploughings and working danti twice for 61 ; (b) 2 plougings and 3 horrowings for 62. Drilling with *gorru* (c) 12·4 Kg/ha. (d) 46 cm.×10 cm. (e) 1 (v) 125·5 /ha. of F.Y.M. for 60, 61 ; 62·8 Q/ha. of F.Y.M. for 62. (vi) PJ-22K (medium). (vii) Irrigated. (viii) Bukherings, earthings and weedings. (ix) 12·1 cm. ; 42·3 cm. ; 39·4 cm. (x) 27.1.1961 ; 1.2.1962 28.1.1963.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.
(3) 3 levels of K_2O as Pot. Sul.: K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 8·2 m.×6·1 m. (b) 6·4 m.×4·3 m. (v) 91 cm.×91 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1960-62. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 876 Kg/ha. (ii) 425·9 Kg/ha. (based on 28 d.f. made up of interactions of N,P,K, N×K, N×P with years). (iii) None of the efects is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	704	711	729	676	746	722	715
N_1	858	859	989	918	875	914	902
N_2	1037	978	1023	1045	1044	949	1013
Mean	866	849	914	880	888	862	876
K_0	837	868	934				
K_1	878	847	940				
K_2	884	833	868				

Individual results

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years								
1960	1026	1153	1119	N.S.	1087	1082	1127	N.S.
1961	529	609	667	**	606	586	613	N.S.
1962	589	945	1251	**	904	880	1002	N.S.
Pooled	715	902	1013	N.S.	866	849	914	N.S.

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
1112	1066	1120	N.S.	1099	223
614	606	585	N.S.	602	111
913	993	879	N.S.	928	207
880	888	862	N.S.	876	425·9

Crop :- Jowar. **Ref :- A.P. 60(161), 61(176), 62(200).**

Site :- Project Development and Demonstration Farm, Yemmiganur. **Type :- 'M'.**

Object : - To study the effect of manuring on Manjari Jonna crop under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jonna. (b) Cotton. (c) Nil for 61, 125·5 Q/ha. of F.Y.M. for 62 ; 34 Kg/ha. of P_2O_5 as Super, 45 Kg/ha. of N as A/S for 60. (ii) Black soil. (iii) 2nd week of July. (iv) (a) Ploughing with country plough. (b) Drilling. (c) 12 Kg/ha. (d) 28 cm. (e) 1. (v) 12·6 tonnes/ha. of F.Y.M. (vi) Co9- (vii) Irrigated. (viii) Interculture thrice. (ix) 31.6 cm. for 60, 30·2 cm. for 61, 35·9 cm. for 62. (x)24.10.60 24.10.61 ; 19.10 62.

2. TREATMENT :

T_0=No manure, T_1=34 Kg/ha. of N, T_2=50 Kg/ha. of N, T_3=67 Kg/ha. of N, $T_4=T_2+22$ Kg/ha. of P_2O_5, $T_5=T_3+22$ Kg/ha. of P_2O_5, $T_6=T_4+22$ Kgha. of P_2O_5, $T_7=T_5+22$ Kg/ha. of K_2O, $T_8=T_6+22$ Kg/ha. of K_2O and $T_9=T_7+22$ Kg/ha. of K_2O.

3. DESIGN ;

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 17·0 m.×3·5 m. (b) 15·2 m.×2·7 m. (v) 90 cm.×40 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960-62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1101 Kg/ha. (ii) 350·4 Kg/ha. (based on 9 d.f. made up of Treatments×years Interaction. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatments :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	709	952	1209	1303	893	960	1275	895	1219	1594

C.D.=

Individual results

Tratments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	Sig.	G.M.	S.E./plot.
Years 1960	585	608	692	827	629	697	810	629	937	1077	**	749	117
1961	582	794	942	1202	890	953	1296	918	995	1556	**	1013	106
1962	959	1455	1994	1880	1161	1231	1720	1139	1725	2150	**	1541	21
Pooled	709	952	1209	1303	893	960	1275	895	1219	1594	**	1101	350.4

Crop :- Jowar (*Kharif*). **Ref :- A.P. 65(9).**

Site :- Millet Res. Stn., Dronachelam **Type :- 'MV'.**

Object :— To study the effect of levels of N on the yield of Jowar.

1. BASAL CONDITIONS:

(i) (a) to (c) Nll. (ii) Red soil. (iii) 15.6.65. (iv) (a) 2 horrowings. (b) Hand dibbling. (c) 7·4 Kg/ha. (d) 46 cm. ×15cm. (e) 1. (v) 50 Kg/ha. of P_2O_5 as Super and 50 Kg/ha. of K_2O as Pot. Sul. (vi) As per treatments. (vii) Unirrigated. (viii) 2 times intercultivation and weeding. (ix) N.A. (x) 20.10.65.

2. TREATMENTS:

Main-plot treatments :

2 varieties : V_1=CSH—1 anp V_2=N—12.

Sub-plot treatments :

5 levels of N as A/S : N_0=0, N_1=40, N_2=80, N_3=120 and N_4=160 Kg/ha.

N applied half as basal dressing and the remaining half at 35 days age of the crop.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 10 m.×2·7 m (b) 8 m.×1·8 m. (v) 100 cm.×45 cm. (vi) Xes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yied of grain. (iv) (a) No. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1892 Kg/ha. (ii) (a) 864·9 Kg/ha. (b) 528·6 Kg/ha. (iii) Main effeets of V, N and interaction V×N are highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	Mean
V_1	827	2319	3065	3797	3639	2729
V_2	836	864	1155	1208	1214	1055
Mena	832	1592	2110	2502	2426	1892

C.D. for V marginal means =679·0 Kg/ha.
C.D. for D marginal means =481·8 Kg/ha.
C.D. for N means at the same level of V=681·3 Kg/ha.
C.D. for V means at the same level of N=901·6 Kg/ha.

Crop :- Jowar (*Rabi*). **Ref :- A.P. 63(206).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'MV'.**

Object :—To find out the response of different varieties at various levels of N.

1. BASAL CONDITIONS:

(i) (a) Med pesara—*Jowar*. (b) Med pesara. (c) Nil. (ii) Black clay. (iii) 20.10.63. (iv) (a) Country plough twice and working gorru once. (b) Drilling. (d) 7 Kg/ha. (d) 45 cm.×6 cm. (e) 1. (v) in corporation of Med pesara dose N.A. (vi) As per treatments. (vii) Unirrigated. (viii) Working metal. Guntaka once. (ix) 24 cm. (x) 24 1.64.

2. TREATMENTS:

Main-plot treatments

3 varieties : V_1=HJ-1, V_2=HJ-15 and V_3=G-4.

Sub-plot treatments

3 levels of N as A/S : N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) 41·8 m.×10·0 m. (iii) 6. (iv) (a) 10·0 m.×4·4 m. (b) 9·4 m.×3·8 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Germination partly affected due to heavy rain on 23, 24.10.63. (ii) Nil. (iii) Plant height and yield of grain and straw. (iv) (a) 1963 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 620 Kg/ha. (ii) (a) 92·6 Kg/ha. (b) 147·1 Kg/ha. (iii) Main effect of Valone is highly significant (iv) Av. yield of grain in Kg/ha.

	N_1	N_2	N_3	Mean
V_1	520	595	533	549
V_2	657	779	744	727
V_3	618	580	553	584
Mean	598	651	610	620

C.D. for V marginal means=68·8 Kg/ha.

Crop :- Jowar. **Ref :- A.P. 65(18).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'MV'.**

Object :—To study the response of different varieties of Jowar to different levels of N.

1. BASAL CONDITIONS :

(i) (a) Maize—Pulses. (b) *Ragi*. (c) 44 Kg/ha. of N as A/S. (ii) Red sandy loam. (iii) 28.9.65. (iv) (a) 3 ploughing. (b) Dibbling. (c) 10 Kg/ha. (d) 15 cm.×46 cm. (e) 1. (v) and (vi) As per treatments. (vii) Rainfed. (viii) 2 weedings, hoeing, push hoeing once. (ix) 25·4 cm. (x) 12.1.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 6 varieties : V_1=CSH—1, V_2=3691, V_3=VZM—1, V_4=AKP—1, V_5=M 35—1 and V_6=AKP—2.

(2) 3 levels of N : N_0=0, N_1=50 and N_2=100 Kg/ha.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 3. (iv) (a) 5·5 m.×7·3 m. (b) 4·6 m.×7·3 m. (v) 46 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Endrin was sprayed as a precautionary measure against Atherigona at 18 gm. in 18 litres of water. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) Nil. (vi) Drought (vii) Drought conditions affected the yield.

5. RESULTS:
(i) 199 Kg/ha. (ii) 211 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
N_1	298	341	154	171	96	34	182
N_2	374	321	164	208	120	95	213
N_3	355	340	146	153	118	102	202
Mean	342	334	155	177	111	77	199

C.D. for V marginal means=202·2 Kg/ha.

Crop : - Jowar (*Rabi*). **Ref :- A.P. 65(87).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'C'.**

Object :—To find out the best time of sowing for *Jowar*.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Sun-hemp. (c) 22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) As per treatments. (iv) (a) 3 to 4 ploughings with country plough. (b) Hand dibbling. (c) 12·4 Kg/ha (d) 45·7 cm.×15·2 cm. (e) 1. (v) 112·1 Kg/ha. of N as A/S in three doses *viz* 33·6 Kg/ha. at sowing. 39·2 Kg/ha. at knee high stage and the remaining 39·2 Kg/ha. at boot leaf stage and 67·2 Kg/ha. of P_2O_5 as Super at sowing. (vi) CSH—1. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :
9 dates of sowing : D_1=9.11.65, D_2=19.11.65, D_3=3.12.65, D_4=17.12.65, D_5=2.1.66, D_6=17.1.66. D_7=2.2.66, D_8=16.2.66 and D_9=1.3.66.

3. DESIGN.

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10·1 m.×4·9 m. (b) 7·6 m.×2·7 m. (v) 122 cm.×110cm (vi) Yes.

4. GENERAL:

(i) Poor. (ii) Mite attack in D, D_4, D_5 ; Shoot borer attack in D_7 plots. Spraying Endrin 3 times against Shoot fly, spraying Rogour and dusting sulphur against Mite whenever necessary, dusting BHC 10 % against Midge at ear head stage. (iii) Plant height, no. of leaves/plant, yield of grain and straw. (iv) (a) 1965 only. (b) and (c) Nil. (v) and (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 3017 Kg/ha. (ii) 231·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9
Av. yield	3020	3581	3508	3803	3776	4383	2845	1531	710

C.D.=337·7 Kg/ha.

Crop :- Jowar (*Kharif*). **Ref :- A.P. 65(130).**

Site :- Soil Cons. Res. Stn., Ananthapur. **Type :- 'C'.**

Object :—To find out the suitable plant population that would give the highest yield and give the maximum soil cover.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Fallow—*Jowar*. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 11, 12.6.65. (iv) (a) Ploughing once with country plough, harrowing once blade harrow. (b) Dibbling. (c) 7 Kg/ha. (d) As per treatments. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal. (vi) N—12. (vii) Unirrigated. (viii) Interculture once with metal guntaka, harrowing once with hand hoe. (ix) N.A. (x) 16.10.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings in between rows : R_1=30, R_2=46 and R_3=61 cm.

(2) 3 spacings in between plants : P_1=15, P_2=23 and P_3=30 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×9·1 m. (b) 7·9 m.×7·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. Incidence of Ear head bug at grain formation stage. (ii) Dusting BHC 10 % once at grain formation stage. (iii) Yield of grain. (iv) (a) 1965—68. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5 RESULTS :

(i) 198 Kg/ha. (ii) 59·2 Kg/ha. (iii) Main effect of R is highly significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	Mean
R_1	80	128	157	122
R_2	133	208	245	195
R_3	282	277	274	278
Mean	165	204	225	198

C.D. for R marginal means=58·9 Kg/ha.

———

Crop :- Jowar. **Ref :- A.P. 1965(127).**

Site :- Soil. Cons. Res. Stn., Ananthapur. **Type :- 'M'.**

Object :—To evaluate Soil Conservation measure best suited for the tract.

1. BASAL CONDITIONS :

(i) (a) *Jowar*-Fallow-Groundnut. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 6, 7.6.65. (iv) (a) Ploughing once with country plough, harrowing once with blade harrow. (b) Drilling. (c) 7 Kg/ha. (d) 23 cm. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal. (vi) Nil. (vii) Unirrigated. (viii) Inter cultivation twice with metal guntaka and harrowing once with hand hoe. (ix) N.A. (x) 26, 28.10.65.

2. TREATMENTS :

5 cultural treatments : T_1=Cultivation up and down the slope, T_2=Cultivation across the slope, T_3+B.F.B.+Cultivation across the slope, T_4=Pudding×Cultivation across the slope and T_5=B.F.B.+Building+Cultivation across the slope.

B.F.B.=Bund farmer bunding (Bullock drawn implement for forming bunds).

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 182·9 m.×21·3 m. (b) T_1—182·9 m.×21·3 m., T_2—182·9m.×21·3m, T_3—182·9 m.×19·5 m., T_4—174·6 m.×19·5 m., T_5—174·5m×195·5 m. (v) For T_4 and T_5=4·2 m·×1·8 m., for T_1, T_2, T_3=Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Ear head bug at grain formation stage, and dusting BHC 10%. (iii) Moisture status estimation, grain yield. (iv) (a) 1965-72. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 227 Kg/ha. (ii) 8·7 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	196	199	234	251	255

C.D.=13·4 Kg/ha.

Crop :- Jowar. **Ref :- A.P, 65(128).**

Site :- Soil. Cons. Res. Stn., Ananthapur. **Type :- 'C'.**

Object :—To determine the optimum spacing between bunds.

1. BASAL CONDITIONS :

(i) (a) *Jowar*-Fallow-*Jowar*. (b) Fallow. (c) Nil. (ii) Red loams. (iii) 9, 10.6.65. (iv) (a) Ploughing once with country plough, harrowing once with blade harrow. (b) Drilling. (c) 7 Kg/ha. (d) 23 cm. (e) 1. (v) 63 Q/ha. of F.Y.M. as Basal. (vi) Nil. (vii) Unirrigated. (viii) Interculture twice with metal guntaka and harrowing once with hand hoe. (ix) N.A. (x) 18, 19, 20.10.65,

2. TREATMENTS :

4 spacings between contour bunds : S_1=48·8, S_2=73·1, S_3=97·5 and S_4=121·9 m.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 48·8m.×21·3 m., 73·1 m.×21·3 m., 97·5 m.×21·5 m., 121·9 m.×21·5 m. (b) 48.8 m.×21·3 m., 73·1 m·×21·3 m., 97·5 m.×21·5 m., 121·9 m.×21·5 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (il) Incidence of Ear hand bug at grain formation stage. Dusting BHC 10%. (iii) Moisture status estimation and grain yield. (iv) (a) 1965-72. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 131 Kg/ha. (ii) 8·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	182	138	110	95

C.D.=12·9 Kg/ha.

Crop :- Jowar (*Rabi*) **Ref :- A.P. 64(68)**

Site :- Millet Res. Stn., Chandragiri, **Type :- 'C'**

Object :—To fix up optimum age of transplanting *Jowar* Seedlings.

1. BASAL CONDITIONS :

(i) (a) *Sannhemp*—Jowar *Ragi*. (b) *Sannhemp* (G.M.) (c) 12·4 C.L./ha. of C.M. (ii) Black heavy. (iii) 4.3.64. (iv) (a) 5 Ploughings with country plough. (b) Transplanting. (c) 9·9 Kg/ha. (d) 46 em. 15cm. (c) 1. (v) 125·5 Q/ha. of C.M. (vi) Co. 18 (medium). (vii) Irrigated. (viii) Two weedings and 2 hoeings (ix) 6·3 cm. (x) 5.7.64.

2. TREATMENTS :

4 ages of seedlings : A_1=21, A_2=28, A_3=35 and A_4=42 days old seedlings.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 14·3 m.×10·9 m. (iii) 5. (iv) (a) 5·2 m.×2·7 m. (b) 4·6 m.×1·8 m. (v) 30 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) to (c) No. (v) to (yii) Nil.

5. RESULTS :

(i) 571 Kg/ha. (ii) 346 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	A_1	A_2	A_3	A_4
Av. yield	605	457	642	581

Crop :- Jowar (*Rabi*). **Ref :- A.P. 65(171).**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'C'.**

Object :— To fix optimum time for sowing Jowar.

1. BASAL CONDITIONS :

(i) (a) Sunnhemp-*Jowar-Ragi*. (b) Sunnhemp. (c) Nil. (ii) Black heavy. (iii) As per treatments. (iv) (a) 5 ploughings with country plough. (b) Hand dibbling. (c) 10 Kg/ha. (d) 46 cm.×15 cm. (e) 1. (v) Nil. (vi) Co-18 (medium). (vii) Irrigated. (viii) Two hand weeding and hoeings. (ix) 16 cm. (x) 5.4.65.

2. TREATMENTS:

10 dates of sowing : D_1=1.1.65, D_2=11.1.65, D_3=21.1,65, D_4=1.2.65, D_5=11.2.65, D_6=21.2.65, D_7=1.3.65 D_8=11.3.65, D_9=21.3.65 and D_{10}=1.4.65.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 3. (iv) (a) 5·0 m.×2·7 m. (b) 4·7 m.×1·8 m. (v) 15 cm.×45 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Attack of shoot borer fly ; spraying Endrin. (iii) Yield of grain straw. (iv) (a) 1965-67. b) and (c) Nil. (v) and (vii) Nil.

5. RESULTS :

(i) 1149 Kg/ha. (ii) 286·8 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield grain in Kg/ha.

Teeatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
Av. yield	1915	1683	1816	1159	1218	1614	860	717	512	0

C.D.=491·8 Kg/ha.

Crop :- Jowar (*Rabi*). **Ref :- A.P. 65(170).**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'C'.**

Object :— To fix up optimum spacing for Summer sorghum.

1. BASAL CONDITIONS :

(i) (a) Sunhemp-*Jowar-Ragi*. (b) Sannhemp. (c) Nil. (ii) Black heavy. (iii) 8.3.65. (iv) (a) 5 ploughing with country plough. (b) Hand dibbling. (c) 10 Kg/ha. (d) As per treatments. (e) 1. (v) 12 C.L./ha. C.M. (vi) Co-18 (medium). (vii) Irrigated. (viii) 2 hand weedings and hoeings. (ix) 15·9 cm. (x) 29.6,65.

2. TREATMENTS ;

5 spacing : S_1=23 cm.×15 cm., S_2=30 cm.×15 cm., S_3=38 cm.×15 cm. S_4=46 cm.×15 cm. and S_5=53 cm.×10 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 18·0 m.×6·0 m. (iii) 5. (iv) (a) 6·0 m.×3·6 m. (b) 5·0 m.×2·7 m. (v) 50 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1965 to 67 (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 430 Kg/ha. (ii) 88·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2	S_3	S_4	S_5
Av. yield	494	455	410	371	420

Crop :- Jowar (*Summer*). **Ref :- A.P. 64(259).**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'C'.**

Object :— To fix up optimum age for transplanting 6owar seedlings.

1. BASAL DONDITIONS:

(i) (a) Sunnhemp-*Jowar-Ragi*. (b) Sunnhemp (G.M.). (c) Nil. (ii) Black heavy, (iii) 12.3.64. (iv) (a) 5 ploughings with country plough. (b) Hand dibbling. (c) 10 Kg/ha. (d) 46 cm.×15 cm. (e) 1. (v) 12 C.L./ha. of C.M. (vi) Co-18 (medium). (vii) Irrigated. (viii) 2 hand weedings and 2 hoeings. (ix) 15·9 cm. (x) 28.6.65.

2. TREATMENTS :

4 ages of seedlings at planting : A_1=21, A_2=28, A_3=35 and A_4=42 days old.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 109·7 m.×51·8 m. (iii) 5. (iv) (a) 51·8 m.×2·7 m. (b) 45·7 m.×1·8 m. (v) 30 cm.×45 cm. (vi) Yes.

4. GENERAL :

(i) Below normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1964 to 66 (Expt. for 65-N.A.). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 350 Kg/ha. (ii) 49·1 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	A_1	A_2	A_3	A_4
Av. yield	361	371	450	217

C.D.=68·4 Kg/ha.

Crop :- Jowar (*Kharif*). **Ref :- A.P. 62(129), 63(124), 64(I34).**

Site :- Millet. Res. Stn., Madhira. **Type :- 'C'.**

Object :—To study the effect of different methods of cultivation on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow for 62 and 64 ; G.M. for 63. (c) Nil. for 62, 64 ; 150·1 Kg/ha. of P_2O_5 as Super for 63. (ii) Light-black soil. (iii) 26.9.62 ; 16.9.63 ; 23.9.64. (iv) (a) Running gorru once and 2 ploughings for 62, 63, Running gorru twice, danti once bakher once and 4 ploughings for 64. (b) to (e) As per treatments. (v) Nil. for 62,63 ; 62·8 Q/ha. of F.Y.M. for 64. (vi) PJ—22 k (medium. (vii) Unirrigated. (viii) Gapfilling, thinning and weeding. (iv) 39·3 cm. ; 22·8 cm. ; 81·7 cm. (x) 23.1.63 ; 24.1.64 ; 20.1.65

2 TREATMENTS :

3 methods of cultivation : C_1=Poona method of cultivation. Dibbling was done with 6 to 8 seeds/hole, 46 cm.×30 cm. spacing, 16 8 to 20·2 Kg/ha. seed rate ; two thinnings were done after 20 and 30 days of sowing and finally keeping 2 to 3 plants/hill. Basal dressing done with 168·1 Kg/ha. of N as A/S and 100·9 Kg/ha. of P_2O_5 as Super C_2=Local method : Sowing is done by drilling by 46 cm. seed drill, seed rate 11·2 Kg/ha., spacings between rows 10 cm., basal dressing done with 112·1 Kg/ha. of P_2O_5 as Super. C_3=Local method with higher manuring. Same as in C_2 except basal dressing was done with 168·1 Kg/ha of N as A/S and 100·9 Kg/ha. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 27·4 m.×15·2 m. for 62 ;N.A. for others. (iii) 8. (iv) (a) 15·2 m.×9·1 m. (b) 15·2 m.×9 1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1962—64. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

(i) 1116 Kg/ha. (ii) 175·7 Kg/ha. (based on 46 d.f. made up of pooled error and Treatment×years interaction. (iii) Treatments differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	C_1	C_2	C_3
Av. yield	1261	954	1133

C.D.=102 2 Kg/ha.

Treatments	C_1	C_2	C_3	Sig.	G.M.	S.E./plot
Years						
1962	1081	848	969	N.S.	966	198
1963	1216	938	1102	N.S.	1085	173
1964	1485	1076	1328	**	1296	165
Pooled	1216	954	1133	**	1116	175·7

Crop :- Jowar. **Ref :- A.P. 65(17).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'C'.**

Object :—To find out optimum spacing for Jowar.

1. BASAL CONDITIONS :

(i) (a) Millets—Pulses, (b) Ragi. (c) 44 Kg/ha. of N as A/S. (ii) Sandy loam. (iii) ZZ.6.65. (iv) (a) 3 ploughings. (b) dibbling. (c) 9·9 Kg/ha. (d) As per treatments. (e) 1. (v) 97 Kg/ha. N as A/S+ 50 Kg/ha. of P_2O_5 as Super+50 Kg/ha. of K_2O as Mur. Pot./ha. (vi) CSH—1. (vii) Unirrigated. (viii) 2 weedings, hoeing, 2 push hoeings. (ix) 60·9 cm. (x) 2.10.65.

2. TREATMENTS :

3 spacings : S_1=91 cm.×8 cm., S_2=61 cm.×10 cm. and S_3=46 cm.×15 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 5·5 m.×6·1 m. (b) 3·1 m.×6·1 m. (v) 91 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin 28 gm. in 18 litres of water sprayed as a precautionary measure against Altergera. (iii) Grain and straw yields. (iv) (a) 1965 only. (d) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 450 Kg/ha. (ii) 378 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	S_1	S_2	S_3
Av. yield	4324	4576	4604

Crop :- Jowar (*Kharif*) **Ref :- A.P. 62(204)**

Site :- Project Development aud Demonstration Farm, Yemmiaganur. **Type :- 'CV'**

Object :—To study the performances of poomineut Jowar varieties in June and July sowings under Tungabhadra Ayacut.

1. BASAL CONDITIONS :

(i) (a) Cotton Jowar. (b) Cotton. (c) 125·5 Q/ha. F.Y.M. (ii) Black soil. (iii) As per treatments. (iv) (a) ploughing blade harrowing. (b) Drilling. (c) 12 Kg/ha. between (d) 27 cm. rons. (e) 1 (v) 125·5 Q/ha. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Gap filling, thimminy, interculture by weeding dantalu and line weeding. (ix) 38·0 cm. (x) 15, 18.10.62/30.12.63.

2. TREATMENTS :

Main-plot treatments :

2 sowing dates : S_1=28th June 62 and S_2=11th July 62.

Sub-plot treatments :

4 varieties: V_1=Y-75, V_2=PJ10 k, V_3=D-340 and V_4=Co-9.

3. DESIGN :

(i) Soil Split-plot. (ii) (a) 2 main-plots replication, 4 sub-plots/main-plot. (b) 14·6 cm.×12·2 cm. (iii) 6 (iv) (a) 12·2 cm.×3·7 cm. (b) N.A. (v) Yes. (vi) Yes.

4. GENERAL :

(i) germination was good. (ii) Seed was pretvated in the Sulphur to prevent Short hunt. (iii) grain yield. (iv) (a) 62 to 63. (b) Nil. (c) Nil. (v)(a) (b) N.A. (vi) Nil. (vii) Due to unfavourable weather D-40 and PJ-104 in July plots unfavourably failed to set grain.

5. RESULTS :

(i) 1072 Kg/ha. (ii) (a) 50·9 Kg/ha. (b) 75·6 Kg/ha. (iii) Main effects of V,S, and interaction V×S are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	Mean
S_1	1037	1207	1122
S_2	723	1321	1022
Mean	880	1264	1072

C.D. for S marginal means=53·5 Kg/ha.
C.D. for V marginal means=68·6 Kg/ha.
C.D. for V means at the same bud of S=97·1 Kg/ha.
C.D. for S means at the same level of V=87·3 Kg/ha.

Crop -: Jowar **Ref :- A.P. 63(195)**

Site :- Project Development and Demonstration Farm Yemmiaganur. **Type :- 'CV'**

Object: —To study the performances of prominant Jowar varieties in June and July sowings.

1. BASAL CONDITIONS:

(i) (a) Cotton-Jowar. (b) Cotton. (c) 125·5 Q/ha. of F.Y.M.+34 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) As per treatments. (iv) (a) ploughing, blade harrowing. (b) Drilling. (c) 12 Kg/ha. (c) 30cm. (c) 1 (v) 125·5 Q/ha. of F.Y.M.+17 Kg/ha. of W+22 Kg/ha. of P_2O_5 (vi) As per treatments (vii) Irrigated. (viii) Gap filling, thinning, weeding and interculture. (ix) 55·1 cm. (x) N.A.

2. TREATMENTS:

Main-plot treatments:

2 sowings dates: S_1=20th July and S_2=17th July.

Sub-plot treatments:

4 varieties: V_1=Y-75, V_2=P J-10 k, K_3=D-340 and K_4=Co-9.

3. DESIGN

(i) Soil Split plot. (iii) (a) 2 main-plots/replications and 4 Sub-plot/main-plot (b) N.A. (iii) 6 (iv) (a) 12·2 cm.×3 cm. (b) N.A. (v) Yes. (vi) Yes.

4. GENERAL:

(i) Germination was good. (ii) Seed was pre treated with Sulpher against seed born smut disease. Endrin spraying and Endrin granule spraying over wheres and toluga against Stem borer. (iii) Grain yield (iv) (a) 62 to 63. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Nil,

5. RESULTS:

(i) 1503 Kg/ha. (ii) and (iii) N.A. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	2750	2192	2006	2328	2319
S_2	766	697	610	672	686
Mean	1758	1445	1308	1500	1503

Crop :- Jowar (*Kharif*). **Ref :- A.P. 63(59).**

Site :- Millet Res. Stn., Dronachelam. **Type :- 'CMV'.**

Object :— To study the effect of different spacings and levels of N on different varieties of Jowar.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Light red sandy ioam. (iii) 20.7.63 ann resouring on 22.8.63. (iv) (a) 2 horrowings and subsequently cultural repuation in the gorru and guntaka. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 9·9 C.L./ha. of F.Y.M., and 33·6 Kg/ha. of P_2O_5 as Super by soil application. (vi) As per treatments. (vii) Unirrigated. (viii) Twice intercultivation and weedings. (ix) 42·3 cm. (x) 5 to 11.12.63.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 varieties : V_1=N—12, V_2=N—S×153617 and V_3=M-S×153691.

(2) 2 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

(3) 3 spacings : S_1=7·6, S_2=15·2 and S_3=22·9 cm.

N applied in two equal doses, half as basal dressing and half 35 days after sowing.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 10·7 m.×4·6 m. (b) 10·1 m.×3·7 m. (v) 30 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Heavy attack of red howeing cater pillar due to which refousing was done. At the fome of resouring 10% timet grammles was applied gaurd after not short fly. (iii) Yield of grain and fodder. (iv) (a) 1363-64 (varieties changed). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1005 Kgha. (ii) 230 5 Kg/ha. (iii) Main effects of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	V_1	V_2	V_3	Mean
N_0	497	889	797	664	534	984	728
N_1	1232	1177	978	984	1098	1306	1129
N_2	1116	1344	1012	1019	1300	1153	1157
Mean	948	1137	929	889	977	1148	1005
V_1	1064	877	772				
V_2	690	1141	1102				
V_3	1042	1392	959				

C.D. for N marginal means=159·3 Kg/ha.

Crop :- Jowar. **Ref :- A.P. 64(72)·**

Site :- Millet Res. Stn., Dronachelam. **Type :- 'CMV'.**

Object :— To study the effect of different spacings and levels of N on different varieties of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Kona and *Jowar*. (c) N.A. (ii) Light red sandy loam. (iii) 1.7.64. (iv) (a) 5 times Guntako and twice Gorru. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 6·2 C.L./ha. of corn post and 33·6 Kg/ha. of P_2O_5 as Super by soil application. (vi) As per treatments. (vii)Unirrigated. (viii) Twice intercultivation and two weedings. (ix) 57·1 cm. (x) 18.11.64.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 varieties : V_1=N—12, V_2=CK—60 A×1·2930 and V_3=CK—60 A×1·53691.

(2) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

(3) 3 spacings : S_1=7·6, S_2=15·2 and S_3=22·9 cm.

N applied by soil application in two equal doses, half at the time of sowing and haif 35 days after sowing.

3. DESIGN :

(i) 3^3 confd. (VNS confd). (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 10·7 m.×3·7 m. (b) 10·1 m.×2·7 m, (v) 30 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) In the earlier stages the young seedlings were heavily attacked by red hoeing cater pillar. (iii) Yield of grain and straw. (iv) (a) 1963-64 (varieties changed). (b) Nil. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 668 Kg/ha. (ii) 226·8 Kg/ha. (iii) Main effects of V, N, S and interaction VS and VNS are significant, (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	S_1	S_2	S_3	Mean
V_1	497	1112	1107	988	877	848	905
V_2	247	489	838	524	326	687	518
V_3	227	620	1008	615	348	670	581
Mean	324	740	984	709	517	735	668
S_1	220	395	358				
S_2	657	677	885				
S_3	786	1161	998				

C.D. for V, N or S marginal means—156·8 Kg/ha.

C.D. for body of V×S table =271·5 Kg/ha,

Crop :- Jowar. **Ref :- A.P. 65(180)·**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CMV'.**

Object : To study the response local varieties and adopted hpb wet to nitrogen fertiligation as in fluenced by plant population.

1. BASAL CONDITIONS :

(i) (a) Cotton—*Jowar*. (b) Cotton. (c) Nil. (ii) Black cotton soil. (iii) 28.9.65. (iv) (a) working gorru and intaka altervatinely 4 times. (b) Hand dibbling. (c) 6 Kg/ha. (d) 46 cm. between 20 cm. and spacings between plants as per treatment. (e) 1. (v) 33 Kg/ha. of P_2O_5 as Super in furrows. (vi) As per treatments. (vii) Unirrigated. (viii) Intercultivation with rokala guntaka twice. (ix) N.A. (x) 18.1.66.

2. TREATMENTS :

Main-plot treatments

2 varieties : V_1=N. 1 (veal) and V_2=CSH—1.

Sub-plot treatments

All combinations of (1) and (2)

(1) 3 spacings between plants : S_1=7·5, S_2=15, S_3=22·5 cm.

(2) 5 levels of were Als : N_0=0, N_1=50, N_2=100, N_3=150, N_4=200 Kg/ha.

Approxinake plant populations : S_1=2,72,000, S_2=1, 36,000, S_3=91,000 ½N was applied by placing half of it at two time of rowing and the 2nd half as a fidd dres‹ing 2and could not be given due to failure of monsoon rains.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 15 sub-plots/main-plot. (b) N.A. (iii) 5. (v) (a) 6·1 m.×3·7 m. (b) 6·1 m.×2·7 m. (v) 46 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil, necessary weed control and insect control measures were carried out. (iv) (a) 1965 only. (b) and (c) Nil. (v) Nil. (vi) The season was charecterised by failure of monsoon rains. (vii) Nil.

5. RESULTS :

(i) 1355 Kg/ha. (ii) (a) 103·5 Kg/ha. (b) 245·7 Kg/ha. (iii) Main effect of V is significant and that of N is highly significant. (iv) Av yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	S_1	S_2	S_3	Mean
V_1	1175	1363	1502	1544	1717	1432	1462	1486	1460
V_2	1023	1107	1386	1367	1368	1121	1276	1353	1250
Mean	1099	1235	1444	1455	1542	1276	1369	1419	1355
S_1	903	1162	1392	1435	1491				
S_2	1124	1270	1429	1442	1580				
S_3	1269	1272	1511	1489	1556				

C.D. for V marginal means=46·9 Kg/ha.
C.D. for N marginal Means=125·5 Kg/ha.

Crop :- Jowar. **Ref :- A.P. 65(179).**

Site :- Cotton Res. Stn., Nandyal. **Type : 'CMV'.**

Object :—To study the response of local varieties to nitrogen fertilisation on growth and yield as influenced by plant population.

1. BASAL CONDITIONS :

(i) (a) Cotton—*Jowar*. (b) Cotton. (c) Nil. (ii) Black cotton soil. (iii) 28.9.65. (iv) (a) Working gorru and guntaka alternatively 4 times. (b) Hand dibbling. (c) 6 Kg/ha. (d) As per treatments for between plants and 45 cm. between rows. (e) 1. (v) 33 Kg/ha. of P_2O_5 as Super in furrows. (vi) As per treatments (vii) Unirrigated. (viii) Intercultivation with rekkala guntaka twiee. (ix) N.A. (x) 18.1.66.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 varieties : V_1=N—1, V_2=N 2 and V_3=NJ—1031.
(2) 3 spacings between plants : S_1=7·5,S_2=15 and S_3=22·5 cm.
(2) 3 levels of N : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

N was applied by placing half at the time of sowing and the 2nd half as a side dressing.

3. DESIGN :

(i) 3^2 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 11·0 m.×3·7 m. (b) 10·1 m.×2·7 m. (v) 46 cm.×46 cm. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Necessary weed control and insect control measures were carried out. (iii) Yield of grain and straw. (iv) (a) 1965—66. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1344 Kg/ha. (ii) 178·1 Kg/ha. (iii) Main effects of V and S are significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	N_0	N_1	N_2	Mean
S_1	1142	1280	1285	1124	1290	1295	1236
S_2	1220	1389	1515	1285	1371	1468	1375
S_3	1206	1495	1562	1399	1386	1479	1421
Mean	1189	1388	1454	1269	1349	1414	1344
N_0	1166	1287	1357				
N_1	1184	1455	1408				
N_2	1218	1421	1596				

C.D. for V or S marginal means=123·2 Kg/ha.

Crop :- Maize (*Kharif*). **Ref :- A.P. 64(122), 65(65).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'M'.**

Object :—To find out comparative advantage of applying phosphate in two doses in the shape of Ammo. Phos. over Super applied in one dose at the time of sowing.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Fallow. (c) Nil. (ii) Red chalka. (iii) 30.7.64 ; 29.6.65. (iv) (a) 1to 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 61 cm. × 30 cm. (e) 1. (v) 17 Kg/ha. of K_2O applied as Mur. Pot. uniformly to all plots. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning, 1to 3 weedings and ridging. (ix) 74·2 cm. (x) 17.11.64, 9.10.65.

2. TREATMENTS :

A—Ammonium Phosphate.

B—Ammonium Sulphate and Super Phosphate.

Ammonium Phos: 56 Kg/ha. applied at sowing and other 56 Kg/ha. at knee high stage. 28 Kg/ha. of N as A/S and 56 Kg. P as Super applied at the time of sowing and another 28 Kg. of N as A/S applied at the knee high stage.

3. DESIGN :

(i) AB—BA method. (ii) (a) 2 (b) 15·2 m. × 7·3 m. for 64 ; N.A. for 65. (iii) 10. (iv) (a) 15·2m. × 3·7 m. (b) 15·2 m. × 2·4 m. (v) 61 cm. on each side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1964—66. (b) No. (c) N.A. for 64, Nil. for 65. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

64(122)

(i) 3688 Kg/ha. (ii) 451·0 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	A	B	Mean
Av. yield	3614	3722	3668

S.E./mean=142·2 Kg/ha.

65(65)

(i) 3657 Kg/ha. (ii) 116 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	A	B
Av. yield	3614	3700

Crop :- Maize (*Kharif*). **Ref :- A.P. 64(249), 65(144).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'MV'.**

Object :—To find out the response of different varieties of Maize to different doses of fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara. (c) 11 Kg/ha. of N as A/S, 22 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 28.6.64 ; 22.6.65. (iv) (a) 3 to 4 ploughings with country plough followed by working *gorru*. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm.×30 cm. (e) 1. (v) 25 C.L./ha. of F.Y.M. for 64 ; 12 C.L/ha. of F.Y.M. for other. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing up, 2 to 3 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :

Main-plots treatments

2 varieties : V_1=Local and V_2=Deccan hybrid.

Sub-plot treatments

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=34$ and $N_2=67$ Kg/ha.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=22$ and $P_2=45$ Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=22$ and $K_2=45$ Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 9 sub-plots/block and 3 blocks/main-plot. (b) N.A. (iii) 2. (iv) (a) 9·1 m.×5·5 m. (b) 8·5 m.×4·3 m. (v) 30 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of grass hopper for 64, controlled by spraying BHC 10 %, Endrin and Parathion ; incidence of Cob borer for 65 controlled by spraying afadrin. (iii) Yield of grain and straw. (iv) (a) 1964-65. (b) No. (c) Nil. (v) Nil. (vi) Unprecedented rain fall of 20 cm. on 27.9.64 for 64 ; Nil. for 65. (vii) Main and sub-plot error variances are homogeneous. Interaction is present in sub-plot and absent in main plot.

5. RESULTS :

Pooled results

(i) 1389 Kg/ha. (ii) (a) 607·5 Kg/ha. (based on 3 d.f. made up of pooled error and V×years interaction). (b) 731·2 Kg/ha. (24 d.f. made up of interaction of N,P, K, N×P, N×K, P×K, V×N, V×P and V×K with years). (iii) Main effect of N is highly significant. Main effect of V and interaction V×N are significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
V_1	607	1338	1589	1132	1157	1244	1228	1196	1109	1178
V_2	681	1790	2332	1643	1640	1519	1602	1592	1609	1601
Mean	644	1564	1960	1388	1399	1381	1415	1394	1359	1389
K_0	636	1685	1923	1398	1484	1362				
K_1	640	1522	2020	1457	1380	1345				
K_2	656	1485	1938	1308	1333	1437				
P_0	630	1553	1980							
P_1	686	1596	1914							
P_2	615	1542	1987							

C.D. for V marginal means =263·0 Kg/ha.
C.D. for N marginal means =251·4 Kg/ha.
C.D. for N means at the same level of V=355·6 Kg/ha.
C.D. for V means at the same level of N=383·2 Kg/ha.

Individual results

Treaments	V_1	V_2	Sig.	G.M.	S.E./plot
Years					
1964	1494	1949	N.S.	1721	998·7
1965	862	1255	**	1058	240·1
Pooled	1178	1601	*	1389	607·5

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2
Years							
1964	688	1963	2512	**	1686	1731	1744
1965	601	1166	1408	**	1090	1067	1018
Pooled	644	1564	1960	**	1388	1399	1381

Sig.	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
N.S.	1748	1724	1693	N.S.	1721	355.8
N.S.	1083	1065	1028	N.S.	1058	283.2
N.S.	1415	1394	1359	N.S.	1389	731.2

Crop :- Maize (*Kharif*). **Ref :- A.P. 63(256).**

Site :- Project Dev. and Demons. Farm, Amaravathi **Type :- 'MV'.**

Oqject :—To select best Maize variety for black soils.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 10.7.63, gap filling on 16.7.63. (iv) (a) 3 to 4 ploughings with country plough followed by working *gorru*. (b) Hand dibbling. (c) 15 Kg/ha. (d) 75 cm.×30 cm. (e) 1. (v) 50 Kg/ha. of P_2O_5 as Super, 35 Kg/ha. of K_2O as Pot. Sul. on 10.7.63. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing up 2 to 3 times and hand weeding. (ix) N. A. (x) 29, 30.10.63.

2. TREATMENTS :

Main-plot treatment :

11 varieties : V_1=Deccan hybrid, V_2=Experimental no. 448, V_3=Rangit, V_4=Experimental no. 30, V_5=VL. 54, V_6=Ganga–101, V_7=Experimental no. 218, V_8=Experimental no. 11, V_9=Local, V_{10}=Ganga–1, and V_{11} Experimental no. 33.

Sub-plot treatment :

2 levels of N : N_1=45 and N_2=150 Kg/ha.

N applied ⅓ at seeding and 2/3 at knee high stage of crop.

3. DESIGN :

(i) Split-plot. (ii) (a) 11 Main-plots./replication/2 Sub-plot/main-plot. (b) N. A. (iii) 3 (iv) (a) N.A. (b) 45 Sq. m. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Shoot borer, spraying Endrin once. (iii) Yield of grain. (iv) (a) 63–64. (1964) N.A. (b) No. (v) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1827 Kg/ha. (ii) (a) 407·5 Kg/ha. (b) 370·9 Kg/ha. (iii) Main effects of V and N are highly significant. Interaction V×N is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
N_1	1156	1015	792	1104	830	1296	1400	1326	593	1089	785	1035
N_2	3600	2541	2933	2496	2074	2889	2918	2733	1141	2851	2630	2619
Mean	2378	1778	1862	1800	1452	2092	2159	2029	866	1970	1707	1827

C.D. for V marginal means=524·2 Kg/ha.
C.D. for N marginal means=189·4 Kg/ha.
C.D. for N means at the same level of V=628·2 Kg/ha.
C.D. for V means at the same level of N=804·2 Kg/ha.

Crop :- Maize (*Kharif*.) **Ref :- A.P. 63(173).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'MV'.**

Object—To study the effect of different levels of N, Paud K on different varieties of Marize.

1. BASAL CODITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 8, 9.6.63. (iv) 3 to 4 ploughing with country plough followed by working *Gorru*. (b) Hand dibbling. (c) 15·7 ½Kg/ha. (d) 61 cm.×30 cm. (e) 2 (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 to 3 hand weedings, earihing up ridges and furrows and thinning. (ix) N.A. (x) 24, 25.9.63.

2. TREATMENTS:

Main-plot treatments :

2 varieties : V_1=Deccan hybrid and V_2=Local.

Sub-plot treatments :

All Combinaffous of (1), (2) and (3)

(1) 3 levels of N as A/S : No=o, N_1=74·1 and N_2=148·3 Kg/ha.

(2) 3 levels of P_2O_5 as super : P_0=o, P_1=49·4 and P_2=98·8 Kg/ha.

(3) 3 levels of K_2O. as Mur. pot : K_0=o, K_1=49·4 and K_2=98·8.

uper and Mur. Pot. were applied on 7, 8.6.63. as basal dose. A/S. in three equal doses, ⅓ on 7,8.6.63, ⅓ on 16, 17.7.63. and ⅓ 15 days before flowering on 26.7.63. All fertilizers were applied by soil application.

3. DESIGN :

(i) Split-plot confd. (Y and W components confd.) (ii) (a) 2 main-plots/block ; 27 sub-plots/main-plot. (b) 26·2 m×17·4 m. (iii) 2 (iv) (a) 9·14 m.×5·49 m. (b) 7·92 m.×4·88 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Spraying Endrin at 28 gms in 18 litres of water on 29.6.63. Gamaxine was dusted on cobs to Control borer on 25.8.63. (iii) Yield of grain,straw and no. of cobs. (iv) (a) 63—65. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5, RESULTS :

(i) 958 Kg/ha. (ii) (a) 322·5 Kg/ha. (b) 438·7 Kg/ha. (iii) Main effects of N, P, and interation V×N are highly significant and interaction N×P is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
V_1	226	1114	2177	1009	1215	1292	1162	1210	1144	1172
V_2	199	677	1354	538	851	842	749	700	781	743
Mean	212	896	1766	774	1033	1067	956	955	962	958
K_0	188	861	1819	795	1022	1050				
K_1	276	988	1602	720	987	1158				
K_2	173	839	1876	806	1089	993				
P_0	250	762	1309							
P_1	218	828	2054							
P_2	169	1098	1934							

C.D. for P or N marginal means =214·0Kg/ha.
C.D. for N means at the same level of V=302·6 Kg/ha.
C.D. for V means at the same level of N=583·5 Kg/ha.
C.D. for body of N×P table =370·5 Kg/ha.

Crop :- Maize (*Rabi*).
Site :- Project Dev. & Demons. Farm, Amaravathi.

Ref :- A.P. 63(257), 64(250), 65(145).
Type :- 'MV'.

Object: – To find out the response of different varieties of Maize to different doses of fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Pillipesara* (c) 11 Kg/ha. of N as A/S, 22 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 13.11.63 ; 15.11.64 ; 22.11.65. (iv) (a) 3 to 4 ploughings with country plough followed by working *gorru*. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm.×30 cm. (e) 1. (v) Nil for 63 ; N.A. for 64, 65. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing up and 2 to 3 weedings. (ix) N.A. (x) 20.2.64, 15.3.64 ; 4.3.65; 7, 8.3.66.

2. TREATMENTS ;

Same as in expt. no. 64(249), 68(144) on page 371.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 2 main-plots/replication and each main-plot consisting of 9 sub-plots/block and 3 blocks/replication. (b) 26·1 m ×17·4 m. for 63 ; N.A. for others. (iii) 2. (iv) (a) 9·1 m.×5·5 m. (b) 7·9 m.×4·9 m. for 63 ; 8·5 m.×4·3 m. for others. (v) 61 cm.×31 cm. for 63 ; 30 cm.×61 cm. for others.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Nil. for 63 ; Incidence of Cob borer for 64, dusting BHC 10% and spraying Tafadrin ; incidence of Shoot borer for 65, Spraying Sevin and Endrin. (iii) Yield of grain and straw (iv) (a) 63—65. (b) No. (v) Nil. (vi) Nil. (vii) Since some of the means table for 63 is N.A. ; results of expt. no. 63(257) is presented individually and combined results of other two years are given below. Errors are homogeneous and Treatment × years interaction is absent.

5. RESULTS :

63(257)

(i) 1651 Kg/ha. (ii) (a) 1961·7 Kg/ha. (b) 299·8 Kg/ha. (iii) Main effects of N,P and interaction N×P are highly significant and interaction V×N is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	V_1	V_2	Mean
N_0	645	692	872	593	882	737
N_1	1665	1903	1750	1532	2014	1773
N_2	2204	2362	2763	2063	2822	2443
Mean	1505	1652	1795	1396	1906	1651
K_0	1352	1717	1747			
K_1	1542	1579	1772			
K_2	1621	1660	1868			

other tables are N. A.

C.D. for N or P marginal means=143·2 Kg/ha.
C.D. for means in the body af N×P table=247·9 Kg/ha.
C.D. for N means at the same level of V=202·4 Kg/ha.
C.D. for V means at the same level of N=384·3 Kg/ha.

Combined results of 64 and 65.

(i) 2043 Kg/ha. (ii) (a) 402·2 Kg/ha. (2 d.f. made up of pooled error) (b) 295·4 Kg/ha. (76 d.f. made up of pooled error). Main effects of N, P and interaction V×N are highly signiffcant. Main effect of V is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
V_1	944	2118	2549	1782	1884	1945	1855	1849	1907	1870
V_2	1107	2387	3155	2069	2285	2295	2146	2297	2206	2216
Mean	1025	2252	2852	1926	2084	2120	2000	2073	2057	2043
K_0	1001	2246	2754	1958	1997	2045				
K_1	1045	2229	2944	1931	2172	2115				
K_2	1029	2282	2859	1888	2083	2199				
P_0	942	2156	2680							
P_1	1099	2280	2873							
P_2	1035	2321	3004							

C.D. for N or P marginal means=98·1 Kg/ha,
C.D. for V marginal means=235·3 Kg/ha.
C.D. for N means at the same level of X=138·9 Kg/ha.
C.D. for V means at the same level of N=245·0 Kg/ha.

Individual results.

Treatments	V_1	V_2	Sig.	G.M.	S.E./plot
Years					
1964	1637	1971	**	1804	417·6
1965	2104	2462	**	2283	390·4
Pooled	1870	2216	*	2043	402·2

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years								
1964	1032	1900	2480	**	1763	1842	1807	N.S.
1965	1019	2605	3225	**	2089	2327	2433	**
Pooled	1025	2252	2852	**	1926	2084	2120	**

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
1756	1851	1805	N.S.	1804	326·2
2245	2295	2309	N.S.	2283	320.4
2000	2073	2057	N.S.	2043	402.2

Crop :- Maize (*Rabi*) **Ref :- A.P. 62(31), 63(125).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'MV'.**

Object :—To study the effects of different levels of N, P and K on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Maize. (b) Maize. (c) As per treatments. (ii) Red *Chalka*. (iii) 16.12.1962 ; 4.12.1963. (iv) (a) 2 ploughings and then ridger was worked. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 61 cm.×30 cm. (e) 1. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding. (ix) 16·5 cm., 2·5 cm. (x) 18, 19, 26, 27.4.63 ; 30.3.64.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Deccan hybrid and V_2=Local-

Sub-plot treatments :

All combinations of (1), (2) and (3)

(1) 5 levels of N as A/S : N_0=0, N_1=44·8, N_2=89·7. N_3=134.5 and N_4=179·3 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=44·8 and P_2=89·7 Kg/ha.
(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=89·7 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication. 30 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. for 62 ; 6·1 m.×3·7 m. for 63. (b) N.A. for 62 : 6·1 m.×2·4 m. for 63.

4. GENERAL :

(i) Good. (ii) Incidence of Corn borer, controlled by spraying Endrin for 62 ; Nil for 63. (iii) Yield of grain. (iv) (a) 1962-63. (b) Yes. (v) and (vi) Nil. (vii) Since the sub-plot error variances are heterogeneous, therefore the individual years results are presented below :

5. RESULTS :

62(131)

(i) 4658 Kg/ha. (ii) (a) 1398 Kg/ha. (b) 835 Kg/ha. (iii) Main effect of V and M are highly significant. Interaction V×N is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	P_0	P_1	P_2	K_0	K_1	Mean
V_1	2657	4409	5721	5990	6907	5118	5239	5055	5194	5080	5137
V_2	2764	3860	4555	4695	5021	4093	4259	4185	4203	4155	4179
Mean	2711	4135	5138	5343	5964	4605	4749	4620	4698	4617	4658
K_0	2831	4199	5260	5323	5864	4662	4734	4891			
K_1	2590	4070	5016	5363	6063	4549	4763	4549			
P_0	2872	3948	5021	5344	5840						
P_1	2787	4028	5184	5466	6280						
P_2	2473	4429	5209	5218	5772						

C.D. for V marginal means=574·3 Kg/ha.
C.D. for N marginal means=334·0 Kg/ha.
C.D. for N means at the same level of V=478·9 Kg/ha.
C.D. for V means at the same level of N=696·4 Kg/ha.

63(125)

(i) 2690 Kg/ha. (ii) (a) 1617 Kg/ha. (b) 696 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	P_0	P_1	P_2	K_0	K_1	Mean
V_1	1186	2399	3061	3487	3835	2719	2812	2849	2769	2817	2793
V_2	1491	2282	2786	3179	3195	2548	2519	2693	2575	2599	2587
Mean	1339	2341	2923	3333	3515	2634	2665	2771	2672	2708	2690
K_0	1398	2450	2831	3190	3490	2647	2632	2736			
K_1	1279	2231	3016	3476	3540	2620	2699	2805			
P_0	1416	2384	2720	3196	3456						
P_1	1287	2174	3073	3305	3486						
P_2	1313	2464	2977	3498	3603						

C.D. for N marginal means 278·5 Kg/ha.

Crop : Maize. **Ref :- A.P. 62 (121), 63 (126).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'MV'.**

Object :—To study the effect of different levels of N, P, K on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Maize. (b) Maize. (c) N.A. ; as per treatments for 63. (ii) Red chalka. (iii) 7.7.72 ; 28.6.63. (iv) (a) 3 ploughings and marking of ridges. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 61 cm × 30 cm. (e) 1. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Thinning and hand weeding. (ix) 74·2 cm. 86·5 cm. (x) 23.10.62 ; 12.19.63.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Deccan hybrid and V_2=Local.

Sub-plot treatments :

All combinations of (1), (2) and (3)

(1) 5 levels of N as A/S : N_0=0, N_1=44·8, N_2=89·7, N_3=134·5 and N_4=179·3 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=44·8 and P_2=89·7 Kg/ha.

(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=89·7 Kg/ha.

P and K applied on 3.7.62, N applied in 3 doses one before flowering, one at knee high stage and the last dose at tasseling stage.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 30 sub-plots/main-plot. (b) 36·6 m × 9·1 m. for 62 ; N.A. for other. (iii) 4. (iv) (a) 3·7 m. × 3·1 m. for 62 ; 6·1 m. × 3·7 m. for other. (b) 3·1 m. × 2·4 m. for 62 ; 6·1 m. × 2 4 m. (v) 30 cm. × 3) cm. for 62 ; 61 cm. on either side of the plot along breadth for other. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed at 28 gm. in 28 litres against borer attack for 62 ; Nil. for other. (iii) Grain of yield. (iv) (a) 1962—63. (b) Yes (c) Nil. (v) and (vi) Nil. (vii) Error variances are homogeneous and interaction is absent.

5. RESULTS:

Pooled results

(i) 4415 Kg/ha. (ii) (a) 1982.4 Kg/ha. (based on 7 d.f. made up of pooled error and Treatments × years interaction). (b) 653·2 Kg/ha. (348 d.f. made up of pooled error). (iii) Main effect of N is highly significant and that of V is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	P_0	P_1	P_2	K_0	K_1	Mean
V_1	1633	3149	5333	6250	7317	4743	4737	4729	4695	4778	4737
V_2	1412	3139	4414	5549	5958	4011	4245	4027	4022	4167	4094
Mean	1522	3144	4873	5900	6637	4377	4491	4378	4358	4472	4415
K_0	1490	3056	4775	5777	6692	4323	4372	4380			
K_1	1554	3231	4971	6022	6583	4431	4609	4377			
P_0	1481	3102	4915	5850	6536						
P_1	1633	3457	4840	5889	6635						
P_2	1453	2873	4864	5961	6741						

C.D. for V marginal means=427·9 Kg/ha.

C.D. for N marginal means=184·7 Kg/ha.

Individual results

Treatments	T_{11}	T_{12}	Sig.	G.M.	S.E./plot
Years					
1962	4784	4097	*	4440	2945
1963	4690	4092	**	4391	1448
Pooled	4737	4094	*	4415	1982·4

Treatments	N_0	N_1	N_2	N_3	N_4	Sig.	P_0	P_1	P_2	Sig.
Years										
1962	1744	3168	4592	5863	6833	**	4437	4532	4361	N.S.
1963	1301	3120	5155	5937	6444	**	4318	4459	4395	N.S.
Pooled	1522	3144	4873	5900	6637	**	4377	4491	4378	N.S.

K_0	K_1	Sig.	G.M.	S.E./plot
4303	4578	*	4440	667
4414	4368	N S.	4391	639
4358	4473	N.S.	4415	653·2

Crop :- Maize (*Kharif*). **Ref :- A.P. 62(92).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'MV'.**

Object :—To find out the optimum dose of N for different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Fallow. (c) Nil. (ii) Red chalka. N.A. (iii) 29.6.62. (iv) (a) 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 76 cm.×30. cm. (e) 1. (v) 89·7 Kg/ha. of P_2O_5 as Super and 44·8 Kg/ha. of K_2O as Mur. Pot. on 24.6.62 by hand application. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 hand weedings and ridging. (ix) 81·2 cm. (x) 19.10.62.

2. TREATMENTS :

Main-plot treatments :

8 varieties of maize :- V_1=Ganga—1, V_2=Ganga—10, V_3=Ranjit, T_4=Deccan, V_5=Malan white×(E to PL—13—1—H—H—1—H×ten n 29), V_6=Rudrapur white×(E to PL-13—1—H—H—1—H×ten n 29), V_7=Indore state×(E to PL—13—1—H—H—1—H×ten n 29) and V_8=Local.

Sub-plot treatments :

2 levels of N as A/S : N_1=44·8 and N_2=112·1 Kg/ha.

N was applied in two equal dose on 26.6.62 and 31·762 and N_2 was applied in three doses, 22·4 Kg/ha. on 26.6.62, 44·8 Kg/ha. of N on 31.7.62 and 44·8 Kg/ha. N on 21.8.62 by hand.

3. DESIGN :

(i) Split—plot. (ii) (a) 8 main-plots/replication and 28 sub-plots/main-plot. (b) 73·2 m.×12·2 m. (iii) 3. (iv) (a) 12·2 m.×4·6 m. (b) 12·2 m.×3·1 m. (v) 76 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Days to silking, vigour, plant aspect, ear apect, Husk cover helimeth, corn borer %, lodging and grain yield. (iv) (a) 1962—contd (treatments modified). (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3610 Kg/ha. (ii) (a) 449·3 Kg/ha. (b) 465·3 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	N_6	V_7	V_8	Mean
N_1	2399	2771	3135	2784	3033	2954	2925	2724	2841
N_2	3695	4373	4833	4794	4388	4689	4224	4037	4379
Mean	3047	3572	3984	3789	3710	3822	3574	3380	3610

C.D. for N marginal means=284·7 Kg/ha.

Crop :- Maize (*Kharif.*) **Ref :- A.P. 63(119)**

Site :- Maize Res. Stn., Karimnagar **Type :- 'MV'.**

Object :—To study the effect of N on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Fallow. (c) Nil. (ii) Red *Chalka.* N.A. (iii) 27.6.63. (iv) (a) 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 69 cm. × 30 cm. (e) 1. (v) 50 Kg/ha. of P_2O_5 as Super, 35 Kg/ha. of K_2O as Mur. Pot. as basal. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinng, 3 weedings and ridging. (ix) 86·5 cm. (x) 14.10.63.

2. TREATMENTS :

Main-plot treatments :

11 varieties : V_1=Ganga −1, V_2=Ganga−101, V_3= Ranjit, V_4=Deccan. V_5=VL-54, V_6=Experimental hybrid no. 213, V_7=Experimental. hybrid no. 11, V_8=Experimental hybrid no. 448, V_9=Experimental hybrid no. 30, V_{10}=Experimental hybrid no. 33 and V_{11}=Local.

Sub-plot treatments :

2 levels of N as A/S : N_1=44·8 and N_2=112·1 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 11 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 12·2 m. × 5·3 m. (b) 12·2 m. × 3.8 m. (v) 76 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield, days to silking, vigour, plant aspect, Ear aspect, Husk cover, Helimenthosporium, corn borer %. (iv) (a) 1962—contd. (treatments modified). (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4680 Kg/ha. (ii) (a) 711·1 Kg/ha. (b) 769·1 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
N_1	3301	4593	3839	3122	3308	3251	3279	3609	3244	2748	2899	3381
N_2	5289	5841	5454	6516	5604	6387	6437	7262	5956	6422	4593	5978
Mean	4295	5217	4646	4819	4456	4819	4859	5436	4600	4585	3746	4680

C.D. for N marginal means=392·6 Kg/ha.

Crop :- Maize (*Kharif*) **Ref. :- A.P. 64 (121).**

Site :- Maize Res. Stn., Karimnagar. **Type -: 'MV'**

Object :—To study the effect of N on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Fallow. (c) Nil. (ii) Red chalka. (iii) 3.8.64 (vi) 3 ploughings with iron plough, levelling, marking ridging. (b) Hand dibbling. (c) 14.8 Kg/ha. (d) 69 cm.×30 cm. (e) 1. (v) 50 Kg/ha. of P_2O_5 as Super, 35 Kg/ha. of K_2O as Mur. Pot. as basal. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 weedings and ridging. (ix) 58·0 cms. (x) 13.11.64.

2. TREATMENTS :

Main-plot Treatments :

11 Varieties : V_1=Ganga-101, V_2=Ranjit, V_3=Daccan, V_4=Ganga-3 V_5=Hi-starch, V_6=Him. 123 V_7=Experimental hybrid no. 238. V_8=Experimental hybrid no. 448 V_9=Experimental hybrid no. 450 V_{10}=Experimental hybrid no. 461 and V_{11}=Local.

Sub-plot treatments :

2 levels of N as A/S : N_1=44.8 and N_2=112.1 Kg/ha.

3. DESIGN AND 4. GENERAL :

Same as in expt. no. 63 (119) on page 380.

5. RESULTS :

(i) 2219 Kg/ha. (ii) (a) 236·0 Kg/ha. (b) 406·5 Kg/ha. (iii) Main effect of N is highly significant and that of V is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
N_1	1801	2187	1863	1295	1418	1660	1762	1742	2128	1660	768	1662
N_2	2997	3262	3464	1883	2634	2572	3464	2775	3687	2735	1053	2775
Mean	2399	2724	2664	1589	2026	2116	2613	2258	2908	2198	910	2219

C. D. for V marginal means=284·1 Kg/ha.

C. D. for N marginal means=207·6 Kg/ha.

Crop :- Maize. **Ref :- A. P. 1965 (66).**

Site :- Agri. Res. Stn., Karimnagar. **Type :- 'MV'.**

Object :—To study the effect of N on different hybrids of Maize.

1, BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Fallow (c) Nil. (ii) (a) Red Chalka. (b) N.A. (iii) 3.7.65. (iv) (a) 3 ploughings with iron plough, levelling and ridging. (b) Hand dibbling. (c) 15 Kg/ha. (d) 62 cm × 31 cm. (e) 1.(v) 50 Kg/ha. of P_2O_5 as Super+30Kg/ha. K_2O as Mur. Pot.+N as per treatments. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, weeding and ridging. (ix) 81·2 cm. (x) 29.10.65

2. TREATMENTS :

Main-plot treatments :

9 varieties : V_1=Hybrid-450, V_2=Ganga-3, V_3=Ganga-2, V_4=Ganga-101, V_5=Hi-tarch, V_6=Amarillo-decuba, V_7=Deccan hybrid, V_8=Ranjit and V_9=Local.

Sub-plot treatments' :

2 levels of N as A/S : N_1=45 and N_2=112 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication ; 2 sub-plots/main-plot. (b) 12·2m.×65·9 m. (iii) 3. (iv) (a) 12·2 m.×5·3 m. (b) 12·2 m.×3·8 m. (v) 76 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Root lodging, stem lodging and grain yield. (iv) 1962-contd. (modified). (b) Yes. (c) N. A. (v) N. A. (vi) Due to heavy rain of 17 cm. on 15.7.65. germination was spare and crop stand was poor. (vii) Nil.

5. RESULTS :

(i) 3374 Kg/ha. (ii) (a) 512 Kg/ha. (b) 390 Kg/ha. (iii) Main effects of V and N are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	Mean
N_1	3140	2735	3141	2817	2409	2218	2876	2553	2229	2680
N_2	4193	4275	4011	4193	4233	3220	4011	3951	4522	4068
Mean	3667	3505	3576	3505	3321	2719	3444	3252	3376	3374

C. D. for V marginal means=626·7 Kg/ha.
C. D. for N marginal means=222·7 Kg/ha.

Crop :- Maize. **Ref :- A.P. 62(290).**

Site :- Fruit Res. Stn., Sangareddy. **T ype :- 'MV'.**

Object :— To find out the nitrogen requirements for the hybrid Maize.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Fallow. (c) Nil. (ii) Black. (iii) N.A. (iv) (a) 3 ploughings, levelling and ridging. (b) Hand dibbling. (c) 15 Kg/ha. (d) 76 cm.×30 cm. (e) 1. (v) 50 Kg/ha.of P_2O_5+35 Kg/ha. of K_2O was applied prior to sowing. (vi) As per treatments. (vii) Irrigated. (viii) Thinning once and weeding thrice. (ix) and (x) N.A.

2. TREATMENTS:

Main-plot treatments :

8 varieties : V_1=Local, V_2=Ganga—103, V_3=Ganga-101, V_4=Ranjit, V_5=Deccan. V_6=Malan white × (Eto PL—13—1—H—H—1—H—×ten 29), V_7=Rudrapur white×(Eto PL—13—1—H—H—1—H×ten 29) and V_8=Indore state×(Eto PL—13—1—H—H—1—H×ten 29).

Sub-plot treatments :

2 levels of N as A/S : N_1=44 and N_2=112 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication ; and 2 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 30·4 sq. m. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Days the silking, lodging % and cob weight and grain yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) Karimnagar and Warangal. (vi) and (vii) Nil.

5. RESULTS :

(i) 4014 Kg/ha. (ii) (a) 547·1 Kg/ha. (b) 480.0 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
N_1	2854	3354	3187	3276	3264	3752	3432	3117	3279
N_2	4335	4744	4712	4836	5042	4890	5076	4357	4749
Mean	3594	4049	3949	4056	4153	4321	4254	3737	4014

C.D. for N marginal means=293·8 Kg/ha.

Crop :- Maize. **Ref :- A.P. 63(292).**

Site :- Fruit Res. Stn., Sangareddy. **Type 'MV'.**

Object :— To find out the nitrogen requirements for the hybrid Maize.

1. BASAL CONDITIONS :

(i) Maize-Fallow-Maize. (b) Fallow. (c) Nil. (ii) Black. (iii) 15.6.63. (iv) (a) 3 ploughings, levelling. and ridging. (b) Hand dibbling. (c) 15 Kg/ha. (d) 76 cm.×30 cm. (e) 1. (v) 50 Kg/ha. of P_2O_5+35 Kg/ha. of K_2O applied prior to sowing. (vi) As per treatments. (vii) Irrigated. (viii) Thinning once and weeding thrice. (ix) N.A. (x) 19.10.63.

2. TREATMENTS :

Main-plot treatments ;

11 varieties : V_1=Local, V_2=Ganga hybrid makka—1, V_3=Ganga hybrid makka—101, V_4=Ranjit hybrid makka, V_5=Deccan hybrid makka, V_6=VL—54, V_7=Hybrid no—218, V_8=Hybrid no—11, V_9=Hybrid no—448, V_{10}=Hybrid no—30 and V_{11}=Hybrid no—33.

Sub-plot treatments :

2 levels of N applied as A/S : N_1=20 Kg/ha. at the time of sowing+25 Kg/ha. N at knee high stage, N_2=50 Kg/ha. of N at sowing and 100 Kg/ha. of N at knee high stage.

4. GENERAL :

(i) Split-plot. (ii) (a) 11 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 9·1 m.×3·1 m. (v) 76 cm. on either side along breadth.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Days to silking, lodging % and cob weight of and grain yield. (iv) (a) 196? only. (b) and (c) Nil. (v) Karimnagar and Amaravathi. (vi) and (vii) Nil.

5 RESULTS :

(i) 2954 Kg/ha. (ii) (a) 292 Kg/ha. (b) 293 Kg/ha. (iii) Main effect of V alone is significact. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
N_1	2749	2969	3493	3308	3013	3176	2943	3316	2939	3447	2623	3088
N_2	2603	2932	2762	2076	2929	2829	2977	3385	3019	2933	2564	2819
Mean	2676	2950	3127	2692	2971	3002	2960	3350	2979	3190	2593	2954

C.D. for V marginal means=351·7 Kg/ha.

Crop :- Maize. **Ref :- A.P. 62(293).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'MV'.**

Object :— To find out the nitrogen requirements to the hybrid Maize.

1. BASAL CONDITIONS:

(i) (a) Maize-Fallow-Maize. (b) Maize. (c) N.A. (ii) Black. (iii) N.A. (iv) (a) 3 ploughings, levelling and ridging. (b) Hand dibbling. (c) 15 Kg/ha. (d) 76 cm. × 30 cm. (e) 1. (v) 90 Kg/ha. of P_2O_5+45 Kg/ha. of Kg/ha. applied before sowing. (vi) As per treatments. (vii) Irrigated. (viii) Thinning and weeding. (ix) and (x) N.A.

2. TREATMENTS:

Main-plot treatments :

8 varieties : V_1=Local, V_2=Ganga hybrid makka no—1, T_3=Ganga hybrid makka no.—101, V_4=Ranjit hybrid makka, V_5=Deccan hybrid makka, V_6=Malan white × (EtoPL—13—1—H—H—1—H × ten 29), V_7=Rudrapur white × (Eto PL—13—1—H—H—1—H × ten 29) and V_8=Indore state × (Eto PL—1—H—H—1—H × ten 29).

Sub-plot treatments :

2 levels of N : N_1=22 Kg/ha. of N applied at the time of sowing+22 Kg/ha. of N at knee high stage and N_2=22 Kg/ha. of N at sowing+45 Kg/ha. of N at knee high stage+45 Kg/ha. at the beginning of flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 9·1 m. × 6·2 m. (b) 9·1 m. × 4·6 m. (v) 76 cm. on either side along breadth.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Days to silking, lodging % and grain yield. (iv) (a) 1962 only. (b) N.A. (v) Karimnagar and Sangareddy. (vi) and (vii) Nil.

5. RESULTS :

(i) 3602 Kg/ha. (ii) (a) 748 Kg/ha. (b) 503 Kg/ha. (iii) Main effect of V is significant and main effect of N is highly significant. (iv) Av. yield of grain in Kg/ha.

	Y_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
N_1	2751	2277	2625	3052	3375	3242	2864	2551	2840
N_2	4127	4316	4063	4727	5495	5106	3866	3218	4345
Mean	3439	3297	3344	3890	4435	4174	3365	2870	3602

C D. for V marginal means=926·4 Kg/ha.

C.D for N marginal means=307·8 Kg/ha.

Crop :- Maize (*Rabi*) **Ref :- A.P. 63(142).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'C'.**

Object :— To find out the best time of sowing for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (b) (iii) As per treatments. (iv) (a) 3 to 4 ploughings with country plough followed by working gorru. (b) Hand dibbling. (c) 15·7 Kg/ha. (d) 61 cm.×30 cm. (e) 1. (v) 5604 Kg/ha. of F.Y.M., 33·6 Kg/ha. of N as A/S, 56·0 Kg/ha. of P_2O_5 as Super, 33·6 Kg/ha. of K_2O as Pot. Sul. at the time of sowing. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning, earthing up and 2 to 3 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :

10 dates of sowing D_1=1.9.73, D_2=16.9.63, D_3=1.10.63, D_4=16.10.63, D_5=1.11.63, D_6=16.11.63, D_7=1.12,63, D_8=16.12.63, D_9=1.1.64 and D_{10}=16.1.64.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 1. (iv) 10·4 m.×8·8 m. (b) 9·1 m.×8·2 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Days to silking plant aspect, husk cover, lodging % and yield of grain. (iv) (a) 1963-65 (season changed). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1591 Kg/ha. (ii) 303·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
Av. yield	2222	2133	1907	1777	1538	1515	1475	1199	1099	1043

C.D.=439·5 Kg/ha.

Crop :- Maize (*Kharif*). **Ref :- A.P. 63(139), 64(252),65(147).**

Project Dev. and Demons. Farm, Amaravathi. **Type :- 'C'.**

Object :—To determine the optimum spacing and best method of sowing for Maize crop.

CONDITIONS :

1. (i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 1, 2.6.63 ; 1.6 94 ; 1.6.65. (iv) (a) 3 to 4 ploughings with country plough followed by working gorru. (b) Hand dibbling. (c) 15·7 Kg/ha. (d) As per treatments. (e) 1. (v) 112·1 Kg/ha. of N as A/S, 56 0 Kg/ha. of P_2O_5 as Super and 56·0 Kg/ha. of K_2O as Mur. Pot. for 63 ; 25 C.L./ha. of F.Y.M.+56 Kg/ha. of P_2O_5+34 Kg/ha. of K_2O and 56 Kg/ha. of N as A/S for others. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning, hand weeding, making ridges and furrows. (ix) N.A. (x) 19.9.63 ; 23, 24.9.64 ; 15.9.65.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 2 methods of sowing : M_1=Flat bed method and M_2=Ridge and furrow method.

(2) 3 spacings : S_1=46 cm. × 30 cm., S_2=61 cm. × 30 cm. and S_3=76 cm. × 30 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 10·7 m. × 9·8 m. (b) 9·1 m. × 9.1 m. (v) 76 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Stem borer and Shoot borer, dusting B.H.C. 1 % and spraying Endrin. (iii) Yield of grain and straw. (iv) (a) 1963—65. (b) No. (c) As under 5. Results (v) N.A. (vi) Heavy rain during last week of Sept., 64 for 64. (vii) Variances are homogeneous and interaction is present.

5. RESULTS :

Pooled results

(i) 3153 Kg/ha. (ii) 448·8 Kg/ha. (based on 10 d.f. made up of interaction of treatments with years). (iii) Main effect of S is highly significant and M effect is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	Mean
M_1	2859	3010	3179	3016
M_2	3097	3320	3455	3291
Mean	2978	3165	3317	3153

C.D. for M marginal means=235·4 Kg/ha.

C.D. for S marginal means=288·5 Kg/ha.

Individual results

Treatments	M_1	M_2	Sig.	S_1	S_2	S_3	Sig.	G.M.	S.E./plot
Years									
1963	2242	3049	**	2524	2606	2807	*	2646	221·3
1964	2542	2849	**	2490	2700	2896	*	2695	247·7
1965	2317	2596	**	2046	2406	2918	**	2457	165·6
Pooled	3016	3291	*	2978	3165	3317	**	3153	448·8

Crop :- Maize (*Rabi*). **Ref :- A.P. 63(140), 64(253), 65(148).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'C'.**

Object :—To determine the optimum spacing and best method of sowing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) N.A. ; N.A. ; 22.11.65. (iv) (a) 3 to 4 ploughings with country plough followed by working gorru. (b) Hand dibbling. (c) 15·7 Kg/ha. (d) As per treatments. (e) 1. (v) N.A. for 64 ; 112·1 Kg/ha. of N as A/S, 56·0 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Pot. Sul. for 63 ; 194·0 Q/ha. of G.M. in situ before sowing, 44 Kg/ha. of N as A/S, 56 Kg/ha. of P_2O_5 as Super and 34 Kg/ha. of K_2O as Pot. Sul. for 65. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning, hand weeding, making ridges and furrows. (ix) N A. (x) N.A. for 63, 64 ; 11.3.66.

2. TREATMENTS :

All combinations of (') and (2)

(1) 2 methods of sowing : M_1=Flat bed method and M_2=Ridge and furrow method.

(2) 3 spacings : 46 cm.×30 cm., S_2=61 cm.×30 cm. and S_3=76 cm.×30 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 10·7 m.×9·8 m. (b) 9·1 m.×9·1 m. (v) 76 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. for 63, 64 ; incidence of Shoot borer controlled by spraying wet table sevin powder and Endrin. (iii) Yield of grain and straw. (iv) (a) 1963—65. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Variances are heterogeneous and interaction is absent.

5. RESULTS :

63(140)

(i) 2862 Kg/ha. (ii) 150·3 Kg/ha. (iii) Main effects of M, S and interaction M×S are significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	Mean
M_1	2488	2631	2822	2647
$_2$ M	2751	3181	3301	3078
Mean	2620	2906	3062	2862

C.D. for M marginal means=130·8 Kg/ha.

C.D. for S marginal means=160·0 Kg/ha.

C.D. for body of M×S table=226·5 Kg/ha.

64(253)

(i) 3191 Kg/ha. (ii) 942·6 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	Mean
M_1	3066	3109	3244	3140
M_2	3336	3200	3190	3242
Mean	3201	3154	3217	3191

65(148)

(i) 3407 Kg/ha. (ii) 338·0 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of grain in Kg/ha.

	S_1	S_2	S_3	Mean
M_1	3022	3289	3472	3261
M_2	3205	3578	3875	3553
Mean	3114	3434	3674	3407

C.D. for S marginal means=360·1 Kg/ha.

Crop :- Maize. **Ref :- A. P. 64(254), 65 (149)·**

Site :- Project Dev. and Demons Farm Amaravathi. **Type 'C'.**

Object :—To findout optimum time of sowing.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) As per treatments. (iv) (a) 3 to 4 ploughings with country plough followed by working gorru. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm.×30 cm. (e) 1. (v) 34 Kg/ha. of N as A/S+56 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Pot. Sul. as basal, 67 Kg/ha. and 34 Kg/ha. of N as topdressing for 64; 5226 Kg/ha. of green matter incorporated in *situ*. 44 Kg/ha. of N as A/S, 56 Kg/ha. of P_2O_5 as Super, 34 Kg/ha. of K_2O as Pot. Sul. as basal, 56 Kg/ha. of N, 34 Kg/ha. of N as top dressing for 65. (vi) Deccan hybrid. (vii) Irrigated. (viii) Gap filling, thinning and hand weeding. (ix) N.A. (x) 28.12.64 to 29.4. 65 for 64, 27.12.65 to 26.4.66 for 65.

2. TREATMENTS :

1964

D_1=1.9.64. D_2=21.9.64, D_3*=1.10.64, D_4=16.10.64, D_5=1.11.64, D_6=16.11.64, D_7=1.12.64, D_8=16.12.64, D_9=1.1.65, D_{10}=16.1.65 and D_{11}=1.2.65.

1965

D_1=1.9.65, D_2=16.9.65, D_3=1.10.65, D_4=16.10.65, D_5=1.11.65, D_6=16.11.65, D_7=1.12.65, D_8=16.12.65. D_9=1.1.66. and D_{10}=16.1.66.

*D_3 was not taken up due to heavy rains.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N. A. (iii) 4. (iv) (a) 10·4 m.×7·9 m. (b) 9 1 m.×7·3 m. (v) 61 cm.×30 cm.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Shoot borer. Dusting BHC 10%, spraying Endrin. (iii) Yield of grain. (iv) (a) 1964—1965. (b) No. (v) Nil. (vi) 1964 : Unprecedented rainfall of 201·5 mm. on 27.9.64. 1965 : Nil. (vii) The third sowing 1.10.64 (D_3) was not done due to heavy rains in that period for 64; Nil for 65.

5. RESULTS :

64(254)

(i) 2928 Kg/ha. (ii) 138.4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}
Av. Yield.	240	3314	3474	3583	4102	3959	3919	3101	1905	1680

C. D.=200·8 Kg/ha.

65(149)

(i) 3231 Kg/ha. (ii) 288·1 Kg/ha. (ii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
Av. yield	2167	3173	3185	3573	610	4806	4104	3435	2380	1880

C. D.=418.0 Kg/ha.

Crop :- Maize. **Ref :- A. P. 65 (160).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'CV'.**

Object :—To study the response of various germplasm sources in relation to date of planting.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N.A. (ii) Black cotton. (iii) As per treatments. (iv) (a) One deep ploughing, 4 discings and one levelling. (b) Hand dibbling. (c) 16 Kg/ha. (d) 25 cm.×75 cm. (e) 1. (v) 150 Kg. of N as A/S, 50 Kg of P_2O_5 as Super and 50 Kg of K_2O as Mur. Pot. $\frac{1}{3}N+P_2O_5+K_2O$ applied at planting, $\frac{1}{3}$ N at knee high stage and the other $\frac{1}{3}$ N applied after 15 days. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and thinning. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

5 dates of sowing : D_1=28th May, D_2=3rd June, D_3=11th June (Normal), D_4=22nd June and D_5=1st July 65.

Sub-plot treatments :

7 varieties : V_1=Pusa culture ($LPL_2 \times$ Basi), V_2=Mexican June composite, V_3=SS III, V_4=Amarillo-decuba, V_5=Dorado de Tequisatex E to Amarillo$_7$ V_6=Deccan hybrid and V_7=Local (un named)

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 10·0×4·5 m. (b) 10·0m.×3·0 m. (v) One row on either side.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3370 Kg/ha. (ii) (a) 1640 Kg/ha, (b) 1210 Kg/ha. (iii) Main effects of D and V are significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	3790	4280	4240	3950	4270	4770	4870	4310
D_2	2810	3470	3020	3040	3210	4020	3500	3280
D_3	2510	3170	3500	2410	2790	3630	3260	3040
D_4	2690	3770	3310	3140	3030	3910	4030	3410
D_5	2140	2500	2710	2610	2570	3680	3450	2810
Mean	2790	3440	3660	3030	3190	4000	3820	3370

C. D. for D Marginal means=955·0 Kg/ha.
C. D. for V marginal means=761·4 Kg/ha.

Crop :- Maize. **Ref :- A. P. 64 (218).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'CV'**

Object :— To findout optimum time of sowing.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N. A. (ii) Black cotton soil. (iii) As per treatments. (iv) (a) Deep ploughing, discing and levelling (b) Dibbling. (c) 16 Kg/ha. (d) 75 cm. × 30 cm. (e) 1. (v) First dose of 50 Kg of N as A/S + 50 Kg/ha. of P_2O_5 as Super + 50 Kg/ha. of K_2O as Mur. Pot. at the time of sowing and the 2nd dose of 100 Kg of N/ha. at knee high stage. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding, hoeing and intercultures. (ix) N.A. (x) 29.8.64 ; 10.9.64 ; 3,8,22.10.64.

2. TREATMENTS :

Main-plot treatments :

5 dates of sowing : D_1=22.5 64, D_2=1.6.64, D_3=11.6.64, D_4=21.6.64 and D_5=1.7.64.

Sub-plot treatments :

7 varieties : V_1=Pusa culture X Basi, V_2=Mexican June composite, V_3=SS. III, V_4=Amarillode cuba, V_5=Dorado de Teguisati X E to Amarillo, V_6=Deccan hybrid, and V_7=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication and 7 sub-plot/main-plots. (b) N.A. (iii) 4. (iv) (a) 10m. × 3m. (b) 10 m. × 1·5m. (v) 23 cm. on either side along breadth and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) To control Stemborer Endrin (·02%) was sprayed when the plants are 10 days old. There after endrin granules (1½) were applied twice at weekly intervals. (iii) Population, height measurements and grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) (a) Kalimpong, Bajaura, Chhindwara, Godhra and Pantnagar. (v) to (vii) Nil.

5. RESULTS :

(i) 5226 Kg/ha. (ii) (a) 846 Kg/ha. (b) 555 Kg/ha. (iii) Main effects of D and V are highly significant. (iv) Av. grain yield in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	4840	6250	5180	4910	5110	5970	5240	5360
D_2	4510	5970	4730	4190	4210	5110	4880	4800
D_3	4440	5170	4400	4220	4730	6040	4450	4780
D_4	5470	6310	6430	4980	4810	6330	5900	5750
D_5	5260	6390	5100	4990	4980	5530	5840	5440
Mean	4900	6020	5170	4660	4770	5800	5260	5226

C. D. for D marginal means=491.6 Kg/ha.

C. D. for V marginal means=349·2 Kg/ha.

Crop :- Maize (*Rabi*). **Ref :- A.P. 63(120).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'CV'.**

Object :— To find out the optimum date of planting for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Fallow. (c) Nil. (ii) Red chalka. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings with iron plough, levelling marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 76 cm. × 30 cm. (e) 1. (v) 112·1 Kg/ha. of N as A/S, 89·7 Kg/ha. of P_2O_5 as Super, 44·8 Kg/ha. of K_2O as Mur. Pot. $\frac{1}{2}$ N, P_2O_5, K_2O as basal and the remaining $\frac{1}{2}$ N at knee high stage and Taseling by hand appliction. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, 3 weedings and ridging. (ix) 20·6 cm. (x) 22.1.64, 15, 24.2.64, 4, 9, 17, 22 28.3.64 ; 10, 18.4.64.

2. TREATMENTS :

Main-plots treatments :

13 dates of plantings : D_1=1.10.63, D_2=8.10.63, D_3=15.10.63, D_4=22.10.63, D_5=29.10.63, D_6=5.11.63, D_7=12.11.63, D_8=19.11.63, D_9=26.11.63, D_{10}=3.12.63. D_{11}=10.12.63, D_{12}=17.12.63 and D_{13}=24.12.63.

Sub-blot treatments :

4 varieties ; V_1=Ganga 101, V_2=Ranjit, V_3=Deccan and V_4=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 13 main-plots/replication, 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 7·6 m. ×3·0 m. (v) Nil. (vi) Yes,

4. GENERAL :

(i) Good. (ii) Nil. (iii) Days to silking, plant aspect, ear aspect, husk cover, vigour and yield of grain (iv) (a) 1962-contd (treatments modified every year). (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3831 Kg/ha. (ii) (a) 1067·5 Kg/ha. (b) 623·7 Kg/ha. (iii) Main effects of D, V and the interaction D × V are highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
V_1	4638	6076	4863	5582	5043	4186	3556	3556
V_2	4996	5627	5449	4772	5337	4772	4458	4233
V_3	5582	6123	5898	4097	5313	4952	4366	3917
V_4	2815	3872	3420	2362	3286	2842	4097	3198
Mean	4508	5424	4908	4203	4745	4188	4119	3726

	D_9	D_{10}	D_{11}	D_{12}	D_{13}	Mean
V_1	3603	3015	2296	2432	2701	3967
V_2	3961	3467	2565	2387	2745	4213
V_3	2926	3062	2251	3151	2612	4173
V_4	3378	3017	2071	2026	2251	2972
Mean	3467	3140	2296	2499	2577	3831

C.D. for D marginal means =766·1 Kg/ha.
C.D for V marginal means =242·6 Kg/ha.
C.D. for V means at the same level of D=874·9 Kg/ha.
C.D. for D means at the same level of V=1075·9 Kg/ha.

Crop :- Maize (*Rabi*) **Ref :- A.P. 64(125).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'CV'.**

Object :—To find out optimum dates of planting for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Fallow. (c) Nil, (iii) Red *Chalka*. (b) N.A. (iii) As per treatments (iv) 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 68 cm. × 30 cm. (e) 1. (v) 112 1 Kg.ha. of N as A/S 89·7 Kg/ha. of P_2O_5 as Super and 44 8 Kg/ha. of K_2O as Mur. pot. $\frac{1}{2}$ N, P_2O_5, K_2O as basal and the remaining $\frac{1}{2}$ N at knee high stage and tasseling by hand application. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 weedings and ridging. (ix) 10·2 cm. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

13 dates of planting : D_1=3·10.64, D_2=10.10.64, D_3=17.10.64, D_4=24.10.64, D_5=31.10.64, D_6=7.11.64, D_7=14.11.64, D_8=21.11.64, D_9=28.11.64, D_{10}=5.12.64, D_{11}=12.12.64, D_{12}=19.12.64 and D_{13}=26.12.64.

Sub-plot treatments :

4 varieties : V_1=Ganga 101, V_2= Ranjit, V_3=Deccan and V_4=Local.

3. DESIGN :

(i) Split-plot. (b) 13 main-plots/replicotion ; 4 sub-plot/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 7·6 m. × 2·7 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) (a) Good. (ii) Nil. (iii) Days to silking, vigour, plant aspect, ear aspect, Husk cover, Helemith, corn borer % grain yield. (iv) (a) 1962 contd (dates modified). (b) No. (c) N.A. (v) and (vii) Nil.

5. RESLULTS :

(i) 5469 Kg/ha. (ii) (a) 945·4 Kg/ha. (b) 773·5 Kg/ha. (iii) Main effects D and V are highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
V_1	7128	6721	6171	6494	7164	5753	5860	4329
V_2	6721	4951	6243	6207	6889	5956	8486	5801
V_3	6781	6159	6410	6315	7296	6709	7355	5394
V_4	3995	3564	3983	3767	4760	4054	4652	4748
Mean	6156	5349	5702	5696	6527	5618	6584	5068

	D_9	D_{10}	D_{11}	D_{12}	D_{13}	Mean
V_1	4987	4222	5059	4102	5693	5668
V_2	5597	5777	4923	4820	5167	5963
V_3	5071	5537	5334	4224	5095	6027
V_4	4892	4138	4138	3971	4150	4216
Mean	5137	4918	4864	4455	5026	5469

C.D. for D marginal means=678·4 Kg/ha.
C D. for V marginal means=300·8 Kglha.

Crop :- Maize (*Kharif*). **Ref :- A.P. 62(93).**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'CV'.**

Object :—To find out the optimum date of planting for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize--Fallow—Sunhemp. (b) Fallow. (c) Nil. (ii) (a) Red chalka. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 76 cm.×30 cm. (e) 1. (v) 89·7 Kg/ha. of P_2O_5 as Super and 44·8 Kg/ha. of K_2O as Mur. Pot. on 15.7.62, 22·4 Kg/ha. of N as A/S just before sowing and 44·8 Kg/ha. of N as A/S at knee high stage and 44·8 Kg/ha. of N as A/S at tasseling stage by hand application. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 hand weedings and ridging. (ix) 91·3 cm. (x) 28.11.62.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D_1=21.7.62, D_2=28.7.62 and D_3=4.8.62.

Sub-plot treatments :

4 varieties : V_1=Ganga--101, V_2=Ranjit, V_3=Deccan and V_4=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plot/replications 4, sub pub-plots/main-plot. (b) 36·6 m.×7·6 m. (iii) 4. (iv) (a) 7·6 m.×3·1 m, (b) 7·6 m.×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Negligible incidence of Corn borer, 3 sprayings of Endrin at 28 gm. in 8 litres of water. (iii) Days to silking, vigour, plant. aspect. ear aspect, Husk corn Helimete, corn borer %, ridging % and yield of grain. (iv) (a) 1962—contd (treatments modified every year). (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3880 Kg/ha. (ii) (a) 598·0 Kg/ha. (b) 304·3 Kg/ha. (iii) Main effect of Valone is highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	3789	3940	3886	3003	3654
D_2	3434	3477	3606	2583	3275
D_3	3240	3735	3391	2476	3210
Mean	3488	3717	3628	2687	3380

C.D. for V marginal means=254·9 Kg/ha.

Crop :- Maize (*Kharif*). **Ref :- A.P. 63(118).**

Site :- Maize. Res. Stn., Karimnagar. **Type :- 'CV'.**

Object :—To find out the optimum date of planting for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow –Maize. (b) Fallow (c) Nil. (ii) (a) Red chalka. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings with iron plough, levelling, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 76 cm.×25 cm. (e) I. (v) 112·1 Kg/ha of N as A/S, 89 7 Kg/ha. of P_2O_5 as Super, 44·8 Kg/ha. of K_2O as Mur. Pot. ½ N, P_2O_5 and K_2O as basal and the remaining ½ N at knee high stage and tasseling by hand application. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 weedings and ridging. (ix) 86·7 cm. (x) 29.8 63, 21.9 63 and 4, 12.10.63.

2. TREATMENTS :

Main-plot treatments :

13 dates of planting : D_1=9.5.63, D_2=16.5.63, D_3=23.5.63, D_4=30.5.63, D_5=6.6.63, D_6×13.6.63, D_7=20.6.63, D_8=27.6.63, D_9=4.7.63, D_{10}=11.7.63, D_{11}=18.7.63 D_{12}=25.7.63 and D_{13}=1,8.63.

Sub-plot treatments :

4 varieties : V_1=Ganga—101, V_2=Ranjit, V_3=Deccan and V_4=Local,

3. DESIGN :

(i) Split-plot. (ii) (a) 13 main-plots/replication and 4 sub-plots/main-plot. (b) N.A, (iii) 4. (iv) (a) and (b) 7·6 m ×3·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Days to silking, vigour, plant aspect, ear aspect, husk cover hebmith, corn borer %, lodging % and yield of grain. (iv) (a) 1962—contd (treatments modified every year). (b) No. (c) Nil. (v) N.A. (vi) and (vi) Nil.

5. RESULTS :

(i 4760 Kg/ha. (ii) (a) 682·0 Kg/ha. (b) 552·4 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av yield of grain in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8
V_1	5854	5224	5132	5582	4999	5582	6390	5402
V_2	6528	5313	4996	5402	5807	6121	6706	5807
V_3	5854	4952	5043	5629	5268	5493	6079	5357
V_4	3235	4025	4097	4547	4638	3961	4502	4277
Mean	5368	4878	4817	5290	5178	5289	5919	5211

	D_9	D_{10}	D_{11}	D_{12}	D_{13}	Mean
V_1	5177	2973	3828	4772	3736	4973
V_2	5449	3198	3736	5674	4008	5288
V_3	5762	2881	3872	5582	3736	5039
V_4	4233	2520	2973	3603	1982	3738
Mean	5155	2893	3602	4908	3366	4760

C.D. for D marginal means=489·4 Kg/ha.

Crop :- Maize (*Kharif*). **Ref :- 64(123).**

Site :- Maize, Res. Stn., Karimnagar. **Type :- 'CV'.**

Object :— To find out the optimum date of planting for Maize.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Fallow. (c) Nil. (ii) (a) Red chalka. (iii) As per treatments. (iv) (a) 3 ploughings with iron plough, levellings, marking and ridging. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) 68 cm.×30 cm. (e) 1. (v) 112·1 Kg/ha. of N as A/S, 89·7 Kg/ha. of P_2O_5 as Super, 44·8 Kg/ha. of K_2O as Mur. Pot. ½ N, P_2O_5, K_2O as basal and the remaining ½ N at knee high stage and Taselling by hand application. (vi) As per treatments. (vii) Irrigated. (viii) 1 thinning, 3 weedings and ridging. (ix) 80·0 cm. (x) N.A.

2. TREATMENTS :

Main-plots treatments :

8 dates of planting : D_1=9.6.64, D_2=16.6.64, D_3=23.6.64, D_4=30.6.64, D_5=7.7.64, D_6=14.7.64, D_7=21.7.64 and D_8=28.7.64.

Snb-plot treatments :

4 varieties : V_1=Ganga—101, V_2=Ranjit, V_3=Deccan and V_4=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 11·6 m.×4·3 m. (b) 10·1 m.×2·7 m. (v) 76 cm.×76 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield, days to silking, plant aspect, ear aspect, husk cover, root lodging, stem lodging, vigour, Helimenthoasporium, Corn borer %. (iv) (a) 1962-contd (modified). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4551 Kg/ha. (ii) (a) 405·3 Kg/ha. (b) 356·4 Kg/ha. (iii) Main effects of D, V and the interaction D×V are highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	Mean
V_1	5421	5592	5898	5286	4295	4910	4228	3682	4912
V_2	4739	4945	6163	6212	4739	4263	4364	3442	4858
V_3	4433	4023	5797	5115	5147	4739	4433	3410	4637
V_4	3922	4263	4604	5011	3613	3341	3000	2590	3793
Mean	4639	4706	5616	5406	4448	4313	4006	3281	4551

C.D. for D marginal means 298·1 Kg/ha.
C.D. for V marginal means =178·2 Kg/ha.
C.D. for V means at the same level of D=504·0 Kg/ha.
C.D. for D means at the same level of V=524·8 Kg/ha.

Crop :- Maize. **Ref :- A.P. 60(178), 61(199)**

Site :- Maize Res. Stn., Amberpet. **Type :- 'CM'.**

Object :— To study the response of fertilizers under different spacings on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Maize. (c) As per treatments. (ii) Black cotton soil. (iii) 23.5.60 ; 29.5.61. (iv) (a) One deep ploughing, 4 discings and one levelling. (b) Hand dibbling. (c) 16 Kg/ha. (d) As per treatments. (e) 1. (v) Nil. (vi) Texas 26. (vii) Irrigated. (viii) 2 hand weedings for 60 ; Hand weeding, blade harrowing and two intercultures for 61. (ix) 22·8 cm. for 60 ; N.A. for 61. (x) 3.9.60 ; 12.9.61.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 4 spacings : $S_1=61\times30$; $S_2=61\times61$; $S_3=91\times61$ and $S_4=91\times91$ cm.

(2) 4 levels of N as A/S : $N_0=0$, $N_1=45$, $N_2=90$ and $N_3=135$ Kg/ha.

(3) 4 levels of P_2O_5 as Super : $P_0=0$, $P_1=45$, $P_2=90$ and $P_3=135$ Kg/ha.

3. DESIGN :

(i) 4^3 confd. (ii) (a) 16 plots/block, 4 blocks/replication (b) 22·0 m.×22·0 m. (iii) 2. (iv) (a) 5·5 m.×5·5 m. (b) For S_1=4·3 m.×4·9 m. ; S_2=4·3 m.×4·3 m. ; S_3=4·3 m.×3·7 m. and S_4=3·7 m.×3·7 m. (v) Varies from S_1 to S_4. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Plant population and yield. (iv) (a) 1960-61. (b) No. (c) Nil. (v) and (vii) N.A.

5. RESULTS :

Pooled results.

(i) 5358 Kg/ha. (ii) 1180·9 Kg/ha. (based on 150 d.f. made up of pooled error and interaction of various components of treatments with years). (iii) Main effects of S alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	P_0	P_1	P_2	P_3	Mean
S_1	2950	3046	2986	2983	2893	2876	3155	3041	2991
S_2	4210	4472	4602	4285	3914	4634	4665	4357	4392
S_3	6418	6174	6015	6312	6128	6320	6057	6415	6230
S_4	7228	8651	8020	7380	7662	7466	8249	7902	7820
Mean	5201	5586	5406	5240	5149	5324	5531	5429	5358
P_0	5034	5345	5529	4689					
P_1	5015	5840	5618	4822					
P_2	5536	5620	5235	5734					
P_3	5220	5539	5241	5716					

C.D. for S marginal means=409·2 Kg/ha.

Individual results.

Treatments	N_0	N_1	N_2	N_3	Sig.	P_0	P_1	P_2	P_3	Sig.
Years										
1960	4312	4626	4557	4105	N.S.	4268	4237	4701	4394	N.S.
1961	6091	6546	6255	6376	N.S.	6031	6411	6362	6464	N.S.
Pooled	5201	5586	5406	5240	N.S.	5149	5324	5531	5429	N.S.

S_1	S_2	S_0	S_4	Sig.	S.E./plot	G.M.
2266	3628	5172	6534	**	1077	4400
3717	5157	7288	9106	**	1206	6317
2991	4392	6230	7820	**	1180·9	5358

Crop :- Maize. **Ref :- A.P. 60(179).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'CV'.**

Object :— To study the response of fertilizers under different spacings on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow-Maize. (b) Maize. (c) As per treatments. (ii) (a) Black cotton soil. (iii) 17.11.60. (iv) (a) One deep ploughing by tractor, four discings and levelling. (b) Dibbling. (c) 16 Kg/ha. (d) As per treatments. (e) 1. (v) Nil. (vi) Texas—26. (vii) Irrigated. (viii) Hand weeding one hoeing by bullock drawn hoe and intercultures. (ix) N.A. (x) 24.3.61.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 4 spacings : S_1=61cm.×36cm, S_2=61cm.×61cm, S_3=91cm.×61cm. and S_4=91cm.×91 cm.

(2) 4 levels of N as A/S : N_0=0, N_1=45, N_2=90 and N_3=135 Kg/ha.

(3) 4 levels of P_2O_5 as Super : P_0=0, P_1=45, P_2=90 and P_3=135 Kg/ha.

3. DESIGN :

(i) 4^3 confd. (ii) (a) 16 plots/block ; 4 blocks/replication. (b) 22·0 m.×22·0 m. (iii) 2. (iv) (a) 5·5 m.×5·5 m. (b) 4·3 m.×4·9 m. for S_1, 4·3 m.×4·3 m. for S_2, 4·3 m.×3·7 m. for S_3 and 3·7 m.×3·7 m. for S_4. (v) Varies from S_1 to S_4. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Final stand and yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2714 Kg/ha. (ii) 677 Kg/ha. (iii) Main effect of S is highly significant and the main effects of N and P are significant, (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	P_0	P_1	P_2	P_3	Mean
S_1	2460	2664	2956	2821	2641	2875	2611	2774	2725
S_2	2930	2969	3663	3313	3054	3354	2957	3510	3219
S_3	2233	2887	2109	2814	2105	2562	2728	2648	2511
S_4	1831	2121	2546	3110	1774	2509	2557	2767	2402
Mean	2364	2660	2819	3015	2394	2825	2713	2925	**2714**
P_0	2009	1986	2584	2996					
P_1	2471	2758	3134	2939					
P_2	2289	2824	2621	3118					
P_3	2685	3073	2936	3004					

C.D. for N, P or S marginal means=340·1 Kg/ha.

Crop :- Maize (*Rabi*). **Ref :- A. P. 64 (124), 65(67).**

Site :- Maize. Res. Stn., Karimnagar. **Type :- 'CM'.**

Object :—To find out optimum dose of N and seed rate for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Moong—Maize. (b) Moong. (c) Nil. (ii) Red Chalka. (iii) 26.11.64 ; 30.11.65. (iv) (a) Ploughing, levelling and ridging. (b) Hand sowing for 64 ; Hand dibbling for 65. (c) As per treatments. (d) 91 cm, for 64 ; varies from 42 cm. for P_1 to 16·8 cm. for P_5. (e) 1. (v) 78 to 89·7 Kg/ha. of P_2O_5 as Super, 44·8 Kg/ha. of K_2O as Mur. Pot, as basal dose. (vi) Deccan hybrid. (vii) Irrigated. (viii) 3 weedings and ridging. (ix) 10·2 cm. (x) 30,31.3.1965 ; 3.4.1966.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 plant populations : P_1=24719, P_2=35089, P_3=44973, P_4=55104 and P_5=67707/ha.

(2) 3 levels of N as A/S : N_1=5·1, N_2=149·1 and N_3=224·2 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 15. (b) N. A. for 64 ; 9·1 m.×96·0 m. for 65. (iii) 4. (iv) (a) 9·1 m.×6·4 m. (b) 9·1 m.×4·6 m. (v) 91 cm. on each side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1964-contd. (b) No. (c) N. A. (v) N. A. (vi) Nil for 64 ; Hail storm on 10.1.66 damaged the crop. (vii) Expt. is contd.

5. RESULTS :

64(124)

(i) 4644 Kg/ha. (ii) 730·5 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	P_4	P_5	Mean
N_1	3821	3755	3648	4467	3648	3868
N_2	4066	5490	4999	5531	4975	5012
N_3	4437	5334	4706	5059	5729	5053
Mean	4108	4860	4451	5019	4784	4644

C. D. for N marginal means=466·3 Kg/ha.

65(67)

(i) 3323 Kg/ha (ii) 852 Kg/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	P_4	P_5	Mean
N_1	2610	2771	2687	3334	2526	2786
N_2	2849	3453	3866	3567	4172	3581
N_3	3298	3591	3956	4070	3088	3601
Mean	2919	3272	3503	3657	3262	3323

C. D. for N marginal means=543·9 Kg/ha.

Crop :- Maize (*Rabi*). **Ref :- A. P. 64(216), 65(161)**

Site :- Maize Res. Stn., Amberpet. **Type :- 'CMV'.**

Object :—To find out optimum plant population and level of Nitrogen for different Maize germplasm.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N. A. (ii) Black loamy for 64 ; Black cotton for 65. (iii) 13.11.64 ; 12.11.65. (iv) (a) Deep ploughing, discing and levelling. (b) Dibbling. (c) 16 Kg/ha. (d) 91 cm. ; 75 cm. × 25 cm. (e) 1. (v) and (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding, hoeing and intercultures. (ix) N. A. (x) 29.3.1965 ; 18.3.66 to 7.4.1966.

2. TREATNENTS :

Main-plot treatments :

7 germplasm : V_1=Pusa culture, PL_2×Basi, V_2=Mexican June composite, V_3=SSIII, V_4=Amrillo de cuba, V_5=Doradode Tequisate×E to Amarillo, V_6=Deccan hybrid and V_7=Local.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_1=75, N_2=150 and N_3=225 Kg/ha.

(2) 3 plant populations : P_1=30,000 P_2=50,000 and P_3=70,000/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/replication ; 9 sub-plots/main-plot. (b) 409·5 sq. cm. for main-plot and 2866·5 sq. cm. for block. (iii) 3. (iv) (a) 4·6 m.×10 m. (b) 2·7 m.×10 m. (v) 91 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) To control Stem borer. Endrin was sprayed as a precautionary measure (28 gm.in 18 litres of water) for 64 ; N. A. for 65. (iii) Yield of grain. (iv) (a) 1964—1965. (b) No. (c) Results of combined analysis given under 5. Results. (v) and (vi) Nil. (vii) Main-plot error variances are homogeneous and interaction is present. Sub-plot error variances are homogeneous and interaction is absent.

5. RESULTS :

Pooled results

(i) 4980 Kg/ha. (ii) (a) 3818·3 Kg/ha. [6 d.f. made up of interaction of V×years]. (b) 762·2 Kg/ha [256 d.f. made up of pooled error and interactions of N, P, N×P, V×N, V×P with years]. (iii) Main effects of N and P are highly significant and interaction N×P is significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	P_1	P_2	P_3	Mean
N_1	4076	4672	5023	3107	4870	5012	5225	4350	4766	4592	4569
N_2	4191	5368	5521	3389	5345	5923	5633	4427	5366	5366	5053
N_3	4506	5629	6018	3618	5227	5900	6322	4866	5496	5590	5317
Mean	4258	5223	5521	3371	5147	5612	5727	4548	5209	5183	4980
P_1	3768	4835	5299	3046	4654	5140	5093				
P_2	4609	5449	5467	3710	5326	5949	5954				
P_3	4396	5386	5796	3360	5462	5745	6132				

C. D. for N or P marginal means =188·2 Kg/ha.

C. D. for means in the body of N×P table=325·3 Kg/ha.

Individual results

Treatments	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Sig	G.M.	S.E /plot
Years										
1964	5160	5463	6650	4033	6780	6027	5934	**	5721	1465
1965	3356	4984	4392	2711	3515	5196	5519	*	4239	1896·9
Pooled	4258	5223	5521	3371	5147	5612	5727	N.S.	4980	3818·3

Treatments	N_1	N_2	N_3	Sig.	P_1	P_2	P_3	Sig.	G.M.	S.E./plo
Years										
1964	5170	5880	6113	**	5138	5927	6098	**	5721	722
1965	3969	4226	4522	**	3958	4492	4267	**	4239	779·7
Pooled	4569	5053	5317	**	4548	5209	5183	**	4980	762·2

Crop :- Maize (*Kharif*). **Ref :- A. P. 62(130), 64(135)**

Site :- Maize Res. Stn., Karimnagar. **Type :- 'CMV'.**

Object :—To study the effect of different spacings and levels of N on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Red chalka. (iii) 2.7.1962 ; 21.7.1964. (iv) (a) 3 ploughings and formations of ridges. (b) Hand dibbling. (c) 14·8 Kg/ha. (d) As per treatments. (e) 1. (v) 44·8 Kg/ha. of P_2O_5 as Super and 44·8 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) 1 to 3 hand weedings. (ix) 81·2 cm. : 74·2 cm. (x) 20.10. 1962 ; 9,10.11.1964.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Deccan hybrid and V_2=Local.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 sprayings between rows : S_1=61 cm, S_2=76 cm and S_3=91 cm.

(2) 3 levels of N as A/S : N_1=67·2, N_2=134·5 and N_3=201·7 Kg/ha.

N applied on 26th, 31st June and 27th August by hand.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 9 sub-plots/main-plot. (b) N. A. (iii) 4. (iv) (a) 9.1 m.×4·6 m. (b) 9·1 m.×2 4 m., 9·1 m×3·1 m., 9·1 m.×2·7m. for S_1, S_2 and S_3 respectively. (v) Varies from 76 cm to 107 cm on either side along breadth.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) 1962—64. (b) Yes (v) and (vi) Nil. (vii) Main-plot error variances are homogeneous and interaction is absent. Sub-plot variances are homogeneous and interaction present.

5. RESULTS :

(i) 4074 Kg/ha. (ii) (a) 1854·3 [7 d.f. made up of pooled error and V×years interaction] (b) 1731·9 Kg/ha. [12 d f. made up of interactions of N, S. N×S, V×N, V×S, with years] (iii) Main effects N and S are highly significant. Main effect of V is significant. (iv) Av. yield of grain in Kg/ha.

	N_1	N_2	N_3	S_1	S_2	S_3	Mean
V_1	3607	480	5139	5139	4161	4248	4516
V_2	2975	3831	4089	4363	3362	3171	3632
Mean	3291	4316	4614	4751	3761	3709	4074
S_1	3621	5168	5463				
S_2	3151	3868	4265				
S_3	3102	3912	4114				

C. D. for V marginal means =732·2 Kg/ha.

C. D. for N or S marginal means=770·3 Kg/ha.

Individual Results.

Treatments	V_1	V_2	Sig.	G.M.	S.E./plot
Years					
1962	5235	4900	N.S.	5067	1953
1964	3797	2365	**	3081	778
Pooled	4516	3632	*	4074	1854·3 (7d.f.)

Treatments	N_1	N_2	N_3	Sig.	S_1	S_2	S_3
Years							
1962	3847	5384	5971	**	6204	4382	4616
1964	2736	3249	3258	**	3298	3141	2804
Pooled	3291	4316	4614	**	4751	3761	3709

Sig.	S.E./plot	G.M.
**	5067	591
**	3081	535
**	408·7	1731·9(12d.f.)

Crop :- Maize. **Ref :- A. P. 65(168).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'IV'.**

Object :—To study the affect of restricted irrigation on different varieties of Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N. A. (ii) Black Cotton. (iii) 15, 16.11.65. (iv) (a) One deep ploughing, 4 discings and one levelling. (b) Hand dibbling. (c) 16 Kg/ha. (d) 27 cm. × 75 cm. (e) 1. (v) 150 Kg/ha. of N+50 Kg/ha. of P_2O_5+50 of Kg/ha. K_2O. ($\frac{1}{3}$N+P+K) of the dose applied at planting and the remaining N was applied at knee high stage as side dressing. (vi) As per treatments, (vii) Irrigated. (viii) Weeding, thinning, working cultivator and ridger. (ix) N.A. (x) 11.3.66 to 9.4.66.

2. TREATMENTS :

Main-plot treatments :

21 varieties : V_1=Jullendu Local, V_2=Basi, V_3=Pusa culture × Basi, V_4=Synthetic E 13, V_5=22TSS, V_6=Ganga –3, V_7=Sonora Gr II ; 7 mid germ plasms V_8=Ganga safed 2, V_9=Composites A_2, V_{10}=J_1, V_{11}=Artigna GrI, V_{12}=Amrillode cuba, V_{13}=Synthetic22, E_{14}=Jellicose, V_{15}=Mexican June complex, V_{16}=Tropical hint composite, V_{17}=A_1 × Antigna Gr-I, V_{18}=B_1 × Cuba 11J, V_{19}=Lebra 3, V_{20}=Canibean hint composite, V_{21}=Dorodo de Tequisate × E to Amarillo.

Sub-plot treatments :

I_1=Normal, I_2=Restricted Irrigation.

3. DESIGN :

(i) Split-plot. (ii) (a) 21 main-plots/replication ; 2 sub-plots/main-plot. (b) N. A. (iii) 4. (iv) (a) and (b) 10 m. × 2·3 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Tafazine 50 ml. was sprayed at 4·9 Kg/ha. as pre emergence spray to control weeds. Endrin was syrayed at 20 gms/18 litres. Endrin grannules were also applied on 15, 21.12·65 (iii) Yield of grain. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3565 Kg/ha. (ii) (a) 734·6 Kg/ha. (b) 904·8 Kg/ha. (iii) Main effects of V and I are highly significant. (iv) Av. yield of grain in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8
I_1	2859	2711	4156	5177	4222	4767	3471	5783
I_2	2602	1649	3090	4586	3025	4312	2518	3921
Mean	2730	2180	3623	4881	3624	4539	2994	4852

	V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}	V_{15}	V_{16}
I_1	5556	3814	3399	3730	4596	4552	5212	3601
I_2	3204	2833	1991	2222	3064	2399	2748	2316
Mean	4380	3324	2695	2976	3830	3476	3980	2958

	V_{17}	V_{18}	V_{19}	V_{20}	V_{21}	Mean
I_1	4846	4578	4709	3993	4724	4307
I_2	3131	2331	3133	1933	2280	2823
Mean	3989	3454	3921	2963	3502	3565

C. D. for V marginal means=734·6 Kg/ha.
C. D. for I marginal means=279·1 Kg/ha.

Crop :- Maize (*Rabi*). **Ref :- A. P. 64(255), 65(153).**

Site :- Project Dev. and Demons. Farm, Amaravati. **Type :- 'IM'.**

Object :—To find out the water requirements of Deccan hybrid Maize:

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara. (c) 11 Kg/ha. of N as A/S, 22 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) N.A. ; 25.11.65. (iv) (a) 3 to 4 ploughings, with country plough followed by working gorru. (b) Hand dibbling. (c) 15Kg/ha. (d) 61 cm. × 30 cm. (e) 1. (v) 56 Kg/ha. of P_2O_5 as Super, 56 to 34 Kg/ha. of K_2O as Sul. of Potash. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning, earthing up, making ridges and furrows, 2 to 3 hand weedings. (ix) N. A. (x) N A. ; 15.3.1966.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigations : I_1=2 acre inches and I_2=3 acre inches.

Sub-plot treatments

No. of irrigations : F_1=3 up to Tasseling stage+3 at maturing stage, F_2=4 up to Tasseling stage+4 at maturing stage, F_3=5 up to Tasseling stage+5 at maturing stage.

Sub-sub-plot treatments :

3 levels of N as A/S : N_0=0, N_1=56 and N_2=112 Kg/ha.

$\frac{1}{3}$N at sowing, $\frac{1}{3}$N at knee high stage, $\frac{1}{3}$N at 10 days before tasseling stage.

No. of irrigations applied in 65 (153) is (2 and 2) for F_1; (3 and 3) for F_2 and (4 and 4) for F_3.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot ; 3 sub-sub-plots/sub-plot. (b) N. A. (iii) 3. (iv) (a) 7·9 m. × 7·0 m. (b) 5·2 m. × 4·3 m. (v) 137 cm. × 137 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Cob and Shoot borer ; spraying Tafodrin, Endrin and Sevin. (iii) Yield of grain and straw. (iv) (a) 1964-contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Expt. is continued.

5. RESULTS :

64(225)

(i) 3487 Kg/ha. (ii) (a) 398·0 Kg/ha. (b) 335·5 Kg/ha. (c) 335·5 Kg/ha. (iii) Main effect of F is significant. Main effect of N and interaction N × F is highly significant. (iv) Av. yield of grain in Kg/ha.

	F_1	F_2	F_3	N_0	N_1	N_2	Mean
I_1	3477	3415	3721	1453	4314	4848	3538
I_2	3467	3185	3657	1285	4075	4950	3436
Mean	3472	3300	3689	1369	4194	4899	3487
N_0	1522	1349	1236				
N_1	3986	4169	4431				
N_2	4908	4386	5404				

C. D. for F marginal means =257·7 Kg/ha.

C. D. for N marginal means =230·7 Kg/ha.

C. D. for N means at the same level of F=399·4 Kg/ha.

C. D. for F means at the same level of N=425·7 Kg/ha.

65(153)

(i) 2874 Kg/ha. (ii) (a) 123·0 Kg/ha. (b) 273·2 Kg/ha. (c) 452·3 Kg/ha. (iii) Main effects of I, F, N are highly significant and interaction N × F is also highly significant. (iv) Av. yield of grain in Kg/ha.

	F_1	F_2	F_3	S_0	S_1	S_2	Mean
I_1	2078	2891	3030	959	3375	3665	2666
I_2	2649	3230	3375	1208	3934	4099	3082
Mean	2364	3060	3202	1084	3654	3882	2874
N_0							
N_1		N.A.					
N_2							

C. D. for I marginal means=143·7 Kg/ha.
C. D. for F marginal means=210·0 Kg/ha.
C. D. for N marginal means=311·2 Kg/ha.

———

Crop :- Maize (*Kharif*). **Ref :- A.P. 65(152).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'IM'.**

Object :—To find out the water requirements of Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara. (c) 11 Kg/ha. of N as A/S, 22 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) N.A. (iv) (a) 3 to 4 ploughings with country plough fallowed by working *gorru*. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm.×30 cm. (e)1. (v) Nil. (vi) Deccan hybrid. (vii) Irrigated. (viii) Thinning. earthing up and 2—3 weedings. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments : :

2 levels of irrigation : I_1=2 and I_2=3 acre inches.

Sub-plots treatments :

No. of irrigations : F_1=2 irrigations at tasseling stage and 2 at maturity stage, F_2=3 irrigations at tasseling stage and 3 at maturity stage, F_3=4 irrigation at tasseling stage and 4 at maturity stage.

Sub-sub-plot treatments :

3 levels of N : N_0=0, N_1=56 and N_2=112 Kg/ha.
$\frac{1}{3}$ N at sowing; $\frac{1}{3}$ N at knee high stage and $\frac{1}{3}$ N 10 days before tesseling.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot ; 3 sub-sub-plots/sub-plot. (b) N.A. (iii) 3. (iv) (a) 7·9 m.×7·0 m. (b) 5·2 m.×4·3 m. (v) 137 cm.×137 cm. (iv) Yes.

4. GENERAL :

(i) Statisfactory. (ii) Incidence of cob borer ; spraying of Tafadrin. (iii) Yeld of grain and straw. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2520 Kg/ha. (ii) (a) 141·2 Kg/ha. (b) 159·7 Kg/ha. (c) 587·1 Kg/ha. (iii) Main effects of N and F are highly significant.(iv) Av. yield of grain in Kg/ha.

	F_1	F_2	F_3	N_0	N_1	N_2	Mean
I_1	2392	2412	2622	321	2597	4507	2475
I_2	2533	2427	2728	215	2622	4863	2565
Mean	2462	2420	2675	268	2610	4685	2520
N_0	279	279	225				
N_1	2691	2525	2617				
N_2	4416	4455	5184				

C.D. for F marginal means=122·6 Kg/ha.
C.D. for N marginal means=403·9 Kg/ha.

Crop :- Maize. **Ref :- A.P. 64(197).**

Site :- Project Dev. and Demons. Farm, Yemmiganur. **Type :- 'IM'.**

Object : –To study the optimum requirements of irrigations and nitrogen for Hybrid Maize crop and their interaction and to study the effect of Potash aplication.

1. BASAL CONDITIONS :

(i) (a) Paddy.-Millet-Groundnut (castor)–Wheat. (b) and (c) N.A. (ii) Black soil. (iii) 2.12.64. (iv) (a) Formation of ridges and furrows. (b) Sown on the sides of ridges, (c) N.A. (d) 60 cm.×25 cm. (e) 2. (v) 125·5 Q/ha. of F.Y.M.+111 Kg/ha. of P_2O_5 as Super. (vi) Deccan hybrid. (vii) Irrigated. (viii) Intercultivation with a guntaka and hand weeding after each irrigation. (ix) Nil. (x) 19.3.65 and 17.4.65.

2. TREATMENTS :

Main-plot treatments :

3 varieties : I_1=5 cm. in 2 weeks, I_2=5 cm. in 3 weeks and I_3=8 cm. in 3 weeks.

Sub-plots treatments :

4 manurial treatments : M_1=111 Kg/ha. of N, M_2=148 Kg/ha. of N, M_3=185 Kg/ha. of N and M_4=185 Kg/ha. of N+74 Kg/ha. of K_2O

N applied as C/A/N and K_2O as Pot. Sul.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/400 ha. (v) and (vi) Yes.

4. GENERAL :

(i) Good. (ii) A spray of Endrin was given at 28 gm./18 litres. as a protective measure on 11.1.65. Slight incidence of Shoot borer in Feb. Endrin was sprayed and controlled. (iii) Grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1689 Kg/ha. (ii) (a) 1347 Kg/ha. (b) 1179 Kg/ha. (iii) No effect is significant. (iv) Av. yield of grain in Kg/ha.

	M_1	M_2	M_3	M_4	Mean
I_1	1671	2053	2064	1702	1872
I_2	1524	1595	2095	2099	1828
I_3	1159	1467	1319	1527	1368
Mean	1451	1705	1826	1776	1689

Crop :- Maize (*Kharif*). **Ref :- A.P.64(217)**

Site :- Maize Res. Stn., Amberpet. **Type :- 'D'.**

Object :—To find out the effect of various fungicides on different varieties.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N.A. (ii) Black loamy. (iii) 5.6.6.64. (iv) (a) Deep ploughing, discing and levelling. (b) Dibbling. (c) 16 Kg/ha. (d) 91 cm. (e) 1. (v) 100 Kg/ha. of N as A/S applied on 14.3.64. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding twice, hoeing and interculturing by ridger. (ix) N.A. (x) 16.9.64.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : $=V_1$=Ganga 101 and V_2=Deccan hybrid.

(2) 4 fungicides : F_0=Control (untreated), F_1=Captan, F_2=Thiram and F_3=Agrosan.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 10 (replications failed). (iv) (a) 4·6 m.×10 m. (b) 2·7 m.×10 m. (v) 91 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2090 Kg/ha. (ii) 248 Kg/ha. (iii) No effect is significant. (iv) Av. yield of grain in Kg/ha.

	F_0	F_1	F_2	F_3	Mean
V_1	1905	2093	2090	2045	2033
V_2	2173	2140	2103	2166	2146
Mean	2039	2117	2097	2106	2090

Crop :- Maize (*Rabi*). **Ref :- A.P. 64(284).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'D'.**

Object :—To find out the effect of various fungicides on different varieties.

1. BASAL CONDITIONS :

(i) (a) Maize-Fallow—Maize. (b) Maize. (c) N.A. (ii) Black loamy. (iii) 9.11.64. (iv) (a) Deep ploughing, discing and levelling. (b) Dibbling. (c) 6 Kg/ha. (d) 91 cm.×30 cm. (e) 1. (v) 80 Kg/ha. of P_2O_5+60 Kg/ha. of K_2O+150 Kg/ha. of N. (vi) As per treatments. (vii) Irrigated. (viii) Interculture by ridger, and 3 weedings. (ix) N.A. (x) 6.4.65.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Ganga – 101 and V_2=Deccan.

Sub-plot treatments :

4 fungicidal treatments : F_0=Control, F_1=Captan, F_2=Thiram and F_3=Agrosan.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 sub-plots/main-plot and 2 main-plots/replication. (b) N.A. (iii) 6.(iv)(a)10 m.×3·6 m. (b) 10 m.×1·8 m. (v) 91 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Damping off, seedling Blight, plant population and grain yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3252 Kg/ha. (ii) (a) 1284·8 Kg/ha. (b) 752·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	F_0	F_1	F_2	F_3	Mean
V_1	2826	2782	2960	2856	2856
V_2	3266	3522	3551	4252	3648
Mean	3046	3152	3256	3554	3252

Crop :- Maize (*Kharif*). **Ref :- A.P. 65(162).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'D'.**

Object :—To find out control measures with special reference to Damping off and seedling Blight by seed treatment.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N.A. (ii) Black cotton. (iii) 4 to 9.6.65. (iv) (a) One deep ploughing, 4 discings and one levelling. (b) hand dibbling. (c) 16 Kg/ha. (d) 91 cm.×20 cm. (e) 1. (v) 80 Kg/ha. of P_2O_5+60 Kg/ha. of K_2O+50 Kg/ha. of N as basal and 100 Kg/ha. of N given as top dressing at knee high stage. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 24.9.65.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Ganga—3 and V_2=Deccan hybrid.

Sub-plot treatments :

6 fungicidal treatments : T_0=Check, T_1=Thiram at 3 gm/Kg. of seed, T_2=Captan at 2 gm/Kg. of seed. T_3=Agrosan G.N. at 2 gm/Kg. of seed, T_4=Ceredon at 3 gm/Kg. of seed and T_5=Dithane M—45 at 3·5 gm/Kg. of seed.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a) 10 m.×3·6 m (b) 10 m.×1·8 m. (v) 91 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Plant stand and seed weight. (iv) (a) 1965. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10989 Kg/ha. (ii) (a) 2150·7 Kg/ha. (b) 1136·8 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	Mean
V_1	11132	10480	11269	11524	11410	11748	11260
V_2	10733	10964	10480	10993	10651	10480	10717
Mean	10932	10722	10874	11258	11031	11114	10989

Crop :- Maize (*Rabi*). **Ref :- A.P. 65(163).**

Site :- Maize Res. Stn., Amberpet. **Type :- 'D'.**

Object :—To find out control measures with special reference to Damping off and seedling Blight by seed treatment.

1. BASAL CONDITIONS :

(i) (a) Maize—Fallow—Maize. (b) Maize. (c) N.A. (ii) Black cotton. (iii) 29.11.65. (iv) (a) One deep ploughing, 4 discings and levelling. (b) Hand dibbling. (c) 16 Kg/ha. (d) 91 cm.×20 cm. (e) 1. (v) 80 Kg/ha. of P_2O_5+60 Kg/ha. of K_2O+50 Kg/ha. of N as basal+100 Kg/ha. of N as A/S given as top dressing at knee high stage. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 1 4.66.

2. TREATMENTS to 4. GENERAL :
Same as in expt. no. 65(162) on Page 407.

5. RESULTS :

(i) 5707 Kg/ha. (ii) (a) 840·6 Kg/ha. (b) 656·6 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	Mean
V_1	5298	5872	5533	5716	5663	5455	5589
V_2	6133	6054	5663	5481	5611	6003	5824
Mean	5716	5963	5598	5598	5637	5729	5707

Crop :- Bajra (*Kharif*). **Ref :- A.P. 61(38).**

Site :- Millet Res. Stn., Peddapuram. **Type :- 'M'.**

Object :— To find out the effect of N and P_2O_5 in different doses on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) Horse gram-*Bajra*. (b) Horse gram. (c) Nil. (ii) Red loam. (iii) 5.6.1961/1, 2.7.61. (iv) (a) 4 ploughings and working with blade horrow once. (b) Broadcasting. (c) 112·1 Kg/ha. (d) 30 cm.×20 cm. (e) 2. (v) Nil. (vi) AKP-2 (medium). (vii) Unirrigated. (viii) Weeding and hoeing twice. (ix) 46·8 cm. (x) 2.9.1961.

2. TREATMENTS :

7 manurial treatments : M_1=125·5 Q/ha. of F.Y.M., M_2=M_1+16·8 Kg/ha. of N as A/S, M_3=M_1+22·4 Kg/ha. of N as A/S, M_4=33·6 Kg/ha. of N as A/S, M_5=16·8 Kg/ha. of N+22·4 Kg/ha. of P_2O_5, M_6=22·4 Kg/ha. of N+22·4 Kg/ha. of P_2O_5 and M_7=33·6 Kg/ha. of N+22·4 Kg/ha. of P_2O_5.

P_2O_5 applied as Super on 9.6.61 and N as A/S was broadcast on 30.6.61 and mixed with the rake.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 13·3 m.×6·0 m. (iii) 4, (iv) (a) 13·3 m.×6·0 m. (b) 12·1 m.×4·8 m. (v) 60 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Vigorous growth except in M_1 plots. (ii) Nil. (iii) Height of the plant, number of leaves, number of tillers and yield of grain. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1577 Kg/ha. (ii) 14·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av yield	1370	1518	1615	1663	1536	1661	1678

C.D.=21·7 Kg/ha.

Crop :- Bajra. **Ref :- A.P. 65(19).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'M'.**

Object :— To study the response of hybrid Bajra to nitrogen levels and to determine the economics of nitrogen rate.

1. BASAL CONDITIONS :

(i) (a) Millets-Pulses. (b) Horse gram. (c) Nil (ii) Red sandy loam. (iii) 22.6.65. (iv) (a) 3 to 4 ploughings with country plough. (b) Direct sowing. (c) 3 to 4 Kg/ha. (d) 10 cm.×45 cm. (e) 1. (v) 50 Kg/ha. of P_2O_5+50 Kg/ha. of K_2O in addition to treatments. (vi)As per treatments. (vii)Unirrigated. (viii) Pot watering, weeding, hoeing, thinning, gap filling and working with push hoe. (ix) 56·7 cm. (x) 23.9.65.

2. TREATMENTS :

Main-plot treatments:

2 entries : V_1=HB—1 and V_2=AKP-2 (local).

Sub-plot treatments:

5 rates of N : N_0=0, N_1=40, N_2=80, N_3=120 and N_4=160 Kg/ha.

Half the N was applied on 28.5.65 along with P_2O_5 and K_2O as basal dose and the other half of the N was applied on 28.7.65 as a side dressing.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication and 2 sub-plots/main-plot. (b) 10 m.×3·6 m. for main-plot 10 m.×18·0 m. for replication. (iii) 5. (iv) (a) 5·0 m.×3·6 m. (b) 5·0 m.×2·4 m. (v) 60 cm. on sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Plant population, % lodging, height measurements and grain yield. (iv) (a) 1965-continued. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2107 Kg/ha. (ii) (a) 237 Kg/ha. (b) 199 Kg/ha. (iii) Main effects of V, N and the interaction V×N are highly significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	N_4	Mean
V_1	998	1326	1456	1695	1794	1454
V_2	1824	2674	2875	3054	3371	2760
Mean	1411	2000	2166	2375	2583	2107

C.D. for V marginal means =186·0 Kg/ha.
C.D. for N marginal means =181·4 Kg/ha,
C.D. for V means at the same level of N=308·9 Kg/ha.
C.D. for N means at the same level of V=254·8 Kg/ha.

Crop :- Bajra (*Kharif*). **Ref :- A.P. 63(68).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'M'.**

Object : To—defermine the optimum dose of fertiilzers for Bajra crop.

1. BASAL CONDITIONS :

(i) (a) Millets-Pulses. (b) Pulses. (c) Nil. (ii) Red sandy loam. (iii) 1.6.63/3, 4.7.63. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) 112·1 Kg/ha. (d) 30 cm.×20 cm. (e) 1. (v) Nil. (vi) Improved Ghana. (vii) Unirrigated. (viii) 2 push hoeings. (ix) 99·5 cm. (x) 25 to 27·9.63.

2. TREATMENTS :

19 manurial treatments : M_0=Control, M_1=125·5 Q/ha. of compost, M_2=11·2 Kg/ha. of N, M_3=22·4 Kg/ha. of N, $M_4=M_1+M_3$, $M_5=M_1+M_3$, $M_6=M_1+11·2$ Kg/ha. of P_2O_5, $M_7=M_4+11·2$ Kg/ha. of P_2O_5, $M_8=M_5+11·2$ Kg/ha. of P_2O_5, M_9=62·7 Q/ha. of compost, $M_{10}=M_2+M_9$, $M_{11}=M_3+M_9$, $M_{12}=M_9+11·2$ Kg/ha. of P_2O_5, $M_{13}=M_{10}+11·2$ Kg/ha. of P_2O_5, $M_{14}=M_{11}+11·2$ Kg/ha. of P_2O_5, $M_{15}=M_2+11·2$ Kg/ha. of P_2O_5, $M_{16}=M_3+11.2$ Kg/ha. of P_2O_5, $M_{17}=M_{16}+22·4$ Kg/ha. of K_2O and M_{18}=33·6 Kg/ha. of N+22·4 Kg/ha. of P_2O_5+22·4 Kg/ha. of K_2O.

N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot. on 24, 25.7.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 19. (b) 57·3 m.×7·0 m. (iii) 4. (iv) (a) 7·0 m.×3·0 m. (b) 7·0 m.×2·4 m. (v) 60 cm on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Plant height, number of tillers, yield of grain and fodder. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 564 Kg/ha. (ii) 144 Kg/ha. (iii) Treatment defferences are not significnt. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	549	462	546	580	534	750	624	556	682	460

Treatment	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}	M_{15}	M_{16}	M_{17}	M_{18}
Av. yield	634	493	462	562	596	650	452	503	612

Crop :- Variga (*Rabi*). **Ref :- A.P. 63(77).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'IV'.**

Object :— To select best variety and to find out the effect of irrigation on Variga crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 5.11.63. (iv) (a) 3 to 4 ploughings with country plough, and followed by gorru. (b) Drilling. (c) 22·4 Kg/ha. (d) 28 cm. between rows. (e) 1. (v) 33·6 Kg/ha. of P_2O_5 and 22·4 Kg/ha. of N as A/S and Super applied by broadcasting. (vi) and (vii) As per treatments. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 2.2.64.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=V_{27}-and V_2=Local.

(2) 2 irrigation and treatments : I_0=Dry condition and I_1=Irrigation condition.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 55 m.×37 m. (iii) 6. (iv) (a) 9·1 m.×6·1 m. (b) 6·7 m.×6·7 m. (v) 114 cm.×114 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 850 Kg/ha. (ii) 37 Kg/ha. (iii) Main effect of I is highly significant. (iv) Av. yield of grain in Kg/ha.

	I_1	I_2	Mean
V_1	968	705	837
V_2	1027	701	864
Mean	997	703	850

C.D. for I marginal means=32·2 Kg/ha.

Crop :- Ragi. **Ref :- A.P. 60(60), 61(152), 62(186). 63(161), 64(188).**

Site -: Sugarcane Res. Stn., Anakapalle **Type :- 'M'.**

Object :—To study the effect of continuous application of A/S and other forms of nitrogeneous manures on sugarcane and rotational crops.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy. (b) Sugarcane (c) 112 Kg/ha. of N. (ii) Clay loam. (iii) 2f, 27.5.60 ; 28, 29.5.61 ; 25, 26.5,62 ; 24.5.63 ; 3.6.64 ; 24, 25.5.65 (iv) (a) Ploughings and removing sugarcane stubbles. (b) Dibbling for 62 ; Transplanting for others. (c) N.A. (d) 15 cm. between rows for 60 ; 10 cm. × 10 cm. for 61 ; 15 cm. × 15 cm. for 62, 63, 64 and 10 cm. between rows for 65. (e) 2 to 3. (v) Nil. (vii) AKP 2. (vii) Unirrigated for 60 ; irrigated for other . (viii) Weeding and hoeing. (ix) 21 cm. ; N.A. ; 34 cm. ; 21 cm ; N.A. (x) 2, 3.8.60 ; 31.7.61 and 1.8.61 ; 27, 28, 29.7.62 ; 21. 22, 23.7.63 ; 3.8.64 ; 28.7.65.

2. TREATMENTS :

5 manurial treatments at 44·8 Kg/ha. of N : T_0=Control (no manure), T_1=A/S, T_2=G.N C., T_3=F.Y.M., T_4=2/3 dose of N as G.N.C.+⅓ dose of N as A/S.

Method of application : applied as soil appplication 2 weeks after sowing.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) 12 m. × 55 m. (iii) 5. (iv) (a) 12 m. × 11 m. (b) 10 m. × 8 m. (v) 1·0 m. × 1·5 m. (vi) Yes.

4. GENERAL :

(i) Poor estalbishment of seedlings for 60 ; satisfactory for others. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1951—contd. (b) Yes. (c) As the experiment is continued beyond 1965, the results of individual years are presented under 5. Results. (v) Nil. (vi) Continuous dry spell from Nov. 64 to May 65. (vii) Nil.

5. RESULTS :

60(60)

(i) 1315 Kg/ha. (ii) 153·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	657	1687	1423	1339	1468

C.D.=205·1 Kg/ha.

61(152)

(i) 1951 Kg/ha. (ii) 232·2 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	930	2529	2268	1724	2302

C.D.=311·3 Kg/ha.

62(186)

(i) 799 Kg/ha. (ii) 177·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	649	961	715	870	802

63(161)

(i) 1463 Kg/ha. (ii) 124 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	920	1668	1649	1532	1544

C.D.=166·3 Kg/ha.

64(188)

(i) 1399 Kg/ha. (ii) 387·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	603	1828	1640	1386	1539

C.D.=518·9 Kg/ha.

65(59)

(i) 956 Kg/ha. (ii) 97 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	432	1273	1063	927	1087

C.D.=130·1 Kg/ha.

=———

Crop :- Ragi. **Ref :- A.P. 61(238).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the effect of nutritional and harmonal foliar sprays on the growth and yield of *Ragi*.

1. BASAL CONDITIONS :

(i) (a) *Ragi* -*Ragi*. (b) *Ragi*. (c) N.A. (ii) Sandy. (iii) N.A. (iv) (a) Ploughing with country plough and levelling. (b) Transplanting. (c) 15 Kg/ha. (d) 15 cm. × 15 cm. (e) 1. (v) Nil. (vi) AKP—6. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N A.

2. TREATMENTS :

5 nutritional treatments : T_0=Control (water spray), T_1=Gibberellic acid at 50 p.p. m. concentration, T_2=Gibberellic acid at 75 p.p.m. concentration, T_3=Urea at 22 Kg/ha. of N and T_4=Urea at 34 Kg/ha. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 5·1 Sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1151 Kg/ha. (ii) 157·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	830	1497	1122	1112	1196

C.D.=232·3 Kg/ha.

———

Crop :- Ragi (*Rabi*). **Ref :- A.P. 65(46).**

Site :- Millet. Res. Stn., Chandragiri. **Type :- 'M'.**

Object :—To recommend a suitable N, P and K combination for winter *Ragi*.

1. BASAL CONDITIONS :

(i) (a) *Ragi—Sunhemp—Jowar.* (b) *Jowar.* (c) 125·5 Q/ha of C.M. 50·4 Kg/ha. of N as A/S. (ii) Black heavy soil. (iii) 7.1.65/4.2.65. (iv) (a) 5 ploughings with country plough. (b) Transplanting. (c) 6·2 Kg/ha. (d) 22 cm.×15 cm. (e) 2. (v) 125·5 Q/ha of C.M. (iv) CO-7 (Early). (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) 7 cm. (x) 29.4.65.

2. TREATMENTS :

All combinations of (1), (2) and (3) : +Control in each block.

(1) 3 levels of N as A/S : N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_1=22·4, P_2=44·8 and P_3=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_1=22·4, K_2=44·8 and K_3=67·2 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 3 blocks/replication and 10 plots/block. (b) 25·4 m.×24·4 m. (iii) 2. (iv) (a) 5·3 m.×4·1 m. (b) 5·0 m.×3·8 m. (v) 15 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1965 contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1947 Kg/ha. (ii) 213 8 Kg/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in Kg/ha.

Control mean=1218 Kg/ha.

	P_1	P_2	P_3	K_1	K_2	K_3	Mean
N_1	1757	1757	1544	1685	1703	1673	1686
N_2	2039	2078	1927	2135	2004	1955	2023
N_3	2397	2567	2404	2375	2545	1950	2376
Mean	2064	2134	1958	2065	2084	1859	2028
K_1	2061	2150	1982				
K_2	2061	2150	2039				
K_3	2078	2145	1853				

C.D. for N marginal means=206·6 Kg/ha.

Crop :- Ragi (*Kharif*). **Ref :- A.P. 60(51), 61(53), 62(77).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'M'.**

Object :—To find out the best nitrogeneous fertilizer for the *Kharif Ragi* crop.

1. BASAL CONDITIONS :

(i) (a) Millets—Pulses—Millets. (b) Pulses. (c) Nil. (ii) Red sandy loam. (iii) 22.7.60/21, 22.8.60 ; 10.7.61/31.7.61 ; 17.7.62/23.8.62. (iv) (a) 3 ploughings followed by working patta. (b) Transplanting. (c) 5·6 Kg/ha. (d) 20 cm.×20 cm. (e) 1. (v) Nil. (vi) VZM—1 (medium). (vii) Unirrigated. (viii)One hand weeding and hoeing. (ix) 56·5 cm. ; 85 cm. ; 80 cm. (x) 7, 8.11.60 ; 25.10.61, 6.11.62.

2. TREATMENTS :

7 manurial treatments : M_0=Control (no manure), M_1=125·5 Q/ha. of F.Y.M.. M_2=5604 Kg/ha. of G.L., M_3=28·0 Kg/ha. of N as A/S, M_4=28·0 Kg/ha. of N as C/A/N, M_5=28·0 Kg/ha. of N as A/S/N and M_6=28·0 Kg/ha. of N as Urea.

F.Y.M. and G.L. applied as basal dressing.

Fertilizers applied as top dressing on 16 8.61 for 61.

Fertilizers in 2 equal doses applied in the middle of August and September for 60.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 35·2 m.×8·1 m. (iii) 5. (iv) (a) 8·1 m.×5·0 m. (b) 8·1 m.×4·6 m. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. for 60, 62 ; spraying of 10 % Bordeaux mixture in nursery for 61. (iii) Height of plants, no. of tillers and yield of grain and fodder. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) As error variances are heterogeneous and Treatment×years interactions is absent. The results of individual years have been presented under 5. Results.

5. RESULTS :

60(51)

(i) 1503 Kg/ha. (ii) 292·8 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1132	1194	1391	1797	1571	1800	1639

C.D.=382·2 Kg/ha.

61(53)

(i) 1649 Kg/ha. (ii) 239 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1228	1575	1813	1794	1556	1727	1849

C.D.=312·0 Kg/ha.

62(77)

(i) 1015 Kg/ha. (ii) 129 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	741	917	1190	1207	1007	1002	1044

C.D.=168·4 Kg/ha.

Crop :- Ragi (*Kharif*). **Ref :- A. P. 63(66), 64(70).**

Site :- Millet Res. Stn., Aizianagaram. **Type :- 'M'.**

Object :—To study the effect of Super Phosphate application in combination with N and G . L. on *Ragi* crop.

1. BASAL CONDITIONS :

(i) (a) Millets—Pulses—Millets. (b) Pulses. (c) Nil. (ii) Red sandy loam. (iii) 25.7.1963/20.8.1963 ; 5.8.1964/14,15.9.1964. (iv) (a) 3 ploughings and working patta. (b) Transplanting. (c) 5·6 Kg/ha. (d) 20 cms.×20 cm. (e) 1. (v) Nil. (vi) VZM—1 (medium). (vii) Unirrigated. (viii) 1 to 2 hand weedings and hoeings. (ix) 106·0 cm. ; 56·3 cm. (x) 13.11.1963 ; 26 to 30.11.1964.

2. TREATMENTS :

13 manurial treaiments : M_0=Control, M_1=5604 Kg/ha. of G. M., M_2=28·0 Kg/ha. of N as A/S, M_3=13·4 Kg/ha. of P_2O_5 as Super, $M_4=M_1+M_3$, $M_5=M_2+M_3$, $M_6=M_1+M_2+M_3$, $M_7=M_3+M_3$, M_8=125·5 Q/ha. of F.Y.M., $M_9=M_7+28·0$ Kg/ha. of K_2O as Pot. Sul., M_{10}=20·2 Kg/ha. of P_2O_5 as Super , $M_{11}=M_1+M_{10}$ and $M_{12}=M_1+M_2+M_{10}$.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) 41·8 m.×7·0 m. (iii) 4. (iv) (a) 7·0 m.×5·2 m. (b) 7·0 m.×2·8 m. (v) one row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of 1% Bordeaux mixture in the nursery as a prophylactic measure against Blast for 63 ; Nil for 64. (iii) Yield of grain. (iv) (a) 1963—64. (b) Yes. (c) As under 5. Results. (v) N. A. (vi) Nil. (vii) Error variances are homogeneous and treatments×Years interaction is absent.

5 RESULTS :

Pooled Results

(i) 991 Kg/ha. (ii) 154·2 Kg/ha. [based on 84 d.f. made up of Treatments×years interaction and pooled error]. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	703	886	1142	785	1360	814	1398

Treatment	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	1218	708	1282	688	870	1028

C. D.=153·5 Kg/ha.

Individual results

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	Sig.	G.M.	S.E./plot
Years 1963	807	1028	1292	901	1513	971	1538	1311	845	1299	788	977	1198	**	1113	159
1964	599	743	991	669	1206	657	1257	1126	572	1264	588	764	859	**	869	161
Pooled	703	886	1142	785	1360	814	1398	1218	708	1282	688	870	1028	**	991	154

Crop :- Ragi (*Rabi*). **Ref :- A. P. 60(52), 61(54).**

Site :- Millet Res. Stn., Vizianagaram. **Type 'M'.**

Object :—To find out the best nitrogeneous for fertilizer for the *Rabi* Ragi crop.

1. BASAL CONDITIONS :

(i) (a) Millets—Pulses—Millets. (b) Pulses. (c) Nil. (ii) Red sandy loam. (iii) 3.11.1960/23.24.11.1960 ; 4.11.1961/27 to 30.11.1961. (iv) (a) 3 ploughings followed by working *paita* and trimming of bunds. (b) Transplanting. (c) 5·6 Kg/ha. (d) 20 cm.×20 cm. (e) 1. (v) Nil. (vi) VZM—2 (medium). (vii) Irrigated. (viii) 2 hand weedings and hoeings. (ix) 9·3 cm ; 6·4 cm. (x) 28.2.1961 and 1.3.1961 ; 12.3.1961.

2. TREATMENTS :

7 manurial treatments : M_0=Control, M_1=11208 Kg/ha. of G. L ; M_2=25·1 Q/ha. of F.Y.M., M_3=50·4 Kg/ha. of N as A/S, M_4=50·4 Kg/ha. of N as A/S/N, M_5=50·4 Kg/ha. of N as C/A/N and M_6=50·4 Kg/ha. of N as Urea.

F.Y.M. and G.L. were applied as basal dressing before planting. Fertilizers were applied in two equal doses, ½ dose at planting and the other ½ dose at 1st weeding and hoeing. A/S broadcasted and all the others applied as soil application.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 20·1 m.×14·1 m. (iii) 6. (iv) (a) 20·1 m.×2·0 m. (b) 20·1 m.×1·6 m. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of 1% Bordeaux mixture as a prophylactic measure against Blast and Blight diseases. (iii) Height of plants, No. of tillers and yield of grain and fodder. (iv) (a) 1959—61. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Results of expt. no. 59(44) have also been included while giving pooled results. Error variances are homogeneous and interaction is present.

5. RESULTS ;

Pooled results

(i) 3078 Kg/ha. (ii) 415·4 Kg/ha. (12 d. f. made up of Treatments×years interaction). (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	2689	3162	3055	3179	3069	3235	3156

C. D.=301·8 Kg/ha.

Individual results

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Sig.	G.M.	S.E./plot
Years										
1959	2311	2673	2683	2837	2842	2941	2877	**	2738	222.0
1960	2893	3309	3205	3670	3178	3528	3540	**	3345	215.3
1961	2774	3503	3278	3029	3187	3236	3050	**	3151	205.4
Pooled	2689	3162	3055	3179	3069	3235	3156	*	3078	415.4

Crop :- Ragi (*Kharif*).

Site :- Agri. College Farm, Bapatla.

Ref :- A. P. 60(205), 61(226), 62(255), 63(247).

Type :- 'C'.

Object :- To study the effect of different dates of sowing and methods of sowing on the yield of Ragi crop during *Kharif* season.

1. BASAL CONDITIONS :

(i) (a) Ragi–Ragi. (b) Ragi. (c) As per treatments. (ii) Sandy soils. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. (b) As per treatments. (c) 6 Kg/ha. (d) 15 cm. × 15 cm. (e) 1. (iv) 126 Q/ha. of F.Y.M.+224 Kg/ha. of A/S. Half A/S applied at planting and the other half 30 days after planting. (vi) AKP–6. (vii) Irrigated. (viii) 2 hand weedings. (ix) N. A. (x) 25.10.60 and 1.11.60 ; 7,27.10.61 and 9.11.61 ; 17.10.62 and 2,5,14.11.62 ; 15.10.63 and 7,8.11.63.

2. TREATMENTS :

Main-plot treatments :

2 methods of sowing : M_1=Direct sowing by drilling and M_2=Transplanting (21 days old seedlings).

Sub-plot treatments :

3 dates of sowing : D_1=1st July, D_2=15th July and D_3=31st July.

3. DESIGN :

(i) Split-plot. (ii) (a) main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 10·0 m. × 4·0 m. (b) 9·7 m. × 3·7 m. (v) 15 cm. × 15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1960—1963. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As the sub-plot error variances are heterogeneous, results of individual years are presented below. Expt. no. 60(205) failed.

5. RESULTS :

61(226)

(i) 666 Kg/ha. (ii) (a) 316·0 Kg/ha. (b) 176·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	653	646	614	638
M_2	867	654	564	695
Mean	760	650	589	666

62(255)

(i) 898 Kg/ha. (ii) (a) 452·4 Kg/ha. (b) 429·3 Kg/ha. (ii) Main effect of D is highly significant. Main effect of M and interaction M × D are significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	616	979	205	600
M_2	1974	1216	395	1195
Mean	1295	1098	300	898

C. D. for M marginal means =587·6 Kg/ha.
C. D. for D marginal means =467·8 Kg/ha.
C. D. for D means at the same level of M=661·5 Kg/ha.
C. D. for M means at the same level of D=901·5 Kg/ha.

63(247)

(i) 282 Kg/ha (ii) (a) 58 6 Kg/ha. (b) 107·5 Kg/ha. (iii) Main effects of M and D are highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	288	185	43	173
M_2	474	365	338	392
Mean	381	275	190	282

C. D. for M marginal means=76·0 Kg/ha.
C. D. for D marginal means=117·1 Kg/ha.

— — —

Crop :- Ragi (*Rabi*).

Site :- Agri. College Farm, Bapatla.

Ref :- A. P. 60(206), 61(227) 62(256), 63(248).

Type :- 'C'.

Object:—To study the effect of different dates of sowing and methods of sowing on Ragi crop during *rabi* season.

1. BASAL CONDITIONS :

(i) (a) Ragi—Ragi. (b) Ragi. (c) As per treatments. (ii) Sandy soil. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. (b) As per treatments. (c) 6 Kg/ha. (d) 15 cm.×15 cm. (e) 1. (v) 126 Q/ha. of F.Y.M.+224 Kg/ha. of A/S. Half A/S applied at planting and the other half 30 days after planing. (vi) AKP—6. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 2,6,14,16,28.3.61 and 5.4.61 ; 10,26.3.62 and 2.4.62 ; 30.3.63 and 11.4.63 ; 13,15,21,28.3.64.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 60(205), 61(226), 62(255), 63(247) on page no. 418.

5. RESULTS :

60(206)

(i) 1272 Kg/ha. (ii) (a) 687·5 Kg/ha. (b) 313·2 Kg/ha. (iii) Main effect of D is highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	1086	1389	950	1142
M_2	1615	1681	914	1403
Mean	1350	1535	932	1272

C. D. for D marginal means=341·2 Kg/ha.

61(227)

(i) 351 Kg/ha. (ii) (a) 77·2 Kg/ha. (b) 145·9 Kg/ha. (iii) Main effect of M is highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	272	249	234	252
M_2	482	463	404	450
Mean	377	356	319	351

C. D. for M marginal means=100·3 Kg/ha.

62(256)

(i) 175 Kg/ha. (ii) (a) 184·9 Kg/ha. (b) 114·1 Kg/ha. (iii) Main effect of D is highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	302	104	136	181
M_2	292	88	126	169
Mean	297	96	131	175

C. D. for D marginal means=124·3 Kg/ha.

63(248)

(i) 271 Kg/ha. (ii) (a) 163·4 Kg/ha. (b) 116·2 Kg/ha. (iii) Main effect of D is highly significant. (iv) Av. yield of grain in Kg/ha.

	D_1	D_2	D_3	Mean
M_1	306	416	102	275
M_2	308	394	102	268
Mean	307	405	102	271

C. D. for D marginal means=126·6 Kg/ha.

Crop :- Ragi (*Rabi*). **Ref. :- A.P. 62(76).**

Site :- Millet Res. Stn., Chandragiri. **Type 'C'.**

Objeet :—To fix up optimum time for sowing Ragi nurseries in winter season.

1. BASAL CONDITIONS :

(i) (a) Ragi—G.M.—*Jowar.* (b) Paddy. (c) N.A. (ii) Black heavy soil. (iii) As per treatments. (iv) (a) 5 ploughings with country plough. (b) Transplanting of 25 days old seedlings. (c) 6 Kg/ha. (d) 23 cm.×15 cm. (e) 2. (v) 125 Q/ha. of C.M. (vi) VZM—2 (medium). (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) 11 cm. (x) 1.5.63.

2. TREATMENTS :

7 dates of sowing in nurseries : D_1=26.12.62, D_2=2.1.63, D_3=9.1.63, D_4=16.1.63, D_5=23.1.63, D_6=30.1.63 and D_7=6.2.63.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 3·1 m.×3·1 m. (b) 2·4 m.×2·7 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1962–only (conducted in 1963 and 64 in modified form). (b) No. (c) Nil. (v) to to (vii) Nil.

5. RESULTS :

(i) 2120 Kg/ha. (ii) 272·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7
Av. yield	2755	2394	2565	2795	1710	1883	741

C.D.=394·6 Kg/ha.

Crop :- Ragi (*Rabi*). **Ref :- A.P. 63(58), 64(67).**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'C'.**

Object : — To study suitable time for sowing Ragi nurseries in winter season.

1. BASAL CONDITIONS :

(i) (a) *Ragi—Sunhemp—Jowar*. (b) *Jowar*. (c) 125 Q/ha. of C.M.+50·4 Kg/ha. of N. (ii) Black heavy soil. (iii) As per treatment. (iv) (a) 5 ploughings with country plough. (b) Transplanting of 25 days old seedlings. (c) 6 Kg/ha. (d) 23 cm.×15 cm. (e) 2. (v) 125 Q/ha. of C.M. (vi) VZM—2 (medium). (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) 2·7 cm., 7·1 cm. (x) 28·4·64 ; 15·4·65.

2. TREATMENTS :

10 dates of sowing in nurseries : D_1=5th of Dec., D_2=12th of Dec., D_3=19th of Dec., D_4=26th of Dec., D_5=2nd of Jan., D_6=9th of Jan., D_7=16th of Jan., D_8=23rd of Jan., D_9=30th of Jan. and D_{10}=6th of Feb.

3. DESIGN :

(i) R B.D. (ii) (a) 10. (b) 12·2 m.×9·1 m. (iii) 3. (iv) (a) 6·1 m.×1·8 m. (b) 5·5 m.×1·5 m. (v) 30 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1963-64. (b) No. (c) As under 5. results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1245 Kg/ha. (ii) 503·8 Kg/ha. (based on 9 d.f. made up of Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of grain in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
Av. yield	1375	1336	1900	1037	2412	1253	1076	924	607	530

C.D.=658·0 Kg/ha.

Individual results

Av. yield of grain in Kg./ha.

Treatments	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
Years										
1963	1848	1848	2424	1213	3212	2011	1764	1495	917	832
1964	902	832	1376	860	1611	494	388	353	294	237
Pooled	1375	1336	1900	1037	2412	1253	1076	924	607	530

Sig.	G.M.	S.E./plot
**	1755	265
**	734	60
**	1245	504

Crop :- Ragi. *(Winter).* **Ref :- A.P. 64(57), 65(47).**

Site :- Millet Res. Stn., Chandragiri. **Type :- 'C'.**

Object :— To fix up suitable spacing and number of seedlings per hole for Ragi crop.

1. BASAL CONDITIONS :

(i) (a) *Ragi-Sunhemp-Jowar.* (b) *Jowar.* (c) 125·5 Q/ha. of C.M. for 63 ; 125·5 Q/ha. of C.M.+50·4 Kg/ha. of N as A/S for 65. (ii) Black heavy soil. (iii) 29.12.63/2.2.64 ; 7.1.65/8.2.65. (iv) (a) 5 ploughings with country plough. (b) Transplanting. (c) 6 Kg/ha. (d) and (e) As per treatments. (v) 125·5 Q/ha. of C.M. (vi) Co-7 (early). (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) 1 cm. ; 7·1 cm. (x) 8.4.64 ; 29.4.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 spacings : S_1=15 cm.×15 cm., S_2=23 cm.×15 cm., and S_3=30 cm.×15 cm.

(2) 2 numbers of seedlings/hole : R_1=One and R_2=Two seedlings/hole.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 21 m.×3 m. (iii) 3. (iv) (a) 3·1 m.×3·1 m. (b) 2·7 m.×2·7 m. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1964-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1073 Kg/ha. (ii) 108·1 kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) Main effect of R is highly significant and the Main effect of S is significant. (iv) Av. yield of grain in Kg/ha.

Control=1050 Kg/ha.

	S_1	S_2	S_3	Mean
R_1	1012	1054	943	1003
R_2	1116	1282	1055	1151
Mean	1064	1168	999	1077

C.D. for S margiual means=107·9 Kg/ha.
C.D. for R marginal means=88·1 Kg/ha.

Individual results

Treatments	R_1	R_2	Sig.	S_1	S_2	S_3	Sig.	Control	Sig.	G.M.	S.E./plot
Years											
1964	754	936	**	807	930	799	**	741	**	830	51
1965	1252	1364	**	1320	1406	1197	**	1359	N.S.	1315	73
Pooled	1003	1151	**	1064	1168	999	N.S.	1050	N.S.	1073	108

Crop :- Ragi (*Rabi*). **Ref :- A.P. 62(78), 63(67), 64(71).**

Site :- Millet Res. Stn., Vizianagaram. **Type :- 'CM'**

Object : - To find out the optimum dose of N, spacings and number of seedlings per hill for Ragi.

1. BASAL CONDITIONS:

(i) (a) Millets-Pulses-Millets. (b) Pulses. (c) Nil. (ii) Red sandy loam. (iii) 22.11.62/20 to 24.12.62 ; 14.11.63/17 to 20.12.63 ; 16.11.64/21 to 25.12.64. (iv) (a) 3 ploughings followed by working patta. (b) Transplanting. (c) 5·6 Kg/ha. (d) and (e) As per treatments. (v) Nil. (vi) VZM-2 (medium). (vii) Irrigated. (viii) One weeding and hoeing. (ix) 2·1 cm. ; 0·2 cm. ; N.A. (x) Last week of March 63; 6 to 9.3.64 ; 8 to 11.3.65.

2. TREATMENTS :

Main-plot treatments:

All combinations of (1) and (2).

(1) 3 spacings : S_1=10 cm.×10 cm., S_2=15 cm.×15 cm. and S_3=20 cm.×20 cm.

(2) No. of seedlings/hill : R_1=1 and R_2=2 seedlings/hill.

Sub-plot treatments :

4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

N applied half at planting and half one month after planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) 20·1 m.×30·2 m. for 62 ; N.A. for others. (iii) 4. (iv) (a) 5·0 m.×5·0 m. (b) 4·6 m.×4·6 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Good for 62 ; crop lodged in others. (ii) Nil for 62 ; spraying 1% Bordeaux mixture for others. (iii) Yield of grain. (iv) (a) 1962-64. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Since the error variances for sub-plots are heterogeneous results of individual years have been presented under 5. Results.

5. RESULTS :

62(78)

(i) 2641 Kg/ha. (ii) (a) 1318 Kg/ha (b) 461 Kg/ha. (iii) None of the effects is significant. (iv) Av. y eld of grain in Kg/ha.

	N_0	N_1	N_2	N_3	S_1	S_2	S_3	Mean
R_1	2718	2580	2626	2555	2771	2368	2721	2620
R_2	2378	2530	2879	2863	2719	2850	2419	2662
Mean	2548	2555	2753	2709	2745	2609	2570	2641
S_1	2533	2433	2872	3141				
S_2	2633	2467	2623	2713				
S_3	2477	2765	2763	2273				

63(67)

(i) 971 Kg/ha. (ii) (a) 408 Kg/ha. (b) 426 Kg/ha. (iii) None of the effests is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	S_1	S_2	S_3	Mean
R_1	843	938	963	951	1079	912	780	924
R_2	904	1063	1060	1051	1184	1037	837	1019
Mean	873	1000	1012	1001	1132	975	808	971
S_1	1053	1201	1154	1119				
S_2	864	992	1047	995				
S_3	703	808	834	889				

64(71)

(i) 1893 Kg/ha. (ii) (a) 400 Kg/ha. (b) 262 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of grain in Kg/ha.

	N_0	N_1	N_2	N_3	S_1	S_2	S_3	Mean
R_1	1702	2007	1827	1857	2032	1751	1762	1848
R_2	1930	1951	1961	1914	1969	2109	1738	1939
Mean	1816	1979	1894	1885	2001	1930	1750	1893
S_1	2005	2046	2048	1903				
S_2	1883	2034	1874	1929				
S_3	1559	1858	1759	1823				

Crop :- Ragi (*Kharif*) **Ref :- A.P. 64(228), 65(39).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object : – To find out the efficacy of pre and post-emergence herbicidal treatments and post-emergence cultural treatments in controlling weed growth in *Ragi* fields.

1. BASAL CONDITIONS

(i) (a) *Ragi—Ragi.* (b) *Ragi,* (c) 12·4 C.L./ha. of F.Y.M.+44·8 Kg/ha. of N as A/S. (ii) Sandy Loam. (iii) N.A./21.7.64, 18.7.65/19.8.65. (iv) (a) Ploughings with country plough and levelling. (b) Transplaning. (c) 14·8 Kg/ha. (d) 15 cm.×15 cm (e) 2. (v) 125·5 Q/ha. of F.Y.M. as basal dressing +33·6 Kg/ha. of N as A/S applied on 1·8·64 and 33·6 Kg/ha. as A/S top dressed on 4·9·64 for 64 N.A. for 65. (vi) AKP–6. (vii) Irrigated. (viii) As per treatments. (ix) 110·2 cm. for 64, N.A. for 65. (x) 18, 19.10.1964 and 31.10.1965.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 pre-emergence herbicidal treatments : A_0=None, A_1=Simazine at 0·28 Kg/ha. and A_2=Simazine at 0·6 Kg/ha.

(2) 3 post-emergence cultivation treatments : B_0=Nil, B_1=Inter-row cultivation but no weeding and B_2=Inter-row cultivation and hand weeding.

(3) 3 post-emergence herbicidal treatments : C_0=None, C_1=2, 4–D sodium salt at 0·8 4 Kg/ha. and C_2=2, 4–D sodium salt at 1·68 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 20·2 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrine 2 to 3 times. (iii) Grain yield. (iv) (a) 1964-65. (b) Yes. (c) Nil. (v) and (vi) N.A. (vii) Error variances are heterogeneous and Treatments×years interaction is present in the case of A×B and B×C tables.

5. RESULTS

Pooled results

(i) 575 Kg/ha. (ii) 218·9 Kg/ha. (14 d. f. made up of interaction of A,B,C, AB, BC with years). (iii) Main effect of B alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	A_0	A_1	A_2	C_0	C_1	C_2	Mean
B_1	421	416	472	431	430	448	436
B_2	564	584	650	580	606	611	599
B_3	645	666	759	672	689	709	690
Mean	453	555	627	561	575	589	575

C.D. for B marginal means=107·1 Kg/ha.

Individual results

Av. yield of grain in Kg/ha.

Treatments	A_0	A_1	A_2	Sig.	B_0	B_1	B_2	Sig.
Years								
1964	918	936	1057	N.S.	734	1009	1167	**
1965	168	174	197	*	137	189	213	*
Pooled	543	555	627	N.S.	426	599	690	**

C_0	C_1	C_2	Sig.	G.M.	S.E./plot
944	969	999	N.S.	970	104·3
178	181	180	N.S.	180	10·7
561	575	589	N.S.	575	

Crop :- Ragi (*Rabi*). **Ref :- A.P. 64(227), 65(38).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object : —To find out the efficacy of pre-emergence, post-emergence herbicidal treatments and post-cultivation treatments in controlling weed growth in *Ragi* fields.

1. BASAL CONDITIONS :

(i) (a) *Ragi-Ragi.* (b) *Ragi.* (c) N.A. (ii) Sandy. (iii) 21.11.64/18.12.64 ; 15.12.65/13.1.66. (iv) (a) Ploughings with country plough and levelling. (b) Transplanting. (c) 14·8 Kg/ha. (d) 15 cm. × 15 cm. (e) 2. (v) 67·25 Kg/ha. of N as A/S in 3 equal doses for 64 ; 89·7 Kg/ha. of N as A/S in 3 split-doses + 14·8 C.L./ha. of F.Y.M. for 65. (vi) AKP—6. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 5, 6.3.65, 1st week of April 66.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 pre-emergence herbicidal treatments : A_0=Control (no treatment), A_1=Simazine at 0·28 Kg/ha. and A_2=Simazine at 0·56 Kg/ha.

(2) 3 post-emergence cultural treatments : B_0=Control (no treatment), B_1=Inter-row cultivation but no weeding, B_2=Inter-row cultivation and hand weeding.

(3) 3 post-emergence herbicidal treatments : C_0=Control (no treatment), C_1=2, 4—D sodium salt at 0·84 Kg/ha. and C_2=2, 4—D sodium salt at 1·68 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 20·2 sq. m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin 2 to 3 times as a rophylactic measure. (iii) Weed counts, Tiller counts, height measurements and yield of grain. (iv) (a) 1964 to 65. (b) Yes. (c) As under 5. Results. (v) Nil. (vi) Summer was severe with high temperature and low humidity from March to May 65. (vii) Error variances are heterogeneous and the Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 1302 Kg/ha. (ii) 405·0 (18 d.f. made up of various components of Treatmens × years interaction) Kg/ha. (iii) Main effects of B alone is highly significant. (iv) Av. yield of grain in Kg/ha.

	B_0	B_1	B_2	C_0	C_1	C_2	Mean
A_0	1112.5	1386.0	1557.0	1327.5	1350.5	1377.5	1351.8
A_1	1073.5	1341.5	1517.5	1285.0	1294.5	1353.0	1310.8
A_2	1000.5	1267.0	1462.0	1203.5	1257.5	1268.5	1243.1
Mean	1062.1	1331.5	1512.1	1272.0	1300.8	1333.0	1301.9
C_0	1048.0	1279.0	1489.0				
C_1	1041.0	1360.5	1501.0				
C_2	1097.5	1355.0	1546.5				

C.D. of B marginal means=200·4 Kg/ha.

Individunl results

Treatments	A_0	A_1	A_2	Sig.	B_0	B_1	B_2	Sig.
Years								
1964	1479	1515	1701	**	1217	1622	1856	**
1965	1224	1106	785	*	907	1041	1168	*
Pooled	1352	1311	1243	N.S.	1062	1332	1512	**

C_0	C_1	C_2	Sig.	G.M.	S.E./plot.
1526	1570	1600	**	1565	58
1018	1032	1046	N.S.	1036	35
1272	1301	1333	N.S.	1302	405

Crop :- Ragi (*Kharif*). **Ref :- A.P. 60(163), 61(183), 62(237).**

Site :- Agri. College Farm, Bapatla. **Type 'D'.**

Object :— To find out the efficacy of different methods of controlling weeds in Ragi fields.

1. BASAL CONDITIONS :

(i) (a) *Ragi-Ragi*. (b) *Ragi*. (c) 12·4 C.L./ha. of F.Y.M.+45 Kg/ha. of N as A/S. (ii) Sandy. (iii) 28.7.60, 18.7.61, 18.7.62. (iv) (a) Ploughing with country plough and levelling. (b) Transplanting. (c) 14·8 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 12·4 C.L./ha. of F.Y.M.+45 Kg/ha. of N as A/S. (vi) AKP-6. (vii) Irrigated. (viii) As per treatments. (ix) 43·6 cm. , 79·6 cm. , 70·7 cm. (x) 21.10.60, 16.10.61, 8.10.62.

2. TREATMENTS :

3 weedicidal treatments : T_0=Control (unweeded), T_1=Local method i.e. hand weeding once, T_2=One postemergence application of weedicide and T_3=Two post-emergence application of weedicide.

N.B. Sodium salt of 2, 4—D (Fernoxone) was sprayed at 1·12 Kg Acid equivalent/ha. in 60 gallons of water. Spraying were done 2 and 4 weeks after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40·5 sq. m. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Endrin was sprayed 2 to 3 times. (iii) Weed and tiller counts, height of plants and grain yield. (iv) (a) 1960-62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Results of 62 have not been included in pooled analysis as the S.E or the plot-wise data were N.A. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results for 60 and 61

(i) 265·6 Kg/ha. (ii) 252·0 Kg/ha. (based on 3 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	173·6	433·4	290·8	164·8

Individual results

Treatments	T_0	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years							
1960	224	672	448	224	**	392	117
1961	123	195	134	106	**	139	26
1962	563	624	650	581	N.S.	609	N.A.
Pooled for 60 and 61	174	433	291	165	N.S.	266	252

Crop :- Ragi. **Ref :- A.P. 61(237).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the effect of seed (soaking) with growth regulators and other substances on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) *Ragi-Ragi.* (b) *Ragi.* (c) N.A. (ii) Sandy. (iii) N.A. (iv) (a) Ploughings with country plough. (b) Transplanting. (c) 15 Kg/ha. (d) 15 cm.×15 cm. (e) 1. (v) 45 Kg/ha. of N as A/S. (vi) AKP-6. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

11 seed soaking treatments : T_0=Control (soaking in water), T_1=Indole Acetic Acid at 100 ppm concentration, T_2=Indole Acetic Acid at 206 ppm concentration, T_3=Naphthalene Acetic Acid at 100 ppm concentration, T_4=N Naphthalene Acetic Acid at 200 ppm concentration, T_5=Potassium Bromide at 1% concentration, T_6=Potassium Bromide at 2% concentration, T_7=Potassium Chloride at 1% concentration, T_8=Potassium Chloride at 2% concentration, T_9=Potassium Iodide at 1% concentration and T_{10}=Potassium Iodide at 2% concentration.

The seeds were soaked for 24 hours before sowing in separate nursery beds in the solutions of the above substances and later the seeedlings were transplanted in the main experimental plots.

3. DESIGN :

(i) R.B D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 10·1 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satifactory. (ii) Nil. (iii) Biometric data, yield of grain and straw. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1155 Kg/ha. (ii) 316·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}
Av. yield	904	1334	909	1142	1404	1324	1008	1092	1166	1231	1191

Crop :- Ragi. **Ref :- A.P. 60(162), 62(206), 63(222).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object : –To find out the efficacy of Fernoxone in controlling weed growth in Ragi fields.

1. BASAL CONDITIONS :

(i) (a) *Ragi–Ragi.* (b) *Ragi.* (c) 12·5 C.L./ha. of F.Y.M.+45 Kg/ha. of N as A/S. (ii) Sandy. (iii) 17.1.60 ; 17.1.62 ; 25.1.63. (iv) (a) Ploughings by country plough and levelling. (b) Transplanting. (c) 14·8 Kg/ha. (d) 15 cm.×15 cm. (e) 2. (v) 12·5 C.L./ha. of F.Y.M.+45 Kg/ha. of N as A/S. (vi) AKP–6. (vii) Irrigated. (viii) As per treatments. (ix) 2·5 cm. ; 4·3 cm. ; 4·7 cm. (x) 23.4.60 ; 24.4.62 ; 30.4.63.

2. TREATMENTS :

5 weedicidal treatments: T_0=Control (no weeding), T_1=One hand weeding, T_2=One post-emergence application of weedicide and T_3=Two post –emergence application of weedicide

N.B. Sodium salt of 2, 4 –D (Fernoxone) was sprayed at 1·12 Kg/ha. acid equivalent in 60 gallons. of water Sprayings done after 2 weeks and 4 weeks of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40·5 sq. m. (v) Nil. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed 2 to 4 times. (iii) Weed and tiller counts, height of plant and grain yield. (iv) (a) 1960—63 (data N.A. for 61). (b) Nil. (c) As under 5. Results. (v) and (vi) N.A. (vii) As the S.E/plot or the raw data for 63 are N.A. only the results for 60 and 62 have been pooled. Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results for 60 and 62

(i) 811·9 Kg/ha. (ii) 285·2 Kg/ha. (based on 21 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	752·0	1103·0	715·0	677·5

Individual results

Treatments	T_0	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years							
1960	1121	1681	1121	1009	N.S.	1233	323
1962	383	525	309	346	N.S.	391	232
1963	368	526	430	341	N.S.	416	N.A.
Pooled for 60 and 62	752	1103	715	678	N S.	812	285

Crop :- Korra (*Kharif*). **Ref :- A.P. 60(158), 61(175), 62(193).**

Site :- Project Dev. and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the optimum requirements of N, P and K for Korra crop in Tungabhadra Project Area.

1. BASAL CONDITIONS :

(i) (a) Groundnut –*Korra*. (b) Groundnut. (c) 125·5 Q/ha. of compost. (ii) Red soils. (iii) 10.7.60, 25.7.61 and 13.7.62. iv) (a) Ploughings with country plough. (b) Drilled. (c) 4·5 Kg/ha. (d) 30 cm. between rows. (e) 1. (v) Nil. (vi) H—2. (vii) Irrigated. (viii) Hand weeding. (ix) 314 cm., 218 cm. ; 273 cm. (x) 20.10.60, 23.10.61 and 6.10.62.

2 TREATMENTS :

10 manurial treatments : T_0=Control (no fertilizer), T_1=22 Kg/ha. of N, T_2=45 Kg/ha. of N, T_3=67 Kg/ha. of N, T_4=T_1+22 Kg/ha. of P_2O_5, T_5=T_2+22 Kg/ha. of P_2O_5, T_6=T_3+22 Kg/ha. of P_2O_5, T_7=T_4+22 Kg/ha. of K_2O, T_8=T_5+22 Kg/ha. of K_2O and T_9=T_6+22 Kg/ha. of K_2O.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 36 6 m.×12·2 m. for 62 and 36·6 m.×17·1 m. for others. (iii) 4. (iv) (a) 12·2 m.×1·7 m. for 62 and 17 1 m.×3·6 m. for others. (b) 11·0 m.×3·7 m. for 62 and 16·5 m.×2·4 m. for others. (v) 60 cm. on sides for 62 and 30 cm.×10 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1960 62 (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1988 Kg/ha. (ii) 720·6 Kg/ha. (based on 18 d.f. made up of Treatments×years interaction. (iii) Treatment differences are significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	1374	1646	1914	2039	2040	2073	1992	1720	2198	2884

C.D.=618·1 Kg/ha.

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
years 1960	1593	1622	1793	2088	1793	2423	2432	1737	2284	2543
1961	1065	1289	1457	1782	2399	1524	885	1491	1838	2970
1962	1465	2026	2493	2246	1927	2273	2659	1932	2471	3138
Pooled	1374	1646	1914	2039	2040	2073	1992	1720	2198	2884

Sig.	G.M.	S.E./plot
**	2301	221·0
**	1670	585·0
**	2263	313·0
*	1988	720·6

Crop :- Red Gram (*Kharif*). **Ref :- A.P. 60(109), 61(123), 62(151), 63(236).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object : –To find out the response of fertilizers on the yield of Red Gram.

1. BASAL CONDITIONS :

(i) (a) Nil for 60 ; Red Gram—Fallow—Red Gram for others. (b) Groundnut for 60 ; Red Gram for others. (c) N.A. for 60 ; as per treatments for others. (ii) *Chalka.* (iii) 29.6.60 ; 8.7.61 ; 26.7.62 ; 3.7.63. (iv) (a) Harrowings and ploughings. (b) Dibbling. (c) 9 Kg/ha. (d) 91 cm. × 15 cm (e) 2 to 3. (v) Nil for 60 ; 14·8 C.L/ha. of compost for 61 ; 9·9 C.L./ha. of compost for 62 ; N.A. for 63. (vi) ST—1. (vii) Unirrigated. (viii) Gapfilling, hand weedings and hoeings. (ix) 66 cm. ; 46 cm. ; 52 cm. ; 49 cm. (x) 3.1.61 ; 30.1.62 ; 28.1.63 ; 23.12.63.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_0=0, N_1=16·8 and N_2=33.6 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=16·8 and P_2=33·6 Kg/ha. Fertilizer applied as soil application in the month of August.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 10·1 m. × 10·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 60, 62 ; Endrin sprayed for others. (iii) Yield of grain. (iv) (a) 1960—63. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and the Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 323 Kg/ha. (ii) 135·0 Kg/ha. (based on 56 d.f. made up of pooled error and Treatment × years interaction). (iii) None of the effects is significant. (iv) Av. yield of red gram in Kg/ha.

	N_0	N_1	N_2	Mean
P_0	253	232	368	284
P_1	358	332	332	341
P_2	340	422	268	343
Mean	317	329	323	323

Individual results.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.	G.M.	S.E./plot
Years										
1960	394	456	465	N.S.	403	441	426	N.S.	423	90·4
1961	437	377	340	N.S.	309	398	447	N.S.	385	210·6
1962	319	329	332	N.S.	293	342	345	N.S.	327	173·9
1963	162	153	156	N.S.	133	182	156	N.S.	157	156·0
Pooled	317	329	323	N.S.	284	341	343	N.S.	323	135·0

Crop :- Red Gram (*Kharif*). **Ref :- A.P. 61(99), 62(117), 63(101).**

Site :- Agri. Res, Stn., Warangal. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on tPe yield af Red Gram.

1 BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut for 61 ; fallow for 62 and Cotton for 63. (c) 12·4 C.L./ha. of F.Y.M. for 61 and 63 ; Nil for 62. (ii) *Chalka.* (iii) 14.6 61 ; 4.7.62 ; 7.6.63. (iv) (a) Tractor ploughings and levelling. (b) Dibbling. (c) N.A. (d) 91 cm. × 10 to 13 cm. (e) 2. (v) 12·4 C.L./ha. of *F.Y.M.* for 61 and 24·7 C.L./ha. of F.Y.M. for others. (vi) C–11 for 61 and Tur ST–1 for others. (vii) Unirrigated. (viii) Hand weedings and blade harrowing. (ix) 70·6 cm. ; 93·7 cm. ; 90·6 cm. (x) 28.12.61, 31.12.62, 3.1.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha .

(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

3. DESIGN :

(i) 3^3 factorial confd. (ii) (a) 3 blocks/replication and 9 plots/block. (b) 21·5 m. × 30·6 m. (iv) (a) 10·1 m. × 6·1 m. (b) 8·2 m. × 4·9 m. (v) 91 cm. × 61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Pod borer noticed in 63 ; Nil for others. (iii) Yield of grain. (iv) (a) 1961—63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 557 Kg/ha. (ii) 200·8 Kg/ha. (based on 36 d.f. made up of Treatments × years interaction). (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	249	455	469	278	441	454	391
N_1	384	662	661	470	621	616	569
N_2	504	707	922	662	678	793	711
Mean	379	608	684	470	580	621	557
K_0	335	515	560				
K_1	374	643	723				
K_2	428	666	769				

C.D. for N, P and K marginal means = 78·4 Kg/ha

Individual results

Av. yield of grain in Kg/ha.

Years	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
1961	275	382	522	**	244	420	515	**
1962	239	417	541	**	254	448	495	**
1963	658	909	1070	**	639	956	1042	**
Pooled	391	569	711	**	379	608	684	**

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
306	402	471	**	393	75
811	885	941	*	879	136
293	453	451	**	379	50
470	580	621	**	557	201

Crop :- Red Gram. (*Kharif*). **Ref :- A.P. 60(89).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To find out the response of Red gram to fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 12·4 C.L./ha. of F.Y.M. (ii) *Chalka* (iii) 20.6.60. (iv) (a) 3 ploughings, levelling, and 2 bukherings. (b) Dibbling. (c) N.A. (d) 91 cm.×10 to 13 cm. (e) 2. (v) Nil. (vi) *Tur* C—11. (vii) Unirrigated. (viii) Hand weeding and working danti twice. (ix) N.A. (x) 27.12.60.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as Urea : N_0=0, N_1=16·8 and N_2=33·6 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=16·8 and P_2=33·6 Kg/ha.

N and P_2O_5 applied at sowing by spreading.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 20·1 m.×10·1 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Pod borer. (iii) Grain yield. (iv) (a) No. (b) and (c) Nil. (v) and (vi) Nil. (vii) One replication was damaged due to stagnation of water.

5. RESULTS :

(i) 1095 Kg/ha. (ii) 174 Kg/ha. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	Mean
N_0	593	1038	1087	906
N_1	964	1235	939	1046
N_2	1186	1285	1532	1334
Mean	914	1186	1186	1095

C.D. for N (or P) marginal means=231·7 Kg/ha.

Crop :- Red Gram (*Kharif*). **Ref :- A.P. 65(41).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To find out the effect of N, P and K combinations on the yield of Red Gram.

1. BASAL CONDITIONS :

(i) (a) Cotton—Red Gram. (b) Cotton. (c) 12·6 C.L./ha. of F.Y.M. (ii) *Chalka.* (iii) 25.6.65. (iv) (a) Removing of weeds, bukhering twice, ploughing twice with country plough. (b) Hand dibbling. (c) As per (d) and (e). (d) 91 cm.×30 cm. (e) 2. (v) 125·5 Tonnes/ha. of Tank silt. (vi) ST—1. (vii) Unirrigated. (viii) 4 hand weedings and working with *guntaka* 2 times. (ix) N.A (x) 6.2.66.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_1=44·8, N_2=67·3 and N_3=89·7 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_1=89·7, P_2=134·5 and P_3=179·3 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_1=44·8, K_2=67·3 and K_3=89·7 Kg/ha.

3. DESIGN :

(i) Fact. in R B.D. (ii) (a) 27. (b) N.A. (iii) 2. (iv) (a) 10·1 m.×6·1 m. (b) 8·2 m.×4·9 m. (v) 91 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Poor. Due to persistant drought the crop showed symptoms of wilting. Even flowering was very much affected and drying of plants was noticed. (ii) 10 % B.H.C. dusted on 30.7.65 as prophylactic measure. Green leaf Cater pillar noticed and B.H.C. dusted on 17.9.65. Pod borer notieed and 50% D.D.T. sprayed on 24.11.65. (iii) Yield of grain. (iv) (a) 1965—contd. (b) No. (c) Nil. (v) N.A. (vi) Drought during crop season. (vii) Nil.

5. RESULTS:

(i) 41·1 Kg/ha. (ii) 28·2 Kg/ha. (iii) Main effects of N, K and interactions NP, NK, PK, NPK are all highly significant. (iv) Av. yield of grain in Kg/ha.

	P_1	P_2	P_3	K_1	K_2	K_3	Mean
N_1	7·5	8·7	9·1	10.0	9·6	5·8	8·4
N_2	15·4	93·0	10·8	12·9	94·3	12·0	39·7
N_3	83·5	14·1	127·5	12·0	10·8	202·2	75·0
Mean	35·5	38·6	49·1	11·6	38·2	73·0	41.1
K_1	9·6	13·3	12.0				
K_2	13·7	87·2	13·7				
K_3	83·0	15·4	121·7				

C.D. for N (or K) marginal means =19·3 Kg/ha.

C.D. for the body of NP (or NK or PK) table=33·4 Kg/ha.

Crop :- Red Gram (*Kharif*). **Ref :- A.P. 65(40).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'C'.**

Object :—To find out suitable spacing for Red Gram.

1. BASAL CONDITIONS :

(i) (a) Cotton–Red Gram. (b) Cotton. (c) 125·5 Q/ha. of F.Y.M., 185·3 for Super. (ii) Grey brown to black clay. (iii) 5.7.65. (iv) (a) Removing of weeds, 2 bukherings and 2 ploughings with country plough. (b) Dibbling. (c) and (d) As per treatments. (e) 2 to 3. (v) Nil. (v)) ST—1. (vii) Unirriga.ed. (viii) Gap filling, 2 hand weedings, interculture twice with *guntaka*, interculture once with power tiller. (ix) N.A. (x) 7.2.66.

2. TREATMENTS :

13 spacings : S_1=91 cm.×30 cm., S_2=91 cm.×61 cm., S_3=91 cm.×91 cm., S_4=1·22 m.×80 cm.. S_5=1·22 m.×61 cm., S_6=1·22 m.×91 cm., S_7=1·22 m.×1·22 m., S_8=1·52 m.×30 cm. S_9=1·52 m.×61 cm., S_{10}=1·52 m.×91 cm., S_{11}=1·83 m.×30 cm., S_{12}=1·83 m.×61 cm. and S_{13}=1·83 m.×91 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) 93·9 m.×6·7 m. (iii) 4. (iv) (a) 9·1 m.×6·7 m. (b) 40·5 sq.m. (Dimension N.A.) (v) N.A. (vi) Yes.

4. GENERAL :

(i) Germination poor. Growth stunted and not uniform. (ii) Green leaf Cater pillar noticed. B.H.C. 10% dusted on 18.9.65. Endrin sprayed against Pod borer as a prophylactic measure. (iii) Grain yield. (iv) (a) 1965—contd. (b) No. (c) Nil. (v) N.A. (vi) Drought during crop season. (vii) Nil.

5. RESULTS :

(i) 47·4 Kg/ha. (ii) 37·9 Kg/ha. (iii) Treatment differences are not significaut. (iv) Av. yield of grain in Kg/ha,

Treatment	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8
Av. yield	58·7	34·0	68·0	65·5	39·3	22·9	29·0	51·3

Treatment	S_9	S_{10}	S_{11}	S_{12}	S_{13}
Av. yield	55·6	26·6	68·0	52·5	46·3

Crop :- Green Gram (*Rabi*). **Ref :- A.P. 61(235), 62(260).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :—To asses the efficacy of different chcmicals in controlling Pod borers.

1. BASAL CONDITIONS :

(i) (a) Paddy—Green Gram (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 23.11.61 ; 21.11.62. (iv) (a) Nil. (b) Broadcasting. (c) 22 Kg/ha. (d) and (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 17.2.62 ; 23.2.63.

2. TREATMENTS :

7 chemical treatments : T_0=Control, T_1=Endrin 0·031%, T_2=D.D.T. 0·32%, T_3=B.H.C. 0·1%, T_4=Diptorex 0·1%, T_5=Folidol dust at 34 Kg/ha., T_6=B.H.C. 10% at 34 Kg/ha.

Treatments applied on 7.2.62 in 61 and on 25.1.63 in 62.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 6·7 m.×5·2 m. (b) 6·1 m.×4·6 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Pod borer. (iii) Yield of pods and % incidence of pod borer. (iv) (a) 1961-62. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The Green Gram crop was sown in the previous paddy crop prior to its harvest. Yield data for 62 N.A.

5. RESULTS :

61(235)

Yield of grain

(i) 248 Kg/ha. (ii) 78·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	264	311	277	237	209	230	210

Incidence of Pod borer

(i) 9·73 degrees. (ii) 1·42 degrees. (iii) Treatment differences are not significant. (iv) Mean incidence of Pod borer in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Incidence	10·08	8·91	9·09	11·11	10·05	8·87	10·03

62(260)

Incidence of Pod borer

(i) 34·55 degrees. (ii) 8·97 degrees. (iii) Treatment differences are not significant. (iv) Mean incidence of pod borer in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Incidence	36·40	29·53	30 00	46·73	36·80	26·13	36 23

Crop :- Black Gram (*Rabi*). **Ref :- A.P. 63(255).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object: — To find out a suitable insecticide for the control of Pod borer in Black Gram crop.

1. BASAL CONDITIONS:

(i) (a) Paddy-Black Gram. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 16.11.63. (iv) (a) Nil. (b) Broadcasting. (c) 22 Kg/ha. (d) and (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 11.2.64.

2. TREATMENTS :

8 insecticidal treatments : T_0=Control, T_1=Endrin 0 03%. T_2=D.D.T. 0·15%, T_3=Telodrin 0·03%, T_4=Malathion 0·15%, T_5=Sevin 0·13%, T_6=Dimecron 0·03% and T_7=Water spray.

Treatments were applied as sprays.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·3 m.×5·5 m. (b) 6·7 m.×4·9 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of pod borer. (iii) % incidence of pod borer and grain yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rainfal of 25·3 cm. recorded on 21 to 22.10.63. (vi) The present Black Gram crop was sown in the previous Paddy crop before its harvest.

5. RESULTS:

Grain yield

(i) 363 Kg/ha. (ii) 66 6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grain in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	382·3	374·6	321·1	351·7	389·9	351·7	298·2	435·8

Incidence of Pod borer

(i) 8·42 degrees. (ii) 0·71 degrees. (iii) Treatment differences are significant. (iv) Av. infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. infestation	8·97	8·52	8·10	7·97	8·31	8·01	9·72	7·77

C.D.=1·04 degrees.

Crop :- Horse Gram (*Kharif*). **Ref :- A.P. 60(203), 61(224),**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :— To study the response of Horse Gram to the applied phosphate on the yield and uptake in sandy soils.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy soil. (iii) 5.7.60 ; 22.7.61. (iv) (a) Ploughings with country plough. (b) Dibbling. (c) N.A. (d) 20 cm.×20 cm. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated, (viii) Nil. (ix) N.A. (x) 17.10.60 ; 3.11.61.

2. TREATMENTS :

7 manurial treatments : M_0=Control (no manure), M_1=62·8 Q/ha. of F.Y.M., $M_2=M_1+22$ Kg/ha. of N as A/S, $M_3=M_2+22$ Kg/ha. of P_2O_5 as Super, $M_4=M_2+45$ Kg/ha. of P_2O_5 as Super, $M_5=M_2+67$ Kg/ha, of P_2O_5 as Super and $M_6=M_2+90$ Kg/ha. of P_2O_5 as Super.

F.Y.M. was applied in single dose as basal dressing and incorporated in to the soil. Super was applied in a single dose as basal dressing in furrows drawn 20 cm. apart and 8 cm. deep in the soil. A/S was applied as top dressing in two equal doses at 15 and 30 days after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 8·0 m.×5·0 m. (b) 7·2 m.×4·2 m. (v) 40 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of total dry matter. (iv) (a) 1960-61. (b) No. (c) As given under 5. Results. (v) to (vii) Nil.

5. RESULTS :

Pooled results

(i) 4524 Kg/ha. (ii) 832·6 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iv) Av. yield of total dry matter in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2984	3901	5021	4930	4363	4244	6226

C.D.=1018 Kg/ha,

Individual results

Av. yield of dry matter in Kg/ha.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig.	G.M.	S.E./plot
Years										
1960	2780	4226	5281	5152	4132	4059	6708	N.S.	4620	N.A.
1961	3188	3577	4762	4708	4595	4430	5745	N.S.	4429	N.A.
Pooled	2984	3901	5021	4930	4363	4244	6226	**	4524	832·6

Crop :- Horse Gram (*Rabi*). **Ref :- A.P. 60(204), 61(225).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :— To study the response of Horse Gram to the applied phosphate on the yield and uptake in sandy soil,

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy soil. (iii) 7.12.60 ; 2.12.61. (iv) (a) Ploughing with country plough. (b) Dibbling. (c) N.A. (d) 20 cm. × 20 cm. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Nil. (iv) N.A. (x) 6.3.61 ; 1.3.62.

2. TREATMENTS to 4. GENERAL :

Same as expt. no. 60(203), 61(224) on page 437.

5. RESULTS :

Pooled results.

(i) 1851 Kg/ha. (ii) 402·8 Kg/ha. (based on 6 d.f. made up of interaction of treatments with years) (iii) Treatment differences are not significant. (iv) Av. yield of total dry matter in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2128	1509	2009	1776	1865	1647	2022

Individual results

Av. yield of dry matter in Kg/ha.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig,	G.M.	S.E./plot
Years										
1960	1449	868	1276	1218	1135	922	1004	N.S.	1123	N.A.
1961	2817	2150	2743	2335	2595	2372	3039	N.S.	2579	N.A.
Pooled	2128	1509	2009	1776	1865	1647	2022	N.S.	1851	402·8

Crop :- Brinjal. **Ref :- A.P. 60(190).**

Site :- Agri. Res. Instt., Hyderabad. **Type:- 'CV'.**

Object :—To asses the suitability of a particular season for the promising varieties of Brinjal.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) Nil. (iii) Black cotton. (iii) As per treatments. (iv) (a) Ploughings, levelling and formation of ridges and furrows. (b) Transplanting. (c) 10,800 seedlings/ha. (d) 60cm. × 60cm. (e) 2. (v) 49 C.L. of F.Y.M./ha. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 3.10.60 to 11.11.61.

2. TREATMENTS :

Main-plot treatments :

12 dates of planting : D_1=5th June, D_2=5th July, D_3=5th August, D_4=5th September, D_5=5th October, D_6=5th November, D_7=5th December, D_8=5th January, D_9=5th February D_{10}=5th March, D_{11}=5 th April, D_{12}=5th May.

Sub-plot treatments :

2 varieties : V_1=Green long cluster, V_2=Kodur long.

3. DESIGN :

(i) Split-plot. (ii) (a) 2sub-plots/main-plot and 12 main-plots/replication. (b) N.A. (iii) 2. (iv) (a) 7·3 m.×5·5 m. (b) 6·1 m.×4·3 m. (v) 60 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin at 5 c.c. in one gallon of water was sprayed regularly to prevent borer attack. (iii) Yield af brinjal fruit. (iv) (a) 1960—61 (in 1961 experiment failed). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6817 Kg/ha. (ii) (a) 2024 Kg/ha. (b) 1174 Kg/ha. (iii) Main effects of D and V interaction V×D are highly significant. (iv) Av. yield of brinjal fruits in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6
V_1	19128	14592	16423	10603	7339	8646
V_2	7341	6153	10927	7215	5355	6627
Mean	13235	10372	13675	8909	6347	7637

	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	10994	9308	2325	1223	783	791	8513
V_2	8710	6153	1631	786	348	208	5121
Mean	9852	7731	1978	1004	566	499	6817

C.D. for D marginal means=3149·6 Kg/ha.
C.D. for V marginal means=738·7 Kg/ha.
C.D. for D means at the same level of V=3147·6 Kg/ha.
C.D. for V means at the same level of D=2558·1 Kg/ha.

———

Crop :- Brinjal (*Summer*). **Ref :- A.P. 61(164), 62(175).**

Site :- Vagetable Res. Stn., Kurnool. **Type :- 'CM'.**

Object :—To find out the optimum spacing and manurial doses for the economic and successful growing of Brinjal.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gurd for 61 ; Bitter gurd and lady's finger for 62. (c) Nil. (ii) Black soil. (iii) 23.1.61/15 to 17.2.61 ; 23.1.62/26, 27.2.62. (iv) (a) Ploughings with country plough, working of guntaka and Pedda guntak *gorru*. (b) Transplanting. (c) 0·8 Kg/ha. (d) As per treatments. (e) 1. (v) 251·1 Q/ha. of F.Y.M. (vi) Local for 61 ; Purple long for 62. (vii) Irrigated. (viii) 4 hand weedings and working of push hoe twice. (ix) 24 cm. for both expts. (x) 4.5.61 to 6.7.61 ; 18.4.62 to 8.8.62.

2. TREATMENTS :

All combinations of (1), (2) and (3)
(1) 3 spacings : S_1=46 cm.×46 cm., S_2=61 cm.×61 cm. and S_3=91 cm.×91 cm.
(2) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.
(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=16·8 and P_2=33·6 Kg/ha.
A/S and Super were applied in one dose by soil application on 15.3.61 for 61 and on 7.4.62 for 62.

3. DESIGN :

(i) 3^2 confd. (ii) (a) 3 blocks/replication and 9 plots/block. (b) 49·4m.×21·9m. (iii) 2 (iv) (a) 7·3m.×5·5 m. (b) 6·4 m.×4·6 m. for S_1, 6·1 m.×4·3 m. for S_2, 5·5 m.×3·7 m. for S_3. (v) S_1=46 cm.×46 cm. ; S_2=61 cm.×61 cm. ; S_3=91 cm.×91 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying Ryomia and Endrin and at 28 gm. in 18 litres of water against Shoot borer and Fruit borer, spraying of Aldrin at 28 gm. in 27 litres of water for 61 ; Slightly affected by Shoot borer and Epilachima incidence, Little leaf disease to a large extent for 62. (iii) Yield of brinjal fruits. (iv) (a) 1961 to 62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Severe cold weather prevailed during January 62 for 62. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results :

(i) 9080 Kg/ha. (ii) 2256·2 Kg/ha. (based on 62 d.f. made up of pooled error and Treatment×years interaction). (iii) Main effects of S and N are highly significant. (iv) Av. yield of Brinjal in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	8275	9677	11804	8975	11593	9189	9919
S_2	7651	8996	11593	9390	8674	10176	9413
S_3	6479	7904	9343	7604	8426	7696	7909
Mean	7468	8859	10913	8656	9564	9020	9080
P_0	6706	8993	10269				
P_1	7771	9363	11559				
P_2	7928	8222	10911				

C.D. for S or N marginal means=1063·6 Kg/ha.

Individual results

Av. yield of brinjal in Kg/ha.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years 1961	4989	4754	5891	N.S.	4910	5551	5173	N.S.
1962	9948	12965	15936	**	12403	13578	12868	N.S.
Pooled	7468	8859	10913	**	8656	9564	9020	N.S.

S_1	S_2	S_3	Sig.	G.M.	S.E./plot.
5620	5870	4144	*	5211	1847
14218	12957	11674	*	12950	2634
9919	9413	7909	**	9080	2256.2

Crop .- Brinjal (*Summer*). **Ref :- A.P. 63(176).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'CM'.**

Object :—To find out the optimum spacing and manurial dose for the economic and successful growing of Brinjal.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sunhemp as G.M. (c) Nil. (ii) Black soil. (iii) N.A./23.2.63. (iv) (a) Ploughings with country plough, working of *Pedda guntaka gorru* and ordinary *guntaka*. (b) Transplanting. (c) 0·8 Kg/ha. (d) As per treatments. (e) 1. (v) 251 Q/ha. of F.Y.M. (vi) Purple long. (vii) Irrigated. (viii) 4 hand weedings, working of push hoe 2 times. (ix) 22 cm. (x) 26.4.63 to 22.7.63.

2. TREATMEMTS :

All combinations of (1), (2) and (3)

(1) 3 spacings : S_1=46 cm.×61 cm., S_2=61 cm.×61 cm. and 91 cm.×61 cm.

(2) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

Super was applied as basal dressing on 20.3.63 and A/S was applied on 23.3.63.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 3 blocks/replication, 9 plots/block. (b) 49·4 m.×21·9 m. (iii) 2. (iv) (a) 7·3 m.×5·5 m. (b) S_1=6·4 m.×4·3 m., S_2=6·1 m. ×4·3 m. and S_3=5·5 m.×4·3 m. (v) S_1=46 cm.×61 cm., S_2=61 cm.×61 cm. and S_3=91 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Leaf disease. Slight intfestation of Epilachna in the mid-stage of the crop. Paramar, Metasystox by stage and Endrin at 1 oz. in 4 gallons of water were sprayed against Shoot and fruit borer incidence. (iii) Yield of brinjal fruits. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 4468 Kg/ha. (ii) 2078·9 Kg/ha. (iii) Main effect of S is significant. (iv) Av. yield of brinjal in Kg/ha.

	S_1	S_2	S_3	P_0	P_1	P_2	Mean
N_0	3939	3716	3151	3057	4376	3373	3602
N_1	6580	5224	3202	5703	7018	3768	5249
N_2	5562	4520	3578	4386	4324	4945	4552
Mean	5360	4487	3310	4382	5239	4029	4468
P_0	6042	4050	3034				
P_1	4841	5357	4038				
P_2	5177	4055	2857				

C.D. S marginal means=1437·2 Kg/ha.

———

Crop :- Brinjal (*Rainy*). **Ref :- A.P. 64(240), 65(100).**

Site :- Agri. Res. Instt., Hyderabad. **Type :- 'D'.**

Object :—To study the control of Little leaf virus disease by controlling the vectors of virus.

1. BASAL CGNDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black Cotton. (iii) N.A. (iv) (a) Ploughing, levelling, formation of ridges and furrows. (b) Transplanting. (c) 10,800 seedlings/ha. (d) 60 cm. × 60 cm. (e) 2. (v) 49 C.L./ha. of F.Y.M. (vi) Manjerogotu. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A. for 64 5 to 22.2.66.

2. TREATMENTS:

7 insecticidal treatments : T_0=No spray, T_1=Water spray, T_2=Methyl Dimethion (Metasytox) 0·10%, T_3=Parathion 0·025%, T_4=Phosphamidon (Dimecron) 0·10%, T_5=Carboyl (Sevin) 0·15% and T_6=Dithionate (Rogor) 0·10%.

3. DESIGN

(i) R.B.D. (ii) (a) 7. (b) N.A, (iii) 4. (iv) (a) 4·3 m. × 4·9 m. (b) 3·1 m. × 3·7 m. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Under study. (iii) Yield of fruits and % incidence of Little leaf disease. (iv) (a) 1964–65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Data on Little leaf incidence for 1965 N.A. Error variances are homogeneous and Treatments × years interactlon is present.

5. RESULTS :

Pooled results

(i) 2082 Kg/ha. (ii) 1474·2 Kg/ha. (based on 6 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of Brinjal in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	962	1112	2728	3190	1971	3061	1548

Individual results

Av. yield of Brinjal in Kg/ha.

Years	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig	G.M.	S.E./plot
1964	1276	556	2708	3632	1750	2288	2170	**	2054	652
1965	649	1668	2749	2749	2193	3833	927	*	2110	1353
Pooled	962	1112	2728	3190	1971	3061	1548	N.S.	2082	1474

Incidence of Little leaf disease

64(240)

(i) 45·32 degrees. (ii) 12·61 degrees. (iii) Treatment differences are not significant. (iv) Mean incidence of Little leaf in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean incidence	52·65	53·10	47·98	44·80	43 10	34 35	41·25

Crop :- Brinjal (*Winter*). **Ref :- A.P. 64(241), 65(101).**

Site :- Agri. Res. Instt., Hyderabad. **Type :- 'D'.**

Object :—To study the control of Little leaf virus disease by controlling the Vectors of virus.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) Black Cotton. (iii) N.A. (iv) (a) Ploughings, levelling, formation of ridges and furrows. (b) Transplanting. (c) 10,800 seedlings/ha. (d) 60 cm.×60 cm. (e) 2. (v) 49 C.L. of F.Y.M./ha. (vi) Manjerogotu. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 12 to 27.10.65, 8 to 26.3.66 and 7.4.66.

2. TREATMENTS:

7 insecticidal treatments : T_0=No spray, T_1=Water spray, T_2=Methyl Dimethion (Metasystox) 0·10%, T_3=Parathion 0·025%, T_4=Phosphamidon (Dimecron) 0·10%, T_5=Carboryl (Sevin) 0·1% and T_6=Dithionate (Rogor) 0·10%.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 4·3 m.×4·9 m. (b) 3·1 m.×3·7 m. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Under study. (iii) Yield of fruits and % incidence of little leaf disease. (iv) (a) 1964-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Data on Little leaf incidence for 1965 N.A. Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS:

Yield of Brinjal fruits

Pooled results

(i) 5886 Kg/ha. (ii) 2405·1 Kg/ha. (based on 6 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of Brinjal in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	4594	4281	7263	6838	5488	7040	5698

Individual results

Av. yield of Brinjal in Kg/ha.

Years	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig	G.M.	S.E./plot
1964	4962	4962	7065	6963	4777	5298	6222	*	5750	721
1965	4225	3600	7462	6213	6200	8781	5175	**	6022	1768
Pooled	4594	4281	7263	6838	5488	7040	5698	N.S.	5886	2405

Incidence of Little leaf disease

64(241)

(i) 45·80 degrees. (ii) 8·63 degrees. (iii) Treatment differences are not significant. (iv) Mean incidence of Little leaf disease in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean incidence	47·90	42·60	39·70	42·60	45·60	47·20	55·00

Crop :- Brinjal (*Rabi*). **Ref :- A.P. 64(245).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :—To study the degree of resistance of fruit borer and Shoot borer in different varieties of Brinjal and to find out their control measures.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) Tomato manurial trial. (ii) Black soil. (iii) 22.7.64. (iv) (a) Deep ploughings with tractor, passing of *Pedda guntaka* and *guntaka*. (b) Transplanting. (c) N.A. (d) 61 cm.×61 cm. (e) 2. (v) 25 C.L./ha. of F.Y.M. 67 Kg/ha. of N as A/S+45 Kg/ha. of P_2O_5 as Super. Fortified with F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Working *Chitti guntaka* twice. (xi) N.A. (x) From 11.9.64 to 11.11.64.

2. TREATMENTS :

Main-plot treatments :

4 insecticidal treatments : S_0=Control (no spraying), S_1=0·03 % Endrin+0·2 % D.D.T. sprayed at 14 days interval, S_2=0 03 % Endrin+0 2 % D.D.T. sprayed at 21 days interval and S_3=0·03 % Endrin+0·2 % D.D.T sprayed at 28 days interval.

Sub-plot treatments :

7 varieties : V_1=Pusa purple long, V_2=Pusa purple round, V_3=Black beauty, T_4=Rayadurg, V_5=C-1 of V.R.S., V_6=C-15 of V R.S., V_7=C--40 of V.R.S.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 7 sub-plots/main-plot, (b) N.A. (iii) 4. (iv) (a) 5·5 m.×3·7 m. (b) 1·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Shoot borer and fruit borer. (iii) Yield of Brinjal, % incidence of Shoot borer and Fruit borer. (iv) (a) 1964 only. (b) and (c) Nil. (v) Nil. (vi) Heavy and continuous rains during the month of Sept. resulted in damage of the crop during Oct. 64. (vii) Nil.

5. RESULTS :

Shoot borer incidence.

(i) 22·9 degrees. (ii) (a) 13·8 degrees. (b) 9·6 degrees. (iii) Main effects of S and V are highly significant. (iv) Mean incidence of Shoot borer in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
S_0	2·69	48·77	41·19	37 90	30·07	42·13	26·42	32·74
S_1	10·15	15·41	11·32	21·39	13·09	11·78	19·12	14·61
S_2	5.37	31·04	14 04	18·54	26·04	27·66	18·38	20·24
S_3	9·23	30·14	28 65	29·58	23·13	25·97	22·09	24·11
Mean	6·86	31·49	23·80	26·86	23·80	26·88	21·50	22·92

C.D. for S marginal meens=8·4 degrees.
C.D. for V marginal means=6·8 degrees.

Incidence of fruit borer.

32·6 (i) degrees. (ii) (a) 3·7 degrees. (b) 7·1 degrees. (iii) Main effects of S and V are highly significant. (iv) Mean incidence of Fruit borer in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
S_0	33·73	40·55	43·72	30·87	34·68	43·68	38·46	37·96
S_1	24·90	27·42	28·75	28·73	20·55	28·53	22·36	25·89
S_2	26·60	32·46	34·58	41·38	27·10	39·62	24·83	32·37
S_3	27·64	35·96	37·75	39·32	28·67	37·46	29·69	34.27
Mean	28·22	34·10	36·20	35·08	27·75	37·32	29·69	32·62

C.D. for S marginal means=2·2 degrees.
C.D. for V marginal means=5·0 degrees.

Crop :- Brinjal (*Rainy*). **Ref :- A.P. 65(113).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :—To study the degree of resistance to Little leaf disease in different varieties and also to find out the control measures for the disease by controlling insect vector.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bhendi. (c) 49 C.L./ha. of F.Y.M., 34 Kg/ha. of N as A/S+45 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iil) 17, 18.7.65. (iv) (a) Ploughings with tractor and harrowings working *pedd guntaka* twice and levelling. (b) Transplanting. (c) 26687 seedlings/ha. (d) 61 cm.×61 cm. (e) 1. (v) 49 C.L./ha. of F.Y.M.+67 Kg/ha. ef N as A/S in in two split+doses 45 Kg/ha. of P_2O_5 as Super by fortifying with F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings working *Chitti guntaka* twice between the lines. (ix) N.A. (x) 21.9.65 to 6.12.65.

2. TREATMENTS :

Main-plot treatments :

5 insecticidal treatments : S_0=Control (no spraying), S_1=Spraying 0·03 % Endrin+0·2 % D.D.T. at 14 days interval, S_2=Spraying 0·03 % Endrin+0·2 % D.D.T. at 21 days interval, S_3=Spraying 0·03 % Endrin+0·2 % D.D.T. at 28 days interval.

Sub-plot treatments :

8 varieties : V_1=Pusa purple long, V_2=Pusa purple round, V_3=Black beauty, V_4=Rayadurg, V_5=C-1 of V.R.S., V_6=C-15 of V.R.S., V_7=C-40 V.R.S. V_8=Purple long cluster.

Spraying were started 1 month after planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication. 8 sub-plots/main -plot. (b) N.A. (iii) 4. (iv) (a) 7·3 m×5·5 m. (b) 6·1 m.×4·3 m. (v) 61 cm.×61 cm. (vi) Yes.

4 GENERAL :

(i) Satisfactory. (ii) Incidence of Little leaf disease. (iii) % Incidcnce little leaf disease and yield of fruits. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

Incidence of ltle leaf disease.

(i) 21·7 degrees. (ii) (a) 7·7 degrees. (b) 7·4 degrees. (iii) Main effect of V alone is highly significant. (iv) Mean incidence of Little leaf of disease in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
S_0	23·7	20·4	18·4	23·2	17·4	19·4	22·4	9·6	19·3
S_1	24·4	22·8	28·9	28.4	22·2	24·8	33·6	10·1	24.4
S_2	20·1	19·0	21·5	27·5	22·0	17·3	26·7	13·4	20·9
S_3	24·3	18·8	23·8	29·4	21·4	23·1	28·1	9·6	22·3
Mean	23·1	20·3	23·2	27·2	20·8	21·2	27·7	10·7	12·7

C.D. for S marginal means=4·4 degrees.
C.D. for V marginal means=5·3 degrees.

———

Crop :- French Beans. **Ref :- A.P. 61(211).**

Site :- Agri. Res. Instt. Hyderabad. **Type :- 'CV'.**

Object :—To asses the suitable season for the promising varieties of French Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Brinjal. (c) 49 C.L./ha. of F.Y.M. and 124 Kg/ha. N as A/S+62 Kg. P_2O_5 as Super/ha. (ii) Black cotton soil. (iii) As per treatments. (iv) (a) 3 ploughings with country plough, working with cultivator, marking ridges and furrows with spades. (b) Dibbling. (c) 5 Kg/ha. (d) 60 cm.×60 cm. (e) 2. (v) 37 C.L./ha. F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

12 dates of planting : D_1=5th September, D_2=5th October, D_3=5th November, D_4=5th December, D_5=5th January, D_6=5th February, D_7=5th March, D_8=5th April, D_9=5th May, D_{10}=5th June, D_{11}=5th July and D_{12}=5th August.

Sub-plot treatments :

2 varieties : V_1=Bonutiful, V_2=Black seeded.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 sub-plots/main-plot and 12 main-plots/replication. (b) 32·8 m.×14·6 m. (iii) (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×3·1 m. (v) 60 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of beans. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 721 Kg/ha. (ii) (a) 184 Kg/ha. (b) 121 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of French beans in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	1759	1584	741	566	178	175	141	180	237	699	1512	546	693
V_2	1764	2113	855	640	198	173	153	168	247	803	1371	494	748
Mean	1762	1849	798	603	188	174	147	174	242	751	1442	520	721

C.D. for D marginal means=286·1 Kg/ha.

—= —

Crop :- French Beans. **Ref :- A.P. 68(243).**

Site :- Agri. Res. Instt., Hyderabad. **Type :- 'CV'.**

Object :—To find out suitable spacing for semipole types of French Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black cotton soil. (iii) N.A. (iv) (a) Ploughings, working with cultivator, formation of ridges and furrows. (b) Dibbling. (c) 5 Kg/ha. (d) As per treatments. (e) 2. (v) 37 C.L. of F Y.M./ha. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings : S_1=61 cm.×30 cm., S_2=61 cm.×46 cm. and S_3=61 cm.×61 cm.

(2) 4 varieties : V_1=Kidney white, V_2=Black seeded, V_3=D.O. Sax stringless and V_4=Canadian Red.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×3·1 m. for S_1, 4·3 m.×2·7 m. for S_2 and 4·3 m.×2·4 m. for S_3. (v) 61 cm. on each end and one row on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Beans. (iv) (a) 1963—only. (b) and (c) Nil. (v) N.A. (vi) and (vii) N.A.

5. RESULTS:

Rainy season

(i) 1774 Kg/ha. (ii) 722 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of beans in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	3128	932	2708	2486	2314
S_2	2491	1658	1665	1517	1833
S_3	1053	761	1586	1297	1174
Mean	2224	1117	1986	1767	1774

C.D. for S marginal means=611·8 Kg/ha.

Winter season

(i) 318 Kg/ha. (ii) 318 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of beans in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	385	692	173	368	405
S_2	250	477	373	210	328
S_3	356	225	161	146	222
Mean	330	465	236	241	318

Crop :- French Beans. **Ref :- A.P. 63(241).**

Site :- Agri. Res. Instt. Hyderabad. **Type :- 'CV'.**

Object :— To find out optimum spacing for the bush type varieties of French Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black cotton soil. (iii) N.A. (iv) (a) Ploughing, working with cultivator formation of ridges and furrows. (b) Dibbling. (c) 5 Kg/ha. (d) As per treatments. (e) 2. (v) 37 C.L./ha. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 spacings : S_1=61 cm.×30 cm., S_2=61 cm.×46 cm. and S_3=61 cm.×61 cm.

(2) 6 varieties : V_1=Bolarum, V_2=Bountiful, V_3=Premier, V_4=Contender, V_5=Gaint Stringless and V_6=Snap beans.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 3. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×3·1 m. for S_1, 4·3 m.×2·7 m. for S_2 and 4·3 m.×2·4 m. for S_3. (v) 61 cm. on each end and one row on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of beans. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Rainy Season.

(i) 1966 Kg/ha. (ii) 561 Kg/ha. (iii) Main effect of S is highly significant and that of V is significant. (iv) Av. yield of beans in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
S_1	2081	2525	3716	2775	1903	1750	2458
S_2	1772	1680	2207	1737	2058	1703	1860
S_3	1226	1305	2414	1683	1871	983	1580
Mean	1693	1837	2779	2065	1944	1479	1966

C.D. for S marginal means=380·0 Kg/ha.
C.D. for V marginal means=536·4 Kg/ha.

Winter season.

(i) 1340 Kg/ha. (ii) 241 Kg/ha. (iii) Main effects of V and S are highly signficant. (iv) Av. yield of beans in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
S_1	3042	1962	2795	178	620	2039	1773
S_2	1759	912	2029	42	556	1139	1073
S_3	2083	890	2338	32	465	1233	1174
Mean	2295	1255	2387	84	547	1470	1340

C.D. for S marginal means=162·6 Kg/ha.
C.D. for V marginal means=229·6 Kg/ha.

Crop :- Potato (*Rabi*). **Ref :- A.P. 64(146), 65(61).**

Site :- Exploratory Cum Demons. Farm, Arakuvalley. **Type :- 'M'.**

Object :— To find out the response to higher levels of application of Super Phosphate.

1. BASAL CONDITIONS. :

(i) (a) Potato-Fallow-Potato. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 7.11.64 ; 13.10.65. (iv) (a) Ploughings with country plough. (b) Planting tubers at a depth of 10 cm. (c) 1236 Kg/ha. (d) 46 cm.×46 cm. for 64 ; 61 cm.×23 cm. for65. (e) 1. (v) Nil. (vi) Up to date for 64 ; N.A. for 65. (vii) Irrigated. (viii) 2 to 3 weedingss. (ix) 3 cm. ; 12 cm. (x) 19.3.65 ; February 66.

2. TREATMENTS :

7 manurial treatments : M_0=124 C.L./ha. of F.Y.M., M_1=1·3, M_2=2·5, M_3=3·8, M_4=5·0, M_5=6·4 and M_6=7·6 Kg/ha. of Super.

Inaddition treatments : M_1 to M_6=receiac 1·3 Q/ha. of time+1·3 Q/ha. of A/S+1·9 Q/ha. of Mur. pot. and treatments M_1 and M_5=receiae a basal dose of 49·4 C.L./ha. of F.Y.M. All the manures applied at the time of planting by broadcasting.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 30·9 Sq. m. for 64 ; 20·2 Sq. m. for 65. (v) N.A. (vi) Yes.

4. GENERAL

(i) Satisfactory. (ii) Slight attack of Wilt and spraying of Hexathane and Diathane was donc. (iii) Yield of tubers. (iv) (a) 1964—65. (b) No. (c) As unedr 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results.

(i) 7916 Kg/ha. (ii) 792·0 Kg/ha. (based on 30 d.f. made up of pooled error and Treatments × years interaction). (iii) Treatment differences are significant. (iv) Av. yield of tubers in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	7190	8580	7016	7598	8568	9007	7450

C.D.=933·8 Kg/ha.

Individual results.

Yield of tubers in Kg/ha.

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Sig.	G.M.	S.E./plot
Years										
1964	6350	7719	6156	6227	7698	8107	6555	N.S.	7045	815·1
1965	8030	9442	7876	8469	9438	9907	8345	N.S.	8787	950·0
Pooled	7190	8580	7016	7598	8568	9007	7450	**	7916	792·0

Crop :- Raddish. **Ref :- A.P. 61(239).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the effects of seed soaking with growth regulators and other substances on the yield of crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy. (iii) N.A. (iv) (a) Ploughing with country plough. (b) Dibbling. (c) and (d) N.A. (e) 1. (v) Nil. (vi) White Giant. (vii) Irrigated. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS:

6 seed soaking treatments : T_0=Control (soaking in water), T_1=Indole Acetic Acid at 200 ppm. concentration, T_2=Naphthalene Acetic Acid at 200 ppm. concentration, T_3=Potassium Bromide at 0·4% concentration. T_4=Potassium Chloride at 0·4% concentration and T_5=Potassium Iodide at 0·4 %concentration.

The seeds of Raddish were soaked in the above for 24 hours and later dibbled in the experimental plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 5·1 Sq. m. (v) and (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of Raddish. (iv) (a) 1961 only. (b) and (c) Nil. (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 138·7 Q/ha. (ii) 18·2 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of Raddish in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	138·6	136·2	111·2	146·2	167·9	132·3

C.D.=27·4 Kg/ha.

Crop :- Tomato (*Winter*). **Ref :- A.P. 63(173).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'M'.**

Object :— To test the efficacy of Spartin on Tomato and to fix up optimum. dosage for economic and successful production of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) 251 Q/ha. of F.Y.M., 33·6 Kg/ha. of N as A/S, 22·4 Kg/ha. of P_2O_5 as Super. (ii) Black soil. (iii) 20.11.63. (iv) (a) Ploughing with country plough ; working *Pedda Guntaka*. (b) Transplanting. (c) 27182 seedlings/ha. (d) 61 cm.×61 cm. (e) I. (v) Nil. (vi) Red Round Compressed. (medium). (vii) Irrigated. (viii) 2 hand weedings, working chitti *Guntaka* once. (ix) 36 cm. (x) 7.2 64 to 2.4.64.

2. TREATMENTS :

8 manurial treatments : T_0=Control, T_1=392·3 Kg/ha. of A/S+448·3 Kg/ha. of Super+112·1 Kg/ha. of Mur. Pot., T_2=201 Q/ha. of F.Y.M.+224·2 Kg/ha. of A/S+336·3 Kg/ha. of Super+84·1 Kg/ha. of Mur. Pot., T_3=201 Q/ha. of F.Y.M., T_4=T_1+56 Kg/ha. of Spartin, T_5=T_1+112·1 Kg/ha. of Spartin, T_6=T_1+224·2 Kg/ha of Spartin and T_7=T_1+448·3 Kg/ha. of Spartin.

Fertilizers applied as soil application on 22.12.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 14·6 m.×11·0 m. (iii) 3. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Vegetative growth in T_3 was very poor. Slight lodging due to weight of fruits. (ii) Pest incidence was negligible. Slight Wilt disease was noticed in the last phase of the crop. (iii) Yield of Tomato. (iv) (a) to (c) No. (v) N.A. (vi) Rains were incessant and ill distributed during Aug. and Oct. 63. (vii) Nil.

5. RESULTS :

(i) 110·9 Q/ha. (ii) 22·2 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Tomato in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	45·6	143·0	114·0	60·3	126·6	121·9	137·1	138·5

C.D.=38·9 Q/ha.

Crop :- Tomato (*Winter*). **Ref :- A.P. 60(138), 61(162).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'CM'.**

Object :—To find out the optimum spacing and manurial dose for Tomato crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Lady's finger bulk for 60; G.M. crop of *Dolichos Lab Lab.* for 61. (c) Nil. (ii) Black soil. (iii) 12.10.60/7 to 9.12.60 ; N.A./9. 10.11.61. (iv) (a) Ploughings with country plough, working *gorru* and *guntaka.* (b) Transplanting. (c) and (d) As per treatments. (e) 1. (v) 251·1 Q/ha. of F.Y.M. for 60;G.M. crop ploughed and incorporated+251·1 Q/ha. of F.Y.M. for 61. (vi) Purple Round (medium). (vii) Irrigated. (viii) Gap filling, 2 to 3 hand weedings and *mummati* diggings. (ix) 11 cm. ; 1 cm. (x) 27.2.61 to 5.5.62 ; 17.1.62 to 9.4.62.

2. TREATMENTS :

All combinations (1), (2) and (3)

(1) 3 spacings : S_1=61 cm.×30 cm., S_2=46 cm.×46 cm. and S_3=61 cm.×61 cm.

(2) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=44·8 and P_2=89·7 Kg/ha.

A/S and Super were applied in single dose by soil application on 19.1.61 for 60 and on 6.1.62 for 61.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) 49·4 m.×21·9 m. (iii) 2. (iv) (a) 7·3 m.×5·5 m. (b) 6·1 m.×4·9 m. for S_1, 6·4 m.×4·6 m. for S_2, 6·1 m.×4·3 m. for S_3. (v) 61 cm.×30 cm. for S_1, 46 cm.×46 cm. for S_2, 61 cm.×61 cm. for S_3. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slightly effected by Wilt disease. Cupravit solution was sprayed twice. (iii) Yield of Tomato. (iv) (a) 1959–61. (b) No. (c) Nil. (v) N.A. (vi) Nil. for 60 ; Very severe cold weather. prevailed during Dec. 61 and January 62 for 61. (vii) Expt. No. 59(115) considered for pooling purposes. As the error variances are heterogeneous and Treatments×years interactions is absent, the results of individual years are presented under 5. Results.

5. RESULTS :

60(138)

(i) 65·0 Q/ha. (ii) 24·0 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Tomato in Q/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	44·2	71·0	84·6	72·5	72·2	55·2	66·6
S_2	43·9	50·4	84·6	68·3	62·8	47·8	56·6
S_3	46·4	67·9	92·5	69·3	59·4	78·1	68·9
Mean	44·8	63·1	87·2	69·7	64·8	60·4	65·0
P_0	53·6	68·3	88·3				
P_1	41·7	58·8	93·9				
P_2	39·2	62·3	79·5				

C.D. for N marginal means=16·6 Q/ha.

61(162)

(i) 87·3 Q/ha. (ii) 27·5 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Tomato in Q/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	100·3	76·3	104·8	82·6	99·8	99·0	93·8
S_2	61·0	90·5	107·0	87·8	88·1	82 6	86·2
S_3	55·5	78 2	111·7	92·8	79·6	73·0	81·8
Mean	72·3	81·7	107·8	87·7	89·2	84·9	87·3
P_0	85·3	79·6	98·3				
P_1	66·2	78·3	123·1				
P_2	65·3	87·1	102·1				

C.D. for N marginal means=19·0 Q/ha.

Crop :- Tomato (*Winter*). **Ref :- A.P. 62(173), 63(172).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'CM'.**

Object : —To find out the optimum spacing and manurial dose for Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. for 62 ; Brinjal for 63. (c) Nil. (ii) Black soil. (iii) 1.11.62/8.11.62 ; 28.9.63/5, 6.11.63 and gap filling on 15, 28.11.63. (iv) (a) Ploughings with country plough, working of *gorru* and *pedda guntaka*. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 1. (v) 251·1 Q/ha. of F.Y.M. by spreading. (iv) Red Round Compressed (medium). (vii) Irrigated. (viii) Gap filling ; 2 hand weedings and working of *Chitti guntaka*. (ix) 27 cm ; 36 cm. (x) 23.1.63 to 8.4.63 ; 11.1.64 to 1.4.64.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 spacings : S_1=61 cm.×46 cm., S_2=61 cm.×61 cm. and S_3=61 cm.×91 cm.

(2) 3 levels of N as A/S : N_0=0, N_1=33·6 and N_2=67·2 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

A/S and Super applied in one dose by soil application on 18th December.

3. DESIGN :

(i) 3^2 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 49·4 m.×21·9 m. (iii) 2. (iv) (a) 7·3 m.×5·5 m. (b) 6·4 m.×4·3 m., 6·1 m.×4·3 m., 5·5 m.×4·3 m. for S_1 S_2 and S_3 respectively. (v) 45 cm.×61 cm., 61 cm.×61 cm. and 91 cm.×61 cm. for S_1, S_2 and S_3 respectively. (iv) Yes.

4. GENERAL :

(i) Satisfactory, Slight lodging due to the weight of fruits for 63. (ii) Negligible incidence of Wilt, Virus diseases and fruit-borer, sprayings of Wettable Copper and Fytober on 12,13.12.63 for 63. (iii) Yield of fruits. (iv) (a) 1962—63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. for 62 ; unusually long dry spell from Oct, 63 to June, 64 for 63. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 243·3 Q/ha. (ii) 57·1 Q/ha. (based on 62 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of N alone is highly significant. (iv) Av. yield of Tomato in Q/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	205·8	241·0	251·8	237·7	247·6	213·4	232·9
S_2	202·7	249·4	276·2	241·0	256·6	230·7	242·7
S_3	214·8	270·3	277·4	274·8	258·0	229·7	254·1
Mean	207·8	253·6	268·5	251·1	254·0	224·6	243·3
P_0	214·5	253·4	285·6				
P_1	222·6	272·6	266·8				
P_2	186·3	234·7	253·0				

C.D. for N marginal means=37·7 Q/na.

Individual results.

Av. yield in Q/ha.

Treatments	S_1	S_2	S_3	Sig.	N_0	N_1	N_2	Sig.
Years								
1962	306·7	353·6	357·3	*	296·5	365·0	356·1	**
1963	159·1	131·9	151·0	N.S.	119·0	142·1	180·8	**
Pooled	232·9	242·7	254·1	N.S.	207·8	253·6	268·5	**

Treatments	P_0	P_1	P_2	Sig.	G.M.	S.E./plot
Years						
1962	352·5	355·1	310·2	N.S.	339·2	61·83
1963	149·8	153·0	139·0	N.S.	147·3	41·96
Pooled	251·1	254·0	224·6	N.S.	243·3	57·08

Crop :- Tomato. **Ref :- A.P. 64(243), 65(115).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :—To find out the degree of resistance to Wilt disease in different varieties and to assess the efficacy of chemicals in controlling the disease.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Brinjal. (c) G.M. for 64 ; 49 C.L./ha. of F.Y.M.+22 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of N as A/S for 65. (iii) Black soil. (iii) 20.7.64 ; 14 and 15.7.65. (iv) (a) Ploughing with tractor followed by *pedda guntaka* and levelling. (b) Transplanting. (c) 26687 seedlings/ha. (d) 61 cm.×61 cm. (e) 2. (v) 25—49 C.L./ha. of F.Y.M. 34 Kg/ha. of N as A/S and 22 to 45 Kg/ha. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) Hand weeding, working of *Chitti guntaka*. (ix) N.A. (x) 14.9.64 to 1.11.64 ; 9.9.65 to 17.11.65.

2. TREATMENTS :

Main-plot treatments :

4 insecticidal sprays : S_0=Control (no spraying), S_1=0·5 % Bordeaux mixture, S_2=1·0 % Bordeaux mixture and S_3=Fytolon at 249 gm./litre of water.

Sub-plot treatments :

7 varieties : V_1=Rutgers, V_2=Pusa Ruby, V_3=Marglobe, V_4=Sioux, V_5=Sanmarzano, V_6=C_9 and V_7=C_{18}.

In 1965, V_8=Pusa Early Dwarf was also tried.

3. DESIGN :

(i) Spiit-plot. (ii) (a) 4 main-plots/replication and 7 sub-plots/main-plot for 64 ; 4 main-plots/replications and 8 sub-plots/main-plot for 65. (b) N.A. (iii) 4. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) As per treatments. (iii) % incidence of Wilt disease and yield of Tomato. (iv) (a) 1964-65 (Treatments modified in 65). (b) No. (c) Nil. (v) No. (vi) Heavy rains during Sept., 64 resulted in damage to the crop during Oct, 64. Long dry spell in Sept, 65. (vii) Yield data not available for 64.

5. RESULTS :

64(243)

Incidence of Wilt disease.

(i) 30·68 degrees. (ii) (a) 9·87 degrees. (b) 6·79 degrees. (iii) Main effect of V alone is significant. (iv) Mean incidence of Wilt disease in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
S_0	31.13	34·36	28·96	31·69	35·43	26·83	26·21	30·66
S_1	29·66	28·96	30·88	30·97	35·21	28·92	30·07	30·67
S_2	32·15	29·71	31·43	32·86	32.57	24·06	28·24	30·15
S_3	27·79	31·35	31·51	35·43	36·09	29·26	27·29	31·25
Mean	30·18	31·10	30·70	32·74	34·83	27·27	27·95	30 68

C.D. for V marginal means=4·75 degrees.

65(115)

Incidence of Wilt disease.

(i) 43·2 degrees. (ii) (a) 13·48 degrees. (b) 6·36 degrees. (iii) Main effect of V alone is highly significant. (iv) Mean incidence of Wilt disease in degrees.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
S_0	40·3	61·5	37·6	42·4	40·6	46·5	37·9	45·5	44·1
S_1	40·7	48·4	39·7	39·0	51·7	40·4	43·3	41·5	43·1
S_2	43·4	49·3	40·7	36·2	44·8	42·4	42·2	52·5	43·5
S_3	36·9	48·5	33·8	41·5	41·9	41·9	35·9	53·9	41 7
Mean	40·3	51·9	37·9	39·8	44·8	42·8	39·8	48·3	43·2

C.D. for V marginal means=4·45 degrees.

Yield

(i) 99·68 Q/ha. (ii) (a) 42·30 Q/ha. (b) 44·87 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of Tomato in Q/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
S_0	32·94	173·12	52·36	69·96	100·50	116·86	70·10	180 02	99·48
S_1	15·67	157·73	31·73	78·75	76·13	130·42	80·16	195·31	95·74
S_2	18·98	153·38	53·33	92·12	122 81	126·74	89·33	116 06	96·59
S_3	12 75	216·32	57·38	95·68	121·28	109·66	107·22	134·84	106·89
Mean	20 08	175·14	48·70	84 13	105·18	120·92	86·70	156·56	99 68

C.D. for V marginal means=31·4 Q/ha.

Crop :- Bhindi (*Winter*). **Ref :- A.P. 64(170).**

Site :- Vegetable Res. Stn., Kurnool. **Type : 'M'.**

Object :—To test the efficacy of the Spartin (7085) on Bhindi and to fix up optimum dosage for economic and successful production of Bhindi

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha* G.M. crop. (c) Nil. (ii) Black soil. (iii) 21.11.64. (iv) (a) 2 ploughing with country plough, working *Pedda guntaka*, working *gorru* twice, levelling and removal of grass stubbles. (b) Dibbling. (c) 4 to 5 Kg/ha. (d) 61 cm.×61 cm. (e) 1. (v) Nil. (vi) Pusa Sawani. (vii) Irrigated. (viii) Working *Chitti guntaka* twice and 1 hand weeding. (ix) 1 cm. (x) 22.1.65 to 8.3.65.

2. TREATMENTS :

8 manurial treatments : T_0=Control, T_1=78 5 Kg/ha. of N as A/S+71·7 Kg/ha. of P_2O_5 as Super+ 67·2 Kg/ha. of K_2O as Mur. Pot., T_2=125 Q/ha. of F.Y.M.+44·8 Kg/ha. of N as A/S+53·8 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Mur. Pot., T_3=125 Q/ha. of F.Y.M., T_4=T_1+112·1 Kg/ha. of Spratin, T_5=T_1+224·4 Kg/ha. of spartin, T_6=T_1+336·2 Kg/ha. of Spartin and T_7=T_1+448·3 Kg/ha. of Spartin.

Super, F.Y.M. and spartin applied by spreading before sowing. A/S and Mur. Pot. applied in two equal doses on 18.12.64 and 6.1.65.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 21·9 m.×7·3 m. (iii) 3. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Germination good ; Stand of the crop satisfactory, growth stunted. (ii) Incidence of Fruit borer. 0·03 % Endrin was sprayed twice to control Fruit borer incidence . (iii) Yield of fruits. (iv) (a) to (c) No. (v) Nil. (vi) Very heavy rains during Sept. 64. (vii) The crop sustained considerable damage and the growth of the crop was stunted consequent to the stoppage of irrigation for about a month in Dec. 64.

5. RESULTS :

(i) 1706 Kg/ha. (ii) 479·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1599	2047	1986	1461	1579	1384	1829	1765

Crop :- Bhindi. **Ref :- A.P. 60(191), 61(210).**

Site :- Agri. Res. Instt., Hyderabad. **Type :- 'CV'.**

Object:—To find out suitable date of planting Bhindi with special reference to the time of occurrance of Leaf Vein Mosiac and incidence of Aphids and Jassids.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) 49 C.L./ha. of FYM. (ii) Black soil. (iii) As per treatments. (iv) (a) 4 ploughings, levelling with patta, forming of of ridges and furrows. (b) Dibbling. (c) 5 Kg/ha. (d) 60 cm.×60 cm. (e) 1. (v) 49 C.L./ha. of F.Y.M. (vi) As per treatments (vii) Irrigated. (viii) Weeding and cleaning. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments:

12 dates of planting: D_1=5th June, D_2=5th July, D_3=5th August, D_4=5th September, D_5=5th October, D_6=5th November, D_7=5th December, D_8=5th January, D_9=5th February, D_{10}=5th March, D_{11}=5th April, D_{12}=5th May.

Sub-plot treatments :

4 varieties: V_1=Shankarpalli, V_2=Red Wonder, V_3=Ponsa Sawani, V_4=American Long.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 sub-plots/main-plot and 12 main-plots/replication. (b) 29·3 m × 43·9 m. (iii) 2 (iv) (a) 7·3 m.×3·7m. (b) 6·1 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Nil

4. GENERAL :

(i) Satisfactory. (ii) Leaf Vein Mosaic, Aphids and Jassids. (iii) Yield of fruits, incidence of Leaf Vein Mosaic, Aphids and Jassids, (iv) (a) 1960—61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil (vii) Since the sub-plot error variances are heterogeneous, results of individual years have been presented under 5. Results. Incidence data on Jassids for both years and data on Mosaic for 1961 one are available.

5. RESULTS :

60(191)

Yield data

(i) 2345 Kg/ha. (ii) (a) 1677 Kg/ha. (b) 557 Kg/ha. (iii) Main effects of D, V and D×V interaction are highly significant. (iv) Av. yield of fruits. in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	10336	6081	3299	1201	410	447	49	222	534	1310	474	353	2060
V_2	12326	4060	1324	487	486	203	77	390	287	1989	650	1087	1947
V_3	10984	8945	3341	808	1181	534	259	316	914	3252	1584	2735	2904
V_4	11105	5940	2572	1231	857	217	47	0	578	3872	1779	1431	2469
Mean	11188	6257	2634	932	734	350	108	232	578	2606	1122	1402	2345

C.D. for D marginal means=1846·6 Kg/ha.
C.D. for V marginal means=327·0 Kg/ha.
C.D. for D means at the same level of V=2030·7 Kg/ha.
C.D. for V means at the same level of D=1131·3 Kg/ha.

Leaf Vien Mosaic Infestation data

(i) 25·10 degrees (ii) (a) 6·25 degrees (b) 5·05 degrees (iii) Main effects of D and V are significant (iv) Mean incidence of Leaf Vein Mosaic in degrees.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mea
V_1	23·10	29·60	19·30	20·70	20·70	36·30	32·45	45·00	36·20	45·90	46·15	40·95	33·07
V_2	21·55	17·95	15·45	17·65	11·50	27·65	27·65	31·40	26·90	21·10	32·25	27·20	23·19
V_3	17·65	17·50	13·40	15·30	9·50	17·95	15·85	20·15	25·05	20·40	23·60	15·45	17·65
V_4	27·45	21·10	20·30	21·40	23·60	27·15	34·15	43·85	34·75	28·65	17·50	18·65	26·54
Mean	22·44	21·54	17·11	18·76	16·33	27 26	27·53	35·10	30·73	29·01	29·88	25·66	25·10

C.D. for D marginal means=6·89 degrees.

C.D. for V marginal means=2·97 degrees.

% Incidence of Aphids.

(i) 23·20 degrees (ii) (a) 6·16 degrees (b) 4·61 degrees (iii) Main effects of D and V are significant. (iv) Mean incidence of Aphids in degiees.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	22·35	26·95	16 80	18·45	31·65	26 90	29·35	24·40	23·90	30·95	29·30	27·90	25·74
V_2	20·70	15·85	1960	14·95	19·30	24·00	25·80	21·55	20·25	25·85	24·35	27·85	21·67
V_3	17·65	15·85	16·40	12·85	29 90	22 40	28·55	22 00	19·35	23·55	25·35	26·45	21·69
V_4	26·30	17·95	23·60	19·95	28·75	22·55	28 65	22·00	21·10	27·75	22·75	25·00	23·69
Mean	21·75	19·15	19·10	16·55	27·40	23·96	28·09	22·49	21·15	26·53	25·44	26·80	23·20

C.D. for D marginal means=6·78 degrees.

C.D. for V marginal means=1·91 degrees.

61(210)

Yield data

(i) 467 Kg/ha. (ii) (a) 400 Kg/ha. (b) 177 Kg/ha. (iii) Main effects of D and V and interaction D×V are highly significant. (iv) Ay. yield of fruits in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	1130	774	881	1621	303	74	1023	424	172	179	10	0	549
V_2	774	1304	485	1204	303	430	471	309	224	165	30	52	471
V_3	1420	538	627	1487	410	620	256	289	415	298	103	357	568
V_4	417	336	363	1157	155	14	114	155	277	203	10	159	280
Mean	935	715	589	1367	293	285	466	294	272	211	38	142	467

C.D. for D marginal means=440·2 Kg/ha.

C.D. for V marginal means=103·6 Kg/ha.

C.D. for D means at the same level of V=506·5 Kg/ha.

C.D. for V means at the same level of D=359·5 Kg/ha.

Infestation data. Log values for Aphid incidence

(i) 2·13 (ii) (a) 0·053 (b) 0·031 (iii) Main effects of D, V and D×V interaction are all highly significant (iv) Mean log values of Aphid incidence.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	Mean
V_1	2·37	2·14	2·44	3 74	3·17	2·53	2·47	1·12	1·54	1·60	3·02	1·76	2·32
V_2	2·45	1·96	2·23	2·98	2·98	2·58	2·26	1·14	1·54	1·52	1·81	1 63	2·09
V_3	2·22	1·83	2·24	2·99	3·02	2·53	2·24	0·96	1·98	1·43	1·85	1·75	2·09
V_4	2·09	1·88	2·20	2·96	3·05	2 59	2·24	1·14	1·44	1·42	1·65	1·59	2·02
Mean	2 28	1·95	2·28	3·17	3·06	2·56	2 30	1·09	1·63	1·49	2 08	1·68	2·13

C.D. for D marginal means=0 095
C.D. for V marginal means=0·012
C.D. for D means at the same level of V=0·080
C.D. for V means at the same level of D=0·065

Crop :- Bhindi. **Ref :- A.P. 60(139), 61(163), 62(174), 63(174).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'CM'.**

Object :—To find out the optimum spacing and manurial doses for the economic and successful production of Lady's Finger.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Brinjal for 60 ; Field bear for 61 ; Sesbania for 62 ; G.M. for 63. (c) N.A. for 60 ; Nil for others. (ii) Black soil. (iii) 17, 18.6.60 ; 29.6.61 and 1.7.61 ; 30.6.62 and 1.7.62 ; 20.7.63. (iv) Ploughings with country plough, working *gorru* and *guntaka*. (b) Hand dibbling. (c) 5 to 7 Kg/ha. (d) As per treatments. (e) 1 (v) 251·1 Q/ha. of F.Y.M. (vi) Green Long. (vi) Irrigated. (viii) Working of push cultivator thrice for 60, 2 *mummtai* diggings, 9 intercultivation with *patti guntaka* and 2 weedings for 61 ; 3 hand weedings and working of push cultivator thrice for 64, working *chitti* for 63, *guntaka* and hand weeding. (ix) 60 cm, 5 cm ; 24 cm ; 69 cm. (x) 1.9 60 to 12.10.60 ; 6.9·61 to 15.12.61 ; 18.8.62 to 12.10.62 ; 13.9.63 to 29.10.63.

2. TREATMENTS :

All combination of (1), (2), and (3).

(1) 3 spacings : S_1=61cm.×30 cm., S_2=46cm.×46 cm. and S_3=61cm.×61 cm.
(2) 3 levels of N as A/S : N_0=0, N_1 =22·4 and N_2=44·8 Kg/ha.
(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=11·2 and P_2=22·4 Kg/ha.

A/S and Super were applied in one dose on. 21.7.60 for 60, on 31.8.61 for 61, on 6, 15.8.62 for 62. In 63 levels of P_2O_5 tried were P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 49·4 m.×7·3 m. for 60, 61, 63 ; N.A. for 62. (iii) 2. (iv) (a) 7·3 m×5.5 m.(b) S_1=6·0 m.×4·9 m. S_2=6.4 m.×4·6 m, S_3=6 1 m×4·3 m (v) 61 cm.×30 cm., 46 cm.×46 cm., 61 cm.×61 cm., for S_1, S_2 and S_3 respectively.

4. GENERAL :

(i) Normal. (ii) Jassids and mite infestation observed for 60, 63 Controlled by spraying D.D.T. and dusting Sulphur. Cupravit was sprayed against Powdery Mildew ; Slight infestation of Jassids for 61. Controlled by spraying Endrin, Guesserol attack of Mites, Powdery Mildew and Fruit borer. Controlled dusting Sulphur; Jassids attack for 62 D.D.T. sprayed. Incidence of fruit borer and mosaic disease. (iii) Yield of Lady's finger. (iv) (a) 59-63 (levels of P_2O_5 changed in 63). (b) No. (c) Nil. (v) N.A. (vi) Nil for 60, 62 ; continuous rains for a period of 3 weeks in July and severe cold weather in Dec. 61 for 61. Rains were ill distributed in August and October for 63. (vii) Expt. No. 59 (116) has been taken into considration for pooling the results. Error variances are homogeneous and Treatments×years intraction is present.

5. RESULTS :

Pooled results for 59 to 62,
(i) 4688 Kg/ha. (ii) 1353·7 Kg/ha. (based on 54 d.f. made up of treatments × years interaction). (iii) Main effect of S alone is highly significant. (iv) Av. yield of Ladys' finger in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	4723	5188	5261	4761	5439	4972	5057
S_2	4861	4955	5126	5166	5058	4718	4981
S_3	4069	4041	3966	4140	3705	4229	4025
Mean	4551	4728	4784	4689	4734	4640	4688
P_0	4424	4858	4786				
P_1	4764	4622	4816				
P_2	4465	4704	4750				

C.D. for S marginal mean=452·8 Kg/ha.

Individual results.

Treatments	S_1	S_2	S_3	Sig	P_0	P_1	P_2	Sig
Years								
1959	7290	6720	5648	NS	6779	6946	5933	N.S.
1960	5290	5205	3785	**	4576	4815	4889	N.S.
1961	2981	2585	2671	NS	2711	2643	2883	N.S.
1962	4668	5412	3997	**	4691	4532	4855	N.S.
Pooled	5057	4981	4025	**	4689	4734	4640	N.S.

N_0	N_1	N_2	Sig.	G.M.	S.E./plot
6435	6863	6360	N.S.	6553	1280·1
4612	4710	4958	N.S.	4760	716·2
2470	2838	2929	N.S.	2746	1025·2
4687	4501	4890	N.S.	4694	1179·0
4551	4728	4784	N.S.	4688	1353·7

63(174)

(i) 2609 Kg/ha. (ii) 1317·3 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of Lady's finger in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
S_1	2960	2921	3002	2978	2515	3390	2961
S_2	3201	2909	3613	3255	2924	3544	3241
S_3	1515	1594	1772	1500	1641	1740	1627
Mean	2559	2475	2796	2578	2360	2891	2610
P_0	2417	2516	2800				
P_1	2427	2444	2209				
P_2	2832	2464	3378				

C.D. for S marginal means=910·7 Kg/ha.

Crop :- Bhindi. **Ref :- A.P. 64(239).**

Site :- Agri. Res. Instt., Hyderabad. **Type :- 'D'.**

Object :—To find out the effective measures for controlling Leaf Vein Mosaic in rainy and winter seasons.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black soil. (iii) N.A. (iv) (a) 4 ploughings, levelling with *patta*, forming of ridges and furrows. (b) Hand dibbling. (c) 5 Kg/ha. (d) 60 cm. × 60 cm. (e) 1. (v) 49 C.L./ha. of F.Y.M. (vi) Shankarpalli. (vii) Irrigated. (viii) Weeding and cleaning. (ix) and (x) N.A.

2. TREATMENTS :

7 insecticidal treatments : T_0=No spray, T_1=Water spray, T_2=Metasystox 0·1%, T_3=Parathion 0·025%, T_4=Dimecron 0·1%, T_5=Sevin 0·15% and T_6=Rogor 0·1%.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Under study. (iii) Yield of fruits and incidence of Leaf Vein Mosaic. (iv) (a) and (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Yield (Rainy season).

(i) 807 Kg/ha. (ii) 222 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	689	596	865	719	712	1045	1025

Incidence data.

(i) 68·29 degrees. (ii) 7·77 degrees. (iii) Treatment differences are significant. (iv) Mean incidence of Leaf Vein Mosaic in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean incidence	73·73	73·45	65·63	54·38	72·60	69·85	68·40

C.D.=11·56 degrees.

Yield (Winter season).

(i) 339 Kg/ha. (ii) 217 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	316	257	277	482	326	366	346

Incidence data.

(i) 55·83 degrees. (ii) 8·74 degrees. (iii) Treatment differences are not significant. (iv) Mean incidence of Leaf Vein Mesaic in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean incidence	55·80	54·15	55·48	46·60	50.08	63·15	65·58

Crop :- Bhindi (*Rainy season*). **Ref :- A.P. 64(244).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :-- To study the degree of resistance to Fruit borer in different varieties and efficacy of the different frequencies of spraying D.D.T. and Endrin in controlling Fruit borer.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gourd. (c) N.A. (ii) Black soil. (iii) 19.7.64. (iv) (a) Tractor ploughing, working *Pedda Guntaka* and ordinary *Guntaka* and levelling. (b) Transplanting. (c) 4 Kg/ha. (d) 61 cm. × 61 cm. (e) 2. (v) 25 C.L./ha. of F.Y.M. + 67 Kg/ha. of N as A/S + 45 Kg/ha. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) Working *chitti Guntaka* twice. (ix) N.A. (x) 1.9.64 to 27.10.64.

2. TREATMENTS :

Main-plot treatments :

4 insecticidal treatments: S_0 = Control (No spraying), S_1 = 0·03% Endrin + 0·15% D.D.T. sprayed at 14 days interval, S_2 = 0·03% Endrin + 0·15% D.D.T. sprayed at 21 days interval and S_3 = 0·03% Endrin + 0·15% D.D.T. sprayed at 28 days interval.

Sub-plot treatments :

5 varieties : V_1 = Pusa Sawani, V_2 = Red Wonder, V_3 = Shankarpalli, V_4 = Patcha Benda and V_5 = H.E.—3 of V.R.S.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 5·5 m. × 3·7m. (b) 4·3 m. × 2·4 m. (v) 61 cm. × 61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Fruit borer. (iii) % incidence of Fruit borer and yield of Lady's finger. (iv) (a) 1964 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rains during last week of Sept, 64. (vii) Nil.

5. RESULTS :

(i)) 19·5 degrees. (ii) (a) 3·19 degrees. (b) 2·49 degrees. (iii) Main effects of S and V are highly significant. (iv) Mean incidence of Fruit borer in degrees.

	V_1	V_2	V_3	V_4	V_5	Mean
S_0	24·4	23·8	22·8	22·3	22·5	23·2
S_1	17·1	17·2	20·0	13·4	16·6	16·9
S_2	19·0	17·2	19·8	13·6	17·9	17·5
S_3	22·5	17·9	82·5	18·2	20·1	20·2
Mean	20·8	19·0	21·3	16·9	19·3	19·5

C.D. for S marginal means = 2·28 degrees.
C.D. for V marginal means = 1·86 degrees.

Crop :- Bhindi (*Winter*). **Ref :- A.P. 64(171).**

Site : Vegetable Res. Stn. Kurnool. **Type :- 'D'.**

Object :—To find out a chemical with Low toxicity which can efficiently control Fruit borer.

1. BASAL CONDITIONS :

(i) (a Nil. (b) *Daincha.* as G.M. (c) Nil. (ii) Black soil. (iii) 25.11.64. (iv) (a) 2 ploughings and working *Pedda Guntaka* and *Gorru* once. (b) Dibbling. (c) 4 to 5 Kg/ha. (d) 61 cm.×61 cm. (e) 2. (v) 251 Q/ha. of F.Y.M., 67·2 Kg/ha. of N as A/S applied as top dressing in two equal doses+44·8 Kg/ha. of P_2O_5 as Super as basal dressing. (vi) C_3 of V.R.S. (Short duration). (vii) Irrigated. (viii) Gap filling, hand weeding and working *Guntaka* (ix) 1 cm. (x) 29.1.65 to 8.3.65.

2. TREATMENTS :

6 chemical treatments : T_0=Control, T_1=Malathion 0 16% as spray, T_2=Thuricide dust at 22·4 Kg/ha., T_3=Thuricide W.P. 0·15% as spray, T_4=Sevin 10% dust at 22·4 Kg/ha., T_5=D.D.V.D (Marnex—D—20) 0·15% as spray and T_6=D.D.V.P. (Marnex-D-20) 0·2% spray.

The programme was started 3 weeks after sowing and continued at fortnightly intervals up to end of Feb. 65.

3. DESIGN :

(i) R B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 5·5 m.×5·5 m. (b) 4 3 m.×4·3 m. (v) 61 cm.×61 cm. (vi) Yes.

4 GENERAL :

(i) Germination very good but growth stunted. (ii) Incidence of Fruit borer. Control measures as per treatments. (iii) % bored fruits by number and by weight ; yield of fruits ; % borer mortality. (iv) (a) to (c) No. (v) N.A. (vi) Very heavy rains during Sept. 64. (vii) Irrigation facility was stopped for about a month in Dec. 64 which adversely effected the crop.

5. RESULTS :

Yield data.

(i) 1251 Kg/ha. (ii) 696·8 Kg/ha, (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1127	1322	1433	971	1581	1119	1203

Infestation data.

(i) 20·82 degrees. (ii) 2·62 degrees. (iii) Treatment differences are highly significant. (iv) Mean infestation of bored fruits in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean infestation	24·88	21·12	18·62	23·32	12·42	24·18	21·20

C.D.=3·89 degrees.

Crop :- Bhindi (*Rainy*). **Ref :- A.P. 65(116).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :— To find out a chemical with short residual toxicity which can efficiently control Fruit borer.

1. BASAL CONDITIONS :

(i) (a) No. (b) Tomato. (c) 25 C.L./ha. of F.Y.M.+45 Kg/ha. of P_2C_5 as Super+67 Kg/ha. of N as A/S. (ii) Black soil. (iii) 6.7.65. (iv) (a) Ploughing with country plough and working *Gorru* and *Guntaka*. (b) Dibbling. (c) 4 Kg/ha. (d) 61 cm.×61 cm. (e) 2. (v) 49 C.L./ha. of F.Y.M.+45 Kg/ha. of P_2O_5 as Super by spreading, 67 Kg/ha. of N as A/S in two split doses and top dressed. (vi) C-3. (vii) Irrigated. (viii) Hand weeding. (ix) N.A. (x) 26.8.65 to 6.9.65.

2. TREATMENTS :

10 insecticidal treatments : T_0=No insecticidal treatment (control), T_1=Malathion spray 0·16% (50% E.C.) T_2=Thuricide dust at 22·4 Kg/ha., T_3=Thuricide W.P. 0·15% spray (50% E.C.), T_4=Sevin 10% dust at 22·4 Kg/ha., T_5=D.D.V.P. (MarnexD-20) 0·15% spray (20% E.C.), T_6=D.D.V.P. (Marnex-D-20) 0·20% spray (20% E.C.), T_7=Nuvan 4 0z in 100 litres (D.D.V.P.) 0·1%. T_8=Dimecron 50% W.P. at 0 06% and T_9=Sevin 85% W.P. 1 0z in 6 gallons of water 0 08%).

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Fruit borer. (iii) % incidence of Fruit borer and yield of fruits. (iv) (a) 1965 only. (b) No. (c) Nil. (v) Nil. (vi) Long dry spell from Sept. 65. (vii) Nil.

5. RESULTS:

Yield.

(i) 57·4 Q/na. (ii) 14·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	61·9	45·6	53 3	49·2	64·3	57·8	59·1	58·7	49·7	74·7

Infestation of bored fruits (by weight) in degrees.

(i) 20·20 degrees. (ii) 2·73 degrees. (iii) Treatment differences are highly significant. (iv) Mean infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Mean angle	24·75	23·66	19·64	21·55	16·18	19·38	19·63	18·33	21·49	17·35

C.D.=3·96 degrees.

Infestation of bored fruits (by number) in degrees.

(i) 23·66 degrees. (ii) 2·79 degrees. (iii) Treatment differences are highly significant. (iv) Mean infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Mean angle	27·36	26·94	23·54	25·40	19·32	23·68	23·56	21·70	24·49	20·63

C.D.=4·04 degrees.

Crop :- Bhindi. **Ref :- A.P. 63(175).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :— To assess the loss due to Powdery Mildew on Lady's Finger during rainy season and to find control measures.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) To mato. (c) 35·1 tonnes/ha. of F.Y.M. (ii) Black soil. (iii) 7.8.63. (iv) (a) 2 ploughings and *Pedda Guntaka* was worked. (b) Dibbling. (c) 7 Kg/ha. (d) 61 cm.×61 cm. (e) 1. (v) 251 Q/ha. of F.Y.M. (vi) Admixture Lady's Finger. (vii) Irrigated. (viii) 1 hand weeding, digging of furrows. (ix) 63 cm. (ix) 15.10.63. to 11.11.63.

2. TREATMENTS :

3 insecticidal treatments : T_0=Control, T_1=Dusting of Sulphur in furrows at 56·0 Kg/ha. on 15.10.63, 30.10.63 and 15.11.63 and T_2=Dusting of Sulphur in furrows at 44·8 Kg/ha. on 15.10.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 11.0 m.×5·5 m. (iii) 6. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Growth was not satisfactory due to heavy rains. Powdery Mildew was noticed in the 2nd week of Oct. 63. Control measures were taken as per treatments. (iii) Yield of fruits. (iv) (a) to (c) No. (v) Nil. (vi) Rains were incessant and ill distributed during Aug. and Oct. 63 and affected the crop adversely (vii) Nil.

5. RESULTS :

(i) 712 Kg/ha. (ii) 533·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fruits in Kg/ha.

Treatment	T_0	T_1	T_2
Av. yield	487	798	852

Crop :- Bhindi (*Rainy season*). **Ref :- A.P. 65(114).**

Site :- Vegetable Res. Stn., Kurnool. **Type :- 'D'.**

Object :— To study the degrees of resistance to Yellow Vein Mosaic disease in different varieties and also to find out the control measures against yellow Vein Mosaic disease by controlling insect vector.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) 49 C.L./ha. of F.Y.M.+45 Kg/ha. of P_2O_5 as Super+67 Kg/ha. of N as A/S. (ii) Black soil. (iii) 2, 3.7.65. (iv) (a) 2 ploughings by *pedda guntaka* and harrowing by blade harrow, passing *gorru* and *guntaka* followed by levelling. (b) Dibbling. (c) 5 Kg/ha. (d) 61 cm.×61 cm. (e) 1. (v) 49 C.L./ha. of F.Y.M.+45 Kg/ha. of P_2O_5 as Super by spreading, 67 Kg/ha. of N as A/S top dressed in two split doses. (vi) As per treatments. (vii) Irrigated. (viii) Working *chitti guntaka* twice between rows and hand weeding. (ix) N.A. (x) 19.8.65 to 15.10.65.

2. TREATMENTS :

Main-plot treatments :

4 insecticidal treatments : S_0=Control (no spraying) S_1=Spraying 0·03% Endrin+0·15% of D.D.T. at 14 days interval, S_2=Spraying 0·03% of Endrin+0·15% of D.D.T. at 21 days interval and S_3=Spraying 0·03% of Endrin+0·15% of D.D.T. at 28 days interval.

Sub-plot treatments :

5 varieties : V_1=Pusa Sawani, V_2=Red Wonder, V_3=Shankarpalli, V_4=Patcha Benda and V_5=C_3 of V.R.S. 1 Cumost.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 5·5 m.×3·7 m. (b) 4·3 m.×2·4 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Yellow Vein Mosaic disease. (iii) Incidence of Yellow Vein mosaic disease and yield of fruits. (iv) (a) 1964-65 (modified in 65.) (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

Yield

(i) 100·3 Q/ha. (ii) (a) 33·5 Q/ha. (b) 23·3 Q/ha. (iii) Main effect of S is highly significant and that of vs is significant. (iv) Av. yield of fruits in Q/ha.

	V_1	V_2	V_3	V_4	V_5	Mean
$_0$	74·2	55·8	80·8	67·7	77·6	71.2
S_1	138·9	107·3	106·5	116·7	122·5	118·4
S_2	130.4	87·2	107·1	107·1	101·1	106·6
S_3	133·9	72·8	110·8	104·5	102·8	105·0
Mean	119·4	80·8	101·3	99·0	101·0	100·3

C.D. for S marginal means=24·0 Q/ha.
C.D. for V marginal means=16·6 Q/ha.

Incidence of Yellow Vein Mosaic

(i) 27·7 degrees. (ii) (a) 13·0 degrees. (b) 10·8 degrees. (iii) Main effect of V alone is highly significant. (iv) Mean incidence of Yellow Vein Mosaic in degrees.

	V_1	V_2	V_3	V_4	V_5	Mean
S_0	2·9	16·8	24·3	24·1	37·8	21·2
S_1	5·8	11·7	52·1	29·2	37·7	27·3
S_2	10·5	21·2	49·7	35·6	44·3	32·2
S_3	2·9	24·1	49 4	33·5	40·2	30·0
Mean	5·5	18·4	43·9	30·6	40·0	27·7

C.D. for V marginal means=7·7 degrees.

Crop : Sugarcane. **Ref :- A.P. 61(168).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To determine the feasibility of adopting the foliar diagnostic technique for correction of nitrogen deficiencies at different ages of the crop.

1. BASAL CONDITIONS:

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 1.3.61. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e)—(v) 25 tonnes/ha. of F.Y.M (vi) Co—419 (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 144·3 cm. (x) 25.2.62.

2. TREATMENTS :

All combinations of (1) and (2) + a control.

(1) 3 levels of N applied on 45th day after planting: N_0=0, N_1=27·8 and N_2=55·6 Kg/ha.
(2) times of correction of nitrogen deficiency at: C_1=120, C_2=150, C_3=180th day.
Control : 111 2 Kg/ha. of N applied in two equal doses at 45th and 90th day after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10 (b) 1190 sq. m. (iii) 4 (iv) (a) 119 sq. m. (b) 60 sq. m. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination counts, Juice quality at harvest and cane yield. (iv) (a) 59—62 (treatments modified in 62.) (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 153·9 Q/ha. (ii) 72·2 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

Control=175.2 Q/ha.

	C_1	C_2	C_3	Mean
N_0	151·2	139 1	131·5	140·6
N_1	158·4	156·7	141·8	152·3
N_2	169·3	159·4	155·9	161·5
Mean	159·6	151·7	143·1	151.5

Crop :- Sugarcane. **Ref :- A.P. 62(189).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To determine the possibility of adopting the foliar diagnostic technique for correction of N deficiencies at different ages of the crop.

1 BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 6.3.62. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 143.8 cm. (x) 9.3.63.

2. TREATMENTS :

2 manurial treatments : T_0=control (111·2 Kg/ha. of N) and T_1=corrected dose.
The amount of N in the standing crop was noted at 120th day and an amount of 72·75 Kg/ha. of N was applied to T_1 plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) 238 sq. m. (iii) 6 (iv) (a) 119 sq. m. (b) 60 sq. m. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination counts, juice quality at harvest and cane yield. (iv) (a) 59 - 62 (treatments modified in 62). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1000·3 Q/ha. (ii) 68·4 Q/ha. (iii) Treatment difference is significant. (iv) Av. cane yield in Q/ha

Treatment :	T_0	T_1
Av. yield :	935·8	1064.8

C.D.=101·5 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(144).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To fix up the index tissues for Mn. and to find out the effect of different levels of N on their contents in the Sugarcane plant

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 11.3.60. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Weeding, earthing up and trash twist. (ix) N.A. (x) 15.4.61.

2. TREATMENTS :

4 levels of N as A/S : N_0=0, N_1=112, N_2=224 and N_3=336 Kg/na.
N applied in two equal doses on 45th and 90th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 32·0m.×13·5m. (iii) 4. (iv) (a) 13·5m.×8·0m. (b) 13·5m.×6·0m. (v) 100 cm. on sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1052·2 Q/ha. (ii) 98·4 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3
Av. yield	528·3	1235·8	1205·6	1239·2

C.D.=157·3 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 61(160)**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To find out the effect of late nitrogenous manuring on yield and quality of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 18.2.61. (iv) (a) Formation of trenches. (b) Transplanting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 55·6 Kg/ha. of N as A/S on 45th day after planting. (vi) Co—527. (vii) Irrigated. (viii) 2 weedings, earthing up and trash twist propping. (ix) 144 cm. (x) 23.1.62 to 22.2.62.

4. TREATMENTS :

8 manurial treatments : T_1=111·2 Kg/ha. of N at 90 days, T_2=111·2 Kg/ha. of N at 90 days+55·6 Kg/ha. of N at 240 days, T_3=111·2 Kg/ha. of N at 120 days, T_4=111·2 Kg/ha. of N at 120 days+55.6 Kg/ha. of N at 240 days, T_5=166·8 Kg/ha. of N at 90 days, T_6=166·8 Kg/ha. of N at 90 days+55·6 Kg/ha. of N at 240 days, T_7=166·8 Kg/ha. of N at 120 days, and T_8=166·8 Kg/ha. of N at 120 days+55·6 Kg/ha. of N at 240 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 64 m.×10·8 m. (iii) 4. (iv) (a) 10·8 m.×8·0 m. (b) 10·0 m.×6·0 m, (v) 40 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Crop lodged badly and hence the experiment was harvested at the age of 12 months. (ii) Infestation of early Shoot borer, due to heavy rains during monsoon infestation of White fly was observed. (iii) Yield of sugarcane. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. (vi) There was a heavy rain on 18.10.61 and the field was under water logged conditions. Water was drained by working basket and a heavy gale on 29.10.61. (vii) Nil.

5. RESULTS :

(i) 1241 Q/ha. (ii) 119·1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1307	1292	1255	1256	1137	1172	1281	1227

Crop :- Sugarcane. **Ref :- A.P. 60(64), 61(150), 62(185), 63(160), 64(187), 65(58).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the effect of continuous application of A/S to Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy—Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N. (ii) Clay loam. (iii) 13.3.60, 13.3.61, 13.3.62, 13.3 64, 12.3.63, 13.3.65. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three-budded setts/ha. (d) 100 cm. between rows. (e) — (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 84 cm., 144 cm., 144 cm., 147 cm., 102 cm., 108 cm. (x) 19.3.62, 12.3.63, 12.3.63, 15.3.64, 16.3.65 and 25.3.66.

2. TREATMENTS :

5 sources of 112 Kg/ha. of N : S_0=Control, S_1=A/S, S_2=G.N.C, S_3=F.Y.M. and S_4=2/3 G.N.C.+$\frac{1}{3}$ A/S

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) 63 m.×58 m. (iii) 5. (iv) (a) 12 m.×11 m. (b) 10 m.×6 m. (v) 1m.×2·5 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin sprayed against Early Shoot borer during 1961, 62 and 63. Nil for others. (iii) Cane yield. (iv) (a) 1960—contd. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

60(64)

(i) 1159 Q/ha. (ii) 103·0 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	823	1294	1240	1176	1262

C.D.=141·9 Q/ha.

61(150)

(i) 989 Q/ha. (ii) 127·7 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment :	S_0	S_1	S_2	S_3	S_4
Av. yield	640	1142	1038	1099	1025

C.D.=176·0 Q/ha.

62(158)

(i) 994 Q/ha. (ii) 136·0 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment :	S_0	S_1	S_2	S_3	S_4
Av. yield	701	1055	1049	1084	1082

C.D.=187·4 Q/ha.

63(160)

(i) 956 Q/ha. (ii) 64· Q/ha. (iii) Treatment differences are highly significant. (iv) (a) Av. yield of cane in Q/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	561	1110	1095	911	1101

C.D.=88·3 Q/ha.

64(187)

(i) 969 Q/ha. (ii) 80·7 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	618	1128	1090	957	1053

G.D.=111·2 Q/ha.

65(58)

(i) 789 Q/ha. (ii) 92·4 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	499	953	852	795	847

C.D.=127·3 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(168), 64(73), 65(22).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :— To study the effect of introducing a green manure crop in the soil with different levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 67·2 Kg/ha. of N as A/S+44·8 Kg/ha. of P_2O_5 as Super for 63, 65 ; N.A. for 64. (ii) Clay loam. (iii) 24.2.63 ; 26.2.64 ; 27.2.65. (iv) (a) Formation of trenches and bunds. (b) Trench planting. (c) 37066 three budded setts/ha. for 63, 64 ; 29653 three budded setts/ha. for 65. (d) 100 cm. between rows. (e) —. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, earthing up and trash twist propping. (ix) 147 cm., 102 cm. and 89 cm. (x) 24, 25.3.1964 ; 2, 3.3.1965 ; 4 to 7.4.1966.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of G.M. (*Sesbania*) : G_0=0 and G_1=5604 Kg/ha.

(b) 3 levels of N as A/S : N_1=55·6, N_2=83·4 and N_3=111·2 Kg/ha.

Sowing of G.M. 30 days after planting of Sugarcane and incorporated at 90 days of Sugarcane crop. N applied in two equal doses at 45 and 90 days after sowing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild infestation of Early Shoot borer and control measures N.A. for 63 ; Nil for others. (iii) Germination counts, shoot population, height measurements and yield of cane. (iv) (a) 1963-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Continuous dry spell from Nov. 63 to May, 64 and cyclone during 1st week of Jan. 66. (vii) Since the error variances are heterogeneous and Treatments×years interaction is absent, results of individual years are presented below.

5. RESULTS :

63(168)

(i) 1287 Q/ha. (ii) 100·4 Q/ha. (iii) The interaction G×N alone is significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	N_3	Mean
G_0	1294	1318	1330	1314
G_1	1226	1360	1194	1260
Mean	1264	1339	1262	1287

C.D. for the body of G×N table=151·3 Q/ha.

64(73)

(i) 1090 Q/ha. (ii) 106·0 Q/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	N_3	Mean
G_0	982	1115	1107	1068
G_1	1054	1111	1173	1113
Mean	1018	1113	1140	1090

C.D. for N marginal means=113·0 Q/ha.

65(22)

(i) 1083·3 Q/ha. (ii) 54·0 Q/ha. (iii) Main effects of N and G are highly significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	N_3	Mean
G_0	1050.9	1156.9	1210·0	1139·3
G_1	966·2	1029·2	1086·7	1027·4
Mean	1008·6	1093·1	1148·4	1 83·3

C.D. for N marginal means=57·5 Q/ha.
C.D. for G marginal means=46·9 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 64(186).**

Site :- Sugarcane Res. Stn. Anakapalle. **Type :- 'M'.**

Object :— To study the influence of split application of fertilizers at two levels on the cane yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 23.2.64. (iv) (a) Trenching. (b) Trench planting. (c) 37066 budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-997. (vii) Irrigated. (viii) Weeding, hoeing and trash twist propping. (ix) 95 cm. (x) 16.1.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of N : N_1=111 and N_2=222 Kg/ha.

(2) 2 times of application of N : T_1=In two equal doses at 45th and 90th day after planting and T_2=In three equal doses at 45 days interval.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 48 m.×10 m. (iii) 4. (iv) (a) 10 m.×8 m. (b) 8 m.×5 m. (v) 1·0 m.×1·5 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil

5. RESULTS :

(i) 1070·7 Q/ha. (ii) 37·1 Q/ha. (iii) Main effect of T alone is highly significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	Mean
N_1	987·4	1102·4	1063.6
N_2	1018·3	1098·4	1077·8
Mean	1002·9	1100·4	1070·7

C.D. for T marginal means=42·0 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 65(57).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :— To find out the effect of application of phosphate as a compound and straight fertilizer in different instalments in combination with two levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 64 Kg/ha. of P as Super+94 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 26.2.65. (iv) Trenching and hoeing in trenches. (b) Trench planting. (c) 29653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) As per treatments. (vi) Co—997. (vii) Irrigated (viii) Weeding, hoeing earthing up and trash twist propping. (ix) N.A. (x) 11 to 13.2.66.

2. TREATMENTS :

All combinations of (1), (2) nnd (3).

(1) 2 levels of N as A/S : N_1=112 and N_2=224 Kg/ha.

(2) 2 times of applicatlon of N : T_1=In two equal doses at 45 and 90 days after planting and T_2=In three equal doses at 45, 90 and 135 days after planting.

(3) 3 forms of phosphatic fertilizers : S_1=A/S (containing 21·14% of N alone), S_2=Ammo. Phos. (containing 19·25% of N and 22·75% of P_2O_5) and S_3=Super.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 24 m.×60 m. (iii) 3. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) yield of Sugarcane. (iv) (a) 1965-contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS ;

(i) 913·4 Q/ha. (ii) 78·1 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Kg/ha.

	S_1	S_2	S_3	N_1	N_2	Mean
T_1	902·4	943·1	897·7	907·8	921·0	914·4
T_2	890·4	900·2	946·4	929·0	895·7	912·3
Mean	896·4	921·7	922·1	918·4	908·4	913·4
N_1	917·4	912·7	925·4			
N_2	875·7	930·6	918·7			

Crop :- Sugarcane. **Ref :- A.P. 62(171), 63(171), 64(184), 65(49).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Gbject :— To fix up the appropriate index tissues that are associated with ultimate cane yield at harvest and to study the uptake of major plant nutrients viz N, P and K.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67 Kg/ha. of N+45 Kg/ha. of P_2O_5. (ii) Clayey loam. (iii) 14, 15.2.62 ; 19, 20.2.63 ; 19, 20.2.64 ; 17.2.65. (b) Trenching. (c) Trench planting. (c) 37066 three budded setts/ha. for 63 and 29653 three budded setts/ha. for others. (d) 100 cm. between rows. (e) N.A. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 147 cm. for 62, 63 ; 102 cm. for 64 ; Nil for 65. (x) 11 to 22.2.63 ; 4, 5.3.64 ; 23 to 25.2.65 ; 22 to 26.2.66.

2. TREATMENTS:

All combinations of (1), (2) and (3).

(1) 4 levels of N : N_0=0, N_1=112, N_2=224 and N_3=336 Kg/ha.

(2) 2 levels of P_2O_5 : P_0=0, P_1=336 Kg/ha.

(3) 2 levels of K_2O : K_0=0, K_1=336 Kg/ha.

N applied as A/S in two equal doses at 45th and 90th day after planting. P_2O_5 applied as Super at planting. K_2O applied as potassium chloride at planting.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 16. (b) 29 m.×56 m. (iii) 3. (iv) (a) 10 m.×14 m. (b) 8 m.×8 m. (v) 100 cm.×300 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Early Shoot Borer and Yellow Spot disease attack for 62, 63, 64 and Nil for 65. (iii) Yield of Sugarcane. (iv) (a) 1962-contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment is continued beyond 65 and hence results of individual years are presented under 5. Results.

5. RESULTS :

62(171)

(i) 1171 Q/ha. (ii) 94·0 Q/ha. (iii) Main effects of N and K are highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	753·8	1263·0	1328·7	1299·0	1133·7	1188·6	1161·1
P_1	745·7	1296·5	1337·4	1344·4	1126·6	1235·4	1181·0
Mean	749·8	1279·8	1333·0	1321·7	1130·2	1262·0	1171·1
K_0	729·5	1226·9	1270·6	1293·7			
K_1	770·0	1332·6	1395·5	1349·7			

C.D. for N marginal means=78·4 Q/ha.
C.D. for K marginal means=55·4 Q/ha.

63(171)

(i) 1295·7 Q/ha. (ii) 107·4 Q/ha. (iii) Main effect of N is highly significant and the main effect of K is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	836·1	1298·8	1449·9	1511·1	1210·7	1337·3	1274·0
P_1	900·3	1445·9	1421·4	1502·2	1312·7	1322·2	1317·4
Mean	868·1	1372·4	1435·7	1506·6	1261·7	1329·7	1295·7
K_0	858·1	1313·0	1416·9	1458.8			
K_1	878.3	1431·8	1454·4	1554·4			

C.D. for N marginal means=89·5 Q/ha.
C.D. for K marginal means=63·3 Q/ha.

64(184)

(i) 1030·5 Q/ha. (ii) 46·1 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	649·0	1233·3	1167·3	1109·6	1038·5	1041·2	1039·8
P_1	629·8	1205·1	1107.0	1142·8	1009·2	1033·1	1021·2
Mean	639.4	1219·2	1137·2	1126·2	1023·9	1037·1	1030·5
K_0	632·9	1205.6	1127·1	1129·8			
K_1	645·8	1232·8	1147·3	1122·7			

65(49)

(i) 1003·2 Q/ha. (ii) 67·5 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	668 9	1129·5	1123·8	1079·1	984.9	1016·7	1000·4
P_1	669.5	1138·4	1120·1	1095·6	1005·2	1006·6	1005·9
Mean	669·2	1134·0	1122·0	1087·4	994·6	1011·7	1003·2
K_0	672·9	1125·2	1096·3	1084·2			
K_1	665.6	1142·9	1147·7	1090·5			

C.D. for N marginal means=56·4 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(53), 61(154), 62(168).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the effect of inter sowing G.M. on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. for 60 ; 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 for others. (ii) Clay loam. (iii) 7.2.1960 ; 15.2.1961 ; 20.2.1962. (iv) (a) Trench formation. (b) Trench planting. (c) 37066 three-budded setts/ha. for 60, 61 ; 29653 three-budded setts/ha. for others. (d) 100 cm. between rows. (e) —. (v) 112·1 Kg/ha. of N as A/S in two equal doses on 45th and 90th day from planting. (vi) CO –419. (vii) Irrigated. (viii) Gap-filling, weeding, earthing up and propping. (ix) 84 cm. ; 144 cm. ; N.A. (x) 11, 12.3.61 ; 2 to 5.3.62 ; 27, 28.2.63.

2. TREATMENTS :

3 manurial treatments : T_0=Control, T_1=G.M. sown at planting and incorporated on 60th day after planting and T_2=G.M. sown one month after planting and incorporated on 90th day after planting.

Sesbania speciosa at 33·6 Kg/ha. was sown at planting on 8.2.60.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. for 60 ; 12 m.×12 m. for others. (b) N. A. for 60 ; 10 m.×2 m. for others. (v) N.A. for 60 ; 1 m.×1 m. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory but crop lodged in 60 and 61. (ii) Nil for 60, infestation of Early Shoot borer and White Fly was observed for 61 ; Early Shoot borer was mild and severe incidence of Yellow Spot disease for 62 ; control measures N.A. (iii) Yield of cane. (iv) (a) 1960 –62. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is absent. Results of individual years are presented below.

5. RESULTS :

60(53)

(i) 1410 Q/ha. (ii) 197 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	1375	1434	1420

61(154)

(i) 1472 Q/ha. (ii) 420·7 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	1538	1374	1503

62(168)

(i) 1270 Q/ha. (ii) 118·2 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	1285	1357	1167

C.D. = 107·4 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(184), 64(190).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To study the possibility of correcting nitrogen deficiency of standing crop of CO—419 when it is 120 days old based on foliar diagnosis and of obtaining yields comparable to those form a normally fertilized crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 7.3.63 ; 1.3.64. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 1 m. between rows. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Weeding and earthing up. (ix) 146·7 cm , 94·5 cm. (x) 6.3.64, 1.2.65.

2. TREATMENTS :

3 manurial treatments : N_0=No nitrogen, N_1=¼th of 111·2 Kg/ha. of N applied at 1½ months age and N_2=111·2 Kg/ha. of N in two equal doses at 1½ months and 3 months of age.

The nitrogen deficiency of the standing crop at the 120th day was found out and on the basis of the same an additional amount of 85·25 Kg/ha. of N for N_0 plots and 58·34 Kg/ha. of N for N_1 plots during 1963 and 90·9 Kg/ha. of N for N_0 plots and 53·7 Kg/ha. of N for N_1 plots during 1964, were applied.

1. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 330 sq. m. (iii) 6. (iv) (a) 110 sq. m. (b) 64 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination counts, juice quality and cane yield. (iv) (a) 1963—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 1185·5 Q/ha. (ii) 85·3 Q/ha. (based on 26 d.f. made up of Treatments × years interaction and pooled error). (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2
Av. yield	1047	1215	1295

C.D. = 71·6 Q/ha.

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	N_0	N_1	N_2	Sig.	G.M.	S.E./plot
Years						
1963	1149	1385	1455	**	1329	94
1964	945	1045	1134	**	1041	83
Pooled	1047	1215	1295	**	1185·5	85

Crop :- Sugarcane. **Ref :- A.P. 62(172), 63(170), 65(183). 65(48).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To fix up appropriate index tissues that are associated with ultimate cane yield at harvest and to study the uptake of major plant nutrients viz N, P and K. To study the green leaf area and cane yield at harvest.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane (b) Paddy. (c) 76·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Sandy loam. (iii) 17, 18.2.62 ; 16, 17.2.63 ; 16, 17.2.64 ; 15.2.65. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. for 63 and 29653 three budded setts/ha. for others. (d) 1 m. between rows. (e) —. (v) Nil. (vi) Co—997. (vii) Irrigated. (viii) Weeding, earthing up and trash twist propping. (xi) 144 cm. for 62, 146 cm. for 63, 102 cm. for 64, N.A. for 65. (x) 5 to 9.2.63'; 16, 17.2.64 ; 9, 11.1.65 ; 19 to 24.1.66.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 4 levels of N : N_0=0, N_1=112, N_2=224, N_3=336 Kg/ha.

(2) 2 levels of P_2O_5 : P_0=0, P_1=336 Kg/ha.

(3) 2 levels of K_2O : K_0=0, K_1=336 Kg/ha.

N Applied as A/S in two equal doses on 45th and 90th day after planting. P_2O_5 applied as Super at planting. K_2O applied as Potassium Chloride at planting.

3. DESIGN :

(i) Fact. in R.B.D. for 62, 63 and 4×2^2 confd. for 64 and 65. (ii) (a) 16 for 62, 63 ; 4 for 64 ; 8 for 65. (b) N.A. (iii) 3. (iv) (a) 12 m. × 9 m. for for 62 and 64 ; 12 m. × 10 m. for 63 and 65. (b) 10 m. × 4 m. for 62 and 64 ; 10 m. × 4 m. for 63 and 65. (v) 100 cm. × 250 cm. for 62 and 64 : 100 cm. × 300 cm' for 63 and 65. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Early shoot borer attack for 62, 63, 64 Nil for 65. (iii) Yield of cane yield. (iv) (a) 1962—contd. (b) No. (c) Nil. (v) N.A. (vi) Nil for 62 ; continuous dry spell for 63 and 64 ; cyclonic effect for 65. (vii) Since the design is changed after 64, the results of 62 and 63 are only pooled together. Error variances are homogenous and Treatments × years interaction is present. Again since the experiment is continued beyond 1964 and 1965 the results of individual years for 64 and 65 are presecuted under 5. results.

5. RESULSTS :

62(172)

Pooled results for 62 and 63.

(i) 984 Q/ha. (ii) 75·8 Q/ha. (based on 12 d.f. made up of Treatments × years interaction). (iii) Main effect of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	876	1065	1055	995	982	1013	998
P_1	874	985	1013	1006	960	979	970
Mean	875	1025	1034	1001	971	996	984
K_0	878	1015	1010	983			
K_1	872	1036	1058	1019			

C.D. for N marginal means=95·4 Q/ha.

Individual results.

Treatments	N_0	N_1	N_2	N_3	Sig.	P_0	P_1	Sig.
Years								
1962	770	889	907	910	**	886	852	N.S.
1963	980	1161	1160	1091	**	1109	1087	N.S.
Pooled	875	1025	1034	1001	**	998	970	N.S.

K_0	K_1	Sig.	G.M.	S.E./plot
860	878	N.S.	869	85·1
1082	1114	N.S.	1099	89·9
971	996	N.S.	934	75·8

64(183)

(i) 952 Q/ha. (ii) 78·2 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	745	1038	1032	969	952	940	946
P_1	779	1034	1012	1007	942	974	958
Mean	762	1036	1022	988	947	957	952
K_0	761	1002	1041	984			
K_1	763	1070	1003	992			

C.D. for N marginal means=65·8 Q/ha.

65(48)
(i) 922 Q/ha. (ii) 60·3 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	747	1037	944	976	936	916	926
P_1	723	1037	938	974	918	974	918
Mean	735	1037	941	975	927	945	922
K_0	757	1027	948	976			
K_1	713	1047	934	974			

C.D. for N marginal means=50·7 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(55), 61(156).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object :—To find out the best method of application of nitrogeneous fertilizers when manuring is delayed to Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) N.A. for 60, 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 for 61. (ii) Clay loam. (iii) 22.2.60, 26.2.61. (iv) (a) Loosening the soil, formation of trenches and hoeing in trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) N.A. (v) Nil. (vi) CO—419. (vii) Irrigated. (viii) Gap filling, weeding, propping and hoeing. (ix) 84 cm., 144·3 cm. (x) 3rd week of Feb. 1961 ; 21 to 23.3.62.

2. TREATMENTS:

7 manurial treatments : T_1=112·1 Kg/ha. of N in two equal doses 45 and 90 days after planting to soil, T_2=112·1 Kg/ha. of N in two equal doses 45 and 180 days after planting to soil, T_3=112·1 Kg/ha. of N in two equal doses 45 and 180 days after planting as foliar spray, T_4=112·1 Kg/ha. of N in two equal doses 90 and 180 days after planting to soil, T_5=112·1 Kg/ha. of N in two equal doses 90 and 180 days after planting as foliar spray, T_6=56·0 Kg/ha. of N 45 days after planting to soil+28·0 Kg/ha. of N 180 days after planting to soil and T_7=56·0 Kg/ha. of N 45 days after planting as foliar spray+28·0 Kg/ha. of N 180 days after planting as foliar spray.

N applied as Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 56·3 m×48·3 m. for 60, 56 m.×12 m for 61. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii)Nil for 60 and Early Shoot borer and White Fly attack for 61. (iii) Yield of Sugarcane. (iv) (a) 1959—61. (b) No. (c) As under 5. Results. (v) Nil for 60. N.A. for 61. (vi) Nil for 60, heavy rainfall of 12·1 cm. and a heavy gale on 18.10.61 for 61. (vii) Error variances are homogeneous and the Treatments×years interaction is absent.

5. RESULTS :

Pooled results for 59 to 61.

(i) 1259 Q/ha. (ii) 99·1 Q/ha. (based on 66 d.f. made up of Treatments×years interaction and pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1334	1242	1239	1237	1247	1270	1245

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Sig.	G.M.	S.E./plot
Years 1960	1259	1242	1225	1205	1274	1285	1252	N.S.	1249	91
1961	1467	1236	1309	1330	1302	1303	1279	N.S.	1318	106
Pooled	1334	1242	1239	1237	1247	1270	1245	N.S.	1259	99

Crop :- Sugarcane. **Ref :- A.P. 61(159), 62(165), 63(164).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'M'.**

Object : To study the influence of potash alone and in combination with nitrogen on cane performance with particular reference to fixation K-Index at this station.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane for 61, 62 and Sugarcane-Paddy for 63. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 26, 27.2.61 ; 19, 20.2.62 ; 22.2.63. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. for 61 and 63 ; 29653 three budded setts/ha. fo 62. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding and hoeing, earthing up and trash twist propping. (ix) 144·3 cm. N.A., 147 cm. (x) 5 to 3.3.62 ; 21, 26.2.63 ; 29.3 to 1.4.64.

2. TREATMENTS :

All combinations of (1) and (2).

(i) 3 levels of K_2O as Pot. Sul. : K_0=), K_1= 112 and K_2=224 Kg/ha.

(2) 3 levels of N as A/S : N_0=0, N_1=112 and N_2=224 Kg/ha.

N applied in two equal doses by pocketing 45 and 90 days after planting. K_2O applied in one dose 30 days after planting.

3. DESIGN ;

(i) R.B.D. (ii) (a) 9 (b) 63 m.×14 m. for 61 ; N.A. for others. (iii) 3. (iv) (a) 14 m.×7 m. for 61 ; 12 m ×8 m for 62 ; N.A. for 63. (b) 12 m.×5 m. for 61 ; 10 m.×6 m. for 62 ; 40·5 sq. m. for 63 ; (vi) 100 cm ×100 cm. for 61, 62 and N.A. for 63. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Infestation of Early Shoot borer and White Fly for 61 ; mild infestation of Early Shoot borer and Yellow Spot disease for 62 ; mild infestation of Early Shoot borer for 63. (iii) Yield of Sugarcane. (iv) (a) 1961-63. (b) No. (c) As under 5. Results. (v) N.A. for 61 for 61 ; Nil for 62, N.A. for 63. (vi) Heavy rainfall amounting to 12·1 cm. on 18.10.61 and a heavy gale on 29.10.61, for 61 Nil for 62, continuous dry spell from Nov. 63 to May. 64 for 63. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results.

(i) 1213 Kg/ha. (ii) 104·7 Kg/ha. (based on 64 d.f. made up of Treatments × years interaction and pooled error). (iii) Main effect of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	K_0	K_1	K_2	Mean
N_0	925	921	948	931
N_1	1370	1307	1364	1347
N_2	1341	1381	1364	1362
Mean	1212	1203	1225	1213

C.D. for N marginal means=56·7 Kg/ha.

Individual results

Av. yield of Sugarcane in Kg/ha.

Treatments	N_0	N_1	N_2	Sig.	K_0	K_1	K_2
Years							
1961	807	1319	1349	**	1112	1155	1155
1962	1051	1338	1344	**	1239	1223	1270
1963	936	1384	1394	**	1235	1230	1248
Pooled	931	1347	1362	**	1212	1203	1225

Sig.	G.M.	S.E./plot.
N.S.	1158	115·4
N.S.	1244	94·2
N.S.	1238	84·6
N.S.	1213	104·7

Crop :- Sugarcane. **Ref :- A.P. 60(136), 61(145), 62(180), 63(181).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :— To study the response of Sugarcane to different nitrogeneous fertilizers.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane – Paddy. (c) N.A. (ii) Loamy. (iii) 7.3.60, 24.2.61, 10.2.62, 7.3.63. (iv) (a) Digging of trenches, digging of cross drains. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co– 449. (vii) Irrigated. (viii) Gap filling, hoeing, weeding and earthing. (ix) 120 cm. ; 113 cm. ; 120 cm.; 147 cm. (x) 23 to 26.1.61 ; 14 to 16.3.62 ; 1st fortnight of March 63 ; 22 to 25.1.64.

2. TREATMENTS :

5 sources of 112 Kg/ha. of N : S_1=A/S, S_2= Urea, S_3=A/S/N, S_4=C/A/N and S_5= Castor cake+A/S 1 : 2 ratio.

Nitrogeneous fertilizers applied by pocketing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 35 m.×14 m. ; 40 m.×12 m. ; 30 m.×16 m. ; 40 m.×10 m. (iii) 4. (iv) (a) 14 m.×7 m. ; 12 m.×8 m. ; 16 m.×6 m. ; 10 m.×8 m. (b) 14 m.×5 m. ; 12 m.×6 m. ; 16 m.×4 m.; 10 m.×6 m. (v) 100 cm. on each side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory in 60 ; Good for others, but crop lodged in 61 and 62 in some of the plots. (ii) Spraying D.D.T. 50% at 0·32% concentration and spraying Endrin at 0·02% against Early Shoot borer for 60 ; spraying Endrin 0·02% against Early Shoot borer for 61 ; Nil for others. (iii) Height measurements, tiller couns and yield of cane. (iv) (a) 1960-63. (b) No. (c) Nil. (v) N.A. (vi) Hail storm on 1.3.60, a rainfall of 46 cm. accompained by a gale on 8.12.60 for 60 ; Heavy gale followed by rain on 29.8.61 for 61 ; Nil for 62 ; cyclone prevailed for a week with a whirl wind on 25.10.63. Heavy rainfall during 2nd fortnight of Oct. for 63. (vii) Since the error variances are heterogeneous and the interaction of Treatments×years is absent, the results of individual years are presented below.

5. RESULTS :

60(136)

(i) 846 Q/ha. (ii) 198·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4	S_5
Av. yield	921	850	781	762	917

61(145)

(i) 958 Q/ha. (ii) 67·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4	S_5
Av. yield	932	979	1033	899	946

62(180)

(i) 1269 Q/ha. (ii) 81·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4	S_5
Av. yield	1270	1154	1319	1317	1284

63(181)

(i) 906 Q/ha. (ii) 68·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4	S_5
Av. yield	950	928	883	896	873

Crop :- Sugarcane. **Ref :- A.P. 60(133).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :—To fix up the optimum dose of N for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 4.2.60. (iv) (a) Digging of trenches and cross drains. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO—997. (vii) Irrigated. (viii) Gap filling, 4 hoeings, 3 weedings and 2 earthing up. (ix) 117 cm. (x) 25.12.60.

2. TREATMENTS :

6 levels of N as A/S : N_0=0, N_1=28·0, N_2=56·0, N_3=84·0, N_4=112·1 and N_5=140·1 Kg/ha
Fertilizer was applied in a single dose by pocketing on 23.6.60.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) 48 m.×10 m. (iii) 4. (iv) (a) 10 m.×8 m. (b) 10 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Severe lodging. (ii) Spraying with D.D.T. 50% at 0·32% concentration on 4.4.60 against Early Shoot borer; spraying of Endrin at 0·02% concentration against Early Shoot borer on 29.4.60. (iii) Gerimination counts, plant population, Early Shoot borer incidence, arrow counts, yield of cane and stalk population. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 992 Q/ha. (ii) 123·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5
Av. yield	914	978	960	1023	1027	1051

———

Crop :- Sugarcane. **Ref :- A.P. 64(180), 65(217)**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object : —To find out the optimum dose of N required to get the maximum cane yield.

1. BASAL CONDITIONS

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 10.2.64; 4.3.65. (iv) (a) Digging of trenches, cross drains and hoeing in trenches. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 250 Q/ha. of F.Y.M. before planting. (vi) CO—997. (vii) Irriagted. (viii) Gap filling, hoeing, weeding, earthing and trash twist propping. (ix) 119 cm., N.A. (x) 18 to 20.2.65; 15.3.66.

2. TREATMENTS :

6 levels of N as A/S : N_0=0, N_1=56·2, N_2=84·3, N_3=112·4, N_4=140·5 and N_5=168.6 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60 m.×10 m.; N.A. (iii) 4. (iv) (a) 10 m.×10 m. (b) 10 m.×6 m. (v) 200 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying Endrin 0·25%. Incidence of Early Shoot borer as noticed during 65. (iii) Germination counts, height measurements, stalk population and cane yield. (iv) (a) 1964-66. (b) No. (c) Nil. (v) to (vi) Nil. (vii) As the experiment is continued beyond 65, results of individual years are presented below.

5. RESULTS :

64(180)

(i) 792 Q/ha. (ii) 67.6 Q/ha. (iii) Treatment differences are highly significant. (iv) Av yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5
Av. yield	394	632	911	937	943	935

C.D.=101.9 Q/ha.

65(217)

(i) 725 Q/ha. (ii) 112.3 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5
Av. yield	468	740	771	804	800	765

C.D.=170.9 Q/ha.

Crop :- Sugarcane (*1st Ratoon*). **Ref :- A.P. 61(147).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :—To study the optimum dose of N required for Ratoon crop of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Sugarcane plant crop. (c) N.A. (ii) Loamy. (iii) 2.2.61. (iv) (a) Harvesting of plant crop. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm between rows. (e) —. (v) Nil. (vi) Co-449. (vii) Un-irrigated. (viii) Weeding, earthing up, trash twist propping. (ix) 113 cm. (x) 8, 9, 10, 11.1.62.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
N applied by pocketing on 5.6.1961.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 50 m.×12 m. (iii) 4. (iv) (a) 12 m.×10 m. (b) 12 m.×8 m. (v) 100 cm. on either side. (vi Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 702 Q/ha. (ii) 71·7 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	542	680	760	782	745

S.E./mean=35·8 Q/ha.

C.D.=110·5 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(135).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :-'M'.**

Object :—To study the effect of N and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 4.2.1960. (iv) (a) Digging trenches and cross drains. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO-449. (vii) Irrigated. (viii) Gap filling, 4 hoeings, 1 weeding, 2 earthing up and trash twist propping thrice. (ix) 121 cm. (x) 19.2.61.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 4 levels of N as A/S : N_0=0, N_1=84·0. N_2=112·1 and N_3=140·1 Kg/ha.

(2) 2 levels of K_2O as Pot. Sul : K_0=0 and K_1=112·1 Kg/ha.

Fertilizers were applied in one dose by pocketing on 24.6.60.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 48 m.×12 m. (iii) 3. (iv) (a) 12 m.×6 m. (b) 12 m.×4 m. (v) 1 m. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; Lodging of cane on 8.12.60. (ii) Spraying D.D.T. 50% at 0·32% concentration on 5.4.60 ; spraying of Endrin 0·02 % on 30.4.60 against Early Shoot borer. (iii) Cane yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 812 Q/ha. (ii) 268·5 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	Mean
K_0	734	767	766	942	802
K_1	710	754	891	934	822
Mean	722	760	828	938	812

Crop :- Sugarcane. **Ref :- A.P. 61(146), 62(184), 63(183).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :— To study the effect of different methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 22.2.61 ; 10.2.62 ; 8.3.63. (iv) (a) Digging of trenches and cross drains. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-449 for 61, 62 ; Co-419 for 63. (vii) Irrigated. (viii) Gap filling weeding, earthing and trash twist propping. (ix) 113 cm. , 120 cm., 147 cm. (x) 26 to 28.1.62 ; 2nd fortnight of Jan. 1963 ; 20 to 23.1.64.

2. TREATMENTS:

5 manurial treatments : M_1=112 Kg/ha. of N to soil in one dose in June, M_2=84 Kg/ha. of N to soil in June+28 Kg/ha. of N to soil in Sept., M_3=84 Kg/ha. of N to soil in June+28 Kg/ha. of N as foliar sprays in Sept., M_4=56 Kg/ha. of N to soil in June+56 Kg/ha. of N to soil in Sept. and M_5=56 Kg/ha. of N to soil in June+56 Kg/ha. of N as foliar spray in Sept.

For soil application N applied as A/S and for foliar application as Urea in 1685 litres/ha. Soil application was done by pocketing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 35 m.×15 m. ; 30 m.×16 m. ; 56 m.×10 m. (iii) 5. (iv) (a) 15 m.×7 m., 16 m.×6 m. ; 10 m.×8 m. (b) 15 m.×5 m. ; 16 m.×4 m. ; 10 m.×6 m. (v) 100 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of Endrin 0·02% against Early Shoot borer for 61 ; Nil for 62 ; spraying Endrin and Parathion for 63. (iii) Height counts, millable cane, juice quality and yield of cane. (iv) (a) 1961-63 (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and the Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 1193 Q/ha. (ii) 121·6 Q/ha. (based on 56 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	1216	1177	1244	1206	1123

Individual results

Av. yield of cane in Q/ha.

Treatments	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years								
1963	1113	1050	1148	1179	1090	N.S.	1116	143
1964	1345	1302	1400	1284	1192	N.S.	1305	130
1965	1191	1178	1185	1156	1087	N.S.	1159	98
Pooled	1216	1177	1244	1206	1123	N.S.	1193	122

Crop :- Sugarcane. **Ref :- A.P. 60(132).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :— To findout the effect of different levels and methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 3.2.60. (iv) (a) Digging of trenches and cross drains. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-449. (vii) Irrigated. (viii) 4 hoeings, 3 weedings and 2 earthings and propping. (ix) 119·8 cm. (x) 21.1.61.

2. TREATMENTS :

All combinations of (1) and (2)+Control (2 plots).

(1) 2 levels of N: N_1=56 and N_2=112 Kg/ha.

(2) 4 methods of application of N in two equal doses: M_1=To soil in June and to soil in July, M_2=To foliage in June and to foliage in July, M_3=To soil in June and to foliage in July, and M_4=To foliage in June and to soil in July.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 70 m.×12 m. (iii) 3. (iv) (a) 12 m.×7 m. (b) 12 m.×5 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying D.D.T. 50% at 0·32% concentration spraying of Endrin 0·02% concentration on 28.4.60 to 2.5.60 against Early Shoot borer. (iii) Cane yield. (iv) (a) 1958—60 (1958 data N.A.) (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 727 Q/ha. (ii) 83·2 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

Control=511 Q/ha.

	M_1	M_2	M_3	M_4	Mean
N_1	712	779	711	798	750
N_2	862	692	754	794	775
Mean	787	736	733	796	763

Crop :- Sugarcane. **Ref :- A.P. 60(137), 61(148), 62(181).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :—To study the effect of split dose application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 6.2.60 ; 22.2.61 ; 9.2.62 (iv) (a) Digging of trenches and cross drains. (b) Trench planting. (c) 37056 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO—449 for 60, 61 ; CO—419 for 62. (vii) Irrigated. (viii) Gap filling, hoeing, weeding, earthing up and trash twist propping. (ix) 120 cm., 113 cm., 120 cm. (x) 3 to 5.2.61 ; 28, 29.1.62 ; 2nd fortnight of Jan., 63.

2. TREATMENTS :

7 manurial treatments : M_1=112 Kg/ha. of N in June in one dose, M_2=56 Kg/ha. of N in June+56 Kg/ha. of N in July, M_3=84 Kg/ha. of N in June+28 Kg/ha. of N in July, M_4=56 Kg/ha. of N in June+56 Kg/ha. of N in August, M_5=84 Kg/ha. of N in June+28 Kg/ha. of N in August, M_6=56 Kg/ha. of N in June+56 Kg/ha. of N in September and M_7=84 Kg/ha. of N in June+28·0 Kg/ha. of N in September.

Manuring was done by pocketing.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 42 m.×14 m. for 60 ; 56 m.×15 m. for 61 and N.A. for 62. (iii) 4. (iv) (a) 14 m.×6 m. ; 15 m.×8 m. ; 12 m.×7 m. (b) 14 m.×4 m. ; 15 m.×6 m., 12 m.×5 m. (v) 100 cm. on each side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory but crop lodged due to heavy rain on 8.12.60 for 60 and 29.8.61 for 61 ; good for 62. (ii) Spraying 50% D.D.T. at 0·32% concentration and spraying Endrin 0·02% against Earlys Shoot borer for 61 ; Nil for 62. (iii) Yield of cane and height measurements. (iv) (a) 1960—62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Hail storm on 1.3.60 and a rainfal of 46 cm. accompanied by devastating gale resulted in heavy lodging of crop for 60 ; heavy gale followed by rain on 29.8.61 for 61(148) and nil for 62. (viii) Error variances are homogeneous and the Treatments × years interaction is absent.

5. RESULTS:

Pooled results

(i) 1076 Q/ha. (ii) 132·6 Q/ha. (based on 66 d.f. made up of pooled error and Treatments × years interaction). (iii) Treatment differences are not significant. (v) Av. yield of cane in Q/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	1090	1090	1075	1053	1086	1043	1094

Individual Results

Av. yield of cane in Q/ha.

Treatments	M_1	M_2	M_3	M_4	M_5	M_6	M_7	Sig.	G.M.	S.E./plot
Years 1960	752	711	841	837	853	797	859	N.S.	807	135
1961	1060	1113	1044	982	1066	953	1020	N.S.	1034	147
1962	1457	1446	1341	1340	1338	1378	1404	N.S.	1386	121
Pooled	1090	1090	1075	1053	1086	1043	1094	N.S.	1076	133

Crop :- Sugarcane. **Ref :- A.P. 64(177), 65(212).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object :—To test the effect of application of recommended dose of N in more than one dose at different times of crop growth.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (iii) Loamy. (iii) 9.3.64 ; 1.3.65. (iv) (a) Digging of trenches, cross drains and hoeing in trenches. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha., 37000 three budded setts/ha. (d) 100 cm. between rows. (e) Nil. (v) Nil for 64., 250 Q/ha. of F.Y.M.for 65. (vi) Co-997. (vii) Irrigated. (viii) Weeding, hoeing, earthing and trash twist propping. (ix) 118 cm. for 64, nil for 65. (x) 3, 4, 5, 6,9.2. 65 ; 15.3.66.

2. TREATMENTS :

Application of 112 Kg/ha. of N as A/S to soil : T_1=In one dose in June to soil, T_2=In two equal doses in June and July, T_3=In two equal doses in June and August, T_4=In three equal doses in June, July and August, T_5=In two doses 2/3 in June and 1/3 in July and T_6=In two doses 2/3 in June and 1/3 in August.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60 m.×10 m. for 64 ; 50 m.×10 m. for 65. (iii) 4. (iv) (a) 10 m.×10 m. (b) 10 m.×6 m. (v) 200 cm. on either side. (vi) Yes.

4. GENERAL:

(i) Good for 64 ; crop suffered due to severe summer and prolonged drought for 65. (ii) Endrin sprayed during 64. The ends of seed setts were dipped in Arotan solution before plantting during 1965. There was slight incidence of Early Shoot borer and Endrin was sprayed thrice during 1965. (iii) Germination counts, population of millable shoots at harvest, juice quality and cane yield. (iv) (a) 1964—66. (b) No. (c) Nil. (v) N.A. (vi) Nil for 64 ; cyclone during January for 65. (vii) As the experiment is continued beyond 65, results of individual years are presented below.

5. RESULTS

64(177)

(i) 938 Q/ha. (ii) 67·1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	888	936	969	927	985	924

65(219)

(i) 768 Q/ha. (ii) 116·9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	761	820	733	705	784	802

———

Crop :- Sugarcane. **Re :- A.P. 60(134), 61(144).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'M'.**

Object:—To fix up the optimum dose of N required for top dressing an acre of Sugarcane crop in the tract.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 4.2.1960: 24.2.1961. (iv) (a) Digging trenches, digging cross drains with iron spade. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO—449. (vii) Irrigated. (viii) Gap filling, 4 hoeings, 2 weedings and 2 earthings up. (ix) 120 cm; 113 cm. (x) 19.1.61; 17.2.62.

2. TREATMENTS :

Same as in experiment no 60(133) on page 481.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 48 m.×12 m.; 36 m.×18 m. (iii) 4. (iv) (a) 12 m.×8 m; 18.×6 m. (b) 12 m.×6 m.; 18 m.×4 m. (v) 1 m. on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory; lodging on 8.12.60 and 29.8.61. (ii) D.D.T. 50% at 0.32% concentration was sprayed against Early Shoot borer on 4.4.60. Endrin at 0.02% against Early Shoot borer was sprayed on 29.4.60 ; 8.4.61 and 5.5.61. (iii) Tiller counts, arrow counts, borer incidence and cane yield. (iv) (a) 1958-61 (Data for 1958 N.A.) (b) No. (c) As under 5. Results. (v) N.A. (vi) Hale storm on 1.3.60 and very devastating gale resulted in heavy lodging of the crop on 8.12.60 and 29.8.61. (vii) Results of experiment no. 59(38) are also included in the combined analysis. Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 655.4 Q/ha. (ii) 120.8 Q/ha. (based on 55 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	588.5	597.5	634.3	701.2	707.0	703.9

C.D.=98.3 Q/ha.

Individual results.

Av. yield of cane in Q/ha.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	Sig.	G.M.	S.E./plot
Years									
1960	667	594	647	753	748	779	N.S.	698	140 0
1961	726	778	825	840	971	864	N.S.	834	99·1
Pooled	589	598	634	701	707	704	*	655	121

Crop :- Sugarcane **Ref :- A.P. 64(204), 65(91)**

Site :- Sugarcane Liaison Farm, Chittoor. **Type :- 'M'.**

Object :– To study the effect of different methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 27.3.64; 27.4.65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 1 m. between rows. (e) —. (v) Nil. (vi) CO—997. (vii) Irrigated. (viii) Weeding, earthing up and trash twist propping. (ix) 93·4 cm. ; N.A. (x) 23.4.65; 17.4.66.

2. TREATMENTS :

5 methods of split applications of 222 Kg/ha. of N as A/S by pocketing : T_1=111 Kg at 45th day+111 Kg at 90th day, T_2=83 Kg at 45th day+83 Kg at 90th day+56 Kg at 120th day, T_3=83 Kg at 45th day+56 Kg 90th day+83 Kg at 120th day, T_4=83 Kg at 45th day+83 Kg at 90th day+56 Kg at 150th day, T_5=83 Kg at 45th day+56 Kg at 90th day+83 Kg at 150th day.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild incidence of Early Shoot borer. Endrin ·02%sprayed on 29.5.64 and 3.6.64. (iii) Germination counts and cane yield. (iv) (a) 1964—66. (b) No. (c) Nil. (v) N.A. (vi) Severe drought condition prevailed during May, June 1964. (vii) As the experiment is continued beyond 65, results of individual years are presented below.

5. RESULTS :

64(204)

(i) 714 Q/ha. (ii) 227·8 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	707	712	714	718	720

65(91)

(i) 981 Q/ha. (ii) 40.0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	978	988	994	969	974

Crop :- Sugarcane. **Ref :- A.P. 62(212), 63(200), 64(207), 65(92).**

Site :- Sugarcane Liaison Farm, Chittoor. **Type :- 'M'.**

Object :— To find the optimum dose of N for Sugarcane,

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 26.3.62, 3.3.63, 30.3.64, 30.4.65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e)—. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) 2 weedings, 1 earthing up. (ix) 101·3 cm. for 62, 70·0 cm. for 63 and N.A. for 64, 65. (x) 6.3.63, 28.3.64, 26.4.65 and N.A. for 65.

2. TREATMENTS :

6 levels of N as A/S : N_0=0, N_1=56, N_2=112, N_3=168, N_4=224 and N_5=280 Kg/ha.
Applied in two equal doses on 45th and 90th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 24 m.×24 m. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 1 m.×1 m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) ·02%Endrin sprayed twice againt Shoot borer. (iii) Cane yield. (iv) (a) 1962 to 65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy rains for 62, 63, severe drought in 1964 and cyclonic weather in 1965. (vii) Error variances are heterogeneous and Treatments×years interaction is pr esent.

5. RESULTS :

Pooled results

(i) 872 Q/ha. (ii) 242·3 Q/ha. (based on 15 d.f. made up of Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5
Av. yield	467	691	849	1010	1125	1087

C.D.=182·6 Q/ha.

Individual results

Treatments	N_0	N_1	N_2	N_3	N_4	N_5	Sig.	G.M.	S.E./plot
Years									
1962	364	635	996	1217	1253	1185	**	942	143
1963	372	554	601	838	1003	971	**	724	84
1964	254	591	770	891	1075	1050	**	772	72
1965	879	983	1026	1094	1170	1142	**	1044	29
Pooled	467	691	849	1010	1125	1087	**	872	242

Crop :- Sugarcane. **Ref :- A.P. 62(211), 63(202), 64(205), 65(293).**

Site :- Sugarcane Liaison Farm, Chittoor. **Type :- 'M'.**

Object : – To study the effect of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS;

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 23.3.62, 8.3.63, 4.4.64 and 3.5.1965. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding and earthing up. (ix) 101 cm. for 62 ; 70 cm. for 63, 93 cm. for 64 and N.A. for 65. (x) 2.3.63 ; 8.3.64 ; 3.3.65 and 17.4.66.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=111 and N_2=222 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0, P_1=222 Kg/ha.

(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=222 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 48 m.×24 m. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Poor for 64 ; good for others. (ii) Endrin ·02% was sprayed against Shoot borer. (iii) Cane yield. (iv) (a) 1962-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Heay rains for 62 and 63, drought in 64 and cyclonic weather in 65. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 805 Q/ha. (ii) 248·1 Q/ha. (based on 27 d.f. made up of Treatments×years interaction). (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	592	824	1000	807	803	805
P_1	610	846	960	807	803	805
Mean	601	835	980	807	803	805
K_0	577	835	1008			
K_1	625	835	952			

C.D. for N marginal means=89·9 Q/ha.

Individual results

Av. yield of cane in Q/ha.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	Sig.	K_0	K_1
Years									
1962	563	1098	1345	**	996	1007	N.S.	1005	998
1963	545	712	807	**	710	666	N.S.	709	667
1964	427	555	652	**	517	572	N.S.	522	568
1965	869	974	1118	**	997	977	N.S.	993	981
Pooled	601	835	980	**	805	805	N.S.	807	803

Sig.	G.M.	S.E./plot
N.S.	1002	142
N.S.	687	146
N.S.	545	217
N.S.	988	54
N.S.	805	248

Crop :- Sugarcane. **Ref :- A.P. 65(95).**

Site :- Sugarcane Res. Stn, Perumallapalle. **Type :- 'M'.**

Object :—To study the effect of graded doses of N on the chemical composition of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Ragi*-Sugarcane. (b) Groundnut. (c) Nil. (ii) Sandy loam. (iii) 8.3.65. (iv) (a) Forming trenches. (b) Trench planting. (c) 29653 three budded setts/ha. (d) 1 m. between the centre of the rows. (e) —. (v) 250 Q/ha of F.Y.M. as basal dressing. (vi) CO—419. (vii) Irrigated. (viii) Weeding twice, hoeing once, earthing up once and trash twist propping once. (xi) 65.3 cm. (x) 14.3.66.

2. TREATMENTS :

4 levels of N as A/S : N_0=0, N_1=112, N_2=224, N_3=336 Kg/ha.
N as applied in two equal doses at 45th and 90th day after planting (23.4, 9.6.65).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 1 m.×1 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging observed in all treatments during Ist week of Nov, 65. (ii) Spraying Endrin 0·02% against Early Shoot borer on 8.4, 28.5.65. (iii) Millable cane and cane yield. (iv) (a) 1965-67. (b) No. (c) Nil. (v) N.A. (vi) Unusual drought during the year. In August '65 there was heavy down pour of nearly 3 times the average. The 1st quarter of 1966 (Jan-March) was completely dry. (vii) Nil.

5. RESULTS :

(i) 1084.2 Q/ha. (ii) 249.8 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3
Av. yield	904·0	1164·9	1163·8	1104·3

Crop :- Sugarcane. **Ref :- A.P. 65(96).**

Site :- Sugarcane Res. Stn, Perumallapalle. **Type :- 'M'.**

Object :—To study the individual and combined effects of N, P and K on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) Sandy loam. (iii) 1.5.65. (iv) (a) Formation of trenches. (b) Furrow planting (c) 37066 three budded setts/ha. (d) 1 m. between rows. (e) —. (v) 25 Tonnes/ha. of F.Y.M. (vi) CO—419. (vii) Irrigated. (viii) Hoeing, hand weeding twice and trash twist propping once. (ix) 62.52 cm. (x) N.A.

2. TREATMENTS:

All combination of (1), (2) and (3)

(1) 2 levels of N as A/S : N_0=0, N_1=224 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0, P_1=224 Kg/ha.

(3) 2 levels of K_2O as Pol. Sul : K_0=0, K_1=224 Kg/ha.

N as A/S was applied by pocketing in two equal doses at 45th and 90th day after planting. (14.6, 31.7.65). P_2O_5 and K_2O were applied in one dose by pocketing at 45th day after planting (14.6.65).

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 48·0 m.×12·4 m. (iii) 4. (iv) (a) 12·4 m.×6·0 m. (b) 10·0 m.×4·0 m. (v) 1.2 m.×1.0 m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying Endrin 0·02% against Early Shoot borer on 27.5, 8.6, 17.7.65. Attack of Pyrilla was noticed on 4.12.65. (iii) Cane yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) N.A. (vi) Unusual drought during the year. In August 65 there was heavy down pour of nearly 3 times the average. The 1st quarter of 1966 (Jan-Mar) was completely dry. (vii) Nil.

5. RESULTS :

(i) 782.4 Q/ha. (ii) 188.8 Q/ha. (iii) Main effect of N is significant. Main effects of P and K are highly significant. (iv) Av. yield of cane in Q/ha :

	P_0	P_1	K_0	K_1	Mean
N_0	747·7	772·1	778·7	741·1	759·9
N_1	865·8	744.0	934·8	675·0	804·9
Mean	806·8	758·0	856·8	708·0	782.4
K_0	912·4	801·2			
K_1	701·2	714·8			

C.D. for N, P or K marginal means=138.2 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(112).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Tyye :- 'M'.**

Object :—To study the effect of Nitro. Phoska. Green on the yield of Sugarcane planted during Spring.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) G.M. (c) Nil. (ii) Clay loam. (iii) 1st week of January, 1960. (iv) (a) Ploughing with tractor, levelling and formation of furrows and ridges. (b) Planting in rows (end to end). (c) 29652—three budded setts/ha. (d) 91 cm between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, earthing up and propping. (ix) 91 cm. (x) 20.3.61.

2. TREATMENTS :

4 manurial treatments : T_0=Control, T_1=252·2 Kg/ha. of N as A/S, T_2=T_1+56·0 Kg/ha. of P_2O_5 as Super and T_3=252·2 Kg/ha. of N as Nitro .Phoska. Green.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 7·32 m.×7·32 m. (b) 7·32 m×5·49 m. (vi) 91 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Smut. (iii) Yield of Sugarcane. (iv) (a) 1959—60. (b) and (c) No. (v) to to (vii) Nil.

5. RESULTS :

(i) 774 Q/ha. (ii) 262 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	638	649	901	907

Crop :- Sugarcane. **Ref :- A.P. 60(113).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :- To study the effect of Nitro. Phoska. Green on the yield of Sugarcane planted during Autumn.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) G.M. (c) Nil. (ii) Clay loam. (b) (iii) 22.11.60. (iv) (a) Ploughing with tractor, levelling and formation of ridges and furrows. (b) Planted in rows (end to end). (c) 29652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, mulching, earthing up and propping. (ix) 126 cm. (x) 24 and 25.1.62.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 60(112) on page 493.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) Yield of Sugarcane. (iv) (a) 1959-60. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 849·5 Q/ha. (li) 143·0 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane.

Treatment	T_0	T_1	T_2	T_3
Av. yield	387	939	1019	1053

C.D.=228·7 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(111).**

Site :- Reg. Agri. Stn., Rudrur. **Type :- 'M'.**

Object :— To study the effect of Nitro. Phoska. Blue. on the yield of cane planted during Spring.

1. BASAL CONDITIONS :

(i) (a) G.M.-Sugarcane. (b) G.M. Crop. (c) Nil. (ii) Clay loam. (iii) 1st week of January, 1960. (iv) (a) Plouging with tractor, levelling by *patta* and formation of ridges and furrows. (b) Planting in a row (end to end). (c) 29652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii)Irrigated. (viii) Weeding, earthing up and propping. (ix) 91 cm. (x) 20.3.61.

2. TREATMENTS :

4 manurial treatments : T_0=Control, T_1=252·2 Kg/ha. of N as A/S, T_2=T_1+56·0 Kg/ha. of P_2O_5 as Super and T_3=252·2 Kg/ha. of N as Nitro. Phoska. Blue.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 7·3 m.×7·3 m. (b) 7·3 m.×5·5 m. (v) 91 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Smut. (iii) No. of millable cane and yield of cane. (iv) (a) 1959-60. (b) No. (c) Nil. (v) to (vii) Nil.

5 RESULTS :

(i) 719 Q/ha. (ii) 130 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_3	T_2
Av. yield	333	910	711	923

C.D.=207·9 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(114).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :— To study the effect of Nitro. Phoska. Blue. on the yield of Sugarcane planted during Autumn.

1. BASAL CONDITIONS :

(i) (a) G.M.-Sugarcane. (b) G.M.Crop. (c) Nil (ii) Clay loam. (iii) 22.11.60. (iv) (a) Ploughing with tractor, levelling by *Patta* and formation of ridges and furrows. (b) End to end planting in a row. (c) 29652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, mulching, earthing and propping. (ix) 126 cm. (x) 24 and 25.1.62.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 60(111) on page 494.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Millable cane and yield of cane. (iv) (a) 1959-60. (b) No. (c) Nil (v) to (vii) Nil.

5. RESULTS :

(i) 884 Q/ha. (ii) 99 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	386	1013	1033	1106

C.D.=158·3 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 62(156).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object:— To find out the manurial requirement of Eksali crop for optimum yield on the basis of foliar diagnosis.

1. BASAL CONDITIONS:

(i) (a) Sugarcane-G.M. (b) G.M.Crop. (c) N.A. (ii) *Regur*. (iii) 3.2.62. (iv) (a) 2 ploughings with tractor, levelling by *Patta* and formation of ridges and furrows with bullocks. (b) End to end planting in rows. (c) 29653 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, mulching, and earth up whenever needed. (ix) 161 cm. (x) 19 and 20.3.63.

2. TREATMENTS :

2 manurial treatments: T_0=No manure and T_1=252·2 Kg/ha. of N as A/S+224·2 Kg/ha. of P_2O_5 as Super.

P_2O_5 in one dose as basal dressing and N in three doses viz.
(i) 25 Kg/ha. of N at planting, (ii) 112·1 Kg/ha. of N at 45 days after planting and (iii) 112·1 Kg/ha. of N at 90 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 29·3 m.×14·6 m. (iii) 6. (iv) (a) 14·6 m.×7·3 m. (b) 12·8 m.×6·7 m. (v) 91 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) Foliar diagnosis ; yield of cane and millable cane at harvest. (iv) (a) 1960 only. (b) and (c) Nil. (v) Nil. (vi) Distribution of rainfall was not uniform and coupled with occassional high gales which had bad effect on cane yield. (vii) Nil.

5. RESULTS:

(i) 655 Q/ha. (ii) 127·6 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1
Av. yield	611	699

———

Crop :- Sugarcane. **Ref :- A.P. 62(255).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :— To findout the manurial requirement of Eksali crop for optimum yield on the basis of foliar diagnosis.

1. BASAL CONDITIONS :

(i) (a) G.M.-Sugarcane. (b) G.M. Crop (c) N.A. (ii) *Chalka*. (iii) 30.12.62. (iv) (a) Ploughing with tractor, levelling by patta and working ridger. (b) End to end planting in rows. (c) 29653 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 224·2 Kg/ha. of P_2O_5 as Super. (vi) Co-419. (vii) Irrigated. (viii) Mulching, weeding, earthing up. (ix) 166 cm. (x) 23, 24 and 26.12.1963 and 7.1.64.

2. TREATMENTS :

3 manurial treatments : N_0=0 Kg/ha. of N with foliar diagnosis at 120th day, N_1= ½th of the normal manuring of the trial applied at the time of application of 1st dose of N in Control i.e. 62·8 Kg/ha. of N at 45th day after planting). N_2=Control (normal manuring of the trial).

Normal manuring=252·2 Kg/ha. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 27·4 m.×15·2 m. (iii) 6. (iv) (a) 15·2 m.×9·1 m. (b) 11·6 m.×5·5 m. (v) 183 cm.×183 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) Foliar diagnosis, yield of sugarcane and millable cane at harvest. (iv) (a) 1960 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rains in July and Aug. 63 created ill-drained conditions. (vii) Nil.

5. RESULTS :

(i) 1416 Q/ha. (ii) 316·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2
Av. yield	1261	1641	1346

Crop :- Sugarcane. **Ref :- A.P. 61(143), 62(163), 63(159).**

Site :- Reg. Agri. Res. Stn., Radrur. **Type :- 'M'.**

Object :— To compare O.D.D.A; P.E.C. Nitro. Phosphates with A/S and Super on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. Crop.—Sugarcane. (b) G.M. Crop. (c) Nil. (ii) *Regur.* (iii) 16.1.61 ; 12.1.62 ; 16.1.63. (iv) (a) Tractorploughing, *patta* working, making ridges and furrows. (b) End to end planting. (c) 29653 three budded setts/ha. (d) 90 cm. between rows. (e) — (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Weeding, mulching, earthing and propping. (ix) 125 cm. ; 161 cm. ; 166 cm. (x) 5, 6.2.62 ; 6 to 11.2.63 ; 6 to 8.12.63.

2. TREATMENTS :

All combinations of (1), (2) and (3) +4 extra treatments.

(1) 3 types of phosphatic fertilizers : P_1=Super, P_2=O.D.D.A (20-20-0). and P_3=P.E.C (16-14-0).

(2) 3 levels of manures : L_1=53·8 Kg/ha. of N+47·1 Kg/ha. of P_2O_5, L_2=107·6 Kg/ha. of N +94·2 Kg/ha. of P_2O_5 and L_3=215·2 Kg/ha. of N+188·3 Kg/ha. of P_2O_5.

(3) 3 methods of application of manures : M_1=Broadcasting, M_2=6·4 cm. below the setts and M_3=Band placement.

Extra treatments :

4 levels of N as A/S : N_0=0, N_1=53·8, N_2=107·6 and N_3=215·2 Kg/ha.

3. DESIGN :

(i) 3^3 confd. with 4 extra treatments in each block. (ii) (a) 13 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 7·9 m.×5·5 m. (b) 7·3 m.×3·7 m. (v) 30 cm.×90 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Sugarcane (iv) (a) 1961—63. (b) No (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 693·0 Q/ha. (ii) 147·1 Q/ha. (based on 42 d.f. made up of interactions of various components of Treatments with years). (iii) Main effects of P and L and the effect of extra treatments are highly significant. (iv) Av. yield of cane in Q/ha.

N_0=474·0, N_1=616·3, N_2=693·3, N_3=827·7.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
P_1	610·6	722·6	968·6	755·3	792·3	754·3	767·3
P_2	566·6	748·6	873·6	722·0	730·0	737·0	729·6
P_3	554·6	623·6	727·6	631·6	636·6	637·6	635·3
Mean	577·3	698·3	856·6	703·0	719·6	790·6	710·7
M_1	603·6	702·0	803·3				
M_2	572·0	696·6	890·3				
M_3	556·3	696·3	876·3				

C.D. for P or L marginal means=57·1 Q/ha.
C.D. for extra treatment means=99·9 Q/ha.

Indvidual results

Treatments	N_0	N_1	N_2	N_3	Sig.	P_1	P_2	P_3	Sig.
Years									
1961	463·0	587·0	538·0	705·0	*	665·0	656·0	572·0	N.S.
1962	630·0	685·0	889·0	994·0	**	880·0	848·0	778·0	N.S.
1963	329·0	577·0	653·0	784·0	**	757·0	685·0	556·0	**
Pooled	474·0	616·3	693·3	827·7	**	767.3	729·3	635·3	**

L_1	L_2	L_3	Sig.	M_1	M_2	M_3	Sig.	G.M.	S.E./plot
546·0	648·0	699·0	*	601·0	632·0	660·0	N.S.	613·0	125·0
689·0	821·0	997·0	**	803·0	873·0	831·0	N.S.	825·0	97·0
497·0	626·0	874·0	**	705·0	654·0	639·0	N.S.	641·0	13·0
577·3	698·3	856·6	**	703·0	719·6	709·6	N.S.	693·0	147·1

———

Crop :- Sugarcane. **Ref :- A.P. 60(77), 6I(74), 62(85).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To find out the effect of application of N through Urea spray on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane—G.M. Crop – Sugarcane. (b) Sugarcane. (c) 252·2 Kg/ha. of N as A/S. (ii) *Regur.* (iii) 6.11.60 ; 9.11.61 ; 6.11.62. (iv) (a) 4 to 6 ploughings, levelling and making furrows with bullocks. (b) planting in ridges. (c) 29653, three budded setts/ha. (d) 91 cm. between furrows. (e) —. (v) 24·7 C.L./ha. of F.Y.M. + 50·4 Kg/ha. of P_2O_5 as Super at planting as soil application. (vi) Co - 419. (vii) Irrigated. (viii) Mulching, weeding, intercultivation and propping. (ix) N.A. ; 157 cm. ; 185 cm. (x) 10.2.62 ; 7.3.63 ; 8.1.64.

2. TREATMENETS :

4 methods of applicantion of N as Urea : M_1=140·1 Kg/ha. of N as soil application+56·0 Kg/ha. of N as foliar application, M_2=196·1 Kg/ha. of N as soil application, M_3=196·1 Kg/ha. of N as soil application+56·0 Kg/ha. of N as foliar application and M_4=252·2 Kg/ha. of N as soil application.

28 Kg/ha. of N as Urea dissolved in 1123 litres of water and sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 29·3 m×7·3 m. for 60; 16·5 m.×14·6 m. for others. (iii) 6. (iv) (a) 7·3 m.×7·3 m. for 60; 8·2 m.×7·3 for others. (b) 5·5 m.×6·7 for 60; 6·4 m.×6·7 for 61; 6·4 m.×7·3 m. for 62. (v) 91 cm.×30 cm. for 60, 61; 91 cm. along breadth on both sides of plot for 62. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination counts, growth measurements and yieled of cane. (iv) (a) 1960—62. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 746 Q/ha. (ii) 87·9 Q/ha. (based on 51 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	M_1	M_2	M_3	M_4
Av. yield	690	792	723	780

C.D.=58·8 Q/ha.

Individual results

Treatments	M_1	M_2	M_3	M_4	Sig.	G.M.	S.E./plot
Years							
1960	1024	1085	1031	1064	N.S.	1051	86·0
1961	547	637	599	655	*	610	66·0
1962	498	653	539	620	N S.	578	114·0
Pooled	690	792	723	780	**	746	87·9

Crop :- Sugarcane. **Ref. :- A.P. 61(75), 62(83), 63(94).**

Site : Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object—To find out the effect of G.M. on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-fallow—Sugarcane. (b) fallow for 63 and Sugarcane for others. (c) Nil for 63 and 252.2 Kg/ha of N as A/S for others. (ii) *Chalka*. (iii) 10.11.61; 16.11.62; 19.11.63. (iv) One ploughing with tractor, 4 to 5 mould board ploughings, levelling and making furrows. (b) planting in furrows. (c) 29653 3 budded setts/ha. (d) 91 between furrows. (e) —. (v) Nil in 61; 50.4 Kg/ha. of P_2O_5 as Super in 62; 24·7 C.L./ha. of F. Y. M.+50·4 Kg/ha. of P_2O_5 as Super in 63. (vi) CO—419. (vii) Irrigated. (viii) Mulching, weeding, intercultivation, earthing up and propping. (ix) 157 cm; 185 cm; 90 cm. (x) 2.3.63; 1.7.64; 21.1.95.

2. TREATMENTS :

7 manurial treatments : To=control, T_1=168·1 Kg/ha. of N as A/S, T_2=252.2 Kg/ha. of N as A/S, T_3=56.0 Kg/ha. of N as G.M.+112.1 Kg/ha. of N as A/S, T_4=56.0 Kg/ha. of N as G.M.+196.1 Kg/ha. of N as A/S, T_5=112.1 Kg/ha. of N as G.M.+56.0 Kg/ha. of N as A/S and T_6=112.1 Kg/ha. of N as G.M.+140.1 Kg/ha. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 89.61 m.×7.32 m. (iii) 4. (iv) (a) 12·8 m.×7·3 m. (b) 11·0 m.×6.7 m. (v) 91 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Normal for '62 and good for others. (ii) Early Shoot borer infestation, Endrin sprayed in '62; nil for others. (iii) Germination counts, shoot population, growth measurements, yield of cane. (iv) 1961—contd. (b) No. (c) Nil. (v) Nil. (vi) Nil. (vii) Expt. is contd. beyond 65, hence results of individual years are presented under 5. Results. Expts. for 64 and 65—N.A.

5. RESULTS :

61(75)

(i) 1020 Q/ha. (ii) 183.0 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	743	1007	1219	999	1199	853	1123

C.D.=192,2 Q/ha.

62(83)

(i) 791 Q/ha. (ii) 130·0 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	508	812	929	880	724	812	870

C.D.=136·6 Q/ha.

63(94)

(i) 1066 Q/ha. (ii) 142.7 Q/ha. (iii) Treatment differences are highly Significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	637	1127	979	1219	1356	902	1241

C.D.=150.0 Q/ha.

Crop :- Sugarcane. **Ref. :- A.P. 64(90), 65(198)**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type 'M'.**

Object—To study the effect of higher doses and early application of N fertilizers on the tillering and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane. (b) G.M. crop. (c) Nil. (ii) *Regur.* (iii) 31.7.64; N.A. (iv) (a) Ploughing with tractor, making ridges and furrows. (b) Planting in furrows. (c) 30,000 three budded setts/ha. (d) 107 cm between rows; 90 cm. between rows. (e) —. (v) 220 Kg/ha. of P_2O_5 as Super at planting. (vi) CO—775. (vii) Irrigated. (viii) Mulching, weeding, earthing up and propping. (ix) 158 cm; N.A. (x) 7.1.66; N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_1=350, N_2=400 and N_3=450 Kg/ha.

(2) 3 times of application : T_1=In four split doses : on the date of planting, 40th, 80th and 120th day after planting. T_2=In four split doses : on the date of planting, 50th, 100th and 150th day after planting. T_3=In four split doses : On the date of planting, 60th, 120th and 180th day after planting (Normal time of application).

3. DESIGN :

(i) Fact is R.B.D. (ii) (a) 9. (b) 12·0 m.×90·6 m. (iii) 3. (iv) (a) 12·0 m.×10·7 m. (b) 11·0 m.×8·6 m. (v) 50 cm.×107 cm. (vi) Yes.

4. GENERAL :

(i) Normal in '64 and not satisfactory in 65. (ii) Nil in 64 and incidence of Early Shoot borer in 65. (iii) yield of cane. (iv) (a) 1964-65. (b) No. (c) Nil. (v) Nil. (vi) Nil for 64 and drought in 65. (vii) In 1965. irrigations from Nov. 65 on wards could not be given as per schedule due to intermittent canal closure. The irrigations in general were most inadequate. Since the raw data and S.E./plot are not available for 65, the results individual years are presented under 5. Results.

5. RESULTS :

64(90)

(i) 1461 Q/ha. (ii) 66.6 Q/ha. (iii) Main effect of N is significant. Interaction T×N is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	T_1	T_2	T_3	Mean
N_1	1379	1533	1629	1514
N_2	1341	1525	1456	1443
N_3	1551	1349	1376	1425
Mean	1426	1469	1487	1461

C.D. for N marginal means =47.1 Q/ha.
C.D. for the body of T×N table=81.6 Q/ha.

65(198)

(i) 319·7 Q/ha. (ii) N.A. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	T_1	T_2	T_3	Mean
N_1	318·0	387·6	323·5	343·0
N_2	287·2	383·4	313·1	327·9
N_3	283·4	234·1	347·4	288·3
Mean	296·2	335·0	328·0	319·7

Crop :- Sugarcane. **Ref :- A.P. 61(76), 62(84), 63(95).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object : — To find ont the effect of G.M. on the yield and quality of Sugarcane in Regur soils.

1. BASAL CONDITIONS :

(i) (a) Sugarcane Fallow-Sugarcane. (b) Sugarcane. (c) 280·2 Kg/ha. of N as A/S. (ii) *Regur*. (iii) 31.10.61 ; 20.11.62 ; 23.11.63. (iv) (a) One ploughing with tractor, 4 to 5 ploughings with mould board plough, levelling and making furrows. (b) Planting in furrows. (c) 29653 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 50·4 Kg/ha. of P_2O_5 as Super at planting. (vi) Co-419 (eksali). (vii) Irrigated. (viii) Mulching, weeding, intercultivation, earthing up and propping. (ix) 157 cm. ; 185 cm. ; 90 cm (x) 5.3.63 ; 27.1.64 ; 11.1.65.

2. TREATMENTS :

7 manurial treatments : T_0=Control, T_1=168·1 Kg/ha. of N as A/S, T_2=252·2 Kg/ha. of N as A/S, T_3=56·0 Kg/ha. of N as G.M.+112·1 Kg/ha. of N as A/S, T_4=56·0 Kg/ha. of N as G.M.+196·1 Kg/ha. of N as A/S, T_5=112·1 Kg/ha. of N as G.M.+56·0 Kg/ha. of N as A/S and T_6=112·1 Kg/ha. of N as G.M.+140·1 Kg/ha. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 12·8 m.×7·3 m. (b) 11·0 m.×6·7 m. (v) 91 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil for 63 : Internodal worm, Early Shoot borer for others. (iii) Germination counts, growth measurements, and yield of Sugarcane. (iv) (a) 1961-63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 718 Q/ha. (ii) 186·9 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treament	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	372	757	832	761	841	687	777

C.D.=166·3 Q/ha.

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig.	G.M.	S.E./plot
Years										
1961	463	842	919	800	880	640	789	**	762	80
1962	258	601	636	543	612	424	485	**	508	113
1963	396	829	940	942	1032	998	1058	**	885	123
Pooled	372	757	832	761	841	687	777	**	718	187

Crop :- Sugarcane. **Ref :- A.P. 63(72), 64(89), 65(197).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object : —To study the requirement of green leaf and green manure for Adsali Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.Crop-Sugarcane. (b) G.M. Crop. (c) Nil. (ii) *Regur*. (iii) 17.6.63 and 17.8.63; 17.6.64 and 17.8.64. June and Aug., 65. (iv) (a) Ploughing with tractor, making ridges and furrows. (b) Planting in furrows.(c) 30,000 three budded setts/ha. (d) 90 cm. between furrows. (e) —. (v) 395·4 Kg/ha. of N as A/S+222·4 Kg/ha. of P_2O_5 Super. (vi) Co-419. (vii) Irrigated. (viii) Hoeing, weeding and propping. (ix) 215 cm. 152 cm. ; N.A (x) 7.12.64 ; 13.11.65 ; Nov. 66.

2. TREATMENTS:

6 manurial treatments : T_1=Planting in June with out G.M., T_2=Planting in June with 5650 Kg/ha. of G.M., T_3=Planting in June with G.M. crop sown in the situ parellel to the cane rows and incorporated after two months with 5650 Kg/ha. of G.M., T_4=Planting in August with out G.M., T_5=Planting in August with 5650 Kg/ha. of green leaf T_6=Planting in August with G.M. crop sown in the situ parallel to the cane rows and incorporated after two months with 5650 Kg/ha. of G.M.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) 54·9 m.×9·6 m.; N.A.; 54·9 m.×9·6 m. (iii) 6. (iv) (a) 9·6. m.×9·2 m. (b) 7·5 m.×8·2 m. (v) 105 cm.×50 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination, cane yield, sucrose percentage at harvest (iv) (a) 1963-65. (b) No. (c) As under 5. Results. (v) No. (vi) Nil in 1963 and 64 ; Drought in 1965. (vii) Irrigations from Nov. 65 onwards could not be given as per schedule due to intermittent closure of canal. The irrigation in general was most indequate. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS:

Pooled results

(i) 1284 Q/ha. (ii) 254·0 Q/ha. (based on 10 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1219	1334	1334	1223	1254	1342

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Sig.	G.M.	S.E./plot
Years										
1963	1764	1941	1913	1631	1629	1737		N.S.	1769	203
1964	1186	1347	1287	1375	1351	1500		**	1341	107
1965	706	713	804	663	781	789		N.S.	743	139
Pooled	1219	1334	1334	1223	1254	1342		N.S.	1284	254

Crop :- Sugarcane. **Ref :- A.P. 63(147). 64(88), 65(199).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object : To study the N, P and K requirements of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane-Fallow-Sugarcane for 64; G.M. Crop-Sugarcane for others. (b) Fallow for 64 ; G.M. Crop for others. (c) Nil. (ii) Regur. (iii) 20.7.63 ; 22.7.64 ; N.A. (iv) (a) Ploughings with tractor, levelling and making of furrows and ridges. (b) Planting in furrows. (c) 29653 threebudded setts/ha. (d) 90 cm. between rows for 65 and 107 cm. between rows for others. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Hoeing, weeding, mulching, earthing up and propping. (ix) 192 cm. ; 158 cm. ; N.A. (x) 22 to 30.11.64 ; 2.1.66 ; Dec. 66.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 4 levels of N as A/S : N_0=0, N_1=198, N_2=395 and N_3=593 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=345·9 Kg/ha.

(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=345·9 Kg/ha.

3. DESIGN :

(i) Fact in R.B.D. for 63 and 4×2^2 balanced confd. for 64, 65. (ii) (a) 16 for 63 ; 8 plots/block and 2 block/replication for others. (b) N.A. for 63 ; 42·8 m.×200 m. for others. (iii) 3. (iv) (a) 12·8 m.×100 m. for 63 ;10 m.×10·7 m. for others. (b) 10·7 m.×8·0 m. for 63 ; 9 m.×8·6 m. for others. (v) 107 cm.×190 cm. for 63 ; 107 cm.×50 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory in 63 ; normal in 64 ; not satisfactory in 65. (ii) Incidence of Early Shoot borer in 63 ; Nil in 64 ; Heavy incidence of White Fly, Mealy Bug and Wilt disease in 65. (iii) Sugarcane yield. (iv) (a) 1963-65. (b) No. (c) As under 5. Results. (v) Nil. (vi) Drought in 65 ; Nil for others. (vii) In 1965 irrigations from Nov. 65 onwards could not be given as per schedule due to intermittent canal closure. The expt. in 1963 was laid out in different design than the other years 1964 and 65. therefore, the results of 1964 and 65 were only combined and presented under 5. Results. Error variances are heterogeneous and Treatment×years interaction is present.

5. RESULTS :

63(147)

(i) 1664 Q/ha. (ii) 178·5 Q/ha. (iii) Main effect of N, P and K are highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	P_0	P_1	Mean
K_0	876	1630	2006	1864	1484	1704	1594
K_1	1084	1635	2035	2183	1636	1833	1734
Mean	980	1632	2020	2024	1560	1768	1664
P_0	865	1406	1963	1926			
P_1	1095	1779	2078	2121			

C.D. for N marginal means =105·2 Q/ha.
C.D. for P or K marginal means=74·3 Q/ha.

64(88) and 65(199)

Pooled results

(i) 907 Q/ha. (ii) 547·4 Q/ha. (iii) Main effects of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_0	N_1	N_2	N_3	K_0	K_1	Mean
P_0	445	864	955	1160	833	879	856
P_1	449	1122	1181	1080	918	998	958
Mean	447	993	1068	1120	876	938	907
K_0	429	963	1028	1084			
K_1	465	1023	1108	1156			

C.D. for N marginal means=344·3 Q/ha.

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	N_0	N_1	N_2	N_3	Sig.	P_0	P_1	Sig.	K_0	K_1	Sig.	G.M.	S.E./plot
Years													
1964	564	1423	1614	1705	**	1287	1366	**	1270	1384	**	1327	29
1965	330	564	522	536	**	425	551	**	482	494	N.S.	488	148
Pooled	447	993	1068	1120	**	856	958	N.S.	876	938	N.S.	907	547·4

Crop :- Sugarcane. **Ref :- A.P. 60(79).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Object :—To study the effec of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Loamy. (iii) Ist week of Feb., 60. (iv) (a) Forming deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) — (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Hoeing in trenches, digging of drains, 2 weedings, 2 earthing up and trash twist propping 2 times (ix) 34 cm. (x) Last week of Feb., 61.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S : N_0=0, N_1=150 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_0=0, P_1=100 Kg/ha.
(3) 2 levels of K_2O as Mur. Pot. : K_0=0, K_1=100 Kg/ha.

Manures were applied in June.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 12·1 m.×10·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×201cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 716 Q/ha. (ii) 119·4 Q/ha. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of Sugarcane in Q/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	568	533	573	564	550
N_1	963	801	871	893	882
Mean	766	667	704	729	716
K_0	718	690			
K_1	813	645			

C.D. for N or P marginal means=87·8 Q/ha.

— — —

Crop :- Sugarcane. **Ref :- A.P. 62(97).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Object :- To study the effect of different nitrogeneous fertilizers on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N A. (ii) Sandy loam. (iii) 28.12.62. (iv) (a) Forming trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Hoeing in trenches once, 3 weedings, levelling trenches twice, earthing up once and trash twist propping twice. (ix) 106 cm. (x) 4.3.64.

2. TREATMENTS :

4 sources of N at 168·1 Kg/ha. : S_1=A/S, S_2=A/S/N, S_3=C/A/N and S_4=Urea.
Fertilizers were applied by pocketing all in one dose on 15.6.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12·1 m. × 10·1 m. (b) 10·1 m. × 6·0 m (v) 100 cm. × 201 cm (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) Nil. (vi) Heavy floods in the last week of Sept. and 1st week of Oct. 63. (vi) Nil.

5. RESULTS :

(i) 828 Q/ha. (ii) 144·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	867	849	741	855

— — — —

Crop :- Sugarcane. **Ref. :- A.P. 65(26).**

Site :- Sugarcane Liaison Farm, Samalkot **Type :- 'M'.**

Object – To study the possibility of improving cane yield without effecting the quality of early maturing variety CO—997 by applying an increased dose of 55.60 Kg/ha. of N over the recommended dose ie a total of 222.40 Kg/ha. of N. The application of this, fertilizer as A/S in two equal doses at planting and in June also studied.

1 BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 12.2.65. (iv) (a) Forming deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO 997. (vii) Irrigated. (viii) Levelling and earthing up and trash twist propping on 5·8·65; 16·9 65 and 3·11·65· (ix) 86·5 cm. (x) 28.2.66 to 11.3.66.

2. TREATMENTS :

5 manurial treatments : T_0=166.8 Kg/ha. of N as A/S in two equal doses at 45th day and in June (control) T_1=222·4 Kg/ha. of N as A/S on N basis in two equal doses at 45th day after planting and in June, T_2=222·4 Kg/ha. of N in two equal doses, Ist dose of N as Ammo. Phos. on N basis at planting and the IInd dose as A/S in June, T_3=222·4 Kg/ha. of N in two equal doses as Ammo. Phos. on N basis at 45th day after planting and in June and T_4=222.4 Kg/ha. of N as A/S in two equal doses at 45th day after planting and in June plus P_2O_5 to the extent of treatment, T_5 as Super in June.

Time of application of fertilizers : 11.4.65 and 4.6.65.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 12 m.× 10 m. (iii) 4. (iv) (a) 12 m.× 10 m. (b) 10 m.×6 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vi) Nil.

5. RESULTS:

(i) 1169 Q/ha. (ii) 57.9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield.	1228	1111	1178	1140	1186

Crop :- Sugarcane. **Ref :- A.P. 60(103).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Object :—To study the effect of different levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy – Sugarcane. (b) Paddy. (c) N.A. (ii) Heavy clay. (iii) 15.2.60. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Hoeing in trenches, digging of drains, weedings, 2 times earthing up and 2 times trash twist propping (ix) 34 cm. (x) 15.2.61.

2. TREATMENTS :

4 levels of N as A/S : N_0=0, N_1=112·1, N_2=168·1 and N_3=224·2 Kg/ha.
N applied in one dose in June.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12·1 m.×10·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×201 cm. (vi) Yes.

4 GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination counts on 35th day ; height counts from July to Nov. ; juice quality from Dec. to harvest ; yield and population at harvest. (iv) (a) No, (b) and (c) Nil. (v) to (vi) Nil.

5. RESULTS :

(i) 785 Q/ha. (ii) and (iii) N.A. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2	N_3
Av. yield	521	665	961	994

Crop :- Sugarcane. **Ref :- A.P. 62(95), 64(81).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Object :—To study the scope of reducing the dose of N by supplementing part of it by the application of G L. to Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N A. (ii) Clay loam. (iii) 27.12.62 ; 6.2.64. (iv) (a) Forming deep trenches 40 cm. width and 20 cm. depth. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. for 62; As per treatments for 64. (vi) Co—419. (vi) Irrigated. (viii) 3 hoeings, levelling, digging, earthing up, 6 weedings and trash twisting. (ix) 106 cm ; 115 cm. (x) 20.3.64 ; last week of January 1965.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N_1=112·1 and N_2=168·1 Kg/ha.

(2) 2 levels of G.L. : G_0=0, and G_1=5604 Kg/ha.

G.M. (Sesbania) applied on 23.6.64 and N applied in two equal doses on 45 and 90 days after planting for 64.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 62 , good for 64 (ii) Nil. (iii) Germination counts, height measurements, Juice quality and cane yield. (iv) (a) 1962—64 (1963—N.A.) (b) No. (c) As under 5. Results. (v) N.A. (vi) Heavy flood in the last week of Sept and 1st week of Oct., 63 for 62 ; Nil for 64. (vii) Error variances are homogeneous and Treatment×years interaction is absent.

5. RESULTS :

Pooled results

(i) 898 Q/ha. (ii) 105·4 Q/ha. (based on 33 d.f. made up of Treatments×years interaction and pooled error). (iii) Main effect of N alone is highly significant (iv) Av. yield of Sugarcane in Q/ha.

	G_0	G_1	Mean
N_1	867	845	856
N_2	937	945	941
Mean	902	895	898

C.D. for N marginal means=61·9 Q/ha.

Individual results

Av. yield of Sugarcane :

Treatments	N_1	N_2	Sig.	G_0	G_1	Sig.	G.M.	S.E./plot
Years								
1962	746	810	N S.	792	764	N.S.	778	117
1964	966	1071	**	1010	1063	N.S.	1018	91
Pooled	856	941	**	902	895	N.S.	898	105

Crop :- Sugarcane. **Ref :- A.P. 61(81), 62(99), 62(96).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Oject : –To study the effect of N, P and K on the yieled of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 12.2.61 ; 26.1.62 ; 29.12.62. (iv) (a) Forming deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co–419. (vii) Irrigated. (viii) Gap filling, hoeing, levelling, weeding earthing up, trash twist propping. (ix) 108 cm. for 61; 128 cm. for 62(99) ; 106 cm. for 62(96). (x) 14.3.62 ; 18, 19, 20, 21, 22, 23.1.63 ; 13.3.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=168{\cdot}1$ and $N_2=252{\cdot}2$ Kg/ha.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=112{\cdot}1$ Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : $K_0=0$ and $K_1=112{\cdot}1$ Kg/ha.

N applied in one dose on 22.6.61 for 61.
P and K applied at planting by soil application.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100 cm.×201 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 62(99), normal for others. (ii) Slight incidence of Early Shoot borer for 62 and controlled by spraying Endrin; Nil for others. (iii) Germination counts, height measurements, juice quality, stalk population and cane yield. (iv) (a) 1961–63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Drought conditions prevailed during early June 1961 and heavy flood during last week of September and 1st week of October 1963. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 683 Q/ha. (ii) 177 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	327	849	875	700	667	683
P_1	328	812	908	682	684	683
Mean	328	831	891	691	676	683
K_0	331	847	895			
K_1	324	814	889			

C.D for marginal means=87·7 Q/ha.

Individual results:

Av. yield of Sugarcane in Q/ha.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	Sig.	K_0	K_1
Years									
61(81)	431	1080	1177	**	884	908	N.S.	906	886
62(99)	259	591	707	**	522	516	N.S.	544	494
62(96)	293	821	791	**	645	625	N.S.	623	647
Pooled	328	831	891	**	683	683	N.S.	691	676

Sig.	G.M.	S.E./plot
N.S.	897	122
N.S.	519	94
N.S.	635	150
N.S.	683	177

Crop :- Sugarcane. **Ref :- A.P. 62(98), 64(80).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'M'.**

Object :—To study the effect of different nitrogeneous fertilizers on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N A. (ii) Clay loam. (iii) 21.1.62, 6.2.64. (iv) (a) Forming deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) . (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Hoeing in trenches after planting, covering of the exposed setts, weedings, levelling, earthing up once and trash twist propping. (ix) 128 cm. for 62, 15 cm. for 64. (x) 23.1.63 to 1.2.63 ; 1st week of March 65.

2. TREATMENTS :

Same as in expt. 62(97) on page 506.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Early Shoot borer, spraying of Endrin was done. (iii) Germination counts, height measurements, juice quality, yield of Sugarcane. (iv) (a) 1962—64 (1963 — N.A.) (b) No. (c) As under 5. Results. (v) No. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 829 Q/ha. (ii) 182·3 Q/ha. (based on 3 d.f. made up of Treatment × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	868	839	798	809

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	S_1	S_2	S_3	S_4	Sig.	G.M.	S.E./plot
Years							
1962	909	838	719	829	N.S.	824	111·5
1964	827	840	878	789	N.S.	834	101·6
Pooled	868	839	798	809	N S.	829	182·3

Crop :- Sugarcane. **Ref :- A.P. 64(142).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :— To study the effect of additional application of N over normal dose late in July on cane yield and juice quality.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 33 6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 1 and 2.2.64. (iv)(a)Formation of trenches of 40cm. width and 20 cm. depth with a spacing of 100cm. apart and loosening of soil to 10 cm. deep. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-997. (vii) Irrigated. (viii) 3 weedings, earthing up twice and trast twist propping twice. (ix) 94·1 cm. (x) 20.12.64.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of additional dose of N during 1st week of July (over 168 Kg/ha. applied in two equal doses at 0 and 60 days after planting) : N_1=28 and N_2=56 Kg/ha.

(2) 2 methods of application : M_1=Soil application by pocketing and M_2=Foliar application by spraying spray fluid of 112 Kg/ha. Spray application of 65 Kg/ha. of N will be done in two doses at weekly intervals.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 72 m. × 40 m. (iii) 5. (iv) (a) 12 m. × 8 m. (b) 12 m. × 6 m. (v) 100 cm. on both sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging due to rains in Nov. (ii) Nil. (iii) Height measurement from July to Dec., arrow counts in Dec . juice quality from Nov. to harvest ; stalk population, cane yield at harvest. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1078 Q/ha. (ii) 75·0 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	M_1	M_2	Mean
N_1	1109	1053	1081
N_2	1076	1074	1075
Mean	1093	1063	1078

Crop :- Sugarcane. **Ref :- A.P. 60(68).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :— To study the effect of P on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 1.2.60. (iv) (a) Forming trenches of 40 cm. width and 60 cm. spacing and loosening the soil to 10 cm. with crowbar. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm between rows (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Weeding, hoeing, 2 earthing up, trash twist propping two times. (ix) 153 cm. (x) 12.3.61.

2. TREATMENTS :

4 levels of P_2O_5 as Super : P_0=0, P_1=28·0 and P_2=56·0 and T_3=112·1 Kg/ha.
P_2O_5 applied 60 days after planting by placement. 168·1 Kg/ha. of N applied in two equal doses at 30 and 60 days after planting by placement in soil in all the treatments.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 485·5 sq. m. (iii) 4. (iv) (a) 121·4 sq. m. (b) 72·8 sq. m. (v) Two lines on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Two times spraying of 0·02% Endrin as a preventive against Early Shoot borer in March. Smut attack noticed ; affeted canes were roguedout and destroyed. (iii) Cane yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 951·0 Q/ha. (ii) 93·6 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	P_0	P_1	P_2	P_3
Av. yield	929·3	967·5	958·2	949·0

Crop :- Sugarcane. **Ref :- A.P. 60(50).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :— To study whether N as A/S can be saved by application of G.M.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) Nil. (ii) Clay loam. (iii) 3.2.60. (iv) (a) Loosening of field up to 10 cm. depth, preparation of trenches with crow bar. (b) Planting in trenches. (c) 37066 three budded setts/ha. (d) 100 cm.×100 cm. (e) — (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) 1 hoeing and 4 weedings. (ix) and (x) N.A.

2. TREMENTS :

2 manurial treatments: T_1=148·1 Kg/ha. of N and T_2=112·1 Kg/ha. of N+5604 Kg/ha. of G.L. N applied as A/S in two equal doses on 4.3.60 and 1.4.60 and G.L. applied at the time of levelling.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 2913·1 sq. m. (iii) 12. (iv) (a) 121·4 sq. m. (b) 60·7 sq. m. (v) 60·7 sq. m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1958-60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1110·6 Q/ha. (ii) 117·0 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2
Av. yield	1120·1	1101·2

Crop :- Sugarcane. **Ref :- A.P. 61(66).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object : --To study the efficacy of application of nitrogenous fertilizers by different methods.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 10.2.61. (iv) (a) Forming of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Removing rotten setts and hoeing, 2 times weeding and hoeing, 2 times earthing up, 2 times trash twist propping. (ix) 181 cm. (x) 6.2.62.

2. TREATMENTS :

4 manurial treatments: T_1=168·1 Kg/ha. of N applied by placement in two equal doses on 30th and 60th day after planting, T_2=168·1 Kg/ha. of N applied by broadcasting in two equal doses on 30th and 60th day after planting, T_3=84·0 Kg/ha. of N as soil application by placement on 30th day and 280 Kg/ha. of N as foliar spray on foliage 60 days after planting and T_4=28·0 Kg/ha of N as foliar spray on 30th day and 84·0 Kg/ha. of N to soil 60 days after planting.

N applied as A/S by placement in pockets 8 cm. deep.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Hairy Cater-pillar in March 61. Sprayed Endrin on 18.3.61. (iii) Cane yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rains to the tune of 195·1 mm. on 4 rainy days in Feb. 61 during 1st fortnight. (vii) Nil.

5. RESULTS :

(i) 963·1 Q/ha. (ii) 101·7 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1059·6	993·1	913·8	885·8

C.D.=125·1 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(135).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To ditermine deficiency in nitrogenous manuring to Sugarcane with special reference to foliar applications of N.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 25.1.63. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. × 100 cm. (e) —. (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) 2 weedings, 2 earthing up, trash twist propping twice. (ix) 112 cm. (x) 15.2.64.

2. TREATMENTS :

N_0=N0 nitrogen till foliar diagnosis on 120th day when deficiency to make up 168 Kg./ha. of N was made, N_1=1/4th normal nitrogen manuring of the tract (Normal manuring 168 Kg/ha of N) applied at the time of application of 1st dose of N in Control (Date of application : 25.2.63) and N_2=Control : Normal manuring of the tract in two equal doses on 30th and 60th day after planting (Dates of application : 25.2.63 and 28 3.63).

3. DESIGN

(i) R.B.D. (ii) (a) 3. (b) 36·2 m. × 8·1 m. (iii) 6. (iv) (a) 12·1 m. × 8·1 m. (b) 10·6 m. × 6·0 m. (v) 100 cm. × 100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1160 Q/ha. (ii) 62·0 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2
Av. yield	1141	1107	1232

C.D.=79·7 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 65(106).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To study the possibility of improving the cane yield without effecting the quality of early maturing variety Co—997 by applying 225 Kg/ha. of N as Ammo. Phos.

1. BASAL CONDITIONS:

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 9.2.65. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) As per treatments. (vi) Co—997. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 19.12.65.

2. TREATMENTS :

6 manurial treatments : T_0=168 Kg/ha. of N as A/S in two equal doses at 30 and 60 days after planting (control), T_1=168 Kg/ha. of N as Ammo. Phos. in two equal doses at 30 and 60 days after planting, T_2=225 Kg/ha. of N as A/S in two equal doses at 30 and 120 days after planting, T_3=225 Kg/ha. of N in two equal doses 1st dose as Ammo. Phos. at 30th day and the 2nd as A/S at 120th day, T_4=225 Kg/ha. of N as Ammo. Phos. in two equal doses at 30 and 120 days after planting and T_5=111 Kg/ha. of N as A/S+111 Kg/ha. of P_2O_5 as Super at 30th day and 111 Kg/ha. of N as A/S at 120th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 12 m.×48 m. (iii) 4. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1965--67. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1056·1 Q/ha. (ii) 109·2 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	948·6	999·5	1058·6	1119·6	1064·3	1145·8

Crop :- Sugarcane. **Ref :- A.P. 60(66).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To study whether a part of the nitrogenous manure can be fed through foliar spray for more efficient utilization of applied N.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 4.2.60. (iv) (a) Forming trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Hoeing, 3 weedings, covering of the setts once, 2 times earthing up and trash twist propping 2 times. (ix) 153 cm. (x) 28.2.61.

2. TREATMENTS :

8 manurial treatments : T_1=168 Kg/ha. of N in one dose to soil on 45th day, T_2=168 Kg/ha. of N in two equal doses to soil on 45th and 90th day, T_3=84·0 Kg/ha. of N to soil on 45th and 90th day, T_4=168·1 Kg/ha. of N to soil in three equal doses at 45th, 90th day and in June, T_5=56·6 Kg/ha. of N to soil on 45 day and 90th day and 56·0 Kg/ha. of N to foliage in two equal doses in June, T_6=56·0 Kg/ha. of N to soil on 45th day, 56·0 Kg/ha. of N to foilage on 90th day and 56·0 Kg/ha. of N to soil in June, T_7=56·0 Kg/ha. of N to soil on 45th day, 56·0 Kg/ha. of N to foilage on 90th day and 56·0 Kg/ha of N to foilage in June in two equal doses and T_8=56·0 Kg/ha. of N to foilage on 45th day, 56·0 Kg/ha. of N to foilage on 90th day and 56·0 Kg/ha. of N to foilage in June.

N.B: spraying was done in two equal doses to reduce scorching effect. Source of N Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 679·7 sq. m. (iii) 3. (iv) (a) 85·0 sq. m. (b) 60·7 sq. m. (v) One line on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Germination very good, growth satisfactory. (ii) Negligible attack of Dead heart and Smut. Smut effected canes were rogued out and destroyed. Spraying of 0.02% Endrin twice as a preventive against Early Shoot borer. (iii) Cane yield. (iv) (a) 1960 only (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1074·7 Q/ha. (ii) 93·4 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1184·4	1121·3	1215·5	1159·9	1051·4	1011·4	937·8	915·8

C.D.=124·6 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(49).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To defermine the optimum dose of N required for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 6.2.60. (iv) (a) Preparation of trenches (b) Planting in trenches. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) . (v) Nil. (vi) Co-527. (vii) Irrigated. (viii) Hoeing and weeding 18.2.60 ; weeding on 12 and 24.3.60, 9.4.60 and partial earthing on 16.5.60 ; gapfilling. (ix) N.A. (x) 17.3.61.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
N applied by placement in the soil in two equal doses on 6.3.60 and 5.4.60 respectively.

3. DESIGN :

(i) L.Sq. (ii) (a) 5. (b) 3030 sq. m. (iii) 5. (iv) (a) 12·2 sq. m. (b) 60·6 sq. m. (v) 60·6 sq.m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Negligible attack of Dead heart disease. Spraying of Endrin 0·02% twice; 1st one in the 1st week of March and the 2nd after 15 days. (iii) Yield of Cane. (iv) (a) 1958—60 (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 912·6 Q/ha. (ii) 113·1 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	483·0	804·5	1013·7	1174·6	1087·2

C.D.=151·7 Q/ha

Crop :- Sugarcane. **Ref :- A.P. 60(67).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object: —To find out the optimum time of application of concentrate manures to Sugarcane in this tract.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 4 and 5.2.60. (iv) Forming trenches of 40 cm. width and 60 cm. spacing; loosening of soil to 10 cm. with crow bar. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) One time hoeing and covering the setts, 2 weedings, 2 times earthing up and 2 times trash twist propping. (ix) 153 cm. (x) 16.3.61.

2. TREATMENTS :

Same as in Expt. no. 60(69), 61(63), 62(140) on page 526.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 121·2 sq. m. (b) 60·6 sq. m. (v) 60·6 sq. m. (vi) Yes.

4. GENERAL

(i) Good. (ii) Negligible attack of Dead heart; Smut attack. Smut effected canes were rogued out and destroyed. Endrin (0·02%) sprayed on 8, 18 and 19.3.60. (iii) Yield of cane. (iv) (a) 1958-1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 996.9 Q/ha. (ii) 121.6 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	997.8	1040.5	969.4	960.6	1016.2

———

Crop :- Sugarcane. **Ref. :- A.P. 65(103).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To study the response of CO-997 to additional application of N in July.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 7.2.65. (iv) (a) Trenching and loosening of soil. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 84 Kg/ha. of N as A/S on 30th and 60th day after planting. (vi) CO-997. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 27.12.65.

2. TREATMENTS :

5 additional application of N as A/S : T_0=0, T_1=28 Kg/ha. to soil, T_2=55 Kg/ha. to soil, T_3=28 Kg/ha. through foliage (with 455 litres/ha. of water), T_4=55 Kg/ha. applied through foliage.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Stalk population, % sucrose and cane yield. (iv) (a) 1965 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1254·0 Q/ha. (ii) 146·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1322·0	1254·6	1247·2	1207·4	1238·9

———

Crop :- Sugarcane. **Ref. :- A.P. 64(143), 65(109).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object : To study the foliar diagnosis of N and application of corrective doses based on leaf analysis.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 3.2.64; 4.2.65. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 101 cm. between rows. (e) —. (v) As per treatments. (vi) CO—419. (vii) Irrigated. (viii) 1 to 2 weedings, hoeing, earthing up and trash twist propping. (ix) Nil. (x) March 65; 4.3.66.

2. TREATMENTS :

5 levels of N: N_1=No N upto 90th day but corrected dose of 152 Kg/ha. of N applied at 90th day, N_2=No N upto 120th day but corrected dose of 122 Kg/ha. of N applied on 120th day, N_3=42 Kg/ha. of N applied on 30th day and corrected dose of 75 Kg/ha. of N on 90th day, N_4=42 Kg/ha. of N applied at 30th day and corrected dose of 75 Kg/ha. of N applied on 120th day and N_5=168 Kg/ha. of N in two equal doses at 30 and 60 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4 GENERAL :

(i) Satisfactory for 64 and good for 65. (ii) Folidol spraying against Catter-pillar, Rust damaging the young sproutes, for 64 and nil for 65. (iii) Yield of Sugarcane. (iv) (a) 1964-1966. (b) No. (c) Nil. (v) No. (vi) Nil. (vii) Expt. was conducted beyond 1965 hence the results of individual years are presented under 5. Results.

5. RESULTS :

64(143)

(i) 1045·3 Q/ha. (ii) 77·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_1	N_2	N_3	N_4	N_5
Av. yield	1055·9	1029·5	1029·1	1036·2	1076·0

65(109)

(i) 910.8 Q/ha. (ii) 144.1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_1	N_2	N_3	N_4	N_5
Av. yield	1009·3	831·2	859·0	856·7	997·7

Crop :- Sugarcane. **Ref :- A.P. 63(132), 64(140), 65(104).**

Site :- Sugarcane Liaison Farm, Tanuku. Type :- 'M'..

Object : —To find out the effect of the different sources of N on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 23.1.63 ; 1.2.64 ; 27.1.65. (iv) (a) Trench formation and loosening of soil. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) As per treatments. (vi) Co—975. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 112 cm. for 63 ; 97 cm for 64 and N.A. for 65. (x) 10.2.64 ; 3.4.65 ; 24.2.66.

2. TREATMENTS :

4 sources of N at 168 Kg/ha. in 2 equal doses at 30 and 60 days after planting : S_1=A/S, S_2=A/S/N, S_3=C/A/N, S_4=Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 12 m.×32 m. (iii) 6. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. between rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1963—65. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

63(132)

(i) 913·0 Q/ha. (ii) 137·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1023	907	897	825

64(140)

(i) 1198 Q/ha. (ii) 65·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1209	1208	1155	1220

65(104)

(i) 1396·2 Q/ha. (ii) 64·9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1389·3	1397·9	1341·2	1456·2

Crop :- Sugarcane. **Ref :- A.P. 62(138), 63(133).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :—To determine the optimum level of N and G.L. for Sugarcane crop.

1. BASAL CONDITIONS:

(i) (a) Paddy –Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 31.1.62 : 29.1.63. (iv) (a) Forming of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co—975. (vii) Irrigated. (viii) Hoeing and weeding for 62 ; one weeding for others. (ix) 121 cm. ; 112 cm. (x) 9.2.63 ; 3rd week of March, 1964.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_0=0, N_1=84·1 and N_2=168·1 Kg/ha.
(2) 2 levels of G.L. : G_0=0. and G_1=5604 Kg/ha.

N applied in 2 equal doses on 30th and 60th day after planting. G.L. *pillipesera* applied at earthing up (22.5.62).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) 48·3 m. × 12·1 m. (iii) 4. (iv) (a) 97·1 sq. m. (b) 72·9 sq. m. (v) 24·2 sq.m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination counts, stalk population and yield of cane. (iv) (a) 1962–63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results :
(i) 1014 Q/ha. (ii) 97·5 Q/ha. (based on 35 d.f. made up of pooled error and Treatments × years interaction). (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	Mean
G_0	734	1098	1232	1021
G_1	773	1064	1186	1008
Mean	753	1081	1209	1014

C.D. for N marginal means = 70·0 Q/ha.

Individual results

Treatments	N_0	N_1	N_2	Sig.	G_0	G_1	Sig.	G.M.	S.E./plot
Years									
1962	633	880	1048	**	866	841	N.S.	854	99·0
1963	854	1283	1370	**	1177	1175	N.S.	1176	91·0
Pooled	753	1081	1209	**	1021	1008	N.S.	1014	97·5

Crop :- Sugarcane. **Ref :- A.P. 61(61), 62(136), 63(128).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :–To study the effect of N, P and K alone and in combination on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) 50·4 Kg/ha. of N as A/S for 62. (ii) Clay loam ; Black clay ; Alluvial clay. (iii) 7.2.61 ; 29.1.62 ; 24.1.63. (iv) (a) Forming of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co–419. (vii) Irrigated, (viii) Gap filling, weedings, earthings and trash twist propping. (ix) 181 cm. ; 121 cm. ; 112 cm. (x) N.A. 8.2.63 ; 22.2.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=168·1 and N_2=252·2 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=112·1 Kg/ha.
(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=112·1 Kg/ha.

N applied in two equal doses 30 and 60 days after planting. P and K applied as soil application prior to planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Damaged by Hairy Cater pillar and incidence of Yellow Spot disease in Oct., 61 spraying 0·02 % Endrin ; Nil. for 62 ; Incidence of Catter pillars and spraying Endrin 0·02 % for 63. (iii) Yield of cane. (iv) (a) 1961—63. (b) No. (c) Nil. (v) N.A. (vi) Heavy rains during the first fortnight of Feb., 61 and field was under water for 4 days. Germination was affected due to stagnation of water for 61 ; Nil. for other years. (vii) Since the error variances are heterogeneous and Treatments×years interaction is absent, the results of individual years are presented under 5. Results.

5. RESULTS :

61(61)

(i) 1214 Q/ha. (ii) 89·0 Q/ha. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	841	1336	1374	1193	1173	1183
P_1	946	1412	1375	1221	1268	1244
Mean	893	1374	1375	1207	1220	1214
K_0	889	1354	1379			
K_1	897	1394	1370			

C.D. for N marginal means=63·9 Q/ha.

C.D. for P marginal means=52·4 Q/ha.

62(136)

(i) 1059 Q/ha. (ii) 156·0 Q/ha. (iii) Main effect of N is highly significant and interaction N×P is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	677	1291	1257	1069	1081	1075
P_1	698	1142	1293	1057	1031	1044
Mean	687	1216	1275	1063	1056	1059
K_0	680	1230	1280			
K_1	695	1202	1270			

C.D. for N marginal means=112·3 Q/ha.

C.D. for the body of N×P table=158·9 Q/ha.

63(128)

(i) 1176 Q/ha. (ii) 184 Q/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	837	1414	1433	1193	1263	1228
P_1	824	1265	1285	1167	1082	1125
Mean	831	1339	1359	1180	1172	1176
K_0	827	1305	1409			
K_1	834	1374	1309			

C.D. for N marginal means=132·4. Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(65).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object :— To study the response of Sugarcane to the three major plant nutrients applied singly or in different combinations.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 2 and 3.2.60. (iv) (a) Forming trenches of 40 cm. width with 60 cm. spacing and loosening of the soil to 10 cm. depth. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Gap filling, hoeing once, weeding thrice, levelling once, earthing up once and trash twist propping twice. (ix) 181 cm. (x) 10.3.61.

2. TREAMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S : N_0=0, N_1=168·1 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0, P_1=112·1 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0, K_1=224·2 Kg/ha.

All fertilizers were applied by soil application in two equal doses at 45th and 90th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 971·0 sq. m. (ii) 4. (iv) (a) 121·4 sq. m. (b) 72·8 sq. m. (v) 2 lines on either side of the plot.

4. GENERAL :

(i) Normal. (ii) Spraying of 0·02% Endrin twice in March as a protective against the Early Shoot borer. Some canes were effected by Smut. Smut effected canes were rogued out and destroyed. (iii) Cane yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RELULTS :

(i) 727 Q/ha. (ii) 113 Q/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	463	479	488	445	471
N_1	1003	963	964	1002	983
Mean	733	721	726	728	727
K_0	758	694			
K_1	708	748			

C.D. for N marginal means=82·9 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(131), 64(194), 65(107).**

Site :- Sugarcane Liaison Farm, Tanuku. Type :- 'M'.

Object : — To study the effect of P and G.L. on the yield Sugarcane.

1. BASAL CODITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S for 63 ; 44·8 Kg/ha. of N as A/S for 64 and N.A. for 65. (ii) Clay loam. (iii) 28.1.63 ; 2.2.64 ; 9.2.65. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168 Kg/ha. of N as A/S in 2 equal doses on 30 and 60 days after planting. (vi) Co-419. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 112 cm. for 63 ; 94 cm. for 64, N.A. for 65. (x) 10.2.64, 13.12.64 and 19.12.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of Sunhemp (G.L.) : G_0=0 and G_1=5604 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=28·0 Kg/ha. and P_2=112·0 Kg/ha.

G.L. applied at planting, P_1 as foliar spray 60 days after planting and P_2 by soil application at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 12 m.×48 m. (iii) 4. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. between rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield, stalk population and % sucrose (iv) (a) 1963-65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results.

(i) 1081·8 Q/ha. (ii) 89·9 Q/ha. (based on 55 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	P_0	P_1	P_2	Mean
G_0	1098·0	1095·6	1090·3	1094·6
G_1	1091·0	1039·6	1076·3	1069·0
Mean	1094·5	1067·6	1083·3	1081·8

Individual results.

Treatments	P_0	P_1	P_2	Sig.	G_0	G_1	Sig.	G.M.	S.E./plot
Years									
1963	981·0	934·0	963·0	N.S.	964·0	954·0	N.S.	959·0	82·0
1964	1033·0	1044·0	1024·0	N.S.	1030·0	1037·0	N.S.	1034·0	66·0
1965	1269·4	1226·0	1262·5	N.S.	1290·1	1215·1	N.S.	1252·6	65·2
Pooled	1094·5	1067·6	1083·3	N.S.	1094·6	1069·0	N.S.	1081·8	89·9

Crop :- Sugarcane. **Ref :- A.P. 61(62), 62(135), 63(127).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object: — To dtermine the optimum dose of N for Sugarcane crop.

1. BASAL CODITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Grey black alluvial clay. (iii) 28.1.61 ; 26.1.62 ; 28.1.63. (iv) (a) Preperation of trenches 40 cm. width and 20 cm. depth at a distance of 101 cm. and loosening of soil in trenches to a depth of 10 cm. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-997. (vii) Irrigated. (viii) Gapfilling, trash twist propping, earthing up and weeding. (ix) 181 cm., 121 cm., and 112 cm. (x) 24.12.61, 1st week of Dec., 62 ; last week of Jan. 64.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
N applied by soil application in two equal doses at 30 and 60 days after planting.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Damage by Cater-pillar, controlled by spraying Endrin 0·02% for 61 ; Nil for others. (iii) Yield of Sugarcane. (iv) (a) 1961-63. (b) No. (c) As under 5. results. (v) N.A. (vi) Heavy rains during the first fortnight of Feb. 61 and germination was effected due to stagnation of water for 61 ; Nil for other years. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.
(i) 952 Q/ha. (ii) 143·7 Q/ha. (based on 8 d.f. made up of Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	768	918	986	1028	1062

C.D.=121·0 Q/ha.

Individual results.

Treatments	N_0	N_1	N_2	N_3	N_4	Sig.	G.M.	S.E./plot
Years								
1961	1128.2	1145·6	1221·1	1215·8	1256·0	**	1193·3	82.6
1962	582·0	842·0	908·0	947·0	960·0	**	847·8	109.0
1963	594·0	765·0	830·0	922·0	969·0	**	816·0	73.0
Pooled	768·0	918·0	986·0	1028·0	1062·0	**	952·0	143.7

Crop :- Sugarcane. **Ref. :- A.P. 60(48), 61(65).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object:—To determine the optimum dose of N required for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 1 and 2.2.60; 27.1.61. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Gap filling; weedings, hoeing, earthing up and trash twist dropping. (ix) N.A. for 60; 181.6 cm. for 61. (x) 11.3.61; 9.1.62.

2. TREATMENTS :

5 levels of N on A/S : N_0=0, N_1=56·0, N_2=112.1, N_3=168·1 and N_4=224·2 Kg/ha.
N applid by placement in the soil in two equal doses.

3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A (iii) 5. (iv) (a) 12·1 m × 10·1 m (b) 10.1 m.×6·0 m. (v) 1 m.×2 m. (vi) Yes.

4. GENERAL :

(i) Good germination, stunted growth in control plots for 60; Normal for 61. (ii) Early Stem borer; spray of Endrin for 60., Incidence of hairy Cater-pillar for 61. (iii) Yield of Sugarcane. (iv) (a) 1959-61. (b) No. (c) As under 5. Results. (v) Vuyyur, Yelamanchili. (vi) Heavy rainfall for 61. Fields were under water hence germination was affected due to the stagnation of water. (vii) The results of 1959 experiment are not included in pooling since the design is different. Error variances are homogeneous and the Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 1038 Q/ha. (ii) 164·2 Q/ha. (based on 4 d.f. made up of Treatments × years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	619	950	1120	1203	1298

C.D.=203·6 Q/ha.

Individual results.

Av. yield of Sugarcane in Q/ha.

Treatments	N_0	N_1	N_2	N_3	N_4	Sig.	G.M.	S.E./plot
Years								
1960	465	822	1061	1177	1197	**	944	68·1
1961	774	1079	1179	1229	1399	**	1132	103·5
Pooled	619	950	1120	1203	1298	**	1038	164·2

Crop :- Sugarcane. **Ref. :- A.P. 60(69), 61(63), 62(140).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'M'.**

Object:—To find out the optimum time of application of concentrate manures to Sugarcane crop in this tract.

1. BASAL CONDITIONS :
(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 9.2.60; 3.2.61; 31.1.62. (iv) (a) Formation of trenches of 40 cm. width and of 20 cm. depth and spaced 101 cm. apart; loosening of soil 10 cm. deep. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (v) —. (vi) CO—997. (vii) Irrigated. (viii) 2 weedings, 2 earthing up and 2 trash twist propping. (ix) 151 cm; 161 cm; 121 cm. (x) 28.3.61; 29.12.61; 7.2.63.

2. TREATMENTS :
5 times of application of 168·1 Kg/ha. of N as A/S : T_1=Full dose after 45 days plant sowing, T_2=Half at 45th day and other half at 90th day, T_3=Half at 30th day and other half at 60th day, T_4=Half at 45th day and other half after opening the canals and T_5=In three equal doses at 30th, 60th and 120th day.

3. DESIGN :
(i) L. Sq. (ii) (a) 5. (b) 40·2 m.×12·1 m. (iii) 5. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :
(i) Good. (ii) Nil. (iii) Germination%, height measurements and cane yield. (iv) (a) 1960-62. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii)Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :
Pooled results
(i) 984 Q/ha. (ii) 103·9 Q/ha. (based on 44 d.f. made up of Treatments×years interaction and pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	946	985	976	1011	1002

Individual results

Av. yield of Sugarcane in Q/ha.

Treatments	T_1	T_2	T_3	T_4	T_5	Sig.	G.M.	S.E./plot
Years								
1960	806	861	863	869	911	N.S.	862	120·9
1961	1157	1220	1178	1180	1151	N.S.	1177	74·4
1962	876	874	888	986	944	N.S.	914	122·5
Pooled	946	985	976	1011	1002	N.S.	984	103·9

Crop :- Sugarcane. **Ref :- A.P. 60(154).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object :—To study the effect of application of the recommended dose of N in single or two equal doses at different phases of the crop growth.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 20.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co– 527. (vii) Irrigated. (viii) Weeding, hoeing, levelling of trenches, earthing up and propping with bamboos. (ix) 152·9 cm. (v) 17, 18, 19 and 20.2.61.

2. TREATMENTS :

7 manurial treatments at 168·1 Kg/ha. of N as A/S and G.N.C. in the ratio 2 : 1 on N basis : T_1=In single dose at planting (on 27.2.60), T_2=In single dose at 45 days after planting (on 4.4.60), T_3=In single dose at 90 days after planting (on 18.6.60), T_4=In single dose at 120 days after planting (on 18.7.60), T_5=In two equal split doses at planting and 45 days after planting (on 27.2.60 and 4.4.60), T_6=In two equal split doses at 45 days and 90 days after planting (on 4.4.60 and 18.6.60) and T_7=In two equal split doses at 90 days and 120 days after planting (on 18.6.60 and 8.7.60).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 70 m. × 12 m. (iii) 4. (iv) (a) 12 m. × 10 m. (b) 10 m. × 8 m. (v) 100 cm. × 100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temperatures going as high as 120°F. Dry spells in the monsoon months of June, July, Aug. 60. (vii) Nil.

5. RESULTS :

(i) 1279 Q/ha. (ii) 163·2 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1218	1400	1372	1257	1179	1274	1251

Crop :- Sugarcane. **Ref :- A.P. 60(153).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object —To findout the best method and the time of application of phosphate fertilizers in addition to the normal nitrogeneous manuring on Co-527 variety of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 17.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37,066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N in the ratio of 2 : 1 as A/S and G.N.C. on N basis in two equal split doses at 45 and 90 days after planting. (vi) Co-527. (vii) Irrigated. (viii) Weeding, hoeing, earthing up, propping with bamboos. (ix) 152·9 cm (x) 21 to 28.2.61.

2. TREATMENTS :

4 manurial treatments : T_0=Control, T_1=112·1 Kg/ha. of P_2O_5 to soil at the time of planting (on 26.2.60), T_2=112·1 Kg/ha. of P_2O_5 to soil in June (actually applied on 14.7.60), T_3=28·0 Kg/ha. of P_2O_5 by foliar spray in June (actually applied on 14.7.60).

N.B. : Spray fluid was used for treatment T_3 at 673 litres/ha. Source of P_2O_5 Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 32 m.×12 m. (iii) 6. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temperature going as high as 120°F. Dry spells in monsoon months of June, July, Aug '60. (vii) Nil.

5. RESULTS :

(i) 1219 Q/ha. (ii) 102·9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1236	1196	1185	1258

———

Crop :- Sugarcane. **Ref :- A.P. 60(150).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object : — To find out the best method and the time of application of phosphate fertilizers in addition to normal nitrogeneous manuring on Co-419 variety of Sugrcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) Nil. (ii) Loamy. (iii) 17.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N in two equal doses at 45 and 90 days after planting in the ratio of 2 : 1 of A/S and G.N.C. on N basis. (vi) Co-419. (vii) Irrigated. (viii) Hoeing, weeding, earthing up, propping with bamboos and levelling. (ix) 152·9 cm. (x) 21 to 26.2.61.

2. TREATMENTS:

4 manurial treatments : T_0=Control, T_1=112·1 Kg/ha. of P_2O_5 to soil at the time of planting (on 26.2.60), T_2=112·1 Kg/ha. of P_2O_5 to soil in June (actually applied on 4.7.60), T_3=28·0 Kg/ha. of P_2O_5 in June by foliar spray (actually applied on 14.7.60).

N.B. Spray fluid was used at 673 litres/ha.
Source of P_2O_5 : Super.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 6. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with the day temperature going as high as 120°F. Dry spells in the monsoon months of June, July, Aug'60. (vii) Nil.

5. RESULTS :

(i) 1383 Q/ha. (ii) 108·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1422	1408	1348	1354

Crop :- Sugarcane. **Ref. :- A.P. 60(149).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object—To find out the efficacy of foliar application of nitrogenous fertilizer as compared to soil application.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) Nil. (ii) Loamy. (iii) 20.6.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO—527. (vii) Irrigated. (viii) Hoeing, weeding, levelling, earthing up and propping with bamboos. (ix) 152·9 cm. (x) 16 to 19.2.61.

2. TREATMENTS :

3 manurial treatments : T_1=168·3 Kg/ha. of N in two equal doses at 45 and 90 days after planting to soil by pocketing (on 4.4.60 and 18.6.60), T_2=84·1 Kg/ha. of N at 45 days after planting to soil by placement and 28·0 Kg/ha. of N by foliar spray in June. (on 4.6.60 and 4.7.60) and T_3=84·1 Kg/ha. of N at 45 days after planting to soil by placement, 28·0 Kg/ha. of N at 90 days after planting to soil by placement and 56·0 Kg/ha. of G.M. before earthing up. (on 4.4.60 and 8.6.60).

Source of N : Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 30 m.×12 m. (iii) 8. (iv) (a) 12 m.×10 m. (b) 10 m.×8 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Cane. (iv) (a) 1960 only. (b) and (c) Nil. (v) and (vi) Nil. (vii) Summer was severe with the day temperature going as high as 120°F. Dry spells in the monsoon months of June to August 60.

5. RESULTS :

(i) 1129 Q/ha. (ii) 159·8 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3
Av. yield	1150	1115	1121

Crop :- Sugarcane. **Ref :- A.P. 60(156)**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object :—To find out the effect of application of phosphate fertilizers either alone or in combination with nitrogenous fertilizers on the yield and quality of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 14.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) CO—527. (vii) Irrigated. (viii) Hoeing, weeding, levelling, earthing up, fixing bamboos and trash twist propping. (ix) 151 cm. (x) 17 to 21.1.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S and G.N.C. in the ratio of 2 : 1 on N basis in two equal split doses at 45 and 90 days after planting (on 30.3.60 and 19.6.60) by soil application : N_0=0, N_1=168·1 and N_2=336·2 Kg/ha.

(2) 3 levels of P_2O_5 as Super in single dose by soil application on 14.2.60 : P_0=0, P_1=112·1 and P_2=168·1 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) 90 m.×12 m. (iii) 4. (iv) (a) 12 m.×10 m. (b) 10 m.×8 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1958—60. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Summer was severe with day temperatures going as high as 120°F. Dry spells in monsoon months of June to August 60. (vii) Nil.

5. RESULTS :

(i) 830 Q/ha. (ii) 144·3 Q/ha, (iii) Main effects of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	P_0	P_1	P_2	Mean
N_0	623	390	524	512
N_1	995	998	931	975
N_2	1029	979	1005	1004
Mean	882	789	820	830

C.D. for N marginal means=121·6 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(152).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object :— To find out the best time of application of nitrogenous manures to cane crop in the locality.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 16.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-527. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and propping with bamboos. (ix) 152·9 cm. (x) 27.2.61 to 2.3.61.

2. TREATMENTS :

6 manurial treatments at 168·1 Kg/ha. of N in two equal split doses as A/S and G.N.C. in the ratio 2 : 1 on N basis : T_1=At planting and 45 days after planting (24·2, 3.4.60), T_2=At planting and 90 days after planting (24·2, 3.7.60), T_3=At planting and 120 days after planting (24·2, 6.8.60), T_4=At 45 days and 90 days after planting (3·4, 3.7.60), T_5=At 45 days and 120 days after planting (3·4, 6.8.60) and T_6=At 90 days and 120 days after planting (3.7, 6.8.60.)

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 70 m.×12 m. (iii) 4. (iv) (a) 12 m.×10 m. (b) 10 m.×8 m. (vi) 100 cm.×100 m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temparatures going as high as 120°F. Dry spells in monsoon months June, July and Aug. 60. (vii) Nil

5. RESULTS :

(i) 1272·0 Q/ha. (ii) 123·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield.	1212	1358	1276	1248	1290	1245

Crop :- Sugarcane. **Ref :- A.P. 60(148).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M',**

Object :— To find out the optimum dose of N needed for the Sugarcane crop in the tract.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Fallow (since last 5 years). (c) Nil. (ii) Loamy. (iii) 14.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) . (v) Nil. (vi) Co-527. (vii) Irrigated. (viii) Hoeing and 2 weedings, levelling, earthing and trash twist propping. (ix) 151·2 cm. (x) 12 to 17.1.61.

2. TREATMENTS :

5 levels of N as A/S and G.N.C. given in the ratio 2 : 1 on N basis : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 50 m.×12 m. (iii) 6. (iv) (a) 12 m.×10 m. (b) 10 m.×8 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temperatured going as high as 120°F. Dry spells in monsoon months of June, July and Aug. 60. (vii) Nil.

5. RESULTS :

(i) 684·0 Q/ha. (ii) 113·3 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	403	680	693	851	794

C.D.=136·4 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 61(173), 62(191), 63(185).**

Site :- Sugarcane Liaison Farm, Vuyyur. Type :- 'M'.

Object :—To study thd effects of different levels of N, P and K alone and in combination on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 30.1.61 ; 8.2.62 ; 21.2.63. (iv) (a) Formation of deep trenches. (b) End to end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Co-527 for 61, 63 ; Co-997 for for 62. (vi) Nil. (vii) Irrigated. (viii) Hoeings; weedings and earthings and trash twist propping. (ix) 292 cm ; 356 cm. ; 204 cm. (x) 17 to 22.1.62; 16 to 22.1.63 ; 17.3.64.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=168·1 and N_2=252·2 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=112·1 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=224·2 Kg/ha.

P_2O_5 and K_2O were applied in single dose by soil application on 7.2.61, N in two equal doses at 45 and 120 days after planting (15.3.61, 26.6.61) by soil application for 61 ; N applied by placement in two equal doses 45 days after planting and in mid. of June ; P_2O_5 and K_2O applied in single dose at the time of planting (25, 26.3.62) for 62 and 63.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 96 m.×12 m. for 61, 62; 120 m.×12 m. for 63. (iii) 4. (iv) (a) 12 m.×8 m. (b) 10 m.×6m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i)(a) Good for 61, 62 ; poor in N_0 plots but good in remaining plots for 63, lodging observed in higher doses of N plots in Oct. 61 and Nov. 61 for 61 only. (ii) Nil. (iii) Yield of cane. (iv) (a) 1961—63. (b) No. (c) As under 5. Results. (v) Nil. (vi) Heavy rain during Aug., Sept. for 61 ; Heavy rain was recorded during Oct., 63 accompanied by strong cyclonic gales. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1116·3 Q/ha. (ii) 224·4 Q/ha. (based on 18 d.f. made up interaction of various components of Treatments×years). (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	K_0	K_1	Mean
P_0	770.3	1271.0	1331·6	1102·6	1146·0	1124.3
P_1	689·6	1279·6	1355·6	1102·6	1114·0	1108.3
Mean	730·0	1275.3	1343·6	1102·6	1130·0	1116.3
K_0	721·6	1253.3	1333.0			
K_1	738·3	1297·3	1354·3			

C.D. for N marginal means=96·2 Q/ha.

Individual results

Years	N_0	N_1	N_2	Sig.	P_0	P_1	Sig.
1961	732·0	1474·0	1564·0	**	1264·0	1250·0	N.S.
1962	830·0	1254·0	1367·0	**	1149·0	1152·0	N.S.
1963	625·0	1098·0	1098·0	**	960·0	923·0	N.S.
Pooled	730·0	1275·3	1343·6	**	1124·3	1108.3	N.S.

K_0	K_1	Sig.	G.M.	S.E./plot
1234·0	1230·0	N.S.	1257·0	141·9
1151·0	1150·0	N.S.	1151 0	98·4
923·0	960·0	N.S.	941·0	123·4
1102·6	1130.0	N.S.	1116·3	224·4

Crop :- Sugarcane. **Ref :- A.P. 64(195), 65(79).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'M'.**

Object :—To study the relative merits of different nitrogenous fertilizers on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A, (ii) Black loam. (iii) 2.4.64 ; 26.2.65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-975. (vii) Irrigated. (viii) Hoeing, weeding, earthing up, and trash twist propping. (ix) 73.cm. ; N.A. (x) 1.1.65 ; 4 to 7.3.66.

2. TREATMENTS :

4 sources of N at 168 Kg/ha. in two equal doses at 45th and 90th day of planting : S_1=Urea, S_2=A/S, S_3=A/S/N and S_4=C/A/N.

3- DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 40 m.×12 m. for 64 ; N.A. for 65. (iii) 5. (iv) (a) 12 m.×10 m. ; 9·0 m,×10·4 m. (b) 12·0 m.×8·0 m. ; 7·0 m.×10·4 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying Endrin against Early Shoot borer. (iii) Yield of cane. (iv) (a) 1964—contd. (b) No. (c) Nil. (v) Yelamanchili, Tanuku. (vi) Nil. (vii) As the expt. is continued beyond 1965, the results of individual years are presented under 5. Results.

5. RESULTS :

64(195)

(i) 1262·7 Q/ha. (ii) 117·9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1201·2	1252·9	1337·7	1259·1

65(79)

(i) 1033·0 Q/ha. (ii) 104·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1003·0	1108·0	1022·0	1001·0

———

Crop :- Sugarcane. **Ref :- A.P. 62(120).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'M'.**

Object :— To find out the optimum dose of N for Sugarcane crop.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 27, 28 and 29.3.62. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Hoeing, 2 weedings, earthing up, fixing up of bamboos and trash twist propping. (ix) 131 cm. (x) 16.2.63.

2. TREATMENTS :

4 levels of N as A/S : N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
N applied in two equal doses at 45th day and in June depending up on the water supply.
(Actual time of application of N : 13 and 14.6.62, 19 and 20.7.62).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 25·4 m.×14·5 m. (iii) 4. (iv) (a) 14·5 m.×6·0 m. (b) 12·1 m.×6·0 m. (v) 121 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of Early Shoot borer. Dipping the setts in ½% Agallol solution against Early Shoot borer ; spraying of Endrin 0·02% as protective against Early shoot borer on 24.4.62 ; 11,29 and 30.5.62. (iii) Cane yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1262·2 Q/ha. (ii) 101·1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	N_1	N_2	N_3	N_4
Av. yield	1171·0	1290·8	1339·9	1247·2

———

Crop :- Sugarcane. **Ref :- A.P. 62(119), 63(108), 64(105).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'M'.**

Object :— To study the different merits of the various Nitrogenous fertilizers on the yield and quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy (c) N.A. (ii) Clay loam. (iii) 1, 2 and 3.4.62 ; 19 and 20.2.63 ; 25 and 26 2 64. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (b) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) 2 hoeings, 3 weedings, earthing up, fixing up of bamboos and trash twist propping. (ix) 131 cm. ; 116 cm. ; 92 cm. (x) 2.3.63 ; 9.4.64 ; 9.1.65.

2. TREATMENTS :

4 sources of 112·1 Kg/ha. of N : S_1=A/S, S_2=Urea, S_3=C/A/N and S_4=A/S/N.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 62·4 m.×60·4 m. for 62 ; N.A. for 63 ; 25·4 m.×12·5 m. for 64. (iii) 6. (iv) (a) 15·3m.×10·1 m. ; 11·7 m.×9·1 m. ; 12·5 m.×6·0 m. (b) 15·3 m.×∞·1 m. ; 11·7 m.×7·2 m.; 11·3 m.×4·0 m. (v) 100 cm. on either side for 62, 90 cm. on either side for 63 and 61 cm.×100 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of Early Shoot borer. dipping the setts, ½% Agallol solution, spraying of Endrin as a protective measure against Early Shoot borer. (iii) Yield of Sugarcane. (iv) (a) 1962-64. (b) No. (c) Nil. (v) Vuyyur, Tanuku. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

62(119)

(i) 1246 Q/ha. (ii) 138·1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	1353	1271	1115	1244

63(108)

(i) 819 Q/ha. (ii) 92·7 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	834	845	827	769

64(105)

(i) 963 Q/ha. (ii) 31·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3	S_4
Av. yield	954	992	942	965

Crop :- Sugarcane. **Ref :- A.P. 63(112), 64(109).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'M'.**

Object :—To find out the optimum dose of N for *Ratoon* crop of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) Ratooning on 20.3.63 ; 1 to 6.6.64. (iv) (a) to (e) N.A. (v) Nil. (vi) Co.—419. (vii) Irrigated. (viii) 1 to 3 weedings, earthing up, hoeing and 1 to 2 trash twist-prroppings. (ix) 116 cm. for 63 ; 92 cm. for 64. (x) 24.2.64 ; 21 and 22.1.65.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
Application of fertilizer in two equal dose on 13.5.63 and 14.6.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 26·8 m.×14·5 m. for 63 ; N.A. for 64. (iii) 5. (iv) (a) 14·5 m.×5·0 m, 10·7 m.×9·1 m. (b) 14·5 m.×3·0 m. ; 10·1 m.×7·3 m. (v) 100 cm. on either side for 63 ; 30 cm.×90 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 63 ; slight incidence of Early Shoot borer, spraying of Endrin (iv) (a) 1963-64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and the Treatments×years interaction is present.

5. TREATMENTS:

Pooled results

(i) 1038 Q/ha. (ii) 381·4 Q/ha. (based on 4 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	891	1003	1054	1100	1140

Individual results

Av. yield of Sugarcane in Q/ha.

Years	N_0	N_1	N_2	N_3	N_4	Sig	G.M.	S.E./plot
1963	1163	1396	1443	1616	1722	**	1468	217·7
1964	619	610	666	585	559	N.S.	608	106.1
Pooled	891	1003	1054	1100	1140	N.S.	1038	381·4

Crop :- Sugarcane. **Ref :- A.P. 63(113), 64(110).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'M'.**

Object :—To find out the optimum dose of N for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 20 and 21.2.63 ; 27 and 28.2.64. (iv) (a) Forming of deep trenches of width 40 cm. and of depth 20 cm. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co.—419. (vii) Irrigated. (viii) 1 to 3 hoeings, weedings, earthing up and trash twist propping. (ix) 116 cm. ; 92 cm. (x) 9.4.64 ; 6, 7.1.65.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.
N applied in two equal doses at 30th day and in June depending upon the water supply.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 10·7 m.×9·1 m. ; 12·5m.×6·0m. (b) 10·7 m.×7·2 m.; 11·3m. ×4·0 m. (v) 90 cm. on either side for 63 ; 60 cm.×101 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 63 ; good for 64. (b) Slight incidence of Early Shoot borer ; Endrin sprayed. (iii) Germination counts, Shoot counts. Tiller counts, and yield of cane. (iv) (a) 1963—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatment × years interaction is present.

5. RESULTS :

Pooled results

(i) 956 Q/ha. (ii) 142·8 Q/ha. (based on 4 d.f. made up of Treatments × years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	665	864	991	1074	1186

C.D.=177·2 Q/ha.

Individual results

Av. yield of Sugarcane in Q/ha.

Years	N_0	N_1	N_2	N_3	N_4	Sig	G.M.	S.E./plot
1963	555	748	859	938	965	**	813	76·7
1964	774	980	1124	1211	1408	**	1099	81·9
Pooled	665	864	991	1074	1186	**	956	142·8

Crop :- Sugarcane. **Ref :- A.P. 60(57).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'MV'.**

Object :— To study the effect of different levels of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 18, 19.2.60. (iv) (a) Trenching and loosening of the soil. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 56·0 Kg/ha. of N as A/S applied 45 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and hoeing 4 times, earthing up and propping twice. (ix) 83·7 cm. (x) 2.3.61.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 varieties: V_1=Co-419 and V_2=Co-527.

(2) 2 levels of N as applied 120 days after planting: N_1=112·1 and N_2=168·1 Kg/ha.

(3) 2 doses of N applied 240 days after planting : D_0=0 and D_1=56·0 Kg/ha.

N applied as A/S.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 12·1 m. × 8·1 m. (b) 10·1 m. × 6·0 m. (v) 100 cm. × 100 cm. (vi) Yes.

4. GENERAL :

(i) Crop lodged severely. (ii) Nil. (iii) Yield of cane, stalk population and sucrose %. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1284 Q/ha. (ii) 146 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	D_0	D_1	Mean
V_1	1278	1288	1295	1271	1283
V_2	1274	1297	1239	1332	1285
Mean	1276	1292	1267	1301	1284
D_0	1232	1302			
D_1	1320	1283			

Crop :- Sugarcane. **Ref :- A.P. 65(53).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'MV'.**

Object :— To select an early maturing variety superior to Co-997.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 74 Kg/ha. of P_2O_5 as Super+87 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 26.1.65. (iv) (a) Trenching by tractor. (b) Trench planting. (c) 29, 653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings, earthing up, propping and wrapping. (ix) N.A. (x) 26 to 28.12.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 5 varieties: V_1=Co-997, V_2=D 4/4, V_3=Co. 62036, V_4=Co. 1335 and V_5=Co. 419.

(2) 2 levels of N as A/S : N_1=112 and N_2=224 Kg/ha.

N applied in two equal doses at 45 and 90 days after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) 24 m.×40 m. (iii) 3. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Stalk population, % juice sucrose and cane yield. (iv) (a) 1965-contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 986·1 Q/ha. (ii) 40·2 Q/ha. (iii) Main effect of V is highly significant and V×N interaction is significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	V_5	Mean
N_1	942·2	1025·7	948·4	904·9	1129·7	990·2
N_2	826·5	1016·3	959·7	934·3	1172·7	981·9
Mean	884·4	1021·0	954·1	919·6	1151·2	986·1

C.D. for V marginal means =48·7 Q/ha.

C.D. for N means in the body of V×N table=68·9 Q/ha

Crop :- Sugarcane. **Ref :- A.P. 60(140), 61(166), 62(188).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'MV'.**

Object :— To study the effect of different times of application of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. crop. (b) G.M. crop. (c) Nil. (ii) *Regur*. (iii) 5.8.60 ; 9.8.61; 4.8.62. (iv) (a) Tractor ploughing. (b) End to end planting. (c) 29653 three-budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, mulching and earthing up. (ix) 174 cm.; 211 cm. ; 227 cm. (x) 25 to 28.12.61 ; Jan. 63 ; Dec. 63.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4).

(1) 2 varieties : V_1=Co-419, V_2=Co-467.

(2) 2 levels of N : N_1=196 and N_2=392 Kg/ha.

(3) 2 methods of application : M_1=Complete application to soil and M_2=3/4th to soil and ¼ by spraying.

(4) 2 times of application : T_1=Complete dose within 6 months and T_2=3/4th in the first six months and ¼th 10 months after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 8·6 m.×7·3 m. (b) 6·4 m.×7·3 m. (v) 110 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil but spraying of Endrin to control Early Stem borer. (iii) Cane yield. (iv) (a) 1960-62. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous aad the interaction of Treatments×years is absent. Hence results of individual years are presented below.

5. RESULTS :

60(140)

(i) 998·0 Q/ha. (ii) 124·0 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	V_1	V_2	M_1	M_2	N_1	N_2	Mean
T_1	864	1101	1058	907	945	1020	982
T_2	918	1109	1037	990	918	1108	1013
Mean	891	1105	1047	949	931	1064	998
N_1	828	1034	970	837			
N_2	954	1174	1125	1060			
M_1	937	1158					
M_2	845	1052					

61(166)

(i) 1363·0 Q/ha. (ii) 161·0 Q/ha. (iii) Main effect of V is highly significant. (iii) Av. yield of Sugarcane in Q/ha.

	V_1	V_2	M_1	M_2	N_1	N_2	Mean
T_1	1297	1448	1401	1344	1367	1378	1373
T_2	1303	1403	1371	1335	1274	1432	1353
Mean	1300	1425	1386	1340	1320	1405	1363.
N_1	1238	1403	1342	1299			
N_2	1362	1448	1430	1380			
M_1	1342	1430					
M_2	1258	1421					

C.D. for V marginal means=84·9 Q/ha.

62(188)

(i) 831·6 Q/ha. (ii) 88·4 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	M_1	M_2	N_1	N_2	Mean
T_1	721·7	956·7	858·0	820·4	816·4	862·0	839·2
T_2	695·3	952·5	838·3	809·5	773·1	874·7	823·9
Mean	708·5	954·6	848·2	815·0	794 8	868·4	831·6
N_1	688·7	900·8	804·0	785·5			
N_2	728·3	1008·4	892·3	844·4			
M_1	740 4	955·9					
M_2	676·6	953·3					

C.D. for V marginal means=52·1 Q/ha.

Crop :- Sugarcane (*Adsali*). **Ref :- A.P. 60(78), 61(87), 62(105).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'MV³'.**

Object :—To study the effect of different levels of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M. Crop.-Sugarcane. (b) Sugarcane. (c) 252 kg/ha. of N as A /S. (ii) *Regur.* (iii) 7.8.60; 8.8.61 ;8.8.62. (iv) (a) 4 to 5 ploughings (b) Planting in furrows. (c) 29653 three budded setts/ha. (d) 107 cm. between rows. (e) —. (v) 87·9 Q/ha. of F.Y.M.+112·1 Kg/ha. of each of P_2O_5 and K_2O as Super and Mur. Pot. repectively for 60 ; 112·1 Kg/ha. of P_2O_5 as Super+112·1 Kg/ha. of K_2O as Pot. Sul. for others. (vi) As per treatments. (vii) Irrigated. (viii) Mulching weeding and earthing up (ix) N.A. ; 211·4 cm. ; 227·4 cm. (x) 2.1.62 ; 4.2.63 ; 4.1.64.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties of Sugar cane : V_1=Co. 419 and V_2=Co. 467.

(2) 6 levels of N as A/S : N_1=280·2, N_3=336·2, N_3=392·2, N_4=448·3, N_5=5044 and N_6=560·4 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 7·5 m.×7·3 m. for 60, 62 ; 1/183·1 ha. for 62. (b) 5·3 m.×7·3 m. for 60 ; 7·5 m.×6·7 m. for 61 ; 1/261·2 ha. for 62. (v) 107 cm. on either side along lengh for 60 ; 30 cm. on either side along breadth for 61 ; N.A. for 62. ((vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination counts and yield of cane. (iv) (a) 1960—62. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

(i) 1280·9 Q/ha. (ii) 181·6 Q/ha. (based on 22 d.f. made up of interaction of various components of Treatments×years). (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	N_3	N_4	N_5	N_6	Mean
V_1	1199·0	1216·0	1302·6	1299·6	1300·6	1209·0	1254·4
V_2	1237·3	1357·6	1330·3	1273·6	1303·6	1341·6	1307·3
Mean	1218·1	1286·8	1316·5	1286·6	1302·1	1275·3	1280·9

Treatments	V_1	V_2	Sig	N_1	N_2	N_3	N_4	N_5	N_6
Years									
1960	1140	1176	N.S.	1095	1229	1181	1120	1173	1150
1961	1521	1455	N.S.	1448	1489	1521	1547	1426	1496
1962	1103	1290	**	1111	1142	1247	1192	1308	1180
Pooled	1255	1307	N.S.	1218	1287	1316	1287	1302	1275

Sig.	G.M.	S.E./plot
N.S.	1158	106
N.S.	1488	117
N.S.	1197	114
N.S.	1281	181·6

Crop :- Sugarcane. **Ref :- A.P. 60(142).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'MV'.**

Object :—To study the effect of different levels and times of application of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 15.12.60. (iv) (a) Tractor ploughing. (b) End to end planting. (c) 29653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 56 Kg/ha. of P_2O_5 and 56 Kg/ha. of K_2O applied at planting. (vi) As per treatments. (vii) Irrigated. (viii) Mulching, weeding, intercultivation, earthing up. (ix) 129 cm. (x) 28, 29.1.62.

2. TREATMENTS :

Main-plot treatments :

3 varieties : V_1=Co—419, V_2=Co—467 and V_3=Co—527.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N : N_1=196, N_2=252 and N_3=308 Kg/ha.

(2) 2 times of application of N : T_1=Whole dose at 90th day and T_2=Whole dose on 150th day.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) 40 m.×19 m. (iii) 3. (iv) (a) 6 m.×7 m. (b) 4 m.×7 m. (v) 100 cm. on sides along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1959—60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 717·7 Q/ha. (ii) (a) 128·7 Q/ha. (b) 87·9 Q/ha. (iii) Main effect of V and interaction V×N are significant. (iv) Av. yield of Sugarcane in Q/ha.

	N_1	N_2	N_3	T_1	T_2	Mean
V_1	718·6	795·0	841·4	728·8	841·2	785·0
V_2	797·2	831·0	715·4	782·8	777·9	781·2
V_3	584·9	568·9	607·3	563·0	611·0	587·0
Mean	700·2	731·6	721·4	691·5	743·9	717·7
T_1	686·2	675·3	713·1			
T_2	714·3	787·9	729·6			

C.D. for V marginal means=119·1 Q/ha.
C.D. for N means as the same level of V=103·5 Q/ha.
C.D. for V means at the same level of N=144·4 Q/ha.

Crop :- Sugarcane. **Ref. A.P. 60(102).**

Site :- Sugarsane Liaison Farm, Samalkot. **Type :- 'M'.**

Object—To find out the effect of different times and method of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Heavy clay. (iii) 22.2.60. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three-budded selts/ha. (d) 100 cm. between rows. (e) Nil. (v) Nil. (vi) As per treatments. (vi) Irrigated. (viii) Hoeing in trenches, digging of drains, weeding, earthing up and 2 times trash twist propping. (ix) 24.1 cm. (x) 26.1.61 and 8.3.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V_1=CO-419 and V_2=CO-527.

(2) 5 methods of application of N : M_1=Application of 168·1 Kg/ha. of N as A/S in June to soil, M_2=Application of 28·0 Kg/ha. of N as Urea to be sprayed on the foliage of the crop 45 days after planting and 84·1 Kg/ha. of N as Urea in June to soil by pocketing, M_3=Application of 28·0 Kg/ha. of N as Urea to be applied 45 days after planting to soil by pocketing and 84·1 Kg/ha. of N as Urea in June to soil by pocketing. M_4=Application of 28·0 Kg/ha. of N as Urea to be sprayed on the foliage of the crop in July and 84·1 Kg/ha. of N as Urea applied to soil by pocketing in June and M_5=Application of 28·0 Kg/ha. of N as Urea to soil by pocketing in July and 84·1 Kg/ha. of N as Urea applied in June to soil by pocketing.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 12·1 m.×10·1 m. (b) 10·06 m.×6·0 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1960-only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1235·3 Q/ha. (ii) and (iii) N.A. (iv) Av. yield of cane in Q/ha.

	M_1	M_2	M_3	M_4	M_5	Mean
V_1	1461·4	1377·6	1341·0	1293·3	1314·4	1357·5
V_2	1177·2	1148·3	1131·7	1071·2	1037·3	1113·1
Mean	1319·3	1263 0	1236·4	1182·2	1175·8	1235·3

Crop :- Sugarcane. **Ref. :- A.P. 64(79), 65(27).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'MV'.**

Object :—To study the effect of different levels of N on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 10.2.64/15.4.64, 12.2.65. (iv) (a) Forming trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Earthing up and trash twist propping. (viii) 114·6 cm; 86·5 cm. (x) Last week of January, 65; 17.1.66 to 2.2.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : N_0=0, N_1=56·0, N_2=112·1, N_3=168·1 and N_4=224·2 Kg/ha.

(2) 3 varieties : V_1=CO-419, V_2=CO-997 and V_3=C.O. 975.

A/S was applied by pocketing in two equal doses 45 days after planting and in June.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 12·0 m.×8·0 m. (b) 10·0 m.×6·0 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) % of germination, juice quality and yield of cane. (iv) (a) 1964-66. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) As the experiment is continued beyond 1965, results of individal years are presented below.

5. RESULTS :

64(79)

(i) 780·5 Q/ha. (ii) 109·2 Q/h. (iii) Main effect of N is highly significant and that of V is significant. (iv) Av. yield of cane in Q/ha..

	N_0	N_1	N_2	N_3	N_4	Mean
V_1	647·2	661·7	901·7	889·4	923·9	804·8
V_2	629·4	665·0	670·0	836·7	788·3	717·9
V_3	689·4	725·6	854·4	850·0	974·4	818·8
Mean	655·3	684·1	808·7	858·7	895·5	780·5

C.D. for V marginal means=81·7 Q/ha.

C.D. for N marginal means=105·5 Q/ha

65(27)

(i) 981 Q/ha. (ii) 117·7 Q/ha. (iii) Main effect of V is significant and that of N is highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	N_4	Mean
V_1	719	936	985	1185	1055	976
V_2	764	877	1201	1170	1231	1049
V_3	689	835	949	1018	1098	918
Mean	724	883	1045	1124	1128	981

C.D. for N marginal means=113·7 Q/ha.

C.D. for V marginal means= 88·1 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 61(172), 62(190), 63(180).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'MV'.**

Object :— To study the effect of different levels of N on different varieties of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b)Paddy. (c) N.A. (b) Black loamy. (iii) 30.1.61 ; 15.2.62/gapfilling in last week of March, 62 ; 16.2.63. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066, three-budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, levelling, earthing up and propping. For 61 and 62., weeding and earthing up for 63. (ix) (x) 22 to 28.1.52 ; 15 to 28.1.63 ; 25.3.64.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 2 varieties: V_1=Co-997 and V_2=Co-975.

(2) 6 levels of N as A/S: N_0=0 N_1=56·0, N_2=112·1, N_3=168·1, N_4=224·2 and N_5=280·2 Kg/ha. N applied in 2 equal doses at 45 and 120 days after planting by soil application on 16.3.61 and 27.6.61 for 61 by application in mid of June. 45 days after planting for 62 and 63.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 120 m.×12 m.; 96 m.×12 m.; 96 m.×12 m. 3 far 61, 63 and 4 for 62. (vi) (a) 12 m.×10 m. ; 12 m.×8 m. ; 12 m.×8 m. (b) 10 m.×8 m.; 10 m.×6 m.; 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1961-63. (b) No. (c) As under 5. Results. (v) N.A. (vi) Summer was severe and temperature was 109°F. Heavy rains in Aug. and Sept. resulted in lodging for 61; Nil for other years. (vii) Error variances are heterogeneous and interaction of Treatments×years is absent.

5. RESULTS:

Pooled results

(i) 879 Q/ha. (ii) 115·7 Q/ha. (based on 22 d.f. made up of interaction of Treatments×years). (iii) Main effect of N is highly significant and that of V is significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	N_4	N_5	Mean
V_1	649	833	899	908	890	940	853
V_2	696	828	885	1012	976	1039	906
Mean	672	830	892	960	933	990	879

C.D. for V marginal means=43·8 Q/ha.

C.D. for N marginal means=75·6 Q/ha.

Individual results

Treatments	N_0	N_1	N_2	N_3	N_4	N_5	Sig.
Years							
1961	577	788	828	862	826	923	**
1962	614	694	766	824	835	861	**
1963	844	1053	1123	1238	1170	1228	**
Pooled	672	830	892	960	933	990	**

V_1	V_2	Sig.	G.M.	S.E./plot.
768	834	N.S.	99·9	801
757	774	N.S.	58·0	766
1065	1154	**	8·6	1109
853	879	*	115·7	879

Crop :- Sugarcane. **Ref :- A.P. 60(155).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'MV'.**

Object : — To study the effect of late application of nitrogenous fertilizers up to six months age of the crop on the yield and quality of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 20.2.60. (iv) (a) Formation of deep trenches. (b) End over end in limes. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing and weeding, earthing up, trash twist propping. (ix) 152·9 cm. (x) 8 to 13.2.61.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=Co-419 and V_2=Co-527.

(2) 3 methods of application of 168·1 Kg/ha. of N in two equal doses : T_1=At 45 days and 90 days after planting, T_2=At 45 days and 180 days after planting and T_3=At 90 days and 180 days after planting.

N to be applied in the ratio of 2 : 1 of A/S and G.N.C. an N basis by soil application.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 12 m.×10 m. (b) 10 m.×8 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Sprouting was observed. (iii) Cane yield. (iv) (a) 1959—60. (b) No. (c) Nil. (v) N.A. (v) Summer was severe with day temparature going as high as 120° F. Dry spell in the monsoon months of June, July and Aug. 60. (vi) Nil.

5. RESULTS :

(i) 963 Q/ha. (ii) 88·8 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	T_3	Mean
V_1	1018	967	999	995
V_2	934	917	943	931
Mean	976	942	971	963

Crop :- Sugarcane. **Ref :- A.P. 61(169).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'MV'.**

Object :—To improve the yield and juice quality of early maturing varieties by adopting early planting and manuring.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 25.1.61. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing, weeding and trash twist propping. (ix) 291.9 cm. (x) 21.12.61 to 1.1.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=Co-997 and V_2=Co-527.

(2) 4 times of application of N at 224·2 Kg/ha. in two doses : T_1=At 45 days and 90 days after planting, T_2=At 30 days and 60 days after planting, T_3=In single dose at planting and T_4=In single dose at 30 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 80 m.×12 m. (iii) 3. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Lodging and breakage of cane was considerable in Co-997 while in Co-527 stray lodging was observed on 31.7.61. (ii) Rat damage, sprouting observed and controlled by spraying D.D.T. 50%. (iii) Germination counts, and yield of cane. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. (vi) Summer was severe and the day temperature reached 107°F and with few showers in late May it reduced. Heavy rains during Aug and Sept., 61. (vii) Nil.

5. RETULTS :

(i) 1371 Q/ha. (ii) 128·5 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	T_3	T_4	Mean
V_1	1332	1074	1290	1178	1218
V_2	1596	1514	1482	1505	1524
Mean	1464	1294	1386	1342	1371

C.D. for V marginal means=109·0 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 61(170).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'MV'.**

Object :—To improve the yield and juice quality of early maturing varieties by adopting late planting and early manuring.

1. BASA L CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 25.3.61. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weedings, hoeing, earthing up and trash twist propping. (ix) 290·2 cm. (x) 23 to 26.2.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties V_1=Co-997, V_2=Co-527.

(2) 4 times of application of 224·2 Kg/ha. of N in two equal doses : T_1=At 45 days and 90 days after planting, T_2=At 30 days and 60 days after planting, T_3=In single dose at planting and T_4=In single dose at 30 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 96 m.×12 m. (iii) 3. (iv) (a) 12 m.×10 m. (b) 10 m.× 6m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Sprouting was observed on 9·4, Boot leaf observed in Co-527 during last week of Oct., 61. Spraying DDT 50%. (iii) Yield of cane. (iv) (a) 1961-only. (b) and (c) Nil. (v) N.A. (vi) Summer was severe and day temperature reached 107°F and with few showers in late May it was slightly reduced. Heavy rains during Aug, and Sept. 61. (vii) Nil.

5. RESULTS :

(i) 1223 Q/ha. (ii) 123·9 Q/ha. (iii) Main effect of V alone is significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	T_3	T_4	Mean
V_1	1192	1242	1352	1348	1284
V_2	1144	1147	1140	1215	1162
Mean	1168	1194	1246	1282	1223

C.D. for V marginal means=108·5 Kg/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(110), 64(107).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'MV'.**

Object :—To study the effect of fertilizer on the yield of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 14.2.63 ; 6, 7.3.64, (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 to 4 hoeings, weeding, earthing up and trash twist propping. (ix) 116·2 cm ; 91·8 cm. (x) 18.4.64 ; 30.3.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=Co-419 and V_2=Co-997.

(2) 2 fertilizers : T_1=112·1 Kg/ha. of N as A/S applied in June and $T_2=T_1+56·0$ Kg/ha. of N as A/S by placement in the first week of August.

3. DESIGN:

(i) Fact. in R.B.D (ii) (a) 4. (b) 11·7 m.×30·2 m. for 63 ; N.A. for 64. (iii) 4 for 63 ; 6 for 64. (iv) (a) 11·7 m.×7·2 m. ; 13·1 m.×6·0 m. (b) 11·7 m.×5·4 m. ; 12·1 m.×4·0 m. (v) 91 cm. on either side along breadth for 63 ; 50 cm.×100 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of Early Shoot borer, Endrin 0·02% sprayed as a protective measure. Dipping setts in ½% Agallol solution. (iii) Yield of cane. (iv) (a) 1963—64. (b) No. (c) Results of combined analysis is given under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years' interaction is present.

5. RESULTS :

Pooled results

(i) 997·1 Q/ha. (ii) 218·9 Q/ha. (based on 3 d.f. made up of Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	Mean
V_1	1006·7	1092·8	1049·7
V_2	879·1	1009·8	944·4
Mean	942·9	1051·3	997·1

Individual results

Treatments	V_1	V_2	Sig.	T_1	T_2	Sig.	G.M.	S.E./plot
Years								
1963	1187·8	948·5	**	1038·9	1097·4	N.S.	1068·2	64·8
1964	957 7	941·5	N.S.	878·9	1020·6	**	949.7	105·2
Pooled	1049·7	944·4	N.S.	942·9	1051·3	N.S.	997·1	218·9

Crop :- Sugarcane. **Ref. :- A.P. 63(111), 64(108).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'MV'.**

Object :—To study the effect of fertilizers on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 24, 25.2.63; 11.4.64. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm between rows. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 3 to 4 hoeings, earthing up and trash twist propping. (ix) 116·2 cm; 91·8 cm. (x) 16.4.64; 25.1.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : T_1=CO-419 and V_2=C.O. 997.

(2) 3 fertilizer treatments : T_1=112·1 Kg/ha. of N as Urea in two doses with 28·0 Kg/ha. of N dissolved in 454·6 litres of water to be given as foliar spray in May and the balance to soil in June after monsoon season, T_2=28·0 Kg/ha. of N to soil in May on the same date as foliar spraying done and 84·1 Kg/ha. of N to soil in June and T_3=112·1 Kg/ha. of N applied in June.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 12·47 m.×7·24 m. for 63, ; 13·08 m.×6·03 m. for 64. (b) 12·47 m.×5·43 m for 63 ; 12·07 m.×4·02 m. for 64. (v) 90 cm on each side along breadth for 63; 50 cm.×100 cm. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of Early Shoot borer, dipping the setts in ½% Agallol solution before planting and spraying of Endrin ·02%. (iii) Germination counts, height measurement and yield of cane. (iv) (a) 1963-64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatment×years interaction is absent.

5. RESULTS :

Pooled results

(i) 914·1 Q/ha. (ii) 127 4 Q/ha. (based on 35 d.f. made up of pooled error and Treatments×years interaction). (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	T_3	Mean
V_1	1001·0	948·6	941·9	963·8
V_2	854·0	860·4	879·0	864·5
Mean	927·5	904·5	910·4	914·1

C.D. for V marginal means=74·7 Q/ha.

Individual results

Treatments	V_1	V_2	Sig.	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years									
1963	1088·7	887·1	**	977·3	987·7	998.8	N.S.	115·4	987·9
1964	838·9	841·9	N.S.	877·7	821·4	822·2	N.S.	123·0	840 4
Pooled	963·8	864·5	**	927·5	904·5	910·4	N.S.	127·4	914·1

Crop :- Sugarcane. **Ref. :- A.P. 60(145), 61(167).**

Site :- Sugarcane Res Stn., Anakapalle. **Type :- 'C'.**

Object :—To find out the adoptability of crop log practices to the conditions prevailing in the region so as to obtain more Sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 45 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 28.12.59 and 29.2.60; 28.12.60 and 28.2.61. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 46 cm. for 60 ; 100 cm between rows for 61 (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 83·7 cm; 144·3 cm. (x) 28.2.61; 20, 28.2.1962.

2. TREATMENTS :

4 cultral treatments : C_1=Crop log (Rayungans+tops) planted in Dec., C_2=Control planted in December, C_3=Crop log planted in Feb., and C_4=Control planted in Feb.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 108 m.×88 m; 82 m.×57 m. (iii) 4 for 60; 6 for 61. (iv) (a) 13·5 m.×11 m. for 60; 176 sq. m. for 61. (b) 8 m.×8 m. for.60; 65 sq. m. for 61. (v) 280 cm.×150 cm. for 60; N.A. for 61. (vi) Yes.

4. GENERAL :

(i) Satisfactory; but lodging and breaking of cane noticed in crop log treat. of Dec. planting. (ii) D.D.T. is sprayed against Early Shoot borer and Yellow Spot. (iii) Height measurements and cane yield. (iv) (a) 1960-61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 1488·8 Q/ha. (ii) 101·2 Q/ha. (based on 27 d.f. made up of pooled error and Treatments×years interaction. (ii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	C_1	C_2	C_3	C_4
Av. yield	1541·8	1483·8	1447·7	1482·0

Individual results

Treatments	C_1	C_2	C_3	C_4	Sig.	G.M.	S.E./plot
Years							
1960	1500·1	1492·9	1438·6	1461·5	N.S.	82·3	1473·3
1961	1569 6	1477·7	1453·7	1495·7	N.S.	117·4	1499·1
Pooled	1541·8	1483·8	1447·7	1482·0	N.S.	101·2	148 ' 8

Crop :- Sugarcane. **Ref :- A.P. 64(179).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'C'.**

Object :-- To study the effect of shallow furrow method of planting on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 7.3.64. (iv) (a) As per treatments. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 247·1 Q/ha. of F.Y.M. as basal and 112·1 Kg/ha. of N as A/S on 23.6.64. (vi) Co-449. (vii) Irrigated. (viii) 2 weedings and hoeings 2 trash twist propping. (ix) 118 cm. (x) 11 to 14.2.65.

2. TREATMENTS :

4 cultural treatments : T_0=Control (only weeding), T_1=Ploughing after last available irrigation at the end of March and ploughing after each rain if any in April and May, T_2=Hoeing inter spaces after last available irrigation at the end of March and after each rain if any in April and May and T_3=Trash blanket after last available irrigation. Ploughing done on 15, 27.4.64 and trash planting on 13.4.64.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) 32 m.×10 m. (iii) 6. (iv) (a) 10 m.×8 m. (b) 10 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good, lodging observed on 1, 2.10.64. (ii) Shoot borer incidence in May. (iii) Cane yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 707 Q/ha. (ii) 75·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	691	722	677	737

Crop :- Sugarcane. **Ref :- A.P. 62(210).**

Site :- Sugarcane Liaison Farm, Chittoor. **Type :- 'C'.**

Object :— To find out the relative merits planting cane with different seeds rates on final yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 27.5.62. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) —. (v) 222 Kg/ha. of N as A/S in two equal doses on 45th and 90th day after planting by pocketing. (vi) Co-419. (vii) Irrigated. (viii) Weeding twice, earthing up and trash twist propping. (ix) 101·3 cm. (x) 4.3.63.

2. TREATMENTS :

2 seed rates : R_1=37066 and R_2=24711 three budded setts/ha.

3. DESIGN:

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 16 m.×8 m. (b) 14 m.×6 m. (v) 100 cm ×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin ·02% was sprayed as a precautionary measure against Early Shoot borer. (iii) Cane yield. (b) No. (c) Nil. (v) N.A. (vi) Unusually heavy rain fall (23·4 cm.) in May and fairly heavy rain fall in Aug. and Sept. 62. (vii) Nil.

5. RESULTS :

(i) 739·0 Q/ha. (ii) 91·1 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	R_1	R_2
Av. yield	695·3	782·7

—= ·· —

Crop :- Sugarcane. **Ref :- A.P. 63(201), 65(90).**

Site :- Sugarcane Liaison Farm, Chittoor. **Type :- 'C'.**

Object :—To study the effect of seed rate on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Paddy –Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 5.3.63 and 10.5.65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) — (v) 224 Kg/ha. of N as A/S in two equal doses, 45 and 90 days after planting. (vi) Co. 419. (vii) Irrigated. (viii) 2 weedings and hoeing. (ix) 70·0 cm. for 63, N.A. for 65. (x) 17.3.64, 17.4.66.

2. TREATMENTS :

3 seed rates : S_1=24710, S_2=30888 and S_3=37066 three budded setts/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 24 m.×12 m. for 63 ; 36·6 m.×8 m. for 65. (iii) 6 for 63 ; 8 for 65. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (iv) Ycs.

4. GENERAL :

(i) Good. (ii) Spraying of Endrin against Early Shoot borer. (iii) Juice analysis and yield of cane. (iv) (a) 1963 to 65 (64 failed). (b) No. (c) As under 5. Results. (v) N.A. (vi) Cyclonic weather in Oct. 63, Dec. 65. (viii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 1124·4 Q/ha. (ii) 96·5 Q/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) (a) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3
Av. yield	1050·8	1108·8	1213·7

Individual results

Treatments	S_1	S_2	S_3	Sig.	G.M.	S.E./plot
Years						
1963	1183·6	1245·8	1297·3	N.S.	37·3	1242·0
1965	951 0	1006·0	1151·0	**	16·5	1036.0
Pooled	1050·8	1108·8	1213·7	N.S.	96·5	1224.4

Crop :- Sugarcane. **Ref :- A.P. 60(74).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To study the effect of spacing and seed rate on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M. Crop—Sugarcane. (b) Sugarcane. (c) 252·2 Kg/ha. of N as A/S. (ii) *Regur.* (iii) 30.11.60. (iv) (a) 4 to 5 mould board ploughings, levelling, marking and furrowing with ridger. (b) Planting in the furrows. (c) and (d) As per treatments. (e) —. (v) 24·7 C.L./ha. of F.Y.M. and 112·1 Kg/ha. of P_2O_5 at planting. (vi) Co-419 (mid to late). (vii) Irrigated. (viii) Intercultivation, weeding, earthing and propping. (ix) 128·8 cm. (x) 6.2.62.

2. TREATMENTS :

Main-plot treatments:

4 spacings between furrows : S_1=7·6, S_2=8·9, S_3=10·2 and S_4=11·4 cm.

Sub-plot treatments :

3 seed rates : R_1=19768, R_2=24710 and R_3=29653 three-budded setts/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) Varies From 1/159·5 ha. to 1/170·8 ha. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Normal, control measures taken for Early Stem borer. (iii) Yield of cane. (iv) (a) 1958—60. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1011 Q/ha. (ii) (a) 93 Q/ha. (b) 70 Q/ha (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	S_3	S_4	Mean
R_1	1015	978	1044	907	986
R_2	991	1039	1039	1002	1017
R_3	1073	1029	1011	1010	1031
Mean	1026	1015	1031	973	1011

Crop :- Sugarcane. **Ref. :- A.P. 60(117).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To find out optimum month of harvest for the *Adsali* crop planted in different months.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. Crop. (b) G.M. Crop. (c) N.A. (ii) *Regur.* (iii) As per treatments. (iv) (a) Tractor ploughing, levelling by *patta*, formation of ridges and furrows. (b) Furrow planting end to end. (c) 29652—three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 252·2 Kg/ha. of N as A/S and G.N.C. (vi) CO-419. (vii) Irrigated. (viii) Weeding, mulching and propping. (ix) 91 cms. (x) As per Treatments.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : P_1=Nov., P_2=Dec., P_3=Jan. and P_4=Feb.

Sub-plot treatments :

4 dates of harvest : H_1=Dec., H_2=Jan., H_3=Feb. and H_4=March.

3. DESIGN :

(i) Split-plot. (ii) 4 main-plots/replication, 4 sub-plots/main-plot. (iii) 4. (iv) (a) 13·7 m.×7·3 m. (b) 11·9 m.×7·3 m. (v) 91 cm. on either sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Smut. (iii) Population counts, yield of Sugarcane. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 438 Q/ha. (ii) (a) 133 Q/ha. (b) 107 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	H_1	H_2	H_3	H_4	Mean
P_1	348	352	434	343	369
P_2	439	416	474	438	442
P_3	389	588	507	516	500
P_4	488	412	414	447	440
Mean	416	442	457	436	438

Crop :- Sugarcane. **Ref :- A.P. 60(118).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To find out the optimum month of harvest for Adsali crop planted in different months.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. Crop. (b) G.M. Crop. (c) N A. (ii) *Regur.* (iii) As per treatments. (iv) (a) Tractor ploughing, levelling, formation of ridges and furrows. (b) Furrow planting end to end. (c) 28652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 280·2 Kg/ha. of N as A/S. (vi) CO-419 (vii) Irrigated. (viii) Weeding, earthing and propping. (ix) 130 cm. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : P_1=20.6.1960, P_2=20.7.1960, P_3=20.8.1960 and P_4=20.9.60.

Sub-plot treatments :

4 dates of harvest : H_1=20.10.1961, H_2=20.11.1961, H_3=20.12.1961, and H_4=20.1.1962.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication. 4 sub-plots/main-plots (b) N.A. (iii) 4. (iv) (a) 12·8 m.×7·3 m. (b) 11·0 m.×7·32 m. (v) 91 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Smut. (iii) Yield of Sugarcane. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 535 Q/ha. (ii) (a) 143 Q/ha. (b) 78 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	H_1	H_2	H_3	H_4	Mean
P_1	555	527	561	503	536
P_2	559	536	636	505	559
P_3	515	527	520	533	524
P_4	581	463	491	547	520
Mean	552	513	552	522	535

Crop :- Sugarcane. **Ref :- A.P. 60(47).**

Site :- Sugarcane Liaison Farm, Tanuku **Type :- 'C'.**

Object : –To find out a suitable method of planting for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 4.2.60. (iv) (a) Loosening of soil 10 cm. deep, preparation of trenches in case of trench method and turning the soil in case of local method. (b) As per treatments. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Filter press cake at 125 5 Q/ha. on 20.1.60 ; manuring of 168·1 Kg/ha. of N in two doses on 30th and 60th day after planting. (vi) Co-419. (vii) Irrigated. (viii) Weeding and hoeing with hand hoe, 5 times partial earthing and earthening twice. (ix) and (x) N A.

2. TREATMENTS :

2 methods of planting : M_1=Trench planting and M_2=Local method of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 1/82·3 ha. (b) 1/164·7 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Rat damage in some of the plots, dusting of Zinc Phosphide ; Endrin spray as a preventive measure against the early Shoot borer. (iii) Yield of cane. (iv) (a) 1959—60. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2106·6 Q/ha. (ii) 184·1 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Sugarcane in Q/ha.

Treatment	M_1	M_2
Av. yield	2218·9	1994·3

C.D.=165·5 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(146).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'C'.**

Object :—To find out the efficacy of the improved trench method of planting over the local method.

1. BASAAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 23.2 60. (iv) (a) Formation of deep trenches, shallow furrows. (b) End over end in lines. (c) 37066three budded setts/ha. (d) As per treatments. (e) —. (v) 168·1 Kg/ha. of N as A/S and G.N.C. in the ratio 2 : 1 on N basis in two equal doses at 45 and 90 days after planting. (vi) Co-527. (vii) Irrigated. (viii) Hoeings, weedings, earthing. (ix) 151 cm. (x) 27.1.61 to 1.2.61.

2. TREATMENTS :

2 cultural treatments : T_1=Planting in deep trenches spaced at 100 cm. and T_2=Planting in shallow furrows spaced at 91 cm. apart.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 104 m.×12 m. (iii) 8. (iv) (a) 26 m.×12 m. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. Lodging was observed more in shallow furrows Dec. 60. (ii) Sprouting was observed in shallow furrows. (iii) Cane yield. (iv) (a) 1958—60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temparature going as high as 120°F. Dry spells in monsoon months of June, July, August 60. (vii) Nil.

5. RESULTS:

(i) 934 Q/ha. (ii) 61·6 Q/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2
Av. yield	1013	856

C.D.=72·8 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(147).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'C'.**

Object :—To find out the optimum spacing suited to the locality.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 23.2.60. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·2 Kg/ha. of N as A/S and G.N.C. in the ratio 2 : 1 on N basis in two equal split doses at 45, 90 days after planting. (vi) Co-527. (vii) Irrigated. (viii) Hoeing, weeding, earthing and trash twist propping. (ix) 151 cm. (x) 29.1.61 to 6.2.61.

2. TREATMENTS :

3 spacings between rows : S_1=81·3 cm., S_2=91·4 cm. and S_3=101·6 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) 1/102·0/ha. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good, badly effected due to severe summer. Lodging observed in Nov., 60. (ii) Drying of leaf tips observed in May, Sprouting observed in March 60. (iii) Cane yield. (iv) (a) 1959 to 60. (b) No. (c) Nil. (v) N.A. (vi) Summer was severe with day temperatures going as high as 120°F; Dry spells in monsoon months of June, July, Aug '60. (vii) Nil.

5. RESULTS:

(i) 1045 Q/ha. (ii) 223·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	S_1	S_2	S_3
Av. yield	1074	1050	1012

Crop :- Sugarcane (1st ratoon). **Ref :- A.P. 60(151).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'C'.**

Object :—To study the rationing behaviour of Sugarcane crop planted in deep trenches and shallow furrows.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Sugarcane crop plant crop. (c) 168·1 Kg/ha. of N as A/S and G.N.C. in the ratio of 2 : 1 on N basis. (ii) Loamy. (iii) N.A. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 224·2 Kg/ha. of N as A/S and given in the ratio of 2 : 1 on N basis in two equal doses an 18.4.60 and 15.7.60. (vi) Co-527. (vii) Irrigated. (viii) Intercultivation with bullock drawn implements on 18.5.60 earthing up on 23.7.60 and trash twist propping twice. (ix) 154·4 cm. (x) 28.12.60 to 8.1.61.

2. TREATMENTS:

2 cultural treatments: T_1=Planting in deep trenches coupled with trash twist propping and T_2=Planting in shallow ploughed furrows as practiced locally without bamboos spacings between trenches and furrows is 100 cm.

3. DESIGN:

(i) R.B.D. (ii) (a) 2. (b) 120 m × 20 m. (iii) 8. (iv) (a) and (b) 30 m. × 20 m. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good Crop was badly affected due to severe summer conditions. (ii) Nil. (iii) Cane yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) Summer was severe with day temperatures going as high as 120°F; Dry spells in monsoon months of June, July and Aug. 60. (vii) Nil.

5. RESULTS:

(i) 934 Q/ha. (ii) 92·0 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_1	T_2
Av. yield	1013	856

Crop :- Sugarcane. **Ref :- A.P. 64(104).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'C'.**

Object :—To study the effect of cultural practices for conserving soil moisture.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 3.3.64. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 56·0 Kg/ha. of N as A/S. (vi) Co-419. (vii) Irrigated. (viii) Hoeings, weedings, earthing up and trash twist propping. (ix) 91·8 cm. (x) 12.2.65.

2. TREATMENTS :

4 cultural treatments : C_0=No trash blanketing and no hoeing but only weeding will be done, C_1=Hoeing after each irrigation, C_2=Deep hoeing after last available irrigation and after each heavy rainfall and C_3=Spreading of trash after 45th day (19.4.64).

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) 25·4 m.×13·1 m. (iii) 6. (iv) (a) 13·1 m.×6·0 m. (b) 11·9 m.×30·0 m. (v) 61 cm ×100 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1178·9 Q/ha. (ii) 52·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane Q/ha.

Treatment	C_0	C_1	C_2	C_3
Av. yield	1187·0	1170·6	1175·5	1182·5

———

Crop :- Sugarcane. **Ref :- A.P. 63(109).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'C'.**

Object :— To stupy the effecacy of trash blanketing to consume soil moisture with and without stubble shaving for Ratoons.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) Ratooning 2.3.63. and gap filling on 23, 24.3.63. (iv) (a) to (e) —. (v) 168·1 Kg/ha. of N as A/S to be applied in two doses on 13.3.63 and 14.6.63; half stubble shaving and half at 60 days subject to availability of water. (vi) Co-419. (vii) Irrigated. (viii) Weeding. earthing up, firing up of bamboos and trash twist propping. (ix) 116·2 cm. (x) 19.3.64.

2. TREATMENTS :

4 cultural treatments: C_0=No trash blanketing and no stubble shaving, C_1=Trash blanketing+stabble shaving, C_2=Trash blanketing only, C_3=No trash blanketing+stubble shaving.

Trash blanketing done on 23, 24.3.63 and stubble shaving done on 13.5.63.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 15·3 m.×14·1 m. (b) 15·3 m.×8·1 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) Spraying of 0·02% Endrin on 12, 24.4.63. (iii) % of Early Shoot borer, cane formed shoot population, yield of cane. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 620·8 Q/ha. (ii) 105·9 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	C_0	C_1	C_2	C_3
Av. yield	604·9	611·3	628·6	638·2

Crop :- Sugarcane. **Ref :- A.P. 60(54).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CV'.**

Object : – To find the effect of different types of setts on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar* (fodder). (c) N.A. (ii) Clayey loam. (iii) 6, 7.8.60. (iv) (a) Wetting and formation of tranches (b) Trench planting. (c) 33 single budded setts per row. (d) 100 cm.×30 cm. (e) —. (v) 56·0 Kg/ha. of N as A/S at planting, 112·1 Kg/ha. of N 90 days after planting and 84·1 Kg/ha. of N on 150 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) Gapfilling, weeding and trash twist propping. (ix) N.A. (x) 5 to 12 January, 1962.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties: V_1=Co-419 and V_2=Co-527.

(2) 2 types of setts: S_1=Rayungans and S_2=Top setts.

3. DESIGN :

(i) L. sq. (ii) (a) 4. (b) 48·3 m.×32·2 m. (iii) 4. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m (vi) 100 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Lodged. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1905 Q/ha. (ii) 111 Q/ha. (iii) Main effects of V and S are significant. (iv) Av. yield of Sugarcane in Q/ha.

	S_1	S_2	Mean
V_1	1480	1759	1619
V_2	2272	2110	2191
Mean	1876	1934	1905

C.D. for V or S marginal means=135·8 Kg/ha.

Crop :- Sugarcane. **Ref. :- A.P. 62(166), 63(165), 64(169).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CV'.**

Object—To study the suitability of Rayungans as seed material as compared to top setts under late planted conditions in the particular reference to juice quality.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane for 62, Sugarcane-Paddy for 63, 64. (b) Sorghum for 62, Paddy for 63 and 64. (c) 44·8 Kg/ha. of N for 62 ; 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 for 63, 64. (ii) Clay loam. (iii) 18·4, 18.5.62; 63 ; 64. (iv) (a) Trenching. (b) Trench planting. (c) 29653 three budded setts/ha. for 62, 63 ; 37066 three budded setts/ha. for 64. (d) 100 cm. × 30 cm. (e) —. (v) 251·1 Q/ha. of F.Y.M. applied 3 weeks prior to planting for 62. 247·0 Q/ha. of F.Y.M. applied 3 weeks prior to planting and hoed into trenches for 63 and 64. (iv) As per treatments. (vii) Irrigated. (viii) 1 to 5 weedings, hoeing, earthing up and trash twist propping. (ix) Nil for 62, 147 cm. for 63, 94 cm. for 64. (x) 17, 19.4.63; 2, 3.5.64 ; 26.4.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties: V_1=CO-997 and V_2=CO-419.

(2) 3 types of seed material : S_1=Planting of top setts in April at the time of topping for production of Rayungans, S_2=Planting top setts in May at the time of planting Rayungans and S_3=Planting of Rayungans in May.

3. DESIGN :

(i) R.B D. (ii) (a) 6. (b) 48 m. × 12 m. for 62 ; N.A. for 63; 48 m. × 12 m. for 64. (iii) 2. (iv) 12 m. × 8 m. for 62, 64 ; 72·84 sq. m. for 63. (b) 10 m. × 6 m. for 62, 64; 60·7 sq. m. for 63. (v) 100 cm. × 100 cm. for 62; N.A. for 63; 100 cm. × 100 cm. for 64. (vi) Yes.

4. GENERAL

(i) Satisfactory. (ii) Incidence of Early Shoot borer and stray incidence of Yellow Spot for 62 ; mild infestation of Early Shoot borer for 63 and 64. (iii) Yield of sugarcane. (iv) (a) 1962-64. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and 'Treatments × years' interaction is present.

5. RESULTS

Pooled results

(i) 1025 Q/ha. (ii) 208·2 Q/ha. (based on 10 d.f. made up of 'Treatments × years' interaction). (iii) Main effect of V alone is significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	S_3	Mean
V_1	954	870	947	924
V_2	1234	989	1159	1127
Mean	1094	929	1053	1025

C.D. for V marginal means=154·6 Q/ha.

Individual results

Treatments	V_1	V_2	Sig.	S_1	S_2	S_3	Sig.	G.M.	S E./plot.
Years									
1962	796·0	1121·0	**	954·0	900·0	1020·0	N.S.	958·0	92·6
1963	1008·5	1358·2	*	1250·6	1086·4	1213·1	N.S.	1183·4	128·5
1964	967·2	903·2	N.S.	1077·1	803·1	925·4	**	935·2	67·9
Pooled	924·0	1127·0	*	1094·0	929·0	1053·0	N.S.	1025·0	208·2

Crop :- Sugarcane. **Ref. :- A.P. 65(94).**

Site :- Sugarcane Res. Stn., Perumallapalle. **Type :- 'CV'.**

Object :—To study the effect of different dates of harvest on the yield of different varieties of Sugarcane.

BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) Sandy loam. (iii) 10, 11.3.65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 29653 three budded setts/ha. (d) 100 cm between rows. (e) —. (v) 250 Q/ha. of F.Y.M. as basal dressing and 224 Kg/ha. of N as A/S in two equal doses at 45th and 90th day atfer planting. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and hoeing 2 times earthing, up and trash twist propping once. (ix) 65·3 cm. (x) 11.1.66 and 11.3.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) varieties : V_1=CO—419 and V_2=CO—997.

(2) 2 times of harvest : H_1=10 and H_2=12 months.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm×100 cm. (vi) Yes.

4. GENERAL :

(i) Good cane Lodged in both varieties on 12.12.65. (ii) Spraying Endrin 0·02% against Early Shoot borer. (iii) Millable cane, cane yield and sucrose %. (iv) (a) 1965-1967. (b) No. (c) Nil. (v) N.A. (vi) Unusual drought during the year. In Aug. 65 there was heavy down pour of nearly 3 times the average. The 1st quarter of 1966 (Jan.—March) was completely dry. (vii) Nil.

5. RESULTS :

(i) 946 Q/ha. (ii) 182·9 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	H_1	H_2	Mean
V_1	1030	891	960
V_2	954	909	932
Mean	992	900	946

Crop :- Sugarcane. **Ref :- A.P. 61(126).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :—To study the effect of different dates of harvest on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. Crop.—Sugarcane. (b) G.M Crop. (c) Nil. (ii) Sandy loam (*Challka*). (iii) 27.11.61. (iv) (a) Tractor ploughing levelling by *patta*, formation of ridges and furrows. (b) Furrow planning end to end. (c) 28652 three budded setts/ha. (d) 91 cm. between rows. (e) —(v) 252·2 Kg/ha. of as A/S. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, mulching and propping. (ix) 161 cm. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 varieties : V_1=Co—419, V_2=Co—987. V_3=Co—1006 and V_4=Co—1026.

Sub-plot treatments :

2 harvesting months : H_1=Feb., 1963 and H_2=April, 1963.

3. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/replication; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 10·1 m.×7·3 m. (b) 8·2 m.×7·3 m. (v) 91 cm. on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) Germination counts, population counts, and yield of millable cane. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS:

(i) 671 Q/ha. (ii) (a) 294 Q/ha. (b) 235 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
H_1	561	700	655	950	716
H_2	643	667	561	633	626
Mean	602	683	608	791	671

Crop :- Sugarcane. **Ref :- A.P. 61(91).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object : —To study the effeet of different dates of harvesting on different varieties of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane—G.M. Crop.—Sugarcane. (b) *Dhaincha* (G.M.) (c) Nil. (ii) *Chalka.* (iii) 27.11.61. (lv) (a) Ploughing by tractor, ridges and furrow formation. (b) Planting in furrow. (c) 29653 three budded setts/ha. (d) 91 cm. between furrows. (e) —. (v) 252 Kg/ha. of N as Urea in three split doses, *Dhaincha* was G.M. incorprated in the situ at the time of land preparation. (vi) As per treatments. (vii) Irrigated. (viii) Gap filling, weeding, earthing up and propping. (ix) 162·0 cm. (x) As per treatments.

2. TREATMENTS:

Main-plot treatments :

4 varieties : V_1=Co—419, V_2=Co—987, V_3=Co—1006 and V_4=Co—1026.

Sub-plot treatments :

2 dates of harvest : D_1=23.2.63 and D_2=15.4.63.

2. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/replications and 2 sub-plots/main-plot. (b) 29·3 m.×20·1m. (iii) 5. (iv) (a) 10·1 m.×7·3 m. (b) 8·2 m.×6·7 m. (v) 91 cm.×30 cm. (v) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS:

(i) 682·4 Q/ha. (ii) (a) 193·7 Q/ha. (b) 154·0 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	569·9	711·3	665·3	965·1	727·9
D_2	653·3	678·1	572·9	643·0	636·8
Mean	611·6	694·7	619·1	804·1	682·4

Crop :- Sugarcane. **Ref :- A.P. 62(106).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :— To study the effect of different dates of harvesting on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M. Crop.—Sugarcane. (b) G.M. Crop. (c) Nil. (ii) *Chalka.* (iii) 14.11.62. (iv) (a) Tractor ploughing, Pata running preparation of ridges and furrows. (b) Planting in furrows. (c) 29653 three budded setts/ha. (d) 91 cm, between furrows. (e) —. (v) 75·3 Q/ha. of P_2O_5. (vi) As per treatments. (vii) Irrigated. (viii) Mulching, weeding, earthing and propping. (ix) 186·5 cm. (x) As per treatments.

2. TREATMENTS :

All combinatins of (1) and (2).

(1) 4 Varieties : V_1=Co-419, V_2=Co-987, V_3=Co-1006 and V_4=Co-1026.

(2) 2 dates of hervest : D_1=9.2.64 and D_2=27.4.64.

3. DESIGN ;

(i) Fact. in R.B.D. (ii) (a) 8. (b) 43·9 m.×14·6 m. (iii) 6. (iv) (a) 11·0 m.×7·3 m. (b) 9·1 m.×6·7 m. (v) 91 cm.×30 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Germination counts, height measurements and yield of cane. (iv) (a) 1961-contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 995·3 Q/ha. (ii) 168·0 Q/ha. (iii) Main effects of V and D are highly significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	1178·0	1175·5	1121·2	1384·3	1214·7
D_2	593.6	784·7	770·3	954·6	775·8
Mean	885·8	980·1	945·7	1169·5	995·3

C.D. for D marginal means=98·5 Q/ha.
C.D. for V marginal means=139·1 Q/ha.

———

Crop :- Sugarcane. **Ref :- A.P. 64(93).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :— To study the effect of different dates of harvest on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. crop.-Sugarcane. (b) G.M. Crop. (c) Nil. (ii) *Chalka.* (iii) 25.1.64. (iv) (a) Tractor ploughing, *patta* working, preparation of ridges and furrows. (b) Planting in furrows. (c) 29653 three-budded setts/ha. (d) 91 cm. between furrows. (e) —. (v) 247 Kg/ha. of N as Urea, 111·2 Kg/ha. of P_2O_5 as Super, green manure crop stubbles were incorporated in field. (vi) As per treatments. (vii) Irrigated. (viii) Mulching, weeding, running cultivator, earthing and propping. (ix) 90·9 cm. (x) As per treatments.

2. TREATMENTS:

Main-plot treatments :

4 varieties : V_1=Co-1026, V_2=Co-1006, V_3=Co-987 and V_4=Co-419.

Sub-plot treatments :

2 dates of harvesting : D_1=21 2.65 and D_2=17.4.65.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 2 sub-plots/main-plot. (iii) 6. (iv) (a) 12·8 m.×4·9 m. (b) 10·0 m.×4·9 m. (v) 91 cm. on each side along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination counts, millable cane and yield of cane. (iv) (a) 1962-64 (dates modified). (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 293·5 Q/ha. (ii) (a) 53·9 Q/ha. (b) 56·3 Q/ha. (iii) Main effects of V and D are highly significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	427·4	332·1	273·1	269·4	325·5
D_2	426·4	255·1	209·6	154·5	261·4
Mean	426·9	293·6	241·4	211·9	293·5

C.D. for V marginal means=46·9 Q/ha.

C.D. for D marginal means=33·8 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(76), 61(73), 62(104).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :—To find out the effect of earthing and propping on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Fallow-Sugarcane for 60 Sugarcane-G.M. Crop.-Sugarcane for 61 and 62. (b) Sugarcane. (c) 392·3 Kg/ha. of N as A/S for 60,61 252·2 Kg/ha. of N as A/S for 2. (ii) *Regur*. (iii) 12.8.60 ; 12.8.61, 8.8.62. (iv) (a) 4 to 5 mould-board ploughings, levelling, marking of furrows and ridges formation. (b) Planting on ridges. (c) 29653 three budded setts/ha. (d) 107 cm. between rows. (e) —. (v) 179·3 Kg/ha. of P_2O_5 as Super+24·7 C.L./ha of F.Y.M. and G. M. for 60 ; 50·2 Q/ha. of G.M. +50·4 Kg/ha. of P_2O_5 as Super. 50·4 Kg/ha. of P_2O_5 as Super applied to the G.M. crop for 61,62. (vi) As per treatments. (vii) Irrigated (viii) Mulching, weeding, intercultivation ; earthing up and propping. (ix) N.A. for 60 ; 211·4 cm. for 61 ; 227·4 cm. for 62. (x) 9.1.62 for 60 ; 20.2.63 ; for 61. 12.1.64. for 62.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 varieties : V_1=Co—419 and V_2=Co—467.

(2) 2 earthings : E_0=No earthing and E_1=Earthing up.

(2) 2 propping treatments : P_0=No propping and P_1=Propping.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 30 m.×20 m. for 60 ; N.A. for 61 ; 17·1 m.×39·0 m. for 62. (iii) 4. (iv) (a) 72·8 sq. m. for 60 ; 8·5 m.×7·6 m. for 61 ; 9·7 m.×8·5 m. for 62. (b) 52·0 sq. m. for 60 ; 48·8 sq.m. for 61 ; 9·8 m. ×6·4 m. for 62. (v) N.A. for 60, 61 and 107 cm. on each side along breadth. for 62. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1960—62. (b) No. (c) As under 5. Results. (v) N.A. for 60 and 61, Nil for 62. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 1339·6 Q/ha. (ii) 271·7 Q/ha. (based on 12 d.f. made up of Treatments×years interaction of various components). (ili) Main effects of E and V are significant. (iv) Av. yield of Cane in Q/ha.

	V_1	V_2	P_0	P_1	Mean
E_0	1241·0	1331·6	1283·0	1289·6	1286·3
E_1	1344·3	1441·6	1453·6	1332·3	1393·0
Mean	1292·6	1386·6	1368·3	1311·3	1339·6
P_0	1337·3	1399·3			
P_1	1248·0	1374·0			

C.D. for V marginal means=120·9 Qha.

Individual results.

Treatments	V_1	V_2	Sig.	E_0	E_1	Sig.	P_0	P_1
Years								
1960	1579	1703	N.S.	1528	1754	**	1707	1575
1961	1307	1221	N.S.	1217	1311	N.S.	1280	1248
1962	992	1236	**	1114	1114	N.S.	1118	1110
Pooled	1292·6	1386·6	*	1286.3	1393·0	*	1368·3	1311·0

Sig.	G.M.	S.E./plot
N.S.	1641	201
N.S.	1264	176
N.S.	1114	129
N.S.	1339·6	271·7

Crop :- Sugarcane. **Ref :- A.P. 64(78), 65(25).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'CV'.**

Object :—To find out suitable period of harvesting for different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil for 64 ; Paddy—Sugarcane for 65. (b) Paddy. (c) N.A. (ii) Clay loam for 64, loamy for 65. (iii) 11.2.64 ; N.A. for 65. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. for 64, N.A. for 65. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses for 64 and N.A. for 65. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and hoeing in trenches twice, earthing up, levelling and trash twist propping. (ix) 114·9 cm. for 64 ; N.A. for 65. (x) 30.12.64, 28.2.65, 16.4.65 ; 30.12.65, 10.2.66 ; 17.4.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 varieties : V_1=Co—997, V_2=Co—975 and V_3=Co—419.

(2) 3 harvesting ages : H_1=10, H_2=12 and H_3=14 months.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. for 64 ; 90 m.×12 m. for 65. (iii) 3. (iv) (a) 12 m.×8 m. for 64 ; 12 m.×10 m. for 65. (b) 10 m.×6 m. for 64 ; 10 m.×6 m. for 65. (v) 100 cm.×100 cm. for 64 ; 100 cm.×200 cm. for 65. (vi) Yes.

4. GENERAL :

(i) Normal for 64 ; good for 65. (ii) Nil. (iii) Yield of cane. (iv) (a) 1964—65. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent. Hence results of individual years are presented below.

5. RESULTS :

64(78)

(i) 737·9 Q/ha. (ii) 167·6 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	H_1	H_2	H_3	Mean
V_1	735·6	629·2	719·4	694·8
V_2	850·0	683·9	782·8	772·2
V_3	787·8	687·8	764·4	746·7
Mean	791·1	667 0	755·5	737·9

65(25)

(i) 1301 Q/ha. (ii) 82·5 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	H_1	H_2	H_3	Mean
V_1	1452	1329	1376	1386
V_2	1117	1165	1210	1164
V_3	1300	1384	1373	1352
Mean	1290	1293	1320	1301

C.D. for V marginal means=82·5 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 65(108).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'CV'.**

Object :—To fix up optimum spacing for the tract in the trench method of planting.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 29.1.65. (iv) (a) Trenching and loosening of the soil in trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) As per treatments. (e) —. (v) 168 Kg/ha. of N as A/S in two equal doses at 30 and 60 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 16.2.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings : S_1=80 cm., S_2=90 cm. and S_3=100 cm.

(2) 4 varieties : V_1=Co—527, V_2=Co 997, V_3=Co - 419 and V_4=Co—975.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination counts, tiller counts and cane yield. (iv) (a) 1965—66. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1240·2 Q/ha. (ii) 81·8 Q/ha. (iii) Main effect of V is highly significant and interaction V×S is significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	1478·5	1004·2	1215·3	1131·9	1207·5
S_2	1272·2	1146·5	1293·0	1310·4	1255·6
S_3	1256·2	1130·6	1291·7	1352·1	1257·6
Mean	1335·6	1093·7	1266·7	1264·8	1240·2

C.D. for V marginal means=103·9 Q/ha.

C.D. for body of V×S table=180·0 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 64(138), 65(102.)**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'CV'.**

Object :—To find out the optimum seed rate for different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S for 64.; N.A. for others. (ii) Alluvial clay. (iii) 28.1.64 ; 27.1.65. (iv) (a) Trench formation and loosening of earth. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses at 30th and 60th day after planting. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing and weedings. (ix) 94·1 cm. ; N.A. (x) Last week of Dec., 64 ; 25.1.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 seed rates : S_1=24711, S_2=30888 and S_3=37066 three budded setts/ha.

(2)4 varieties : V_1=Co—419, V_2=Co—527, V_3=Co—997 and V_4=Co—975.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 1/102·9 ha. for 64 ; 12 m.×8 m. for 65. (b) 1/134·3 ha. for 64 ; 12 m.×6 m. for 65. (v) N.A. for 64 ; 100 cm. on either side along breadth for 65. (vi) Yes.

4. GENERAL :

(i) Lodging due to rain in November. (ii) Spraying of Endrin on 25.4.64 against Catterpillar for 64 ; Nil for 65. (iii) Germination counts, tiller counts and yield of cane. (iv) (a) 1964—66. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. is continued beyond 1965 and hence individual results are presented.

5. RESULTS :

64(138)

(i) 1185 Q/ha. (ii) 163 Q/ha. (iii) Main effects of S and V are significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	1191	1182	916	1248	1134
S_2	1222	1104	1032	1127	1121
S_3	1263	1322	1187	1432	1301
Mean	1225	1203	1045	1269	1185

C.D. for S marginal means=137·9 Q/ha.

C.D. for V marginal means=159·3 Q/ha.

65(102)

(i) 1469·5 Q/ha. (ii) 112·5 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
S_1	1552·8	1531·9	1141·7	1594·0	1455·1
S_2	1500·0	1491·2	1207·4	1708·3	1476·7
S_3	1526·4	1578·2	1229·2	1572·7	1476·6
Mean	1526·4	1533·8	1192·8	1625·0	1469·5

C.D. for V marginal means=110·0 Q/ha.

Crop :- Sugarcane. **Ref. :- A.P. 64(242).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'CV'.**

Object :—To assess loss in yield due to ill drained conditions as also the relative performance of the standard varieties under such condition.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 7.2.64. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows (e) —. (v) 84 Kg/ha. of N at 30 days and 84 Kg/ha. of N at 60 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 8.2.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 6 varieties: V_1=CO—449, V_2=CO 527, V_3=CO=975, V_4=CO—997, V_5=CO—419 and V_6=CO –1010.

(2) 2 drained condition: T_1=Swamp conditions, T_2=Well drained conditions (maintained by scrupulous lift drainage where necessary).

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 12. (b) 32 m.×48 m. (iii) 2. (iv) (a) 12 m.×8 m. (b) 12 m.×6 m. (v) 100 cm on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Folidol was sprayed to prevent damage by Cater-pillar. (iii) Cane yield. (iv) (a) 1964 only. (b) and (c) Nil. (v) Not known. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 936·8 Q/ha. (ii) 114·5 Q/ha. (iii) Main effects of V and T are significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
T_1	768·0	872·8	1047·2	820·8	934·7	777·1	870·1
T_2	685·4	993·0	1092·4	1068·7	1172·2	1009·7	1003·6
Mean	726·7	932·9	1069·8	944·8	1053·4	893·4	963·8

C.D. for T marginal means=102·8 Q/ha.

C.D. for V marginal means=178·1 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 62(137), 63(129), 64(137).**

Site :- Sugarcane Liaison Farm, Tanuku. Type 'CV'.

Object :—To study the effect o· different periods of harvesting on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 3.1.62; 7.2.63 ; 30.1.64. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses at 30 and 60 days after planting. (vi) As per treatments. (vii) Irrigated. (viii) 1 to 4 weedings, 1 to 2 earthing up ; trash twist propping ; hoeing. (ix) 121·2 cm. for 62. 112·5 cm. for 63 ; 96·7 cm. for 64. (x) 20.12.62 and 14.3.63 ; 7. 12.63, 7.2.64, 31.3.64; 8, 9.12.64, 1st week of Feb. and April for 65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 varieties : V_1=Co—997, V_2=Co—527, V_3=Co—975 and V_4=Co—419.

(2) 3 periods of harvest : H_1=10, H_2=12, H_3=14 months.

3. DESIGN :

(i) Fact in R.B.D. for 62, 63 ; R.B.D. for 64. (ii) (a) 12. (b) 12·1 m.×96·6 m. for 62 ; 96·6 m.×12·1 m. for 63 ; 96·6 m.×48·3 m. for 64. (iii) 4. (iv) (a) 12·1 m.×8·1 m. for 63 ; 12·1 m.×8·0 m. for 64. (b) 10·1 m.×6·0 m. for 62 ; 10·1 m.×6·0 m. for 63 and 64. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Incicence of Yellew Spot for 62; Endrin 0·02 % spray against Caterpillar for 63; Nil for 64. (iii) Yield of cane. (iv) (a) 1962—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present. Yield for H_3 is N.A. in 1962 and hence not pooled with 63 and 64.

5. RESULTS :

Pooled results of 1963 and 64
(i) 1056·6 Q/ha. (ii) 202·1 Q/ha. (based on 11 d.f. made up Treatments×years interaction). (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
H_1	1098·0	1045·0	1034·0	1043·5	1055·1
H_2	1165·5	1034·0	1043·5	1090·5	1083·3
H_3	1122 0	979·5	940·0	1084·5	1031·5
Mean	1128·5	1019·5	1005·8	1072·8	1056·6

Treatments	H_1	H_2	H_3	Sig.	V_1	V_2	V_3	V_4
Years								
1963	972	948	910	N.S.	1058	878	962	876
1964	1138	1219	1153	*	1199	1161	1049	1270
Pooled	1055·1	1083·3	1031·5	N.S.	1128·5	1019·5	1005·8	1072·8

Sig.	G.M.	S.E./plot
**	943	94
**	1170	84
N.S.	1056·6	202·1

62(137)

(i) 1337 Q/ha. (ii) 168 Q/ha. (iii) Main effect of H alone is highly significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	V_3	V_4	Mean
H_1	1512	1467	1386	1595	1490
H_2	1162	1274	1008	1293	1184
Mean	1337	1371	1197	1444	1337

C.D. for H marginal means=123·6 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 64(193), 65(81).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'CV'.**

Object :—To find out the optimum time of harvest for the standard varieties for maximum Sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 7.2.64 ; 9.2.1965. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 150·6 to 230 Q/ha. of press mud cake applied in trenches and 168·1 Kg/ha. of N as A/S applied in two equal doses on 45th and 120th day after planting. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 73 cm ; 53·9 cm. (x) As per treatments.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 varieties : V_1=Co-975, V_2=Co-997 and V_3=Co-527.

(2) 3 ages of harvest : H_1=10, H_2=12 and H_3=14 months of age.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) 90 m.×12 m. for 64 ; 81 m.×10·4 m. for 65. (iii) 4. (iv) (a) 12 m.×10 m. for 64 ; 10·4 m.×9 m. for 65. (b) 12 m.×8 m. for 64 ; 10·4 m.×7 m. for 65. (v) 100 cm. on either side along breadth.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 64 ; Red mite attack during April 65 and was controlled by spraying Wettable Sulphur. (iii) Germination counts, height measurements and yield of cane. (iv) (a) 1964-contd. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) As experiment is continued beyond 1965. results of individual years are prsented below.

5. RESULTS :

64(193)

(i) 1299·2 Q/ha. (ii) 116·8 Q/ha. (iii) Main effects of V and H are highly significant. (iv) Av. yield of cane in Q/ha.

	H_1	H_2	H_3	Mean
V_1	1259.8	1241·0	1083·1	1194.6
V_2	1489·8	1258·4	1275·3	1341·2
V_3	1509·4	1322·8	1253·4	1361·9
Mean	1419·7	1274·1	1203·9	1229·2

C.D. for V or H marginal means=98·5 Q/ha.

65(81)

(i) 1216 Q/ha. (ii) 73 Q/ha. (iii) Main effect of V alone is significant. (iv) Av. yield of cane in Q/ha.

	H_1	H_2	H_3	Mean
V_1	1250	1277	1237	1255
V_2	1170	1025	1029	1075
V_3	1323	1283	1351	1319
Mean	1248	1195	1206	1216

C.D. for V marginal means=61·5 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 64(194), 65(80).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'CV'.**

Object :—To find out suitable seed rate for different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 27.1.64 ; 28.2.65. (iv) (a) Trenching. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses at 45th and 120th day after planting. (vi) As per treatments. (vii) Irrigated. (viii) Trash twist propping, weeding and earthing up. (ix) 73 cm. ; 53·9 cm. (x) 16, 17.2.65 ; 8 to 10.3.66.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 varieties : V_1=Co-975, V_2=Co—997 and V_3=Co—419.

(2) 3 seed rates : S_1=24711, S_2=30888 and S_3=37066 three budded setts/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) 54 m.×12 m. for 64 ; 72 m.×12 m. for 65. (iii) 3. (iv) (a) 12 m.×6 m. for 64 ; 12 m.×8 m. for 65. (b) 12 m.×4 m. for 64 ; 12 m.×6 m. for 65. (v) 100 cm. on either side along breadth.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination counts, height measurements and yield of cane. (iv) (a) 1964-contd. (b) and (c) Nil. (v) N.A. (vi) Nil. (vii) As the expt. is continued beyond '65, results of individual years are presented below.

5. RESULTS :

64(194)

(i) 1124·2 Q/ha. (ii) 124·2 Q/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	S_3	Mean
V_1	1234·8	1184·0	1211·5	1210·1
V_2	1021·4	820·2	926·6	922·7
V_3	1238·3	1207·4	1204·6	1216·8
Mean	1164·8	1070·5	1114·2	1124·2

C.D. for V marginal means=124·0 Q/ha.

65(80)

(i) 1191 Q/ha. (ii) 58 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	S_3	Mean
V_1	1211	1175	1177	1188
V_2	1298	1175	1199	1224
V_3	1133	1187	1167	1162
Mean	1214	1179	1181	1191

Crop :- Sugarcane. **Ref :- A.P. 64(103).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'CV'.**

Object :—To study the effect of different times of planting on different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) As per treatments. (iv) (a) Formation of deep trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 56·0 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 6 hoeings, 6 weedings, earthing, up and trash twist propping 5 times. (ix) 91·8 cm. (x) 26.3.65 and 2.5.65.

2. TREATMENTS :

Main-plot treatments :

2 dates of planting : D_1=4, 5, 6.3.1964 and D_2=6.5.1964.

Sub-plot treatments :

2 varieties : V_1=Co-419 and V_2=Co-997.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 2 sub-plots/main-plot. (b) 25·3 m.×10·9 m. (iii) 6. (iv) (a) 10·9 m.×6·0 m. (b) 10·1 m.×4·0 m. (v) 40 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight incidence of Early Shoot borer, dipping the ends of setts before planting in ½% Agallol solution, spraying of 0·02% Endrin as a protective mea ure against early shoot borer. (iii) Yield of cane. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1176·4 Q/ha. (ii) (a) 182·3 Q/ha. (b) 145·5 Q/ha. (iii) Main effect of V alone is significant. (iv) Av. yield of cane in Q/ha.

	D_1	D_2	Mean
V_1	1238·0	1261·9	1250·0
V_2	1084·8	1121·0	1102·9
Mean	1161·4	1191·4	1176·4

C.D. for V marginal means=132·3 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 64(106).**

Site :- Sugarcane Liaison Farm, Yelamanchili. **Type :- 'CV'.**

Object :—To study the efficacy of trash blanketing to conserve soil moisture for Sugarcane Ratoon crop.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) Ratooning on 18, 19.5.64. (iv) (a) Stubble shaving. (b) to (e) —. (v) 168·1 Kg/ha. of N as A/S to be applied in two doses half at stubble shaving and half at 60 days subject to availability of water after on set of monsoon. (vi) As per treatments. (vii) Irrigated. (viii) 5 weedings, 2 hoeings, earthing up and trash twist propping. (ix) 91·8 cm. (x) 24, 25.1.65.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 2 varieties : V_1=Co—419, V_2=Co—997.

(2) 2 cultural practices : Co=No trash cover and C_1=Trash blanketing (16.6.64).

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 11·7 m.×8·1 m. (b) 10·9 m.×6·0 m. (v) 40 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Slight incidence of Early Shoot borer. Spraying of Endrin 0·02% as a protective measure against Early Shoot borer. (iii) Cane yield. (iv) (a) 1964-only. (b) and (c) and (v) to (vii) Nil.

5. RESULTS:

(i) 941·8 Q/ha. (ii) 166·4 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	V_1	V_2	Mean
C_0	914·2	923·3	918·8
C_1	962·0	967.6	964·8
Mean	938·1	945·4	941·8

Crop :- Sugarcane. **Ref :- A.P. 61(158), 62(164), 63(169).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CM'.**

Object :—To study the possibility of improving germination in Sugarcane by various methods of pre-treatment of seed material.

1. BASAL CONDITIONS:

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44 8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 29.1.61 ; 15.3.62 ; 12.2.63. (iv) (a) Formation of trenches. (b) Trench planting. (c) 29653 three budded setts/ha. ; 37066 three budded setts/ha. for 63. (d) 100 cm. between rows. (e) and (v) 251·1 Q/ha. of F.Y.M. by spreading, 55·6 Kg/ha. of P_2O_5 as Super and 55·6 Kg/ha. of K_2O as Pot. Sul. by pocketing in two equal doses for 61 ; 251·1 Q/ha. of F.Y.M. and 112·1 Kg/ha. of N as A/S in two equal doses at 45 and 90 days after planting by pocketing for others. (vi) Co-997. (vii) Irrigated. (viii) 2 weedings. earthing up and trash twist propping. (ix) 144 cm. ; N.A. ; 146 cm. (x) N.A. ; 4, 5.63 ; 21.1.64.

2. TREATMENTS:

7 cultural-cum-manurial treatments : T_0=Planting, short crop setts cut on the same day of planting, T_1=Planting short crop setts dipped in A retan T_2=Planting short crop setts manured with P_2O_5 as Super in addition to normal manuring of 111·2 Kg/ha. of N as A/S, T_3=Planting short crop setts manured with K_2O as Pot. Sul. in addition to normal manuring of 111·2 Kg/ha. of N as A/S, T_4=Planting short crop setts manured with P_2O_5 as Super and K_2O as Pot. Sul. in addition to normal manuring of N, T_5=Planting short crop setts soaked in cold water for 24 hrs. prior to planting and T_6=Planting short crop setts cut three days prior to planting.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) 28 m.×6 m. (iii) 4. (iv) (a) 6 m.×4 m. (b) 4 m.×2m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Infestation of Early Shoot borer and White Fly in 1961 ; Shoot borer incidence and Yellow Spot disease in 62 and 63 ; control measures N.A. (iii) Yield of cane. (iv) (a) 1961-63. (b) No. (c) Nil. (v) N.A. (vi) Heavy rainfall amounting to 12 cm. on 18.10.61 and heavy gale on 29.10.61 for 61 ; In treatment T_5 the extent of germination was only 17·8% and there were some mortalities, gap filling was done with ordinary seed material for 62 ; continuous dry spell from Nov. 63 to May, 64 for 64. (vii) Nil.

5. RESULTS :

61(158)

Germinated shoots.

(i) 32035 germinated shoots/ha. (ii) 2397 germinated shoots/ha. (iii) Treatment differences are highly significant. (iv) Av. no. of germinated shoots/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. on. of germinated shoots	29035	38301	30888	32432	36757	20695	36139

C.D.=3561 shoots/ha.

62(164)

Yield.

(i) 925 Q/ha. (ii) N.A. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	894	917	845	985	913	—	995

Germinated shoots

(i) 23387/ha. (ii) 1991·7/ha. (iii) Treatment differences are highly significant. (iv) Av. no. of germinated shoots/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. no. of germinated shoots	26564	27799	28108	28108	26564	3089	23475

C.D.=2958·8/ha.

63(169)

Yield

(i) 1076·9 Q/ha. (ii) 387·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1105·8	1163·0	1010·1	956·0	1093·5	1064·1	1146·0

% germination in degrees

(i) 30·61 degrees. (ii) 6·19 degrees. (iii) Treatment differences are not significant. (iv) Av. % germination in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean angle	29·25	35·69	28·85	27·02	23·97	32·56	36·91

Crop :- Sugarcane. **Ref :- A.P. 62(169), 63(163), 64(185).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CM'.**

Object :— To increase percentage of survival of total shoots formed by restricting production of unthrifty tillers.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 11.2.62 ; 12.3.63 ; 1.3.64. (iv) (a) Formation of trenches. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co—419. (vii) Irrigated. (viii) Weeding, trash twist propping and earthing up. (ix) N.A. ; 147 cm. ; N.A. (x) 19 to 21.3.63 ; 12 to 16.4.64 ; 9 to 11.4.65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 cultural operations : C_0=No earthing up on 45 day after planting and C_1=Earthing up to 10 cm. depth of furrow on 45th day after planting.

(2) 2 seed rates : S_1=24710 and S_2=37066 three budded setts/ha.

(3) 2 methods of application of N : M_1=$\frac{1}{4}$th dose on 45th day and $\frac{3}{4}$th dose on 90th day after planting and M_2=In two equal doses on 45th and 90th day after planting.

N as A/S at 112·2 Kg/ha. of N by pocketing.

3. DESIGN

(i) Fact. in R.B.D. (ii) (a) 848 m.×10 m. for 62. (b) 48 m.×8 m. for others. (iii) 4. (iv) (a) 10 m.×6 m. (b) 10 m.×4 m. (v) 100 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild infestation of Early Shoot borer. (iii) Germination counts, stalk population and cane yield. (iv) (a) 1962-contd (1965 N.A.) (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. is continued. beyond 1965 hence the results of individual years are presented under 5. Results.

5. RESULTS :

62(169)

(i) 1259 Q/ha. (ii) 1150·6 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of Sugarcane in Q/ha.

	S_1	S_2	M_1	M_2	Mean
C_0	1180	1237	1177	1240	1208
C_1	1301	1319	1290	1330	1310
Mean	1240	1278	1234	1285	1259
M_1	1235	1232			
M_2	1246	1324			

63(163)

(i) 1571·2 Q/ha. (ii) 13·6 Q/ha. (iii) Main effects of C, S and M are is highly significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	M_1	M_2	Mean
C_0	1505·9	1542·1	1504·5	1543·5	1524·0
C_1	1605·5	1631·1	1602·5	1634·1	1618·3
Mean	1555·7	1586·6	1553·5	1588·8	1571·2
M_1	1540.3	1566·7			
M_2	1571·1	1606·5			

C.D. for C, S or M manrginal means=10·0 Q/ha.

64(185)

(i) 1272·6 Q/ha. (ii) 67·2 Q/ha. (iii) Main effect of C alone is significant. (iv) Av. yield of Sugarcane in Q/ha.

	S_1	S_2	M_1	M_2	Mean
C_0	1204·0	1277·4	1220·7	1260·7	1240·7
C_1	1290·4	1318·7	1304·1	1305·0	1304·6
Mean	1247·2	1298·0	1262·4	1282·8	1272·6
M_1	1236·0	1288·8			
M_2	1258·4	1307·3			

C.D. for C marginal means=49·4 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(69).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'CM'.**

Object :— To study the influence of spacing and application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cowpea. (c) Nil. (ii) Clay loam. (iii) 27.2.63. (iv) (a) Bund formation and trench formation. (b) Trench planting. (c) 37066 three budded setts/ha. (d) As per treatments. (e) —. (v) 251·1 Q/ha. of F.Y.M. applied at planting. (vi) Co-419. (vii) Irrigated. (viii) Gap filling, weeding and trash twist propping. (ix) 147·2 cm. (x) 27 and 28.1.64.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 3 levels of N as A/S : N_1=50·4, N_2=100·9 and N_3=151·3 Kg/ha.
(2) 2 spacings between rows : S_1=80 and S_2=100 cm.
N applied in two equal doses at 45 and 90 days after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 13·6 m.×9·7 m. for S_1 and 13·6 m.×10·1 m. for S_2. (b) 10·1 m.×8·1 m. (v) 150 cm.×80 cm. for S_1 and 150 cm.×100 cm. for S_2. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1631 Q/ha. (ii) 154 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

	N_1	N_2	N_3	Mean
S_1	1626	1638	1635	1633
S_2	1623	1619	1644	1629
Mean	1625	1629	1639	1631

Crop :- Sugarcane. **Ref :- A.P. 61(171).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'CM'.**

Object : - To study the effect of heavy and late application of manures on the yield and quality of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Black loamy. (iii) 2.2.61. (iv) (a) Formation of deep trenches. (b) End over end in lines. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —, (v) Nil. (vi) Co-527. (vii) Irrigated. (viii) Weedings, earthing up and trash twist propping. (ix) 291·9 cm. (x) 11 to 13.2.62 and 2 to 3.4.62.

2. TREATMENTS:

All combinations of (1), (2) and (3).

(1) 4 levels of N as A/S : N_0=0, N_1=84·0, N_2=168·1 and N_3=252·2 Kg/ha.

(2) 3 times of application of N : First half dose at 45 days after planting and the balance half dose at T_1=90, T_2=120 and T_3=240 days after planting.

(3) 2 times of harvest: H_1=12 and H_2=14 months age of crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 24. (b) 96 m.×12 m. (iii) 2. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Good in N plots and poor in No plots. (ii) Sprouting observed at the end of 1st fortnight of Feb. 61. Spraying with D.D.T. 50% on 6.3.61. (iii) Cane yield. (iv) (a) 1961 only. (b) and (c) Nil. (v) N.A. Summer was severe and the day temprature reached 107°F and with few showers in late May it was reduced. Heavy rains during Aug. and sept. 61. (vii) Nil.

5. RESULTS:

(i) 1075 Q/ha. (ii) 115·7 Q/ha. (iii) Main effects of N and T are highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	N_3	T_1	T_2	T_3	Mean
H_1	827	1040	1268	1243	1140	1143	1002	1095
H_2	810	1093	1193	1129	1085	1156	928	1056
Mean	818	1066	1230	1186	1112	1149	965	1075
T_1	820	1149	1319	1160				
T_2	834	1130	1135	1299				
T_3	802	920	1038	1100				

C.D. for N marginal means=97·6 Q/ha.

C.D. for T marginal means=84·6 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 62(192), 63(187), 64(191).**

Site :- Sugarcane Liaison Farm, Vuyyur. **Type :- 'CM'.**

Object : — To study the late and heavy application of manures on the yield of cane at two stages of harvest.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. for 62, 63 ; 22·4 Kg/ha. of N as A/S for 64. (ii) Black loamy. (iii) 10.2.62 ; 20.2.63 ; 28.1.64. (iv) (a) Formation of deep trenches. (b) Trench planting end to end. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) Nil. (vi) Co-527. (vii) Irrigated. (viii) Weeding, trash twist propping and earthing up. (ix) 362·7 cm. ; 204·1 cm. ; 73 cm. (x) As per treatments.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 8 times of application of N : T_1=84·1 Kg/ha. of N at 45 days+84·1 Kg/ha. of N at 120 days after planting, T_2=84·1 Kg/ha. of N at 45 days+112·1 Kg/ha. of N at 120 days and 6·0 Kg/ha. of N at 240 days after planting and T_3=84·1 Kg/ha. of N at 45 days+168·1 Kg/ha. at 120 days after planting.

(2) 2 times of harvest : H_1=12 and H_2=14 months age of crop.

A/S applied by soil application.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) 60 m.×12 m. (iii) 5. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Sprouting was observed in Feb. 62 for 62, Nil for others. (iii) Germination count, height measurements and yield of cane. (iv) (a) 1962-64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years' interaction is present.

5. RESULTS :

Pooled resulte

(i) 1098·8 Q/ha. (ii) 189·7 Q/ha. (based on 10 d.f. made up of Treatments×years interaction). (iii) Main effect of N alone is significant. (iv) Av. yield of cane in Q/ha.

	T_1	T_2	T_3	Mean
W_1	1081·3	1177·6	1194·0	1151·0
W_2	983·3	1046·6	1110·0	1046·6
Mena	1032·3	1112·1	1152·0	1098·8

C.D. for N marginal means=89·1 Q/ha.

Individual results

Treatments	W_1	W_2	Sig.	T_1	T_2	T_3	Sig.	S.E./plot	G.M.
Years									
1962	1102	1108	N.S.	1022	1081	1213	**	1105	109·0
1963	1345	1130	**	1153	1316	1244	**	1237	68·9
1964	1006	901	**	922	940	998	N.S.	954	76·6
Pooled	1151	1046	*	1032	1112	1152	N.S.	1099	109·7

Crop :- Sugarcane. **Ref :- A.P. 63(102).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'CMV'.**

Object :— To find out the ratooning capacity of the promising varieties of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane-Sugarcane. (b) Sugarcane. (c) As per treatments. (ii) Regur. (iii) As per treatments. (iv) (a) Tractor ploughing, *patta* running laying the field in ridges and furrows. (b) Planting in furrows. (c) 29653 three-budded setts/ha. (d) 90 cm. between rows. (e) —. (v) 246·6 Q/ha. as Super to plant crop. (vi) As per treatments. (vii) Irrigated. (viii) Mulching, hoeing, weeding, earthing and propping. (ix) 90·4 cm. (x) 10.12.64.

2. TREATMENTS:

Main-plot treatments :

4 varieties : V_1=Co-49, V_2=Co-975, V_3=Co-683 and V_4=Co-737.

Sub-plot treatments :

3 seasons of ratooning and planting : S_1=December, 61 ; S_2=December 62 and S_3 Planting in Dec. 63.

Sub-sub-plot treatments :

2 levels of N : N_1=252·2 and N_2=378·3 Kg/ha.

3. DESIGN:

(i) Split-split-plot. (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot and 2 sub-sub-plots/sub-plot. (b) N.A. (iii) 3. (iv) (a) 15·9 m.×6·4 m. (b) 15·2 m.×4·6 m. (v) 30 cm.×91 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Germination counts, growth measurements and yield of cane. (iv) (a) 1963 only (b) and (c) Nil. (v) to (vii) Nil.

5. RESLTS :

(i) 631·7 Q/ha. (ii) (a) 157·4 Q/ha. (b) 219·7 Q/ha. (c) 102·3 Q/ha. (iii) Main effects of V and N are significant. (iv) Av. yield of cane in Q/ha

	V_1	V_2	V_3	V_4	N_1	N_2	Mean
S_1	445·9	440·1	605·6	779·8	540·4	595·1	567·8
S_2	463·1	618·6	732·0	827·4	625·4	695·2	660·3
S_3	703·0	615·2	620·2	729·3	653·0	681·0	667·0
Mean	537·3	558·0	652·6	778·6	606·3	657·1	631·7
N_1	535·3	500·1	643·9	745·8			
N_2	539·3	615·9	661·2	812·0			

C.D. for V marginal means=128·5 Q/ha.
C.D. for N marginal means=49·7 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(166), 64(182), 65(23).**

Site :- Sugarcane Res. Stn., Ankapalle. **Type :- '1'.**

Object :—To study the effect of sprinkle irrigation as compared to that of furrow irrigation on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 26.2.63 ; 26.2.64 ; 2.3.65. (iv) (a) Formation of trenches by tractor. (b) Trench planting. (c) 37066 three budded setts/ha. for 63 ; 29653, three budded setts for others. (d) 100 cm. between rows. (e) –. (v) 247 Q/ha. of F.Y.M. and 111 Kg/ha. of N as A/S in 2 equal doses on 45th and 90th day after planting for 62th 111 Kg/ha of N as A/S on 45th, 90th day after planting for others. (vi) Co-419. (vii) Irrigated. (viii) Weeding, earthing up and trash twist propping. (ix) 147 cm. ; 102 cm. ; 89 cm. (x) 6, 7.4.64 ; 10.3.65 ; 8, 9.3.66.

2. TREATMENTS :

2 irrigational treatments : I_1=Ordinary furrow irrigation and I_2=Sprinkle irrigation.

3. DESIGN :

(i) AB-AB method. (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 80·9 sq. m. for 63 ; 10 m.×8 m. for others. (b) 48·6 sq. m. for 63 ; 8 m.×6 m. for others. (v) N.A. for 63 ; 100 cm.×100 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild infestation of Early Shoot borer for 63, 64, control measures N.A. ; for 65. (iii) Germination counts, tiller counts, height measurements and yield of cane. (iv) (a) 1963-65. (b) No. (c) Nil. (v) N.A. (vi) Continuous dry spell from Nov. 63 to May, 64 for 63 ; from Nov. 64 to May, 65 for 64 ; A cyclone during 1st week of Jan., 66 for 65. (vii) Error variance are heterogeneous and Treatments×years' interaction is absent. The results of individual years are presented below.

5. RESULTS :

63(266)

(i) 1292·8 Q/ha. (ii) 87·6 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	I_1	I_2
Av. yield	1317·7	1267·9

64(182)

(i) 1350·7 Q/ha. (ii) 100·3 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	I_1	I_2
Av. yield	1342·3	1359·1

65(23)

(i) 1017·0 Q/ha. (ii) 14·5 Q/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cane in Q/ha.

Treatment	I_1	I_2
Av. yield	1023·1	1010·8

Crop :- Sugarcane. **Ref :- A.P. 64(87).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'IV'.**

Object :—To study the effect on yield due to different varieties under normal and swampy conditions of irrigation.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M. Crop.—Sugarcane. (b) and (c) N.A. (ii) *Regur.* (iii) 31.12.54. (iv) (a) Tractor ploughing, ploughing with iron plough, *patta* marking, levelling laying of field into ridges and furrows. (b) planting furrows. (c) 29653 three budded setts/ha. (d) 90 cm. between furrows. (e) — (v) 247·1 Kg/ha. of N in three split doses and 111·2 Kg/ha. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrrigated. (viii) Mulching, weeding, hoeing, earthing and propping. (ix) 93·1 cm. (x) 27.1.66.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 6 varieties : V_1=Co-419, V_2=Co-613, V_3=Co-737, V_4=Co-975, V_5=Co-1026 and V_6=Co-1235.

(2) 2 irrigational levels : I_0=Normal condition and I_1=Swampy.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 15 m ×5 4 m. (b) 14 m.×3·6 m. (v) 50 cm.×90 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination and population counts, crop height and yield of cane. (iv) (a) 1964 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1107·0 Q/ha. (ii) 181·4 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane in Q/ha.

Mean	V_1	V_2	V_3	V_4	V_5	V_6	Mean
I_0	1067·9	1029 3	1098·7	1176·6	1266·3	1205·8	1140·8
I_1	1026·8	1134·4	1216·3	847·2	1192·4	1022·8	10 3·3
Mean	1047·3	1081·9	1157·5	1011·9	1229·3	1114·3	1107·0

Crop :- Sugarcane. **Ref :- A.P. 60(56).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'IM'.**

Object :—To fix up the optimum dose of N and irrigational intervals for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 16.2.60. (iv) (a) Loosening up the soil and trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows (e) — (v) Nil. (vi) Co-419. (vii) Irrigated. (viii) Gap filling, weeding and hoeing, wrapping, propping and earthing up. (ix) 83·7 cm. (x) 24 to 26 Feb., 1961.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_0=0, N_1=112·1 and N_2=336·3 Kg/ha.

(2) 2 intervals of irrigation : I_1=6 and I_2=18 days from the 45th day of planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 2. (iv) 16·1 m×14·1 m. (b) 12·1 m.×6·0 m. (v) 200 cm.×400 cm. (vi) Yes.

4. GENERAL :

(i) Crop lodged badly due to heavy wind and rain in the final stage. (ii) Nil. (iii) Yield of cane (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1195 Q/ha. (ii) 106 Q/ha. (iii) Main effects of N and I are highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	Mean
I_1	1035	1679	1497	1404
I_2	841	1164	957	987
Mean	938	1421	1227	1195

C.D. for I marginal means=157·3 Q/ha.

C.D. for N marginal means=192·6 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(116), 64(91).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'IM'.**

Object :—To find out the effect of different levels of N at different levels of imgation.

1. BASAL CONDITIONS :

(i) (a) G.M. Crop.—Sugarcane.(b) G.M. Crop. (c) Nil. (ii) *Regur.* (iii) 12.2.60 ; 1.2.64. (iv) (a) 4 to 5 plough ings, levelling and *patta* working. (b) Planting in furrows. (c) 29652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 24·7 C.L./ha. of F.Y.M.+56·0 Kg/ha. of P_2O_5+56·0 Kg/ha. of K_2O as Pot. Sul as top dressing for 60 ; 111·2 Kg/ha. of P_2O_5 as Super and 111·2 Kg/ha. of K_2O as Mur. Pot. at planting for 64. (vi) Co-419. (vii) Irrigated. (viii) Mulching, weeding, earthing and propping. (ix) 90 cm. ; 91 cm. (x) Last week of Nov. to 2nd week of December 60 for 60 ; 1.2.65.

2. TREATMENTS:

Main-plot treatments :

4 irrigational treatments : I_1=Once in 5 days, I_2=Once in 10 days, I_3=Once in 15 days and I_4=Once in 20 days.

Sub-plot treatments :

4 levels of N as A/S : N_1=168·1, N_2=252·2, N_3=336·2 and N_4=420·3 Kg/ha.

3. DESIGN :

(i) Spilt-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×4·6 m. for 60 ; 13 m.×7 m. for 64. (b) 7·3 m.×2·7 m. for 60 ; 13 m.×5·4 m. for 64. (v) 91 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cane. (iv) (a) 1960—65 (season changed during 1961 to 64). (b) No. (c) Nil. (v) and (vi) Nil. (vii) Sub-plot Error variances are heterogeneous and hence results of individual years are presented below.

5. RESULTS:

60(116)

(i) 912 Q/ha. (ii) (a) 161 Q/ha. (b) 157 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of cane Q/ha.

	I_1	I_2	I_3	I_4	Mean
N_1	846	797	874	833	838
N_2	978	890	884	846	900
N_3	1035	950	915	1018	980
N_4	1010	1021	857	838	932
Mean	967	914	882	884	912

64(91)

(i) 880·7 Q/ha. (ii) (a) 103·0 Q/ha. (b) 97·3 Q/ha. (iii) Main effects of I and N are highly significant. (iv) Av. yield of cane in Q/ha.

	I_1	I_2	I_3	I_4	Mean
N_1	775·9	829·1	696·6	751·7	763·3
N_2	966·3	984·3	709·9	836·2	874·2
N_3	1100·2	1064·6	840·9	833.3	959·7
N_4	1165·2	1136·3	688·0	713·2	925·6
Mean	1001·9	1003·6	733·9	783·6	880·7

C.D. for I marginal means=102·8 Q/ha.

C.D. for N marginal means=81·9 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 60(75), 61(72), 62(107), 64(92).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'IM'.**

Object :—To study the effect of different levels of N and interval of irrigation on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M. Crop.—Sugarcane. (b) Sugarcane. (c) 252·2 Kg/ha, of N as A/S. (ii) *Chalka.* (iii) 20, 21.11.60 ; 14.12.61 ; 17.11.62 ; 24.11.64. (iv) (a) 4 to 5 mould board ploughing 8 and levelling. (b) Planting in forrows. (c) 29653 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 24·7 C.L./ha. of F.Y.M.+56·0 Kg/ha. of P_2O_5 as Super as basal dose+56·0 Kg/ha. of K_2O as Pot. Sul. as top dressing for 60, 61, 62 ; 111·2 Kg/ha. of P_2O_5 as Super and 111·2 Kg/ha. of K_2O as Mur. Pot. for 64. (vi) Co-419. (vii) Irrigated. (viii) Mulching, earthing and propping. ix) 128·8 cm. ; 156·7 cm. ; 184·9 cm. ; 98 1 cm. (x) 29.1.62 ; 14.12.63 ; 20.1.64 ; 1.2.66.

2. TREATMENTS :

Main-plot treatments :

4 intervals of irrigation : I_1=5, I_2=10, I_3=15 and I_4=20 days.

Sub-plot treatments :

4 levels of N as A/S : N_1=168·1, N_2=252·2, N_3=336·2 and N_4=420·3 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. for 60,61 ; 11·9 m.×5·2 m. for 62 ; 13 m.×7·2 m. for 64. (b) 1/294·9 ha. for 60, 61 ; 11·0 m.×4·6 m. for 62 ; 13 m.×5·4 m. for 64. (v) N.A. for 60, 61, ; 46 cm.×30 cm. for 62 ; 90 cm. on either side along breadth for 64. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil for 60, 61, 64 ; control measures were adopted to check E.S.B. (iii) Germination counts and yield of cane. (iv) (a) 1960 –65 (season changed during 1960 and 65). (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances for main as well as sub-plots are homogeneous and Treatments×years interaction is absent in both.

5. RESULTS:

(i) 868 0 Q/ha. (ii) (a) 182·8 Qha. (based on 33 d.f. made up of pooled error and Treatments × years interaction). (b) 109·4 Q/ha. (based on 132 d.f. made up of pooled error and Treatments × years interaction). (iii) Main effects of I and N are highly significant. (iv) Av. yield of cane in Q/ha.

	I_1	I_2	I_3	I_4	Mean
N_1	874·5	908·5	759·2	740·2	820·6
N_2	914·7	855·7	796·2	865 2	858·0
N_3	963·5	912·2	846 7	869·5	898 0
N_4	962·0	942·7	857·5	820·7	895·7
Mean	928·6	904·8	814·9	823·9	868·0

Treatments	I_1	I_2	I_3	I_4	Sig.	S.E./main-plot	N_1	N_2	N_3	N_4	Sig.	G.M.	S.E./sub-plot
Years													
1960	835	845	753	711	N S.	121	746	815	779	804	N.S.	786	83
1961	823	750	730	792	N.S.	266	742	758	803	793	N.S.	774	108
1962	776	793	689	710	N.S.	136·6	746	721	755	746	N.S.	742	110·3
1964	1280	1232	1088	1083	N.S.	214·9	1048	1139	1255	1241	**	1171	107·5
Pooled	929	905	815	824	**	182·8	821	858	898	896	**	868	109·4

Crop :- Sugarcane. **Ref :- A.P. 61(155).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'IMV'.**

Object :—To study the effect of N at different irrigational levels on the yield of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 16, 17.2.61/gap filling on 23.3.61. (iv) (a) Trenching. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) and (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding ; earthing up and trash twist propping. (ix) N.A. (x) 18.2.62 to 27.2.62.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=111·2 and N_2=333·6 Kg/ha.

(2) 2 levels of irrigations : I_1=Once in 6 days from 45th day after planting and I_2=Once in 18 days from 45th day after planting.

(3) 2 varieties : V_1=Co-419 and V_2=Co-997.

N applied in two equal doses 45 and 90 days after planting.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 12. (b) 60 m.×10 m. (iii) 2. (iv) (a) 12 m.×10 m. (b) 10 m.×6 m. (v) 100 cm.×200 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Infestation of Early Shoot borer, due to heavy rains during monsoon infestation of white Fly was observed. (iii) Yield of cane. (iv) (a) 1961 only. (b) and(c) Nil. (v) Nil.(vi) Heavy rainfall amounting to 12·1 cm. on 18.10.61 and heavy gale on 29.10.61. (vii) Nil.

5. RESULTS :

(i) 589 Q/ha. (ii) 125·8 Q/ha. (iii) Main effects of V, N and interaction V×N are highly significant. (iv) Av. yield of cane in Q/ha.

	N_0	N_1	N_2	V_1	V_2	Mean
I_1	490	711	698	702	563	633
I_2	437	608	587	583	504	544
Mean	464	660	642	642	534	589
V_1	415	753	761			
V_2	512	566	524			

C.D. for V marginal means=113·1 Q/ha.

C.D. for N marginal means=138·4 Q/ha.

C.D. for means in the body of V×N table=195·7 Q/ha.

———

Crop :- Sugarcane. **Ref :- A.P. 62(170).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'IC'.**

Object :—To study the effect of intervals of irrigation with and without interculture operations on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 13.2.62. (iv) (a) Formation of trenches. (b) Trench planting. (c) As per treatments. (d) 100 cm. between rows. (e) —. (v) 251·1 Q/ha. of F.Y.M. by spreading on 29.2.61, 112·1 Kg/ha. of N as A/S in two equal doses. (vi) Co-419. (vii) Irrigated. (viii) Earthing up, weeding' and trash twist propping. (ix) 146 cm. (x) 6, 7.3.63.

2. TREATMENTS :

Main-plot treatments :

2 types of irrigations : I_1=Irrigations once in six days after planting till 36th day and I_2=Irrigations once in twelve days after planting till 36th day.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 2 seed rates : S_1=29653 and S_2=37066 three budded setts/ha.

(2) 2 cultural treatments : C_1=No hoeing on 6th day after planting and C_2=Hoeing on 6th day after planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 7. (iv) (a) N.A. (b) 13·4 m.×1 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying Endrin against Early Shoot borer on 10.4.62. Spray incidence of Yellow Spot diseases. (iii) Yield of cane (iv) (a) 1962-only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1133·2 Q/ha. (ii) (a) 186·0 Q/ha. (b) 245·8 Q/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of cane in Q/ha.

	S_1	S_2	C_1	C_2	Mean
I_1	1042	1177	1102	1117	1109
I_2	1087	1227	1166	1147	1157
Mean	1065	1202	1134	1132	1133
C_1	1062	1206			
C_2	1067	1198			

C.D. for S marginal means = 133·4 Q/ha.

Crop :- Sugarcane. **Ref :- A.P. 65(55).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To findout the optimum time of application of insecticides for control of Shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 119 Kg/ha. of Super+161 Kg/ha. of A/S. (ii) Clay loam. (iii) 7.3.65. (iv) (a) Trenching and hoeing in trenches. (b) Trench planting. (c) 29,653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 250 Q/ha. of F.Y.M. as basal and 112 Kg/ha. of N as A/S in 2 equal doses on 45th and 90th day after planting. (vi) Co-419. (vii) Irrigated. (viii) Weeding, hoeing, ea. thing up and trash twist propping. (ix) N.A. (x) 20.4.66.

2. TREATMENTS :

Spraying of D.D.T. 50% wetable powder at 0·32 concentration during: T_0=No treatment, T_1=3rd week of March, T_2=1st week of April, T_3=3rd week of April, T_4=1st week of May, T_5=3rd week of March and 3rd week of April, T_6=1st week of April and 1st week of May, T_7=4th, 6th and 9th weeks after planting.

Quantity and method of spraying : 450 litres of spray fluid/ha. for 4 weeks old crop, 675 litres of spray fluid/ha. for 6 weeks old crop and 900 litres of spray fluid/ha. for 9 weeks old crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 12 m.×64 m. (iii) 2. (iv) (a) 12 m.×8 m. (b) 11·6 m.×8 m. (v) 20 cm. on either side of the plot along the breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) % Shoot borer incidence, % juice sucrose and cane yield. (iv) (a) 1963-only. (b) and (c) Nil. (v) N.A. (vi) Cyclonic effect during 1st week of Jan. 66. (vii) Nil.

5. RESULTS :

(i) 876·3 Q/ha. (ii) 100·1 Q/ha. (iii) Treatment differences are not significant. (iv) Av. cane yield in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	932·7	833·8	861·3	866·7	847·8	867·7	894·7	905·7

Crop :- Sugarcane. **Ref :- A.P. 62(179).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To find out whether any of the chemicals under trial can be used more profitably in the control of the Shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Loamy. (iii) 5.3.62. (iv) Formation of trenches. (iv) (a) Hoeing in trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) . (v) 251·1 Q/ha. of F.Y.M., 112·1 Kg/ha. of N as A/S in two equal doses on 45th, 90th day after planting. (vi) Co-419. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 144 cm. (x) 5 to 9.3.63.

2. TREATMENTS :

5 spraying treatments : T_0=Control, T_1=Spraying DDT 25% emulsion at 0·25 concentration, T_2=Spraying Lindane 20% emulsion at 0·1 % concentration, T_3=Spraying Endrin 20% emulsion at 0·02% concentration and T_4=Soil application of 20% emulsion at 0·57 Kg/ha. at the time of planting.

The spray treatments were given during the 4th, 6th and 9th week of the crop using 182, 273 and 364 litres of the spray fluid respectively for the three sprayings.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 14 m.×8 m. (b) 10 m.×6 m. (v) 200 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Early Shoot borer incidence was mild in general. (iii) Germination counts, heart counts, stalk population and cane yield. (iv) (a) 1962 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Cane yield

(i) 1377 Q/ha. (ii) 110·2 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1296	1445	1304	1450	1391

% Shoot borer incidence.

(i) 11·65 %. (ii) 4·62%. (iii) Treatment differences are highly significant. (iv) Av. % of shoot borer incidence.

Treatment	T_0	T_1	T_2	T_3	T_4
% incidence	20·53	6·32	6·87	7·99	16·52

C.D.=7·12 %.

Crop :- Sugarcane. **Ref :- A.P. 60(62).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :— To study the effect of insecticides against Shoot borer Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Clayey loam. (iii) 27.2.60. (iv) (a) field claiming, wetting and trenching. (b) Trench planting, (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 251·1 Q/ha. of F.Y.M. and 112·1 Kg/ha. of N as A/S in two equal doses on 45 and 90 days after planting. (vi) Co-419. (vii) Irrigated. (vlii) Gap filling, weeding and propping. (ix) 83·7 cm. (x) 10.1.61.

2. TREATMENTS:

7 insecticidal treatments : T_0=Control, T_1=D.D.T. 0·32% suspension spray, T_2=Endrin 0·02% emulsion spray, T_3=D.D.T. 0·25% emulsion spray, T_4=Gamma B.H.C. (Lindane) 0·1% emulsion spray, T_5=(B.H.C.+D.D.T.) 0·25% suspension spray and T_6=Gusathion 0·1% emulsion spray.

Insecticides were sprayed during 4th, 6th and 9th weeks and at 449·0 and 898·3, 674·0 and 898·7 letres/ha. of spray fluid respectively.

3. DETIGN :

(i) R.B.D. (ii) (a) 7. (b) 72·4 m.×44·3 m. (iii) 4. (iv) (a) 11·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 50 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of shoot borer, control measures as per treatments. (iii) Germination counts, dead heart counts commencing from 15 days after planting with one count just-before spraying till the 4th month of crop and yield of cane. (iv) (a) 1960 only. (b) No. (c) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Yield of cane.

(i) 1259 Q/ha. (ii) 49 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1165	1337	1242	1192	1270	1354	1255

C.D.=72·7 Q/ha.

No. of dead hearts recorded in the 1st four months age of crop.

(i) 4912 dead hearts/ha. (ii) 581 dead hearts/ha. (iii) Treatment differences are highly significant. (iv) Av. no. of dead hearts/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
No. of dead hearts/ha.	1643	5807	4613	6538	3912	5230	6631

C.D.=863 dead hearts/ha.

Crop :- Sugarcane. **Ref :- A.P. 65(54).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :— To study the varietal resistance to the Shoot borer incidence at different levels of N.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) 74 Kg/ha. of P_2O_5 as Super+87 Kg/ha. of N as A/S (ii) Clay loam. (iii) 26.1.65. (iv) (a) Trenching by tractor. (b) Trench planting. (c) 29653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) and (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings, earthing up, propping and wrapping thrice. (ix) N.A. (x) 26 to 28.12.65.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 5 varieties: V_1=Co-997, V_2=D 4/4, V_3=Co-62036, V_4=Co-1335 and V_5=Co-419.
2 levels of N : N_1=112 and N_2=224 Kg/ha.

N applied as A/S in two equal doses at 45th and 90th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 24 m.×40 m. (iii) 3. (iv) (a) 22 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) % shoot borer incidence, % internodal infestation. (iv) (a) 1965-contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

% Shoot borer incidence

(i) 22·63 %. (ii) 4·56 %. (iii) Main effect of V alone is significant. (iv) Av. % of shoot borer incidence

	V_1	V_2	V_3	V_4	V_5	Mean
N_1	16.44	15·48	23·63	33·21	25 03	22·76
N_2	16·52	18·40	20·48	33·02	24·04	22·49
Mean	16·48	16·94	22·06	33·12	24·54	22·63

C.D. for V marginal means=5·53 %.

Crop :- Sugarcane. **Ref :- A.P. 61(157), 62(167), 63(167).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

To study the possibility of improving tillering by spraying Maleic hydrazide on 30th day after planting.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5. (ii) Clay loam. (iii) 29.1.61., 15.3.62 ; 12.2.63. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 251·1 Q/ha. of F.Y.M. by spreading, 112·1 Kg/ha. of N as A/S in two equal doses on 45th and 90th day after plantig by pocketing. (vi) Co-997. (vii) Irrigated. (viii) 3 weedings, trash twist propping and earthing up. (ix) 144 cm. ; N.A. ; 146 cm. (x) 8, 9.2.1962 ; 6, 7.1.1963 ; 22.1.1964.

2. TREATMENTS:

3 spraying treatments : T_0=Control, T_1=Maleic hydrazide 0·05 % of active principle and T_2=Maleic hydrazide 0·1% of active principle.

Spray fluid used at 337·3 litres/ha.

3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) 12 m.×6 m. for 61, 62 ; 24 m.×6 m. for 63. (iii) 8. (iv) (a) 6 m.×4 m. (b) 4 m.×2 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory in all but severe lodging in months of Oct. and Nov. 61 Infestation of Early Shoot borer, White Fly ; control measures N.A. (iii) Tiller counts and yield of cane. (iv) (a) 1961-63. (b) No. (c) Nil. (v) N.A. (vi) Heavy rainfall amounting to 12 cm. on 18.10.61 and gale on 9.10.61 for 61 ; Nil for others. (vii) Error variances are heterogeneous and Treatments×years interaction is absent., hence results of individual years are presented below.

5. RESULTS :

61(157)

(i) 1482 Q/ha. (ii) 242·1 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	1429	1648	1370

C.D.=259·5 Q/ha.

62(167)

(i) 835 Q/ha. (ii) 93·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	856	803	846

63(167)

(i) 1115·3 Q/ha. (ii) 107·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2
Av. yield	1178·4	1113.5	1054·0

Crop :- Sugarcane. **Ref :- A.P. 60(59).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object : To study the effect of D.D.T. on yield and incidence of dead hearts in Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 4, 5.3.60. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) Nil. (v) 251·1 Q/ha. of compost and 112·1 Kg/ha. of N as A/S in two equal doses on 20.4.60. and 3.6.60. by soil application. (vi) Co—419. (vii) Irrigated. (viii) 7 weedings, hoeing, earthing up and trash twist propping. (ix) 67 cm. (x) 12.1.61,

2. TREATMENTS :

8 sprayings of D.D.T. powder: T_0=Control (no spraying), T_1=Single spraying during 6th week, T_2=Single spraying during 6th week, T_3=Single spraying during 9th week, T_4=Two sprayings one during 4th week, and one during 6th week, T_5=Two spraying one during 4th week and other during 9th week, T_6=Two spraying one during 6th week and other during 9th week and T_7=Three sprayings one during 4th week, one during 6th week and one during 9th week.

D.D.T. 50 % wettable powder at 0·32 concentration was used at the rate of 449·3, 674·0 and 898·7 litres of spray fluid for the 4th, 6th and 9th week sprayings respectively.

3. DESIGN:
(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 11·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 50 cm.×100 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Termite infection ; control measures as per treatments. (iii) Germination counts, dead heart counts and yield of cane. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

Yield of cane

(i) 1139 Q/ha. (ii) 106 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1038	1104	1115	1052	1163	1111	1171	1355

C.D.=155·8 Q/ha.

No. of dead hearts recorded in the 1st four month age of crop.
(i) 13745 Q/ha. (ii) 1106 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of dead hearts/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. no. of dead hearts/ha.	25205	15032	13508	15897	13961	12190	8196	5972

C.D.=1626 deed hearts/ha.

Crop :- Sugarcane. **Ref :- A.P. 63(183), 65(56).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To find out the loss of yield of Sugarcane at different levels of Shoot borer incidence.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 for 63 ; 93 Kg/ha of Super+121 Kg/ha. of A/S for 65. (ii) Clay loam. (iii) 26.2.63 ; 5.3.65. (iv) (a) Forming trenches and hoeings. (b) Trench planting. (c) 29653 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 251·1 Q/ha. of F.Y.M. and 112·1 Kg/ha. of N as A/S in two equal doses on 45th and 90th day after planting by pocketing. (vi) Co —419. (vii) Irrigated. (viii) Weeding hoeing, earthing up and trash twist propping. (ix) 147 cm. ; N.A. for 65. (x) N.A. ; 20.4.66.

2. TREATMENTS :

6 infestation treatments : T_0=Control (No creation of artificial infestation), T_1=Creating infestation up to 10 %, T_2=20 %, T_3=30 %, T_4=40 %, and T_5=50 %.

Dead hearts infestation created artificially by damaging the growing point. Infestation created on 45th day by damaging the growing point of primary shoots. All plots were sprayed with [Endrin 0·02 % EC once in 15 days from 15th day after planting till 150th day to keep the nartural insestation by the pest as low as posible.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 24 m.×5 m. for 63 ; N.A. for 65. (iii) 4 for 63 ; 6 for 65. (iv) (a) 5 m.×4 m. (b) 3 m.×2 m. (v) 100 cm.×100 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild infestation of Early Shoot borer. (iii) Dead heart counts and yield of cane (iv) (a) 1963 contd (1964 N.A.). (b) No. (c) Nil. (v) N.A. (vi) Continuous dry spell form Nov, 63 to May 64 ; cyclonic effect during 1st week of June, 66 for 65. (vii) Expt. in continued beyond 1965, hence results of individual years are prensented below.

5. RESULTS :

63(180)

(i) 1252 Q/ha. (ii) 141·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q'ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1332	1277	1249	1230	1246	1181

65(56)

(i) 1348·3 Q/ha. (ii) 117·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1309·6	1311·8	1398·6	1341·0	1328·9	1400·0

Crop :- Sugarcane. **Ref :- A.P. 61(55)**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To find out an efficient and economic chemical for the control of Early Shoot borer.

1. BASAL CONDITIONS :

(i) (a) Sugarcane *Ragi.* (b) *Ragi.* (c) N.A. (ii) Sandy loam. (iii) 22.2.61. (iv) (a) Trench formation. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 251·1 Q/ha. of F.Y.M. as basal dose and 112·1 Ka/ha. of N as A/S in two equal doses 45 and 90 days after planting. (vi) Co—419. (vii) Irrigated. (viii) Earthing up, gap filling and trash twist propping. (ix) 144·4cm. (x) 9.3.62.

2. TREATMENTS :

5 insecticidal treatment : T_0=Control, T_1=Spraying D.D.T. 0·25 % EC, T_2=Spraying Lindane 0·10 % EC T_3=Spraying Endrin 0·02 % EC. and T_4=Soil application of 0·56 Kg/ha. of Lindane at planting. The spray treatments were given during the 4th, 6th and 9th weeks age of crop using 449·3, 674·0 and 898·7 litres/ha. of spray fluid respectively for three sprayings.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 50·3 m.×48·3 m. (iii) 4. (iv) (a) 12·1 m.×10·1 m. (b) 10·1 m.×8·1 m. (v) 100 cm. around the plot. (vi) Yes.

4. GENERAL :

(i) Good ; lodging observed. (ii) Incidence of borer ; control measure as per treatments. (iii) Germination counts, tiller counts, dead heart counts and yield of cane. (iv) (a) 1961 only. (b) No. (c) and (v) to (vii) Nil.

5. RESULTS :

Yield of cane

(i) 1224 Q/ha. (ii) 124 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1273	1201	1290	1174	1282

No. of dead hearts counts observed during first four months age of crop.
(i) 20048/ha. (ii) 5703/ha. (iii) Treatment differences are significant. (iv) Av. no. of dead hearts/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. no. of dead hearts/ha.	25534	21580	10749	17709	24669

C.D.=8786 dead hearts/ha.

———

Crop :- Sugarcane. **Ref :- A.P. 64(176), 65(51).**

Site :- Sugarcane Res. Stn., Anakapalle. **Type :- 'D'.**

Object :—To find out an effective and economic chemical for the control of Shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 67·2 Kg/ha. of N+44·8 Kg/ha. of P_2O_5 for 64 ; Nil for 65. (ii) Sandy loam. (iii) 3.3.64 ; 4.3.65. (iv) (a) Forming trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) and (v) 251·1 Q/ha. of F.Y.M.+112·1 Kg/ha. of N as A/S in two equal doses on 45th and 90th day after planting for 64 ; 250 Q/ha. of F.Y.M. for 65. (vi) Co–419. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 102 cm ; N.A. for 65. (x) N.A. for 64 ; 5 to 9.3.66.

2. TREATMENTS :

5 insecticidal treatments : T_0=Control, T_1=Spraying Endrin 0·02 % concentration, T_2=Spraying Lindane 0·1 % concentration, T_3=Spraying Telodrin 0·05 % emulsion concentration. and T_4=Dusting Endrin 1 % dust at 16·8, 22·4 and 28·0 Kg/ha. as foliage application. Treatments were given dusting 4th, 6th and 9th week age of the crop using 181·6, 272·4 and 363·2 litres/ha of spray fluid.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 40 m.× 14m. for 64 ; N.A. for 65. (iii) 4. (iv) (a) 14 m.×8 m. for 64 ; 10·6 m.×6·8 m. for 65. (b) 10·1 m.×6·8 m. for 64 ; 10·0 m.×6·0 m. for 65. (v) 200 cm.×100 cm. for 64 ; 30 cm.×40 cm. for 65. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Incidence of Early Shoot borer for 64 ; Nil for 65. (iii) Germination counts, % of dead hearts and yield of cane. (iv) (a) 1964 contd. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. is continued beyond 1965 and hence results of individual years are presented.

5. RESULTS :

64(176)

Yield of cane

(i) 1441 Q/ha. (ii) 121·6 Q/ha. (iii) Treatment differences are significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1261	1519	1566	1433	1428

C.D.=187·4 Q/ha.

% of dead heart

(i) 10·04 % (ii) 1·78 % (iii) Treatment differences are highly signifi eant. (iv) Av. % of dead hearts.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. % of dead hearts	13·7	8·6	8·6	10·4	8·9

C.D. =2·74 %

65(51)

Yield of cane

(i) 902·5 Q/ha (ii) 183·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	875·7	1016·8	857·9	891·5	870·5

% of dead hearts

(i) 17·30 % (ii) 4·20 % (iii) Treatment differences are highly significant. (vi) Av. % of dead hearts.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. % of data hearts	24·4	8·9	9·7	21·0	22·5

C.D.=6·5 %

Crop :- Sugarcane. **Ref. :- A.P. 61(149).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'D'.**

Object :—To find out the beneficial effect of dipping, cut ends of setts in Organo—Mercurial compounds individually or in combination with insecticides on yield and quality of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane... (b) Paddy. (c) N.A. (ii) Loamy. (iii) 23.2.67 and gap filling on 12.4.61. (iv) (a) Digging trenches, digging of cross drains and hoeing in trenches. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm, between rows. (e) —. (v) 112·0 Kg/ha. of N as A/S by pocketing on 4.6.61. (vi) CO—449. (vii) Irrigated. (viii) 2 weedings, 4 hoeings, 2 earthings and trash twist propping. (ix) 113 cm. (x) 3, 4.3.62.

2. TREATMENTS :

6 insecticidal treatments : T_0=Control, T_1=Dipping cut ends of setts in Aretan 6% solution before planting (56 gm in 22·7 litres of water), T_2=Dipping cut ends of setts in Aretan 6% solution before planting + dusting B.H.C. 10% dust in trenches at the rate of 28·0 Kg/ha. before planting, T_3=Dipping cut ends of setts in Tillex solution made by adding 28 gm of Tillex liquid in 4·54 litres of water, T_4=Dipping cut ends of setts in Intox—8 solution made by adding 56 gm of Intox—8 in 4·54 letres of water and T_5=Dusting B.H.C. 10% dust in trenches at the rare of 28·0 Kg/ha. prior to planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 42 m.×15 m. (iii)) 4. (iv) (a) 15 m.×7 m. (b) 15 m.×5 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of Endrin 0·02% against Early Shoot borer. (iii) Germination counts, tiller counts population counts and yield of cane. (iv) (a) 1961-63 (modified). (b) No. (c) Nil. (v) N.A. (vi) Heavy gale followed by rain on 29.8.61. (vii) Nil.

5. RESULTS :

(i) 103·7 Q/ha. (ii) 132·4 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	931	1067	1154	1028	1015	1025

Crop :- Sugarcane. **Ref. :- A.P. 62(182).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'D'.**

Object :—To test the effect of treating the setts with Organo—Mercurial compounds either alone or in combination with insecticides on germination and final yield of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 13.2.62/gap filling on 15.3.62. (iv) (a) Digging of trenches. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 109 cm between rows. (e) —. (v) 247·1 Q/ha. of F.Y.M. by spreading in trenches before planting, 112·1 Kg/ha. of N as A/S by packeting on 1.6.62. (vi) CO—449. (vii) Irrigated. (viii) Hoeings, weedings, earthings and trash twist propping. (ix) 120 cm. (x) End of Jan., 63.

2. TREATMENTS:

8 insecticidal treatments : T_0=Control, T_1=Dipping cut ends of setts in Aretan 6% before planting (56 gm. in 23 litres of water), T_2=Dipping out ends of setts in Aretan 6% before planting and dusting B.H.C. 10% in the trenches before planting at 28·0 Kg/ha. T_3=Soil application of B.H.C. 10% in the trenches before planting at 28·0 Kg/ha. T_4=Dipping cut ends of setts in Tillex solution made by 28 gm Tillex in 4·54 litres of water, T_5=Dipping cut ends of setts in Tillex solution made by 28 gm of Tillex in 4·5 litres of water and dusting B.H.C. 10% in the trenches before planting at 28·0 Kg/ha., T_6=Dipping cut ends of setts in Intox–8 solution made by addin g 28 gm of Intox—8 in 36·4 litres of water and T_7=Dipping cut ends of setts in Tillex solution and Intox—8 solution made by adding 28 gm of Intox—8 in 36·4 litres of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 24·6 m.×40 m. (iii) 3. (iv) (a) 12 m.×10 m. (b) 12 m.×8 m. (v) 100 cm. on either side along bread. (vi) Yes.

4. GENERAL :

(i) Good. (li) *Nil.* (iii) Germination counts, tiller counts and yield of cane. (iv) (a) 1961-63 (treatments modi fied). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1234 Q/ha. (ii) 192·5 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yieid	1186	1362	1518	1213	1110	1141	1162	1180

Crop :- Sugarcane. **Ref :- A.P. 63(182).**

Site :- Sugarcane Liaison Farm, Bobbili. **Type :- 'D'.**

Object :— To test the effect of treating the setts with Organo-Mercurial compounds either alone or in combination with insecticides on germination and final yield of cane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) N.A. (ii) Loamy. (iii) 23.2.63. (iv) (a) Digging of trenches, cross drains and hoeing in trenches. (b) Eye to eye method of planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 113·7 Kg/ha. of N as A/S by pocketing. (vi) Co-449. (vii) Irrigated. (viii) Weedings, hoeings, earthings and trash twist propping. (ix) 147 cm. (x) 18.1.64.

2. TREATMENTS:

8 insecticidal treatments : T_0=Control, T_1=Dipping cut ends of setts in Aretan 0·05% solution, T_1=Dipping cut ends of setts in Aretan solution and dusting B.H.C. 10% dust at 33·6 Kg/ha. in the trenches before planting, T_3=Dusting B H.C. 10% dust alone at 33·6 Kg/ha. in the trenches before planting, T_4=Dipping cut ends of setts in Tillex solution, T_5=Dipping cut ends of setts in Tillex solution and dusting B.H.C. 10% dust at 33·6 Kg/ha. in the trenches before planting, T_6=Dipping cut ends of setts in Intox solution and T_7=Dipping cut ends of setts in Tillex solution and in Intox-8 solution.

3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) 32 m.×10 m. (iii) 3. (iv) (a) 10 m.×8 m. (b) 10 m.×6 m. (v) 100 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying Endrin on 10, 11.4.63 and spraying Parathion on 18.5.63. (iii) Germination counts, population counts and cane yield. (iv) (a) 1961-63 (treatments modified). (b) No. (c) Nil. (v) N.A. (vi) Heavy rain fall of 28·6 cm. during 2nd fortning of Oct. 63, cyclone prevailed with severe whirl wind on 25.10.63 which has damaged the crop. (vii) Nil.

5. RESULTS :

(i) 1130 Q/ha. (ii) 78·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1109	1093	1180	1121	1094	1157	1107	1178

Crop :- Sugarcane. **Ref :- A.P. 65(196).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :— To study the effect of new insecticide in controlling Early Shoot borer.

1. BASAL CONDITIONS :

(i) (a) G.M. crop. (b) G.M. crop. (c) Nil. (ii) *Regur*. (iii) 1st week of Feb. 65. (iv) (a) Tractor ploughting, *Pata* working, marking ridges and furrows. (b) End to end. (c) 30,000 three budded setts/ha. (d) 90 cm. between rows. (e) —. (v) N.A. (vi) Co-737. (vii) Irrigated. (viii) Mulching, hand weeding, earthing up and propping. (ix) N.A. (x) 14.2.66.

2. TREATMENTS :

5 insecticidal treatments : T_0=Control, T_1=Endrin 0·02% spray, T_2=Endrin dust at 3·36 Kg/ha., T_3=Telodrin 0·02% spray and T_4=Parathion 0·02% spray.

Spraying and dusting of the doses chemicals was done at 4, 6, 9th week age of the crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 7·0 m.×8·1 m. (b) 7·0 m.×6·3 m. (v) 90 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) % of dead hearts and cane yield. (iv) (a) 1965-67. (b) No. (c) Nil. (v) Nil. (vi) Drought during the year. (vii) Nil.

5. RESULTS :

Yield of cane.

(i) 567·9 Q/ha. (ii) 80·2 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	416·1	641·2	505·7	678·0	598·6

C.D.=123·5 Q/ha.

Infestation

(i) 12·47 degrees. (ii) 1·56 degrees. (iii) Treatment differences are highly significant. (iv) Mean angle in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4
Mean infestation	16·90	11·09	11·52	10·92	11·93

C.D.=2·40 degrees.

Crop :- Sugarcane. **Ref :- A.P. 63(143), 63(144), 65(194).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To study the effect of insecticides against Early Shoot borer on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. Crop. (b) G.M. Crop. (c) Nil. (ii) *Regur*. (iii) 15.2.63 ; 11.11.63 ; 3rd week of Feb., 65. (iv) (a) Tractor ploughing, *pata* working and marking ridges and furrows. (b) End to end planting in a row. (c) 28650 to 30000 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 28·0 Kg/ha. of N as A/S at planting, 112·1 Kg/ha. of N as A/S 70 days after planting and 112·1 Kg/ha. of N as A/S after 140 days of planting for 63(143), G.M. (*Pillisipera*) was incorporated to the soil at planting at 3362 Kg/ha. of green matter, N applied as split doses through A/S, 24·7 Kg/ha. at planting 111·2 Kg/ha. each after 2 to 5 months after planting for 63 (144) N.A. for 65. (vi) Co-419. (vii) Irrigated. (viii) Mulching, hoeing, weeding, earthing up and propping. (ix) 166 cm. ; 83 cm. ; N.A. for 65. (x) Feb., 1964 ; Jan., 65 ; 6.3.66.

2. TREATMENTS :

5 insecticidal treatments : T_0=Control, T_1=D.D.T. 0·25% in emulsion, T_2=Lindane (Gama B.H.C.) 0·1%, T_3=Endrin 0·02% and T_4=Application of 227 gm. actual Lindane to soil at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 11·9 m.×7·0 m. for 63 ; 11·7 m.×8 m. for others. (b) 10·1 m.×6·1 m. for 63(143) ; 9·9 m.×8·0 m. for others. (v) 91 cm.×46 cm. for 63(143) ; 90 cm. on either side along length for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Early Shoot borer incidence, control measures as per treatments. (iii) Yield of cane. (iv) (a) 1963-65. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and 'Treatments×years' interaction is absent.

5. RESULTS:

Pooled results.

(i) 696 Q/ha. (ii) 330·5 Q/ha. (based on 44 d.f. made up of pooled error and 'Treatments×years' interaction). (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	628	738	740	694	682

Individual results.

Treatments	T_0	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years								
1963	495	703	660	535	505	N.S.	580	132
1963	726	697	777	746	749	N.S.	739	89
1965	663	815	784	800	791	N.S.	771	70·7
Pooled	628	738	740	694	682	N.S.	696	104·5

% of dead hearts in degrees

65(194)

(i) 12·24 degrees. (ii) 1 06 degrees. (iii) Treatment differences are highly significant. (iv) Av. of % dead hearts in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. of dead hearts in degrees	16·97	11·61	11·46	10·63	10·54

C.D.=1·63 degrees.

Crop :- Sugarcane. **Ref :- A.P. 65(195).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To find out an effective and economical insecticide for controlling the incidence of Early Shoot borer of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-G.M. crop. (b) G.M. crop. (c) Nil. (ii) *Regur*. (iii) 1st week of Feb., 65. (iv) (a) Tractor ploughing, *pata* working, marking ridges and furrows. (b) End to end. (c)30,000 three-budded setts/ha. (d) 90 cm. between rows. (e) —. (v) N.A. (vi) Co-419. (vii) Irrigated at 8 to 10 days interval. (viii) Mulching, hand weeding, earthing up and propping. (ix) and (x) N.A.

2. TREATMENTS :

8 insecticidal treatments : T_0=Control, T_1=D.D.T. 0·32% spray, T_2=D.D.T. 0·25% spray, T_3=D.D.T. 0·16% spray, T_4=Endrin 0·02% spray, T_5=Endrin 0·10% spray, T_6=Endrin 0·05% spray and T_7=Endrin 0·25% spray.

Spraying of the above chemicals in respective concentrations was done at 4th, 6th and 9th week age of the crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·0 m.×8·1 m. (b) 7·0 m.×6·3 m. (v) 90 cm. on either side along length. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Early Shoot borer. (iii) % of dead hearts and cane yield. (iv) (a) 1965-66. (b) No. (c) Nil. (v) Nil. (vi) Drought during the year. (vii) Nil.

5. RESULTS:

Yield of cane

(i) 924·2 Q/ha. (ii) 103·0 Q/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	802·7	895·7	898·5	928·6	856·0	1199·5	887·7	924·6

C.D =151·4 Q/ha.

Infestation

(i) 14·01 degrees. (ii) 1·41 degrees. (iii) Treatment differences are highly significant. (iv) Av. % infestation in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
% infestation in degrees	22·98	13·19	13·55	15·30	12·21	10·39	11·82	12·62

C.D.=2·07 degrees.

Crop :- Sugarcane. **Ref :- A.P. 60(115), 61(125).**

Site :- Reg. Agri. Res. Stn., Rudrur. **Type :- 'D'.**

Object :—To study the effect of insecticides against Early Shoot borer on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Sugarcane-G.M. crop. (b) G.M. crop. (c) Nil. (ii) *Regur*. (iii) 7.11.60 ; 11, 12.11.61. (iv) (a) Tractor ploughing, *pata* working, marking ridges and furrows. (b) End to end planting in rows. (c) 28652 three budded setts/ha. (d) 91 cm. between rows. (e) —. (v) 28·0 Kg/ha. of N as A/S+56·0 Kg/ha. of P_2O_5 as Super at planting, 112·0 Kg/ha. of A/S in the last week of January and 112·1 Kg/ha. of N as Urea in 2nd week of April. (vi) Co-419. (vii) Irrigated. (viii) 2 mulchings and 2 weedings, earthing and propping. (ix) 127 cm. ; 161 cm. (x) 11.12.61 ; 1st week of January, 63.

2. TREATMENTS :

6 insecticidal treatments : T_0=Control, T_1=Soil application of B.H.C. 5% dust, T_2=D.D.T. 0 25% emulsion spray, T_3=B.H.C. 0·10% emulsion spray, T_4=(D.D.T.+B.H.C.) suspension spray and T_5=Endrin 0·10% Emulsion spray.

3. DESIGN :

(i) R B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 25·6 m.×4·6 m. (b) 22·0 m.×4·6 m. (v) 180 cm. on either side along length. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) As per treatments. (iii) Germination counts and yield of cane. (iv) (a) 1960-61. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and 'Treatments×years' interaction is absent.

5. RESULTS :

Pooled results

(i) 842·6 Q/ha. (ii) 129·1 Q/ha. (based on 35 d.f. made up of pooled error and 'Treatments×years' interaction). (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	781·5	868·0	736·5	880·5	904·0	885·0

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	Sig.	S.E./plot	G.M.
Years									
1960	1113	1137	1015	1125	1179	1148	N.S.	160	1120
1961	450	599	458	636	629	622	N.S.	105	506
Pooled	781·5	868·0	736·5	880·5	904·0	885·0	N.S.	129·1	842 6

———

Crop :- Sugarcane. **Ref :- A.P. 63(136), 64(77).**

Site :- Sugarcane Liaison Farm, Samalkot. **Type :- 'D'.**

Object :—To find out the effect of Blitox in controlling the Yellow Spot disease on the cane yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane for 63 ; Nil for 64. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 5.2.63 ; 2.2.64. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses for 63 ; 168·1 Kg/ha. of N as A/S for 64. (vi) Co-419. (vii) Irrigated. (viii) Weeding, hoeings, earthing up and trash twist propping. (ix) 106·1 cm. ; 115·0 cm. (x) 1.3.64 ; 17.3.65.

2. TREATMENTS :

4 spraying treatments : T_0=No spraying, T_1=One spraying, T_2=2 sprayings and T_3=3 sprayings. Spraying done with Blitox.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12 m.×8 m. (b) 10 m.×6 m. (v) 100 cm.×100 cm (vi) Yes.

4. GENERAL :

(i) Lodging due to flood for 63 ; Normal for 64. (ii) Incidence of Yellow Spot disease, control measures as per treatments. (iii) Germination counts and yield of cane. (iv) (a) 1963-64. (b) No. (c) Nil. (v) N.A. (vi) Flood for about 48 hrs in the river which caused lodging in 63 ; Nil for others. (vii) S.E. in expt. No. 63 is N.A. hence results of individual years are presented.

5. RESULTS :

63(136)

(i) 1402·7 Q/ha. (ii) N.A. (iii) N.A. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1370·2	1459·8	1474·9	1305·8

64(77)

(i) 1396·7 Q/ha. (ii) 717·8 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1364·5	1453 6	1468·6	1300·3

Crop :- Sugarcane. **Ref. :- A.P. 63(134).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'D'.**

Object--To study the effect of Blitox in controlling Yellow Spot disease to Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S. (ii) Clay loam. (iii) 24.1.63. (iv) (a) Trench formation. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N in two equal doses at 30 and 60 days after planting. (vi) CO—419. (vii) Irrigated. (viii) Weedings, earthing up and trash twist propping twice. (ix) 112·5 cms. (x) 28.2.62.

2. TREATMENTS :

5 spraying treatments : T_0=Control (No spraying), T_1=One spraying on 1st August, T_2=2 sprayings on 1st and 15th August, T_3=3 sprayings on 15th August, 1st September and 15th September and T_4=4 sprayings on 15th August, 1st September, 15th September and 1st October, 63, Sprayings done with Blitox at ½ Kg in 113·6 litres of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 40·2 m.×12·1 m. (iii) 5. (iv) (a) 12·1 m.×8·1 m. (b) 10·1 m.×6·0 m. (v) 100 cm. on each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Yellow Sport disease; control measures as per treatment. (iii) % infection of Yellow Spot disease at fortnightly intervals from the time of 1st spraying, height measurements, stalk population and yield of cane. (iv) (a) 1963 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1185 Q/ha. (ii) 80·3 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1224	1193	1144	1192	1174

Crop :- Sugarcane. **Ref. :- A.P. 60(70).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'D'.**

Object :—To fix up the best period for giving a protective spray for controlling Early Shoot borer.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 5.2.60. (iv) (a) Forming trenches with crowbar. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 125·5 Q/ha. of Filter press cake, 168·1 Kg/ha. of N as Urea in two equal doses by placement in soil on 6.3.60 and 4.4.1960. (vi) CO-419. (vii) Irrigated. (viii) Hoeing, weedings, earthing up and trash twist propping. (ix) 153·3 cms. (x) Last week of March, 61.

2. TREATMENTS:

6 times of spraying Endrin 0·02% : T_0=Control (No spraying), T_1=On 5.3.60, 20.3.60 and 4.4.60, T_2=On 1st March and 1st April, 60, T_3=On 15th March and 15th April, T_4=1st April and 1st May, 60 and T_5=21st March and 15th April, 60.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) 1/17·16 ha. (iii) 4. (iv) (a) 1/102·9 ha. (b) 1/137·3 ha. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of Shoot, Dead heart diseases; control measures: as per treatments. (iii) Germination counts, population and dead heart counts, height measurements and yield of cane. (iv) (a) 1960 only. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1007·2 Q/ha. (ii) 216·2 Q/ha. (ii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	957·3	977·1	1123·1	978·8	1139·4	867·3

Crop :- Sugarcane. **Ref :- A.P. 64(141), 65(105).**

Site :- Sugarcane Liaison Farm, Tanuku. **Type :- 'D'.**

Object :— To study the effect of copper fungicides in controlling Yellow Spot disease.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 33·6 Kg/ha. of N as A/S for 64 ; N.A. for 65. (ii) Clay loam. (iii) 3.2 64 ; 1.2.65. (iv) (a) Formation of trenches. (b) Trench planting. (c) 37066 three budded setts/ha. (d) 100 cm. between rows. (e) —. (v) 168·1 Kg/ha. of N as A/S in two equal doses applied 30 and 60 days after planting and 75·3 Q/ha. of Filter press cane as basal dose for 64 ; 280 Kg/ha. of N as A/S in three doses at 30, 60 and 120 days after planting. (vi) Co-419. (vii) Irrigated. (viii) Hoeing and weeding earthing up twice and trash twist propping for 64; hoeing and weeding for 65. (ix) 96·7 cm. ; N.A. (x) 6.3.65 ; 29.1.66.

2. TREATMENTS :

4 spraying treatments : T_0=Control, T_1=One spraying, T_2=Two spraying and T_3=Three sprayings. Spraying Blitox-50 at 20gm in 5 litres of water at fortnightly interval.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 32·2 m.×12·1 m. for 64 ; N.A. for 65. (iii) 6. (iv) 12·1 m.×8·1m. (b) 12·1 m.×6·0 m. (v) 100 cm. on either side along length. (vi) Yes.

GENERAL;

(i) Satisfactory but lodging in November due to rains for 64 only. (iii) Incidence of Yellow Spot disease, control measures as per treatments. (iii) Cane yield. (iv) (a) 1964-66. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. is continued beyond 1965 and hence results of individual years are presented below.

5. RESULTS :

64(141)

(i) 1043 Q/ha. (ii) 92 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1056	994	1037	1085

65(105)

(i) 1267·8 Q/ha. (ii) 105·0 Q/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cane in Q/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1308·1	1249·5	1288·2	1225·2

Crop :- Cotton (*Kharif*). **Ref :- A.P. 63(74), 64(236), 65(86).**

Site :- Project Dev. and Demons. Farm,, Amaravathi.

Type :- 'M'.

Object :— To find out the optimum time of application of N for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sunhemp* for 63 ; *Medapesera* for others. (iii) 11·2 Kg/ha. N as A/S and 22·4 Kg/ha. of P_2O_5 as Super. (ii) Black soils. (iii) 16.9.63 ; 10.8.64 ; 3.8.65. (iv) (a) 3 to 4 ploughings and forming ridges. (b) Hand dibbling on ridges. (c) 15 Kg/ha. (d) 76 cm. × 30 cm. (e) 2. (v) 56·0 Kg/ha. of each of P_2O_5 as Super and K_2O as Pot. Sul. for all these expts ; 18286 Kg/ha. of G.L. of *Sunhemp* fo 63, 7368 Kg/ha. of green matter of *Medapesera* for others. (vi) MCU—2. (vii) Irrigated. (viii) Thinning, hand weeding and earthing up. (ix) N.A. ; 70 cm. ; 53 cm. (x) 18.3.64 to 26.5.64 ; 3.2.65 to 16.3.65 ; 24.12.65 to 5.4.66.

2. TREATMENTS :

All combinations of (1) and (2)+Control (2 plots).

(1) 2 levels of N : N_1=56·0 and N_2=112·1 Kg/ha.

(2) 6 times of application of N : T_1=Full dose at sowing, T_2=Full dose at thinning, T_3=Full dose at flowering, T_4=½ dose at sowing+½ dose at thinning, T_5=½ dose at sowing+½ dose at flowering and T_6=½ dose at thinning+V_3 dose at flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) 70·1 m. × 54·9 m. for 63 ; N.A. for others. (iii) 3. (iv) (a) 7·6 m. × 7·3 m. for 63 ; 9·1 m. × 8·4 m. for others. (b) 6·1 m. × 6·7 m. for 63 ; 8·5 m. × 6·8 m. for others. (vii) 76 cm. × 30 cm. for 63 ; 30 cm. × 76 cm. for others. (vi) Yes.

4. GENERAL :

(i) Normal for 63 ; Satisfactory for others. (ii) Attack of Bollworm and Jassids, spraying of Endrin, Parathion D.D.T. 50%+B.H.C. 50% for 63 ; Parathion, Blitox, sevin sprayed in others. (iii) Height of plants, standing bolls/plant and yield of *Kapas*. (iv) (a) 1963-65. (b) No. (c) Nil. (v) and (vi) N.A. (vii) As the error variances are heterogeneous and Treatment × years interaction is absent individual results are presented under 5. Results.

5. RESULTS:

63(74)

(i) 443 Kg/ha. (ii) 110·0 Kg/ha. (iii) Main effect of N is significant and 'control vs. others' is highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Control=253 Kg/ha.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
N_1	366	388	542	374	353	398	403
N_2	452	561	536	498	519	529	516
Mean	409	474	539	436	436	463	459

C.D. for N marginal means=75·1 Kg/ha.

C.D. for control vs. others' =99·4 Kg/ha.

64(236)

(i) 1236 Kg/ha. (ii) 212·7 Kg/ha. (iii) Main effect of N and 'conrol vs. others' are significant. (iv) Av. yield of *Kapas* in Kg/ha.

Control=1013 Kg/ha.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
N_1	1222	1355	1081	1254	944	1195	1172
N_2	1448	1477	1240	1392	1238	1229	1337
Mean	1335	1416	1160	1313	1091	1212	1255

C.D. for N marginal means=145·4 Kg/ha.

C.D. for 'control *vs.* others'=192·3 Kg/ha.

65(86)

(i) 1386 Kg/ha. (ii) 349·6 Kg/ha. (iii) Main effect of N is significant and 'control *vs.* others' is highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Control=883 Kg/ha.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
N_1	1476	1203	1082	1443	1165	1420	1298
N_2	1656	1571	1436	1783	1583	1568	1600
Mean	1566	1387	1259	1613	1374	1494	1449

C.D. for N marginal means=238·9 Kg/ha.

C.D. for 'control *vs.* others'=316·1 Kg/ha.

Crop :- Cotton (*Kharif*). **Ref. :- A.P. 64(76), 65(154).**

Site :- Project Dev. and Demons. Farm, Amaravathi. Type :- 'M'.

Object :—To fix up optimum manurial shedule in Paddy fallows for P 216 F variety of Cotton grown in black soils.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Cotton. (b) Fallow. (c) Nil. (ii) Black soil. (iii) 1.1.64 ; 7.1.65. (iv) (a) 3 to 4 ploughings with country plough, ridge formation, trimming of bunds, digging corners. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm. × 23 cm. (e) 2. (v) Nil. (vi) P 216 F (vii) Irrigated. (viii) 1 thinning, 2 to 3 hand weeding and earthing up. (ix) N.A. (x) 2.5.64 to 16.6.64 ; 2.7.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=56 and N_2=112 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

1/5th dose of N, full doses of K and P applied as basal dressing 2/5th dose of N applied each at thinning and flowering stages.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 7·3 m. × 6·1 m. b) 6·9 m. × 3·7 m. (v) 61 cm. × 23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of Boll worm and Jassids, Spraying of Endrin, Parathion and Blitox. (iii) Plant population height. of plants, standing Bolls/plant and yield of *Kapas*. (iv) (a) 1964—65. (b) No. (c) Presented under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS:

Pooled results

(i) 490 Kg/ha. (ii) 114·0 Kg/ha. (based on 110 d.f. made up of various components of Treatments × years interaction and pooled error). (iii) Main effect of N is highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	318	329	312	308	322	329	320
N_1	509	490	524	506	502	516	508
N_2	656	634	635	638	672	615	642
Mean	494	484	490	484	498	486	490
K_0	496	481	476				
K_1	503	486	506				
K_2	484	486	490				

C.D. for N marginal means=161·2 Kg/ha.

Individual results

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
Years													
1964	203	331	511	**	360	325	360	339	357	349	N.S.	348	92·7
1965	437	685	772	**	628	644	621	629	639	624	N.S.	631	131·9
Pooled	320	508	642	**	494	484	490	484	498	486	N.S	490	114·0

Crop :- Cotton (*Kharif*). **Ref :- A.P. 63(75), 64(235), 65(85).**

Site :- Project Dev. and Demons Farm, Amaravathi.

Type:- 'M'.

Object :—To study the effect of different levels of N, P, K and F.Y.M. on the yield of MCU—2 variety of Cotton.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Sunhemp* for 63 and *Medapesara* for others. (c) 11·2 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super for 63, 134·5 Kg/ha. of Super+56 Kg/ha. of A/S for 64, N.A. for 65. (ii) Black soil. (iii) 13.9.63 ; 3.8.64 ; 10.8.65. (iv) (a) 3 to 4 ploughings with country plough and ridge formation. (b) Hand dibbling on ridges. (c) 15 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) 222 Q/ha. of G.L, of *Sunhemp* for 63, 156 Q/ha. of *Medapesara* for 64 and 45 Q/ha. of *Medapesara* for 65. (vi) MCU—2. (vii) Irrigated. (viii) Thinnings, earthings, and weedings. (ix) N.A. for 63, 78·2 cm. for 64 and 45 cm. for 65. (x)21.2.64 to 25.5.64, 27.11.64 to 5.4.65 and 10.1. 66 to 19.3.66.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=56 and N_2=112 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot.: K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

(4) 3 levels of F.Y.M. : F_0=0, F_1=11208 and F_2=22417 Kg/ha.

20 % N, whole of F.Y.M., P_2O_5 and K_2O applied as basal dressing. 40 % N applied each to 6 and 10 weeks old crop as soil application.

3. DESIGN:

(i) 3^4 confd. (ii) (a) 9 plots/block, 9 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 11·3 m.×5·3 m. (b) 10·7 m.×3·8 m. (v) 76 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Boll worm and Jassids. 4 spray of Endrin and parathion. (iii) Height of plants: standing bolls/plant and yield of *Kapas*. (iv) (a) 1963—65. (b) No. (c) As under 5—Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and treatments×years interaction is absent.

5. RESULTS:

Pooled results

(i) 1058 Kg/ha. (ii) 199·8 Kg/ha. (based on 48 d.f. made up of pooled error). (iii) Main effect of N and interaction F×P are highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	769	1073	1294	986	1134	1016	1068	989	1078	1045
N_1	749	1074	1422	1096	977	1171	1028	1068	1149	1081
N_2	740	1040	1360	999	1103	1039	997	1065	1078	1047
Mean	753	1062	1359	1027	1071	1075	1031	1041	1102	1058
F_0	732	1047	1315	981	1060	1053				
F_1	741	1033	1349	1028	1056	1038				
F_2	785	1107	1412	1072	1097	1135				
K_0	728	1016	1336							
K_1	770	1114	1330							
K_2	760	1056	1410							

C.D. for N marginal means=63·2 Kg/ha.

C.D. for the body of F×P table=199·7 Kg/ha.

Indivldual results.

Treatments	F_0	F_1	F_2	Sig.	N_0	N_1	N_2	Sig.	P_0	P_1	P_2
Years											
1963	541	518	561	N.S.	337	523	759	**	530	551	539
1964	1640	1702	1629	N.S.	1222	1734	2014	**	1572	1670	1730
1965	955	1025	951	N.S.	699	929	1302	**	979	993	958
Pooled	1031	1041	1102	N.S.	1045	1081	1047	**	753	1062	1359

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
512	521	586	N.S.	540	147·0
1637	1666	1668	N.S.	1657	222·5
945	936	1050	N.S.	977	220·0
1027	1071	1075	N.S.	1058	199·8

Crop :- Cotton (*Kharif*). **Ref :- A.P. 65(83).**

Site :- Project Dev. and Demons. Farm, Amaravathi. **Type :- 'M'.**

Object :—To find out the response of MCU—2 variety of Cotton to different levels of N.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Medapesara*. (c) Nil. (ii) Biack soil. (iii) 3.8.65. (iv) (a) 3 to 4 ploughings with country plough, forming of ridges. (b) Hand dibbling on ridges. (c) 15 Kg/ha. (d) 76·2 cm.×30·5 cm. (e) 2. (v) 5676 Kg/ha. of *Medapesara* was incorporated during last week of July and 56·0 Kg/ha. of P_2O_5 as Super and 56·0 Kg/ha. of K_2O as Pot. Sul. (vi) MCU—2. (vii) Irrigated. (viii) 1 thinning. (ix) 53 cm. (x) 23.12.65 to 21.3.66.

2. TREATMENTS :

4 levels of N as A/S : N_0=0, N_1=67·2, N_2=134·5 and N_3=201·8 Kg/ha.
N was applied in three equal doses to soil at sowing, thinning and flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 8·4 m.×7·0 m. (b) 6·9 m.×6·4 m. (v) 76 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Parathion sprayed on 26.8.65 and 13.9.65 ; Endrin sprayed on 3.9.65 ; Wettable Sevin powder sprayed on 1.12.65 ; sevin dusting on 8.10.65, 22.10.65, 12.11.65 and 22.12.65. (iii) Plant population height measurements, standing Bolls/plant and yield of *Kapas*. (vi) (a) 1965—67. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1643 Kg/ha. (ii) 152·9 Kg/ba. (iii) Treatment differences are highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	N_0	N_1	N_2	N_3
Av. yield	1113	1569	1740	2151

C.D.=181·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63(203), 64(200).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object :—To fix up manurial schedule for Cotton in Rice fallows in the respective tracts.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Cotton. (b) Fallow. (c) Nil. (ii) Clay loam to clayey. (iii) 28.11.63 ; 26.11.64. (iv) (a) 3 ploughings with country plough. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 2/hill. (v) Nil. (vi) P 216 F (medium). (vii) Irrigated. (viii) 1 *Mummaty* hoeing, hand weedings. (ix) 97 cm. ; 107 cm. (x) 1.5.64 to 21.5.64 ; 1.5.65 to 6.6.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0. N_1=44·8 and N_2=89·7 Kg/ha.

(2) 3 level of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. of Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

P and K applied as basal dressing. N applied in two equal doses in the last week of Dec. and first week of February.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 block/replication. (b) 54 cm.×24 cm. (iii) 2. (iv) (a) 9·1 m.×3·7 m. and 6·3 m.×6·0 m. (b) 8·5 m.×2·4 m. and 5·7 m.×4·8 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids, Sevin 10% dusted 4 times ; 4 sprayings of Endrin ; D.D.T. 50 % and B.H.C. 50 % sprayed. (iii) No. of Bolls/plant, height of plants and yield of seed Cotton. (iv) (a) 1963-64 (b) No. (c) Nil. (v) Tenali, Ramachandrapuram and Nellore. (vi) Nil. (vii) As error variances are heterogeneous and Treatments×years interaction is absent individual results have been presented under 5.—Results.

5. RESULTS :

63(203)

(i) 1357 Kg/ha. (ii) 159·2 Kg/ha. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of seed Cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1152	1232	1092	1183	1145	1150	1159
N_1	1288	1305	1256	1261	1330	1259	1283
N_2	1662	1745	1480	1655	1644	1587	1629
Mean	1367	1427	1276	1366	1373	1332	1357
K_0	1385	1389	1324				
K_1	1360	1498	1260				
K_2	1357	1394	1244				

C.D. for N or P marginal means=63·5 Kg/ha.

64(200)

(i) 1543 Kg/ha. (ii) 229 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1093	1157	1227	1082	1235	1159	1159
N_1	1538	1565	1499	1480	1529	1592	1538
N_2	1937	1825	2043	1857	1982	1966	1935
Mean	1523	1516	1589	1473	1582	1572	1543
K_0	1384	1475	1560				
K_1	1595	1494	1656				
K_2	1589	1578	1551				

C.D. for N marginal means=91·4 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 60(170), 61(194).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object :—To study the effect of application of N in a single dose against split doses.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) (a) Black soil. (iii) 11.12.60. ; 30.11.61. (iv) (a) Nil. (b) Hand dibbling in stubbles. (c) N.A, (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Thinning, hand weedings, ploughing in between rows. (ix) 3·7 cm. ; 12·8 cm. (x) 11, 20.5.61 and 2.6.61 ; 17, 24, 29.5.62 and 4.6.62.

2. TREATMENTS :

3 manurial treatments : M_1=45 Kg/ha. of N as A/s as initial dose, M_2=45 Kg/ha. of N at flowering and M_3=22·5 Kg/ha. of N as initial dose and 22·5 Kg/ha. of N at flowering.

Initial dose applied about one month after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 11·0 m.×7·6 m. for 60 ; 14·6 m.×7 6 m. for others. (iii) 8, (iv) (a) 7·6 m.×3·7 m. for 60 ; 7·6 m.×4·9 m. for other. (b) 6·4 m.×2·4 m. for 60 ; 6·4 m.×3·7 m. for other. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (b) Incidence of Boll worm and Endrin sprayed for 60 ; dusting B.H.C. 10 % against grass hoppers and *Prodenia litura* Endrin sprayed 5 times. (iii) Stand, height and yield of *Kapas*. (iv) (a) 1960—61. (b) No. (c) Results of combined analysis presented under 5-Results. (v) Nellore and Ramachandrapuram. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 609 Kg/ha. (ii) 249·8 Kg/ha. (based on 2 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield	635	535	657

Individual results

Treatments	M_1	M_2	M_3	Sig.	G.M.	S.E./plot
Years						
1960	103	109	121	N.S.	111	49·6
1961	1167	961	1194	N.S.	1107	176·4
Pooled	635	535	657	N.S.	609	249·8

Crop :- Cotton (*Rabi*). **Ref :- A.P. 60(173).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object :—To study the effect of different doses of N with and without P on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 30.11.60 ; Resowing 11.12.60. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F (medium). (vii) Irrigated. (viii) 2 hand weedings thinning, 2 intercultivations with country plough. (ix) 6·1 cm. (x) Pickings on 11.5.61, 20.5.61 and 2.6.61.

2 TREATMENTS :

Main-plot treatments :

2 levels of P_2O_5 as Super : P_0=0 and P_2=33·6 Kg/ha.

Sub-plot treatments :

4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

Super was applied on 1.2.61.

A/S was applied in two equal doses, first one month after sowing and the second at flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot (b) 25·9 m.×7·6 m. (iii) 4. (iv) (a) 7·6 m.×6·1 m. (b) 6·4 m.×4·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Stunted in growth due to heavy moisture in initial stages. (ii) 4 sprayings of Endrin. Incidence of Boll worm. germination counts, plant height, no. of bolls/plant, (iii) halolenth, ginning percentage and yield of seed Cotton. (iv) (a) 1960—61 (with modified design in 1961). (b) Nil. (c) No. (v) Ramachandrapurm and Nellore (vi) Heavy rain 3 cm. soon after sowing on 3.12.60. (vii) Resowing had to be done as 1st sowing was affected by rain on 3.12.60.

5. RESULTS :

(i) 96 Kg/ha (ii) (a) 4·9 Kg/ha. (b) 4·8 Kg/ha. (iii) None of the effects are significant. (iv) Av. yield of seed Cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	133	95	113	114	113
P_1	80	89	52	90	78
Mean	106	92	82	102	96

———

Crop :- Cotton (*Rabi*). **Ref :- A.P. 61(192).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object : — To study the effect of different doses of N with and without P on the yield of Cotton.

1. BASAL CONDITIONS:

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 29, 30.11.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Thinning, 3 intercultivations with country plough, working with spades and 3 line weedings. (ix) 13 cm. (x) 16.5.62 to 4.6.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

(2) 4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

Super applied on 12.1.62.

A/S applied in two equal doses first on 12.1.62 and second on 22.2.62.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·6 m.×6·2 m. (b) 6·4 m.×4·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% against Grass hopper and *Prodenia litura*. 5 sprayings of Endrin. (iii) Germination counts, vigour, dates of 1st squaring, flowering 1st bursting, height, boll counts, final stand and yield of seed Cotton. (iv) (a) 1960-61 (with modified design in 1960). (b) and (c) Nil. (v) Rama chandra puram, Nellore. (vi) and (vii) Nil.

5. RESULTS :

(i) 1106 Kg/ha. (ii) 157·4 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	843	1089	1205	1275	1103
P_1	941	999	1301	1191	1108
Mean	892	1044	1253	1233	1106

C.D. for N marginal means=163·7 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 65(245).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object :— To find out the optimum dose of N for Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 18.1.66. (iv) (a) 2 ploughings with tractor, rectifying borders with spades. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F (medium). (vii) Irrigated. (viii) Intercultivations with spade and country plough, 1 line weeding and thinning. (ix) N.A. (x) 11.5.66 to 1.6.66.

2. TREATMENTS :

16 levels of N as A/S : N_1=90, N_2=112, N_3=134, N_4=146, N_5=157, N_6=168, N_7=174, N_8=179, N_9=185, N_{10}=190, N_{11}=196, N_{12}=202, N_{13}=207, N_{14}=213, N_{15}=219 and N_{16}=224 Kg/ha.
N was applied in two equal doses on 19.2.66 add 21.3.66.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 6·8 m.×6·0 m. (b) 5·9 m.×4·8 m. (v) 45 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 1 spraying of Parathion, 3 sprayings of Endrin 3 dustings of Sevin 10%. (iii) No. of bolls/plant, height of the plant, and *Kapas* yield. (iv) (a) 1965-67. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1122 Kg/ha. (ii) 363·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8
Av. yield	788	874	1099	1010	1153	1012	1249	1102

Treatment	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}	N_{15}	N_{16}
Av. yield	1120	1091	1214	1191	1314	1189	1250	1290

Crop :- Cotton. **Ref :- A.P. 62(124), 63(126), 64(116).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'M'.**

Object :— To find out the optimum levels of N and P for maximising the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black clay loam. (iii) N.A. ; 17.9.63, gapfilling on 25.9.63 ; 12.10.64. (iv) (a) 2 ploughings with country plough and 2 harrowings. (b) Hand dibbling. (c) 11·2 Kg/ha. (d) 55·9 cm. × 30 cm. (e) 3 to 4. (v) Nil. (vi) Cocanadas-2. (vii) Unirrigated. (viii) 2 thinnings, intercultures and weedings. (ix) and (x) N.A.

2. TREATMENTS :
Treatments for 62 :

4 manurial treatments : M_0=Control, M_1=22·4 Kg/ha. of N as A/S, M_2=M_1+22·4 Kg/ha. of P_2O_5 as Super and M_3=44·8 Kg/ha. of N as A/S.

Treatments for 63 and 64.

6 manurial treatments : M_0=Control, M_1=22·4 Kg/ha. of N, M_2=22·4 Kg/ha. of P_2O_5, M_3=M_1+M_2, M_4=44·8 Kg/ha. of N+M_2 and M_5=44·8 Kg/ha. of N+44·8 Kg/ha. of P_2O_5.

N as A/S and P_2O_5 as Super applied as basal dressing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 for 62 ; 6 for others. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/123·5 ha. (v) N.A. (vii) Yes.

4. GENERAL:

(i) Satisfactory. (ii) N.A. (iii) Germination counts and yield of *Kapas*. (iv) (a) 1962-64 (treatments modified in 63). (b) N.A. (c) Results of combined analysis for 63 and 64 presented under 5. Results. (v) N A. (vi) During Oct. 63, heavy down pour of 31 cm. was recorded in 6 rainy days for 63 ; Nil for others. (vii) Individual results for expt. no. 62,(124) and results of combined analysis for the other two experiments has been presented. Error variances for 63 and 64 are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

62(824)

(i) 332 Kg/ha. (ii) 48·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3
Av. yield	315	389	420	204

C.D.=76·7 Kg/ha.

Pooled results for 63 and 64.

(i) 378 Kg/ha. (ii) 207·5 Kg/ha. (based on 5 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	345	467	397	363	334	360

Individual results for 63 and 64.

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years									
1963	552	732	664	496	436	484	N.S.	561	80
1964	137	202	130	230	236	232	**	194	6·7
Pooled	345	467	397	363	334	360	N.S.	378	207·5

Crop :- Cotton (*Kharif*). **Ref :- 61(8), 62(8), 63(11).**

Site :- Plant Breeding Stn., Mudhol. **Type :- 'M'.**

Object :— To study the effect of Nitrophosphate application on Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*-Cotton. (b) *Jowar*. (c) Nil. (ii) Black cotton soil. (iii) Last week of June 61 ; 18.6.62 ; 15.6.63. (iv) (a) Ploughing with mould board plough and harrowing. (b) Dibbling in furrows. (c) 17 Kg/ha. (d) 45 cm. × 10 to 15 cm. (e) N.A. (v) 125 Q/ha. of F.Y.M. for 61, 62 ; Nil for 63. (vi) Gaorani-6 (early). (vii) Unirrigated. (viii) 2 hoeings and weedings. (ix) 108 cm. ; 117 cm. ; 105 cm. (x) 4 pickings from Nov. to Dec. for 61 and 62 ; 4 pickings from Nov. to Jan. for 63.

2. TREATMENTS :

All combinations of (1), (2) and (3)+4 extra treatments.

(1) 3 sources of P_2O_5 : S_1=Super, S_2=O.D.D.A. and S_3=P.E.C.

(2) 3 levels of fertilizers : L_1=13·5 Kg/ha. of N+11·8 Kg/ha. of P_2O_5, L_2=26·9 Kg/ha. of N+23·5 Kg/ha. of P_2O_5 and L_3=53·8 Kg/ha. of N+47·1 Kg/ha. of P_2O_5.

(3) 3 methods of application : M_1=Broadcast, M_2=6 cm. below seed and M_3=Band placement.

4 extra treatments : N_0=0, N_1=13·5. N_2=26·9 and N_3=53·8 Kg/ha. of N as A/S.

3. DESIGN :

(i) 3^3 confd. with 4 extra treatments in each block. (ii) (a) 13 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·1 m. × 5·5 m. (b) 8·5 m. × 4·6 m. (v) 30. cm. × 46 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination counts plant height, boll counts and yield of *Kapas*. (iv) (a) 1961-63. (b) No. (c) Presented under 5. Results. (v) and (vi) Nil. (vii) As the error variances are heterogeneous and Treatments × years interaction is absent therefore the results of individual years have been presented under 5. Results.

5. RESULTS :

61(8)

(i) 325 Kg/ha. (ii) 47·0 Kg/ha. (iii) Main effect of L is highly significant. and that of N is significant. (iv) Av. yield of *Kapas* in Kg/ha.

N_0=265, N_1=325, N_2=315 and N_3=354 Kg/ha.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
S_1	296	357	379	363	358	310	344
S_2	299	327	352	317	338	324	326
S_3	293	322	337	325	334	292	317
Mean	296	335	356	334	343	309	329
M_1	302	353	349				
M_2	303	343	385				
M_3	282	310	335				

C.D. for L marginal means=31·7 Kg/ha.
C.D. for N marginal means=54·8 Kg/ha.

62(8)

(i) 382 Kg/ha. (ii) 122·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of *Kapas* in Kg/ha.

N_0=351, N_1=273, N_2=398 and N_3=403 Kg/ha.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
S_1	457	425	413	404	467	425	432
S_2	320	355	402	363	385	329	359
S_3	325	413	425	328	427	408	388
Mean	367	398	413	365	426	387	393
M_1	319	368	408				
M_2	433	415	431				
M_3	349	411	402				

63(11)

(i) 370 Kg/ha. (ii) 70·0 Kg/ha. (iii) Main effects of S, M, N anp 'N *vs.* others' are highly significant. L effect is significant. (iv) Av. yield of *Kapas* in Kg/ha.

N_0=201, N_1=315, N_2=287 and N_3=382 Kg/ha.

	L_1	L_2	L_3	M_1	M_2	M_3	Mean
S_1	332	358	371	327	403	331	354
S_2	392	451	480	409	509	406	441
S_3	291	345	362	333	364	301	333
Mean	338	385	404	356	425	346	376
M_1	320	385	364				
M_2	398	439	439				
M_3	298	330	410				

C.D. for any marginal mean=47·1 Kg/ha·
C,D. for 'N *vs.* others, =34·7 Kg/ha.

— —

Crop :- Cotton (*Kharif*). **Ref :- A.P. 60(8), 61(7).**

Site :- Plant Breeding Stn., Mudhol. **Type :- 'M'.**

Object :—To study the effect of foliar application of N at different levels on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Cotton-*Jowar*. (b) *Jowar*. (c) Nil. (ii) Black cotton soil. (iii) 28.6.60; 26.6.61. (iv) (a) Ploughings with mould board plough and harrowing. (b) Dibbling in furrows. (c) 17 Kg/ha. (d) 45 cm.×10 to 15 cm. (e) N.A. (v) 125 Q/ha. of F.Y.M. (vi) Gaorani-6(early). (vii) Unirrigated. (viii) 2 hoeings and weedings. (ix) 81 cm. ; 108 cm. (x) 4 pickings from November to December.

2. TREATMENTS:

8 manurial treatments : M_0=Control, M_1=22·4 Kg/ha. of N as A/S applied to soil at sowing, M_2=One foliar spray of N (1 %) applied one month after sowing, M_3=Two foliar sprays of N(1 %) applied one month and 2 months after sowing, M_4=One foliar spray of N(2 %) applied one month after sowing, M_5=Two foliar sprays of N(2%) applied one month and 2 months after sowing, M_6=Water sprayed one month after sowing and M_7=Water sprayed one month and 2 months after sowing.

Alpha Naphtheline Acetic Acid was sprayed on plants in vegetative and bud formation phases in three concentrations of 5, 10, 20 p.p.m in. single and double sprays.

3. DESIGN :

(i) R.B D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×5·5 m. (b) 8·5 m.×4·6 m. (v) 30 cm.×4·6 cm. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination counts and yield of *Kapas*. (iv) (a) 1960-61. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As the error variances are heterogenous and Treatments×years interaction is absent, the results of individual years have been presented under 5. Results.

5. RESULTS :

60(8)

(i) 738 Kg/ha. (ii) 107 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	662	875	805	707	735	750	672	701

61(7)

(i) 179 Kg/ha. (ii) 52 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	174	193	206	167	191	169	131	204

Crop :- Cotton (*Kharif*). **Ref :- A.P. 60(7).**

Site :- Plant Breeding Stn., Mudhol. **Type :- 'M'.**

Object :—To study the combined effect of N, P and K and to find out the optimum dosage of fertilizers for increasing the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Cotton-*Jowar*. (b) *Jowar*. (c) Nil. (ii) Black cotton soil. (iii) 28.6.60. (iv) (a) Ploughing with mould board plough and harrowing. (b) Dibbling in furrows. (c) N.A. (d) 45 cm.×10 cm. (e) N.A. (v) 125 Q/ha. of F.Y.M. (vi) Gaorani-6 (early). (vii) Un-irrigated. (viii) 2 bullock hoeings and 2 weedings. (ix) 81 cm. (x) Four pickings from November to December.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of N as A/S : N_0=0 and N_1=33·6 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.
(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=33·6 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 8·5 m.×5·9 m. (b) 7·9 m.×5·0 m. (v) 30 cm.×45 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) *Kapas* yield. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 737 Kg/ha. (ii) 830 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	618	604	613	610	611
N_1	842	884	832	893	863
Mean	730	744	723	752	737
K_0	716	729			
K_1	744	760			

C.D. for N marginal means=61·2 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 60(92), 61(105).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :—To study the effect of foliar application of N on the yield of Cotton and quality of lint.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Cotton. (b) Sorghum. (c) 12·4 C.L./ha. of F.Y.M. (ii) Deep black Cotton soil. (iii) 4.9.1960 ; 25.8.61. (iv) (a) Field was worked twice with *gorru* and *guntaka*. (b) Drilling. (c) 12·4 Kg/ha. (d) 53 cm. between rows. (e) 1. (v) Nil. (vi) N-14 for 60 ; 5975 for 61. (vii) Unirrigated. (viii) Intercultivation was given with *pathi guntaka* in the early stages and H.M. *guntaka* in later stages. (ix) 27 cm. ; 21 cm. (x) 1, 11.2.61 ; 12.1.62, 3, 26.2.62.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=Water spraying, M_2=11·2 Kg/ha. of N by spraying, M_3=11·2 Kg/ha. of N by soil application, M_4=22·4 Kg/ha. of N by spraying and M_5=22·4 Kg/ha. of N by soil application.

N applied as Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 27·4 m.×19·2 m. for 60 ; N.A. for other. (iii) 4. (iv) (a) 13·7 m.×3·2 m. (b) 12·5 m.×2·1 m. (x) 61 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory for 60 ; poor for other. (ii) Attack of Boll worm in both the years but Endrin and Sevin sprayed for 61 only. (iii) Yield of *Kapas*. (iv) (a) 1960-61. (b) No. (c) Results of combined analysis given under 5. Results. (v) to (vii) Nil.

5. RESULTS :

Pooled results

(i) 87·5 Kg/ha. (ii) 70·6 Kg/ha. (based on 5 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	72·2	88·0	91·4	94·2	94·3	84·7

Individual results

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years									
1960	115	137	136	85	112	84	N.S.	112	35·9
1961	29	39	47	103	76	85	N.A.	63	N.A.
Pooled	72	88	91	94	94	85	N.A.	88	70·6

Crop :- Cotton. **Ref :- A.P. 60(93), 61(106).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :- To study the effect of foliar application of N on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Cotton. (b) Sorghum. (c) 12·4 C.L./ha. of F.Y.M, (ii) Deep black cotton soils. (iii) 4.9.60 ; 25.8.61. (iv) (a) Field preparation with *gorru* and *guntaka*. (b) Drilling. (c) 12·4 Kg/ha. (d) 53 cm. between rows. (e) 1. (v) Nil. (vi) Laxmi. (vii) Unirrigated. (viii) Intercultivation was given with pathi *guntaka* in the early stages and with H.M. *guntaka* in the later stages. (ix) 27 cm. ; 21 cm, (x) 1, 11.2.61 ; 12.1.62, 3, 26.2.62-

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=Water spraying, M_2=11·2 Kg/ha. of N by spraying, M_3=11·2 Kg/ha. of N by soil application, M_4=22·4 Kg/ha. of N by spraying and M_5=22·4 Kg/ha. of N by soil application.

N applied as Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 27·4 m.×19·2 m. for 60 ; N.A. for other. (iii) 4. (iv) (a) 13·7 m.×3·2 m. (b) 12·5 m.×2·1 m. (v) 61 cm.×53 cm. (vi) Yes.

4. Satisfactory. (ii) Severe attack of boll worms in both the years but spraying of Endrin and dusting of Sevin for 61 only. (iii) Yield of *Kapas*. (iv) (a) 1960-61. (b) No. (c) Results of combined analysis given under 5. Results. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Pooled results

(i) 267·8 Kg/ha. (ii) 64·4 Kg/ha. (based on 5 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	271·7	261·1	255·2	298·6	276·4	243·8

Individual results

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
Years									
1960	241	242	213	237	211	165	N.S.	218	38·4
1961	303	280	297	360	342	323	N.S.	317	N.A.
Pooled	272	261	255	299	276	244	N.S.	268	64·4

Crop :- Cotton. **Ref :- A.P. 60(32), 61(33).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :—To study the effect of foliar and soil application of N on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) N.A. (iii) 5.9.60 ; 25.8.61. (iv) (a) Working *gorru* and *guntaka*. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) *Desi* Cotton (N—14). (vii) Unirrigated. (viii) Nil. (ix) 25 cm. ; 34 cm. (x) 20.2.61 ; 12.1.62.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=Water spray, M_2=22·4 Kg/ha. of N through soil, M_3=11 2 Kg/ha. of N through soil, M_4=22·4 Kg/ha. of N as spray and M_5=112. Kg/ha. of N as spray.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/226·7 ha. (b) 1/368·8 ha, (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Severe incidence of boll worm and gram cater piller. Endrin sprayed twice ; BHC+D.D.T. 5 % sprayed twice. (iii) yield of *Kapas*. (iv) (a) 1960—61. (b) N>. (c) Results of combined analysis given under 5—Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

( ) 107 Kg/ha (ii) 22·0 Kg/ha. (based on 35 d.f. made up of pooled error and Treatments × years interaction). (iii) Treatment differences are highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	71	96	144	120	80	130

C.D. 5 %=22·5 Kg/ha.

Individual results

Treatments / Years	M_0	M_1	M_2	M_3	M_4	M_5	Sig.	G.M.	S.E./plot
1960	113	152	184	156	114	183	N.S.	150	20.0
1961	29	39	103	85	47	76	**	63	24·0
Pooled	71	96	144	120	80	130	**	107.0	22·0

Crop :- Cotton. **Ref :- A.P. 60(91), 61(104), 62(126).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :—To study the effect of N, P and K alone and in combination on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton (b) *Jowar*. (c) 12·4 C.L./ha. of F.Y.M. (ii) Deep black Cotton soil. (iii) 3.9.60 ; 26 8.61 : 8.8.62. (iv) (a) Working *gorru* and *guntaka* twice. (b) Drilling. (c) 12·4 Kg/ha. (d) 53 cm. between rows. (e) 1. (v) Nil. (vi) N—14 (long staple). (vii) Unirrigated. (viii) Intercultivation with (viii) pathi *guntaka* and H.M. *guntaka* 1. (ix) 27 cm. ; 21 cm. ; 66 cm. (x) 17.2.61 and 15.3.61 ; 28.2.62 ; 11.2.63.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S : N_0=0 and N_1=44·8 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=67·2 Kg/ha.

(3) 2 levels of K_2O as Pot. Sul. : K_0=0 and K_1=67·2 Kg/ha.

Fertilizers were applied by soil application at the time of sowing.

3. DESIGN :

(i) Fact. in R.B,D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 12·2 m.×4·3 m. (b) 9·8 m.×3·2 m. (v) 122 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Poor. in 60(91) and satisfactory in others. (ii) Severe incidence of boll worm controlled by spraying Endrin and dusting severe. (iii) Yield of *Kapas*. (iv) (a) 1960—64 (Expts. failed in 63 and 64. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As the error variances are heterogeneous and Treatment×years interaction is absent the results of individual years have been under 5—Results.

5. RESULTS :

60(91)

(i) 37·6 Kg/ha. (ii) 15·7 Kg/ha (iii) Main effect of N alone is highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	20·9	20·5	18·5	22·9	20·7
N_1	51·3	57·7	52·1	56·9	54·5
Mean	36·1	39·1	35·3	39·9	37·6
K_0	30·1	40·5			
K_1	42·1	37·7			

C.D. for N marginal means=11·5 Kg/ha.

61(104)

(i) 98·6 Kg/ha. (ii) 30·3 Kg/ha. (iii) Main effect of N is highly significant. Interaction N×K., P×N are significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	73·4	77·9	69·5	81·8	75·6
N_1	126·1	117·1	144·0	99·2	121·6
Mean	99·8	97·5	106·8	90·5	98·6
K_0	119·9	93·6			
K_1	79·6	101·4			

C.D. for N marginal means=22·4 Kg/ha.

C.D. for means N×K and P×K tables=31·5 Kg/ha.

62(126)

(i) 298·7 Kg/ha. (ii) 271·8 Kg/ha. (iii) None of the effect is significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	263·2	250·8	243·4	270·6	257·0
N_1	347·2	333·6	328·6	352·2	340·4
Mean	305·2	292·2	286·0	311·4	298·7
K_0	286·6	285·4			
K_1	323·8	299·0			

Crop :- Cotton. **Ref :- A.P. 60(33), 61(34).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :—To compare the effects of soil and foliar applications of N on Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) N A. (ii) N.A. (iii) 5.9 60 ; 25.8.61. (iv) (a) Working *gorru* and *guntaka* twice. (b) Dibbling (c) to (e) N.A. (v) Nil. (vi) American Cotton (*laxmi*). (vii) Unirrigated. (viii) Nil. (ix) 25 cm ; 34 cm. (x) 20.2.61 ; 12.1.62.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=Water spray, M_2=22·4 Kg/ha. of N through soil, M_3=11·2 Kg/ha. of N through soil, M_4=22·4 Kg/ha. of N as spray and M_5=11·2 Kg/ha. of N as spray.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/226·7 ha. (b) 1/368·8 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Severe incidence of boll worm and Gram catter piller, Endrin sprayed twice B.H.C.+D.D.T. 50 % also sprayed twice. (iv) (a) 1960—61. (b) No. (c) Results of combined analysis presented 5 Results. (v) and (vi) Nil (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 314 Kg/ha. (ii) 65·5 Kg/ha. (based on d.f. made up of Treatments × years interaction). (iii) Treat differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	262	334	343	325	308	314

Individual results

Treatments	S_1		S_2		S_3	S_4	Sig.	G.M.	S.E./plot
Years									
1962	222	285	326	325	319	287	**	294	20·0
1964	303	383	360	325	297	342	**	335	30·0
Pooled	262	334	343	325	308	314	N S.	314	65·5

Crop :- Cotton. **Ref :- A.A. 64(131), 65(183).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'M'.**

Object :—To study the effect of major nutrients N, P, K and F.Y.M. on the yield and fibre quality of Cotton

1. BASAL CONDITIONS :

(i) (a) *Jowar* Cotton. (b) *Jowar*. (c) 12 C.L./ha. of F.Y.M (ii) Black Cotton soils. (iii) 27.9.64 and resowing on 17.13.64 ; 7.9.65 and gap filling on 30.9.65. (iv) (a) working *gorru* and *guntaka* alternatively. (b) Drilling. (c) 12 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) Nil. (vi) Nandiam. (vii) Unirrigated. (viii) Thinning and 2—3 interculturing. (ix) 31 cm. ; N.A. (x) 29.3.65 to 16.4.65 ; 24.2.66 to 26.3.66.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0. P_1=22·4 and P_2=33·6 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=22·4 and K_2=33·6 Kg/ha.

(4) 3 levels of F.Y.M. : F_0=0, F_1=6·2 and F_2=12·4 Q/ha.

Treatments applied as soil application at sowing.

3. DESIGN :

(i) 3^4 confd. (ii) (a) 9 plots/black, 9 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 13·7 m.×5·3 m. (b) 12·5 m.×4·3 m. (v) 61 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of boll worm and 5 cm. cater piller dusting of sevin, spraying of Endrin, B.H.C. 50 %× D.D.T. 50 % (iii) Yield of *Kapas*. (iv) (a) 1964—66. (b) No. (c) Nil. (v) Nil. (iv) Failure of monsoon rains for 65 and continuous heavy rains inmediate after sowing for 64. (vii) As the experiment is continuing, beyond 1965 results of individual years have been presented.

5. RESULTS:

64(131)

(i) 141 Kg/ha. (ii) 74·6 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	178	141	206	166	163	195	180	215	128	175
N_1	101	99	109	111	99	99	84	101	124	103
N_2	151	104	180	141	146	146	151	124	161	145
Mean	143	114	165	139	136	147	138	147	138	141
F_0	166	114	138	138	124	156				
F_1	109	136	195	148	126	168				
F_2	156	79	161	131	161	119				
K_0	133	99	185							
K_1	146	123	138							
K_2	151	124	170							

65(183)

(i) 140 Kg/ha. (ii(29·7 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of *Kapas* in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	140	134	145	158	121	141	134	151	135	140
N_1	135	130	153	148	143	126	140	132	146	139
N_2	135	140	144	132	141	147	132	144	144	140
Mean	137	135	147	146	135	138	135	142	142	140
F_0	138	127	140	138	137	131				
F_1	134	133	160	162	127	137				
F_2	138	144	142	138	141	146				
K_0	147	140	151							
K_1	134	133	138							
K_2	130	130	154							

Crop :- Cotton. **Ref :- A.P. 61(195).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :— To study the effect of different doses of N with and without P on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 5.2.61. (iv) (a) Nil. (b) Hand dibbling in rice stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Thinning hand weeding, Hummati hoeing, forming ridges and furrows (ix) 55 cm. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

Sub-plot treatments :

4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

½ dose of N and full dose of P_2O_5 applied 1 month after sowing. ½ dose of N applied and flowering

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 7·6 m.×6·1 m. (b) 7·0 m.×4·9 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Shedding of polls due to Boll worms, spraying Endrin and dusting B.H.C. 10 %. (iii) Halo length, ginning percentage and yield of *Kapas*. (iv) (a) 1961-62 (design changed in 62). (b) and (c))Nil. (v) Rama chandra puram, Gudiuada. (b) Nil. (vi) Unusually heavy rains during picking period. (vii) Nil.

5. RESULTS :

(i) 820 Kg/ha. (ii) (a) 129·8 Kg/ha. (b) 1394 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	715	891	824	1032	866
P_1	558	786	788	964	774
Mean	636	8 8	806	998	820

C.D. for N marginal means=146·4 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(228).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object : -- To study the effect of different doses of N with and without P on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 9.2.62 and gap filling on 27.2.62. (iv) (a) Nil. (b) Hand dibbling in Paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (b) P 216 F. (vii) Irrigated. (viii) 3 thinnings, hand weeding, 2 *Hummati* hoeings, forming ridges and (ix) 24·4 cm. (x) 15.6.62 to 16.8.62.

2. TREATMENTS :

All combinations (1) and (2).

(1) 4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_4=67·2 Kg/ha.

(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

A/S applied in two equal doses, first dose about one month after sowing and second dose at flowering. Super applied on 2.3.62.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 7·6 m.×6·1 m. (b) 7·0 m.×4·9 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% on 30.3.62, spraying Endrin 1, 19.4.62, 4.5.62, 19.7.62. (iii) Germination counts, final stand, Boll counts, height measurements and yield of seed Cotton. (iv) (a) 1861-62 (design changed in 1962). (b) and (c) Nil. (v) Rama chandra puram Gudiuada. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 317 Kg/ha. (ii) 117·5 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	113	196	429	477	304
P_1	104	348	442	426	330
Mean	109	272	435	451	317

C.D. for N marginal means=173·1 Kg/ha.

Crop :- Cotton. **Ref. :- A.P. 61(198), 62(224).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object –To study the effect of application of N in a single dose against split doses.

1. BASAL CONDITIONS :

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 23.2.61; 12.2.62, resowing on 26.2.62 and gap filling on 29.3 62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm. × 30 cm. (e) 2. (v) Nil. (vi) P 2 6 F. (vii) Irrigated. (viii) Thinning, weeding, *Mummati* hoeing and forming ridges and furrows. (ix) 55 cm; 25 cm. (x) N.A.; 29.6.62, 11.7.62 and 1, 17.8.62.

2. TREATMENTS :

3 manurial treatments : M_1=44·8 Kg/ha. of N applied one month after sowing, M_2=44·8 Kg/ha. of N. applied at flowering and M_3=44·8 Kg/ha. of N in two equal doses, applied one month after sowing and at flowering.

N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) 9·1 m. × 3·7 m. (b) 8·6 m. × 2·4 m. (v) 61 cm. × 30 cm (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Shedding of bolls due to boll worms; dusting B.H.C. 10% and spraying Endrin for 61; Nil for 62 but Endrin and B.H.C. 10% sprayed. (iii) Height measurments and yield of seed cotton. (v) (a) 1961-62. (b) No. (c) Result of combined analysis presented under—Results. (v) Ramachandra puram and Gudivada. (vi) Heavy rains during picking period for 61 and Nil for other. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled Results.

(i) 497 Kg/ha. (ii) 253·0 Kg/ha. (based on 2 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	M_1	M_2	M_3
Av. yield.	547	516	429

Individual Results

Treatments	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
Years						
1961	555	448	486	N.S.	496	84.9
1962	529	585	372	N.S.	499	138.8
Pooled	547	516	429	N.S.	497	253.0

Crop :- Cotton (*Rahi*). **Ref. A.P. 64(202), 65(10).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object—To fix up manurial schedule for Cotton in Rice follows in the respective tracls.

1. BASAL CONDITIONS:

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 20.2.64 and 1.3.65. (iv) (a) 2 to 3 ploughings with country plough. (b) Dibbling. (c) N.A. (d) 61 cm. × 30 cm. (e) 2. (v) Nil. (vi) P 216 F (medium). *(vii) Irrigated. (viii) 1-Mammuty* hoeing, 2 hand weedings, line weeding, earthing up and formation of ridges and furrows. (ix) 99 cm, 55 cm. (x) 10.6.64 to 22.8.64; 25.6.65 to 20.8.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Mot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

N was applied in two equal doses, 1 and 2 months after sowing. P_2O_5 and K_2O were applied before sowing.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) 54 m. × 24 m. (iii) 2. (iv) (a) 9·1 m. × 3·7 m. 6·1 m. × 6·1. (b) 8·5 m. × 2·4 m; 4·9 m. × 5·5 m. (v) 60 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids. 6 sprayings of I.C.C.C. for 64(202) Dusting of Sevin 10% and 20% emulsion of Endrin sprayed for 65. (iii) Height of plants, no. of bolls/plant and yield of seed cotton. (iv) (a) 1964-contd. (b) No. (c) Nil. (v) Tenali, Ramachandrapuram and Gudivada. (vi) to (vii) Nil.

5. RESULTS :

64(202)

(i) 973 Kg/ha. (ii) 84·1 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	473	468	458	466	461	470	466
N_1	1007	960	947	965	970	979	971
N_2	1501	1493	1447	1460	1504	1477	1480
Mean	994	974	951	964	978	975	973
K_0	1002	950	940				
K_1	985	1010	944				
K_2	995	962	968				

C.D. for N marginal means=81·5 Kg/ha.

65(10)

(i) 934 Kg/ha. (ii) 75 Kg/ha. (iii) Main effect of N and P are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	456	546	576	514	524	541	526
N_1	953	1005	1074	1001	998	1033	1011
N_2	1157	1246	1357	1231	1246	1282	1253
Mean	855	932	1002	955	923	952	934
K_0	861	900	985				
K_1	837	928	1003				
K_2	868	969	1019				

C.D. for N or P marginal means=72·7 Kg-/ha.

Crop :- Cotton. **Ref :- A.P. 65(241).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'M'.**

Object :— To find out the optimum dose of N for Cotton.

1. BASAL CONDITIONS ;

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Black soil. (iii) 4.3.66/gapfilling on 24.3.66. (iv) (a) 3 ploughings with tractor. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Earthing of furrows and ridges and thinning. (ix) N.A. (x) 27, 28.6.66.

2. TREATMENTS :

16 levels of N as A/S : N_1=90, N_2=112, N_3=134, N_4=146, N_5=157, N_6=168, N_7=174, N_8=179, N_9=185, N_{10}=190, N_{11}=196, N_{12}=202, N_{13}=207, N_{14}=213, N_{15}=219 and N_{16}=224 Kg/ha.

3. DESIGN :

(i) R B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 6·7×4·9 m. (b) 6·1 m.×3·7 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Replications II, III were completely damaged due to ill drained conditions. (ii) Sprayings of Endrin 2 times, dusting sevin once, spraying of wettable Sevin 2 times. (iii) No. of bolls/plant, height, measurements and yield of *Kapas*. (iv) (a) 1965-67. (b) No. (c) Nil. (v) Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 2464 Kg/ha. (ii) 57·4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8
Av. yield	1456	1650	1924	1968	2089	2273	2414	2533
Treatment	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}	N_{15}	N_{16}
Av. yield	2645	2716	2741	2820	2766	3084	3151	3200

C.D.=81·2 Kg/ha.

———

Crop :- Cotton. **Ref :- A.P. 63(204).**

Site :- Rice Fallow Cotton Scheme, Ramachandrapuram. **Type :- 'M'.**

Object : — To fix up manurial schedules for Cotton in Rice-fallows in the respective tracts.

1. BASAL CONDITIONS :

(i) (a) Paddy-Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 30.11.63. (iv) (a) 3 ploughings with country plough. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P 216 F (medium). (vii) Irrigated. (viii) 1 manuity hoeing and 2 hand weedings. (ix) 76 cm. (x) 25.4.64 to 26.5.64.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

N applied on 5.1.64 and 1.2.64 in two equal doses. P_2O_5 and K_2O as applied as basal dressing.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 3 blocks/replication and 9 plots/block. (b) N.A. (iii) 2. (iv) (a) 7·3 m.×3·7 m. (b) 6·7 m.×2·4 m. (v) 31 cm.×61 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Slight incidence of Jassids only, six sprayings schudule of I.C.C.C. was followed. (iii) No. of bolls/plant, height of plant and yield of seed cotton. (iv) 1963 only. (b) No. (c) Nil. (v)Nellore and Gudivada. (b) Nil. (vi) Nil. (vii) This expt. was conducted by the Cotton specialist, Nandyal under the Rice-Fallow Cotton scheme at Ramachandrapuram, where no regular Res. Stn. exists.

5. RESULTS :

(i) 1148 Kg/ha. (ii) 155 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	953	1088	1013	995	996	1063	1013
N_1	1197	1153	1055	1100	1131	1174	1135
N_2	1268	1347	1254	1369	1217	1284	1290
Mean	1139	1195	1107	1155	1114	1174	1148
K_0	1186	1231	1132				
K_1	1126	1139	1078				
K_2	1191	1219	1112				

C.D. for N marginal means=150·2 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 60(176), 61(204).**

Site :- Rice Fallow Cotton Scheme, Ramachandra Puram **Type :- 'M'.**

Object :—To study the effect of application of N in a single dose against split doses.

1. BASAL CONDITIONS:

(i) (a) Paddy- Cotton. (b) Paddy (c) N.A. (ii) Clay loam to clayey. (iii) 11.12.60 ; 2.12.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P—216 F. (vii) Irrigated. (viii) Line weeding, hoeing, thinning, working plough in between rows. (ix) 0·4 cm., 0·4 cm.(x) 19.5.61, 2, 15.6.61 ; 23.4.62, 3, 14, 29.5.62 and 19.6.62.

2. TREATMENTS :

3 times of application of 41·8 Kg/ha. of N as A/S : T_1=At initial dose one month after sowing, T_2=At flowering and T_3=In two equal doses at one month after sowing and at flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 11·0 m.×7·6 m. for 60(176), 9·1 m.×7·0 m. for 61(204). (il) 6 for 60(76) ; 8 for 61(204). (iv) (a) 7·6 m.×3·7 m. for 60(176) ; 7·0 m.×3·0 m. for 61(204). (b) 7·0 m.×2·4 m. for 60(176) ; 6·4 m.×1·8 m. for 61(204). (v) 30 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Jassids and boll worms ; controlled by spraying Endrin. (iii) Yield of *kapas*. (iv) (a) 1960—61. (b) No. (c) Presented under 5. Results. (v) Nellore and Gudivada. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is absent. This expt. was conducted by the Cotton Spacialist Nandyal under the Rice Fallow Cotton Scheme at Ramachandrapuram, where no regular Res Stn. exists.

5. RESULTS :

Pooled results.

(i) 493 Kg/ha. (ii) 37·3 Kg/ha. (based od 24 d.f. made up pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	494	479	505

Individual results.

Years	T_0	T_1	T_2	Sig.	G.M.	S.E./plot
1960	160	130	135	N.S.	142	32·7
1961	746	741	783	N.S.	757	40·1
Pooled	494	479	505	N.S.	493	37 3

Crop :- Cotton. **Ref :- A.P. 60(175).**

Site :- Rice Fallow Cotton Scheme Ramachandra Puram. **Type :- 'M'.**

Object :—To study the effect of different doses of N with and without P_2O_5 on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 10.12.60, gap filling on 3.1.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) Nil. (vi) P—216 F. (vii) Irrigated. (viii) 1 hoeing, working country plough once and line weeding and hoeing once. (ix) 0·4 cm. (x) 15.5.61 to 13.6.61.

2. TREATMENTS :

Main-plot treatments :

2 levels of P_2O_5 as Super : P_0=0 and P_1=33·6 Kg/ha.

Sub- plot treatments :

4 levels of N as A/S : N_0=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

P_2O_5 was applied 1 month after sowing. N was applied in two equal doses at 1 month after sowing and at flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication; 4 sub-plots/main-plot. (b) 24·4 m.×15·2 m. (iii) 4. (iv) (a) 7·6 m.×6·1 m. (b) 6·4 m.×4·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids one spraying of Endrin on 25, 26.4.61. (iii) Germination counts, stand, resistance to Jassids and Black worm, height, flower counts, boll counts and yield of *kapas*. (iv) (a) 1960-61. (Design changed in 1961). (b) No. (c) Nil. (v) (a) Gudivada ond Nellore. (b) Nil. (vi) Nil. (vii) Irrigation at the fruiting stage was not adequate. This expt. was conducted by the Cotton Specialist, Nandyal under the Rice Fellow Cotton scheme at Ramachandrapuram where no regular Res. Stn. exists.

5. RESULTS :

(i) 209 Kg/ha. (ii) (a) 45·3 Kg/ha. (b) 81·2 Kg/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of seed cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	130	176	227	241	193
P_1	136	209	238	314	224
Mean	133	193	232	277	209

C.D. for N marginal means=47·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(203).**

Site :- Rice Fallow Cotton Scheme Ramachandra Puram. **Type :- 'M'.**

Object—To study the effect of different doses of N with and without P on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) (a) Clay loam to clayey loam. (iii) 2.12.61/gap filling on 16.2.62. (iv) (a) Nil. (b) Dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2 (v) Nil. (vi) P–216 F. (vii) Irrigated. (viii) Working plough once, 2 line weedings, hand hoeings, thinning once, and working guntaka in between rows once. (ix) 0·4 cm. (x) 25.4.62 to 18.6.62.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of P_2O_5 as super : P_0=0 and P_1=33·6 Kg/ha.

(2) 4 levels of N as A/S : No=0, N_1=22·4, N_2=44·8 and N_3=67·2 Kg/ha.

P_2O_5 was applied on 3.1.61. N was applied in two equal doses at the initial stage of the crop and at flowering.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 24·3 m.×9·1 m. (iii) 4. (iv) (a) 6·1 m.×9·1 m. (b) 4·9 m×8·5 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids and Black worm. 4 sprayings of Endrin (ii) Initial stand, resistance to Jassids and Black worm, height, No. of bolls, final stand and yield of *kapas*, (iv) (a) 1960—61 (Design changed in 1961). (b) No. (c) Nil. (v) Gudivada and Nellore. (vi) Nil. (vii) This expt. was condncted by the Cotton Specialist, Nandyal under the Rice Fallow Cotton scheme at Ramachandrapuram, where no regular Res. Stn. exists.

5. RESULTS :

(i) 568 Kg/ha. (ii) 103·4 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
P_0	306	481	627	807	555
P_1	382	503	596	844	581
Mean	344	492	612	826	568

C.D. for N marginal means=152·1 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(228).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'M'.**

Object : –To find out the optimum dose of for Cotton.

1. BASAL CONDITIONS :

(i) (a)Paddy.–Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey (iii) 3, 4, 5.1.66. (a) Ploughing with country plough. (b) Dibbling. (c) N.A. (d) 60 cm.×45 cm. (e) 2 (v) Nil. (vi) P—216 F. (vii) Irrigated. (viii) Hand weeding, *Mummati* hoeing, ploughing with country plough. (ix) and (x) N.A.

2. TREATMENTS :

16 levels of N as A/S : 2 Treatments : Same as in expt. no 65 (241) on page. 626.
N was applied in two equal doses at one month after sowing and at flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 6·8 m.×6·0 m. (b) 5·9 m ×3·6 m. (v) 45 cm × 120 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrin, Sulphur and Endrin, Sulphur and Sevin and Sulphur dustings. (ii) No. of bolls/plant, plant, height and *kapas* yield. (iv) (a) 1965–67. (b) No. (c) Nil. (v) Nellore and Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 2130 Kg/ha. (ii) 337·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8
Av. yield	1702	1870	2081	2042	2195	1997	2181	2274
Treatment	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}	N_{15}	N_{16}
Av. yield	2280	2172	2090	2324	2187	2191	2020	2475

Crop :- Cotton. **Ref :- A.P. 64(199).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'M'.**

Object : To fix up manurial schedules for Cotton rice fallows in the tract.

1. BASAL CONDITIONS :

(i) (a) Cotton—Paddy. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 29.11.64. (iv) 2 tractor ploughings. (b) Dibbling. (c) N.A. (d) 61 cm×30 cm. (e) 2. (v) Nil. (vi) P—216 F (medium.) (vii) Irrigated. (viii) *Mummati* hoeing, 2 hand weedings, working with country plough twice (ix) 101 cm. (x) 14.5.65 to 12.6.65.

2. TREATMENTS:

All combinations of (1), (2) and (3).
(1) 3 levels of N as A/S : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.
N was applied in 2 equal doses on 29.12.64 and 6.2.65. P_2O_5 and K_2O were applied before sowing on 28.11.64.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) 46 m.×24 m. (iii) 2. (iv) (a) 6·1.m.×6·7 m. (b) 4·9 m.×6·1 m. (v) 0·6 m.×0·3 m. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids only. Endrin (20% emulsion) was sprayed 3 times. Endrin and Sulphur sprayed once. Sulphur and Sevin once and Sulphur dusting twice. (iii) Height of plants, no. of bolls/plant and yield of seed cotton. (iv) (a) 1964—only. (b) No. (c) Nil. (v) (a) Nellore and Gudivada. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1142 Kg/ha. (ii) 315 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	755	697	594	655	671	720	682
N_1	1129	1060	1133	1046	1126	1149	1107
N_2	1589	1680	1646	1593	1714	1608	1638
Mean	1157	1145	1124	1098	1170	1159	1142
K_0	1115	1115	1063				
K_1	1137	1160	1213				
K_2	1219	1161	1097				

C.D. for N marginal means=305·3 Kg/ha.

Crop :- Cotton (*Kharif*). **Ref :- A.P. 60(157), 61(174), 60(205).**

Site :- Project Dev. and Demons. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find out the effect of different doses of G.L. applied as basal dressing.

1. BASAL CONDITIONS :

(i) (a) Jonna—Cotton. (b) G.M. crop for 60(157), Jonna for others. (c) Nil for 60(157), 126 Q/ha. of F.Y.M.+224 Kg/ha. of A/S for others. (ii) Black soils. (iii) 21.8.60, 28.8.61 and 13.8.62. (iv) (a) Ploughing. (b) Dibbling. (c) 15 Kg/ha (d) 69 cm.×20 cm. (e) 1 to 2. (v) 34 Kg/ha. of P_2O_5 as Super+45 Kg/ha of N as A/S applied in two equal doses first as basal dressing and second at flowering. (vi) *Laxmi* (vii) Irrigated. (viii) Weeding and earthing up. (ix) 332 cm., 128 cm. and 67 cm. (x) 3.2.61 to 7.4.61 ; 21.1.62 to 24.3.62 ; 5.2 63 to 30.4.63.

2. TREATMENTS :

4 levels of green leaves : G_0=0, G_1=2802, G_2=5604 and G_3=8406 Kg/ha.
G.L. applied one month prior to sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 536 sq. m. for 60(157) ; 48·8 m.×38·4 m. for 61(174) and 21·9 m.×17·8 m. for 62(205). (iii) 6. (iv) (a) 8·2 m.×9 m. for 60(157), 12·2 m.×9·6 m. for 61(174) and 8·9 m.×11·0 m. for 62(205). (b) 6·9 m.×8·3 m. for 60(157), 8·2 m.×11·4 m. for 61(174), 4·8 m.×10·4 m. for 62(205). (v) 30 cm.×206 cm. for 62(205) and 69 cm.×40 cm. for others. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Periodical sprayings of Parathion against Boll Worm and Jassids. (iii) Yield of *kapas*. (iv) (a) 1960—62. (b) No. (c) Results of combined analysis presented under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × Years interaction is absent.

5. RESULTS :

Pooled results.

(i) 520 Kg/ha. (ii) 55·5 Kg/ha. (based on 51 d.f. make up of Treatments × Years interaction and pooled error). (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	G_0	G_1	G_2	G_3
Av. yield	479	516	529	555

C.D.=37·2 Kg/ha.

Individual results.

Treatments	G_0	G_1	G_2	G_3	Sig.	G.M.	S.E./plot
Years							
1960	430	436	442	483	N.S.	448	46·0
1961	645	722	744	778	*	722	65·0
1962	363	390	402	405	N S.	390	53·0
Pooled	479	516	529	555	**	520	55·5

Crop :- Cotton (*Kharif*). **Ref :- A.P. 62(9), 63(12), 64(17).**

Site :- Plant Breeding Stn., Mudhol. **Type :- 'MV'.**

Object :—To study the effect of different levels of fertilizers on different varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) Cotton—*Jowar*. (b) *Jowar*. (c) Nil. (ii) (a) Black cotton soils. (iii) 30.6.62 ; 28.6.63 ; 23.6.64 (iv) (a) Ploughing with mould board plough and harrowing. (b) Dibbling in furrows. (c) 17 Kg/ha. (d) 45 cm. × 10 cm. (e) N.A. (v) 125 Q/ha. of F.Y.M. for 62(9) and 63(12) ; Nil for 64(17). (vi) As per treatments. (vii) Unirrigated. (viii) 2 bullock hoeings and 2 weedings. (ix) 117 cm. ; 105 cm. ; 108 cm. (x) 4 pickings from Nov. to Dec.

2. TREATMENTS

Main-plot treatments

6 manurial treatments : M_0=Control, M_1=22·4 Kg/ha. of N as A/S as basal dressing, M_2=44·8 Kg/ha. of N as A/S, half at sowing and half at flowering, M_3=67·3 Kg/ha. of N as A/S applied as in M_2, M_4=33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of K_2O as Mur. Pot. applied as in M_2 and M_5=44·8 Kg/ha. of N as A/S+44·8 Kg/ha. of N as A/S+44·8 Kg/ha. of K_2O as Mur. Pot. applied as in M_2.

Sub-plot treatments

5 early varieties : V_1=Gaorani—6, V_2=2927, V_3=3394, V_4=2860 and V_5=PA_1=American.

3. DESIGN :

(i) Split-plot, (ii) (a) 6 main-plots/replication and 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9.1 m. × 3·2 m. (b) 8·5 m. × 2·3 m. (v) 30 cm. × 46 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (iii) Nil. (iii) Yield of *kapas*. (iv) (a) 1962—64. (b) No. (c) Nil. (v) (a) and (vi) Nil. (vii) As the sub-plot error variances are heterogeneous the results of individual years have been presented under 5. Results.

5. RESULTS :

62(9)

(i) 264 Kg/ha. (ii) (a) 137·0 Kg/ha. (b) 75·0 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	Mean
V_1	254	243	211	276	258	236	246
V_2	283	316	298	359	243	258	292
V_3	287	261	261	316	327	338	298
V_4	345	323	203	374	258	327	305
V_5	185	134	192	214	181	163	178
Mean	271	255	233	308	253	264	264

C.D. for V marginal means=43·3 Kg/ha.

63(12)

(i) 158 Kg/ha. (ii) (a) 80·0 Kg/ha. (b) 46·0 Kg/ha. (iii) Main effect of M alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	Mean
V_1	85	145	197	208	184	166	164
V_2	87	137	207	193	182	171	163
V_3	83	132	200	189	140	158	150
V_4	103	86	172	182	171	133	141
V_5	140	141	222	189	192	139	171
Mean	99	128	199	192	174	153	158

C.D. for M marginal means=53·9 Kg/h.

64(17)

(i) 189 Kg/ha. (ii) (a) 80·0 Kg/ha. (b) 34·0 Kg/ha. (iii) Main effect of V is highly significant and that of M is significant. (iv) Av. yield of *kapas* in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	Mean
V_1	165	204	246	191	215	247	211
V_2	204	171	182	150	189	236	189
V_3	145	175	206	190	169	284	195
V_4	145	173	191	187	227	263	198
V_5	143	151	142	128	171	199	156
Mean	160	174	193	169	194	246	189

C.D. for M marginal means=53·9 Kg/ha.

C.D. for V marginal means=19·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(181).**

Site :- Project Dev. and Demons. Farm, Yemmiganur. **Type :- 'MV'.**

Object :—To fix up economic dose of fertilizers for different varieties of desi Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Cotton—Jonna. (b) Jonna. (c) 125·5 Q ha. of F.Y.M.+22·4 Kg/ha. of N as A/S. (ii) (a) Black soils. (iii) 14.9.61. (iv) (a) Ploughing. (b) Dibbling on ridges. (c) 15 Kg/ha. (d) 69 cm.×20 cm. 1 to 2. (v) 125 5 Q/ha. of F Y.M.+34 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Pot. Sul. at the time of sowing. (vi) As per treatments. (vii) Irrigated. (viii) Working Patti *Guntaka*, weeding and earthing up. (ix) 9 cm. (x) Last picking on 15.3.62.

2. TREATMENTS :

All combination of (1) and (2).

(1) 4 varieties : V_1=5975, V_2=Western—1, V_3=2—3—6895 aed V_4=Laxmi.

(2) 4 doses of N as A/S : N_0=0, N_1=22, N_2=45 and N_3=67 Kg/ha.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) 7·32 m.×109·8 m. (iii) 4. (iv) (a) 7·3 m.×6·9 m. (b) 6·1 m.×5·5 m. (v) 60 cm.×69 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of *kapas*. (iv) (a) 1961—only. (b) No. (c) Nil. (v) and (vi) Nil.

5. RESULTS :

(i) 297 Kg/ha. (ii) 67 Kg/ha. (iii) Main effect of V alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	N_0	N_1	N_2	N_3	Mean
V_1	188	207	221	223	210
V_2	317	330	347	334	332
V_3	255	286	287	336	291
V_4	363	322	374	367	357
Mean	281	286	307	315	297

C.D. for V marginal means=47·4 Kg/ha.

— =—

Crop :- Cotton. **Ref :- A.P. 65(84).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'M'.**

Object :—To find out the effect of topping on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Medapesara. (c) Black soils. (iii) 3.8.65. (iv) (a) 3—4 ploughings with country plough, ridge forming. (b) Hand dibling on ridges. (c) 15 Kg/ha. (d) 76·2 cm.×30·5 cm. (e) 2. (v) 5676 Kg/ha. of medapesara was incorporated during the last week of July with three ploughings. 22·4 Kg/ha. of N as A/S, 56·0 Kg/ha. of P_2O_5 as Super and 56·0 Kg/ha. of K_2O as Pot. Sul. as basal dressing 44·8 Kg/ha. of N as A/S each as top dressing at thinning and flowering stages. (vi) McV_3. (vii) Irrigated. (viii) 1 thinning. (ix) 52·7 cm. (x) 23.12.65 to 21.3.66.

2. TREATMENTS :

5 topping treatments T_0=No Topping, T_1=Topping 75 days after sowing, T_2=Topping 90 days after sowing, T_3=Topping 105 days after sowing and T_4=Topping 120 days after sowing.

N.B. : Topping is removal of Top 2·54 cm. shoot borer main shoot as well as from the branches.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 8·4 m.×7·0 m. (b) 6·9 m.×6·4 m. (v) 0·7 m.×0·3 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 1 Spraying each of Panatoiow and Endrin 4 Sevin dustings. (ii) Plant population, height measurements, standing pores plant and yield of *kapas*. (iv) (a) 1965—67. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1657 Kg/ha. (ii) 202·5 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1527	1914	1577	1588	1681

C.D.=238·1 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(51).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'M'.**

Object :—To find up the cultural practices for Coton in rice fallows in tne respective tracts.

1. BASAL CONDITIONS :

(i) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 2.12.64 and 13.1.65. (iv) (a) As per treatments. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) N.A. (vi) 89·7 Kg/ha. of N in two doses, one absent a month after sowing and the other at flowersing. (vii) P-216 F. (medium). (viii) Irrigated. (viii) 1 *Mummati* hoeing, 2 hand weedings, working country plough twice. (ix) 107 cm. (x) 4-5.65 to 7.6.65.

2. TREATMENTS :

2 cultural treatments : T_1=Sowing Cotton in Paddy stubbles and T_2=Sowing Cotton in prepared land.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 115 m.×17 m. (iii) 12. (iv) (a) 81·0 sq. m. (b) 61·9 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) (a) Slight incedence of Jassids only. (b) 6 spray schedule of i.c.c.c. followed (iii) Yield of *kapas*. (iv) (a) 1964—only. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Tenali.

5. RESULTS :

(i) 1446 Kg/ha (ii) 49·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_1	T_2
Av. yield	1526	1366

C.D.=44·0 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 61(193).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'C'.**

Object :—To find out the optimum number of seedlings per hill.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soils. (iii) 1.12.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) As per treatments. (v) 44·83 Kg/ha. of N as A/S in two equal doses of 1 month after sowing and at flowering. (vi) P—216 F. (vii) Irrigated. (viii) Thinning of plants as per treatments and 3 times weedings. (ix) 12·8 cm. (x) 4 pickings from 12.5.62 to 4.6.62.

2. TREATMENTS :

2 number of seedlings/hill : P_1=1 and P_2=2 seedlings/hill.

3. DESIGN :

(i) R B.D. (ii) (a) 2. (b) 7·6 m.×6·1 m. (iii) 12. (iv) (a) 7·6 m.×3·1 m. (b) 6·4 m.×1.8 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% against grass hoppers and prodeura litura, 5 sprayings by Endrin. (iii) Germination counts, plant height, Boll count, ginning percentage, Halo length, yield of *kapas*. (iv) (a) 1960—61 (Expt. failed in 1960). (b) No. (c) Nil. (v) (a) Ramachandrapuram, Nellore. (b) Not. (vi) and (vii) Nil.

5. RESULTS :

(i) 970 Kg/ha. (ii) 199·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	P_1	P_2
Av. yield	879	1061

Crop :- Cotton. **Ref :- A.P. 60(171).**

Site : Cotton Res. Sub-Stn., Gudivada. **Type :- 'C'.**

Object :—To study the efficiency of different spacings between rows as well as between plants.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soils. (iii) 3.12.60, resown on 12·12.60. (iv) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two split doses, first at 1 month after sowing and second at flowering. (vi) P—216 F. (vii) Irrigated. (viii) 3 hand weedings, 2 intercultivations with country plough and thinning. (ix) 6 cm. (x) 10.5.61 to 2.6.61.

2. TREATMENTS :

Main-plot treatments

2 spacing between rows : R_1=45·7 and R_2=61 cm.

Sub-plot treatments

4 spacings between plants (with in rows) : P_1=15·2, P_2=30·5, P_3=45·7 and P_4=61 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 4 sub-plots/main-plot. (b) 18·3 m.×7·6 m. (iii) 4. (iv) (a) For R_1=8·5 m.×4·6 m. and for R_2=8·5 m.×4·9 m. (b) For R_1=7·3 m.×3·7 m. and for R_2=7·3 m.×3·7 m. (v) For R_1=61 m.×46 m. and for R_2=61 m.×61 m. (vi) Yes.

4. GENERAL :

(i) Stunted growth due to excessive moisture in initial stages and sheeding of floral forms. (ii) Incidence of Boll worm, Spraying Endrin four times. (iii) Germination counts, plants height, initial stand, final stand, yield, halo length, ginning percentage. (iv) (a) 1960—61. (Design changed in 1961). (b) No. (c) Nil. (v) (a) Nellore and Ramachandrapuram. (b) Nil. (vi) Heavy rain of 2·4 cm. soon after sowing on 3.12.60. (vii) Considerable damage of bolls by field rats.

5. RESULTS :

(i) 247 Kg/ha. (ii) (a) 48·0 Kg/ha. (b) 789 Kg/ha. (iii) Main effect of P alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	368	325	212	157	266
R_2	341	248	178	145	228
Mean	354	286	195	151	247

C.D. for P marginal means=82·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(191).**

Site :- Cotton Res. Sub-Stn.. Gudivada. **Type :- 'C'.**

Object :—To study the efficacy of different spacings between rows as well as between plants.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soils. (iii) 2.12.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two doses, first at 1 month after sowing and second at flowering. (vi) P—216 F. (vii) Irrigated. (viii) Thinning, 1 intercultivation with spades, 2 intercultivations with country plough, 2 line weedings. (ix) 10 cm. (x) 18.5.62 to 1.6.62.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 spacings between rows : R_1=45· 7and R_2=61·0 cm.

(2) 4 spacings between plants (with in rows) : P_1=15·2. P_2=30·5, P_3=45·7 and P_4=61 cm.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 8. (b) 39·0 m.×8·5 m. (iii) 4. (iv) 8·5 m.×4·9 m. (b) 7·3 m.×3·7 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% against grass hoppers and prodeura litura, 5 spacings of Endrin, rat poison was used against rats. (iii) Germination counts, vigour. height counts, boll counts, final stand and yield of *kapas*, ginning %, halo length. (iv) (a) 1961—61 (Design changed in 1961). (b) No. (c) Nil. (v) (a) Ramachandrapuram and Nellore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 597 Kg/ha. (ii) 115·0 Kg/ha. (iii) None of the effects is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	654	622	603	591	618
R_2	676	623	520	489	577
Mean	665	622	562	540	597

Crop :- Cotton. **Ref :- A.P. 64(201), 65(243).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'C'.**

Object :—To fix up the optimum stage of topping Cotton in Rice fallows.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 24.11.64, 19.1.66. (iv) (a) Nil for 64(201) ; 2 ploughings with country plough 65(243). (b) Dibbling in Rice stubbles for 64(201) and Dibbling in prepared fields for 65(243). (c) N.A. (d) 61 cm.×30 cm. ; 61 cm.×46 cm. (e) 2. (v) 67·2 Kg/ha. of N as A/S in two equal doses applied one month after sowing and at flowering for 64(201) ; 90 Kg/ha. of N as A/S in two equal doses applied on 19.2.66 and on 21.3.66. (vii) Irrigated. (viii) 1 intercultivation each with spade and country plough, line weeding. (ix) 107 cm. for 64, N.A. for 65. (x) 15, 28.5.65 and 8.6.65 ; 11, 22.5.66 and 1.6.66.

1. TREATMENTS :

5 topping treatments : T_0=Control (No topping), T_1=Topping the terminal bud just before squaring, T_2=Topping the terminal bud at flowering, T_3=Topping the terminal bud after cessation of first flugh of flowering and T_4=Topping the terminal bud after completion of boll formation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 25·2 m.×15·0 m , N.A. (iii) 4. (iv) (a) 6·3 m.×3·0 m. ; 6·3 m.×3·0 m. (b) 6·7 m.×1·8 m. ; 5·9 m.×1·8 m. (v) 60 cm.×60 cm. ; 60 cm.×45 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids only. Sevin 10% dusting 4 times, Endrin (20 emulsion) spraying 4 times, D.D.T.×B.H.C. spraying once. (iii) Height of plants, No of bolls/plant, yield of seed Cotton. (iv) (a) 1964—65. (b) No. (c) Nil. (v) (a) Nellore and Tenali. (b) Nil. (vi) Nil. (vii) As error varriances are heterogenous and Treatments×Years interaction absent, hence the results of individual years are presented under 5. Results.

5. RESULTS :

64(201)

(i) 2927 Kg/ha. (ii) 191·4 Kg/ha. (iis) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1962	1793	1986	1866	2030

65(243)

(i) 1985 Kg/ha. (ii) 432·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1910	1966	2044	2083	1924

Crop :- Cotton. **Ref :- A.P. 62(123), 63(115), 64(115).**

Site :- Millet Res. Stn.. Lam, Guntur. **Type :- 'C'.**

Object :— to find out the optimum spacing for Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Black clays loam. (iii) N.A. ; 17, 18.8.63 ; 12·19.64. (iv) (a) 2 ploughings with country plough for 62(123) ; 2 ploughings with country plough and harrowings for others. (b) Hand dibbling and gorru sowing as per treatments. (c) 11.2 to 13.4 Kg/ha. (d) As per treatments. (e) As per treatments. (v) Nil. (vi) Cocanadas-2. (vii) Unirrigated. (viii) 2 Thinnings, 2 intercultures and 2 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :

5 cultural treatments: C_1=55·9 cm.×27·9cm. spacing with 1 seedling per hill, C_2=55·9cm.×27·9cm. spacings with 2 seedings per hill, C_3=55·9cm.×55·9cm. spacing with, 1 seedling per hill and C_4=55·8cm.×55·9cm. spacing with 2 seedings per hill and C_5=Gorru sowing with 55·9cm. between rows.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4 (iv) N.A. (b) 1/83 ha. ; 1/123·5 ha for 63(115), 64(115). (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Yield of *Kapas*. (iv) (a) 1262-64. (b) No (c) Result of conditioned analysis presented under S.—Results. (v) (a) and (b) N.A. (vi) Nil. (vii) Error Variances are heterogenous). and Treatments & years interaction in present.

5. RESULTS :

Pooled results

(i) 242 Kg/ha. (ii) 93·7 Kg/ha. bared on 8 d.f. made up of Treatments & years interaction. (iii) Treatment differences are significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	272	239	251	297	149

C.D.=88·2 Kg/ha.

Individaul results

Treatments	C_1	C_2	C_3	C_4	C_5	Sig.	G.M.	S.E./plot
Years								
1962	373	286	314	416	197	*	317	92·1
1963	252	158	211	271	133	*	205	62·0
1964	·191	272	229	203	116	**	202	5·2
Pooled	272	239	251	297	149	*	242	93·7

Crop :- Cotton. **Ref :- A.P. (205).**

Site :-Plant Breeding Stn., Mudhol. **Type 'C'.**

Object : — To find out the optimum time of sowing for Cotton.

1. BASAL CONDITIONS :

(i) *Jowar*-Cotton. (b) *Jowar*. (c) Nil. (ii) Black Cotton soil. (iii) As per treatments (iv) 1 ploughiriing the country plough, 2 harrowing. (b) Hand dibbling. (c) 20 Kg/ha. (d) 46cm. between rows. (e) 1. (v) 125 Q/ha. of F.Y.M. (vi) Gao. 6 (Early). (vii) un-irrigated. (viii) 3 Hoeings, 4 weedings. (ix) 81·5cm. (x) 19·11.65 to 4·1·66·

2. TREATMENTS :

5 dates of sowing : D_1=19·6·65, D_2=26·6·65, D_3=3·7·65 D_4=10·7·65 and D_5=17·7·65.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 35·7m×6·4m. (iii) 3. (iv) (a) and (b) 6·4m×6.4m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Yes. (iii) Plant height; no. of bolls/plant and *Kapas* yeld. (iv) (a) 1965-68 (b) No. (c) Nil. (v) (vi) to (vii) Nill.

5. RESULTS :

(i) 937 Kg/ha. (ii) 140·32 Kg/ha. (iii) Treatment differences are not significant. (iv) Av yield of *Kapas* in Kg/ha.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	1281	988	946	686	786

Crop :- Cotton (*Kharif*). **Ref :- A.P. 64(18), 65(2).**

Site :- Plant Breeding Stn., Mudhol. **Type :- 'C'.**

Object :—To find out the optimum spacing for minimization the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) Nil. (ii) Black cotton soils. (iii) 30.1964 ; 1.7.1965. (iv) (a) Ploughing and harrowings. (b) Dibbling in fomous. (c) 17 Kg/ha. (d) As per treatments. (v) 125 Q/ha. of F.Y.M. for 64(18) ; 33·6 Kg/ha. of N as A/S and 33·6 Kg/ha. of K as Mur. Pot. for 65(2). (vi) 3394 (early). (vii) Unirrigated. (viii) 2 weedings and 3 hoeings. (ix) 108 cm. ; N.A. (x) 4 picking Nov. to Dec. for 64(18) ; 3 pickings from 19.11.65 to 5.1.66.

2. TREATMENTS :

All combinations of (1) and (2)+3 extra treatments

(1) 3 spacings between rows : S_1=30 cm., S_2=45 cm. and S_3=60 cm.

(2) 3 spacing between plants : P_1=15 cm., P_2=23 cm. and P_3=30 cm.

Extra treatments : C_1=45 cm.×30 cm. spacing with 2 plants/hill, C_2=60 cm.×30 cm. spacing with 2 plants/hill and C_3=Seeds drilled 45 cm. apart.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 6·4 m.×3·7 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of *kapas*. (iv) (a) 1964—65. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As error variances are heterogeneous and Treatments×years interaction is absent, the results of individual years have been presented under 5. Results.

5. RESULTS :

64(18)

(i) 323 Kg/ha. (ii) 83 Kg/ha. (iii) Main effect of S alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

C_1=373, C_2=315 and C_3=321 Kg/ha.

	P_1	P_2	P_3	Mean
S_1	415	387	329	377
S_2	383	251	347	327
S_3	291	235	237	254
Mean	363	291	304	319

C.D. for S marginal means=69·0 Kg/ha.

65(2)

(i) 576 Kg/ha. (ii) 133 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of *kapas* in Kg/ha.

C_1=595, C_2=567 and C_3=603 Kg/ha.

	P_1	P_2	P_3	Mean
S_1	679	585	631	632
S_2	633	585	566	595
S_3	507	484	476	489
Mean	606	551	558	572

C.D. for S marginal means=110·5 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(196).**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'C'.**

Object :—To study the efficacy of different spacings between rows as well as between plants.

1. BASAL CONDITIONS.

(i) (a) Paddy—cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 8; 21.2.61 (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied 1 month after sowing and at flowering. (vi) P—216 F. (vii) Irrigated. (viii) Thinning, weeding, *mummati* hoeing and farming ridges and furrows. (ix) 5·5 cm. (x) N.A.

2 TREATMENTS :

Main-plot treatments :

2 spacings between rows: R_1=46 and R_2=61 cm.

Sub-plot treatments :

4 spacings between plants (with in rows): P_1=15, P_2=30, P_3=46 and P_4=61 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication : 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 8·5 m.×4·9 m. (b) 7·3 m.×3·7 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Shedding Bolls due to Boll worm ; spraying 28 gm. of Endrin in 18 litres of water, dusting B.H.C. 1·%. (iii) Ginning percentage and yield of seed cotton. (iv) (a) 1961-62(Design changed in 1962). (b) Nil. (c) Nil. (v) Ramachandrapuram and Gudivada. (vi) Unusually heavy rains during the picking period. (vii) Nil.

5. RESULTS :

(i) 689 Kg/ha. (ii) (a) 153·9 Kg/ha. (b) 51·3 Kg/ha. (iii) Main effect of P alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	872	746	642	608	717
R_2	801	704	615	524	661
Mean	836	725	628	566	689

C.D. for P marginal means=53·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(225).**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'C'.**

Object :—To study the efficacy of different spacings between rows as well as between plants.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 13.2.62. gap-filling on 28.2.62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied 1 month after sowing and at flowering. (vi) P –216 F. (vii) Irrigated (viii) Thinning, line weeding, *mummati* hoeing, forming ridges and furrows. (ix) 24·4 cm. (x) 16.6.62 to 16.8.62.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 spacings in between rows : R_1=46 cm. and R_2=61 cm.

(2) 4 spacings in between plants (within rows): P_1=15, P_2=30, P_3=46 and P_4=61 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 7·3 m.×3·7 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) One dusting of Mico, 4 sprayings of Endrin. (iii) Germination counts, earliness, final stand, boll counts, height measurements, yield of seed cotton, halo length and ginning percentage. (iv) (a) 1961—62 (Design changed in 1962). (b) No. (c) Nil. (v) Ramachandrapuram and Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 551 Kg/ha. (ii) 85·2 Kg/ha. (iii) Main effects of R and P are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	884	622	480	393	595
R_2	723	568	389	349	507
Mean	804	595	434	371	551

C.D. for R marginal means=62·6 Kg/ha.
C.D. for P marginal means=88·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(11), 65(240).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'C'.**

Object :—To fix up the optimum stage of topping Cotton in Rice-fallows.

1. BASAL CONDITIONS :

(i) (a) Paddy – Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) N.A (iv) (a) 2 ploughings by tractor. (b) Dibbling. (c) N.A. (d) 61 cm. × 30 cm. (e) 2. (v) 67·2 Kg/ha. of N as A/S in two equal doses applied 1 month after sowing and at flowering for 64(11); 90 Kg/ha. of N as A/S in two equal doses applied on 11.4.66 and 2.5.66 for 65(240). (vi) P—216 F (medium). (vii) Irrigated. (viii) Thinning, line weeding earthing up with *mummati*, formation of ridges and furrows. (ix) 55·2 cm. (x) 23.6.65 to 22.8.65; 2.7.66.

2. TREATMENTS :

5 topping treatments : T_0=Control (No topping), T_1=Topping the terminal bud just before squaring, T_2=Topping the terminal bud at peak flowering, T_3=Topping the terminal bud after lessation of first flush of flowering and T_4=Topping the terminal bud after completion of boll formation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 25·2 m. × 15·0 m. (iii) 4 (2 replications rejected for 65(240). (iv) (a) 6·1 m. × 3·1 m. ; 6·7 m. × 3·7 m. (b) 5·5 cm. × . × 1·8 m. ; 6·1 m. × 2·4 m. (v) 61 cm. × 30 cm.(vi) Yes.

4. GENERAL :

(i) Normal for 64(11) ; 2 replications completely damaged due to ill drained conditions for 65(240). (ii) Slight incidence of Jassids only ; Sevin 10% dusting once, Endrin (20% emulsion) sprayig 4 times and Paramar spraying 2 times for 64(11) ; 2 sprayings of Endrin and Wettable Sevin and dusting of Sevin for 65(240). (iii) Height of plant, no. of bolls/plant, and yield of seed cotton. (iv) (a) 1964—66. (b) No. (c) Nil. (v) Gudivada and Tenali. (vi) Nil. (vii) There was water stagnation on the field.

5. RESULTS :

64(11)

(i) 353 Kg/ha. (ii) 127·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	345	323	409	358	331

65(240)

(i) 2150 Kg/ha. (ii) 78·0 Kg./ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	2281	2113	2100	2093	2163

Crop :- Cotton. **Ref :- A.P. 62(226).**

Site -: Reg. Rice Res. Stn., Nellore. **Type 'C'**

Object :—To find out the optimum date of sowing Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton, (b) Paddy. (c) N.A. (ii) Sandy loams. (iii) As per treatments. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied 1 month after hoeing and flowering. (vi) P—216 F. (vii) Irrigated. (viii) Thinning, hand weeding, *mummati* levelling, forming ridges and furrows. (ix) 28·2 cm. (x) N.A.

2. TREATMENTS :

4 dates of sowing : D_1=10.2.62, D_2=26.2.62, D_3=14.3.62 and D_4=29.3.62.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 4·9 m.×3·1 m. (b) 3·7 m.×3·1 m. (v) 61 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10%, spraying Endrine. (iii) Germination counts, earthing, final stand, boll counts, height measurements, yield of seed cotton, halo length and ginning precentage. (iv) (a) 1962-only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 326·4 Kg/ha. (ii) 94.4 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	D_1	D_2	D_3	D_4
Av. yield	782·8	383·6	123·3	15·7

C.D.=142·3 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(197), 62(227).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'C'.**

Object :—To find out the optimum number of seedlings per hole for Cotton.

1. BASAL CONDITIONS:

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 23.2.61 ; 12.2.62 ; gap filling on 26.2.62 and 30.3.62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) As per treatments. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied one month after sowing and flowering. (vi) P—216 F. (vii) Irrigated. (viii) Thinning, weeding, *mummati* hoeing and forming ridges and furrows. (ix) 55 cm. ; 24 cm. (x) N.A. ; 22.6.62. 10, 31,7.62 and 16.8.62.

2. TREATMENTS :

Number of plants/hill : P_1=Retaining 1 plant/hill and P_2=Retaining 2 plants/hill.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 9·1 m.×6·1 m. ; N.A. for other. (iii) 9 for 61(197) ; 12 for 62(227). (iv) (a) 9·1 m.×3·1 m. ; 9·1 m.×3·7 m. (b) 8·5 m.×1·8 m. ; 8·5 m.×2·4 m. (v) 30 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Shedding of bolls due to Boll worms in 61(197) ; spraying Endrin and dusting B.H.C. 10% for both the expts. (iii) Yield of *kapas*. (iv) (a) 1961—62. (b) No. (c) Results of combined analysis presented under 5. Results. (v) Gudivada and Ramachandrapuram. (vi) Heavy rains during picking period for 61(197) and Nil for other. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

(i) 494 Kg/ha. (ii) 128·6 Kg/ha.(based on 1 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	P_1	P_2
Av. yield	436	552

Individual results.

Treatments	P_1	P_2	Sig.	G.M.	S.E./plot
Years					
1961	538	608	*	573	58·0
1962	360	510	**	435	43.5
Pooled	436	552	N.S.	494	128.6

Crop :- Cotton. **Ref :- A.P. 60(177).**

Site :- Ramachandrapuram. **Type :- 'C'.**

Object :—To study the efficacy of different spacings between rows as well as between plants.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 12.12.60, gap filling on 3.1.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied 1 month after sowing and at flowering. (vi) P—216 F. (vii) Irrigated. (viii) 1 hoeing, working country plough and line weeding. (ix) 0·4 cm. (x) 14.5.61 to 14.6.61.

2. TREATMENTS :

Main-plot treatments :

2 spacing between rows : R_1=46 cm. and R_2=61 cm.

Sub-plot treamtents :

4 spacings between plants (within rows) : P_1=15 cm., P_2=30 cm., P_3=46 cm. and P_4=61 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 4 sub-plots/main-plot. (b) 17·1 m.×19·5 m. (iii) 4. (iv) (a) 8·5 m.×4·9 m. (b) 7·3 m.×3·7 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Jassids and Boll worm. (iii) Stand, weight of 100 seeds, ginning percentage, halo length and yield of *kapas*. (iv) (a) .960—61 (Design changed in 61). (b) No. (c) Nil. (v) Nellore and Gudivada. (vi) Nil. (vii) Irrigation at the fruiting stage was inadequate. This experiment was conducted by the Cotton Specialist, Nandyal under the Rice—Fallow—Cotton Scheme at Ramachandrapuram, where no regular Res. Stn. exists.

5. RESULTS:

(i) 193 Kg/ha. (ii) (a) 37·4 Kg/ha. (b) 79·3 Kg/ha. (iii) Main effect of R alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	182	263	185	242	218
R_2	116	145	216	198	169
Mean	149	204	201	220	193

C.D. for R marginal means=42·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(202).**

Site :- Ramachandrapuram. **Type :- 'C'.**

Object :—To study the efficacy of different spacings between rows as well as between plants.

1. BASAL CONDITIONS:

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey loam. (iii) 4.12.61, gap filling on 15, 21.12.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied at the initial stage and at flowering. (vi) P—216 F. (vii) Irrigated. (viii) Working plough in between rows, hand hoeing and two line weedings and thinning. (ix) 0·4 cm. (x) 27.4.62 to 18.6.62.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 spacings between rows : R_1=46 and R_2=61 cm.

(2) 4 spacings between plants (within rows) : P_1=15 , P_2=30, P_3=46 and P_4=61 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 19·5 m.×17·1 m. (iii) 4. (iv) (a) 8·5 m.×4·9 m. (b) 7·3 m.×3·7 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Severe attack of Jassids, mild attack of Black arm and slight incidence of Stem borer. (iii) Initial stand, vigour, earliness, production, resistance to Jassids, Black arm and Boll worm, height counts, no. of bolls, final stand and yield of *kapas* ; ginning percentage and halo length. (iv) (a) 1960—61 (Design changed in 1961). (b) No. (c) Nil. (v) Gudivada and Nellore. (vi) Nil. (vii) This experiment was conducted by the Cotton Specialist, Nandyal under the Rice—Fallow—Cotton scheme at Ramachandrapuram, where no regular Res. Stn. exists.

5. RESULTS :

(i) 599 Kg/ha. (ii) 142·9 Kg/ha. (iii) Main effect of P alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
R_1	904	602	592	432	632
R_2	700	614	454	492	565
Mean	802	608	523	462	599

C,D. for P marginal means=148·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 60(174), 61(201).**

Site :- Ramachandrapuram. **Type :- 'C'.**

Object :— To find out the optimum number of seedlings per hole.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey loam. (iii) 11.12.60 ; 2.12.61, gap filling on 15 and 22.12.61. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) As per treatments. (v) 44·8 Kg/ha. of N as A/S in two equal doses applied one month after sowing and at flowering. (vi) P 216—F. (vii) Irrigated. (viii) Working country plough in between row, line weeding, hoeing and thinning. (ix) 0·4 cm for both expts. (x) 12.5.61 to 17.6.61 ; 23.4.62 to 18.6.62.

2. TREATMENTS :

2 cultural treatments : P_1=1 and P_2=2 seedlings/hole.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 9·8 m.×7 0 m. for 60(74) ; 7·0 m.×4·9 m. for other. (iii) 12. (iv) (a) 7 0 m.×4·9 m. for 60(174) ; 7·0 m.×2·4 m. for other. (b) 6·4 m.×3·7 m for 60(174) ; 6·4 m.×1·2 m. for other. (v) 30 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Boll worm and Jassids ; controlled by spraying Endrin. (iii) Yield of *kapas*. (iv) (a) 1960-61. (b) No. (c) Presented under 5. Results. (v) Gudivada and Nellore. (vi) Nil. (vii) This experiment was conducted by the Cotton Specialist, Nandyal under the Rice-Fallow-Cotton scheme at Ramachandrapuram, where no regular Res. Stn. exists. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled Results

(i) 634 Kg/ha. (ii) 246·1 Kg/ha. (based on 1 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	P_1	P_2
Av. yield	579	690

Individual results

Treatments	P_1	P_2	Sig.	G.M.	S.E./plot.
Years 1961	315	355	N.S.	335	73·8
1962	844	1026	*	935	174·4
Pooled	579	690	N.S.	634	246·1

———

Crop :- Cotton. **Ref. :- A.P. 64(52).**

Site :- Agri Res. Stn., Tenali. **Type :- 'C'.**

Object : — To fix up the cultural practices for Cotton in Rice-fallows.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 3.12.64 and 10.1.65. (iv) (a) As per treatments. (b) Dibbling. (c) N.A. (d) 60 cm. × 30 cm. (e) N.A. (v) 89·7 Kg/ha. of N in two doses, first dose one month after sowing and second dose at flowering. (vi) P 216—F (medium). (vii) Irrigated. (viii) *Mummati* hoeing, 2 hand weedings and workings country plough twice. (ix) 104 cm. (x) 15.5.65 to 9.6.65.

2. TREATMENTS :

2 cultural treatments : T_1=Sowing in rice stubbles and T_2=Sowing in prepared land.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 113 m. × 16 m. (iii) 12. (iv) (a) 80·1 sq. m. (b) 59·4 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Stunted growth. (ii) Slight incidence of Jassids, six sprays schedule of I.C.C.C. followed. (iii) Yield of *kapas*. (iv) (a) 1964 only. (b) No. (c) Nil. (v) Gudivada. (vi) Nill.

5. RESULTS

(i) 1354 Kg/ha. (ii) 90·0 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_1	T_2
Av. yield	1555	1152

CD=107·5 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(203), 65(227).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'C'.**

Object :—To study the effect of topping on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 29.11.64 ; 6.1.66 to 15.1.66. (iv) (a) Ploughing with country plough. (b) Dibbling. (c) N.A. (d) 60 cm. × 30 cm. for 64(203) and 60 cm. × 45 cm. for 65(227). (e) 2. (v) 90 Kg/ha. of N as A/S in two equal doses, applied one and two months after sowing. (vi) P—216 F (medium). (vii) Irrigated. (viii) *Mummati* hoeing, hand weeding and working country plough. (ix) 101 ; N.A. (x) 14.5.64 to 12.6.65 ; N.A.

2. TREATMENTS :

5 topping treatments ; T_0=Control (No topping), T_1=Topping the terminal bud just before square formation, T_2=Topping the terminal bud at peak flowering, T_3=Topping the terminal bud fist after the lessation of first flush of flowering and T_4=Topping the terminal bud after the completion of boll formation (after 10 to 12 fruiting branches are formed).

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 3·4 m. × 3·1 m. ; 24·4 sq. m. (b) 2·7 m. × 1·8 m. ; 14·1sq. m. (v) 60 cm. × 30 cm. ; 60 cm. × 45 cm.(vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Jassids, Endrin sprayed, Sevin and Endrin added with Sulphur applied. (iii) Height of plants, No. of bolls/plant and *kapas* yield. (iv) (a) 1964—65. (b) No. (c) Refer to 5. Results. (v) Nellore and Gudivada. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 1787 Kg/ha. (ii) 254·2 Kg/ha. (based on 28 d.f. made up of Treatments × years interaction and pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	1802	1600	1774	1893	1865

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years								
1960	2086	1873	2097	2245	2231	N.S.	2106	229·1
1961	1518	1328	1452	1541	1498	N.S.	1467	306·2
Pooled	1502	1600	1774	1893	1865	N.S.	1787	254.2

Crop :- Cotton. **Ref :- A.P. 63(37).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'CV'.**

Object : —To determine the optimum date of sowing for different varieties of Cotton in the black soil areas of the Nagarjun Sagar Project *ayacut* of Andhra Pradesh.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Black soil. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Dibbling on ridges. (c) N.A. (d) 76 cm. × 30 cm. (e) 2 to 3. (v) 11,000 Kg/ha. of G.M. (Medpesara) + 33·6 Kg/ha. of P_2O_5 as Super + 33·6 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing and weeding. (ix) N.A. (x) 4.12.63 to 21.5.64.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing : D_1=8.8.63, D_2=15.8.63, D_3=30.8.63, D_4=14.9.63, D_5=29.9.63 and D_6=14.10.63.

Sub-plot treatments :

4 varieties : V_1=216 F, V_2=170—CO_2, V_3=*Laxmi* and V_4=MCU—2.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) 35·4 m. × 18·3 m. (iii) 4. (iv) (a) 8·8 m. × 4·6 m. (b) 8·2 m. × 3·1 m. (v) 30 cm. × 76 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Jassids in early stages and Boll-worm in bolling stage. Spraying of Parathion and Endrin, Black-worm was also noticed, the intensity was controlled to some extent by Blitox (Copper fungicide). (iii) Yield of *kapas*. (iv) (a) 1963-66 (Treatments modified every year). (b) No. (c) Nil. (v) Darsi. (vi) Cyclonic rains during the month of November, 1963. (vii) Nil.

5. RESULTS :

(i) 577 Kg/ha. (ii) (a) 77·0 Kg/ha. (b) 73 0 Kg/ha. (iii) Main effects of D, V and interaction D × V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
V_1	1153	972	507	542	250	238	610
V_2	953	753	419	442	269	311	524
V_3	957	742	377	511	342	296	538
V_4	1264	803	576	538	323	307	635
Mean	1082	818	470	508	296	288	577

C.D. for D marginal means = 58·0 Kg/ha.
C.D. for V marginal means = 42·5 Kg/ha.
C.D. for V means at the same level of D=104·0 Kg/ha.
C.D. for D means at the same level of V=107·1 Kg/ha.

Crop. :- Cotton. **Ref :- AP 64(53).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'CV'.**

Object :—To determine the optimum date of sowing for different varieties of cotton in black soil areas, of the Nagarjun Sagar Project ayacut of Andhra Pradesh.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil (ii) Black soil. (iii) As per treatments. (iv) (a) 3 ploughings (b) Dibbling on rideges. (c) N.A. (d) 76 cm. × 30 cm. (e) 2 to 3. (v) 224 to 280 Q/ha. of G.M. (Medpesara)+50 Kg/ha. of P_2O_5 as Super+56 Kg/ha. of N as A/S+56 Kg./ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing and weeding. (ix) 79 cm (x) 20.11.1964 to 6.5.65.

2. TREATMENTS

Main-plot treatments

4 dates of sowing : D_1=1.8.64, D_2=16.8.64, D_3=1.9.64 and D_4=19.9.64.

Sub-plot treatments

4 varieties: V_1=216 F, V_2=MCU-2, V_3=170–CO_2 and V_4=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) 35·4 m. × 18·3 m. (iii) 4. (iv) (a) 8·8 m. × 4·6 m. (b) 8·2 m. × 3·1 m. (v) 30 cm. × 76 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Jassids in early stages and Boll-worm in bolling stage. Controlled by spraying Parathion, Endrin and Sevin periodically. Black-worm was also noticed and the intensity was controlled to some extent by spraying Blitox. (iii) Yield of Cotton. (iv) (a) 1963—66 (Treatments modified every year). (b) No. (c) Nil. (v) Darsi. (vi) Heavy cyclonic showers during September with a total rainfall of 20 cm. on 28.9.64. (vii) The crop had to face over moist conditions with heavy shedding and retardation in growth.

5. RESULTS :

(i) 1624 Kg/ha. (ii) (a) 65·0 Kg/ha. (b) 142·0 Kg/ha. (iii) Main effect of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	Mean
V_1	2379	1587	1625	1429	1755
V_2	1998	1656	1191	1026	1468
V_3	2087	1399	1522	1057	1516
V_4	1914	1883	2063	1222	1758
Mean	2094	1619	1600	1184	1624

C.D. for D marginal means = 52·0 Kg/ha.
C.D. for V marginal means =101·9 Kg/ha.
C.D. for V means at the same level of D=203·8 Kg/ha.
C.D. for D means at the same level of V=182·6 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 65(89).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'CV'.**

Object :—To determine the optimum date of sowing for different varieties of Cotton in black soil areas of the Nagarjun Sagar Project *Ayacat* of Andhra Pradesh.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) 67·2 Kg/ha. of N as A/S,+56·0 Kg/ha. of P_2O_5 as Super+ 56·0 Kg/ha. of K_2O as Mur. Pot. (ii) Black soils. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. (b) Hand dibbling on ridges furrows. (c) 17·3 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) 125·6 Q/ha. of F.Y.M.+56·0 Kg/ha. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 3 hand weedings. (ix) 52·7 cm. (x) 20.12.65 to 30.3.66.

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : D_1=1.8.65, D_2=16.8.65, D_3=1.9.65 and D_4=16.9.65.

Sub-plot treatments :

4 varieties : V_1=P216—F, V_2=4—1—7, V_3=Sea Island and V_4=MCU—2.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub plots/main-plots· (b) 32·9 m.×18·3 m. (iii) 4. (iv) (a) 8·2 m.×4·6 m. (b) 7·6 m.×3·0 m. (v) 30 cm.×76 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Jassids, Boll worm and Black arm. (ii) Spraying Endrin 4 times and dusting Sevin 10% once. (iii) Yield of seed Cotton, halo length, ginning percentage. (iv) (a) 1963—66. (Treatments modified every year). (b) No. (c) Nil. (v) *Darsi*. (vi) During growth period severe draught prevailed. Added to this, there was deep cracking even as early as December since the rains of the later monsoon were inadequate. (vii) Nil.

5. RESULTS :

(i) 999 Kg/ha. (ii) (a) 373·0 Kg/ha. (b) 212·3 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	Mean
V_1	1692	1577	607	517	1098
V_2	2308	2034	770	558	1418
V_3	795	1005	495	358	663
V_4	1273	1248	372	382	819
Mean	1517	1466	561	454	999

C.D. for D marginal means =298·3 Kg/ha.
C.D. for V marginal means =151·2 Kg/ha.
C.D for V means at the same level of D=302·5 Kg/ha.
C.D. for D means at the same level of V=396·2 Kg/ha.

Crop :- Cotton. **Ref. :- A.P. 62(263).**

Site :- Agri. Res. Stn., Darsi. **Type :- 'CV'.**

Object:—To determine the optimum time of sowing and suitable variety for the red soil areas of Nagarjun Sagar Project *ayacut* of Andhra Pradesh.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) *Jowar* and Red gram. (c) 62·8 Q/ha. of F.Y.M. (ii) Red soils. (iii) As per treatments. (iv) (a) N.A. (b) Hand dibbling. (c) 8 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, 2 hand weedings and 2 earthing up. (ix) N.A. (x) 22.9.62 to 15.5.63.

2. TREATMENTS :

Main-plot treatments:

6 dates of sowings : D_1=15.6.62, D_2=30.6.62, D_3=15.7.62, D_4=30.7.62, D_5=14.8.62 and D_6=29.8.62.

Sub-plot treatments :

4 varieties : V_1=MCV—2, V_2=P—216—F, V_3=170—CO and V_4=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) 39·3 m.×32·0 m. (iii) 4. (iv) (a) 9·1 m.×5·3 m. (b) 8·5 m.×3·1 m. (v) 30 cm.×114 cm. (vi) Yes

4. GENERAL :

(i) Poor. (ii) Severe boll and bud shedding. Heavy infestation of Jassids and Boll worm. (iii) Yield of seed Cotton. (iv) (a) 1962—64 (Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Prolonged rainy weather was prevelent in Oct. and Nov. 62. (vii) Nil.

5. RESULTS :

(i) 827 Kg/ha. (ii) (a) 304·0 Kg/ha. (b) 240·0 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
V_1	1205	1032	743	943	1167	655	958
V_2	1205	1117	628	578	578	462	761
V_3	1109	751	551	859	828	647	791
V_4	1136	770	608	905	809	570	800
Mean	1164	918	632	821	846	584	827

C.D. for D marginal means=229·0 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63(38).**

Site :- Agri. Res. Stn., Darsi. **Type :- 'CV'.**

Object :—To determine the optimum time of sowing for different varieties of Cotton in the red soil areas of the Nagarjun Sagar Project ayacut of Andhra Pradesh.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*—Red gram. (c) 62·8 Q/ha. of F.Y.M. (ii) Red soils. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Dibbling on ridges. (c) N.A. (d) 76 cm.×30 cm. (e) 2 to 3. (v) 12 C.L./ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing and weeding. (ix) 44 cm. (x) 24.9.63 to 31.3.64.

2. TREATMENTS:

Main-plot treatments :

6 dates of sowing : D_1=4.6.63, D_2=15.6.63, D_3=1.7.63. D_4=15.7.63, D_5=1.8.63 and D_6=15.8.63.

Sub-plots treatments :

4 varieties : V_1=P—216 F, V_2=170—CO_2, V_3=*Laxmi* and V_4=MCU—2.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) 39·3 m.×32·0 m. (iii) 4. (iv) (a) 9·1 m.×5 3 m. (b) 8·5 m.×3·1 m. (vi) 30 cm.×114 cm, (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Jassids in early stages and boll worm during bolling stages. Controlled by spraying Parathion and Endrin. Black worm partially controlled by spraying Blitox. (iii) Yield of seed Cotton. (iv) (a) 1962—64(Treatments modified every year). (b) No. (c) Nil. (v) Amaravathi. (vi) to (vii) Nil.

5. RESULTS :

(i) 637 Kg/ha, (ii) (a) 134·0 Kg/ha. (b) 31·0 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
V_1	1321	1205	570	358	339	281	679
V_2	1205	1051	751	481	377	243	718
V_3	1059	924	493	308	270	223	546
V_4	1136	924	608	358	300	308	606
Mean	1230	1026	606	376	322	264	637

C.D. for D marginal means =101·0 Kg/ha.

C.D. for V marginal means = 18·0 Kg/ha.

C.D. for V means at the same level of D=44·0 Kg/ha.

C.D. for D means at the same level of V=107·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(54)**

Site :- Agri. Res. Stn., Dasvi. **Type :- 'CV'.**

Object :—To determine the optimum date of sowing for different varieties of Cotton in the red soil areas of the Nagarjun Sagar Project *Ayacut* of Andhra Pradesh.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Red soil. (iii) As per treatments. (iv) (a) 3 ploughings (b) Dibbling on ridges. (c) N.A. (d) 76 cm. × 30 cm. (e) 2 to 3 (v) 12 C.L./ha. of F.Y.M. + 56 Kg/ha. of P_2O_5 as Supei + 56 Kg/ha. of N as A/S. + 56 Kg/ha. of K_2O as Mur. pot. (vi) As per treatments. (vii) Irrigated. (viii) Thinning, earthing and weeding. (ix) 79 cm. (x) 5.11.64. to 15.4.65.

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : D_1=5.6.64, D_2=16.6.64, D_3=1.7.64, D_4=16.7.64.

Sub-plot treatments :

4 varieties : V_1=P—216 F (Early), V_2=M.C.U.—2 (medium), V_3=170—CO_2 (late) and V_4=*Laxmi* (late).

3. DESIGN ;

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) 35·4 m. × 18·3 m. (iii) 4. (iv) (a) 8·8 m. × 4·6 m. (b) 8·2 m. × 3·0 m. (v) 30 cm. × 76 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Jassids in early stages and Worm during Boll bearing stage. They were controlled by spraying Parathion and Endrin. Btitox was sprayed to control the Black-worm. (iii) Yield of seed cotton. (iv) (a) 1962—64 (Treatments modified every year). (b) No. (c) Nil. (v) Amaravathi. (vi) and (vii) Nil.

5. RESULTS :

(i) 1106 Kg/ha. (ii) (a) 1380 Kg/ha. (b) 990 Kg/ha. (iii) Main effect of D and interaction D × V are highly significant. Main effect of V is significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	Mean
V_1	1533	1284	884	585	1072
V_2	1499	1404	781	551	1059
V_3	1584	1463	789	823	1165
V_4	1434	1498	925	661	1130
Mean	1512	1412	845	655	1106

C.D. for D marginal means = 110·4 Kg/ha.

C.D. for V marginal means = 71·0 Kg/ha.

C.D. for V means at the same level of D=142·1 Kg/ha.

C.D. for D means at the same level of V=164·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(37).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :--To find out the optimum time of sowing for different varieties of Cotton under irrigated Conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Heavy black Cotton. soils. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) 1 (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super to 33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (vii) 2 hand weedings, working *Prathi guntaka* between lines after working Junior hoe. (ix) 82 cm. (x) 15.1.62 to 17.4.62.

2. TREATMENTS :

Main-plot treatments :

3 dates of sowing : D_1=10.8.61, D_2=26.8.61, and D_3=10.9.61.

Sub-plot treatments :

4 varieties : V_1=N—14, V_2=Nandicum, V_3=122 and V_4=*Laxmi*.

3, DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/repilcation, 4 sub-plots/main-plot. (b) 36·6 m.× 15·2 m. (iii) 4. (iv) (a) 7·3 m.×6·1 m. (b) 6·1 m.× 4·9 m. (v) 61 cm.× 61 cm. (vi) Yes.

4. GENERAL :

(i) Not good due to severe incidence of Boll worm. (ii) Incidence of Boll worm was noticed ; Endrin sprayed. (iii) Yield of seed cotton. (iv) (a) 1961—65 (Treatments modified every year). (b) No. (c) Nil (v) Nil. (vi) Distribution of rainfall was uneven. (vii) Nil.

5. RESULTS :

(i) 224 Kg/ha. (ii) (a) 134·6 Kg/ha. (b) 24·7 Kg/ha. (iii) Main effect of V is highly significant. Main effect of D and interaction D×V are significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	222	170	222	321	234
D_2	210	178	225	371	246
D_3	151	166	190	267	194
Mean	194	171	212	320	224

C.D. for D marginal means =29·9 Kg/ha.
C.D. for V marginal means =20·7 Kg/ha.
C D. for V means at the same level of D=35·8 Kg/ha.
C.D. for D means at the same level of V=34 0 Kg/ha.

Crop :-Cotton. **Ref :- A.P. 62(40).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To findout the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut—Bengal gram. (c) N.A. (ii) (a) Heavy black soils. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) 1. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments (vii) Irrigated. (viii) 2 hand weedings working *Prathi guntaka* between lines thrice after working Junior hoe. (ix) 106 cm. (x) 17.1.63 to 3.4.63.

2. TREATMENTS :

Main-plot treatments :

3 dates of sowings : D_1=14.7.62 D_2=14.8.62 and D_3=15.9.62.

Sub-plot treatments :

6 varieties : V_1=N—14, V_2=Nandicum, V_3=122, V_4=1145, V_5=355—E—6 and V_6=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) 54·9 m.×15·9 m. (iii) 4. (iv) (a) 7·6 m.×6·1 m. (b) 6·7 m.×4·9 m. (v) 0·5 m.×0·6 m. (vi) Yes.

4. GENERAL :

(i) Not good due to heavy rainfall and incidence of Boll worm and Midew. (ii) Incidence of Ball worm and Midew noticed ; Endrin, D.D.T. plus B.H.C. and Blitox sprayed. (iii) Yield of Cotton. (iv) (a) 1961-65 (Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Heavy rainfall in December. (vii) Nil.

5. RESULTS :

(i) 193 Kg/ha. (ii) (a) 49·4 Kg/ha. (b) 32·1 Kg/ha, (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	156	111	143	109	148	768	239
D_2	138	163	136	114	153	301	168
D_3	99	64	126	158	114	469	172
Mean	131	113	135	127	138	513	193

C.D. for D marginal means =34·9 Kg/ha.
C.D. for V marginal means =26·3 Kg/ha.
C.D. for V means at the same level of D=45·4 Kg/ha.
C.D. for D means at the same level of V=53·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63(40).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Heavy black cotton soils. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) 1. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super and 33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings, working *Prathi guntaka* between lines twice after working junior hoe. (ix) 79 cm. (x) 16.11.63 to 17.4.64.

2. TREATMENTS :

Main-plot treatments :
4 dates of sowing : D_1=11 6.63, D_2=11.7.63, D_3=12.8.63 and D_4=11.9.63.

Sub-plot treatments :
6 varieties : V_1=*Gaoraui*—6, V_2=Adonicum, V_3=H—420, V_4=Nandicum, V_5=122 and V_6=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 102·4 m.×10·4 m. (iii) 4. (iv) (a) 8·5 m ×4·9 m. (b) 7·9 m.×3 7 m. (v) 0·3 m.×0·6 m. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Incidence of Boll worm and Mildew noticed. Endrin, Parathion, Paramer and Blitox were sprayed. (iii) Yield of seed cotton. (iv) (a) 1961—65(Treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 182 Kg/ha. (ii) (a) 42·0 Kg/ha. (b) 37·1 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	361	418	319	136	245	610	348
D_2	292	141	158	128	178	427	221
D_3	20	67	20	69	124	235	89
D_4	22	32	32	59	62	203	68
Mean	174	164	132	98	152	369	182

C.D. for D marginal means =27·4 Kg/ha.
C.D. for V marginal means =26·2 Kg/ha.
C.D. for V means at the same level of D=52·5 Kg/ha.
C D. for D means at the same level of V=55·1 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(57).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) N.A. (ii) Heavy black cotton soils. (iii) As per treatments. (iv) (a) Ploughings with iron plough and *guntoka.* (b) Dibbling. (c) N.A. (d) 61 cm. × 23 cm. (e) 2. (v) 250 Q/ha. of F.Y.M. + 33·6 Kg/ha. of P_2O_5 as Super + 33·6 Kg/ha. of K_2O as Mur. Pot. + 44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) Working Junior hoe and *Prathi guntaka* twice and 3 hand weedings. (ix) 109 cm. (x) 28.10.64 to 17.3.65.

2. TREATMENTS :

Main-plot treatments :

3 dates of sowing : D_1=29.6.64, D_2=29.7.64 and D_3=29.8.64.

Sub-plot treatments :

4 varieties : V_2=*Gaoraui*—6, V_2=Adonicum, V_2=H—420 and V_4=*Laxmi.*

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 4 sub-plots/main-plot. (b) 43·9 m. × 14·6 m. (iii) 4. (iv) (a) 7·3 m. × 7·3 m. (b) 7·0 m. × 6·1 m. (v) 15 cm. × 60 cm. (vi) Yes.

4. GENERAL :

(i) August sowing failed completely. (ii) Incidence of Boll worm, Gram caterpillar, Mealy bug and Grey mildew diseases were noticed. Endrin, Sevin dust, Paramar and Blitex were used for controlling pests and diseases. (iii) Yield of seed cotton. (iv) (a) 1961—65(Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Heavy rains in the months of August and September. (v) Crop in D_3 plots failed compectely.

5. RESULTS :

(i) 355 Kg/ha. (ii) (a) 61·8 Kg/ha. (b) 37·1 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	356	425	393	699	468
D_2	193	96	175	504	242
Mean	274	260	284	602	355

C.D. for D marginal means = 53·5 Kg/ha.
C.D. for V marginal means = 31·1 Kg/ha.
C.D. for V means at the same level of D = 53·8 Kg/ha.
C.D. for D means at the same level of V = 70·7 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(182).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) As pee treatments. (iv) (a) Working *gorru* and *guntaka* alternatively. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm. × 30 cm. (e) 1. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings, 2 workings of *prathi guntaka* between rows. (ix) N.A. (x) 13.10.65 to 5.4.66.

2. TREATMENTS

Main-plot treatments :

3 dates of sowing : D_1=2.7.65, D_2=21.7.65 and D_3=26.8.65.

Sub-plot treatments :

V_1=Gaovani—1, V_2=Adonicum, V_3=H—420, V_4=Sanjay, V_5=Cocoradas white and V_6=*Laxmi*.

3. DESIGN:

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 7·3 m.×6·1 m. (b) 6·1 m.×4·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Boll-worm ; spraying of Endrin. (iii) Yield of *kapas*. (iv) (a) 1961-65 (Treatments modified every year). (b) No. (c) Nil. (v) N.A. (vi) Failure of monsoon rains. (vii) Nil.

5. RESULTS :

(i) 494 Kg/ha. (ii) (a) 342·9 Kg/ha. (b) 194·0 Kg/ha. (iii) Only the main effect of V is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	560	533	405	654	612	1160	654
D_2	410	360	345	348	516	973	492
D_3	202	266	192	288	284	794	337
Mean	391	386	314	430	471	974	494

C.D. for V marginal means=159·7 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(130).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To study the effect of change in the time of sowing of Cotton to evade the incidence of Boll-worm for obtaining higher yield.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) 12·4 C.L./ha. of F.Y.M. and 22·4 Kg/ha. of N as A/S. (ii) Deep black cotton soils. (iii) As per treatments. (iv) (a) Preparatory cultivation with working *gorru* and *guntaka* alternatively. (b) Drilling. (c) 12·5 Kg/ha. (d) 53 cm.×30 cm. (e) One. (v) 22·4 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Unirrigated. (viii) Intercultivation by working *prathi guntaka* twice. (ix) 87·5 cm. (x) 20.2.65 to 16.4.65.

2. TREATMENTS :

Main-plot treatments :

3 dates of sowing : D_1=16.7.64, D_2=16.8.64 and D_3=16.10.64.

Sub-plot treatments :

3 varieties : V_1=Nandicum, V_2=122 and V_3=355 E—6.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) 39·3 m.×12.8 m. (iii) 4. (iv) (a) 13·1 m.×4·3 m. (b) 11·9 m.×3·2 m. (v) 61 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Very severe incidence of Boll-worm and grain Cater-piller. Spraying of Endrin and dusting of Sevin (iii) Yield of seed cotton, (iv) (a) 1964—65 (Treatments modified in 1965). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 52·2 Kg/ha. (ii) (a) 35·0 Kg/ha. (b) 23·0 Kg/ha. (iii) Main effect of V is highly significant. Main effect of D and interaction D×V are significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	Mean
D_1	83·5	82·1	65·1	76·9
D_2	22·3	36·2	30·2	29·6
D_3	46·0	57·8	46·6	50·1
Mean	50·6	58·7	47·3	52·2

C·D. for D marginal means =35·0 Kg/ha.
C.D. for V marginal means =19·6 Kg/ha.
C.D. for V means at the same level of D=34·0 Kg/ha.
C.D. for D means at the same level of V=44·5 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(184).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CV'.**

Object :—To study the effect of the change in time of sowing of Cotton to evade Boll worm incidence for obtaining higher yield.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) As per treatments. (iv) (a) Working *gorru* and *guntaka* alternatively. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 22 Kg/ha. of N as C/A/N. (vi) As per treatments. (vii) Unirrigated. (viii) Thinning, hand weeding, earthing *pekkala guntaka*. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 dates of sowing : D_1=21.7.65, D_2=29.8.65 and D_3=28.9.65.

Sub-plot treatments :

3 varieties : V_1=Nandicum, V_2=122 and V_3=365—E—B.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of *kapas*. (iv) (a) 1964—65(Treatments modified in 1965). (b) No. (c) Nil. (v) Nil. (vi) Failure of monsoon rains. (vii) Nil.

5. RESULTS :

(i) 319 Kg/ha. (ii) (a) 110·7 Kg/ha. (b) 59·1 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	V_1	V_2	V_3	Mean
D_1	440	534	484	487
D_2	284	334	339	319
D_3	161	143	143	151
Mean	294	336	321	319

C.D. for D marginal means=110·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(264).**

Site :- Cotton Sub Centre, Narasaraopeta. **Type :- 'CV'.**

Object :—To determine suitable optimum time of sowing and variety for the areas of the Nagarjunsagar Project ayacut of Andhra Pradesh.

1. BASAL CNNDITIONS :

(i) (a) N.A. (b) Jonna. (c) 62·8 Q/ha. of F.Y.M. (ii) Black soils. (iii) As per treatments. (iv) (a) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) and (ix) N.A. (x) 19.12.62 to 15.5.63.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing ; D_1=1.8.62, D_2=15.8.69, D_3=30.8.62, D_4=14.9.62, D_5=29.9.62 and D_6=14.10.62.

Sub-plot treatments :

4 varieties : V_1=MCU—2, V_2=P—216 F, V_3=170—CO_2 and V_4=*Laxmi*.

3. DESIGN:

(i) Split-plot. (ii) (a) 6 main-plots/replication, 4 sub-plots/main-plot. (b) 39·3 m.×32·0 m. (iii) 4. (iv) (a) 9·1 m.×5·3 m. (b) 8·5 m.×3·1 m. (v) 1·1 m.×0·3 m- (vi) Yes.

4. GENERAL :

(i) Satisfactoroy. (ii) Incidence of Black worm and Jassids. (iii) Yield of seed cotton. (iv) (a) 1962—only. (b) —. (c) Nil. (v) Un-usually very heavy rains during the year. (vi) and (vii) Nil.

5. RESULTS :

(i) 1050 Kg/ha. (ii) (a) 808·0 Kg/ha. (b) 279·2 Kg/ha. (iii) Mnin effect of D alone is significant. (iv) Av. yield of seed cotton in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
V_1	1801	1351	1096	876	1093	902	1186
V_2	1595	1391	1056	822	770	766	1067
V_3	1295	866	725	764	760	891	884
V_4	1624	1011	880	1027	1000	841	1064
Mean	1579	1155	939	872	906	850	1050

C.D. for D marginal means=608·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(35).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing of different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) Clay loam. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) N.A. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and working junior hoe and *guntaka* between lines. (ix) 131 cm. (x) 17.10.61 to 21.1.62.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing : D_1=9.5.61, D_2=10.6.61 and D_3=10.7.61.

Sub-plot treatments :

4 varieties : V_1=Gaorani—6, V_2=1494, V_3=2861 and V_4=Adonicum.

3. DESIGN :

(i) Split-plot. (iv) (a) 3 main-plots/replication ; 4 sub-plots/main-plot. (b) 27·4 m.×11·6 m. (iii) 6. (iv) (a) 11·6 m.×4·6 m. (b) 9·8 m.×4·0 m. (v) 0·9 m.×0·3 m. (vi) Yes.

4. GENERAL :

(i) Not good due to severe incidence of Boll worm. (ii) Severe incidence of Boll worm noticed. Endrin sprayed. (iii) Yield of Cotton (iv) (a) 1961—65(Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Heavy rainfall during crop growth. (vii) Nil.

5. RESULTS :

(i) 113 Ka/ha. (ii) (a) 27·2 Kg/ha. (b) 27·2 Kg/ha. (iii) Main effects of D and V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	227	212	259	175	218
D_2	126	106	116	69	104
D_3	22	20	12	10	16
Mean	125	113	129	85	113

C.D. for D marginal means =17·5 Kg/ha.
C.D. for V marginal means =18·1 Kg/ha.
C.D. for D means at the same level of V=31·4 Kg/ha.
C.D. for V means at the same level of D=32·3 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(38).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object: —To find out the optimum time of sowing of different verieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) Clay loam. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 1. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+43·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and working Junior hoe and *guntaka* between lines. (ix) 159 cm. (x) 15.11.62 to 15.3.63.

2. TREATMENTS:

Main-plot treatments :

3 dates of sowing : D_1=30.5.62, D_2=15.6.62 and D_3=15.7.62.

Snb-plot treatments :

4 varieties : V_1=*Gaorani*−6, V_2=1994, V_3=2861 and V_4=Adonicum.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/repliecation ; 4 sub-plots/main-plot. (b) 28·0 m.×18·3 m. (iii) 4 (iv) (a) 14·0 m.×3·0 m. (b) 12·8 m.×1·8 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Incidence of Boll worm noticed; Endrin sprayed. (iii) Yield of seed cotton. (iv) (a) 1961-65 (Treatment modified every year). (b) No. (c) Nil. (v) Nil. (vi) Heavy rainfall in Aug., September. (vii) Nil.

5. RESULTS :

(i) 370 Kg/ha. (ii) (a) 103·8 Kg/ha. (b) 202·6 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	823	694	610	593	680
D_2	222	301	388	512	356
D_3	54	54	67	116	73
Mean	366	350	355	407	370

C.D. for D marginal means=89·8 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(55).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :-To find out the optimum time of sowing of different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Nil (b) Sugarcane. (c) N.A. (ii) *Chalka* soils. (iii) As per treatments. (iv) (a) Preparatory cultivation with plough and *guntaka*. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 2 (v) 250 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) Working country plough in between lines twice and 2 hand weedings. (xi) 89 cm. (x) 19.10.64 to 24.1.65.

2. TREATMENTS:

Main-plot treatments:

3 dates of sowing : D_1=28.5.64, D_2=28.6.64 and D_3=28.7.64.

Sub-plot treatments:

6 varieties : V_1=*Gaoravi*—6, V_2=3394, V_3=2927, V_4=Adonicum, V_5=Pratap and V_6=170. CO_2.

3. DESIGN

(i) Split-plot. (ii) (a) 3 main-plots/replication; 6 sub-plot/main-plot. (b) 25·6 m.×18·3 m. (iii) 4. (iv) (a) 8.5 m.×5·5 m. (b) 7·9 m.×4·3 m. (v) 0·3 m.×0·6 m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Boll worm noticed; Endrin was sprayed. (iii) Yield of seed cotton. (iv) (a) 1961-65 (Treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 474 Kg/ha. (ii) (a) 39·5 Kg/ha. (b) 46·9 Kg/ha. (iii) Main effect of D and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	724	1003	810	571	904	509	754
D_2	371	415	410	311	455	432	399
D_3	321	277	341	259	272	153	270
Mean	472	565	520	380	544	365	474

C.D. for D marginal means =34·2 Kg/ha.
C.D. for D means at the same level of V=31·4 Kg/ha.
C.D. for V means at the same level of D=32·3 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(207)**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing of different varieties of Cotton under irrigated Conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sugarcane. (c) N.A. (ii) *Chalka* soil. (iii) As per treatments. (iv) (a) Working country plough and *guntaka* making ridges and furrows. (b) Dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) 1. (v) 45 Kg/ha. of N as A/S+250 Q/ha. of F.Y.M.+34 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Mur. Pot. (vi) As per treatments. (vii) Irrigated. (viii) Working country plough in between rows and hand weeding. (ix) N.A. (x) 13.10.65 to 7.1.66.

2. TREATMENTS :

Main-plot tre atments :
3 times of sowing : D_1=May, D_2=June and D_3=July.

Sub-plot treatments :
4 varieties : V_1=3394, V_2=Coconadas white, V_3=Pratap and V_4=170—Co—2.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0020 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Boll worm ; spraying Endrin. (iii) Yield of *kapas*. (iv) (a) 1961—65 (Treatments modified every year). (b) No. (c) Nil. (v) No. (vi) From Nov. 65 irrigation was inadequate. (vi) and (vii) N.A.

5. RESULTS

(i) 603 Kg/ha. (ii) (a) 516·0 Kg/ha. (b) 207·8 Kg/ha. (iii) Main effect of D is highly significant and main effect of V and interaction D×V are significant. (iv) Av. Yield of *kapas* in Kg/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	1016	1030	1052	1698	1198
D_2	328	465	408	500	425
D_3	198	214	192	139	186
Mean	514	570	551	779	603

C.D. for D marginal means = 446·4 Kg/ha.
C.D. for V marginal means = 174·1 Kg/ha.
C.D. for V means at the same level of D = 301·5 Kg/ha.
C.D. for D means at the same level of V = 577·1 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(36).**

Site :- Agri. Demons.-cum-Res. Farm, Yemmiganur, **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) I. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super3+3·6 Kg/ha. of K_2O as Mur. Pot+44·8 Kg/ha. of N as A/s. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and 2 working of *prathi guntaka* between rows. (ix) 71 cm. (x) 17.1.62 to 1.4.62.

2. TREATMENTS :

Main-plot treatments

3 dates of sowing : D_1=31.7.61, D_2=27.8.61 and D_3=24.9.61.

Sub-plot treatments

6 varieties: V_1=122, V_2=Nandicum. V_3=2-3-68-1/5. V_4=3870−1U/1, V_5=Western—1 and V_6=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main plot. (b) 34·8 m.×27·7 m. (iii) 4. (iv) (a) 11·3 m.×4·1 m. (b) 10·1 m.×2·7 m. (v) 0·6 m.×0·7 m. (vi) Yes.

4. GENERAL :

(i) Not good due to severe incidence of boll worm. (ii) Incidence of Boll worm was noticed ; Endrin and Parathion were sprayed. (iii) Yield of cotton. (iv) 1961—65 (Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Distribution of rainfall was uneven. (vii) Nil.

5. RESULTS :

(i) 428 Kg/ha. (ii) (a) 39·5 Kg/ha. (b) 39·5 Kg/ha. (iii) Main effect of D is significant. Main effect of V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	383	395	356	395	385	660	429
D_2	383	309	331	306	437	687	409
D_3	425	485	415	403	425	571	446
Mean	397	380	367	368	416	639	428

C.D. for D marginal means = 27·9 Kg/ha.

C.D. for V marginal means = 32·2 Kg/ha.

C.D. for D means at the same level of V = 113·9 Kg/ha.

C D. for V means at the same level of D = 55·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(39).**

Site :- Agri. Demons.-cum-Res. Farm, Yemmiganur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) N.A. (ii) Red soil. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) 1. (v) 125 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and working of *prathi guntaka* twice between rows. (ix) 63 cm. (x) 10.10.62 to 20.5.63.

2. TREATMENTS :

Main-plot treatments

4 dates of sowing : D_1=18.6.62, D_2=14.7.62, D_3=10.8.62 and D_4=23.9.62.

Sub-plot treatments

6 varieties : V_1=122, V_2=Nandicum, V_3=2-3-68—11, V_4=3870-IV/J, V_5=Western-1 and V_6=*Laxmi.*

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 51·2 m.×23-8 m. (iii) 4. (iv) (a) 11·6 m.×4·3 m. (b) 10·7 m.×3·1 m. (v) 0·5 m.×0·6 m. (vi) Yes.

4. GENERAL :

(i) Not good due to heavy rain fall. (ii) Incidence of Boll worm was noticed. Endrin and Parathion were sprayed. (iii) Yield of cotton. (iv) (a) 1961—65 (Treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Heavy rainfall in December. (vii) Nil.

5. RESULTS :

(i) 405 Kg/ha. (ii) (a)19·8 Kg/ha. (b) 12·4 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	620	815	351	390	445	890	585
D_2	618	442	363	274	282	440	403
D_3	460	353	356	512	269	630	430
D_4	232	212	220	205	220	121	202
Mean	482	456	322	345	304	520	405

C.D. for D marginal means =12·9 Kg/ha.

C.D. for V marginal means = 8·8 Kg/ha.

C.D. for V means at the same level of D =17·5 Kg/ha.

C.D. for D means at the same level of V =64·4 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63 39).**

Site :- Agri. Demons.-cum-Res. Farm, Yemmiganur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Red soil. (iii) As per treatments. (iv) (a) Nil. (b) Dibbling. (c) N.A. (d) 61 cm. × 23 cm. (e) 1. (v) 125 Q/ha, of F.Y.M. + 33·6 Kg/ha. of P_2O_5 as Super + 33·6 Kg/ha. of K_2O as Mur. Pot. + 44·8 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings and working *prathi guntaka* twice between rows. (ix) 80 cm. (x) 22.12.63 to 5.5.64.

2. TREATMENTS:

Main-plot treatments :

4 dates of sowing : D_1=26.6.63, D_2=16.7.63, D_3=19.8.63 and D_4=21.9.63.

Sub-plot treatments :

6 varieties : V_1=2-3-68-1/5, V_2=Westerns—1, V_3=Jayadhar, V_4=Adonicum, V_5=H—420 and V_6=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 54·9 m × 27·4 m. (iii) 4. (iv) (a) 13·7 m. × 4·6 m. (b) 13·8 m. × 3·1 m. (v) 0·2 m. × 0·8 m. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Mealy bug attack in initial stages and Boll worm ; incidence were noticed. Endrin, Paramar and Tobacco decoction were sprayed. (iii) Yield of Cotton. (iv) (a) 1961—65 (Treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 338 Kg/ha. (ii) (a) 12·4 Kg/ha. (b) 2·5 Kg/ha. (iii) Main effect of D, V and interaction D × V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	294	306	304	376	287	390	326
D_2	371	413	452	395	361	373	394
D_3	398	371	398	245	208	408	338
D_4	296	437	294	208	247	279	294
Mean	340	382	362	306	276	362	338

C.D. for D marginal means =8·0 Kg/ha.
C.D. for V marginal means =1·8 Kg/ha.
C.D. for V means at the same level of D =3·5 Kg/ha.
C.D. for D means at the same level of V =8·6 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(56).**

Site :- Agri. Demons. Cum. Res. Farm. Yemmiganur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) Preparatory cultiuation with plough and *guntaka*. (b) Dibbling. (c) N.A. (d) 61 cm.×23 cm. (e) 2. (v) 250 Q/ha. of F.Y.M.+33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot.+44·8 Kg/ha. of N as A/s. (vi) As per treatments. (vii) Irrigated. (viii) Working *prathi guntaka* twice in between rows and 3 hand weedings. (ix) 67 cm. (x) 16.11.64 to 29.4.65.

2. TREATMENTS :

Main-plot treatments :

4 times of sowing : D_1=June sowing, D_2=July sowing, D_3=August sowing and D_4=September sowing.

Sub-plot treatments :

7 varieties : V_1=Adonicum, V_2=H−420, V_3=*Gaoraui*−6, V_4=2.3.68—1/5, V_5=Jayadhar, V_6=Western—1 and V_7=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 7 sub-plots/main-plot. (b) 36·6 m.×25·0 m. (iii) 4. (iv) (a) 12·2 m.×4·0 m. (b) 11·6 m.×2·4 m. (v) 0·3 m.×0·8 m. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Boll worm, Mealy bug noticed. Endrin, Paramar and tobacco (decoction) were sprayed. (iii) Yield of cotton. (iv) (a) 1961– 65(Treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 427 Kg/ha. (ii) (a) 46·9 Kg/ha. (b) 46·9 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	539	605	687	665	694	608	294	585
D_2	230	526	371	358	269	343	447	363
D_3	217	193	190	514	588	499	465	381
D_4	254	146	136	544	502	554	516	379
Mean	310	368	346	520	513	501	430	427

C.D. for D marginal means =28·4 Kg/ha.
C.D. for V marginal means =32·8 Kg/ha.
C.D. for D means at the same level of V=78·1 Kg/ha.
C.D. for V means at the same level of D=65·7 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(208).**

Site :- Agri. Demons.-cum-Res. Farm, Yemmiganur. **Type :- 'CV'.**

Object :—To find out the optimum time of sowing for different varieties of Cotton under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) Working country plough and *guntaka*, making ridges and furrows. (b) Dibbling. (c) N.A. (d) 61 cm. × 23 cm. (e) 1. (v) 45 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Mur. Pot. and 250 Q/ha. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Working *prathi guntaka* in between rows and hand weeding. (ix) N.A. (x) 6.11.65 to 29.3.66

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : D_1=20.6.65, D_2=17.7.65, D_3=14.8.65 and D_4=12.9.65.

Sub-plot treatments :

7 varieties : V_1=Gaoraui—6, V_2=Adonicum, V_3=H—420, V_4=Jayadhar, V_5=2.3.68—1/5, V_6=Western—1 and V_7=*Laxmi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 7 sub-plots/ main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0030 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Mealy bug, Boll worm ; spraying Endrin, Parathion, Tobacco decoction. (iii) Yield of *kapas*. (iv) (a) 1961—65(Treatments modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 498 Kg/ha. (ii) (a) 195·8 Kg/ha. (b) 112·0 Kg/ha. (iii) Main effects of D, V and interaction D×V are significant. (iv) Av. yield of *kapas* in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
D_1	524	545	571	722	686	622	473	592
D_2	466	579	567	674	655	645	528	588
D_3	386	322	384	531	497	480	459	437
D_4	197	202	285	531	435	502	468	374
Mean	393	412	452	614	568	562	482	498

C.D. for D marginal means = 118·4 Kg/ha.
C.D. for V marginal means = 79·0 Kg/ha.
C.D. for V means at the same level of D = 158·1 Kg/ha.
C.D. for D means at the same level of V = 202·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(234), 65(156).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'CM'.**

Object :- To find out the best time of sowing, optimum spacing and levels of N for Cotton yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow ; *Mung*. (c) Nil. (ii) Black soils. (iii) As per treatments. (iv) (a) 3 to 4 ploughings with country plough. (b) Hand dibbling. (c) 15 Kg/ha. (d) As per treatments. (e) 2. (v) 49 C.L /ha. of F.Y.M, +67 Kg/ha. of P_2O_5 as Super+56 Kg/ha. of Sul. Pot. for 64 ; 741 Kg/ha. of G.L. of *Mung* +56 Kg/ha. of P_2O_5 as Super+56 Kg/ha. of K_2O as Sul. Pot. for 65. (vi) MCU.—2 (vii) Irrigated. (viii) 2-3 weedings, thinning, earthing up. (ix) 82 cm ; N.A. (x) 21.11.64 to 14.3.65 ; 30.11.65 to 18.3.66.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 dates of sowing : D_1=16th July, D_2=1st August and D_3=16th August.
(2) 3 spacing between rows : S_1=61, S_2=76 and S_3=91 cm.
(3) 3 levels of N as A/S : N_0=0, N_1=56 and N_2=112 Kg/ha.

N was applied in two equal doses at sowing and at flowering.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·1 m.×7·0 m. (b) S_1=7·9 m.×6·4 m., S_2=7·6 m.×6·4 m. and S_3=7·3 m.×6·4 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids and Boll worm ; spraying of Parathion, Endrin and dusting of Sevin. (iii) *Kapas* yield. (iv) (a) 1964—65. (b) No. (c) Refer to 5. Results.. (v) N.A. (vi) 20·2 cm. rain on 27.9.64 for 64. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 1570 Kg/ha. (ii) 260·0 Kg/ha. (based on 62 d.f. made up of various components of Treatments×years interaction and pooled error). (iii) Main effects of D and N are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	N_0	N_1	N_2	S_1	S_2	S_3	Mean
D_1	1199	1792	2238	1713	1760	1756	1743
D_2	1199	1698	2035	1784	1600	1540	1641
D_3	960	1314	1707	1333	1302	1346	1327
Mean	1116	1601	1994	1610	1554	1547	1570
S_1	1256	1568	2006				
S_2	1013	1666	1984				
S_0	1081	1570	1990				

C.D. for D or N marginal means=367·7 Kg/ha.

Individual results

Treatments	D_0	D_1	D_2	Sig.	N_1	N_2	N_3	Sig.
Years 1964	1222	1254	1042	**	756	1216	1546	N.S.
1965	2264	2028	1612	**	1477	1986	2441	**
Pooled	1743	1641	1327	**	1116	1601	1994	**

S_1	S_2	S_3	Sig.	G.M.	S.E./plot
1223	1162	1133	N.S.	1174	266·9
1997	1946	1961	N.S.	1970	213·7
1610	1554	1547	N.S.	1570	260·0

Crop :- Cotton. **Ref :- A.P. 65(275).**

Site :- Agri. Res. Stn., Darsi. **Type :- 'CM'.**

Object :—To find out optimum spacing and manurial dose for Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red sandy loam. (iii) 15.6.65. (iv) (a) 2 ploughings and 1 harrowing. (b) Hand dibbling. (c) 8 Kg/ha. (d) As per treatments. (e) 2. (v) 5 C.L./ha. of F.Y.M. (vi) MCU—2. (vi) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 4 pickings from 20.10.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 spacings : S_1=60 cm.×30 cm. and S_2=75 cm.×30 cm.

(2) 2 manurial levels : F_1=100 Kg/ha. of N+50 Kg/ha. of P_2O_5+50 Kg/ha. of K_2O and F_2=120 Kg/ha. of N+50 Kg/ha. of P_2O_5+80 Kg/ha. of K_2O, N as A/S ; P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 6·1 m.×6·1 m. (b) 5·8 m.×5.8. (v) 15 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin sprayed twice and sevin dusted thrice as a precautionary measure. (iii) Plant stand, yield of *kapas*, length and ginning %, lint yield. (iv) 1965 –68. (b) No. (c) Nil. (v) to (vii) N.A.

5. RESULTS.

(i) 1497 Kg/ha. (ii) 221·3 Kg/ha. (iii) Main effect of F is significant. (iv) Av. yield of *kapas* in Kg/ha.

	F_1	F_2	Mean
S_1	1396	1837	1616
S_2	1327	1430	1378
Mean	1361	1633	1497

C.D. for F marginal means=250·3 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(236).**

Site :- Cotton Res. Sub-Stn., Gudivada- **Type :- 'CM'.**

Object :—To study the effect of time of application of N and plant population on the yield of Cotton

1. BASAL CONDITIONS:

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soils. (iii) 30.11.62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm.×30 cm. (e) As per treatments. (v) Nil. (vi) P—216 F. (viii) Hand weeding, line weeding, thinning, intercultivation with spades, ploughing in between rows. (ix) 376·7 cm. (x) 2.5.63 to 31.5.63.

2. TREATMENTS :

All combinations of (1) and (2)

(1) Number of plants per hill : P_1=1, P_2=2 plants/hill.

(2) 3 methods of applications of 44·9 Kg/ha. N as A/S: M_1=Full dose 1 month after sowing, M_2=Full dose at flowering and M_3=In two equal doses, first 1 month after sowing and second at flowering.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) (b) 14·6 m.×7·6 m. (iii) 4. (iv) (a) 7·6 m.×4·9 m. (b) 6·4 m.×3·7 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% against grass hoppers; sprayings of Endrin, Paramar, Ghesoral and Agroside. (iii) Germination counts, No of days to 1st squaring, first flowering, 1st dusting, boll counts, ginning percentage, halo length and yield of *kapas*. (iv) (a) 1962—only. (b) No. (c) Nil. (v) Nellore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 294 Kg/ha. (ii) 38·7 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed cotton in Kg/ha.

	M_1	M_2	M_3	Mean
P_1	262	278	298	279
P_2	285	341	299	308
Mean	274	310	298	294

Crop :- Cotton. **Ref :- A.P. 62(294).**

Site :- Cotton. Res. Sub-Stn., Gudivada. **Type :- 'CM'.**

Object: —To study the effect of different doses of N and spacings on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Black soils. (iii) 28.11.62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) P—216 F. (vii) Irrigated. (viii) Working with spades, ploughing in between rows, thinning, weeding and line weedings. (ix) N.A. (x) 2.5.63 to 31.5.63.

2. TREATMENTS :

Main-plot treatments :

4 levels of N as A/S: N_0=0, N_1=45, N_2=67 and N_3=89 Kg/ha.

Sub-plot treatments :

4 spacings between plants : S_1=15, S_2=30, S_3=46 and S_4=61 cm.

N was applied in two equal doses, 1 month after sowing and at flowering.

3. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/replication; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×5·5 m. (b) S_1=7·0 m.×4·3 m., S_2=6·7 m.×4·3 m., S_3=6·4 m.×4·3 m. and S_4=6·1 m.×4·3 m. (v) S_1=15 cm.×61 cm., S_2=30 cm.×61 cm., S_3=46 cm.×61 cm. and S_4=61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Dusting B.H.C. 10% against Grass Hoppers, spraying Endrin 4 times, spraying Parawar once, ghesoral+Agroside once. (iii) Yield of *kapas*. (iv) (a) 1962—only. (b) —. (c) Nil. (v) Ramachandrapuram. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1041 Kg/ha. (ii) (a) 208 Kg/ha. (b) 151 Kg/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_1	681	966	1140	1239	1006
N_2	797	955	1128	1276	1039
N_3	844	954	1105	1262	1077
N_4	788	897	1214	1410	1077
Mean	777	943	1146	1397	1041

C.D. for N marginal means=210 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(50).**

Site :- Cotton Res. Sub-Stn., Gudivada. **Type :- 'CM'.**

Object :—To study the effect of different levels of N, spacing and different number of plants per hole on Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 28.11.64. (iv) (a) Nil. (b) Dibbling in paddy stubbles. (c) N.A. (d) and (e) As per treatments. (v) Nil. (vi) P –216 F (medium). (vii) Irrigated. (viii) *Mummati* hoeing, 2 hand hoeings and working country plough twice. (ix) 107 cm. (x) 1.5.65 to 7.6.65.

2. TREATMENTS

Main-plot treatments ;

All combinations of (1) and (2)

(1) 3 levels of spacings : S_1=60 cm. × 15 cm., S_2=60 cm. × 30 cm. and S_3=60 cm. × 45 cm.

(2) Number of plants per hill : P_1=1 and P_2= 2 plants hill

Sub-plot treatments :

3 levels of N : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.

N applied in two doses, 1 month after sowing and at flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 3 sub-plots/main-plot. (b) 36 m. × 24 m. (iii) 4 (iv) (a) 34 Sq. m. (b) 21 Sq. m. (v) 13 Sq/m. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids, six spray schedule of I.C.C.C. followed. (iii) Height of the plant and yield of seed cotton. (iv) (a) 1963—only. (b) No. (c) Nil. (v) Nellore and Tenali. (vi) and (vii) Nil.

5. RESULTS :

(i) 1783 Kg/ha. (ii) (a) 68 Kg/ha. (b) 68 Kg/ha. (iii) Main effects of S, N and interactions S × P, N × S and N × P are highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

	S_1	S_2	S_3	P_1	P_2	Mean
N_0	1233	1330	1390	1256	1380	1318
N_1	1708	1846	2025	1839	1880	1860
N_2	1916	2275	2325	2249	2094	2172
Mean	1619	1817	1913	1781	1785	1783
P_1	1667	1824	1853			
P_2	1571	1810	1974			

C.D. for S marginal means =41·9 Kg/ha.
C.D. for N marginal means =39·7 Kg/ha.
C.D. for means in the body of S × P table=59·1 Kg/ha.
C.D. for N means at the same level of P=55·8 Kg/ha.
C.D. for P means at the same level of N=57·1 Kg/ha.
C.D. for N means at the same level of S=68·7 Kg/ha.
C D. for S means at the same level of N=70·0 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(244).**

Site :- Cotton. Res. Sub-Stn., Gudivada. **Type :- 'CM'.**

Object :—To study the optimum spacing, doses of N and time of application for Cotton.

1. BASAL CONDITIONS:

(i) (a) Paddy– Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 20.1.65. (iv) (a) 2 ploughings with tractor. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) P 216 F (Medium) (vii) Irrigated. (viii) Intercultivation with spades, country ploughing, thinnings. and line weeding. (ix) N.A. (x) 10.5.66 to 31.5.66.

2. TREATMENTS :

All combinations (1), (2), (3) and (4)

(1) 3 spacings between rows : R_1=61, R_2=76, and R_3=91 cm.

(2) 3 spacings within rows : S_1=46, S_2=61, and S_3=76 cm.

(3) 3 levels of N as A/S : N_1=45, N_2=90, and N_3=134 Kg/ha.

(4) 3 times of applications of N : T_1=½ as basal and ½ at flowering, T_2=½ as initial dose and ½ at flowering and T_3=⅓ as basal ⅓ as initial and ⅓ at flowering.

Dates of applications Basal on 20.1.66, initial on 19.2.66, flowering on 11.3.66.

3. DESIGN :

(i) 3^4 confd. (ii) (a) 9 plots/block ; 9 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 9·1 m.×4·3 m. (b) N.A. (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying parathion once, Endrin 3 times, Sevin 10% dusting 3 times. (iii) No. of bolls/plant, height of the plant and *kapas* yield. (iv) (a) 1965—67. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 917 Kg/ha. (ii) 197·8 Kg/ha. (iii) Main effects of R and S are highly significant and that of N is significant. (iv) Av. yield of *kapas* in Kg/ha.

	S_1	S_2	S_3	N_1	N_2	N_3	T_1	T_2	T_3	Mean
R_1	1173	885	858	814	1077	1025	933	1005	977	972
R_2	968	758	714	794	798	850	818	826	798	814
R_3	1133	1037	726	862	1025	1009	929	977	989	965
Mean	1091	893	766	823	967	961	893	936	921	917
T_1	981	897	802	818	882	981				
T_2	1149	905	754	842	1017	949				
T_3	1145	878	742	810	1001	953				
N_1	997	818	654							
N_2	1133	925	842							
N_3	1145	937	802							

C.D. for R or S or N marginal means=190·3 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 64(114).**

Site :- Millet. Res. Stn., Lam. **Type :- 'CM'.**

Object :—To find out the optimum dose of N, spacing and number of seedlings/hill for Cotton.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Black clay loams. (iii) 11.10 64. (iv) (a) 2 ploughings with country plough and 2 harrowings. (b) Hand dibbling. (c) 11·2 Kg/ha. (d) and (e) As per treatments. (v) Nil. (vi) Cocanadas—2. (vii) Un-irrigated. (viii) 2 thinnings, 2 intercultures and 2 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22.4 and N_2=44·8 Kg/ha.

(2) 2 spacings : S_1=56 cm.×28 cm. and S_2=56 cm.×56 cm.

(3) Number of seedlings/hill : H_1=1 and H_2=2.

A/S was applied in one dose as basal.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Germination counts and picking wise yield. (iv) (a) 1964—contd. (Expt. far 1965 N.A.) (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil

5. RESULTS :

(i) 497·4 Kg/ha. (ii) 32·32 Kg/ha. (iii) Main effect of N and interaction N×S are highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

	N_0	N_1	N_2	S_1	S_2	Mean
H_1	409.2	535·2	560·7	490·8	512·6	501·7
H_2	390·6	537·7	550·8	513·2	472·9	493·0
Mean	399·9	536·4	555·8	502·0	492·8	497·4
S_1	407·1	531·7	567·1			
S_2	392·7	541·2	544·5			

C.D. for N marginal means =18·7 Kg/ha.

C.D. for the body of N×S table=26·4 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63(217).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'CM'.**

Object :—To study the effect of different doses of N and spaci. gs on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Sandy loams. (iii) 16.2.63. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (e) N.A. (d) 61 cm. between rows. (e) 2. (v) Nil. (vi) P—216 F. (vii) Irrigated. (viii) Thinning, intercultivation with country plough, line weeding and *Mummati* hoeing. (ix) 43.1 cm. (x) 21.6.63 to 30.8.63.

2. TREATMENTS :

Main-plot treatments :

4 levels of N as A/S : N_0=0, N_1=44·8, N_2=67·2 and N_3=89·7 Kg/ha.

Sub-plot treatments :

4 spacings between plants within rows : P_1=15, P_2=30, P_3=46 and P_4=61 cm.

N applied in two equal doses, first 1 month after sowing and second at flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×5·5 m. (b) P_1=7·0 m.×4·3 m., P_2=6·9 m.×4·3, P_3=6·4 m.×4·3 m. and P_4=6·1 m.×4·3 m. (v) P_1=61 cm.×15 cm., P_2=61 cm.×30 cm., P_3=61 cm.×46 cm. and P_4=61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 4 sprayings of Endrin, 1 spraying of Parathion. (iii) Germination counts, final stand, boll counts, height measurements and yield of seed cotton. (iv) (a) 1963—only. (b) and (c) Nil. (v) Ramachandrapuram and Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 781 Kg/ha. (ii) (a) 113·9 Kg/ha. (b) 68·7 Kg/ha. (iii) Main effects of N and P are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
N_0	521	469	371	324	421
N_1	850	805	773	674	776
N_2	1020	921	909	776	907
N_3	1235	890	872	1074	1018
Mean	907	771	731	712	781

C.D. for N marginal means=113·8 Kg/ha.
C.D. for P marginal means= 57·9 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 65(12).**

Site :- Reg. Rice. Res. Stn., Nellore. **Type :- 'CM'.**

Object :—To fix up manurial schedules and cultural practices for Cotton in Rice-Fallows.

1. BASAL CONDITIONS :

(i) Rice-fallow-cotton. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 28.2.65. (iv) (a) 2 ploughings with tractor. (b) Dibbling. (c) N.A. (d) Rows 60 cm. apart and plants as per treatments. (e) As per treatments. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) *Mummati* hoeing, 2 hand weedings, line weeding, earthing up with *mummati*, formation of ridges and furrows. (ix) 55·2 cm. (x) 23.6.65 to 20.8.65.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 spacings between plants : S_1=15 cm., S_2=30 cm. and S_3=45 cm.

(2) Number of plants/hill : P_1=1 and P_2=2

Sub-plot treatments :

3 levels of N : N_0=0, N_1=45 and N_2=90 Kg/ha.

N applied as A/S, ½ dose on 4.4.65 and ½ dose on 3.5.65.

3. DESIGN:

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 6·1 m.×6·1 m. (b) S_1=4·9 m.×5·8 m, S_2=4·9 m.×5·5 m. and S_3=4·9 m.×5·2 m. (v) S_1=61 cm.×15 cm., S_2=60 cm.×30 cm. and S_3=60 cm.×45 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Slight incidence of Jassids, six spray schedule of I.C.C.C. has been followed. (iii) No. of bolls/plant, height and yield. (iv) (a) 1965—contd. (modified in 1966). (b) No. (c) Nil. (v) Gudivada. and Tenali. (vi) and (vii) Nil.

5. RESULTS:

(i) 1700 Kg/ha. (ii) (a) 104 Kg/ha. (b) 68 Kg/ha. (iii) Interaction N×S only is significant. (iv) Av. yield of seed cotton in Kg/ha.

	S_1	S_2	S_3	N_1	N_2	N_3	Mean
P_1	1604	1711	1416	954	1725	2052	1577
P_2	2279	1445	1747	846	2189	2436	1824
Mean	1941	1578	1582	900	1957	2244	1700
N_0	855	944	852				
N_1	2172	1849	1851				
N_2	2797	1893	2042				

C.D. for N means at the same level of S=123·6 Kg/ha.
C.D. for S means at the same level of N=138·2 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 63(216).**

Site :- Reg. Rice Res. Stn., Nellore. **Type :- 'CM'.**

Object :—To study the effect of time of application of N and plant population on the yield of Cotton.

1. BASAL CONDITIONS:

(i) (a) Paddy - Cotton. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 18.2.63. (iv) (a) 3 ploughings with country plough. (b) Hand dibbling. (c) N.A. (d) 61 cm.×30 cm. (e) As per treatments. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Thinning, intercultivation with country plough, line weeding, and *mummati* hoeing. (ix) 19·1 cm. (x) 20.6.63 to 12.8.63.

2. TREATMENTS:

All combinations of (1) and (2)

3 times of application of 44·8 Kg/ha. of N as A/S : T_1=Full dose 1 month after sowing, T_2=Full dose at flowering and T_3=½ dose 1 month after sowing and ½ dose at flowering.

(2) No. of plants per hill : P_1=1 and P_2=2

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 6·1 m.×4·3 m. (b) 4·9 m.×3·7 m. (v) 61 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 4 sprayings of Endrin and 1 spraying of Parathion. (iii) Germination counts, final stand ; boll counts ; height measurements and yield of seed cotton. (iv) (a) 1963 only. (b) and (c) Nil. (v) Ramachandrapuram and Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 562 Kg/ha. (ii) 114·7 Kg/ha. (iii) Main effects of P is highly significant and the main effect of the significant. (iv) Av. yield of seed Cotton in Kg/ha.

	T_1	T_2	T_3	Mean
P_1	441	431	567	480
P_2	709	479	746	645
Mean	575	455	656	562

C.D. for P marginal means= 99·7 Kg/ha.
C.D. for T marginal means=122·2 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(295).**

Site :- Rice Fallow Cotton Scheme, Ramachandrapuram. **Type :- 'CM'.**

Object :—To study the effect of different levels of N and different spacings and their combination on Cottton.

1. BASAL CONDITIONS ;

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam. (iii) 29.12.62. gap filling on 8.12.62 and 16.12.62. (iv) (a) Nil. (b) Dibbling in paddy stubbles. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) P 216 F. (vii) Irrigated. (viii) Working plough in between rows, hand weeding and line weedings thinning, and hand hoeing. (ix) N.A. (x) 3.4.63 to 24.5.63.

2. TREATMENTS :

Main-plot treatments :

4 levels of N as A/S : N_0=0, N_1=45, N_2=67, and N_3=90 Kg/ha.

Sub-plot treatments :

4 spacings between plants (within rows) : S_1=15 cm., S_2=30 cm. S_3=45 cm. and S_4=61 cm.
A/S was applied on 12.1.63 and 8.2.63.

3. DESIGN :

(i) Split—plot. (ii) (a) 4 main-plots/replication and 4 sub-plots/main plot. (b) N.A. (iii) 3. (iv) (a) 7·3 m.×5·5m (b) S_1=7·0 m.×4·3 m. : S_2=6·7 m.×4·3 m. S_3 and S_4 N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids and Grass hopper and Black arm. Endrin and Paramar sprayed (iii) Yield of *kapas*. (iv) (a) 1962—only. (b) and (c) Nil. (v) Gudivada. (vi) Nil. (vii) This experiment was conducted by the Cotton specialist, Nellore under the Rice—Fallow—Cotton scheme at Ramachandrapurm where no regular Res. Stn., exists.

5. RESULTS :

(i) 508 Kg/ha. (ii) (a) 497 Kg/ha. (b) 173 Kg/ha. (iii) None of the effects is significant. (iv) Av. Yield of *kapas* in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
N_0	271	444	731	730	544
N_1	265	420	653	639	494
N_2	282	408	692	742	531
N_3	300	373	606	568	462
Mean	279	411	670	670	508

Crop :- Cotton. **Ref :- A.P. 62(235).**

Site :- Rice Fallow Cotton Scheme, Ramachandrapuram. **Type :- 'CM'.**

Object :—To study the effect of application of N and number of plants per hill on Cotton.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey loam. (iii) 1.12.62, gap filling on 10, 16, 17.12.62. (iv) (a) Nil. (b) Hand dibbling in paddy stubbles. (c) N.A. (d) 61 cm. × 30 cm. (e) As per treatments, (v) Nil. (vi) P– 216 F. (vii) Irrigated. (viii) Working plough in between rows, hand hoeing, line weeding and thinning. (ix) 0·2 cm. (x) 5, 15, 25.5.63.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 Number of seedlings per hill : $P_1=1$, and $P_2=2$.

(2) 3 methods of application of 44·8 Kg/ha. of N as A/S : M_1=Full dose 1 month after sowing, M_2=Full dose at flowering and $M_3=\frac{1}{2}$ dose 1 month after sowing and $\frac{1}{2}$ at flowering.

3. DESIGN :

(i) Fact. in R.B.D. (ii) 6. (b) N.A. (iii) 4. (iv) (a) 6·1 m. × 4·3 m. (b) 4·9 m. × 3·7 m. (v) 61 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Jassids, Grass hoppers and Boll worm. Spraying of Endrin and Paramar. (iii) Initial stand and yield of *kapas*. (iv) (a) 1962—only. (b) and (c) Nil. (v) Gudivada and Nellore. (vi) Nil. (vii) This experiment was conducted by the Cotton Specialist, Nellore under the Rice–Fallow–Cotton scheme at Ramachandrapuram. where no regular Res. Stn., exist.

5. RESULTS :

(i) 376 Kg/ha. (ii) 109 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed cotton in Kg/ha.

	M_1	M_2	M_3	Mean
P_1	375	354	303	344
P_2	403	495	394	407
Mean	389	390	348	376

Crop:- Cotton. **Ref :- A.P. 64(210).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'CM'.**

Object :—To fix up the manurial schedules and cultural practices for Cotton in Rice—Fallows.

1. BASAL CONDITIONS :

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey (iii) 30.11.64. (iv) (a) 2 ploughings with tractor. (b) Dibbling. (c) N.A. (d) and (e) As per treatments. (v) Nil. (vi) P—216 F (medium). (vii) Irrigated. (viii) *Mummati* hoeing, hand hoeing and working county plough. (ix) 101 cm. (x) 13.5.65 to 9.6.65.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 spacings : S_1=15 cm., S_2=30 cm. and S_3=46 cm.

(2) 2 number of plants/hill : P_1=1 and P_2=2

Sub-plot treatments :

3 levels of N : N_0=0, N_1=45 and N_2=90 Kg/ha.

N applied as A/S ½ on 29.12.64 and ½ on 6.2.65.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication; 3 sub-plots/main-plot. (b) Nil. (iii) 4. (iv) (a) 6·7 m.×6·1 m. (b) S_1=6·4 m.×4·9 m., S_2=6·1 m.×4·9 m. and S_3=5·8 m.×4·9 m. (v) S_1=15 cm.×60 cm., S_2=30 cm.×60 cm. and S_3=45 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight incidence of Jassids. Six sprays schedule of I.C.C.C. has been followed. (iii) No. of bolls per plant, height of plant and yield of seed cotton. (iv) (a) 1964—only. (b) No. (c) Nil. (v) Nellore and Gudivada, (vi) and (vii) Nil.

5. RESULTS :

(i) 1112 Kg/ha. (ii) (a) 136 Kg/ha. (b) 100 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed cotton in Kg/ha.

	S_1	S_2	S_3	N_0	N_1	N_2	Mean
P_1	1226	1106	976	637	1161	1510	1103
P_2	1029	1086	1248	608	1167	1589	1121
Mean	1128	1096	1112	623	1164	1555	1112
N_0	690	596	581				
N_1	1169	1196	1128				
N_2	1525	1497	1628				

Crop :- Cotton. **Ref :- A.P. 65(215).**

Site :- Agri. Res. Stn., Tenali. **Type :- 'CM'.**

Object :—To find out the optimum cultural practices and fertilizer requirements for Cotton.

1. BASAL CONDITIONS:

(i) (a) Paddy—Cotton. (b) Paddy. (c) N.A. (ii) Clay loam to clayey. (iii) 30, 31.12.65 ; 1.1.66. (iv) (a) Nil. (b) Dibbling. (c) Nil. (d) As per treatments. (e) 2. (v) Nil. (vi) P—216 F. (vii) Irrigated. (vii) *Mummiti* hoeing and hand weeding. (ix) and (x) N.A.

2. TREATMENTS:

All combinations of (1), (2), (3) and (4)

(1) 3 spacings between rows : R_1=60, R_2=75 and R_3=90 cm.

(2) 3 spacings within rows : P_1=45, P_2=60 and P_3=75 cm.

(3) 3 levels of N as A/S : N_1=45, N_2=90 and N_3=135 Kg/ha.

(4) 3 times of application of N : T_1=½ dose as basal+½ dose as initial (one month later), T_2=½ dose as initial+½ dose at flowering and T_3=⅓ dose as basal+⅓ dose as initial+⅓ dose at flowering.

3. DESIGN :

(i) 3^4 confd. (ii) (a) 9 blocks/replication, 9 plots/block. (b) N.A. (iii) 1. (iv) (a) 4·8 m.×9·0 m. (v) 1 row on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids ; 6 spray schedule of I.C.C.C. has been followed. (iii) No of bolls/plant, height of plant and yield of *kapas*. (iv) (a) 1965—67. (b) No. (c) Nil. (v) Gudivada. (vi) and (vii) Nil.

5. RESULTS :

(i) 2069 Kg/ha. (ii) 150·6 Kg/ha. (iii) Main effects of R, P and N and interactions R×N, A×N are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	R_1	R_2	R_3	P_1	P_2	P_3	T_1	T_2	T_3	Mean
N_1	1375	1311	1213	1410	1379	1110	1335	1268	1296	1300
N_2	2240	2022	2190	2251	2291	1912	2156	2156	2142	2151
N_3	2907	2792	2570	2978	3030	2259	2777	2710	2780	2756
Mean	2174	2042	1991	2213	2333	1760	2067	2045	2073	2069
T_1	2164	2076	2026	2219	2259	1789				
T_2	2145	2010	1979	2212	2184	1738				
T_3	2212	2042	1967	2209	2255	1754				
P_1	2299	2216	2125							
P_2	2366	2161	2173							
P_3	1857	1750	1674							

C.D. for R or P or N marginal means = 86·9 Kg/ha.

C.D. for the body of R×N (or P×N) table=150·5 Kg/ha.

Crope :- Cotton. **Ref :- A.P. 60(90).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CMV'.**

Object—To study the effect of different dates of sowing and levels of N on different varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12·4 C.L./ha. of F.Y.M. (ii) Deep black Cotton soils. (iii) As per treatments. (iv) Working of *gorru* and *guntaka* thrice. (b) Dibbling. (c) N.A. (d) 53 cm.×30 cm. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Intercultivations with *pathi guntaka* in early stages and H.M. *guntaka* in the later stages and hand weeding immediately after intercultivation. (ix) 59·3 cm. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : D_1=1.7.60, D_3=15.7.60, D_3=4.9.60 and D_4=15.9.60.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 4 varieties : V_1=Gaorani—6 (early), V_2=Western—1 (early), V_3=Cocanadas—2 (late) and V_4=5975 (late)

(2) 2 levels of N as A/S applied at the time of sowing : N_0=0 and N_1=22·4 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 11·9 m.×3·2 m. (b) 9·8 m.×2·1 m. (v) 107 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe Boll worm attack. (iii) Picking wige and yield of *kapas*. (vi) (a) 1960—62 (Treatments modified every year). (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 223·9 Kg/ha. (ii) (a) 133·6 Kg/ha. (b) 40·1 Kg/ha. (iii) Main effects of D, V and N are highly significant. Interaction D×N is significant. (iv) Av. yield of *kapas* in Kg/ha.

	D_1	D_2	D_3	D_4	V_1	V_2	V_3	V_4	Mean
N_0	238·4	272·4	200·1	53·6	142·2	217·1	181·4	223·9	191·1
N_1	332·9	369·5	263·9	60·4	229·0	304·0	224·8	269·0	256·7
Mean	285·6	321·0	232·0	57·0	185·6	260·6	203·1	246·4	223·9
V_1	284·4	265·6	173·7	18·7					
V_2	335·5	337·2	304·8	64·7					
V_3	223·1	323·5	189·0	76·6					
V_4	299·7	357·6	260·5	68·1					

C.D. for D marginal means =75·6 Kg/ha.
C.D. for V marginal means =19·9 Kg/ha.
C.D. for N marginal means =14·1 Kg/ha.
C.D. for N means at the same level of D=28·2 Kg/ha.
C.D. for D means at the same level of N=89·0 Kg/ha.

Crop :- Cotton. (*Kharif.*) **Ref :- A.P. 61(103).**

Site :- Cotton. Res. Stn., Nandyal. **Type :- 'CMV'.**

Object :—To study the effect of different dates of sowing and level of N on different varieties of Cotton.

1. BATAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12·3 C.L./ha. (ii) Deep black Cotton soils. (iii) As per treatments. (iv) (a) Working of *gorru* and *guntaka* twice. (b) Hand dibbling. (c) 12·3 Kg/ha. (d) 61 cm.×3) cm. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Intercultivation with *pathi guntaka* in early stages and H.M. *guntaka* in later stages and hand weeding immediately after intercultivations. (ix) 21·3 cm. (x) N.A.

2. TREATMENTS :

Main-plot treatments:

4 dates of sowing : D_1=26.6.61, D_2=10.8.61, D_3=26.8.61 and D_4=14.10.61.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 4 varieties : V_1=W-1 (Western—1), V_2=*Gaorani*—6, V_3=Cocanadas—2 and V_4=5975

(2) 2 levels of N as A/S : N_0=0 and N_1=22·4 Kg/ha.

A/S was applied as soil application at the time of sowing.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 11·9 m.×3·2 m. (b) 9·8 m.×2·1 m. (v) 107 cm.×53 cm. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Severe Boll worm attack, spraying of Endrin and dusting of Sevin. (iii) Yield of *kapas*. (iv) (a) 1960—62 treatments modified every year.) (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 100·0 Kg/ha. (ii) (a) 114·9 Kg/ha. (b) 39·2 Kg/ha. (iii) Main effect of V and interaction D×V are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	V_1	V_2	V_3	V_4	D_1	D_2	D_3	D_4	Mean
N_0	39·2	155·6	71·8	129·4	110·7	108·7	117·2	37·1	96·2
N_1	46.1	159·7	80·8	128·6	114·0	120·9	114·9	65·8	103·8
Mean	42·6	157·6	76·3	129·0	112·4	114·6	116·0	51·4	100·0
D_1	101·7	129·4	68·4	149·8					
D_2	25·0	213·5	77·1	142·5					
D_3	30·7	203·7	92·0	137·9					
D_4	13·1	84·1	67·8	85·7					

C.D. for V marginal means =19·4 Kg/ha.
C.D. for V means at the same level of D=38·9 Kg/ha.
C.D. for D means at the same level of V=111·2 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 62(125).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'CMV'.**

Object :—To study the effect of different dates of sowing and levels of N on different varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) 12·4 C.L./ha. of F.Y.M. (ii) Deep black cotton soils. (iii) As per treatments. (iv) (a) Field was worked alternatively with *gorru* and *guntaka*. (b) Drilling. (c) 12·3 Kg/ha. (d) 53 cm. × 30 cm. (e) 1. (vi) As per treatments. (vii) Un-irrigated. (viii) Intercultivation with *pathi gunta ka* in the early stages and H.M. *guntaka* in the latter stages followed by hand weeding. (ix) 77 8 cm. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : D_1=29.6.62, D_2=17.7.62, D_3=23.8.62 and D_4=23.9.62.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 4 varieties : V_1=Gaorani –6 (early), V_2=Western—1 (early), V_3=Cocanadas—2 (late) and V_4=Nandicum (late).

(2) 2 levels of N as A/S : N_0=0, and N_1=20 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 11·9 m. × 3·2 m. (b) 9·8 m. × 2·1 m. (v) 107 cm. × 53 cm. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Severe attack of Boll worm and Gram caterpillar ; spraying of Endrin and dusting of Sevin. (iii) Yield of seed cotton. (iv) (a) 1960—62 (Treatments modified every year). (b) No. (c) Nil. (v) N.A. (vii) Continuous rains during 2nd fortnight of August and 1st fortnight of September. (vii) Nil.

5. RESULTS :

(i) 103·7 Kg/ha. (ii) (a) 60·5 Kg/ha. (b) 35·2 Kg/ha. (iii) Main effects of V and N and interaction V × N are highly significant. Interaction D × V is significant. (iv) Av. yield of seed cotton in Kg/ha.

	V_1	V_2	V_3	V_4	N_0	N_1	Mean
D_1	154·1	89·4	102·2	143·9	98·3	146·4	122·4
D_2	95·4	84·3	106·4	166·9	83·0	143·5	113·2
D_3	61·3	51·1	70·7	149·8	48·5	117·9	83·2
D_4	88·5	54·5	78·3	162·4	56·6	135·0	95·9
Mean	99·8	69·8	89·4	155·8	71·6	135·7	103·7
N_0	70·7	50·7	61·3	103·9			
N_1	129·0	89·0	117·5	207·3			

C.D. for V marginal means =17·5 Kg/ha.

C.D. for N marginal means =12·4 Kg/ha.

C.D. for V means at the same level of D=35·0 Kg/ha.

C.D. for D means at the same level of V=45·6 Kg/ha.

C.D. for means in body of N × V table =24.8 Kg/ha.

Crop :- Cotton. **Ref. :- A.P. 64(257), 65(157).**

Site :- Agri. Res. Stn., Amaravathi:. **Type :- 'IM'.**

Object :—To find out the optimum water requirement of MCU-2 variety of Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Medapesara.* for G.M. (c) 11 Kg/ha. of N as A/S+22 Kg/ha. of P_2O_5 as Super for 64 and 22 Kg/ha. of N as A/S+22 Kg/ha. of P_2O_5 as Super for 65. (ii) Black soils. (iii) 18.8.64 ; 12.8.65. (iv) (a) 3-4 ploughings with country plough. (b) Hand dibbling. (c) 15 Kg/ha. (d) 61 cm.×30 cm. (e) 2. (v) 9578 Kg/ha. of *medapesara* for G.M.+56 Kg/ha. of P_2O_5 as Super+56 Kg/ha. of K_2O as Mur. Pot (vi) MCU-2. (vii) Irrigated. (viii) 2-3 hand weedings, thinning and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigations : I_1=30 cm. and I_2=45 cm. for each irrigation.

Sub-plot treatments :

3 frequencies of irrigation : F_1=8, F_2=10 and F_3=12 irrigations.

Sub-sub-plot treatments :

3 levels of N as A/S : N_0=0, N_1=56 and N_2=112 Kg/ha,

Instead of above in 65(157), the sub-plot treatments tried were :

3 frequencies of irrigation : F_1=6, F_2=8 and F_3=10 irrigations.

20% of N at sowing, 40% of N at 6 weeks age and remaining 40% at 10 weeks age of the crop.

3. DESIGN .

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot and 3 sub-sub-plots/sub-plot. (b) N.A. (iii) 3. (iv) (a) 10·4 m.×5·0 m. ; 8·4 m.×7·0 m. (b) 5·8 m.×3·8 m. ; 3·8 m.×5·8 m. (v) 2·3 m.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Jassids and black arm, spraying of Parathion, Endrin, Blitox and Sevin. (iii) *Kapas* yield. (iv) (a) 1964—66. (b) No. (c) Nil. (v) Nil. (vi) Unprecidented rainfall of 20·1 cm. on 27.9,64 for 64. (vii) Nil.

5. RESULTS :

64(257)

(i) 1591 Kg/ha. (ii) (a) 750·7 Kg/ha. (b) 249·9 Kg/ha. (c) 211·6 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of *kapas* in Kg/ha.

	F_1	F_2	F_3	N_0	N_1	N_2	Mean
I_1	1596	1732	1542	1189	1683	1999	1624
I_2	1636	1673	1364	1258	1460	1955	1558
Mean	1616	1702	1453	1224	1572	1977	1591
N_0	1179	1366	1124				
N_1	1594	1646	1572				
N_2	2078	2093	1977				

C.D. for N marginal means=149·5 Kg/ha.

65(157)

(i) 1400 Kg/ha. (ii) (a) 73·5 Kg/ha. (b) 68·2 Kg/ha. (c) 146·8 Kg/ha. (iii) Main effects of N, F and interaction N×F are highly significant. Main effect of I and interaction I×F are significant, (iv) Av. yield of *kapas* in Kg/ha.

	F_1	F_2	F_3	N_0	N_1	N_2	Mean
I_1	1025	1339	1656	610	1537	1876	1340
I_2	1221	1470	1688	773	1735	1871	1460
Mean	1123	1404	1672	692	1636	1874	1400
N_0	534	709	833				
N_1	1253	1715	1940				
N_2	1584	1792	2244				

C.D. for N marginal means =103·7 Kg/ha.
C.D. for F marginal means =52·4 Kg/ha.
C.D. for I marginal means =86·3 Kg/ha.
C.D. for I means at the same level of F =178·0 Kg/ha.
C.D. for F means at the same level of I =109·7 Kg/ha.
C.D. for F means at the same level of N =152·0 Kg/ha.
C.D. for N means at the same level of F =187·6 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 63(207).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'D'.**

Object :—To study the efficacy of different insecticides in improving the yield of Cotton by controlling Jassids and boll worm.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram. (c) Nil. (ii) Black soils. (iii) 11.8.63. (iv) (a) Working *guntaka* twice. (b) Hand dibbling. (c) 7·9 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) 10088 to 11208 Kg/ha. of green gram (G.M.) ; 33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. as basal and 44·8 Kg/ha. of N as A/S as top dressing in two equal doses, at 4th and 8th week of the age of the crop. (vi) MCU-2. (vii) Irrigated. (viii) Thinning, earthing and weeding. (ix) N.A. (x) December, 1963 to May, 1964.

5. TREATMENTS :

5 insecticidal treatments : T_0=Control, T_1=I.C.C.C. schedule of sprayings (I, II IV and VI sprays with Endrin ; III and V sprays with B.H.C.+D.D.T., T_2=6 sprays of Endrin 0·03%, T_3=6 sprays of Parathion 0·025% and T_4=6 sprays of B.H.C.+D.D.T. 0·05% in 1 : 1 ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0014 ha. (v) 114 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (b) Incidence of Jassids in early stages and Boll worm during bolling stage. Heavy incidence of Black arm also noticed during October, 63 due to heavy cyclonic rains. (ii) Yield of seed cotton. (iv) (a) 1963 only. (b) and (c) Nil. (v) Darsi. (vi) Unusually heavy cyclouinc rains during October, 63. (vii) Nil.

5. RESULTS :

(i) 520 Kg/ha. (ii) 108 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	484	523	584	477	530

Crop :- Cotton (*Rabi*). **Ref :- A.P. 64(211).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'D'.**

Object :—To study the efficacy of different insecticides in improving the yield of Cotton by controlling Jassids and boll worm.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram. (c) Nil. (ii) Black. (iii) 1.8.64. (iv) (a) Working *Metla guntaka* and *Boda guntaka*. (b) Hand dibbling. (c) 7·9 Kg/ha. (d) 76 cm. × 30 cm. (e) 2. (v) 49421 to 61776 Kg/ha. of Green gram (G.M.) ploughed in *Situ* ; 56·0 Kg/ha. of P_2O_5 as Super as basal ; 56·0 Kg/ha. of N as A/S +56·0 Kg/ha. of K_2O as Mur. Pot. in two equal split doses, at thinning and at flowering. (vi) MCU-2. (vii) Irrigated. (viii) Thinning, earthing and hand weeding. (ix) 78·7 cm. (x) 20.11.64 to 6.5.65.

2. TREATMENTS :

8 insecticidal treatments: T_0=Control, T_1=I.C.C.C. schedule of sprayings (I, II, IV and VI sprays with Endrin ; III and V sprays with B.H.C.+D.D.T.), T_2=6 sprays of Endrin 0·03%, T_3=6 sprays of Parathion 0·025%, T_4=6 sprays of B.H.C.+D.D.T. 0·5% in 1 : 1 ratio, T_5=6 sprays of Sevin-carbaryl dust, T_6=3 dustings of Sevin-carbaryl dust and 3 sprayings of Endrin 0·03% alternatively and T_7=Watersprays.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0048 ha. (v) 76 cm. × 30 cm. (vi) Yes,

4. GENERAL :

(i) Good with healthy vegetative growth in the initial stages. (ii) Heavy incidence of Boll worm and was promptly controlled. Incidence of Jassids in early stages and Boll worm during the bolling stage. (iii) Yield of seed cotton. (iv) (a) 1964 only. (b) and (c) Nil. (v) Darsi. (vi) During August, 1964 the rains were much less and temperature continued to be high. This was followed by heavy cyclonic rains during Sept., 64. There was a total rainfall of 57·3 cm. of which 20.1 was recorded in a short time of 4 hours. (vii) Nil.

5. RESULTS :

(i) 829 Kg/ha. (ii) 224 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	594	979	780	664	619	1355	1049	592

C.D. = 329·5 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 65(38).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'D'.**

Object : —To study the efficacy of different insecticides in improving the yield of Cotton by controlling jassids and boll worm.

1. BASAL CONDITIONS:

(i) (a) *Jowar* –Cotton. (b) *Jowar*. (c) 67·2 Kg/ha. of N as A/S+56·0 Kg/ha. of P_2O_5 as Super+56·0 Kg/ha. of K_2O as Mur. Pot. (P_2O_5 as basal dusting and N, K_2O in two equal doses at sowing and 1 month after sowing). (ii) Black soils. (iii) 10.8.65, gap filling on 20.8.65. (iv) (a) 2 ploughings with country plough. (b) Hand dibbling. (c) 17·3 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) 125·65 K/ha. of F.Y.M. and 56.0 Kg/ha. of P_2O_5 as Super. (vi) MCU–2. (vii) Irrigated. (viii) 2 hand weedings. (iv) 45·6 cm. (x) 24.12.65 to 6.4.66.

2. TREATMENTS :

6 insecticidal treatments : T_0=Control, T_1=6 sprays of Endrin 0·03%, T_2=6 sprays of Parathion 0·025%, T_3=6 sprays of B.H.C.+D.D.T.—0·05% in 1 : 1 ratio, T_4=6 dustings of Sevin (carbyl dust at 11·2 Kg/ha. and T_5=I.C.C.C. schedule of sprayings (I, II, IV and VI sprays with Endrin 0·03% ; III and V sprays with D.D.T.+B.H.C.—0·05% in 1 : 1 ratio).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 20·5 m.×17·6 m. (iii) 4. (iv) (a) 8·8 m.×6·8 m. (b) 8·2 m.×5·3 m. (v) 30 cm.×76 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Jassids and black arm. (iii) Yield of seed cotton, halo length and ginning percentage. (iv) (a) 1965—only. (b) and (c) Nil. (v) Darsi. (vi) During the growth period, severe drought prevailed. Added to this, there was deep craweiling even as early as December as the rains of the winter monsoon were inadequate. (vii) Nil.

5. RESULTS :

(i) 253 Kg/ha. (ii) 71·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of seed Cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	194	311	238	192	381	201

C.D.=107·8 Kg/ha.

Crop :- Cotton. (*Rabi*) **Ref :- A.P. 63(208)**

Site :- Agri. Res. Stn., Darsi. **Tppe :- 'D'.**

Object :—To study the efficacy of different insecticides in improving the yield of cotton controlling by Jassids and Boll worm.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna* and Red gram. (c) 62·8 Q/ha. of F.Y.M. (ii) Red soil. (iii) 15.6.63. (iv) (a) ploughing 3 times with country plough. (b) Hand dibbling. (c) 7·85 Kg/ha. (d) 76 cm.×30 cm. (v) 33·62 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Mur. Pot. as basal dressing and 44·8 Kg/ha. of N as A/S as top dressing in two equal doses, to 4 and 8 weeks old crop. (vi) MCU–2 medium (vii) Irrigated (viii) Thinning, Earthing up and hand weeding. (ix) 43·9 cm. (x) 22.9.63 to 4.4.64.

2. TREATMENTS :

5 inseeticidal treatments : T_0=Control T_1=Indian central cotton committee schedule of sprayings I, II, IV and VIsprays with Endrin 0·03% ; and V sprays with B.H.C.+D.D.T.—0·5% in 1·1 ratio, T_2=6 sprays of Endrin 0·03%, T_3=6 sprays of Parathion 0·025% and T_4=6 sprays of B.H.C.+D.D.T.—0·05% in 1·1 ratio.

3. DESIGN :

(i) R B D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) 9·1 m.×5·3 m. (b) 8·5 m.×3·1 m. (v) 30 cm×114cm. Yes.

4. GENERAL :

(i) Good with healhly vegetative growth attack of Boll worm was high, ard incidence of Jassids was less and that of black arm was high. Mild incidence of red leaf disease. (iii) Yield of seed Cotton. (iv) (a) 1963 only. (b) No. (c) Nil. (v) Amaravathi. (vi) and (vii) Nil.

5. RESULTS :

(i) 946 Kg/ha. (ii) 196 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4
Av. yield:	936	1048	1040	876	828

Crop :- Cotton (*Rabi*). **Ref :- A.P. 64(212).**

Site :- Agri. Res. Stn., Darsi. **Type :- 'D'.**

Object :—To study the efficacy of different insecticides in improving the yield of Cotton by controlling Jassids and Boll worm.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna* and red gram. (c) 62·8 Q/ha. of F.Y.M. (ii) Red soil. (iii) 21.6.64. (iv) (a) 3 ploughings with country plough. (b) Hand dibbling. (c) 7·8 Kg/ha. (d) 76 cm.×30 cm. (e) 2. (v) 12·4 C.L./ha. of F.Y.M.+56·0 Kg/ha. of P_2O_5 as Super applied as basal and 56·0 Kg/ha. of N as A/S+56·0 Kg/ha. of K_2O as Mur. Pot. applied in two equal doses as top dressing at thinning and flowering. (vi) MCU—2 (medium). (vii) Irrigated. (viii) Thinning, earthing up and hand weeding. (ix) 79·5 cm. (x) 12.10.64 to 17.4.65.

2. TREATMENTS :

7 insecticidal treatments : T_0=Control, T_1=I.C.C.C. schedule, T_2=6 spray of Endrin 0·03%, T_3=6 spray of Parathion 0·02%, T_4=6 spray of B.H.C.+D.D.T.–0·5% in 1 : 1 ratio, T_5=6 dustings of Sevin—Carbaryl dust and T_6=6 water sprays.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0032 ha. (v) 76 cm.×30 cm. (vi) Yes.

4. GENERAL:

(i) Good with good vegetative phase. (ii) Severe attack of black arm ; incidence of Jassids in early stages and Boll worm during boll bearing stage. (iii) Yield of seed Cotton. (lv) (a) 1964—only. (b) No. (c) Nil. (v) Nil. (vii) Unusually heavy rain fall of 15·2 cm. during September, 64. (vii) Nil.

5. RESULTS :

(i) 1156 Kg/ha. (ii) 148 Kg/ha. (iii) Treament differences are not significant. (iv) Av. yield of seed Cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_4	T_5	T_6
Av. yield	1053	1276	1158	1138	1202	1165

Crop :- Cotton. **Ref :- A.P. 65(169).**

Site :- Agri. Res. Stn., Darsi. **Type :- 'D'.**

Object :—To study the efficacy of different insecticides in controlling Jassids and Boll worm.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Jonna* and red gram. (c) 62·8 Q/ha. of F.Y.M. (ii) Red soils. (iii) 14·6·65. (iv) (a) N.A. (b) Hand dibbling. (c) 8 Kg/ha. (d) 76 cm. × 30 cm. (e) 2. (v) N.A. (vi) MCU-2. (vii) Irrigated. (viii) 1 thinning, 2 hand weedings and 2 earthings. (ix) N.A. (x) March, 1966.

2. TREATMENTS :

6 insecticidal treatments: T_0=Control, T_1=I.C.C.C. schedule of sprayings, T_2=Endrin sprays, T_3=Parathion spray, T_4=B.H.C.+D.D.T. spray and T_5=Sevin dusting.

No other details available.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0·0025 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor, stunted growth. (ii) The crop shed its first flush of floral forms. (iii) Yield of seed Cotton, % of bad *kapas*, mean halo length, ginning %, earliness by Bartletts Index. (iv) (a) 1965—only. (b) No. (c) Nil. (v) Nil. (vi) Severe drought conditions prevailed. (vii) Nil.

5. RESULTS :

994 Kg/ha. (ii) 218·0 Kg/ha, (iii) Treatment differences are significant. (iv) Av. yield of seed cotton in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	756	1053	1171	926	823	1236

C.D.=328·5 Kg/ha.

Crop :- Cotton. **Ref :- A.P. 61(245).**

Site :- Cotton Res. Stn. Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control boll worms.

1. BASAL CONDITION :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 26·8.61 (iv) (a) 3 times working *gorru* and two times *guntaka*. (b) Dibbling. (c) 10 Kg/ha. (d) and (e) N.A. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) N—14. (vii) Unirrigated. (viii) 2-3 intercultivation with hoe *gunta a* and *patti guntaka* and hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

10 insecticidal treatments : T_0=Control, T_1=0·15% D.D.T.+0·15% B.H.C., T_2=0·03% Endrin. T_3=0·03% Parathion, T_4=0·03% Diazinon, T_5=0·15% Realathion, T_6=0·15% Sevin, T_7=0·15% Thioneton, T_8=0·025% Gugathions and T_9=0·15% cotton spray.

1st spraying on 20.12.61 and 3 more sprayings applied at 15 days interval.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL:

(i) In early stages the crop was healthy and in the latter stag's it was below normal. (ii) Infestation of Boll worm. (iii) % infestation of Boll worm and yield of *kapas*. (iv) (a) 1961—only. (b) No. (c) Nil. (v) Nil. (vi) Heavy down pour in October and no rains from November on wards. (vii) Nil.

5. RESULTS:

Yield of *kapas*

(i) 117 Kg/ha. (ii) 9·9 Kg/ha, (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	99	49	69	114	114	96	267	138	158	67

C.D.=14·4 Kg/ha.

% infestation of Boll worm.

(i) 84%. (ii) 12·0%. (iii) Treatment differences are significant. (iv) Av. % infestation of Boll worm.

Treatment	T_0	T_1	T_2	T_3	T_4	S_5	T_6	T_7	T_8	T_9
Av. % infestation	94	91	79	88	81	87	56	87	79	94

C.D.=17·3 %.

Crop :- Cotton (*Kharif*). **Ref :- A.P. 62(266).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control Boll worms.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L /ha. of F.Y.M. (ii) Black cotton soils. (iii) 27.7.62. (iv) (a) 3 times working *gorru* and 2 times *guntaka*. (b) Dibbling. (c) 10 Kg/ha. (d) 53×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y M.+22 Kg/ha. of N as A/S. (vi) Nandicum. (vii) Un-irrigated. (viii) 2–3 intercultivations with H.M.—*guntaka* and *prathi guntaka* and hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

10 insecticidal treatments : T_0=Control, T_1=D.D.T.+B.H.C. 0·15%, T_2=Endrin 0·03%, T_3=Parathion 0·03%, D_4=Diezinon 0.03%, T_5=Malathion 0·15%, T_6=Sevin 0·15%, T_7=Thiometon 0·03%, T_8=Telodring 0·2% and T_9=Dimecron 0 03%.

The sprayings were commenced on 15.12.62 and continued till the middle of Febraury 63 at 15 days in terval.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) to (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Attack of Boll worm. (iii) % infestation of Boll worm and yield of *kapas*. (iv) (a) 1962—only. (b) No. (c) Nil. (v) Nil. (vi) Heavy rainfall no December. (vii) N.A.

5. RESULTS :

(i) 102 Kg/ha. (ii) 40·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	82	60	91	57	66	46	315	60	70	170

C.D.=58·1 Kg/ha.

Crop :- Cotton (*Rabi*). **Ref :- A.P. 63(262).**

Site :- Cotton Res· Stn., Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control boll worm.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black Cotton soils. (iii) 1.9.63. (iv) (a) 3 times working *gorru* and 2 times *guntaka*. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) Northerns—14. (vii) Un-irrigated. (vii) 2—3 intercultivations with hoe *guntaka* and *prathi guntaka* and hand weeding. (ix) N.A. (x) 22.2.64 to 8.4.64.

2. TREATMENTS :

6 insecticidal treatments : T_0=Control, T_1=D. 0·15% D.D.T.+0.15% B.H.C., T_2=0·03% Endrin, T_3=0·03% Telodrin, T_4=Rogor 40, T_5=Calcium Arsenate+Cotton seed cake+ lince 1 day each, T_6=0·05% Methy 1 Parathion ad and T_7=0·15% carbaryl.

Sprayings were commenced before square for mation and 1st spraying was gtven was on 25.11.63 and were continued at 15 days interval till harvest. A total of 5 spraying were gram.

3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Infestation of Boll worms. (iii) % infestation af Boll worms and yield of *kapas* (iv) (a) 1963 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Yield of *kapas*.

(i) 140 Kg/ha. (ii) 54·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	27	33	219	158	44	40	78	523

C.D.=79·4 Kg/ha.

% infestation.

(i) 71% (ii) 13·8% (iii) Treatment differences are not significant. (iv) Av. % infestation of Boll worm.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. % infestation	89	79	67	65	87	83	39	60

Crop :- Cotton. **Ref :- A.P. 60(208)**

Site :- Cotton. Res. Stn., Nandyal. **Type : 'D'.**

Object; —To find out a suitable insecticide to control Jassids.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 6.9.60. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1 (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (iv) *Laxmi.* (vii) Un irrigated. (viii) 2 to 3 times working of H.M. *guntaka* and *partti gnntaka* and hand weeding. (ix) N.A. (x) 2.4.61 to 18.3.61.

2. TREATMENTS:

(i) 10 insecticidal treatments : T_0=0·1% D.D.T.+0·1% B.H.C. ; T_2=D.D.T. 0·16%, T_3=D.D.T. 0·24%, T_4=Endrin 0·17%, T_5=Endrin 0·025%, T_6=Diazinon 0·025%, T_7=Dibbling 0·033%, T_8=Panathion 0·025%, T_9=Panathion 0·05%.

3. DESIGN :

(i) R.B D. (ii) 10. (c) N.A. (iii) 4. (iv) 12·4 m.×7·0 m. (b) 11·6 m.×6·0 m. (v) 50 cm.×40 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Jassids had appeared severely from November on words. (iii) % infestation of Jassids yield of *kapas*. (iv) (a) 1960—only. (b) No. (c). Nil. (v) and (vii) Nil.

5. RESULTS :

(i) (1) 246 Kg/ha. (ii) 86·76 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatments :	T_0	T_1	T_2	T_3	T_5	T_6	T_7	T_8	T_9	T_{10}
Av. yield	175	175	217	187	333	434	187	276	276	202

Crop :- Cotton. **Ref :- A.P. 96(241), 61(242), 61(243).**

Site :- Cotton. Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control Jassids.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soil. (iii) 26.8.61. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1 (v) 12 Kg/ha. of F.Y.M+22 Kg/ha. of N as A/S. (vi) *Laxmi.* (vii) Un-irrigated. (vii) 2 to 3 intercultivatoins by H.M. *guntaka* ond *patti guntaka* and hand weeding. (ix) N.A. (x) 1st week of March to 1st week of April. 62.

2. TREATMENTS :

8 insecticidal treatments : T_0=Control, T_1=0·1% D.D.T+0·1%B.H.C., T_2=0·02% Endrin, T_3=0·02% Panathion, T_4=0·2% Diazlnon, T_5=0·1% ralathion, T_6=0·1% Sevin and T_7=Gusothion.

Sprayings given at 10 days, 15 days and 20 days interval in three seperate experiments.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 2. (iv) 48·55 sq./m. (b) 30·35 sq./m. (v) N.A. (vi) Yes

4. GENERAL :

(i) Satisfactory. (ii) Infestation of Boll worms. (iii) % infestation of Boll worms and yield of *kapas*. (iv) (a) 1961 only. (b) No. (c) Nil. (vi) to (vii) Nil. (viii) Three seperate expriments depending on the interval of applications of insecticides were conducted. Exprements with 10 days, 15 days, and 20 days interval of applications of insecticides have referene No. 61(241), 61(242), and 61(243) respectively.

5. RESULTS :

61(241)

(i) 376 Kg/ha. (ii)141·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment :	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield :	240	605	314	319	296	719	257

61(242)

(i) 372 Kg/ha. (ii) 184·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield :	324	287	534	319	296	247	704	267

61(243)

(i) 246 Kg/ha. (ii) 51·36 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of*kapas* in Kg/ha.

Treatment :	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield :	210	215	229	250	188	198	388	217

Crop :- Cotton. **Ref :- A.P. 62(265)**

Site :- Cotton. Res. Stn., Nandyal, **Type :-'D'.**

Object : —To find out a suitable insecticide to control Jassids.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soil. (iii) 23.9.62. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm. × 30 cm. (e) 1 (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Un-irrigated. (viii) 2 to 3 times working of H.M. *guntaka* and *patti guntaka* and hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 intervals of sprayings : I_1=10, I_2=15, I_3=20 days interval.

Sub-plot treatments :

9 insecticides : T_0=0·1% D.D.T.+0·1% B.A.C. T_2=0·02% Endrin, T_3=0.02% Parathion, T_4=0·02% Demicron, T_5=0·01% Malathion, T_6=0·01% Sevin, T_7=0·015% Telodrin and T_8=0·02% Thimeton.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main/replication 9 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Infestion of Boll worm. (iii) % Infestation of Boll worm, and yield of *kapas*. (iv) (a) 1962—only. (b) No. (c) Nil. (v) Nil. (vi) Heavy rain fall in December. (vii) Nil.

5. RESULTS:

(i) 210 Kg/ha. (ii) (a) 64·2 Kg/ha. (b) 21·0 Kg/ha. (iii) Main eeffcts of I and T and interaction I×T are significant. (iv) Av. yield of *kapas* in Kg/ha.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Mean
I_1	208	148	222	166	215	225	460	193	253	232
I_2	190	151	175	163	240	232	275	151	181	195
I_3	193	161	151	213	230	220	247	198	227	204
Mean	197	153	183	181	228	226	327	181	220	210

C.D. for I marginal means =27·5 Kg/ha.
C.D. for T marginal means =13·9 Kg/ha.
C.D. for T means at the same level of I =19·6 Kg/ha.
C.D. for I means at the same level of T =35·53 Kg./ha.

Crop :- Cotton. **Ref :- A.P. 60(202).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To find out out a suitable insecticides to control aphids.

1. BASAL CODITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (b) 12 C.L./ha. of F.Y.M. (ii) Black Cotton soils. (iii) 6.9.60. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Un-irrigated. (viii) 2—3 working of hoe *guntaka* and *pathi guntaka* and 1 hand weeding. (ix) N.A. (x) 10.2.61 to 4.3.61.

2. TREATMENTS:

9 insecticidal treatments: T_0=Control, T_2=Parathion 0·025%, T_2=Parathion 0·05%, T_3=Diazinon 0·05%, T_4=Diazinon 0·021%, T_5=Malathion 0.031%, T_6=Malathion 0·46%, T_7=Metasystox 0·021% and T_8=Metasystox 0·03%.

Date of spraying : 6, 7.1.61.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 7·4 m.×8·0 m. (b) 6·0 m.×7·2 m. (v) 70 cm.×40 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Aphids appeared in the last week of December. (iii) Insect population and yield of *kapas*. (iv) (a) 1960—only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 135 Kg/ha. (ii) 153 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	91	173	148	148	179	130	105	105	140

Crop :- Cotton. **Ref :- A.P. 61(244).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control aphids.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black Cotton soils. (iii) 26.8.61. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) N.A. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Unirrigated. (viii) 2-3 times working of H.M. *guntaka* and *prathi guntaka* and 1 hand weeding. (ix) N.A. (x) 2nd week of March, 62.

2. TREATMENTS :

5 insecticidal treatments: T_0=Control, T_1=Metasystox 0·02%, T_2=Malathion 0·05%, T_3=Diazinon 0·02% and T_4=Sevin 0·1%.

Dates of spraying : 12.12.61, 27.12.61 and 11.1.62.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40·5 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) The pest appeared from the 1st week of December. (iii) Population count of Aphids and yield of *kapas*. (iv) (a) 1961—only. (b) No. (c) Nil. (v) Nil. (vi) Heavy downpour in October and no rains from November onwards. (vii) Nil.

5. RESULTS :

(i) 476 Kg/ha. (ii) 118·7Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	422	383	304	450	823

Crop :- Cotton. **Ref :- A.P. 63(259).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To study the efficacy of various spray schedules to get a fairly pest free crop under unirrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 1.9.63. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Unirrigated. (viii) 2-3 times intercultivation with *H.M. guntaka* and *prathi guntaka* and 1 hand weeding. (ix) N.A. (x) 28.2.64 to 8.4.64.

2. TREATMENTS :

6 insecticidal treatments ; T_0=Control (no spray), T_1=Endrin alternated with D.D.T.+B.H.C. (I.C.C.C. schedule), T_2=Methyl Parathion for early pests whenever pests appear and carbary for Boll worm, T_3=0·15% Sevin at 20 days interval for all pests, T_4=Ethyl Parathion for early pests and 0·03% Endrin+0·15% D.D.T. for boll worms and T_5=Control (water spray).

Sprayings commenced on 14.11.63 and 6 sprayings were given for treatments T_1 and 4 sprays for other treatments.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 12·0 m.×7·4 m. (b) 11·2 m.×6·2 m. (v) 40 cm.×60 cm. (vi) Yes.

4. GENERAL

(i) Satisfactory. (ii) Infestation of Boll worm. (iii) Population counts of aphids, Jassids, black arm and yield of *kapas*. (iv) (a) 1963 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

Yield

(i) 118 Kg/ha. (ii) 70·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	30	262	305	266	54	23

C.D.=105·4 Kg/ha,

% Boll worms damage at harvest.

(i) 53 %. (ii) 7·8%. (iii) Treatment differences are highly significant. (iv) Av. % of Boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	93	71	42	47	72	99

C.D.=11·7 %.

Crop :- Cotton. **Ref :- A.P. 64(266), 65(176).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To study the efficacy of various spray schedules to get a fairly pest free crop under un-irrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 2-10.64 ; 30.8.65. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Un-irrtgated. (viii) 2—3 interculturings and 1 hand weeding. (ix) N.A. (x) 19.3.65 to 20.4.65 ; 5.2.66 to 9.3.56.

2. TREATMENTS:

6 insecticidal treatments : T_0=Control (No spray), T_1=Endrin alternated with 0·1% D.D.T.+0·1% B.H.C., T_2=0·15% Carbaryl alternated with 0·05% Methyl Parathion, T_3=0·15% Carbaryl alternated with 0·03% Phosphamedon , T_4=0·02% Methyl Parathion+0·02% Endrin and T_5=0·15% Carbaryl.

Dates of sprayings : 30.11.64, 15.12.64, 30.12.64, 14.1.65, 29.1.65 and 13.2.65 for 64(266) ; 27.10.65, 11.11.65, 26.11.65, 11.12.65, 26.12.65 and 6.1.66 for 65(175).

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/112·3 ha. ; 1/160·4 ha. (b) 1/145·3 ha. ; 1/207·6 ha. (v) N.A. (vi) Yes.

4. GENERAL:

(i)Satisfactory. (ii) Infestation of Jassids and Boll worm. (iii) % of Boll worm damage at harvest and *kapas* yield. (iv) (a) 1964–65. (b) No. (c) Nil. (v) Nil. (vi) Heavy rains at sowing for 64, and failure of Monsoon for 65. (vii) As error variances are heterogeneous and Treatment × years interaction is absent, the results of individual years have been presented under 5. Results.

5. RESULTS:

Yield

64(266)

(i) 308 Kg/ha. (ii) 55·8 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	212	242	362	412	245	376

C.D.=83·8 Kg/ha.

65(176)

(i) 248 Kg/ha. (ii) 104·0 Kg/ha. (iii) Treatment differences are not significant, (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	133	138	259	242	312	404

% Boll worm damage at harvest

64(266)

(i) 47·8%. (ii) 13·4%. (iii) Treatment differences are significant. (iv) Av. % Boll worm damage at harvest

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	77·2	62·7	39·5	24·0	60·5	23·2

C.D.=20·2 %.

65(176)

(i) 55·2%. (ii) 8·1%. (iii) Treatment differences are significant. (iv) Av. Boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	84·7	60·7	60·0	43·7	52·0	30·2

C.D.=12·2 %.

Crop :- Cotton. **Ref :- A.P. 63(260).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To study the efficacy of various spray schedules to get a fairly pest free crop under irrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 26.7.63. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm. × 30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Irrigated. (viii) 2-3 times working of H.M. *guntaka* and *prathi guntaka* and 1 hand weeding. (ix) N.A. (x) 18.1.64 to 30.4.64.

2. TREATMENTS :

6 insecticidal treatments : T_0=Control (No spray), T_1=Endrin alternated with D.D.T.+B.H.C. (I.C.C.C. schedule), T_2=Methyl parathion for early pests and (Sevin) Carbaryl for Boll worm, T_3=Carbaryl for all pests, T_4=Ethyl Parathion for early pests and Endrin+D.D.T. for Boll worm and T_5=Control (water spray).

Spraying commenced on 20.9.63. 9 sprayings for T_1 and 5 sprayings for others.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 16·4 m.×4·8 m. (b) 15·6 m.×3·6 m. (v) 40 cm.×60 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Due to heavy rains, black arm appeared in severe form and copper fungicide (cupramau) sprayed for its control. (iii) Population count of Jassids, Aphids and Boll worm and yield of *kapas*. (iv) (a) 1963—only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Yield of *kapas*

(i) 481 Kg/ha. (ii) 206 Kg/ha. (iii) Treatment differences are not significant. (ix) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	216	426	725	·825	366	328

% of Boll worm damage at harvest

(i) 69%. (ii) 10·6%. (iii) Treatment differences are highly significant. (iv) Av. % of Boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	89	84	29	50	74	89

C.D.=15·9 %.

Croy :- Cotton (*Rabi*) **Ref :- A.P. 64(265), 65(175).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To study the efficacy of various spray schedules to get a fairly pest free crop under irrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 9.10.64 ; 13.8.65. (iv) (a) Working *gorru* thrice and *guntaka* twice. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Irrigated. (viii) 2-3 interculturings and 1 hand weeding. (ix) N.A. (x) 20.3.65 to 17.4.65 ; 8.2.66 to 11.3.66.

2. TREATMENTS:

6 Insecticidal treatments : T_0=Control (no spray), T_1=Endrin alternated with 0·1% D.D.T.+0·1% B.H.C., T_2=0·15% Carbaryl alternated with 0·05% Methyl Parathion, T_3=0·15% Carbaryl alternated with 0·03% Phosphamedor, T_4=0·02% Methyl Parathion +0·02% Endrin and T_5=0·15% Carbaryl.

Dates of sprayings : 28.11.64, 13.12.64, 28.12.64, 12.1.65, 11.2.65 and 26.2.65 for 64(265) ; 30.10.65, 14.11.65, 25.11.65, 14.12.65, 29.12.65 and 13.1.66 for 65(175).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/176·5 ha, ; 1/112·3 ha. (b) 1/411·8 ha. ; 1/142·0 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Stunted growth due to late sowing for 64(265) and Satisfactory for 65(175). (ii) Infestation of Boll worm. (iii) % Boll worm damage at harvest and *kapas* yield. (iv) (a) 1964--65. (b) No. (c) Refer to 5. Results. (v) Nil. (vi) Heavy rain fall for 64(265), failure of monsoon for 65(175). (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS:

Yield

(i) 305 Kg/ha. (ii) 186·9 Kg/ha, (based on 5 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	198	236	280	301	258	558

Individual Results

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	Sig.	S.E./plot	G.M.
Years									
1964	264	334	316	400	312	779	*	401	83·4
1965	133	138	244	202	205	338	N.S.	210	63·2
Pooled	198	236	280	301	258	553	N.S.	305	186·9

64(265)

(i) 64·9 %. (ii) 16·0 %. (iii) Treatment differences are significant. (iv) Av. % Boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	87·5	58·5	73·5	60·5	79·7	29·5

C.D.=24·1 %.

(i) 63·5 %. (ii) 8·4 %. (iii) Treatment differences are significant. (iv) Av. % Boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. % damage	92·2	69·5	57·2	55·7	77·0	29·5

C.D.= 12·6 %.

Crop :- Cotton. **Ref :- A.P. 64(263), 65(178).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object: —To test the efficacy of various synthetic insecticides against Jassids and Aphids.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. *(ii)* Black cotton soil. (iii) 2.10.64 ; 30.8.65. (iv) (a) Working *gorru* 3 times and *guntaka* twice. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi.* (vii) Un-irrigated. (viii) 2 to 3 times interculturing with H.M. *guntaka* and *prathi guntaka* and 1 hand weeding. (ix) N.A. (ix) 13.3.65 to 15.4.65 ; 4.2.66 to 8.3.66.

2. TREATMENTS:

8 insecticidal treatments: T_0=Control (no spraying), T_1=0·05% Methyl Parathion, T_2=0·03% Phoshamedon+0·03% Endrin, T_3=0·15% Carbaryl, T_4=0·02% Endrin+0·02% Methyl Parathion, T_5=10% Carbaryl dust at 22 Kg/ha., T_6=0·15% Carbaryl+0·1% Thiometon and T_7=0·03% Endrin+0·15% D.D.T.

Dates of spraying : 1, 16, 31.12.64 ; 15, 30.1.65 and 14.2.65 for 64(263) ; 29.10.65, 13, 28.11.65, 13, 28.12.65 and 12.1.66 for 65(178).

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 89·0 sq. m. (b) 72·8 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Jassids appeared in the last week of November, 64 and October, 65. (iii) % infestation of Jassids, population counts and yield of *kapas.* (iv) (a) 1964 - 65. (b) N.A. (c) Nil. (v) Nil. (vi) Heavy rains during sowing period during 1964 and failure of monsoon rains during 1965. (vii) Error variances are heterogeneous and Treatments×years interaction is absent the results of individual years are presented under 5—Results.

5. RESULTS :

Yield of *kapas*

64(263)

(i) 362 Kg/ha. (ii) 43·6 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	233	299	438	519	336	326	444	300

C.D.=64·1 Kg/ha

65(178)

(i) 401 Kg/ha. (ii) 82 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	130	397	491	546	332	418	549	345

% Boll damage at harvest

64(263)

(i) 35·7 %. (ii) 12·8 %. (iii) Treatment differences are not significant. (iv) Av. % of Boll damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. % damage	53·2	47·7	18·2	16·5	46·7	33·7	20·7	49·0

65(178)

(i) 35·0 %. (ii) 10·8 %. (iii) Treatment differences are not significant. (iv) Av. % damage of bolls at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. % damage	57·7	46·7	22·0	18·2	45·2	32·5	21·7	35·7

Crop :- Cotton (*Rabi*). **Ref :- A.P. 64(267), 65(177).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To find out a suitable insecticide to control Boll worm in desi Cotton under rainfed conditions.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 2.10.64 ; 3.9.65. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbiing. (c) 10 Kg/ha. (d) 53 cm. × 30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Desi*. (vii) Un-irrigated. (viii) Hand weedings and working of H.M. *guntaka* and *prathi guntaka*. (ix) N.A. (x) 13.3.65 to 20.4.65 ; 7.2.66 to 10.3.66.

2. TREATMENTS :

7 insecticidal treatments : T_0=Control (No spray), T_1=0·03% Methyl Parathion+0·15% D.D.T., T_2=0·15% Carbaryl+0 03% Phosphamedon, T_3=0·03% Telodrin, T_4=0·15% Carbaryl (spray), T_5=10% Carbaryl (dust) and T_6=0·02% Endrin+0·1% Theimeton.

Dates of application : 8.1.65, 23.1.65 and 7.2.65 for 64(267) and 26.11.65, 11.12.65, 26.12.65 and 10.1.66 for 65(177).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 1/137·3 ha. for 64(267) ; 1/168·1 ha. for 65(177). (b) 1/190 ha. for 64(267) ; 1/226·7 ha. for 65(177). (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Inefstation of Boll worm. (iii) Yield of *kapas* and infestation of Boll worm (iv) (a) 1964—65. (b) No. (c) Nil. (v) N.A. (vii) Failure of monsoon for 65(177) ; heavy rains during sowing period for 64(267). (vii) Error variances are homogeneous and Treatment × years interaction is present

5. RESULTS

Yield

Pooled results

(i) 220 Kg/ha. (ii) 153·7 Kg/ha. (based on 6 d.f. made up of Treatments × years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	149	142	275	185	384	192	212

Individual results

Years	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Sig	G.M.	S.E./plot
1964	190	220	436	229	456	321	214	*	295	39·8
1965	108	64	114	141	313	64	210	*	145	46·8
Pooled	149	142	275	185	384	192	212	N.S.	220	153·7

% infestation of Boll worm at harvest.

64(267)

(i) 35·7 %. (ii) 6·8 %. (iii) Tretament differences are significant. (iv) Av. % boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. % damage	56·7	41·2	14·7	41·5	18·2	34·7	43·0

C.D.=10·0 %.

65(177)

(i) 45·6 %. (ii) 7·0 %. (iii) Treatment differences are significant. (iv) Av. % infestation of Boll worm at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. % infestation	76·2	40·0	35·2	52·2	26·7	44·7	44·0

C.D.=10·3 %.

Crop :- Cotton. **Ref :- A.P. 63(261).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To test the efficacy of various new insecticides against pests.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soils. (iii) 1.9.63. (iv) (a) Working *gorru* 3 times and *guntaka* 2 times. (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M.+22 Kg/ha. of N as A/S. (vi) *Laxmi*. (vii) Unirrigated. (viii) 2-3 times working of H.M. *guntaka* and *Prathi guntaka* and hand weeding once. (ix) N A. (x) 29.1.64. to 8.4.64.

2. TREATMENTS:

8 insecticidal treatments : T_0=Control, T_1=D.D.T.+B.H.C.—0·15 % each, T_2=Endrin 0·03 %+D.D.T. 0·15 %, T_3=Methyl, parathion 0·1 %, T_4=Phosphamedan (Dimecron) 0·1 %, T_5=Carbaryl (sevin) 0·15 %, T_6=Telodrin 0·03 % and T_7=Thiveton 0·1 %

Sprayings given on 12.11 63, 27.11.63, 12.12.63, 27.12.63, 11.1.64 and 26.1.64.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 12·0 m.×7·4 m. (b) 11·2 m.×6·2 m. (v) 40 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Jassids appeared in the crop by the end of October, 63. (iii) Population count of Jassids, Aphids and yield of *kapas*. (iv) (a) 1965 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Yield of *kapas*

(i) 749 Kg/ha. (ii) 202·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	89	141	1517	257	319	2619	961	91

C.D.=298·0 Kg/ha.

% Boll worm damage at harvest

(i) 78 % (ii) 12·8 % (iii) Treatment differences are significant. (iv) Av. % boll worm damage at harvest.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. % damage	98	94	62	93	77	32	74	96

C.D.=18·8 %.

Crop :- Cotton. **Ref :- A.P. 65(185).**

Site :- Cotton. Res. Stn., Nandyal. **Type :- 'D'.**

Object :—To study the influence of the plant harmone planofix (N.A.A.) and insecticide Sevin individualey and in combination with each other in graded doses on the yield of Cotton.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 C.L./ha. of F.Y.M. (ii) Black cotton soil. (iii) 7.9.65. (iv) (a) Working *Gorru* and *guntaka* alternatively (b) Dibbling. (c) 10 Kg/ha. (d) 53 cm.×30 cm. (e) 1. (v) 22 Kg/ha. of N as C/A/N. (iv) Nandicum. (vii) Un-irrigated. (viii) 2—3 intercultivations with H.M. *guntaka* and *parthi guntaka* and hand weeding. (ix) N.A. (x) 25.2.66 to 23.3.66.

2. TREATMENTS:

T_0=Control, T_1=Planofix 20 p.p.m., T_2=Planofix 40 p.p.m., T_3=Planofix 60 p.p.m., T_4=Planofix 80 p.p.m., T_5=Sevin 28·35 gm./4·55 litres of water, T_6=T_5+planofix 20 p.p.m., T_7=T_5+Planofix 40 p.p.m., T_8=T_5+Planofix 60 p.p.m., T_9=T_5+Planofix 80 p.p.m. and T_{10}=Water spray.

The sprayings were done in 3 monthly instalments commencing from the Squaring stage during November.

3. DESIGN:

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×3·2 m. (b) 7·9 m.×3·2 m. (v) 61 cm. on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Attack of Boll worm. (iii) % Boll worm damage and yield of *Kapas*. (iv) (a) 1965—only. (b) and (c) Nil. (v) Nil. (vi) Failure of monsoon rains. (vii) Nil.

5. RESULTS:

(i) 321·2 Kg/ha (ii) 88·1 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of *Kapas* in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	389	251	236	358	337	334	326	421

Treatment	T_8	T_9	T_{10}
Av. yield	251	352	276

Crop :- Mesta. **Ref :- A.P. 63(41), 64(58), 65(45).**

Site :- Mesta Res. Stn., Amadalavalasa. **Type :- 'M'.**

Object :—To study the effect of different methods of application of N on the yield of Mesta.

1. BASAL CONDITIONS:

(i) (a) Groundnut—Mesta for 65 and Nil for others. (b) Mesta for 63, N.A. for 64, Groundnut for 65. (c) Nil for 65, and N.A. for others. (ii) Sandy loam. (iii) 7.6.63; 19.6.64; 17.7.65. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) 16·8 Kg/ha. (d) and (e) N.A. (vi) 12·3 C.L./ha. of F.Y.M. (vi) N.A. for 63, 481/2 for 64; A.M.V. – 1 for 65. (vii) Un-irrigated. (viii) 2 hand weedings and hoeings. (ix) 65·7 cm. for 65 and N.A. for othe.s. (x) 30.10.63; 17.11.64; 11.12.65.

2. TREATMENTS:

All combinations of (1) and (2) + a control.

(1) 2 levels of N : N_1=22·4 and N_2=44·8 Kg/ha.

(2) 4 methods of applications : M_1=As basal dressing, M_2=As top dressing 1 month after sowing, M_3=½ as basal dresing and ½ as top dressing 1 month after sowing and M_4=½ as basal dressing, ¼ 1 month after sowing and ¼, 2 months after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 24·7 m.×21·3 m. (iii) 4. (iv) (a) 7·6 m.×6·7 m. (b) 7 0 m.×6·1 m. (d) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of fibre. (iv) (a) 1963--66. (b) No. (c) Nil. (v) N.A. (vi) Cyclonic weather prevail during the month of September for 64. (vii) 1 replication was damaged by cattle for 65 and Nil for others. As the expt. is continued beyond 65, therefore individual years results are given below.

5. RESULTS :

63(41)

(i) 1431 Kg/ha. (ii) 23·4 Kg/ha. (iii) Main effects of N, M and control *vs.* others are highly significant. (iv) Av. yield of fibre in Kg/ha.

Control=1102 Kg/ha.

	M_1	M_2	M_3	M_4	Mean
N_1	1342	1436	1450	1463	1423
N_2	1492	1520	1534	1539	1521
Mean	1417	1478	1492	1501	1472

C.D. for N marginal means=17 1 Kg/ha.

C.D. for M marginal means=24·1 Kg/ha.

C.D. for 'control *vs.* others'=25·6 Kg/ha.

64(58)

(i) 1658 Kg/ha. (ii) 133·6 Kg/ha. (iii) Main effect of M, 'control *vs.* others' and interaction N×M are highly significant., Effect of N is significant. (iv) Av. yield of fibre in Kg/ha.

Control=1082 Kg/ha.

	M_1	M_2	M_3	M_4	Mean
N_1	1611	1465	1757	1880	1678
N_2	2093	1436	1836	1764	1782
Mean	1852	1450	1796	1822	1730

C.D. for N marginal means = 97·4 Kg/ha.

C.D. for M marginal means =137·9 Kg/ha.

C.D. for means in the body of N×M table=195·0 Kg/ha.

C.D. for control *vs* others =146·1 Kg/ha.

65(45)

(i) 1105 Kg/ha. (ii) 133 6 Kg/ha. (iii) Main effect of M and 'control *vs.* others' are highly significant. (iv) Av. yield of fibre in Kg/ha.

Control=874 Kg/ha.

	M_1	M_2	M_3	M_4	Mean
N_1	1327	1073	1093	1158	1163
N_2	1310	1069	914	1131	1106
Mean	1318	1071	1004	1144	1134

C.D. for M marginal means=137·9 Kg/ha.

C.D. for 'control *vs.* others'=146·1 Kg/ha.

Crop :- Mesta (*Kharif*). **Ref :- A.P. 62(102).**

Site :- Mesta Res. Stn, Amadalavalasa. **Type :- 'M'.**

Object :—To find out suitable method of application of N and its effect on the yield of Mesta.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Alluvial. (iii) 10.6.62. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) 16·8 Kg/ha. (d) and (e) N.A. (v) Nil. (vi) 481/2. (vii) Un-irrigated. (viii) 2 hand weedings and hoeings. (ix) N.A. (x) 7.11.62.

2. TREATMENTS :

6 manurial treatments : M_0=No Nitrogen, M_1=22·4 Kg/ha. of N as basal dressing, M_2=22·4 Kg/ha. of N as top dressing 1 month after sowing, M_3=44 Kg/ha. of N as basal dressing, $M_4=M_1+M_2$ and $M_5=M_1+11·2$ Kg/ha. of N as top dressing 1 month after sowing and 11·2 Kg/ha. of N as top dressing 2 months after sowing.

N as A/S applied by broadcasting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 21·3 m.×15·9 m. (ii.) 4. (iv) (a) 7·6 m.×6·7 m. (b) 7.0 m.×6·1 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Below normal. (ii) Nil. (iii) Yield of fibre. (iv) (a) 1962—only. (b) and (c) and (v) to (vii) Nil.

5. RESULTS :

(i) 1024 Kg/ha. (ii) 168·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of fibre in Kg/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	742	922	1076	1064	1110	1233

C.D.=253·1 Kg/ha.

Crop :- Mesta (*Kharif.*) **Ref :- A.P. 60(80), 61(82).**

Site :- Mesta Res. Stn., Amadalavalasa. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on the yield of Mesta.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy loam. (iii) 10.6.60. ; 2.6.61. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) 16·8 Kg/ha. (d) Nil. (e) 1. (v) Nil. (vi) RT—2. (vii) Unirrigated. (viii) 2 hand weedings and hoeings. (ix) N.A. (x) 23.11.60 ; 28.11.61.

2. TREATMENTS:

All combinations of (1), (2) and (3)

(i) 3 levels of N as A/S : N_0=0, N_1=44·8 and N_2=89·7 Kg/ha.
(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=44·8 Kg/ha.
(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=44·8 Kg/ha.

Fertilizer applied by broadcasting as basal.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 7·6 m. × 6·7 m. (b) 7·0 m. × 6·1 m. (v) 30 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Below normal. (ii) Nil for 60(80) ; incidence of Jassids at early stages controlled by spraying Gamaxine 50 % once for 61(82). (iii) Yield of fibre. (iv) (a) 1959—61 (Treatments modified in 60). (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results.

(i) 944 Kg/ha. (ii) 230·1 Kg/ha. (based on 43 d.f. made up of pooled error and interaction of various components of treatments with years). (iii) Main effect of N alone is highly significant. (iv) Av. yield of fibre in Kg/ha.

	P_0	P_1	K_0	K_1	Mean
N_0	658	680	722	616	669
N_1	1054	975	924	1105	1014
N_2	1093	1204	1154	1143	1148
Mean	935	953	933	955	944
K_0	914	952			
K_1	956	954			

C.D. for N marginal means=140·2 Kg/ha.

Individual rosults.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	Sig.	K_0	K_1
Years									
1960	583	861	977	**	789	876	N.S.	840	771
1961	755	1168	1319	**	1082	1080	N.S.	1027	1134
Pooled	669	1014	1148	**	935	953	N.S.	933	955

Sig.	G.M.	S.E./plot
N.S.	787	258.4
N.S.	1081	217·6
N.S.	944	230·1

Crop :- Mesta (*Kharif*). **Ref :- A.P. 62(101), 63(43).**

Site :- Mesta Res. Stn., Amadalavalasa. **Type :- 'C'.**

Object :—To determine the optimum seed rate for Mesta crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) Alluvial. (iii) 8.6.62 ; 6.6.63. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) As per treatments. (d) Nil. (e) N.A. (v) 12·4 C.L./ha. of F.Y.M. as basal and 22·4 Kg/ha. of N as A/S as top dressing for 62; 12·4 C.L./ha. of F.Y.M. for 63. (vi) RT.—2 for 62; 481/2 for 63. (vii) Unirrigated. (viii) 2 hand weedings and hoeings. (ix) N.A. (x) 5.11.62; 2.11.63.

2. TREATMENTS:

6 seed rates : R_1=5·6, R_2=11·2, R_3=16·8, R_4=22·4, R_5=28·0 and R_6=33·6 Kg/ha.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) 16·5 m.×16·8 m. for 62; N.A. for 63. (iii) 6. (iv) (a) 7·9 m.×5·2 m. (b) 7·3 m.×4·6 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Av. plant height, base diameter and yield of fibre. (iv) (a) 1962—63. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Since the error variances are heterogeneous and Treatments×years interaction is absent, therefore the individual years results are presented below.

5. RESULTS :

62(101)

(i) 829 Kg/ha. (ii) 97·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in Kg/ha.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6
Av. yield	833	786	845	860	854	798

63(43)

(i) 593 Kg/ha. (ii) 21·3 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in Kg/ha.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6
Av. yield	539	608	638	650	573	540

C.D.=25·3 Kg/ha.

Crop :- Mesta (*Kharif*). **Ref :- 60(82), 61(83), 62(100), 63(42), 64(59), 65(44).**

Site :- Mesta Res. Stn., Amadalavalasa. **Type :- 'C'.**

Object :—To study the effect of different spacings between rows and plants on the yield of Mesta.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Mesta for 65 ; Nil for others. (b) Groundnut for 65 ; N.A. for others. (c) Nil for 65 ; N.A. for others. (ii) Sandy loam. (iii) 21.6.60 ; 2.6.61 ; 7.6.62 ; 8.6.63 ; 21.6.64 ; 18.7.65. (iv) (a) 3 ploughings. (b) Drilling and Broadcasting. (c) 16·8 Kg/ha. (d) As per treatments. (e) 1. (v) 12·3 C.L./ha. of F.Y.M. as basal and 22·4 Kg/ha. of N as A/S as top dressing for 60, 61,62 and 63 ; 22·4 Kg/ha. of N as Urea as top dressing for 64 and 125·5 R/ha. of F.Y.M.+22·4 Kg/ha. of N as A/S+ 22·4 Kg/ha. of P_2O_5 for 65. (vi) RT—2 for 60, 61, 62 ; 481/2 for 63, 64 ; AMV—1 for 65. (vii) Unirrigated (viii) 2 hand hoeings and weedings. (ix) 65·7 cm. for 65 ; N.A. for others. (x) 17.11.60 ; 30.11.61 ; 5.11.62; 1.11.63 ; 30.11.64 ; 11.12.65.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 3 spacings between rows : R_1=23, R_2=30 and R_3=38 cm.

(2) 3 spacings between plants : S_1=5, S_2=10 and S_3=15 cm.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 25·3 m.×18·9 m. (iii) 4. (iv) (a) and (b) 9·1 m.×4·6 m, (v) Nil. (vi) Yes.

4. GENERAL :

(i) Below normal for 60, 62 ; Normal for others. (ii) Nil except in expt. no. 61(83) there was incidence of Jassids at early stage and 50 % Gamaxene sprayed. (iii) Yield of fibre. (iv) (a) 1959—65. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Experiment for the year 1959 has also been included. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 840 Kg/ha. (ii) 195·4 Kg/ha. (based on 54 d.f. made up of Treatments×years interaction). (iii) Main effects of R is highly significant and main effect of S in significant. (iv) Av. yield of fibre in Kg/ha.

Control=872 Kg/ha.

	S_1	S_2	S_3	Mean
R_1	894	905	837	879
R_2	867	907	822	865
R_3	823	792	716	777
Mean	861	868	792	840

C.D. for R or S marginal means=60·5 Kg/ha.

Individual results.

Treatment	R_1	R_2	R_3	Sig.	S_1	S_2	S_3	Sig.	G.M.	S.E./Plot
Years										
1960	410	425	443	N.S.	451	433	394	N.S.	418	101·3
1961	1210	1053	944	**	1129	1139	934	N.S.	1091	119·6
1962	604	501	481	N.S.	599	488	499	N.S.	535	131·8
1963	931	1097	1024	**	1005	1041	1006	N.S.	1000	16·0
1964	1424	1476	1191	**	1348	1429	1314	**	1375	63·6
1965	1106	1053	950	**	1115	1054	941	**	1043	95·3
Pooled	879	865	777	N.S.	861	868	792	N.S.	840	195·4

Crop :- Mesta (*Kharif*). **Ref :- A.P. 60(81), 61(84).**

Site :- Mesta Res. Stn., Amadalavalasa. **Type :- 'C'.**

Object :—To determine the optimum seed rate for Mesta crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy loam. (iii) 20.6.60 ; 31.5.61. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. (c) As per treatments. (d) Nil. (e) N.A. (v) 12·3 C.L./ha. sf F.Y.M. as basal and 22·4 Kg/ha. of N as A/S as top dressing. (vi) RT—2. (vii) Unirrigated. (viii) 2 hand weedings and hoeings. (ix) N.A. (x) 21.11.60 ; 13.10.61.

2. TREATMENTS :

8 seed rates : R_1=5·6, R_2=11·2, R_3=16·8, R_4=22·4, R_5=28·0, R_6=33·6, R_7=39·2 and R_8=44·8 Kg/ha.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 22·6 m.×16·5 m. (iii) 4. (iv) (a) 7·9 m.×5·2 m. (b) 7·3 m.×4·6 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Below normal. (ii) Nil for 60 ; incidence of Jassids at early stages and spraying of Gamaxine 50 % once for 61. (iii) Yield of fibre. (iv) (a) 1959—61. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Results of Expt. for the years 1959 have also been included while giving combined results. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 936 Kg/ha. (ii) 31642 Kg/ha. (based on 14 d.f. made up of Treatments×years interaction. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in Kg/ha.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6	R_7	R_8
Av. yield	705	778	985	951	997	984	1040	1044

Individual results.

Treatments	R_1	R_2	R_3	R_4	R_5	R_6	R_7	R_8	Sig.	G.M.	S.E./plot
Years											
1960	493	500	533	538	532	475	520	510	N.S.	513	57·8
1961	1097	1115	1704	1584	1715	1677	1825	1848	**	1517	267·5
Pooled	705	778	985	951	997	984	1040	1044	N.S.	936	316·2

Crop :- Tobacco (*Rabi*). **Ref :- A.P. 64(26).**

Site :- Tobacco Res. Stn., Burganpad. **Type :- 'M'.**

Object :—To study the effect of manures on the yield of Cigarette Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tobacco. (c) 22·4 Kg/ha. of N+22·4 Kg/ha. of P_2O_5 and 56·0 Kg/ha. of K_2O. (ii) Black clay loam. (iii) N.A./5.11.64. (iv) (a) 2 ploughings and harrowings. (b) to (c) N.A. (v) As per treatments. (vi) Cigarette tobacco. (vii) Irrigated. (viii) Ploughing was done as an interculture after irrigation. (ix) Nil. (x) 29.1.65. 5, 12, 19.2.65.

2. TREATMENTS :

6 manurial treatments : M_1=44·8 Kg/ha. of N as Urea, M_2=44·8 Kg/ha. of N as A/S, M_3=44·8 Kg/ha. of N as C/A/N, M_4=44·8 Kg/ha. of N as A/S/N, M_5=44·8 Kg/ha. of N as Nitrophos. and M_6=22·4 Kg/ha. of N as A/S.

100 Kg/ha. of each of P_2O_5 and K_2O as Super and Pot. Sul. respectively given to M_1 to M_4 plots.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/143·8 ha. (b) 1/237·6 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Tofedrine was sprayed to control Grass hopper. (iii) Yield of cured leaf and bright leaf. (iv) (a) 1964 only. (b) and (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS:

I. Cured leaf

(i) 1299 Kg/ha. (ii) 212 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1354	1292	1305	1233	1505	1105

II. Bright leaf

(i) 713 Kg/ha. (ii) 138 Kg/ha. (iii) Treatment differences are not significant, (iv) Av. yield of bright leaf in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	773	697	719	650	872	566

Crop :- Tobacco. **Ref :- A.P. 60(224).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object : —To find out the best manurial schedule for white ash Tobacco,

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black cotton soil. (iii) 16.11.60. (iv) (a) Tractor ploughing. (b) Broadcasting onraised seed beds. (c) 14230 seedlings/ha. (d) 84 cm. × 84 cm. (e) I. (v) 22 C.L./ha. of F.Y.M. (vi) Guntur white tobacco. (vii) Unirrigated, (viii) Topping once and desuckering 3 times. (ix) N.A. (x) 6.3.61.

2. TREATMENTS :

8 manurial treatments : M_1=22 Kg/ha. of N as G.N.C., $M_2=M_1+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_3=22 Kg/ha. of N as A/S, $M_4=M_3+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_5=11 Kg/ha. of N as G.N.C. +11 Kg/ha. of N as A/S, $M_6=M_5+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_7=15 C.L./ha. of F.Y.M. and $M_8=M_7+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 13·4 m. × 6·7 m. (b) 11·7 m. × 6·7 m. (v) 84 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cured leaf. (iv) 1958—60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 670 Kg/ha. (ii) 212·7 Kg. (iii) Treatment differences are not significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	644	586	702	586	711	721	788	624

Crop :- Tobacco. **Ref :- A.P. 60(222).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'M'.**

Object :—To find out the best manurial schedule for Guntur white ash Tobacco.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black cotton soil. (iii) 21.11.60. (iv) (a) Tractor ploughing. (b) Broadcasting on raised seed-beds. (c) 14230 seedlings/ha. (d) 84 cm. × 84 cm. (e) 1. (v) 22 C.L./ha. of F.Y.M. (vi) Guntur white ash Tobacco. (vii) Unirrigated. Desuckering 3 times and topping once. (ix) N.A. (x) 9.3.61.

2. TREATMENTS :

8 manurial treatments: M_1=45 Kg/ha. of N as G.N.C., $M_2=M_1+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_3=45 Kg/ha. of N as A/S, $M_4=M_3+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_5=22 Kg/ha. of N as G.N.C.+22 Kg/ha. of N as A/S, $M_6=M_5+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O, M_7=30 C.L./ha. of F.Y.M. and $M_8=M_7+22$ Kg/ha. of P_2O_5+22 Kg/ha. of K_2O

Date of manuring is 19.11.60., P_2O_5 as Super, K_2O as Pot. Sul. applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 13·4 m. × 10·1 m. (b) 2·6 m. × 10·1 m. (v) 42 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cured leaf. (iv) (a) 1958-60. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 829 Kg/ha. (ii) 196·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	879	721	836	826	894	754	932	793

Crop :- Tobacco. **Ref :- A.P. 60(223).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'C'.**

Object :— To find out correct stage of topping for Tobacco.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black cotton soil. (iii) 14.11.60. (iv) (a) Ploughing with tractor. (b) Broadcasting on raisd seed beds. (c) 14230 seedlings/ha. (d) 84 cm. × 84 cm. (e) 1. (v) 22 C.L./ha. of F.Y.M., 235 Kg/ha. of A/S, 207 Kg/ha. of Super, 78 Kg/ha. of Pot. Sul. (vi) Guntur white ash Tobacco. (vii) Unirrigated. (viii) Topping once as per treatments and desucking twice. (ix) N.A. (x) 1.3.61.

2. TREATMENTS :

4 topping treatments : T_1=Topping 14 leaves, T_2=Topping 16 leaves, T_3=Topping 18 leaves and T_4=Topping along flower head.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 16·8 m. × 10·1 m. (b) 15·1 m. × 10·1 m. (v) 84 cm. on either side along breadth. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of cured leaf. (iv) (a) 1953-60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 514 Kg/ha. (ii) 85·6 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	625	508	466	457

C.D.=117·9 Kg/ha.

Crop :- Tobacco. **Ref :- A.P. 62(279).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'C'.**

Object :— To find out the effect of mulching with Paddy straw on the yield of white Ash Tobacco.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black/cotton soil. (iii) 16.10.62. (iv) (a) Tractor ploughing. (b) Broadcasting on raisd seed beds. (c) 14·230 seedlings/ha. (d) 84 cm.×84 cm. (e) 1. (v) Nil. (vi) Guntur white Ash Tobacco. (vii) Unirrigated. (viii) Interculturing topping and suckering once. (ix) N.A. (x) 2.1.63.

2. TREATMENTS :

2 cultural treatments : T_0=No mulching and T_1=Mulching with paddy straw at 7·4 C.L/ha. after 1st Mulching on 21.11.62. intercultur.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 10·1 m.×10·1 m. (b) 9·5 m.×9·5 m. (v) 27 cm.×27 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cured leaf. (iv) (a) 1962 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rains just after sowing. (vii) Nil.

5. RESULTS :

(i) 6263 Kg/ha. (ii) 808·7 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	T_0	T_1
Av. yield	6603	5922

Crop :- Tobacco. **Ref :- A.P. 61(257).**

Site :- Agri. Res. Stn., Warangal. **Type :- 'CM'.**

Object :—To find out the optimum manurial dose and correct stage of topping for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black Cotton soil. (iii) 27.10.61. (iv) Nil. (a) Tractor ploughing. (b) Broadcasting on raised seed beds. (c) 14230 seedlings/ha. (d) 84 cm.×84 cm. (e) 1. (v) Nil. (vi) Guntur white ash tobacco. (vii) Un-irrigated. (viii) Topping, interculturing and desuckering as per treatments. (ix) N.A. (x) 2.2.62.

2. TREATMENTS :

Main-plot treatments:

4 levels of topping : T_1=Topping with 14 leaves, T_2=Topping with 16 leaves, T_3=Topping with 18 leaves and T_4=Topping flower head

Sub-plot treatments :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=22 and N_2=45 Kg/ha.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=67 and P_2=134 Kg/ha.
(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=45 and K_2=90 Kg/ha.

Manures applied on 26.10.61.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 4 main-plots/replication ; 9 sub-plots and 3 blocks/main-plot. (b) N.A. (iii) 1. (iv) (a) 7·5 m.×5·0 m. (b) 5·9 m.×3·4 m. (v) 84 cm.×84 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cured leaf. (iv) (a) 1961 only. (b) and (c) Nil. (v) Nil. (vi) Heavy rainfall of 11·8 cm. on 27.10.61 and 4·5 cm. on 28.10.61. (vii) Nil.

5. RESULTS :

(i) 182 Kg/ha. (ii) (a) 63·4 Kg/ha. (b) 67·2 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of cured leaf in Kg/ha.

	T_1	T_2	T_3	T_4	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	168	190	188	156	163	173	190	170	208	151	176
N_1	190	170	188	185	183	193	175	181	175	195	184
N_2	205	175	183	180	185	180	190	198	178	180	185
Mean	188	178	186	174	177	182	185	183	187	175	182
K_0	208	178	173	173	188	185	178				
K_1	208	178	193	170	161	195	203				
K_2	148	130	195	180	183	168	175				
P_0	178	183	190	156							
P_1	195	188	173	173							
P_2	190	166	195	193							

Crop :- Tobacco. **Ref :- 62(10), 63(14), 64(25).**

Site :- Tobacco Res. Stn., Burgampad. **Type :- 'CMV'.**

Object :—To compare the farm method with the formers method of Tobacco cultivations.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Tobacco in 62, *Jowar* in 63 and 64. (c) N.A. (ii) Silty loam and black loam. (iii) 20.10.62; N A. for 63, 64. (iv) (a) As per treatments. (b) Planting. (c) N.A. (d) As per treatments. (e) N.A. (v) 22·4 Kg/ha. of N+56 Kg/ha. of each of P_2O_5 and K_2O. (vi) As per treatments. (vii) Un-irrigated. (viii) 3 hoeings and harrowing. (ix) N.A. (x) 2.1.63 to 20.2.63 25.1.64 to 29.2.64 29.1.65 27.2.65.

2. TREATMENTS :

2 methods of tobacco cultivation : T_1=Farms methods. (i) Deep ploughing done up to 23 cm. to 30 cm. depth in summer season ligher with tractor or crnobar digging and subsequently 3 ploughings and 2 harrowings done. (ii) 30 Kg/ha. of N as G.N.C.+100 Kg/ha. of K_2O applied just before planting and 20 Kg/ha. of N applied 4 weeks before ptanting. (iii) Panting Delerat variety seedlings along the manurial rows at 84×84 cm. spacing. (iv) Application of dinine 50% wettab e powder at 2·2 Kg/ha. in transplanting water for the control of ground beetles. (v) Topping is done when a few flowers open on pancle and desuckering at weekly interval. T_2=Farmers methods (i) 5 ploughings and 2 harrowings, (ii) 112 Kg/ha. of A/S broadcast 10 days before planting and ploughing. (iii) Planting of Varigina and Gold seedlings at a distance of 84 cm.×84 cm.

3. DESIGN:

(i) R.B.D. (ii) (a) 2 (b) N A. (iii) 12. (iv) (a) N.A. (b) 1/237·6 ha. (v) 1 row all around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 71 gm. Taffiline and 13 gm. of Micops in 45 litres of water was sprayed. (iii) Yield of cured leaf. (iv) (a) 1962—64. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogenous and Treatments×year interaction is absent, hence the results of individual years are presented below.

5. RESULTS :

Cured leaf

62(10)

(i) 925 Kg/ha. (ii) 52 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	T_1	T_2
Av. yield	988	862

C.D.=46·7 Kg/ha.

63(14)

(i) 461 Kg/ha. (ii) 24 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	T_1	T_2
Av. yield	524	398

C.D.=20·6 Kg/ha.

64(25)

(i) 663 Kg/ha. (ii) 135 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of cured leaf in Kg/ha.

Treatment	T_1	T_2
Av. yield	791	534

C.D.=115·8 Kg/ha.

Bright leaf

63(14)

(i) 201 Kg/ha. (ii) 24 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of bright leaf in Kg/ha.

Treatment	T_1	T_2
Av. yield	278	123

C.D.=20·6 Kg/ha.

65(25)

(i) 510 Kg/ha. (ii) 145 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of bright leaf in Kg/ha.

Treatment	T_1	T_2
Av. yield	620	400

C.D.=124·4 Kg/ha.

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 64(144), 65(8).**

Site :- Agri. Res. Stn., Amravathi. **Type :- 'M'.**

Object :— To find out suitable manurial schedule for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cowpea. (c) 56 Kg/ha. of A/S and 140 Kg/ha. of Super. (ii) Black soil. (iii) 8.1.64, 4.1.65. (iv) (a) 3/4 ploughings with country plough. (b) Dibbling. (c) 134·5 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) TMV—2 (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 20.4.64; 3.5.65.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4).

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.
(2) 3 levels of P as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.
(4) 4 levels of F.Y.M. : F_0=0, F_1=5600, F_2=11200 Kg/ha.

All fertilizers and F.Y.M. were applied by soil application as basal dose.

3. DESIGN :

(i) 3^4 confd. (ii) (a) 9 blocks/replication ; 9 plots/block. (b) N.A. (iii) 1. (iv) (a) 7·3 m.×5·5 m. (b) 7·0 m.×5·0 m. (v) 23 cm.×15 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of Jassid and Tikka leaf controlled by Endrin and Parathion spray. (iii) Yield of Pods. (iv) (a) 1964-65. (b) N.A. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years intraction is absent.

5. RESULTS :

Pooled results.

(i) 2693 Kg/ha. (ii) 311·1 Kg/ha. (based on 64 d.f. made up of poold error and interaction of years with N, P, K, F, N×P, N×K, N×F, P×K, P×F and K×F. (iii) Main effect of N is highly significant. (iv) Av. yield of pods in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	2371	2644	2642	2571	2615	2470	2428	2650	2578	2552
N_1	2714	2737	2747	2736	2713	2750	2777	2741	2681	2733
N_2	2781	2771	2836	2714	2832	2842	2790	2791	2807	2796
Mean	2622	2717	2742	2673	2720	2687	2665	2727	2689	2693
F_0	2482	2756	2757	2671	2753	2570				
F_1	2747	2706	2728	2699	2668	2814				
F_2	2637	2690	2740	2650	2738	2679				
K_0	2600	2719	2701							
K_1	2634	2718	2808							
K_2	2632	2714	2717							

C.D. for N marginal means=119·7 K/ha.

Individual results

Treatments	P_0	P_1	P_2	Sig.	K_0	K_1	K_2	Sig.
Years								
1964	2724	2688	2796	N.S.	2642	2787	2780	N.S.
1965	2520	2747	2688	N.S.	2706	3652	2597	N.S.
Pooled	2622	2917	2742	N.S.	2673	2720	2688	N.S

N_0	N_1	N_2	Sig.	F_0	F_1	F_2	Sig.	G.M.	S.E./plot
2611	2746	2852	*	2711	2760	2738	N.S.	2736	338·1
2494	2720	2741	N.S.	2618	2695	2641	N.S.	2652	216·1
2552	2733	2796	**	2665	2727	2689	N.S	2693	311·1

Crop :- Groundnut. **Ref :- A.P. 63(138), 64(75). 65(150), 65(151).**

Site :- Agri. Res. Stn , Amaravathi. **Type :- 'M'.**

Object :— To study the effect of different levels of N, P and K and F Y M. on the yield of Groundnut.

1 BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow for 63(438), 65(150), 65(151; jowar for 64(75). (c) 22·4 Kg/ha. of N as A/S, 33·6 Kg/ha. of P_2O_5 as Super for 64(75) ; Nil for others. (ii) Black soil. (iii) 13, 14.6.63 ; 4.7.64 ; 24.7.65 ; 11.12.65. (iv) (a) 3 to 4 ploughings with country plough. (b) Hand dibbling. (c) 134 Kg/ha. (d) 23 cm. × 15 cm. (e) 1. (v) Nil. (vi) TMV-2. (vii) Unirrigated for 64(75) ; Irrigated for others. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 13, 14, 15.10.63 ; 30.10.64 ; 9.10.65 ; 11 to 13.4.66.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=33·6 and P_2=67·2 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot.: K_0=0, K_1=33·6 and K_2=67·2 Kg/ha.

(4) 3 levels of F.Y.M. : F_0=0, F_1=5604 and F_2=11208 Kg/ha.

All the fertilizers and F.Y.M. were applied as basal by soil application.

3. DESIGN :

(i) 3^4 confd. (ii) (a) 9 plots/block ; 9 blocks/replication, (b) N.A. (iii) 1. (iv) (a) 7·6 m.×5·8 m. for 63 ; 7·3 m.×5·5 m. for others. (b) 7·3 m.×5·5 m. for 63 ; 7·0 m.×5 0 m. for others. (v) 15 cm.×15 cm. for 63 ; 15 cm.×23 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Crop suffered with Tikka leaf in later stages and incidence of Aphids controlled by spraying Endrine at 28 gm. in 18 litres of water for 63(138) ; Thrips attack in 64(75) and 65(150) was controlled by spraying Endrin and Parathion. (iii) Yield of pod. (iv) (a) 1963-65. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Because the error variances are heterogeneous and the interaction of treatments in each two way table with years are absent. Therefore results of individual years are presented below.

5. RESULTS :

63(138) (Kharif)

(i) 1214 Kg/ha. (ii) 151·1 Kg/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	1062	1182	1165	1134	1162	1112	1084	1153	1172	1136
N_1	1165	1236	1247	1161	1256	1231	1249	1222	1176	1216
N_2	1245	1280	1348	1224	1337	1312	1228	1275	1370	1291
Mean	1157	1233	1253	1173	1252	1218	1187	1217	1240	1214
F_0	1123	1199	1239	1169	1287	1105				
F_1	1145	1236	1368	1143	1244	1263				
F_2	1204	1263	1253	1208	1225	1287				
K_0	1092	1157	1271							
K_1	1189	1279	1287							
K_2	1190	1262	1202							

C.D. for N marginal means=87·2 Kg/ha.

64(75) Kharif)

(i) 522 Kg/ha. (ii) 32·1 Kg/ha. (iii) Main effect of N is highly significant and interaction P×K in significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	440	420	464	431	422	472	474	425	425	447
N_1	531	558	591	585	519	577	600	568	519	560
N_2	529	593	566	548	593	546	536	532	617	562
Mean	500	524	540	521	511	532	537	508	520	521
F_0	511	509	585	494	531	578				
F_1	502	499	524	509	519	496				
F_2	487	563	511	559	484	518				
K_0	442	548	573							
K_1	501	467	566							
K_2	556	556	482							

C.D. for N marginal means=18·6 Kg/ha.

C.D. for the body of P×K table=32·1 Kg/ha.

65(150) (*Kharif*)

(i) 403 Kg/ha. (ii) 88·6 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	331	319	306	301	321	331	309	309	338	318
N_1	437	445	427	477	400	435	465	427	420	437
N_2	455	460	450	462	447	455	484	413	467	455
Mean	408	408	394	413	389	407	419	383	408	493
F_0	420	420	420	413	410	435				
F_1	388	376	388	390	368	390				
F_2	415	430	378	437	390	395				
K_0	378	425	437							
K_1	435	368	366							
K_2	410	430	380							

C.D. for N marginal means=51·1 Kg/ha.

65(151) (Rabi)

(i) 1955 Kg/ha. (ii) 283·6 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	F_2	Mean
N_0	1693	1796	1806	1648	1821	1829	1784	1730	1782	1765
N_1	1974	2147	1940	2002	1999	2058	1898	2058	2103	2020
N_2	2002	2110	2128	2170	1974	2098	2056	2113	2071	2080
Mean	1890	2018	1958	1940	1931	1995	1913	1967	1985	1955
F_0	1801	1873	2066	1809	1861	2069				
F_1	1932	2019	1952	1977	2002	1922				
F_2	1935	2162	1858	2031	1932	1992				
K_0	1759	2036	2021							
K_1	1866	2044	1885							
K_2	2044	1974	1967							

C D. for N marginal means=163·6 Kg/ha.

Crop :- Groundnut. **Ref :- A.P 65(126).**

Site .- Soil Cons. Res. Stn., Ananthapur. **Type :- 'M'.**

Object :— To determine under dry land conditions of this area the specific effects on soil fertility of the more important organic manures and inorganic fertilizers applied alone.

1. BASAL CONDITIONS :

(i) (a) Fallow-Groundnut. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 29.6.65. (iv) (a) Ploughing twice with country plough, horrowing once with blade horrow. (b) Drilling. (c) 99 Kg/ha. (d) 23 cm. (e) 1. (v) Nil. (vi) TMV-3. (vii) Unirrigated. (viii) Interculture twice with metal guntaka and harrowing twice with hand hoe. (ix) N.A. (x) 24.11.65.

2. TREATMENTS :

5 sources of 22 Kg/ha. of N : T_0=Control (no N), T_1=F.Y.M., T_2=Castor cake, T_3=G.N.C. and T_4=A/S.

Castor cake, G.N.C. A/S were applied by drilling as basal and F.Y.M. was applied by plough in furrows as basal.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4 (iv) (a) 15·2 m.×6·1 m. (b) 14·0 m,×4·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4, GENERAL :

(i) Poor. (ii) Incidence of leaf webber. B.H.C. 10% dusting at flowering stage, spraying Endrin at 25 gm. with 18 litres of water once at flowering stage and once at pod formation stage. (iii) Yield of Pod. (iv) (a) 1965-66. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 91 Kg/ha. (ii) 19·7 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	97	78	107	95	80

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 64(248), 65(143).**

Site :- College of Agri., Bapatla. **Type :- 'M'.**

Object :—To find out the response of Groundnut in sandy soils to the application of N, P and K.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Sandy soil. (iii) 27.7.64 ; 22.7.65. (iv) (a) Ploughing twice with iron plough, *gorru* sowing once, digging with spades. (b) Dibbling seeds treated with Agrosan G.N. (c) 134 Kg/ha. (d) 15 cm.×15 cm. (e) 1. (v) Nil. (vi) TMV—2 bunlchi. (vii) Unirrigated. (viii) Hand weeding once. (ix) N.A. (x) 27.10.64 ; 23.10.65.

2. TREATMENTS :

10 manurial treatments : M_1=133·6 Q/ha. of F.Y.M. alone, M_2=133·6 Q/ha. of Glyricidice leaf alone, M_3=M_1+25 Kg/ha. of N as A/S, M_4=M_1+37 Kg/ha. of N as A/S, M_5=M_1+25 Kg/ha. of N+25 Kg/ha. of P_2O_5, M_6=M_1+37 Kg/ha. of N+25 Kg/ha of P_2O_5, M_7=M_1+37 Kg/ha. of N+37 Kg/ha. of P_2O_5, M_8=M_1+25 Kg/ha. of N+37 Kg/ha. of K_2O, M_9=M_1+25 Kg/ha. of N+37 Kg/ha. of K_2O and M_{10}=M_1 +37 Kg/ha. of N+37 Kg/ha. of P_2O_5+37 Kg/ha. of K_2O.

N as A/S, P_2O_5 as Super and K_2O as potassium chloride were applied

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 5·9 m.×4·9 m. (b) 5·0 m ×4·0 m. (v) 45 cm.×45 cm. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of fungns Spraying Fytolan at 21 gm /5 litres/1 gallon of water 181 6 litres sprayed for 64 Nil. for 65. (iii) Yield of pods and haulms. (iv) (a) 1964—67. (b) No. (c) Nil. (v) Nil. (vi) 1964 heavy rain fall of 80 mm., 100 mm 105 mm. on 14, 15, 16 9.64 respectively ; Nil for 65. (vii) Expt. is continued beyond 65.

5. RESULTS :

64(248)

(i) 789 Kg/ha. (ii) 221·5 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of pod in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	575	538	762	1075	837	925	750	925	850	650

65(143)

(i) 1844 Kg/ha. (ii) 547 6 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of pod in Kg/ha.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av yield	1281	1156	1531	2531	2469	1594	1469	2094	2406	1906

C.D.=794·5 Kg/ha.

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(110), 61(124), 62(152), 63(235).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object : -To find out the effect of fertilizers on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil for 60, 63 ; Groundnut—Fallow—Groundnut for others. (b) Castor for 60 ; Groundnut for others. (c) N.A. for 60 ; as per treatments for others. (ii) *Chalka.* (iii) 30.6.60 ; 5.7.61 ; 27.7.62. ; 4.7.63 (iv) (a) 4 bakherings for 60 ; 2 harrowings and 2 ploughings for others. (b) Hand dibbling. (c) 56 to 67 Kg/ha. (d) 46 cm.×15 cm. (e) 1. (v) Nil for 60 ; 14·8 C L./ha. of compost for 61 ; 9·9 C.L /ha. of compost for 62 ; as per treatments for 63. (vi) TMV—2. (vii) Unirrigated. (viii) 2 interculturings for 60 ; 2 hand weedings and hoeings for others. (ix) 66 cm. ; 43 cm. ; 40 cm. ; 51 cm. (x) 28.10.60 ; 28.10.61 ; 30.10.62 ; 24.10.63.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_0=0, N_1=16·8 and N_2=33·6 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=16 8 and P_2=33·6 Kg/ha.

Fertilizers applied by soil application.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 10·1 m.×10·1 m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 60, 62 ; incidence of tikka leaf spot for 61, spraying Endrin for 61 and 63. (iii) Yield of pod. (iv) (a) 1960 63. (b) Yes. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. No. 56, 58, 59 have been considered for pooling. Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

60(110)

(i) 641 Kg/ha. (ii) 189·9 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	Mean
P_0	591	553	629	591
P_1	765	828	521	705
P_2	572	457	852	627
Mean	643	613	667	641

61(124)

(i) 536 Kg/ha. (ii) 55·8 Kg/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	Mean
P_0	510	415	546	490
P_1	569	520	614	568
P_2	488	534	626	549
Mean	522	490	595	536

C.D. for N marginal means=74·3 Kg/ha.

62(152)

(i) 980 Kg/ha. (ii) 177·1 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	Mean
P_0	1092	919	982	998
P_1	890	953	1090	978
P_2	856	1224	818	966
Mean	946	1032	963	980

63(235)

(i) 438 Kg/ha. (ii) 202 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	Mean
P_0	370	191	471	344
P_1	404	639	583	542
P_2	415	339	527	427
Mean	396	390	527	438

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(19), 61(15), 62(18), 63(34).**

Site :- Agri. Res. Instt., Rajendra Nagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K alone and in combination on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Groundnut. (b) Groundnut. (c) N.A. for 60 and as per treatments for others. (ii) Sandy loam. (iii) 24.6.60 ; 9.6.61 ; 9.6.62 ; 16.6.63. (iv) (a) 3 ploughings followed by blade harrow and levelling. (b) Hand dibbling. (c) N.A. (d) 23 cm. × 23 cm. (e) 1. (v) Nil. (vi) Spanish (Improved). (vii) Unirrigated. (viii) Interculture with cultivator and hand weeding. (ix) 69 cm. ; 96 cm. ; 110 cm. ; 72 cm. (x) 4.11.60 ; 3.9.61 ; 17.10.62 ; 9.10.63.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0 =0, P_1=22·4 and P_2=44·8 Kg/ha.

( ) 3 levels of K_2O on Mur. Pot. K_0=0, K_1=22·4 and K_2=44·8.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 11·9 m. × 4·8 m. (b) 11·7 m. × 4·6 m. (v) 12 cm. × 12 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil in 60 ; miled attack of Aphids is 61 and 62 ; mild attack of grain Hopper in initial stage ; Tikka disease at maturity stage for 63. (iii) Yield of pod. (iv) (a) 1960–63. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is absent hence the results of individual years are presented below.

5. RESULTS :

60(19)

(i) 521 Kg/ha. (ii) 129·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	571	505	499	511	475	589	525
N_1	561	488	547	542	566	488	532
N_2	537	465	516	555	531	432	506
Mean	556	486	521	536	524	503	521
K_0	523	526	559				
K_1	559	498	515				
K_2	587	434	488				

61(15)

(i) 1529 Kg/ha. (ii) 212·0 Kg/ha. (iii) Main effect of N is highly significant and interaction N × P is significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1248	1475	1062	1361	1447	1377	1395
N_1	1603	1588	1404	1604	1504	1487	1532
N_2	1560	1503	1915	1617	1673	1688	1659
Mean	1470	1522	1594	1527	1541	1517	1529
K_0	1405	1631	1546				
K_1	1545	1433	1646				
K_2	1461	1502	1589				

C.D. for N marginal means=146·6 Kg/ha.

C.D. for means in the body of N×P table=253·9 Kg/ha.

62(18)

(i) 730 Kg/ha. (ii) 219·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	735	837	820	1040	672	680	797
N_1	750	719	728	696	735	766	732
N_2	680	625	680	703	727	555	662
Mean	722	727	743	813	711	667	730
K_0	813	798	828				
K_1	657	781	696				
K_2	695	602	704				

63(34)

(i) 1225 Kg/ha. (ii) 87·0 Kg/ha. (iii) Main effect of P and interaction N×P are highly significant. interaction P×K is significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1039	1313	1338	1211	1219	1260	1230
N_1	1211	1266	1234	1250	1227	1234	1237
N_2	1182	1218	1227	1211	1181	1235	1209
Mean	1144	1266	1266	1224	1209	1243	1225
K_0	1108	1290	1274				
K_1	1133	1181	1313				
K_2	1191	1326	1212				

C.D. for P marginal means =60·1 Kg/ha.

C.D. for body of N×P or P×K table=104·1 Kg/ha.

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 62(19), 63(35).**

Site :- Agri, Res. Instt. Rajendranagar, Hyderabad. **Type :- 'M'.**

Object :—To study the effect of molybdenum as foliar spray and soil application along with phosphatic manures on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Groundnut. (b) Groundnut. (c) N.A. (ii) Sandy loam. (iii) 27.6.62, 17.8.63. (iv) (a) 3 ploughings followed by blade harrows. (b) Hand dibbling. (c) N.A. (d) 23 cm. × 30 cm. (e) 1. (v) Nil. (vi) Spanish improved. (vii) Unirrigated. (viii) Hand weeding. (ix) 110 cm. for 62 ; 72 cm. for 63. (x) 12.10.1962 ; 9.11.63.

2. TREATMENTS :

All combinations of (1), (2), (3) with 2 extra treatments

(1) 3 fertilizers : S_1=Super, S_2=Nitrogen and S_3=Nitrophos.

(2) 2 levels of molybdenum : M_1=140 and M_2=280 GM./ha.

(3) 2 methods of application of molybdenum : F_0=Foliar spray and F_1=Soil application.

Extra treatments : E_1=Water as spray and E_2=Water through soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) 7·3 m. × 2·4 m. (b) 6·7 m. × 2·0 m. (v) 0·3 m. × 0·2 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pods. (iv) (a) 1962— 63. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

(i) 267 Kg/ha. (ii) 69·4 Kg/ha. (based on 63 d.f. made up of pooled error and Treatments × years interaction). (iii) None of the effects is significant. (iv) Av. yield of pods in Kg/ha.

E_1=237 Kg/ha. and E_2= 258 Kg./ha.

	S_1	S_2	S_3	F_0	F_1	Mean
M_1	278	261	266	262	275	268
M_2	256	372	271	274	258	266
Mean	267	266	269	268	267	267
F_0	276	274	253			
F_1	258	258	284			

Treatments	S_1	S_2	S_3	Sig.	E_0	F_1	Sig.	M_1	M_2
Years									
1962	140	182	176	N.S.	155	177	N.S.	173	159
1963	394	351	362	N.S.	381	357	N.S.	364	374
Pooled	267	266	269	N.S.	268	267	N.S.	268	266

Sig.	G.M.	S.E./plot
N.S.	163	56·0
N.S.	367	81·0
N.S.	267	69·4

Crop :- Groundnut (*Kharif*). **Ref :- A P. 60(22), 61(18), 62(25), 63(258).**

Site :- Reg. Oilseed Res. Stn., Kadiri. **Type :- 'M'.**

Object :—To study the effects of different levels of N, P and K on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut for 60 ; Groundnut—Groundnut for others. (b) Castor for 60 ; Groundnut for others. (c) N.A. for 60 and as per treatments for others. (ii) Red loam. (iii) 8.9.60 ; 15.7.61 and 31.7.62, 1.8.62, 23.7.63. (iv) (a) Country plough twice. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm. × 8 cm. (e) N.A. (v) Nil. (vi) TMV-3. (vii) Unirrigated. (viii) 2 hand weedings and hoeing. (ix) 66 cm. for 60, 47 cm. for 61, 60 cm. for 62 and N.A. for 63. (x) 9 to 11.2.61 ; 8.1.62 ; 8.1.63 ; 20.12.63.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block : 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 19·2 m. × 3·7 m. (b) 18·6 m. × 3·2 m. (v) 23 cm. × 23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Endrin sprayed for 61, others Nil. (iii) Pod yield. (iv) (a) 1960 –63. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

(i) 945 Kg/ha. (ii) 214·9 Kg/ha. [based on 54 d.f. made up of interaction of various components of treatments with years]. (iii) Main effects of N and P are significant. (iv) Av. yield of Pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	951	978	1013	969	964	1008	981
N_1	909	966	954	951	946	932	943
N_2	877	944	912	929	892	914	912
Mean	912	963	960	954	934	951	945
K_0	909	974	966				
K_1	922	912	967				
K_2	907	1003	944				

C.D. for N or P marginal means=71·8 Kg/ha.

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years	870	877	860	N.S.	882	882	843	N.S.
1960	447	402	401	N.S.	401	473	376	N.S.
1961	1502	1371	1240	N.S.	1277	1435	1401	N.S.
1962		N.A.		N.A.		N.A.		N.A.
Pooled	981	943	912	N.S.	912	963	960	N.S.

Sig.	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
N.S.	867	835	904	N.S.	869	59·0
N.S	470	376	403	N.S.	417	114.4
S.	1385	1390	1339	N.S	1371	180·0
N.A.		N.A.		N.A.	N.A.	N.A
S.	950	934	951	N.S.	945	214·9

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 64(167).**

Site .- Groundnut Res. Stn., Machilipatnam. **Type :- 'M'.**

Object :— To study the effect of potash applied in combination with C.M. and the inorganic manures on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy-Groundnut. (b) Paddy. (c) 24·7 C.L./ha. of C.M. +33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 Super. (ii) Sandy loam. (iii) 25, 26.12.64, (iv) (a) 4 ploughings with country plough. (b) Hand dibbling. (c) 173 Kg/ha. (d) 23 cm.×15 cm. (e)1. (v) Nil. (vi) TMU-2. (vii) Irrigated. (viii) 2 hand weedings. (ix) and (x) N.A.

2. TREATMENTS :

4 manurial treatments : T_0=Control, T_1=123·6 Q/ha. of C.M., T_2=T_1+16·8 Kg/ha. of N as A/S+33·6 Kg/ha, of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Mur. Pot. and T_3=T_2.

T_1 and T_2 applied before sowing.In T_3 all applied before, sowing except half the quantity of K_2O applied one month after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 104·2 m.×6·1 m. (iii) 5. (iv) (a) 9·1 m.×2·7 m. (b) 8·2 m.×2·1 m. (v) 46 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Pod. (iv) (a) 1964 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1814 Kg/ha. (ii) 193·8 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1743	1902	1822	1788

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 63(56), 64(166), 65(270).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'M'.**

Obejct : - To study the residual effect of manuring of Paddy on succeeding Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Groundnut. (b) Paddy. (c) As per treatments. (ii) Sandy loam. (iii) 29.12.63 ; 19, 20.12.64; 29.12.65/11.1.66 gap filling. (iv) (a) 2 to 4 Ploughings. (b) Hand dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) As per treatments. (vi) TMV-2. (vii) Irrigated. (viii) 1 to hand weedings. (ix) 92 cm. ; Nil. ; N.A. (x) 23.4.64 ; 3.4.65 ; 18.4.66.

2. TREATMENTS :

T_0=*Kharif* paddy No manure	*Rabi* Groundnut No manure
T_1=125 Q/ha. of C.M+33·6 Kg/ha. of N as A/S+28 Kg/ha. of P_2O_5 as Super.	No manure
T_2=125 Q/ha. of C.M.+33·6 Kg/ha.. of N as A/S+28 Kg/ha. of P_2O_5 as Super.	16·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul.
T_3=125 Q/ha. of C.M.+50·4 Kg/ha. of N as A/S+61·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul	No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A (iii) 6. (iv) (a) 9·1 m.×4·6 m. for 63 ; 9·8 m.×4·6 m.for 64, 65. (b) 8·5 m.×41. m. for 63 ; 7·9 m.×2·7 m. for 64, 65. (v) 30 cm.×23 cm. for 63 ; 91 cm.×91 cm. for 64, 65. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 63 ; Spraying of B.H.C. at 50% to control slight attack of Leaf minor for 64, Endrin and Bordeaux mixture sprayed as a precautionary measure for 65. (iv) (a) 1963—65. (b) No. (c) Nil. (v) Rudrur. (vi) Nil. (vii) Error Variances are heterogeneous and Treatments×years interaction is absent. Therefore results of individual years are presented below.

5. RESULTS :

63(56)

(i) 1667 Kg/ha. (ii) 157·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1228	1569	2108	1762

C.D.=193·1 Kg/ha.

64(166)

(i) 2503 Kg/ha. (ii) 521·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1817	2216	3143	2837

C.D.=641·0 Kg/ha.

65(270)

(i) 2039 Kg/ha. (ii) 470·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1413	1997	2396	2350

C.D.=578·3 Kg/ha.

Crop :- Groundnut **Ref :- A.P. 63(54), 64(164).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures on Groundnut.

1 BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. for 63 ; 24·7 C.L./ha. of C.M.+33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for 64. (ii) Sandy loam. (iii) 28, 29.12.63 ; 24, 25.12.64. (iv) (a) 3 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) TMV−2. (vii) Irrigated. (viii) Hand weeding. (ix) 92 cm. ; Nil. (x) 22.4.64 ; 5.4.65.

2. TREATMENTS :

Main-plot treatments :

4 organic manures : M_0=Control (no manure), M_1=125 Q/ha. of C.M., M_2=125 Q/ha. of G.L. compost and M_3=173 Kg/ha. of Castor cake.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N_0=0, N_1=16·8 and N_1=33·6 Kg/ha.

(2) 3 levels of P_2O_5 as Super+K_2O as Pot. Sul : F_0=0, F_1=33·6 Kg./ha. of P_2O_5+33·6 Kg/ha. of K_2O and F_2=50·4 Kg/ha. of P_2O_5+50·4 Kg/ha. of K_2O.

3. DESIGN :

(i) Split-plot. (ii) 4 main-plots/replication ; 9 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 9·1 m.×3 7 m. (b) 7 9 m.×2·7 m. (v) 61 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil for 63 ; Spraying of B.H.C. 50% against slight incidence of Leaf minor for 64. (iii) Yield of pods. (iv) (a) 1963—64. (b) No. (c) As under 5. Results. (v) Rudrur. (vi) Nil. (vii) Both the main and sub-plot error variances are homogeneous and Treatments×years interactions are absent.

5. RESULTS :

Pooled results

(i) 1784 Kg/ha. (ii) (a) 547·5 Kg/ha. (based on 9 d.f. made up of M×years interaction and pooled error) (b) 796·0 Kg/ha (based on 84 d.f. made up of interaction and of interaction of N, F, N×F, M×N and M×F with years. (iii) None of the effects is significant. (iv) Av. yield of pods in Kg/ha.

	M_0	M_1	M_2	M_3	F_0	F_1	F_2	Mean
N_0	1824	1798	1430	1581	1768	1698	1509	1958
N_1	1801	1430	1686	2048	1687	1771	1766	1741
N_2	1647	2215	1893	2058	1753	2040	2067	1953
Mean	1757	1814	1670	1895	1736	1836	1781	1784
F_0	1547	1859	1679	1859				
F_1	1765	1863	1763	1954				
F_2	1960	1721	1567	1874				

Individual results

Treatments	M_0	M_1	M_2	M_3	Sig.	N_0	N_1	N_2	Sig.
Years 1963	2185	2313	2121	2340	N.S.	2100	2214	2405	N.S.
1964	1331	1316	1219	1452	N.S.	1217	1·69	1502	N.S.
Pooled	1757	1814	1670	1895	N.S.	1658	1741	1953	N.S.

F_0	F_1	F_2	Sig.	G.M.	Main/plot	S.E./plot
2242	2330	2147	N.S.	2240	749·0	652·0
1230	1343	1415	N.S.	1329	552·0	522·0
1736	1836	1781	N.S.	1784	547·5	796·0

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 60(30), 61(24), 62(34).**

Site :- Groundnut Res. Stn., Machilipatnam. Type :- 'M'.

Object : —To study the residual effect of manuring of Paddy with N, P and G.M. on succeeding Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) As per treatments. (ii) Sandy soils. (iii) 17, 18.12.60, 21.12.61, 12.12.62. (iv) (a) 2 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm. × 15 cm. (e) 1. (v) Nil. (vi) TMV-2. (vii) Irrigated. (viii) 2 hand weedings. (x) 87 cm. ; 115 cm. ; 163 cm. (x) 19.4.61 ; 21.4.62 ; 30.4.63.

2. TREATMENTS :

4 manurial treatments : M_0=0, M_1=44·8 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super, M_2=4448 Kg/ha. of G.M. and $M_3=M_1+M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 9·1 m. × 4·6 m. (b) 8·5 m. × 4·1 m. (v) 30 cm. × 23 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Root grub attack was noticed in 61 only. (iii) Yield of pods. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) Rudrur. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

974 Kg/ha. (ii) 432·0 Kg/ha. (based on 6 d.f. made up of interaction of Treatments × years). (iii) Treatment differences are not significant. (iv) Av. yield of Pods in Kg/ha.

Treatment	M_0	M_1	M_2	M_3
Av. yield	777	995	1090	1036

Treatments	M_0	M_1	M_2	M_3	Sig.	G.M.	S.E./plot
Av. yield 1962	1174	1754	1725	1772	**	1606	254·0
1961	670	862	1100	951	*	896	243·0
1960	487	368	445	385	N.S.	421	121·0
Pooled	777	995	1090	1036	N.S.	974	432·0

Crop :- Groundnut. **Ref :- A.P. 60(31), 61(25), 62(33).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K with and without G.M. on the yield of Groundnut.

1. BASAL CONDITIONS:

(i) (a) Paddy –Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 20.12.60. 23.12.61, 21 12.62. (iv) (a) 2 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) TMV—2. (vii) Irrigated. (viii) 2 hand weedings. (ix) 87 cm. ; 115 cm. ; 163 cm. (x) 2nd week ofAugust for 1960 and 61 and 22.4.63.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

(4) 2 levels of G.M. : M_0=0 and M_1=112 Q/ha.

3. DESIGN :

(i) 3^3×2 Confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×4·1 m, (v) 30 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of ods. (iv) (a) 1960—62. (b) Yes. (c) Nil. (v) Rudrur. (vi) Nil. (vii) E rror variances are heterogeneous and Treatments×years interaction is absent, hence the results of individual years are presented below.

5. RESULTS :

60(31)

(i) 791 Kg/ha. (ii) 197·0 Kg/ha. (iii) Main effect of M alone is highly significant. (iv) Av. yield of pods in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	831	614	660	667	677	761	640	724	741	702
M_1	919	880	840	818	835	986	773	1010	855	879
Mean	875	747	750	743	756	873	707	867	798	791
K_0	877	587	657	699	760	663				
K_1	903	917	781	792	767	1043				
K_2	845	737	811	738	740	917				
P_0	875	632	722							
P_1	801	754	713							
P_2	946	855	820							

C.D. for M marginai means=114·6 Kg/ha.

61(25)

(i) 1787 Kg/ha. (ii) 416·0 Kg/ha. (iii) Main effect of K alone is significant. (iv) Av. yield of pods in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	1720	1802	1814	1764	1868	1703	1658	1596	2078	1778
M_1	1847	1691	1853	1836	1784	1771	1594	1799	1999	1797
Mean	1783	1747	1832	1800	1825	1737	1626	1698	2039	1787
K_0	1648	1539	1690	1584	1759	1534				
K_1	1460	1703	1930	1725	1470	1898				
K_2	2241	1999	1877	2092	2246	1779				
P_0	1964	1786	1651							
P_1	1826	1670	1979							
P_2	1559	1784	1868							

C.D. for K marginal means=302·2 Kg/ha.

62(33)

(i) 2567 Kg/ha. (ii) 590 Kg/ha. (iii) Main effect of K alone is significant. (iv) Av. yield of pods in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	2532	2589	2468	2557	2388	2642	2275	2443	2867	2529
M_1	2640	2528	2644	2637	2693	2483	2366	3062	2366	2604
Mean	2586	2559	2557	2598	2541	2563	2331	2753	2618	2567
K_0	2494	2323	2276	2419	2513	2061				
K_1	2718	2879	2661	2718	2632	2908				
K_2	2647	2475	2733	2656	2478	2721				
P_0	2881	2463	2449							
P_1	2402	2459	2762							
P_2	2476	2755	2459							

C.D. for K marginal means=428·5 Kg/ha.

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 61(30), 62(28), 63(47).**

Site :- Agri Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K with and without G.M. on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 18.1.61, 8.1.62 and 15 1. 63. (iv) (a) 2 plougings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) Spanish improved. (vii) Irrigated. (viii) Hand weeding. (ix) 93 cm. ; 147 cm. ; and 147 cm. (x) 18.5.61 ; 8.5.62 and 20.5.63.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

(3) 3 levels of K_2O as Pot Sul. : K_0=0, K_1=22·4 and K_2=44·8 Q/ha.

(4) 2 levels of C.M. : M_0=0 and M_1=112 Q/ha.

3. DESIGN :

(i) $3^3 \times 2$ ccnfd. (ii) (a) 9 plots/black ; 6 blacsk/replicatioo. (b) N.A. (iii) 1. (iv) (a) 9·6 m.×3·7 m. (b) 9·1 m.×2·7 m. (v) 0·3 m.×0·5 m. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of pods. (iv) (a) 1961 to 63. (b) Yes. (c) Nil. (v) Machilipatnam. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent hence the individual results are presented below.

5. RESULTS :

61(30)

(i) 714 Kg/ha. (ii) 213 Kg/ha. (iii) None of the effect is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	776	749	768	845	766	684	798	637	860	765
M_1	783	545	662	687	676	626	653	735	599	663
Mean	779	647	715	766	720	635	725	687	729	714
K_0	739	618	817	825	744	605				
K_1	710	699	652	672	650	739				
K_2	887	623	677	801	766	620				
P_0	988	720	590							
P_1	654	657	849							
P_2	694	563	707							

62(28)

(i) 811 Kg/ha. (ii) 577 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	748	702	907	657	904	798	899	445	1013	786
M_1	931	689	889	861	786	861	830	969	710	836
Mean	840	695	898	759	844	829	864	707	862	811
K_0	684	675	1233	818	845	929				
K_1	692	759	669	655	650	815				
K_2	1144	650	791	803	1038	744				
P_0	904	759	613							
P_1	858	687	988							
P_2	756	638	1092							

63(47)

(i) 1066 Kg/ha. (ii) 345 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	K_0	K_1	K_2	P_0	P_1	P_2	Mean
M_0	1112	1085	1035	1050	929	1253	1169	1031	1032	1007
M_1	1174	823	1169	889	1203	1072	1018	1142	1006	1055
Mean	1143	954	1102	969	1066	1163	1093	1087	1019	1066
K_0	1196	1097	986	944	1196	1139				
K_1	983	964	1314	957	1055	1248				
K_2	1251	803	1003	1007	948	1102				
P_0	917	798	1194							
P_1	1136	1109	954							
P_2	1376	956	1157							

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 63(50).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To determine the residual effect of manuring Paddy crop on the succeeding crop of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) As per treatments. (ii) Sandy loam. (iii) 16.12.63. (iv) (a) 2 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm. × 15 cm. (e) 1. (v) Nil. (vi) Spanish improved (105 days). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.5.64.

2. TREATMENTS :

Kharif Paddy.	*Rabi* Groundnut.
T_1=No manure.	No manure.
T_2=67·3 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+125 Q/ha. of C.M.	No manure.
T_3=Same as in T_2	16·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul.
T_4=84 Kg/ha. of N as A/S+67·3 Kg/ha. of P_2O_5 as Super+50 4 Kg/ha. of K_2O as Pot. Sul. +125 Q/ha. of C.M.	No manure.

Treatments in *Kharif* applied to Paddy. Their residual effect was studied on succeeding Groundnut crop. In T_3 plot Groundnut crop is also manured.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6 (iv) (a) 11·0 m. × 4·6 m. (b) 10·4 m. × 3·7 m. (v) 30 cm. × 45 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pods. (iv) (a) 1963 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1980 Kg/ha. (ii) 127·0 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in Kg/ha.

Treatmant	T_1	T_2	T_3	T_4
Av. yield	1089	1925	2189	2716

C.D.=156·3 Kg/ha·

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 61(29), 62(29), 63(46).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'M'.**

Object :—To study the residual effect, of manuring of Paddy crop, on succeeding Grou ndnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) As per treatments. (ii) Sandy loam. (iii) 13.2.61 ; 9.1.62 ; 18.1.63. (iv) (a) 2 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) Spanish improved. (vii) Irrigated. (viii) Hand weeding. (ix) 93 cm. ; 147 cm. ; 174 cm. (x) 13.6.61 ; 13.5.62 ; 30.5.63.

2. TREATMENTS :

4 manuring treatments : M_0=0, M_1=4484 Kg/ha. of G.M. M_2=67·3 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super and $M_3=M_1+M_2$

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 15·2 m.×6·7 m. (b) 14·4 m.×5·8 m. (v) 0·3 m.×0·5 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil in 61 and 63 Sever incidence of Tikka leaf spot in 62. (iii) Pod yield. (iv) (a) 1961 to 63. (b) Yes. (c) Nil. (v) Machilipatnam (vi) Nil. (vii) Since the error variances are heterogeneous and Treatments×years interaction is absent. Therefore individual years results are presented under 5. Results.

5. RESULTS :

61(29)

(i) 1046 Kg/ha. (ii) 3380 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	918	1002	1156	1107

62(29)

(i) 1124 Kg/ha. (ii) 297 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1315	1122	1055	1003

63(46)

(i) 1228 Kg/ha. (ii) 5450 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1043	1527	1033	1310

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(88), 61(98), 62(116), 63(100).**

Site :- Agri. Res. Stn., Warangal. Type :- 'M'.

Object :—To study the effect of different levels of N, P and K on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) *Chalka*. (iii) 25.6.60; 13.6.61; 1.7.62; 10.6.63. (iv) (a) 3 ploughings with country plough. (b) Hand dibbling. (c) 89·7 Kg/ha. (d) 23 cm.×23 cm. (e) 2. (v) 12·3 C.L./ha. of F.Y.M. (vi) Spanish improved. (vii) Unirrigated. (viii) Hand weeding and blade harrowing. (ix) N.A. for 60, 62·3 cm. ; 86·9 cm. ; 66·9 cm. (x) 27.10.60 ; 5.10.61 ; 9.10.62 ; 3.10.63.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as urea : N_0=0, N_1=28·0, N_2=56·0 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=28·0 and P_2=56·0 Kg/ha.

(3) 3 level of K_2O as Mur. Pot. : K_0=0, K_1=28·0 and K_2=56·0 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 10·5 m.×10·5 m. (b) 10·0 m.×10·0 m. (v) 23 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil in 61 and 62, infection of thrips. Endrin sprayed on 30.7.60. (iii) Yield of Pods. (iv) (a) 1960—63. (b) No. (c) As under 5. Results. (v) Nil. (vi) and. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS:

Pooled results.

(i) 425 Kg/ha. (ii) 297·4 Kg/ha. (based on 54 d.f. made up of interaction of years with N×P×K, N×P, N×K and P×K. (iii) Main effects of N and P are highly significant, while K effect in significant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	243	290	369	253	285	363	300
N_1	325	434	467	339	413	474	408
N_2	380	572	743	461	553	681	565
Mean	316	432	526	351	417	506	425
K_0	258	365	430				
K_1	309	435	507				
K_2	397	497	642				

C.D. for N or P or K marginal means=99·4 Kg/ha.

Individual results

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.	K_0	K_1	K_2	Sig.	G.M.	S.E./plot
Years														
1960	252	376	440	**	273	373	423	**	283	353	433	**	356	78
1961	226	265	279	**	221	253	296	**	228	256	286	**	257	49
1962	252	269	390	**	274	296	340	**	241	280	390	**	304	49
1963	473	725	1153	**	495	807	1048	**	653	780	917	**	783	79
Pooled	300	408	565	**	316	432	526	**	351	417	506	*	425	297·4

Crop :- Groundnut. **Ref :- A.P. 61(79), 62(88), 63(78), 64(78).**

Site :- Oil seed Res. Stn., Yellamanchili. **Type :- 'M'.**

Object :—Te study the effect of different levels of N, P and K and cattle manure on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Fallow—Groundnut—Fallow—Gingelly. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 1.7.61 ; 2.6.62 ; 10, 11.6.63 ; 3, 4.6.64. (iv) (a) 3 to 5 ploughings with country plough. (b) Hand dibbling. (c) 89·7 to 112·1 Kg/ha. (d) 23 cm.×15 cm. for 61 ; 23 cm.×23 cm. for others. (e) 1. (v) Nil. (vi) T.M.V. –3. (vii) Un-irrigated. (viii) 2 hand weedings and hoeing. (ix) 76·1 cm. ; 124·7 cm. ; 102·2 cm. ; 85·9 cm. (x) 6.12.61 ; 12, 13.11.62 ; 9, 10.11.63 ; 27.10.64.

2. TREATMENTS:

All combinations of (1), (2), (3) and (4)

(1) 2 levels of C.M. : C_0=0 and C_1=5604 Kg/ha.

(2) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

(4) 3 levels of K_2O as Pot. Sul : K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

Fertilizers were applied in one dose in furrows and C.M. was applied by broadcasting.

3. DESIGN :

(i) 3^3×2 confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) 69·5 m.×41·2 m. for 61 and 62 ; N.A. for others. (iii) 1. (iv) (a) 6·1 m ×4·6 m. for 61 ; 11·0 m.×6·1 m. for others. (b) 5·5 m.×4·0 m. for 61 ; 10·1 m.×5·2 m. for others. (v) 30 cm.×30 cm. for 61 ; 46 cm.×46 cm. for others. (vi) Yes.

4. GENERAL :

(i) Normal for 61 ; Satisfactory for others. (ii) Nil for 61 ; attack of Jassids for 62 and Endrin sprayed ; Attack of Tikka leaf spot for 63, 64. (iii) Yield of pod. (iv) 1961—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present excepting C×K×years interaction.

5. RESULTS :

Pooled results

(i) 709 Kg/ha. (ii) 223·1 Kg/ha. (based 69 d.f. made up of Treatments components C,N,P,K. C×N,C×P, N×P, K×N, P×K, with years. (iii). Main effect of N alone is highly significant. (iv) Av. yield of pod in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
C_0	778	675	677	738	709	683	710
C_1	773	653	698	726	747	651	708
Mean	776	664	687	732	728	667	709
K_0	752	686	770	639	764	705	
K_1	767	651	666	766	710	609	
K_2	808	656	726	792	709	688	
P_0	809	680	708				
P_1	789	657	737				
P_2	728	656	617				

C.D. for N marginal means=148·6Kg/ha.

Individual results

Treatments	C_0	C_1	Sig.	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years											
1961	477	487	N.S.	429	540	477	N.S.	492	427	527	N.S.
1962	411	453	N.S.	498	426	372	**	453	463	380	N.S.
1963	984	957	N.S.	1090	900	923	*	983	1034	896	N.S.
1964	968	935	N.S.	1086	789	981	N.S.	1002	984	968	N.S.
Pooled	710	708	N.S.	776	664	687	**	732	728	667	N.S.

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
464	470	512	N.S.	482	49·3
430	427	439	N.S.	431	103·9
918	1009	986	N.S.	970	235·3
1000	871	984	N.S.	952	297·7
703	695	730	N.S.	709	223·1

Crop :- Groundnut. **Ref :- A.P. 61(182).**

Site :- Project Development and Demons. Farm, Yemmiganur. **Type :- 'M'.**

Object :—To study the effect of N, P, K on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—*Jowar*. (b) *Jowar*. (c) 125·5 Q/ha. of F.Y.M.+22·4 Kg/ha. of P_2O_5. (ii) Red soil. (iii) 29.6.61. (iv) (a) Ploughing with country plough followed by *guntaka*. (b) Hand dibbling. (c) 86 Kg/ha. (d) 28 cm.×20 cm. (e) 1. (v) Nil. (vi) T.M.V.—2, (vii) Irrigated. (viii) Gap filling, weeding, working with *guntaka*. (ix) 60·3 cm. (x) 28.10.61.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : N_0=0, N_1=11 and N_2=22 Kg/ha.
(2) 3 levels of P_2O_5 : P_0=0, P_1=34 and P_2=67 Kg/ha.
(3) 3 levels of K_2O : K_0=0, K_1=34 and K_2=67 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 5·0 m.×4·4 m. (iv) (a) 5·0 m.×4·9 m. (b) 4·5 m.×4·1 m. (v) 28 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pods. (iv) 1961—only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1135 Kg/ha. (ii) 120 Kg/ha. (iii) Main effect of P is significant. Interaction N×K and P×K are highly signifi ant. (iv) Av. yield of pod in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1178	1123	1137	1151	1180	1107	1146
N_1	1257	1034	1182	1236	980	1256	1158
N_2	1199	1095	1010	1004	1199	1101	1101
Mean	1211	1084	1110	1130	1120	1155	1135
K_0	1241	1091	1057				
K_1	1259	1006	1095				
K_2	1134	1154	1176				

C.D. for P marginal means = 82·9 Kg/ha.
C.D. for the body of N × K or P × K table = 143·7 Kg/ha.

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 63(41), 64(256), 65(155).**

Site :- Agri. Res. Stn., Amaravathi. **Type :- 'C'.**

Object :—To find out the optimum spacing and suitable time of sowing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Black soils. (iii) As per treatments, (iv) (a) 3 to 4 ploughings with country plough. (b) Hand dibbling. (c) 99 Kg/ha. (d) As per treatments. (e) 1. (v) 1121 Kg/ha. of F.Y.M.+22·4 Kg/ha. of N as A/S,+33·6 Kg/ha. of P_2O_5 as Super+56 Kg/ha. of K_2O as Mur. Pot. at planting for 63 ; 22 Kg/ha. of N as A/S,+34 Kg/ha. of P_2O_5 as Super,+56 Kg/ha. of K_2O as Pot. Sul. for others. (vi) TMV—2. (vii) Irrigated. (viii) 2 to 3 hand weeding. (ix) N.A. (x) N.A. for 63 ; 24.2.65 to 17.6.65 ; 8.2.66 to 3.3.66.

2. TREATMENTS :

Main-plot treatments :

for 63(141)

9 dates of sowing : D_1=1.9.63, D_2=16.9.63, D_3=1.10.63, D_4=16.10.63, D_5=1.11.63, D_6=16.11.63, D_7=1.12.63, D_8=16,12.63 and D_9=1.1.64.

for 64 (256)

9 dates of sowing : D_1=17.10.64, D_2=11.11.64, D_3=17.11.64, D_4=1.12.64, D_5=18,12.64, D_6=1.1.65, D_7=17.1.65, D_8=3.2.65 and D_9=16.2.65.

for 65(155)

9 dates of sowing : D_1=16.10.65, D_2=1.11.65, D_3=16.11.65, D_4=1.12.65, D_5=16.12.65, D_6=1 1.66, D_7=17.1.66, D_8=1.2.66 and D_9=17.2.66.

Sub-plot-treatments :

6 spacings : S_1=30 cm.×30 cm., S_2=30 cm.×23 cm., S_3=23 cm.×23 cm., S_4=30 cm.×15 cm. S_5=23 cm.×15 cm. and S_6=15 cm.×15 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication ; 6 sub-plots/main-plot. (b) 65·8 m.×65·8 m. (iii) 3. (iv) (a) 11·0 m.×7·3 m. (b) 8·2 m.×4·6 m. (v) 137 cm.×137 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Thrips and Jassids controlled by spraying Endrin, Blitox and B.H.C. (iii) Plant population and yield of pods. (iv) (a) 1963 to 65. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Since dates of sowing are different, results of individual years are presented below.

5. RESULTS :

63(141)

(i) 1192 Kg/ha. (ii) (a) 163·3 Kg/ha. (b) 11·7 Kg/ha. (iii) Main effect of D is significant. Main effect of S and interaction D×S are highly significant. (iv) Av. yield of pods in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	Mean
S_1	583	944	1063	534	494	677	1263	1292	741	843
S_2	563	702	1270	650	904	946	1584	1463	1129	1023
S_3	507	1216	1347	823	810	1097	1547	1233	1614	1133
S_4	541	1186	1349	843	934	1302	1478	1680	993	1145
S_5	680	1453	1500	1243	1171	1441	1720	1787	2142	1460
S_6	803	1231	1404	1443	1154	1502	2402	2118	1873	1548
Mean	613	1122	1322	923	911	1161	1666	1596	1415	1192

C.D. for D marginal means =115·3 Kg/ha.
C.D. for S means at the same levels of D = 18·9 Kg/ha.
C,D. for D means at the same level of S =200·5 Kg/ha.

64(256)

(i) 1405 Kg/ha. (ii) (a) 77·5 Kg/ha. (b) 73·7 Kg/ha. (iii) Main effect of D, S and interaction D×S are highly significant. (iv) Av. yield of pod in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	Mean
S_1	638	798	1189	1596	1586	1604	1223	726	531	1099
S_2	744	1090	1258	1703	1878	1596	1275	1038	665	1250
S_3	771	1231	1408	1861	1994	1853	1436	1302	692	1394
S_4	771	1275	1586	1878	2049	1871	1576	1196	771	1444
S_5	904	1302	1596	2100	2135	2128	1586	1357	798	1545
S_6	932	1329	1648	2340	2471	2385	1809	1490	877	1698
Mean	793	1171	1448	1913	2019	1906	1484	1185	722	1405

C.D. for D marginal means = 54·7 Kg/ha.
C.D. for S marginal means = 45·0 Kg/ha.
C.D. for S means at the same level of D =119·8 Kg/oa.
C.D. for D means at the same level of S =122·0 Kg/ha.

65(155)

(i) 1889 Kg/ha. (ii) (a) 360·6 Kg/ha. (b) 363·4 Kg/ha. (iii) Main effects of D and S are highly significant. (iv) Av. yield of Pod in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	Mean
S_1	1883	2352	2417	1633	1248	1092	640	529	694	1388
S_2	2313	2496	2738	1932	1700	1137	899	640	783	1626
S_3	2461	2827	2916	2120	1878	1811	993	872	1016	1877
S_4	2523	2728	2936	2263	2518	1888	894	904	1016	1963
S_5	2980	3136	2871	2429	2461	2053	1110	1114	1127	2142
S_6	2987	3499	3279	2562	2770	2152	1154	1381	1226	2334
Mean	2521	2840	2860	2156	2096	1689	948	907	977	1889

C.D. for D marginal means=254·8 Kg/ha.
C.D. for S marginal means=196·8 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 65(133).**

Site :- Soil Cons. Res. Stn., Ananthapur. **Type :- 'C'.**

Object :—To study the effect of minimum tillage on control of weeds, soil and water losses and yield of crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Fallow - Groundnut. (b) Fallow. (c) Nil. (ii) Red loam. (iii)29.6.65. (iv) (a) As per treatments. (b) Drilling. (c) 99 Kg/ha. (d) 23 cm. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal dressing. (vi) TMV—3. (vii) Unirrigated. (viii) Interculture with *guntaka* twice, harrowing with hand hoe once. (ix) N.A. (x) 25.11.65.

2. TREATMENTS :

8 cultural treatments : C_0=No cultivation except sowing, C_1=Ploughing once, C_2=Ploughing twice, C_3=*Guntaka* once, C_4=*Guntaka* twice, C_5=Normal cultivation, T_6=Ploughing twice +harrowing twice and D_7=Ploughing once+harrowing once,

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×9·1 m. (b) 7·9 m,×7·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of Leaf webber. Dusting BHC 10% at following stage and spraying with Endrin twice at flowering and Pod formation stage. (iii) Yield of pods. (iv) 1965 - 68. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 103·0 Kg/ha. (ii) 102·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of Pods in Kg/ha.

Treatment	C_0	C_1	C_2	C_3	C_4	C_5	C_6	C_7
Av. yield	131	231	63	75	46	97	84	97

Crop :- Groundnut. **Ref :- A.P. 65(131).**

Site :- Soil. Cons. Res. Stn., Ananthapur. **Type :- 'C'.**

Object :—To study the effect of different spacings on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut.—Fallow - Groundnut. (b) Fallow. (c) Nil. (ii) Red loam. (iii) 29, 30.6.65. (iv) (a) Ploughing twice with country plough, harrowing once with blade harrow. (b) Drilling. (c) 99 Kg/ha. (d) As per treatments. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal dressing. (vi) TMV—3. (vii) Unirrigated. (viii) Interculturing and harrowing. (ix) N.A. (x) 24.11.65.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings between rows : R_1=30, R_2=46 and R_3=61 cm.

(2) 3 spacings between plants : P_1=15, P_2=23 and P_3=30 cm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×9·1 m. (b) 7·9 m.×7·9 m. (v) 61 cm.×cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of leaf webber. Dusting BHC 10 % at flowering stage spraying Endrin 28 gm. in 18 litres of water at flowering and pod formation stages. (iii) Yield of pods. (iv) (a) 1965—68. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 33 Kg/ha. (ii) 21·0 Kg/ha. (iii) Main effect of P alone is significant. (iv) Av. yield of pod in Kg/ha.

	P_1	P_2	P_3	Mean
R_1	17	25	36	26
R_2	35	33	57	42
R_3	14	22	59	32
Mean	22	27	51	33

C.D. for P marginal means=20·9 Kg/ha.

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(18), 61(14), 62(17), 63(33).**

Site :- Agri. Res. Instt., Rajendra nagar, Hyderabad. **Type :- 'C'.**

Object :—To study the effect of different dates of sowing and spacings on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. for 60 ; 22·4 Kg/ha. of P_2O_5 as Super+112 Kg/ha. of A/S+88 Q/ha. of F.Y.M. for others. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 3 ploughings, blade harrowing and levelling. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 37 C.L./ha. of F.Y.M. +22·4 Kg/ha. of P_2O_5 as Super+112 Kg/ha. of A/S for 60; 22·4 Kg/ha. of P_2O_5 as Super+112 Kg/ha. of A/S for 61, 62 ; 192 Kg/ha. of Super+56 Kg/ha. of A/S for 63. (vi) Spanish improved. (vii) Unirrigated. (viii) Interculturing and weeding. (ix) 69 cm. ; 96 cm. ; 110 cm. ; 72 cm. (x) 8.11.60 ; 31.10.61 ; 17.10.62 : 10.10.63 to 16.11.63.

2. TREATMENTS :

All Combinations of (1) and (2)

(1) 3 spacings : S_1 =15 cm.×15 cm., S_2=23 cm.×23 cm. and S_3=30 cm.×30 cm.

(2) 3 dates of sowing : D_1=1st week of June, D_2=4th week of June and D_3=3rd week of July.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 11·0 m.×7·3 m. (b) 1/133·7 ha. for S_1 ; 1/138·7 ha. for S_2 ; 1/143·9 ha. for S_3. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) *Tikka* was observed at maturity of crop. (iii) Yield of pod. (iv) (a) 1960—63. (b) Yes. (c) As under 5. Results. (v) N.A. (vi) (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

(i) 747 Kg/ha. (ii) 212·2 Kg/ha. (based on 24 d.f. made up of Treatments×years interaction). (iii) Main effects of D and S are highly significant. (iv) Av. yield of pod in Kg/ha.

	D_1	D_2	D_3	Mean
S_1	1437	952	514	968
S_2	1294	561	265	707
S_3	1047	446	208	567
Mean	1259	653	329	747

C.D. for D or S marginal means=103·2 Kg/ha.

Treatments	D_1	D_2	D_3	Sig.	S_1	S_2	S_3
Years							
1060	864	5:2	260	**	702	570	405
1961	1743	963	359	**	1312	998	754
1962	923	352	247	**	767	370	383
1963	1508	746	451	**	1089	889	726
Pooled	1259	653	329	**	968	707	567

Sig.	G.M.	S.E./plot
*	559	193·0
**	1022	221·0
**	507	180·0
**	901	219·0
**	747	212·2

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(21), 61(17).**

Site :- Reg. Oil seeds Res. Stn., Kadiri. **Type :- 'C'.**

Object :—To determine the optimum seed rate and spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Castor. (c) 75 Q/ha. of F.Y.M.+23·5 Kg/ha. of A/S+9 Kg/ha. of Super+7·8 Kg/ha. of Pot. Sul. (ii) Red loam. (iii) 20.7.60 ; 18.7.61. (iv) (a) Working country plough once and chekkale *guntaka* once. (b) Dibbling. (c) and (d) As per treatments. (e) N.A. (v) 16 C.L./ha. of F.Y.M. for 60 ; 27 C.L./ha. of C.M.+11·1 Kg/ha. of Pot. Sul.+28·6 Kg/ha. of A/S+71 Kg/ha. of Super for others. (vi) TMV—3. (vii) Unirrigated. (viii) Hand weeding and hoeing. (ix) 66 c.m. : 47 c.m. (x) 3rd week of December, 60 ; 10.1.62.

2. TREATMENTS :

Main-plot treatments :
3 seed rates : R_1=56, R_2=78 and R_3=100 kg/ha.

Sub-plot treatments :
3 spacings : S_1=23 cm.×8 cm., S_2=30 cm.×8 cm. and S_3=38 cm.×8 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 16·5 m.×5·3 m. for S_1, 16·5 m.×5·5 m. for S_2, 16 5 m.×5·7 m. for S_3. (b) 16·5 m.×4 6 m. (v) 38 cm. for S_1, 46 cm. for S_2, 58 cm. for S_3. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil for 60 ; crop was effected by Root grub and Leaf minor, controlled by spraying Endrin. (iii) Yield of pod. (iv) (a) 1958—61. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. for the years 1958, 59 have been considered for the purpose of pooling. As sub-plot error variances are heterogeneous, results of individual years are presented below.

5. RESULTS :

60(21)

(i) 291 Kg/ha. (ii) (a) 46·0 Kgha. (b) 29·0 Kg/ha. (iii) Main effects of R and S and interaction R×S are significant. (i) Av. yield of pod in Kg/ha.

	S_1	S_2	S_3	Mean
R_1	250	257	250	251
R_2	291	299	301	297
R_3	321	366	289	325
Mean	287	307	280	291

C.D. for R marginal means=46·0 Kg/ha.
C.D. for S marginal means=24·8 Kg/ha.
C.D. for S means at the same level of R=43·1 Kg/ha.
C.D. for R means at the same level of S=57·8 Kg/ha.

61(17)

(i) 649 Kg/ha. (ii) (a) 74·0 Kg/ha. (b) 95·0 Kg/ha. (iii) Main effects of R and S and interaction R×S are highly significant. (iv) Av. yield of pod in Kg/ha.

	S_1	S_2	S_3	Mean
R_1	667	682	778	709
R_2	521	613	969	701
R_3	516	546	549	537
Mean	568	614	765	649

C.D. for R marginal means=73·9 Kg/ha.
C.D. for S marginal means=81·5 Kg/ha.
C.D. for S means at the same level of R=141·2 Kg/ha.
C.D. for R means at the same level of S=136·5 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 61(240), 62(284). 63(278).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'C'.**

Object :— To determine the number of preparatory cultivations and intercultural operations with certain implements for fixing agronomic schedule for the spreading variety of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Castor-Groundnut. (b) Castor. (c) N.A. for 61 and 62. 75 Q/ha. of F.Y.M.+52 Kg/ha. of A/S+21 Kg/ha. of Super+17 Kg/ha. of Pot. Sul. for 63. (ii) Red loam. (iii) 16.7.61 ; 31.7.62 ; 21.7.63. (iv) (a) As per treatments. (b) Dibbling. (c) and (d) N.A. (e) 1. (v) 27 C.L/ha. of C.M.+11 Kg/ha. of Pot. Sul.+29 Kg/ha. of A/S+71 Kg/ha. of Super for 61 ; 12 C./ha. of compost for 62; 63 Q/ha. of F.Y.M. +22 Kg/ha. of A/S+11 Kg/ha. of Super+11 Kg/ha. of Pot. Sul. for 63. (vi) T.M.V.-3. (vii) Unirrigated. (viii)As per treatments. (ix) N.A. (x) 22, 23.1.62 ; 23 to 26.12.62 ; 5.12.63.

2. TREATMENTS :

10 cultural treatments : T_1=Working country plough twice ; *chakkala guntaka*, once *Bara guntaka* once, *Metla guntaka* once followed by *Metla palugu* once, T_2=Working country plough twice, *Bara guntaka* once, *Metla guntaka* once followed by *Metla Palugu* once, T_3=Working country plough once, *Bara guntaka* twice, *Metla guntaka* once followed by *Metla palngu* once, T_4=Working *chakkali guntaka* twice, *Bara guntaka* once, *Metla guntaka* once followed by *metla palugu* once, T_5=Working country plough thrice: *Bara guntaka* once, *Matla guntaka* once followed by *Metla palugu* once, T_6=Working country plough twice, *chakkala gantaka* once, *Bara gunta a* once and *Danthulu* twice, T_7=Working country plough twice, *Bara guntaka* once and *Danthulu* twice. T_8=Working country plough once, *Bara guntaka* twice and *Danthulu* twice ; T_9=Working *caakkala guntaka* twice, *Bara guntaka* once and *Danthulu* twice and T_{10}=Working country plough thrice, *Bara guntaka* once and *Danthulu* twice.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 11·0 m.×5·5 m. (b) 10·4 m.×5·0 m. (v) 30 cm.×25 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. for 61 and 62. Incidence of Leaf webber. Dusting B.H.C. 10% at 35 Kg/ha. in the initial stages and spraying Endrin 20 E/C 280 gm. per 18 litres. water in laterstages for 63. (iii) Yield of Pods. (iv) (a) 1961-63. (b) No. (c) Combined results are given under 5. Results. (v) and (vi) Nil. (vii) As the S.E./plot of 63 is N.A., Treatments×years interaction has been taken as the error.

5. RESULTS :

Pooled results.

(i) 1213 Kg/ha. (ii) 108·0 Kg/ha. (based on 18 d.f. made up of interaction of Treatments×years. (iii) Treatment differences are not significant. (iv) Av. yield of pods in Kg/ha.

Treatments	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}
Av. yield	1201	1203	1200	1224	1243	1263	1209	1182	1233	1170

Individual results.

Treatments / Years	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	Sig	G.M.	S.E./plot
1961	296	306	301	272	405	432	240	267	338	294	N.S.	315	108·7
1962	1431	1352	1394	1475	1419	1431	1497	1384	1492	1301	N.S.	1418	98·8
1963	1876	1952	1905	1925	1905	1925	1890	1895	1868	1915	N.S.	1906	N.A.
Pooled	1201	1203	1200	1224	1243	1263	1209	1182	1233	1170	N.S.	1213	108·0

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 62(21), 63(20), 64(48).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'C'.**

Object :— To determine the optimum seed rate and spacings for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Castor-Groundnut. (b) Castor. (c) 75 Q/ha. of F.Y.M.+23·5 Kg/ha. of A/S+9 Kg/ha. of Super+ 8 Kg/ha. of Pot. Sul. (ii) Red loams for 62, 63, sandy loam for 64. (iii) N.A. (iv) (a) One ploughing and *Chakkala guntaka*. (b) Dibbling. (c) and (d) As per treatments. (e) N.A. (v) 75 Q/ha. of F.Y.M.+84 Kg/ha. of A/S+16 Kg/ha. of Super. (vi) TMV-3. (vi) Unirrigated. (viii) Hand weeding and hoeing, working Dantalu. (ix) 60 cm., 56 cm., 49 cm (x) 31.12.62 ; 2.12.63 : 22 12.64.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 seed rates : R_1=78, R_2=100 and R_3=123 Kg/ha.

(2) 3 spacings S_1=23 cm.×8 cm., S_2=30 cm.×8 cm. and S_3=38 cm.×8 cm.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 17·4 m.×5.5 m. for S_1, 17·4 m.×5.5 m. for S_2 and 17·4 m.×6·1 m. for S_3. (b) 16·5 m.×4·6 m. (v) 23 cm. at the end and a row at each side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of pods. (iv) (a) 1962-64. (b) No. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 1890 Kg/ha. (ii) 206·0 Kg/ha. (based on 16 d.f. made up of interaction of Treatments × years). (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	R_1	R_2	R_3	Mean
S_1	1805	1736	1859	1800
S_2	1843	1795	1880	1839
S_3	1763	1949	1837	1850
Mean	1804	1829	1859	1890

Individuai results.

Treatments	R_1	R_2	R_3	Sig.	S_1	S_2	S_3	Sig.	G.M.	S.E./plot
Years										
1962	1651	1723	1796	**	1758	1676	1735	N.S.	1723	101·0
1963	2447	2526	2510	N.S.	2548	2513	2422	N.S.	2494	312·0
1964	1213	1244	1358	**	1196	1316	1304	**	1272	55·0
Pooled	1804	1829	1859	N.S.	1800	1839	1850	N.S.	1890	206·0

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 60(20).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type:—'C'.**

Object :— To determine the optimum number of ploughings and intercultures for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Castor-Groundnut. (b) Castor. (c) N.A. (ii) Red loam. (iii) 6.9.60. (iv) (a) As per treatments and 2 *Chikala guntaka*. (b) Dibbling. (c) 56 Kg/ha. (d) 23 cm. betwen rows. (e) N.A. (v) 16 C.L./ha. F.Y.M. (vi) TMV-3. (vii) Unirrigated. (viii) As per treatments and hand weeding. (ix) 66 cm. (x) 9 to 11.2.61.

2. TREATMENTS :

Main-plot treatments :

4 numbers of ploughings with country plough : $P_1=1$, $P_2=2$, $P_3=3$ and $P_4=4$.

Sub-plot treatments :

2 levels of interculture with *metla guntaka* : $I_1=1$ and $I_2=2$.

3 DESIGN :

(i) Split-plot. (ii) (a) 2 sub-plots/main-plot ; 4 main-plots/replication. (b) N.A. (iii) 4. (iv) (a) 18·3 m. ×2·3 m. (b) 17·8 m. × 1.8 m. (v) 23 cm. × 23 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Pods. (iv) (a) 1960 only. (b) and (c) Nil. (v) N.A. (vi) Nil. (vii) Heavy intermitent rain followed by long spell of draught.

5. RESULTS :

(i) 903 Kg/ha. (ii) (a) 117·0 Kg/ha. (b) 69·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pods in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
I_1	866	935	889	943	908
I_2	866	912	905	905	897
Mean	866	923	997	927	903

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 61(22).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :—To find out whether harvesting of Groundnut can be advanced by sprouted kernels.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) paddy. (c) N.A. (ii) Sandy loam. (iii) 6.1.61. (iv) (a) 2 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 24·7 C.L. of C.M.+22·4 Kg/ha. of N as A/S +22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Pot. Sul. (vi) Local. (vi) Irrigated. (viii) Weeding. (ix) 87 cm. (x) 19.4.61.

2. TREATMENTS :

2 types *k*ernels : T_1=Sprouted and T_2=Unsprouted.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×4·1 m. (v) 30 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yi-ld of pods (iv) (a) 1961 only. (b) No. (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS :

(i) 923 Kg/ha. (ii) 123·0 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2
Av. yield	1025	820

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 61(31), 62(36).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :—To find out whether harvest of Groundnut can be advanced by sowing sprouted Kernels.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy soil. (iii) 30.12.61 ; 24.12.62. (iv) (a) 2 ploughings (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 24·7 C.L./ha. of C.M,+22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Mur. Pot. (vi) TMV—2. (vii) Irrigated. (viii) Weeding. (ix) 115 cm. ; 163 cm. (x) 23.4.62 ; 20.4.63.

2. TREATMENTS :

2 types of Kernels : T_1=5prouted and T_2=Unsprouted.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×4·1 m. (v) 30 cm.×23 cm. (v) Yes.

4. GENERAL :

(i) Normal. (ii) *Tikka* leaf spot and Root grub were noticed in 61 ; Nil for 62. (iii) Yield of pods. (iv) (a) 1961—62. (b) No. (c) Nil. (v) Rudrur. (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is absent.

5. RESULTS :

61(31)

(i) 1586 Kg/ha. (ii) 78·0 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2
Av. yield	1752	1421

C.D.=175·5 Kg/ha.

62(36)

(i) 520 Kg/ha. (ii) 366·0 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_1	T_2
Av. yield	541	519

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 60(28), 61(32), 62(37).**

Site :- Groundnut. Res. stn., Machilipatnam. Type :- 'C'.

Object :—To study the effect of different numbers of ploughings on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy soils. (iii) 18.12.60 ; 27.12.61 ; 23.12.62. (iv) (a) As per treatments. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 24·7 C.L./hu. of C.M.+22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Pot. Sul. (vi) TMV—2. (vii) Irrigated. (viii) Wecding. (ix) 87 cm. ; 115 cm. ; 163 cm. (x) 19.4.61 ; 19.4.62 ; 25.4.63.

2. TREATMENTS :

4 levels of ploughings before sowing : T_0=0 (No preparatory cultivation), T_1=1, T_2=2 and T_3=4 ploughings

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 9 1 m.×4·6 m. (b) 8·5 m.×4·1 m. (v) 30 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. for 60, 62 ; *Tikka* leaf disease was noticed for 61. (iii) Yield of pods. (iv) (a) 1960—62. (b) No. (c) Nil. (v) Rudrur. (vi) Nil (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 991 Kg/ha. (ii) 444·4 Kg/ha. (based on 6 d.f. made up of Treatments × years interaction). (iii) Treatment difference is not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3
Av. yield	735	1115	1006	1123

Individual results.

Treatments	T_0	T_1	T_2	T_3	Sig.	G.M.	S.E./plot
Years							
1960	556	558	361	469	N.S.	486	247·3
1961	667	1119	729	1060	N.S.	894	331.0
1962	983	1668	1927	1841	**	1605	311.0
Pooled	735	1115	1006	1123	N.S.	991	444·4

Crop :- Groundnut (*Rabi*). **Ref :- 60(29), 61(23), 62(35).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'C'.**

Objcet :— To determine the optimum date of sowing and seed rate for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy-Groundnut. (b) Paddy. (c) N.A. (ii) Sandy soil. (iii) As per treatments. (iv) (a) 2 ploughings. (b) Dibbling. (c) As per treatments. (d) 23 cm. between rows. (e) 1. (v) 24·7 C.L/ha. of C.M.+ 22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Mur. Pol. (vi) TMV-2. (vii) Irrigated. (viii) Hand weeding and intercultivation by push hoe. (ix) 87 cm.; 115 cm.; 163 cm. (x) 2nd and 3rd week of April for all years.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 seed rates : S_1=78, S_2=100 and S_3=123 Kg/ha.

(2) 4 dates of sowing : D_1=10.12.60, D_2=20.12.60, D_3=30.12.60 and D_4=9.1.61.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×4·1 m. (v) 30 cm. ×30 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pod. (iv) (a) 1960-62. (b) No. (c) As under 5 Results. (v) Rudrur. (vi) Nil. (vii) Error variances are homogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results.

(i) 1113 Kg/ha. (ii) 446·4 Kg/ha. (based on 22 d.f. made up of interaction of Treatments × years). (iii) Main effect of D alone is highly significant. (iv) Av. yield of pod in Kg/ha.

	D_1	D_2	D_3	D_4	Mean
S_1	948	1320	1108	893	1067
S_2	1421	1223	1230	831	1176
S_3	1169	1117	1243	854	1096
Mean	1179	1220	1194	859	1113

C.D. for D marginal means=251·9 Kg/ha.

Individual results.

Treatments	D_1	D_2	D_3	D_4	Sig.	S_1	S_2	S_3	Sig.	G.M.	S.E./plot
Years											
1960	653	460	698	612	N.S.	553	555	709	N.S.	606	229·0
1961	1407	1479	1213	643	**	1140	1254	1159	**	1185	335·0
1962	1478	1728	1670	1323	N.S.	1510	1721	1419	N.S.	1550	360·0
Pooled	1179	1220	1194	859	**	1067	1176	1096	N.S.	1113	446·4

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 63(53).**

Site :- Groundnut. Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :—To determine the optimum date of sowing for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy-Groundnut. (b) Paddy (c) N.A. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 125 Q/ha. of C.M.+168 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O Mur. Sul. (vi) TMV-2. (vii) Irrigated. (viii) Hand weeding. (ix) 92 cm. (x) 2, 14 and 27.4.64.

2. TREATMENTS :

4 dates of sowing : D_1=10.12.63, D_2=20.12.63, D_3=30.12.63 and D_4=9.1.64.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 9·1 m.×3·7 m. (b) 8·5 m.×2·7 m. (v) 30 cm ×46 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pods. (iv) (a) 1963 only. (b) No. (c) Nil. (v) Rudrur. (vi) and (vii) Nil.

5. RESULTS :

(i) 1568 Kg/ha. (ii) 491·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pod in Kg/ha.

Treatment	D_1	D_2	D_3	D_4
Av. yield	1497	1366	1357	2053

C.D.=6766 Kg/ha.

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 63(52), 64(168).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'C'.**

Object :—To determine the optimum spacing and intercultural operation for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. for 63 ; 24·7 C.L./ha. of C.M.+33·6 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super for 64. (ii) Sandy loam. (iii) 21 to 23.12.63 ; 22 to 24.12.64. (iv) (a) 2 to 4 ploughings with country plough. (b) Hand dibbling. (c) and (d) As per treatments. (e) 1. (v) 125 Q/ha. of C.M.+16·8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50·4 Kg/ha. of K_2O as Pot. Sul. for 63; 24·7 C.L/ha. of C.M.+16 8 Kg/ha. of N as A/S+33·6 Kg/ha. of P_2O_5 as Super+50 4 Kg/ha. of K_2O as Mur. Pot. for 64. (vi) TMV—2. (vii) Irrigated. (viii) As per treatments. (ix) 92 cm. ; Nil. (x) 18, 19.4.64 ; 5, 7.4.65.

2. TREATMENTS :

Main-plot treatments :

5 intercultures : I_1=Interculture one month after sowing, I_2=Intercultures one month and two months after sowing, I_3=Hand weeding one month after sowing, T_4=Hand weedings one month and two months after sowing and I_5=One interculture followed by one hand weeding one month after sowing.

Sub-plot treatments :

All combinations (1) and (2)

(i) 3 spacings between rows : S_1=23 S_2=30 and S_3=38 cm.

(2) 2 spacings between plants : P_1=8 and P_2=15 cm.

Interculture is done with *Dantalu*.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 7·3 m.×5·0 m. (b) 6·1 m.×4·6 m. (v) 61 cm.×23 cm. (vi) Yes.

(4) GENERAL :

(i) Satisfactory. (ii) Nil for 63 ; spraying of BHC 50 %, Bordeaux mixture and Endrin for 64. (iii) Yield of pod. (iv) (a) 1963—64. (b) No. (c) As under 5 Results. (v) Rudrur. (vi) Nil. (vii) Both the main and sub-plot error variances are homogeneous and Treatments×years interacttion is absent.

5. RESULTS :

(i) 2155 Kg/ha. (ii) (a) 837·6 Kg/ha. (based on 12 d.f. made up of pooled error and interaction I×years). (b) 476·8 Kg/ha. (based on 67 d.f. made up of pooled error and interaction of P, S, P×S, I×P, I×S with years). (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

Pooled results.

	I_1	I_2	I_3	I_4	I_5	S_1	S_2	S_3	Mean
P_1	2147	1772	2338	2092	2265	2109	2156	2104	2123
P_2	2165	2110	2269	2215	2176	2364	2127	2070	2187
Mean	2156	1941	2303	2154	2221	2236	2141	2087	2155
S_1	2368	2278	2224	2152	2159				
S_2	2001	1872	2471	2076	2287				
S_3	2098	1672	2214	2233	2216				

Individual results.

Treatments	I_1	I_2	I_3	I_4	I_5	Sig.	S.E./main plot
Years							
1963	2765	2584	2945	2676	2525	N.S.	714·0
1964	1546	1298	1662	1632	1857	N.S.	1122·4
Pooled	2156	1941	2303	2154	2221	N.S.	837·6

Treatments	S_1	S_2	S_3	Sig.	P_1	P_2	Sig.	G.M.	S.E./sub-plot
Years									
1963	2726	2717	2610	N.S.	2770	2770	N.S.	2711	457·0
1964	1747	1566	1484	N.S.	1526	1672	N.S.	1599	1122·4
Pooled	2236	2141	2087	N.S.	2183	2123	N.S.	2155	476·8

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 64(62).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To determine the optimum date of sowing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. (b) Sowing behind the plough. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 20 C.L./ha. of C.M.+22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super. (vi) Spanish improved (105 days). (vii) Irrigated. (viii) Hand weeding. (ix) 137 cm. (x) 2nd and 3rd week of May, 1964.

2. TREATMENTS :

4 dates af sowing : D_1=1st, D_2=11th, D_3=21st and D_4=31st January.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×3·7 m. (v) 30 cm.×46 cm. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of pods. (iv) (a) 1964—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1386 Kg/ha. (ii) 266·0 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of pod in Kg/ha.

Treatment	D_1	D_2	D_3	D_4
Av. yield	1087	1522	1359	1577

C.D.=366·6 Kg/ha.

Crop :-Groundnut (*Rabi*). **Ref :- A.P. 61(28), 62(30), 63(51).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To determine the optimum seed rate and date of sowing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) As per treatments (iv) (a) 2 ploughings. (b) Dibbling. (c) As per treatments. (d) 23 cm. between rows. (e) 1. (v) 22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super. (vi) Spanish improved. (vii) Irrigated. (viii) 2 hand weedings. (ix) 93 cm. ; 174 cm. for 62 and 147 cm. (x) 2nd and 3rd week of May.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 seed rates : S_1=78, S_2=101, and S_3=123 Kg/ha.

(2) 4 dates of sowing : D_1=1st Jan., D_2=11th Jan., D_3=21st Jan. and D_4=31st Jan.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 9·1 m.×4·6 m. (b) 8·5 m.×3·7 m. (v) 30 cm·×46 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. for 62, 63; not satisfactory for 61. (ii) Severe incidence of Wilt was noticed. (iii) Yield of pods. (iv) (a) 1961—63. (b) No. (c) As under 5. Results. (v) Machilipatnam. (vi) Nil. (vii) Observation of D_1 and D_2 for 61 not considered due to unsatisfactory yield. Hence individual results for 61 given. Variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

61(28)

(i) 821 Kg/ha. (ii) 227·0 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	S_1	S_2	S_3	Mean
D_3	618	746	902	655
D_4	927	860	870	886
Mean	773	803	883	821

Pooled results for **62(30)** and **63(51)**

(i) 1193 Kg/ha. (ii) 531·8 Kg/ha. (based on 55 d.f. made up of pooled error and Treatments×years interaction of various components). (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	D_1	D_2	D_3	D_4	Mean
S_1	804	1143	1439	794	1045
S_2	1123	966	1513	1058	1165
S_3	1303	1209	1502	1461	1369
Mean	1077	1106	1485	1104	1193

Individual results

Treatments	D_1	D_2	D_3	D_4	Sig.	S_1	S_2	S_3	Sig.	G.M.	S.E./plot
Years											
1962	852	845	1421	785	*	917	811	1199	N.S.	976	432·0
1963	1302	1367	1548	1425	N.S.	1174	1519	1539	N.S.	1411	610·0
Pooled	1077	1106	1485	1104	N.S.	1045	1165	1369	N.S.	1193	531·0

———

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 64(61), 65(272).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To determine the optimum spacing and intercultural operations for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 10.1.64 ; 20.1.65. (iv) (a) 2 to 4 ploughings. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 20 C.L./ha. of C.M.+22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super. (vi) Spanish improved (105 days). (vii) Irrigated. (viii) As per treatments. (ix) 137 c.m. for 64 ; N.A. for 65. (x) 2nd and 3rd week of May 64 ; 28.5.65.

2. TREATMENTS :

Same as expt. No. 63(52), 64(108) on Page 752.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication, 6 sub-plots/main-plot ; (b) N.A. (iii) 2. (iv) (a) and (b) 9·1 m.×4·6 m., 8·5 m.×3·7 m. for 64 ; 7·3 m.×5·0 m., 6·1 m.×4·6 m. for 65. (v) 30 cm.×46 cm. ; 61 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Yield of pods. (iv) (a) 1964 66. (b) No. (c) Nil. (v) (a) Machilipatam. (vi) Nil. (vii) Expt. is continued beyond 65 hence individual results are presented below :

5. RESULTS :

64(61)

(i) 961 Kg/ha. (ii) (a) 109·0 Kg/ha. (b) 201·0 Kg/ha. (iii) Main effect of I is highly significant. Main effect of S and interaction S×P are significant. (iv) Av. yield of pods in Kg/ha.

	I_1	I_2	I_3	I_4	I_5	P_1	P_2	Mean
S_1	703	993	543	2022	831	921	1116	1018
S_2	752	980	434	2028	861	892	1129	1011
S_3	636	766	262	2019	579	915	790	852
Mean	697	913	413	2023	757	909	1012	961
P_1	635	828	408	1961	715			
P_2	759	998	418	2085	799			

C.D. for I marginal means=123·5 Kg/ha.
C.D. for S marginal means=130·9 Kg/ha.
C.D. for the body of S×P table=185·1 Kg/ha.

65(272)

(i) 688 Kg/ha. (ii) (a) 48 Kg/ha. (b) 9 Kg/ha. (iii) Main effect of I and S and the interaction S×P are highly significant. (iv) Av. yield of pods in Kg/ha.

	I_1	I_2	I_3	I_4	I_5	P_1	P_2	Mean
S_1	534	631	779	1118	644	678	804	741
S_2	555	727	762	1056	769	772	775	774
S_3	384	495	504	869	492	612	485	549
Mean	491	618	682	1015	635	688	688	688
P_1	52	602	696	1003	618			
P_2	462	634	667	1026	652			

C.D. for I marginal means=54·4 Kg/ha.
C.D. for S marginal means=5·9 Kg/ha.
C.D. for the body of S×P table=8·3 Kg/ha.

Crop :- Groundnut (*Rabi*). **Ref :- 61(26), 62(32), 63(49).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Object :—To find out the effect of different number of ploughings on Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 23.1.61, 11.1.62, 16.1.63. (iv) (a) As per treatments. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm. × 15 cm. (e) 1. (v) 25 C.L./ha. of F.Y.M. (vi) Spanish improved. (vii) Irrigated. (viii) Weeding. (ix) 93 cm. ; 147 cm. ; 174 cm. (x) 18.5.61; 15.5.62 ; 20.5.63.

2. TREATMENTS :

4 levels of ploughing: P_0=0, P_1=1, P_2=2 and P_3=4 ploughings.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 7·6 m. × 5·5 m. for 1961 ; 9·1 m. × 4·6 m. for others. (b) 7·0 m. × 4·6 m. for 1961 ; 8·5m. × 3·7 m. for others. (v) 30 cm. × 46 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of pods. (iv) (a) 1961 to 1963. (b) No. (c) Nil. (v) Machlipatanm. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × year interaction is absent.

5. RESULTS :

61(26)

(i) 471 Kg/ha. (ii) 114 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pods in Kg/ha.

Treatment	P_0	P_1	P_2	P_3
Av. yield	494	509	469	413

62(32)

(i) 1073 Kg/ha. (ii) 351·0 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pods in Kg/ha.

Treatment	P_0	P_1	P_2	P_3
Av. yield	1082	1290	983	937

63(49)

(i) 1133 Kg/ha. (ii) 425 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of pods in Kg/ha.

Treatment	P_0	P_1	P_2	P_3
Av. yield	855	1438	1109	432

Crop :- Groundnut. **Ref :- A.P. 61(27), 62(31), 63(198).**

Site :- Agri. Res. Stn., Rudrur. **Type :- 'C'.**

Objec t :—To study whether the harvest of Groundnut can be advanced by sowing sprouted kernels.

1. BASAL CONDITIONS:

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 25.1.61; 12.1.62; 1.1.63. (iv) (a) 2 to 3 ploughings. (b) Dibbling. (c) 78 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) 22·4 Kg/ha. of N as A/S +22·4 Kg/ha. of P_2O_5 as Super for 61 and 62. 22·4 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super +20 C.L./ha. of compost for 63. (vi) Spanish improved. (vii) Irrigated. (viii) Weeding. (ix) 93 cm. ; 147 cm. ; 174 cm. (x) 27.6.61 ; 15.5.62 ; 15.5.63.

2. TREATMENTS :

2 types of kernels: T_1=Sprouted and T_2=Unsprouted.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 4. (iv) (a) 9·1 m.×4·6 m. (b) 8·8 m.×4·1 m. for 61; 8·5 m.×3·7 m. for 62 and 63. (v) 15 cm.×23 cm. for 61 ; 30 cm.×45 cm. for 62 and 63. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of pods. (iv) (a) 1961—63. (b) No. (c) Nil. (v) Machilipatnam. (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is presented.

5. RESULTS:

Pooled results.

(i) 1028 Kg/ha. (ii) 245·5 Kg/ha. (based on 11 d.f. made up of pooled error and Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. yield of pods in Kg/ha.

Treatment	T_1	T_2
Av. yield	957	1098

Individual results

Treatments	P_1	P_2	Sig.	G.M.	S.E./plot.
Years					
1961	1255	1525	N.S.	1390	356·0
1962	455	385	N.S.	420	198·4
1963	1161	1384	N.S.	1271	99·0
Pooled	957	1098	N.S.	1028	245·5

Crop:- Groundnut. **Ref :- A.P. 63(79), 64(118).**

Site :- Oilseed Research Stn., Yellamanchili. **Type :- 'C'**

Object :— To find out the optimum spacing and dates of sowing for Groundnut crop.

1. BASAL CONDITIONS:

(i) (a) Fallow-Groundnut-Fallow-Gingelly. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 4 to 5 ploughings with country Plough. (b) Hand dibbling. (c) 90, 67, 50 and 40 Kg/ha. for S_1, S_2, S_3 and S_4 spacings respectively. (d) As per treatments. (e) 1. (v) N.A. for 63 ; 24·7 C.L./ha. of F.Y.M. for 64. (vi) FMV-3. (vii) Unirrigated. (viii) 2 hand weedings and hoeing. (ix) 102·2 cm. ; 85·9 cm. (x) 31.10.63 ; 10, 16, 23.11.63 and 14.12.63 for 63 ; 28.10.64, 13, 14.11.64 for 64.

2. TREATMENTS :

Main-plot treatments:

5 dates of sowing : D_1=1st week of June, D_2=2nd week of June, D_3=Third week of June, D_4=1st week of July and D_5=Secod week of July.

Sub-plot treatments :

4 spacings: S_1=23 cm.×23 cm., S_2=30 cm.×23 cm., S_3=30 cm.×30 cm. and S_4=38 cm.×30 cm.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9·8 m.×5·5 m. (b) 9·1 m.×4·6 m. (v) 30 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Mild incidence of Tikka leaf spot disease noticed and B.H.C. was dusted. (iii) Yield of pods. (iv) (a) 1963-65. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Expt. of 1965 was rejected because of poor yields, error variances of Sub-plot are heterogeneous.

5. RESULTS :

63(79)

(i) 456 Kg/ha. (ii) (a) 219 Kg/ha. (b) 149 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of pods in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	Mean
S_1	700	670	568	335	94	473
S_2	604	706	508	401	78	459
S_3	700	652	526	401	112	478
S_4	520	622	478	347	100	413
Mean	631	663	520	371	96	456

C.D. for D marginal means=168·7 Kg/ha.

64(118)

(i) 555 Kg/ha. (ii) (a) 98·7 Kg/ha. (b) 97·9 Kg/ha. (iii) Main effect of S and interaction D×S are highly significant. (iv) Av. yield of pods in Kg.ha.

	D_1	D_2	D_3	D_4	D_5	Mean
S_1	660	927	510	706	143	589
S_2	870	951	532	658	161	634
S_3	673	496	511	646	152	496
S_4	768	622	370	562	179	500
Mean	743	749	481	643	159	555

C.D. for S marginal means =62·5 Kg/ha.
C.D. for S means at the same level of D =139·8 Kg/ha.
C.D. for D means at the same level of S =148·4 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 61(77), 62(86).**

Site :- Oilseed Res. Stn., Yellamanchili. **Type :- 'C'.**

Object : — To find out the optimum seed rate and date of sowing for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Fallow-Groundnut-Fallow-Gingelly. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 4 to 5 ploughings with country plough. (b) Hand dibbling. (c) As per treatments. (d) 23 cm. between rows. (e) 1. (v) 125·5 Q/ha. of C.M. for 61 and 10043 Kg/ha. of compost for 62, applied by broadcasting. (vi) TMV-2 for 61 and TMV-3 for 63. (vii) Unirrigated. (viii) 2 hand weedings and hoeings. (ix) 69·1 cm. for 61 and 124·5 cm. for 62. (x) 16.10.61 and 11.11.62.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 4 seed rates : S_1=78·5, S_2=89·7, S_3=100·9 and S_4=112·1 Kg/ha.

(2) 3 dates of sowing : D_1=22.6.61, D_2=3.7.61 and D_3=13.7.61 for 61 and D_1=19.5.62, D_2=29.5.62 and D_3=8.6.62 for 62.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 54·9 m.×9·2 m. for 61 and 43·9 m.×18·3 m. for 62. (iii) 3 for 61 and 4 for 62. (iv) (a) 9·1m. ×4·6 m. for 61 and 18·3 m.×3·7 m. for 62. (b) 8·5 m.×4·0 for 61 and 17·1 m.×2·7 m. for 62. (v) 30 cm.×30 cm. for 61 and 61 cm.×46 cm. for 62. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil for 61, attack of Jassid and Thips during July, controlled by the spray of Endrin. (iii) Yield of pods. (iv) (a) 1961-62. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) Sinee the dates of sowing are different, therefore results of individual years are presented below.

5. RESULTS:

61(77)

(i) 1231 Kg/ha. (ii) 179·6 Kg/ha. (iii) Main effects of D alone is highly significant. (iv) Av. yield of pods in Kg/ha.

	R_1	R_2	R_3	R_4	Mean
D_1	1542	1632	1632	1542	1587
D_2	1252	1431	1118	1386	1297
D_3	760	917	805	760	810
Mean	1185	1327	1185	1229	1231

C.D. for D marginal means=152·0 Kg/ha.

62(86)

(i) 736 Kg/ha. (ii) 141·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pods in Kg/ha.

	R_1	R_2	D_3	D_4	Mean
D_1	924	844	605	689	766
D_2	654	652	691	824	705
D_3	837	715	722	668	736
Mean	805	737	673	727	736

Crop :- Groundnut. **Ref :- A.P. 61(80), 62(87), 63(80).**

Site :- Oilseed Res. Stn., Yellamanchili. **Type :- 'C'.**

Object : — To find out the optimum tillage and intercultural operation required for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Gingelly-Fallow-Groundnut-Fallow. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 2.6.61 ; 2.6.62 ; 9.6.63. (iv) (a) As per treatments. (b) Hand dibbling. (c) 89·7 to 112 Kg/ha. (d) 30 cm.×30 cm. (e) 1. (v) 123·5 Q/ha. of C.M. for 61; 100·4 Q/ha. of compost for 62 and 42 Q/ha. of compost for 63, all covered by country plough. (vi) TMV-3. (vii) Unirrigated. (viii) As per treatments. (ix) 76 cm. ; 12·5 cm. ; 61 ; 102 cm. (x) 7.12.61 ; 10.11.62 ; 2.11.63.

2. TREATMENTS :

Main-plot treatments :

4 tillage operations with country plough : P_1=2 ploughings, P_2=3 ploughings, P_3=4 ploughings and P_4=5 ploughings.

Sub-plot treatments :

2 intercultural treatments : C_1=Hand weeding and hoeing once on 3.8.61, C_2=Hand weeding and hoeing twice on 3 and 19.8.61.

Tillage operations were performed on 8.5.61.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) 24·4 m.×12·2 m. for 61 ; 32·0 m.×18·3 m. for 62 and 31·1 m.×18·3 m. for 63. (iii) 4. (iv) (a) 12·2 m.×3·1 m. for 61; 18·3 m.×3·7 m. for others. (b) 11·6 m.×2·4 m. for 61; 17·4 m.×2·7 m. for others. (v) 30 cm.×30 cm. for 61 ; 46 cm.×46 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of plant Lice for 61 ; Jassids for 62 and Tikka leaf spot disease for 63. 10% B.H.C. dusting and ·02% Endrin sprayed (iii) Pods yield. (iv) (a) 1961-63. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Sub-plot error variances are heterogeneous therefore results of individual years are presented below.

5. RESULTS :

61(80)

(i) 250 Kg/ha. (ii) (a) 98·4 Kg/ha. (b) 22·7 Kg/ha. (iii) Main effect of C alone is significant. (iv) Av. yield of pod in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
C_1	213	243	211	341	252
C_2	211	261	238	286	249
Mean	212	252	224	313	250

C.D. for C marginal means=18·2 Kg/ha.

62(87)

(i) 923 Kg/ha. (ii) (a) 128·0 Kg/ha. (b) 120·5 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of pod in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
C_1	991	900	1061	921	968
C_2	1015	845	742	908	877
Mean	1003	872	901	914	923

63(80)

(i) 863 Kg/ha. (ii) (a) 144·5 Kg/ha. (b) 161·0 Kg/ha. (iii) Main effects of P, C and interaction P×C are significant. (iv) Av. yield of pod in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
C_1	608	692	1012	844	789
C_2	834	1154	871	886	936
Mean	721	923	941	865	863

C.D. for P marginal means =157·3 Kg/ha.
C.D. for C marginal means =128·7 Kg/ha.
C.D. for C means at the same level of P=257·4 Kg/ha.
C.D. for P means at the same level of C=240·2 Kg/ha.

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 64(69), 65(273).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'CM'.**

Object —To find out the suitable plant population and its interaction with levels of fertilizers on Groundnut.

1. BASAL CONDITIONS ;

(i) Nil. (b) Groundnut. (e) N.A. (ii) Sandy loam. (iii) 7.7.64 ; 21.6.65. (iv) (a) 4 ploughings followed by blade harrow and levelling. (b) Hand dibbling. (c) 56 Kg/ha for 64 and N.A. for 65. (d) As per treatments. (e) 1. (v) 12 C.L./ha. of F.Y.M. for 64 ; 62·5 Q/ha. of F.Y.M. before sowing for 65. (vi) Spanish improved (bunch). (vii) Unirrigated. (vii) Intercultivation and hand weeding twice. (ix) 56 cm, ; N.A. (x) 10.11.64, 13.10.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 spacings between rows : S_1=30 cm., S_2=38 cm. and S_3=45 cm.
(2) 3 spacings within rows : R_1=8 cm., R_2=15 cm. and R_3=23 cm.
(3) 3 fertilizer levels : F_0=0 (no fertilizers). F_1=16·8 Kg/ha. of N+22·4 Kg/ha. of P_2O_5+22·4 Kg/ha. of K_2O and F_2=33·6 Kg/ha. of N+44·8 Kg/ha. of P_2O_5+44·8 Kg/ha. of K_2O.

N applied as A/S, P_2O_5 as Super and K_2O as Pot. Sul.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 plots/replication. (b) N.A. (iii) 2. (iv) (a) 11·0 m.×4 6 m. (b) 1/233 ha. to 1/260 ha. as per spacing treatments. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) *Tikka* appeared at maturity, Severe attack of Leaf webber controlled by dusting. (iii) Yield of pods. (iv) (a) 1964—66. (b) No. (c) Nil. (v) N.A. (vi) Nil for 64, severe drought affected the crop adversely resulting in low yields for 65. (vii) As the expt, is contd. beyond 1965. hence the results of individual years are given below.

3. RESULTS :

64(69)

(i) 490 Kg/ha. (ii) 155·0 Kg/ha. (iii) Main effect of R alone is significant. (iv) Av. yield of pods in Kg/ha.

	R_1	R_2	R_3	F_0	F_1	F_2	Mean
S_1	651	483	440	541	511	522	525
S_2	576	389	405	389	461	520	457
S_3	642	491	336	416	491	563	490
Mean	623	454	394	449	487	535	490
F_0	514	480	352				
F_1	612	444	406				
F_2	743	439	423				

C.D. for R marginal means=107·2 Kg/ha.

65(273)

(i) 196 Kg/ha. (ii) 58 Kg/ha. (iii) Main effect of R is highly significant and the main effect of F is significant. (iv) Av. yield of pods in Kg/ha.

	R_1	R_2	R_3	F_0	F_1	F_2	Mean
S_1	273	200	144	265	168	187	207
S_2	254	185	170	233	183	192	202
S_3	209	195	134	184	192	162	179
Mean	245	193	149	227	181	180	196
F_0	265	251	166				
F_1	242	156	144				
F_2	229	173	139				

C.D. for R or F marginal means=40·0 Kg/ha.

Crop :- Groundnut (*Kharif*). **Ref :- A.P. 64(45).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'CM'.**

Object :—To find out the effects of different spacings and different fertilizer mixtures on the yield of Groundnut.

1. BASAL CONDITIONS:

(I) (a) Nil. (b) Groundnut. (c) N.A. (ii) Red sandy loam. (iii) 20.7.64. (iv) (a) Working with country plough once. (b) Dibbling. (c) 56 Kg/ha. (d) As per treatments. (e) 1. (v) Nil. (vi) TMV-3. (vii) Unirrigated. (viii) Working *metla guntaka* once and hand weeding. (ix) 45 cm. (x) 1.1.1965.

2. TREATMENTS:

All combinations of (1), (2) and (3)

(1) 3 spacings between rows : S_1=23 cm,, S_2=46 cm. and S_3=69 cm.

(2) 3 spacings within rows : R_1=8 cm., R_2=15 cm. and R_3=23 cm.

(3) 3 levels of fertilizer mixtures : F_0=0, F_1=11·2 Kg/ha. of N as A/S+16·8 Kg/ha. of P_2O_5 as Super +16·8 Kg/ha. of K_2O as Pot. Sul. and F_2=22·4 Kg/ha. of N as A/S +33·6 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Pot. Sul.

Time and method of application of fertilizers are not available.

3. DESIGN:

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 16·5 m.×5·5 m. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of pods. (iv) (a) 1964 only. (b) and (c) Nil. (v) Hyderabad. (vi) and, (vii) Nil.

5. RESULTS:

(i) 973 Kg/ha. (ii) 101·0 Kg/ha. (iii) Main effects of S and F are significant. (iv) Av. yield of pods in Kg/ha.

	R_1	R_2	R_3	F_0	F_1	F_2	Mean
S_1	946	1028	1035	996	959	1054	1003
S_2	1060	1045	961	976	983	1107	1022
S_3	967	906	803	830	873	973	892
Mean	991	991	933	934	939	1045	973
F_0	1011	993	796				
F_1	920	939	958				
F_2	1242	1048	1345				

C.D. for F or S marginal means=69·8 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 63(55), 64(165).**

Site :- Groundnut Res. Stn., Machilipatnam. **Type :- 'CM'.**

Object :— To study the effect of different numbers of ploughings through different implements with and without manurial dose on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy-Groundnut. (b) Paddy. (c) N.A. for 63; 24·7 C.L./ha. of C.M.+33·6 Kg/ha. of N as A/S for 64. (ii) Sandy loam. (iii) 13.12.63 ; 27, 28.12.64. (iv) (a) As per treatments. (b) Dibbling. (c) 67 Kg/ha. (d) 23 cm.×15 cm. (e) 1. (v) Nil. (vi) TMV-2. (vii) Irrigated. (viii) 1 hand weeding. (ix) 92 cm.; Nil. (x) 17, 18.4.64 ; 9.4.65.

2. TREATMENTS :

Main-plot treatments :

2 levels of fertilizers : M_0=0 (no application) and M_1=11·2 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+33·6 Kg/ha. of K_2O as Pot. Sul.

Sub-plot treatments :

All combinations of (1) and (2).

(1) 3 levels of ploughings : C_1=2, C_2=3 and C_3=4 ploughings.

(2) 2 types of implements : T_1=Country plough and T_2=Iron plough.

3. DESIGN :

(i) Split-plot, (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 7·1 m.×7·3 m. (b) 7·9 m.×6·4 m. (v) 61 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil for 63. B.H.C. at 50% sprayed for slight attack of leaf miner for 64. (iii) Yield of pods. (iv) (a) 1963-64. (b) No. (c) Nil. (v) Rudrur. (vi) Nil. (vii) Main-plot and sub-plot error variances are homogeneous and Treatments×years interaction are absent.

5. RESULTS :

Pooled results.

(i) 1776 Kg/ha. (ii) (a) 383·4 Kg/ha. (based on 3 d.f. made up pooled error and interaction of treatment with years). (b) 554·6 Kg/ha. (based on 28 d.f. made up of pooled error and interaction of various components of treatment with years). (iii) Interaction M×T alone is significant. (iv) Av. yield of pod in Kg/ha.

	C_1	C_2	C_3	T_1	T_2	Mean
M_0	1748	1560	1924	1917	1571	1744
M_1	1924	1604	1896	1641	1571	1808
Mean	1836	1582	1910	1779	1773	1776
T_1	1854	1478	2004			
T_2	1817	1686	1816			

C.D: for T means at the same level of M=463·7 Kg/ha.
C.D. for M means at the same level of T=571·5 Kg/ha.

Individual results.

Treatments	M_0	M_1	Sig.	S.E./main-plot
Years				
1963	2132	2096	N.S.	188 0
1964	1356	1520	N.S.	534·4
Pooled	1744	1808	N.S.	383.4

C_1	C_2	C_3	Sig.	T_1	T_2	Sig.	G.M.	S.E./sub-plot
1942	2095	2305	N.S.	2096	2132	N.S.	2114	566·0
1730	1069	1515	*	1462	1414	N.S.	1438	418·0
1836	1582	1910	N.S.	1779	1773	N.S.	1776	554·6

Crop :- Groundnut (*Rabi*). **Ref :- A.P. 64(60).**

Site :- Agri. Res. Stn. Rudrur. **Type :- 'CM'.**

Object :— To determine te effect of cultural practices along with meanures on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) N.A. (ii) Sandy loam. (iii) 12.1.64. (iv) (a) As per treatments. (b) Sowing with wooden plough. (c) 78 Kg/ha. (d) 23 cm. × 15 cm. (e) 1. (v) Nil. (vi) Spanish improved (105 days). (vi) Irrigation. (viii) Hand weeding. (iv) 137 c.m. (x) 15.5.64.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 63 (55), 64(164) on page 763.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pod. (iv) (a) 1964 only. (b) No. (c) Nil. (v) Machilipatnam. (vi) and (vii) Nil.

5. RESULTS :

(i) 1170 Kg/ha. (ii) (a) 440·0 Kg/ha. (b) 157·0 Kg/ha. (iii) Main effect of T is highly significant. (iv) Av. yield of pod in Kg/ha.

	C_1	C_2	C_3	T_1	T_2	Mean
M_0	1050	1148	1006	842	1294	1068
M_1	1222	1234	1360	1152	1392	1272
Mean	1136	1191	1183	997	1343	1170
T_1	1035	1083	873			
T_2	1237	1299	1493			

C.D. for T marginal means =142·8 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 65(232).**

Site :- Oilseeds Res. Stn., Yellamanchili. **Type :- 'CM'.**

Object :—To determine optimum spacing between and within rows and their relationship with fertilizer application.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Fallow—Groundnut—Fallow. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 16, 17.7.65/gap filling 25.7.65. (iv) (a) Ploughing with country plough. (b) Hand dibbling. (c) 124 Kg/ha. (d) 20 cm.×20 cm. (e) 1. (v) Nil. (vi) TMV-3 (spreading, 120 days duration). (vii) Unirrigated. (viii) Hand weeding and hoeing 2 times. (ix) N.A. (x) 30.11.65.

2. TREATMENTS :

All combinations (1), (2) and (3)

(1) 3 spacings between rows : R_1=30, R_2=38 and R_3=46 cm.

(2) 3 spacings within rows : S_1=8, S_2=15 and S_3=23 cm.

(3) 3 fertilizers : F_0=Control (No manure), F_1=11 Kg/ha. of N as A/S+17 Kg/ha. of P_2O_5 as Snper +17 Kg/ha. of K_2O of as Mur. Pot. F_2=22 Kg/ha. of N as A/S+34 Kg/ha. of P_2O_5 as Super+34 Kg/ha. of K_2O as Mur. Pot.

Fertilizers were applied by placement in furrows before sowing on 16, 17.7.65.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 9·8 m.×5·2 m. (b) 9·1 m.×4·6 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Mild incidence of Surl Puchi was noticed and Endrin was sprayed 2 times. (iii) Pod yield. (iv) (a) 1965—67. (b) No. (c) Nil. (v) N.A. (vi) Drought condition. (vii) Nil.

5. RESULTS :

(i) 169 Kg/ha. (ii) 73·4 Kg/ha. (iii) Main effects of R and S are significant. (iv) Av. yield of pod in Kg/ha.

	F_0	F_1	F_2	S_1	S_2	S_3	Mean
R_1	189	219	170	241	197	140	193
R_2	161	104	102	117	138	112	122
R_3	180	217	176	272	167	135	191
Mean	177	180	149	210	167	129	169
S_1	207	222	200				
S_2	175	192	134				
S_3	148	125	114				

C.D. for R or S marginal means=50·8 Kg/ha.

Crop :- Groundnut. **Ref :- A.P. 65(238).**

Site :- Oil seeds Res. Stn., Yemmiganur. **Type :- 'IM'.**

Oject : —To determine the optimum irrigational practices and its relation with the method of fertilizer placement.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red sandy loam. (iii) 26, 28.7.65. (iv) (a) Ploughing with country plough. (b) Hand dibbling. (c) 124 Kg/ha. (d) 20 cm.×20 cm. (e) 1. (v) Nil (iv) TMV—2. (vii) Irrigated. (viii) Working *danthula* and hand weeding twice. (ix) N.A. (x) 20.11.65.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 irrigational times : I_1=At sowing, I_2=At flowering and I_3=At fruiting.

(2) 2 Fertilizer levels : F_1=15 Kg/ha. of N as A/S+30 Kg/ha. of P_2O_5 as Super+30 Kg/ha. of K_2O as Mur. Pot., F_2=60 Kg/ha. of N as A/S+60 Kg/ha. of P_2O_5 as Super+60 Kg/ha. of K_2O as Mur. Pot.

Sub-plot treatments:

4 methods of application of fertilizers: M_0=No application, M_1=Below the seed in furrows, M_2=Band placement, M_3=Local method (broadcasting).

Manure applied on 24.8.65.

3. DESIGN

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 22·0 m.×2.8 m (b) 19·6 m.×2·4 m. (v) 20 cm.×20 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of smut, spraying Endrin 4 times Dusting BHC 10 % once. (iii) Pod yield. (iv) (a) 1965—66. (b) No. (c) Nil. (v) N.A. (vi) Acute drought condition prevailed. (vii) Nil.

5. RESULTS :

(i) 743 Kg/ha. (ii) (a) 563·3 Kg/ha. (b) 172·3 Kg/ha. (iii) None of the effects is significant. (iv) Av yield of pod in Kg/ha.

	M_0	M_1	M_2	M_3	I_1	I_2	I_3	Mean
F_1	764	792	812	736	625	769	928	774
F_2	652	721	779	697	726	514	896	712
Mean	708	756	795	716	675	641	912	743
I_1	603	661	719	719				
I_2	576	698	665	626				
I_3	944	910	990	804				

Crop :- Castor. **Ref :- A.P. 63(291), 64(286).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :— To find out the manurial requirement of the Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) *Chalka*. (iii) 2.8.63, 27.6.64. (iv) (a) 2 ploughings. (b) Hand dibbling. (c) 7·4 Kg/ha. (d) 91 cm.×46 cm. (e) 1. (v) H.C.—6. (vii) Unirrigated. (viii) Hand weeding-3, hoeing-5. (ix) N.A. (x) 28.2.64, 15.1.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22 and N_2=48 Kg/ha.

(2) 3 levels of P_2O_5 as single Super : P_0=0, P_1=11 and P_2=22 Kg/ha.

(3) 3 levels of K_2O on pot sulphate : K_0=0, K_1=11 and K_2=22 Kg/ha.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block; 3 blocks/replication. (b) No. (iii) 2. (iv) (a) 7·3 m.×6·4 m. (b) 6·4 m.×4·6 m. (v) 0·5 m.×0·9 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed once. (iii) Seed yield. (iv) (a) 1962—64. (b) Yes. (c) Nil. (v) and (vi) N.A. (vii) Error variances are heterogeneous and Treatments×years interaction is absent therefore results of individual years are presented below.

5. RESULTS :

63(291)

(i) 314 Kg/ha. (ii) 142·0 Kg/ha. (iii) Main effect of N, is highly significant. (iv) Av. yield of seeds in Kg/ha.

	S_1	S_2	S_3	K_1	K_2	K_3	Mean
N_1	160	218	247	231	334	382	208
N_2	270	313	386	189	299	430	323
N_3	426	418	393	205	336	425	412
Mean	285	316	342	208	323	412	314
K_1	321	239	295				
K_2	311	316	321				
K_3	315	362	349				

C.D. for N marginal means=97·6 Kg/ha.

64(286)

(i) 96 Kg/ha. (ii) 56·6 Kg/ha. (iii) Main effect of N is highly significant. (iv) Av. yield of seeds in Kg/ha.

	P_1	P_2	P_3	K_1	K_2	K_3	Mean
N_1	40	43	84	45	116	106	56
N_2	92	8I	87	54	63	167	87
N_3	146	129	164	68	81	166	146
Mean	93	84	112	56	87	146	96
K_1	90	95	94				
K_2	59	77	117				
K_3	118	113	105				

C D. for N marginal means=39·0 Kg/ha.

Crop :- Castor. **Ref :- A.P. 65(222).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To find out the manurial requirements of the Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) *Chalka.* (iii) 25.6.65/1.7.65. (iv) (a) 2 ploughings. (b) Hand dibbling. (c) 7·4 Kg/ha. (d) 91 cm.×46 cm. (e) 1. (v) Compost 100 C.L./ha. (vi) HC—6. (vii) Unirrigated. (viii) 3 hoeings and 2 weedings. (ix) N.A. (x) 15.10.65 to 9.2.66.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=30 and N_2=60 Kg/ha.

(2) 3 level of P_2O_5 as Super : P_0=0, P_1=5 and P_2=10 Kg/ha.

(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=5 and K_2=10 Kg/ha.

3. DESIGN :

(i) 3^2 confd. (ii) (a) 9 plots/block; 3 blocks/replication. (b) 22·0 m.×19·2 m. (iii) 2. (iv) (a) and (b) 7·3 m.×6·4 m. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (2) Endrin was sprayed twice. (iii) Yield of seed. (iv) (a) 1965—67. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 163 Kg/ha, (ii) 51·2 Kg/ha. (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	114	102	95	108	117	86	104
N_1	194	162	202	193	182	183	186
N_2	188	214	196	184	203	212	199
Mean	166	159	164	162	167	160	163
K_0	156	131	198				
K_2	168	173	161				
K_1	173	173	135				

C.D. for N marginal means=35·5 Kg/ha.

Crop :-Castor (*Kharif*). **Ref :- A.P. 62(148).**

Site :- Govt. Agri. Farm, Dindi. **Type :- 'M'.**

Object :—To study the effects of N, P and K on the yield of Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) Nil. (ii) *Chalka*. (iii 16.7.62. (iv) (a) 2 ploughings. (b) Hand dibbling. (c) 7 Kg/ha. (d) 91 cm.×46 cm. (e) 1. (v) 63 Q/ha. of compost. (vi) Castor H.C. 6. (vii) Unirrigated. (viii) 1 gap filling, 2 hoeings and 1 hand weeding. (x) N.A. (x) 20.11.62.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=11·2 and P_2=22·4 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=11·2 and K_2=22·4 Kg/ha.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 blocks 1 replication. (b) N.A. (iii) 2. (iv) (a) 7·3 m.×6·4 m. (b) 6·4 m.×4·6 m. (v) 46 cm.×91 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Castorseed. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 941 Kg/ha. (ii) 352·0 Kg/ha, (iii) Main effect of N is highly significant. (iv) Av. yield of Castor in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	392	862	615	499	684	686	623
N_1	977	1133	1164	978	1122	1174	1091
N_2	1109	1190	1028	1025	1135	1167	1109
Mean	826	1062	936	834	980	1009	941
K_0	698	823	981				
K_1	973	1095	873				
K_2	807	1267	953				

C.D. for N marginal means=242·2 Kg/ha.

Crop :- Castor (*Kharif*). **Ref :- A.P. 60(4), 61(16), 62(20), 63(36).**

Site :- Agri. Res. Instt., Rajendranagar, Hyderabad. **Type :- 'M'.**

Object : —To study the effect of different levels of N, P and K on the yield of Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) As per treatments. (ii) Sandy loam. (iii) 14.7.60; 20.7.61; 12.7.62 and 14.7.63. (iv) (a) 2 ploughings and 2 harrowings. (b) Dibbling. (c) 6·7 Kg/ha. (d) 91 cm.×46 cm. (e) 1. (v) Nil. (vi) H.C.—6 (late). (vii) Unirrigated. (viii) 2 intercultures. (ix) 66·3 cm. for 60, 95·9 cm. for 61, 110·2 cm. for 62 and 71·8 for 63. (x) 20.3.61, 31.3.62, 27.3.63 and 25.3.64.

2. TREATMENTS ;

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=11·2 and P_2=22·4 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=11·2 and K_2=22·4 Kg/ha.

3. DESIGN :

(i) 3^3 Confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. for 60; 7·3 m.×6·4 m. ; for others. (b) 1/166 ha. for 60; 6·4 m.×4·6 m. for others. (v) N.A. for 60, 46 cm.×91 cm. for others. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrin was sprayed to control Semilooper. (iii) Seed yield. (iv) (a) 1960 to 1963. (b) Yes. (c) As under 5. Results. (v) and (vi) N.A. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results.

(i) 490 Kg/ha. (ii) 190·4 Kg/ha. (based on 54 d.f. made up of interaction of Treatments×years). (iii) Main effect of N alone is highly significant. (iv) Av. yield of seed in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	433	343	412	382	393	412	396
N_1	489	509	514	485	460	568	504
N_2	560	585	565	585	572	553	570
Mean	494	479	497	484	475	511	490
K_0	472	478	501				
K_1	470	483	473				
K_2	540	475	518				

C.D. for N marginal means=64·1 Kg/ha.

Individual results

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years								
1960	302	403	422	N.S.	387	342	398	N.S.
1961	431	511	628	**	578	467	525	**
1962	551	679	732	**	611	704	647	N.S.
1963	299	423	499	**	401	401	419	N.S.
Pooled	396	504	570	**	494	479	497	N.S.

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
381	391	355	N.S.	376	150
488	497	584	**	523	72
619	645	698	N.S.	654	187
447	367	407	N.S.	407	154
484	475	511	N.S.	490	190·4

Crop :- Castor. **Ref :- A.P. 60(26), 62(27).**

Site :- Reg. Oilseed Res. Stn., Kadiri. **Type :- 'M'.**

Object :— To study the effect of different levels of N, P and K on the yield of Castor.

1. BASAL CONDITIONS :

(i) (a) No. (b) Castor. (c) N.A. (ii) Red loam. (iii) 6.9.60; 2.8.62. (iv) (a) Working country plough followed by *Chakkala* and *Guntaka* twice. (b) and (c) N.A. (d) 91 cm.×91 cm. (e) N.A. (v) As per treatments. (vi) H.C.-6. (vii) Unirrigated. (viii) Interculture harrowing and hoeing and weeding twice. (ix) 66 cm. ; 60 cm. (x) 6.4.61; 5.4.63.

2. TREATMENTS :

All combinations of (1). (2) and (3).

(1 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=22·4 and P_2=44·8 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=22·4 and K_2=44·8 Kg/ha.

3. DESIGN :

(i) 3^3 partial confd. (ii) (a) 9 plots/block, 3 blocks/replicatian. (b) 113·4 m.×58·5 m. (iii) 2. (iv) (a) 18·3 m.×5·5 m. (b) 16·5 m.×3·7 m. (v) 91 cm.×91 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack by Semi looper, controlled by Endrin spray. (iii) Seed yield. (iv) (a) 1960-62. (b) Yes. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variences are heterogeneous and Treatments ×years interaction is present.

5. RESULTS :

(i) 564 Kg/ha. (ii) 240·5 Kg/ha. (based on 18 d.f, made up of various components of Treatments×years). (iii) Main effect of N is highly significant. (iv) Av. yield of pods in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	368	320	326	373	337	304	338
N_1	513	628	699	632	574	635	614
N_2	619	888	716	706	698	818	741
Mean	500	612	581	570	536	586	564
K_0	454	611	654				
K_1	467	610	533				
K_2	580	616	562				

C.D. for N marginal means=119·2 Kg/ha.

Individual results.

Years	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
1960	359	585	635	**	450	529	600	**
1961	317	642	848	**	550	695	562	N.S.
Pooled	338	614	741	**	500	612	581	N.S.

K_0	K_1	K_2	Sig.	G.M.	S.E./plot
514	517	549	N.S.	526	108
627	556	624	N.S.	602	196
570	536	586	N.S.	564	240·5

Crop :- Castor. **Ref :- A.P. 60(25), 61(21), 62(26), 63(18).**

Site :- Reg. Oilseed Res. Stn., Kadiri. **Type :- 'C'.**

Object :— To determine the optimum spacing between rows and between plants for castor crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut-Castor. (b) Groundnut. (c) 75·3 Q/ha, of F.Y.M. for 60. 61 ; 27·2 C.L./ha. of C.M. for 62 ; 75·3 Q/ha. of F.Y.M.+23·5 Kg/ha. of A/S+9·5 Kg/ha. of Super+7·8 Kg/ha. of Pot. Sul. for 63. (ii) Red sandy loam. (iii) 31.8.60 ; 12.7.61 ; 7.8.62 ; 20.7.63. (iv) (a) Working country plough twice followed by *Chikkala* and *Guntaka* twice. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 62·8 Q/ha. of F.Y.M.+22·4 Kg/ha.of A/S+11·2 Kg/ha. of each of Super and Pot. Sul. for 60 and 63 ; 27·2 C.L./ha. of C.M.+27·2 Kg/ha. ofA/S+69·2 Kg/ha. of Super+9·9 Kg/ha. of Pot. Sul. for 61 ; 14·8 C.L./ha. of C.M.+118·6 Kg/ha. of A/S+57·1 Kg/ha. of Super+15·5 Kg/ha. of Pot. Sul. for 62. (vi) TMV-1. (vii) Unirrigated. (viii) Interculturing by working *pilliguntaka* thrice followed by hoeing and weeding twice. (ix) 66·0 cm. ; 41·6 cm. ; 60·1 cm. ; 57·1 cm. (x) 6.3.61 to 4.4.61 ; 10.11.61 to 13.3.62 ; 4.4.63 ; 23.3.64.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments

(1) 2 spacings between rows : R_1=122 cm. and R_2=91 cm.

(2) 3 spacings between plants ; S_1=30, S_2=61 and S_3=91 cm.

Extra treatments are : E_1=61 cm.×30 cm. and E_2=61 cm.×61 cm.

3. DESIGN ;

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. for 60, 61, 62 ; 75·9 m.×58·5 m. for 63. (iii) 4. (iv) (a) 18·3m.×4·9 to 6·2 m. for 60, 61.62 ;18·3 m.×7·3 m. for 63. (b) 18·3 m.×3·7 m. for 60, 61, 62 : 14·6 m.×3·7m. for 63, (v) Varies for different treatments. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of Semilooper controlled by spraying Endrin and by hand picking. (iii) Yield of castor beans. (iv) (a) 1960-63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treaments×years interaction is present.

5. RESULTS :

Pooled results

(i) 677 Kg/ha. (ii) 198·5 Kg/ha. (based on 28 d.f. made up of interaction of Treatments×years). (iii) None of the effects is sifinificant. (iv) Av. yield of castor beans in Kg/ha.

E_1=656 and E_2=651 Kg/ha.

	S_1	S_2	S_3	Mean
R_1	735	710	681	709
R_2	700	682	599	660
Mean	718	696	640	685

Individual results.

Treatments	S_1	S_2	S_3	Sig.	R_1	R_2	Sig.	G.M.	S.E./plot
Years									
1960	331	316	312	N.S.	306	326	N.S.	319	59
1961	543	550	590	N.S.	603	520	N.S.	535	32
1962	1149	1090	886	N.S.	1049	1034	N.S.	1037	142
1963	762	637	496	N.S.	605	659	N.S.	632	168
Pooled	696	648	571	N.S.	641	635	N.S.	631	198·5

Caop :- Castor (*Kharif*). **Ref :- A.P. 60(24), 61(20), 62(23), 63(17).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'C'.**

Object :— To ascertain the optimum number of intercultural operations required for Castor crop.

1. BASAL CONDITIONS:

(i) (a) Groundnut-Castor. (b) Groundnut. (c) N.A. for 60 ; 14·8 C.L./ha. of F.Y.M. for 61, 62 ; 75·3 Q/ha. of F.Y.M., 23·5 Kg/ha. of A/S, 9·5 Kg/ha. of Super and 7·8 Kg/ha. Pot. Sul. for 63. (ii) Red loam. 31.8.60 ; 6.7.61 ; 30.7.62 ; 22.7.63. (iv) (a) As per treatments. (b) and (c) N.A. (d) 91 cm.×91 cm. (e) N.A. (v) 14·8 C.L./ha. of C.M., 22·4 Kg/ha. of A/S, 11·2 Kg/ha. of each of Super and Pot. Sul. for 60 61 ; 12·4 C.L./ha. of C.M. for 62 ; 62·8 Q/ha. of F.Y.M.+22·4 Kg/ha. of A/S+11·2 Kg/ha. of each of Super and Pot. Sul. for 63. (vi) TMV-1. (vii) Unirrigated. (viii) As per treatments. (ix) 60·0 cm. ; 41·6 cm. ; 60·1 cm. ; 57·1 cm. (x) 27,2·61 to 15.4.61 ; 4.4.62 ; 17.12.62 to 8.12.63 ; 19.3.64.

2. TREATMENTS :

6 intercultural treatments : C_1=Country ploughing once and *Guntaka* once, C_2=*Guntaka* twice, C_3=*Guntaka* four times, C_4=*Guntaka* and *Gorru* once, C_5=Country ploughing once and *Guntaka* twice and C_6=*Gorru* once and *Guntaka* twice.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 18·3 m.×32·9 m. (iii) 4. (iv) (a) 18·3 m.×5·5 m. (b) 16·5 m.×3·7 m. (v) 91 cm. on each side of plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of Semilooper controlled by spraying Endrin and Parathion. (iii) Yield of Castor. (iv) (a) 1960-63. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled results

(i) 384 Kg/ha. (ii) 100·7 Kg/ha. (based on 15 d.f. made up of interaction of Treatments × years). (iii) Treatment differences are not significant. (iv) Av. yield of castor in Kg/ha.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	406	365	417	344	402	371

Individual results

Treatments	C_1	C_2	C_3	C_4	C_5	C_6	Sig.	G.M.	S.E./plot
Years									
1960	252	210	237	193	215	200	N.S.	218	49
1961	440	425	465	385	469	499	N.S.	447	37
1962	368	336	484	324	487	403	N.S.	400	32
1963	563	489	481	472	436	381	N.S	470	148
Pooled	406	365	417	344	402	371	N.S.	384	100·7

Crop :- Castor (*Kharif*). **Ref :- A.P. 64(47).**

Site :- Reg. Oilseed Res. Stn., Kadiri. **Type :- :C'.**

Object :-- To study the effect of tillage and intercultural operations on the yield of Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 75·3 Q/ha. of F.Y.M., 84·0 Kg/ha. of N as A/S; 160·6 Kg/ha. of P_2O_5 as Super. (ii) Red sandy loam.(iii) 24.7.74. (iv) (a) As per treatments. (b) dibbling. (a) Hand dibbling. (c) 18.5 Kg/ha. (d) 91 cm. × 30 cm. (e) 1. Same as 1·1 (c) above. (vi) TMV-1. (vii) Unirrigated. (viii) As per treatments. (ix) 46·2 cm. (x) 8·4.65.

2. TREATMENTS:

Main-plot treatments :

3 types of tillage operation : T_1=*Chakkala guntaka* twice and *Guntaka* once, T_2=Cuntry plough thrice *Guntaka* twice and T_3=Country plough thrice and *Guntaka* thrice.

Sub-plot treatments :

3 types of intercultural operation : I_1=*Guntaka* once, I_2=*Guntaka* twice, and I_3=*Guntaka* twice,

3. DESIGN:

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 Sub-plots/main-plot. (iii) 4. (iv) (a) 18·3 m. × 5·5 m. (b) 17·7 m. × 3·7 m. (v) 30 cm. × 91 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attak of Semilopper, spraying Endrin E.C. 20% and hand picking on 24.9.64. (iii) Yield of seed. (iv) (a) and (c) Nil. (v) N,A. (vi) and (vii) Nil.

5. RESULTS :

(i) 766 Kg/ha. (ii) (a) 246 Kg/ha. (b) 91 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed in Kg/ba.

	I_1	I_2	I_3	Mean
T_1	801	771	719	764
T_2	754	714	709	726
T_3	763	845	820	809
Mean	773	777	749	766

Crop :- Castor (*Kharif*). **Ref :- A.P. 64(46).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'CM'.**

Object :—To study the effect of different times and methods of application of different levels of M on the yield of Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) N.A. (ii) Red sandy loam. (iii) 23.7.64. (iv) (a) Working with country plough and *chakkala guntaka*. (b) and (c) N.A. (d) 91 cm.×91 cm. (e) — (v) As per treatments. (vi) TMV—1. (vii) Unirrigated. (viii) Hand hoeing and weeding twice. (ix) 46·1 cm. (x) 30.3.65.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_2=44·8 Kg/ha.

(2) 3 methods of application : M_1=Broadcasting and covering, M_2=In single plough furrow and covering, M_3=In two plough furrows and covering.

(3) 3 times of application : T_1=At sowing, T_2=One month after sowing and T_3=Two months after sowing.

3. DESIGN :

(i) 3^3 partial confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) N.A. (iii) 2. (iv) (a) 18·3 m.×5·5 m (b) 17·7 m×3·7 cm. (v) 30 cm.×91 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Mild attack of Semilooper was noticed during Oct. and Nov. controlled by spraying Endrin. 20 % and hand picking. (iii) Yield of seed. (iv) (a) and (b) No. (c) Nil. (v) and (vi) Nil. (vii) As the layout was faulty, the experiment was analysed as R.B.D.

5. RESULTS :

(i) 462 Kg/ha. (ii) 271 Kg/ha. (iii) Main effects of N and T are highly significant. (iv) Av. yield of seed in Kg/ha.

	M_1	M_2	M_3	T_1	T_2	T_3	Mean
N_0	197	287	237	329	213	178	240
N_1	442	507	623	830	342	401	524
N_2	605	657	603	954	560	351	622
Mean	415	484	488	704	372	310	462
T_1	618	674	820				
T_2	350	382	386				
T_3	276	395	257				

C.D. for N or T marginal means=187·3 Kg/ha.

Crop :- Gingelly. **Ref :- A.P. 63(13), 64(19), 65(63).**

Site :- Sesamum Res. Stn., Karimnagar. **Type :- 'M'.**

Object : –To obtain the optimum levels of N, P and K for the maximum production of Sesamum.

1. BASAL CONDITIONS :

(i) (a) Nil. for 63, 64 ; Gingelly—Fallow—Gingelly for 65. (b) Gingelly. (c) Nil. for 63 ; as per treatments for 64 ; 22 Kg/ha. of N as A/S+11 Kg/ha. of P_2O_5 as Super+11 Kg/ha. of K_2O as Mur. Pot. for 65. (ii) Sandy loam. (iii) 26.7.63 ; 29.7.64 ; 23.7.65. (iv) (a) 2 ploughings. (b) Hand dibbling. (c) 5 Kg/ha. (d) 30 cm.×15 cm. (e) One. (v) Nil. (vi) T—85. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 49·1 cm. for 63 ; 74·2 cm. for 64, 43·5 cm. for 65 (x) 29.10.63 to 19.11.63 ; 22.10.64 to 2.11.64 ; 25.10.65.

2. TREATMENTS :

All combinaiions of (1), (2) and (3)

(1) 3 levels of N : N_0=0, N_1=22 and N_1=44 Kg/ha.
(2) 3 levels of P_2O_5 : P_0=0, P_1=22 and P_2=44 Kg/ha.
(3) 3 levels of K_2O : K_0=0, K_1=22 and 44 Kg/ha.

The N_2 was applied in two equal doses one at sowing and the other one month after sowing.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 12·2 m.×4·9 m. (b) 11·6 m.×4·3 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Poor for 63 ; satisfactory for others. (ii) Attack of Catter piller controlled by spraying Endrin for 63. Leaf spot and Phyllody attack for others controlled by spraying Fytolan 5 %. (iii) Yield of sesamum (iv) (a) 1963–contd. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) The expt. is continued beyond 1965 hence the results of indvidual years are given below.

5. RESULTS :

63(13)

(i) 80 Kg/ha. (ii) 39 Kg/ha. (iii) Main-effect of N is highly significant and that of K is significant. (iv) Av. yield of sesamum in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	15	5	8	8	11	9	9
N_1	89	81	98	56	106	106	89
N_2	135	147	140	117	153	152	141
Mean	80	78	82	60	90	89	80
K_0	54	56	69				
K_1	104	65	101				
K_2	80	111	75				

C.D. for N or K marginal means=27·0 Kg/ha.

64(19)

(i) 102 Kg/ha. (ii) 47 Kg/ha. (iii) Main effect of of N alone is highly, significant. (iv) Av. yield of sesamum in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	19	7	16	7	24	11	14
N_1	111	137	126	121	139	114	125
N_2	147	141	214	170	129	202	167
Mean	92	95	119	99	97	109	102
K_0	92	95	111				
K_1	65	83	144				
K_2	119	107	102				

C.D. for N marginal means=32·5 Kg/ha.

65(63)

(i) 154 Kg/ha. (ii) 44 Kg/ha. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in Kg/ha.

	P_0	P_1	P_2	K_0	K_1	K_1	Mean
N_0	26	31	74	28	68	35	44
N_1	126	178	171	154	195	127	159
N_2	210	260	307	242	228	307	259
Mean	121	156	184	141	164	156	154
K_0	112	190	122				
K_1	132	162	197				
K_2	118	117	234				

C.D. for N or P marginal means=30·4 Kg/ha.

Crop :- Gingelly. **Ref :- A.P. 63(113).**

Site :- Oilseeds Res. Stn., Yellamanchilli. **Type :- 'M'.**

Object :—To find out the optimum manurial requirements of Gingelly crop raised under rainfed conditions.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Fallow—Gingelly—Fallow. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 8, 9.6.63. (iv) (a) 4 ploughings with country plough. (b) Free hand sowing. (c) 6·7 Kg/ha. (d) 23 cm.×15 cm. (e) 2. (v) Nil. (vi) TMV—1. (vii) Unirrigated. (viii) Hand weeding (ix) 47·5 cm. (x) 6 to 10.9.63.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 2 levels of C.M. : M_0=0, and M_1=5604 Kg/ha.

(2) 3 levels of N as A/S : N_0=0, N_1=22·4 and N_1=44·8 Kg/ha.

(3) 3 levels of P_2O_5 as Super : P_0=0, P_1=22 4 and P_2=44·8 Kg/ha.

(4) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=22·4 and K_2=44·8Kg/ha.

3. DESIGN:

(i) $3^3 \times 2$ confd. Fact. (ii) (a) 6 blocks/replication ; 9 Plots/block. (b) 33·5 m.×14·3 m. (iii) 2. (iv) (a) 11·0 m.×4·6 m. (b) 10·7 m.×4·0 m. (v) 15 cm.×27 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Yield of gingelly seed. (iv) (a) 1963 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 95 Kg/ha. (ii) 137·6 Kg/ha. (iii) None o the effects is significant. (vi) Av. yield of grain in in Kg/ha.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
M_0	107	107	108	93	113	115	97	106	119	107
M_1	73	75	104	87	74	90	77	82	93	84
Mean	90	91	106	90	94	103	87	94	106	95
K_0	74	85	102	87	83	91				
K_1	94	98	90	84	108	90				
K_2	103	90	125	100	91	127				
P_0	80	84	108							
P_1	99	86	96							
P_2	92	102	113							

Crop :- Gingelly (*Kharif*). **Ref :- A.P. 63(32), 64(44).**

Site :- Agri. Res. stn., Karimnagar. **Type :- 'C'.**

Object :—To determine the optimum date of sowing and seedrate for Sesamum crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gingelly. (c) 11·2 Kg/ha. of N as A/S. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 2 ploughings and harrowing. (b) Behind the plough in furrows. (c) As per treatments (d) 10 cm.×30 cm. (e) 1. (v) 11·2 Kg/ha. of N as A/S. (vi) T—85 (medium). (vii) Unirrigated. (viii) Thinning and weeding. (ix) 67·8 cm. ; 74·2 cm. (x) 19.11.63 ; 27.10.64 to 17.11.64.

2. TREATMENTS :

Main-plot treatments :
5 dates of sowing : D_1=23.7.63, D_2=30.7.63, D_3=7.8.63, D_4=13.8.63 and D_5=20.8.63.

Sub-plot treatments :
4 seed rates : R_1=2·2, R_2=4·5, R_3=6·7 and R_4=8·9 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 11·6 m.×4·6 m. (b) 11·0 m.×4·0 m. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Sub-normal for 63 due to adverse seasonal conditions and crop lodged ; favourable for other. (ii) Attack of Phyllody ranged from 6 to 25 % attacked plants were burnt, leaf spot disease was controlled by Fytolan, a Coppen fungicide for 63 ; Nil for 64. (iii) Yield of sesamum. (iv) (a) 1963 -64. (b) Yes. (c) Nil. (v) No. (vi) Nil. (vii) Results have been presented individually because sub-plot error variances were found to be heterogeneous.

5. RESULTS :

63(32)

(i) 33 Kg/ha. (ii) (a) 32 Kg/ha. (b) 16 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of gingelly in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	Mean
R_1	22	46	19	39	37	33
R_2	19	33	37	57	32	36
R_3	16	48	23	35	47	34
R_4	13	19	39	49	30	30
Mean	17	37	29	45	37	33

64(44)

(i) 49 Kg/ha. (ii) (a) 24 Kg/ha. (b) 11 Kg/ha. (iii) Main effect of D alone is significant. (b) Av. yield of gingelly in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	Mean
R_1	76	9	29	48	87	50
R_2	95	7	39	43	68	50
R_3	81	18	35	46	74	51
R_4	63	31	34	25	76	46
Mean	79	16	34	41	76	49

C.D. for D marginal means=17·1 Kg/ha.

Crop :- Gingelly. **Ref :- A.P. 61(69), 62(89), 64(119).**

Site :- Oilseeds Res: Stn., Yellamanchili. **Type :- 'C'.**

Object :—To determine the optimum number of tillage operation and intercultural operation required for Gingelly.

1. BASAL CONDITIONS :

(i) (a) Gingelly—Fallow—Groundnut—Fallow—Gingelly. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) 5.6.61, 19.5.62 and 1.6.64. (iv) (a) As per treatments. (b) Hand dibbling. (c) 6·7 Kg/ha. (d) 30 cm. × 30 cm. for 61 ; 23 cm. × 15 cm. for 62 and 64 (e) 1. (v) 125·5 Q/ha. of C.M. for 61 ; 100·4 Q/ha. of compost for 62 and 24·7 C.L./ha. of F.Y.M, for 64. (vi) TMV—1. (vii) Unirrigated. (viii) As per treatments. (ix) 76 cm. for 61 32 cm. for 62 and 32·5 cm. for 64. (x) 5.9.61, 22.8.62 and 1.9.64.

2. TREATMENTS :

Main-plot treatments:

4 tillage operations : P_1=2 ploughings, P_2=3 ploughings, P_3=4 ploughings and P_4=5 ploughings with wooden plough.

Sub-plot treatments:

2 intercultural operations : T_1=Hand weeding once on 11.7.61 and T_2=Hand weeding twice on 11 and 19.7,64.

Tillage operation performed on 8.5.61.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) 24·4 m.×12·2 m. for 61 38 4 m.×11·6 m. for others. (iii) 4. (iv) (a) 12·2 m.×3·1 m. for 61; 11·6 m.×4·6 m. for others. (b) 11·6 m.×2·4 m. for 61; 11·0 m.×4·1 m. for others. (v) 30 cm.×30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of Leaf cater piller and pest, Goll fly and Phyllody. (iii) Yield of Gingelly. (iv) (a) 1961 to 64. (b) No. (c) Nil. (v) and (vi) N.A. (vii) Sub-plot treatments are heterogeneous therefore results of individual years are presented below.

5. RESULTS :

61(49)

(i) 665 Kg/ha. (ii) (a) 155·8 Kg/ha. (b) 121·6 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
T_1	502	713	733	723	668
T_2	542	749	735	623	662
Mean	522	731	734	673	665

62(89)

(i) 639 Kg/ha. (ii) (a) 213·8 Kg/ha. (b) 230·4 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
T_1	453	620	623	805	625
T_2	668	540	649	753	652
Mean	560	580	635	779	639

64(119)

(i) 307 Kg/ha. (ii) (a) 54·7 Kg/ha. (b) 57·6 Kg/ha. (iii) Interaction P×T is significant. (iv) Av. yield of seed in Kg/ha.

	P_1	P_2	P_3	P_4	Mean
T_1	266	334	273	321	298
T_2	277	243	381	366	317
Mean	271	288	327	343	307

C.D. for T means at the same level of P=88·7 Kg/ha.

C.D. for P means at the same level of T=87·3 Kg/ha.

Crop :- Gingelly. **Ref :- A.P. 61(68).**

Site :- Oilseeds Res. Stn., Yellamanchili. **Type :- 'C'.**

Object :—To find out the optimum seed rate and time of sowing for Gingelly crop.

1. BASAL CONDITIONS :

(i) (a) Fallow—Gingelly—Fallow—Groundnut—Fallow. (b) Fallow. (c) Nil. (ii) Clay loam. (iii) As per treatments. (iv) (a) 4 ploughings with country plough. (b) Hand dibbling. (c) As per treatments. (d) 23 cm. × 15 cm. (e) 1. (v) 125·5 Q/ha. of C.M. applied by broadcasting and covered by ploughing. (vi) TMV—1. (vii) Unirrigated. (viii) 2 hand weedings and hoeings. (ix) 76·1 cm. (x) 14, 28.9.61 and 13.10.61.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 seed rates : R_1=2.2, R_2=4·5, R_3=6·7 and R_4=8 9 Kg/ha.

(2) 3 dates of sowing : D_1=5.6.61, D_2=19.6.61 and D_3=2.7.61.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 54·9 m × 9 1 m. (iii) 3. (iv) (a) 9·1 m. × 4·6 m. (b) 8·5 m. × 4·0 m. (v) 30 cm. × 30 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of Leaf cater pillar in early stages. Pest was brought under control by dusting of B.H.C. 10%. Gall fly and Phyllody attack at flowering stage spread was mitigated by removing affected plants. (iii) Yield of gingelly seed. (iv) (a) 1961 only. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS ;

(i) 103·9 Kg/ha. (ii) 29·5 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of seed in Kg/ha,

	R_1	R_2	R_3	R_4	Mean
D_1	137	128	176	129	142
D_2	84	101	117	112	104
D_3	50	56	89	67	65
Mean	90	95	127	102	104

C.D. of D marginal means=24·9 Kg/ha.

Crop :- Gingelly. **Ref :- A.P. 62(91).**

Site :- Oliseed Res. Stn., Yellamanchili. **Type :- 'C'.**

Object :—To find the appropriate seed rate and date of sowing for Gingelly crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut– Fallow—Gingelly—Fallow. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) As per treatments. (iv) (a) 4 ploughings with country plough. (b) Hand dibbling. (c) As per treatments. (d) 23 cm. between rows. (e) 1. (v) 100·4 Q/ha. of compost broadcasted and covered with country plough. (vi) TMV—1. (vii) Unirrigated. (viii) 2 weedings and hoeing. (ix) 63·6 cm. (x) 23.8.62 to 9.9.62.

2. TREATMENTS :

Main-plot treatments:

5 dates of sowing : D_1=13.5.62, D_2=20.5.62, D_3=27.5.62. D_4=3.6.62 and D_5=10.6.62.

Sub-plot treatments :

4 seed rates : R_1=2·2, R_2=4·5, R_3=6·7 and R_4=8·9 Kg/ha.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 sub-plots/main-plot ; 5 main-plots/replication. (b) 93·9 m.×11·6 m. (iii) 4. (iv) (a) 11·6 m.×4·6 m. (b) 11·0 m.×4·11 m. (v) 30 cm.×23 cm. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of Gall fly, filode and leaf curl. Controlled by spraying Endrin. Further attack of silede was Checked by removing plants. (iii) Growth measurements and yield of seed. (iv) (a) 1962 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 347 Kg/ha. (ii) (a) 87 Kg/ha. (b) 117 Kg/ha. (iii) Main effect of D alone is highly significant. (iv) Av. yield of seed in Kg/ha.

	D_1	D_2	D_3	D_4	D_5	Mean
R_1	1032	402	150	71	24	336
R_2	990	407	182	79	18	335
R_3	947	594	255	85	20	380
R_4	831	516	237	73	33	338
Mean	950	480	206	77	24	347

C.D. for D marginal means=67·0 Kg/ha.

Crop :- Gingelly (*Kharif*). **Ref :- A.P. 65(234).**

Site :- Oilseeds Res. Stn., Yemmiganur. **Type :- 'IM'.**

Object :—To determine the optimum irrigation practices and its relation with the method of fertilizer placement and fertilizers requirement.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) Red sandy loam. (iii) 3.8.65. (iv) (a) One ploughing with country plough followed by *guntaka*. (b) *Gorru* sowing. (c) 3 Kg/ha. (d) 33 cm.×15 cm. (e) 1. (v) Nil. (vi) T—85. (vii) Irrigated. (viii) Thinning once, working *Donttulus* twice hand weeding once. (ix) N.A. (x) 10, 11, 16.11.65.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 stages of irrigation : I_0=At sowing, I_1=At flowering, and I_2=At fruiting.

(2) 2 fertilizer levels : F_1=33·6 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Mur. Pot., F_2=67·2 Kg/ha. of N as A/S+44·8 Kg/ha. of P_2O_5 as Super+44·8 Kg/ha. of K_2O as Mur Pot.

Sub-plot treatments :

3 methods of fertilizer placement : M_1=Below the seed in furrows, M_2=Band placement and M_3=Local method.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 6·0 m.×15·0 m. (b) 5·0 m.×15·0 m. (v) 50 cm. on other side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height of plant and yield of gingelly. (iv) (a) 1965—66. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 345 Kg/ha. (ii) (a) 318·4 Kg/ha. (b) 294 0 Kg/ha· (iii) None of the effects is significant. (iv) Av. yield of seed in Kg/ha.

	F_1	F_2	M_0	M_1	M_2	M_3	Mean
I_1	292	345	318	326	331	299	319
I_2	322	298	313	334	342	251	310
I_3	505	309	293	277	333	727	407
Mean	373	317	308	312	335	426	345
M_0	303	313					
M_1	318	307					
M_2	318	353					
M_3	554	297					

Crop :- Gingelly (*Rabi*). **Ref :- A.P. 65(235).**

Site :- Oilseeds Res. Stn., Yemmiganur. **Type :- 'IM'.**

Object :—To determine the optimum irrigation practices and its relation with the method of fertilizer placement and fertilizer requirement.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) Red sandy loam. (iii) 30.12.65. (iv) (a) 1 ploughing with country plough followed by *guntaka*. (b) *Gorru* sowing. (c) 3 Kg/ha. (d) 33 cm.×15 cm. (e) 1. (v) Nil. (vi) T—85. (vii) Irrigated. (viii) Thinning once, working *Danthulu* twice, hand weeding twice. (ix) N.A. (x) 6, 7.4.66.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 stages of irrigations : I_1=At sowing, I_2=At flowering and I_3=At fruiting.

(2) 2 fertilizers levels : F_1=33·6 Kg/ha. of N as A/S+22·4 Kg/ha. of P_2O_5 as Super+22·4 Kg/ha. of K_2O as Mur. Pot. and F_2=67·2 Kg/ha. of N as A/S+44·8 Kg/ha. of P_2O_5 as Super+44·8 Kg/ha. of K_2O as Mur. Pot.

Sub-plot treatments :

4 methods of fertilizers placement : M_0=No application, M_1=Below the seed in furrows, M_2=Band placement and M_3=Local method.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) Main gross plot=24·2 m.×16 0 m. and net=20·0 m.×15·0 m. (iii) 3. (iv) (a) 6·0 m.×15·0 m. (b) 5·0 m.×15·0 m. (v) 50 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height of plants and yield of gingelly. (iv) (a) 1965—66. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 127 Kg/ha. (ii) (a) 54·8 Kg/ha. (b) 34·6 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of seed in Kg/ha.

	F_1	F_2	M_0	M_1	M_2	M_3	Mean
I_1	133	120	134	139	125	108	126
I_2	114	137	113	145	120	125	126
I_3	131	127	142	125	121	129	129
Mean	126	128	129	136	122	121	127

M_0	126	133
M_1	139	133
M_2	124	120
M_3	116	125

Crop :- Chillies. **Ref :- A.P. 64(247), 65(142).**

Site :- Agri. College Farm, Bapatla. **Type :- 'M'.**

Object :—To study the response of Green chilli to N in sandy soils.

1. BASAL CONDITION :

(i) (a) Nil. (b) and (c) N.A. (ii) Sandy soil. (iii) N.A. (iv) (a) Ploughing with country plough. (b) Transplanting. (c) 7·5 Kg/ha. (d) 46 cm. × 15 cm. (e) 1. (v) 740 Q/ha. of C.M. (vi) G-2. Splash watering every day till harvest. (viii) Hand weeding. (ix) and (x) N.A.

2. TREATMENTS :

5 levels of N as A/S : N_0=0, N_1=45, N_2=90, N_3=134 and N_4=179 Kg/ha.
N as top dusting in fix equal doses at intervals of 15 days commencing from 15 days after planting.

5. DESIGN :

(i) Latin Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 35·7 sq. m. (b) 29·6 sq. m. (v) and (vii) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Yield of chillies. (iv) (a) 1964—66. (b) N.A. (c) Nil. (v) Nil. (vi) Heavy rainfall of 80 m.m., 100 m m., 105 m.m. on 14, 15, 16.9.64 respectively. (vii) As the expt. is contd. beyond 1965, hence the results of individual years are presented below.

5. RESULTS :

64(247)

(i) 1803 Kg/ha. (ii) 300·5 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of Green chillies in Kg/ha.

Treatment	N_0	N_1	N_2	N_3	N_4	Mean
Av. yield	871	1604	1917	1976	2645	1803

C.D. = 402·9 Kg/ha.

65(142)

(i) 2497 Kg/ha. (ii) 181·7 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of green chilli in Kg/ha.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	822	1613	2349	3544	4157

C.D.=243·6 Kg/ha.

Crop :- Chillies (*Rabi*). **Ref :- A.P. 65(117).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'M'.**

Object :—To study the effect of G.M. crop over the succeeding Chillies crop.

1. BASAL CONDITIONS :

(i) (a) to (c) As per treatments. (ii) Black. (iii) 23.7.65/10.9.65. (iv) (a) Ploughing with country plough. (b) Broadcasting. (c) 7 Kg/ha. (d) N.A. (e) 1. (v) G.M. crop of *Moong* was incorporated on 13.7.65. (vi) G—3. (vii) Unirrigated. (viii) 3 weedings, working Junior hoe twice, working country plough once. (ix) N.A, (x) 6th Jan. to 9th Feb. '66.

2. TREATMENTS :

A : Chillies after chillies (control).
B : Chillies after *Moong*.

3. DESIGN :

(i) AB—BA method. (ii) (a) 2. (b) N.A. (iii) 12. (iv) 20·0 m.×6·6 m. (b) 18·0 m.×5 5 m. (v) 100 cm.×55 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Thrips. Aphids, Pod borer. Dusting B.H.C. 10%. spraying Democron and Endrin. (iii) Yield of ripe chillies. (iv) (a) 1964—66. (b) No. (c) Nil. (v) Nil. (vi) Drought during the season. (vii) Nil.

5. RESULTS :

(i) 700 Kg/ha. (ii) 147·9 Kg/ha. (iii) Treatment difference is significant. (iv) Av. yield of chillies in Kg/ha.

Treatment	A	B
Av. yield	778	629

C.D=132·9 Kg/ha.

Crop :- Chillies (*Rabi*). **Ref :- A.P. 64(111).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'M'.**

Object :—To study the effect of G.M. crop in rotation to the succeeding Chillies crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Cotton. (c) N.A. (ii) Retentive black clay loam. (iii) 9.8.64. (iv) (a) Field was ploughed thrice and levelled and plots were laid out. (b) Grew grain seed was drilled on 23·6.64 in B plots and the crop was incorporated on 9.8.64. (b) Broadcasting. (c) and (d) N.A. (e) 1—2. (v) 12·3 C.L./ha. (vi) G—3. (vii) Unirrigated. (viii) Junior hoe was worked twice and hand weeding. (ix) 69 cm. (x) 9th Jan to 4tn March 65.

2. TREATMENTS :

2 treatments : M_1=Raising chilli after chilli crop and M_2=Raising G.M. in *punasa* season and incorporating as G.M. to the succeeding chilli crop.

3. DESIGN :

(i) AB – BA method. (ii) (a) 2. (b) 20·1 m.×13·3 m. (iii) 12. (iv) (a) 20·1 m.×6·6 m. (b) 18·1 m.×5·5 m. (v) 100 cm.×55 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Thrips and Aphids ; Thrips were controlled by spraying BHC and Malathion Aphids fields were controlled by spraying Demecron. (iii) Population counts and yield of chilli. (iv) (a) 1964–65. (b) No (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 736 Kg/ha. (b) 140·2 Kg/ha. (iii) Treatment difference is highly significant. (iv) Av. yield of chilli in Kg/ha.

Treatment	M_1	M_2
Av. yield	627	845

C.D.=125·9 Kg/ha.

Crop :- Chillies. **Ref :- A.P. 64(113), 65(119).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'C'.**

Object : –To find out suitable girth and number of seedlings per hill for Chilli crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton and groundnut for 64 : Chillies for 65. (c) 12 C.L./ha. of F.Y.M. (ii) Black clay loam. (iii) 25.9.64 ; 23.7.65/10.9.65. (iv) (a) 5 ploughings and 1 harrowing for 64 ; ploughing with country plough for 65. (b) Transplanting. (c) N.A. for 64 ; 7 Kg/ha. for 65. (d) 56 cm.×14 cm. (e) As per treatments. (v) 12 C,L./ha. of F.Y.M.+67.2 Kg/ha. of N as A/S+53·6 Kg/ha. of P_2O_5 as Super and 56 Kg/ha. of K_2O as Mur. pot. for 64 ; 12 C.L./ha. of F.Y.M. for 65. (vi) G—3. (vii) Unirrigated. (viii) Hand weeding once and working junior hoe. (ix) 58 cm. ; N.A. (x) 17.1.65, 1.2.65 and 5.3.65 ; 10, 20.1.66, 11.2.66.

2. TREATMENTS :

6 cultural treatments : C_1=1 seedling/hill of 1·5 mm. diameter, C_2=1 seedling/hill of 2·0 mm. diameter, C_3=1 seedling/hill of 2·5 mm. diameter, C_4=1 seedling/hill of 3·0 mm. diameter, C_5=2 seedlings/hill of 1·5 mm. diameter and C_6=2 seedlings/hill of 2·0 mm diameter.

3. DESIGN :

(i) R.B,D. (ii) (a) 6. (b) N.A. (iii) 6 for 64 ; 4 for 65. (iv) (a) 4·4 m.×2·8 m. for 64 ; N.A. for 65. (b) 4·0 m.×1·6 m. for 64 ; N.A. for 65. (v) 20 cm.×60 cm. for 64 ; N.A. for 65. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (iii) Incidence of Thrips, Aphids, Pod borer controlled by spraying BHC, Demecron and Endrin. (iii) Yield of Chillie. (iv) (a) 1964—65, (b) No. (c) As under 5. Results. (v) Nil. (vi) Drought during the season for 65. (vii) Error variances are homogeneous and Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 668 Kg/ha. (ii) 290·0 Kg/ha. (based on 40 d.f. made up of pooled error). (iii) Treatment differences are highly significant. (iv) Av. yield of Chilli in Kg/ha.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	337	509	1105	984	463	608

C.D.=262·6 Kg/ha.

Individual Results

Treatments	C_1	C_2	C_3	C_4	C_5	C_6	Sig.	G.M.	S.E./plot
Years									
1964	403	543	949	850	489		*	659	308·3
1965	239	458	1340	1184	425	442	**	681	258·4
Pooled	337	509	1105	984	463	608	**	668	290·0

Crop :- Chillies (*Rabi*). **Ref :- A.P 64(112), 65(120).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'C'.**

Object :— To study the relative merits of sowing Chillies directly and by transplanting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton and Groundnut for 64 ; Chillies for 65. (c) 12·3 C.L./ha. of F.Y.M. (ii) Black clay loam. (iii) 10.8.64/10.9.64 ; 24.7.65/1.9.64. (iv) (a) 3 ploughings and 1 harrowing for direct sowing, 6 ploughings, 1 harrowing for transplanted plots for 64 ; ploughing with country plough for 65. (b) As per treatments. (c) 7 Kg/ha. (d) 56 cm.×14 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M. (vi) G-3. (vii) Unirrigated. (viii) Hand weeding. (ix) 77·9 cm. for 64 ; N.A. for 65. (x) 8, 23.1.65 and 4.3.65 ; 5, 19.1.66 and 10.2.66.

2. TREATMENTS ;

All combinations of (1) and (2).

(1) 2 methods of sowing: M_1=Direct sowing and M_2=Transplanting.

(2) 3 methods of cultivation: C_0=No cultivation, C_1=Iniercultivation by junior hoe and C_2=Intercultivation by country plough.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 26·6 m.×20·1 m. for 64 ; N.A. for 65. (iii) 6. (iv) (a) 20·1 m.×4·4 m. (b) 18·1 m.×3·3 m. (v) 100 cm.×55 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Thrips, Aphids, Pod borer, controlled by spraying B.H.C., Demecron and Endrin. (iii) Yield of chillies. (iv) (a) 1964-65. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled Results

(i) 621 Kg/ha. (ii) 286·4 Kg/ha. (based on 5 d.f. made up of interaction of Treatments×years). (iii) None of the effects is significant. (iv) Av. yield of chillie in Kg/ha.

	C_0	C_1	C_2	Mean
M_1	574	646	558	593
M_2	652	672	624	649
Mean	613	659	591	621

Individual results.

Treatment	M_1	M_2	Sig.	C_0	C_1	C_2	Sig.	G.M.	S.E./plot.
Years									
1962	724	667	**	739	667	680	**	696	35·8
1963	461	632	**	487	651	501	**	547	140·1
Pooled	592	649	N.S.	613	659	591	N.S.	621	286·4

Crop :- Chillies (*Rabi*). **Ref :- A.P. 63(114).**

Site :- Millet Res. Stn , Lam, Guntur. **Type :- 'C'.**

Object :— To find out suitable girth of seedling for Chillies crop.

1. BASAL CONDITIONS :

(i) (a) Chillies-Chillies (b) Chillies. (c) 67·2 Kg/ha. of N as A/S, 33·6 Kg/ha. of P_2O_5 as Super and 56·0 Kg/ha. of K_2O as Mur. Pot. (ii) Deep black retentive clay loam. (iii) 1.10.63. (iv) (a) Field was ploughed 4 times with country plough, harrow was worked twice for levelling the field and finally rows were formed. (b) Broadcasting. (c) N.A. (d) 55·9 cm. × 14·0 cm. (e) 1. (v) 12·3 C.L./ha. F.Y.M., 67·2 Kg/ha. of N as A/S, 33·6 Kg/ha. of P_2O_5 as Super and 56·0 Kg/ha. of K_2O as Mur. Pot. (vi)G-3 (medium). (vii) Unirrigated. (viii) Weeding twice, Junior hoe worked twice, final intercultivation.by working country plough in rows. (ix) 72·3 cm. (x) 25.1.64 and 22.2.64.

2. TREATMENTS :

4 levels of girth measurement of seedlings : T_1=1·5, T_2=2·0, T_3=2·5 and T_4=3·0 mm. diameter.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 8·9 m. × 3·3 m. (iii) 6. (iv) (a) 3·3 m. × 2·2 m. (b) 2·2 m. × 1·8 m. (v) 55 cm. × 20 cm (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Thrips incidence was noticed and was brought to check by spraying 0·4% B.H.C. (iii) Population counts and yield of chillies. (iv) (a) 1963-65 (modified) in 64). (b) No. (c) Nil. (v) N.A. (vi) During October 63, a heavy down pour of 30·6 cm. on 6 rainy days which affected the chilli crop under initial stages of growth. (vii) Nil,

5. RESULTS :

(iv) 1779 Kg/ha. (ii) 448·9 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of chillies in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1359	1581	2009	2167

C.D.=552·4 Kg/ha.

Crop :- Chillies. **Ref :- 63(254), 65(139).**

Site :- Agri. College Farm, Bapatla. **Type :- 'D'.**

Object :— To study the efficacy of insecticides in controlling pod borer in Ch llies.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Black soil. (iii) N.A. (iv) (a) Ploughing with country plough. (b) Transplanting. (c) 7·5 Kg/ha. (d) 59 cm.×14 cm. (e) 1 to 2. (v) Nil. (vi) G-3. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS :

5 insecticidal treatments: T_0=Control (no hoeing), T_1=Adrin, T_2=Hepta Chlor 3%, T_3=Chlordane 5% and T_4=Hoeing alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 9·1 m.×4·6 m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Chillies. (iv) (a) 1963-65 only. (b) No. (c) Nil. (v) Nil. (vi) Unprecedented floods in 1963 ; Nil for 65. (vii) Error variances are homogeneous and Treatments × years interaction is absent.

5. RESULTS :

Pooled results

(i) 430 Kg/ha. (ii) 130·7 Kg/ha. (based on 40 d.f. made up of pooled error). (iii) Treatment differences are not significant. (iv) Av. yield of chilles in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4
Av. yield	388	440	488	431	404

Individual results

Treatments	T_0	T_1	T_2	T_3	T_4	Sig.	G.M.	S.E./plot
Years								
1963	393	396	379	343	356	N.S.	373	106·9
1965	487	581	483	465	422	N.S.	488	150·9
Pooled	440	488	431	404	388	N.S.	430	130·7

Crop :- Chillies. **Ref :- A.P. 65(123).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'D'.**

Object :—To find out a suitable fungicide for the effective control of *collectrotrichum* on Chillies.

1, BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) 12 C.L./ha. of F.Y.M. (ii) Black. (iii) 24.7.65. (iv) (a) Ploughing with country plough. (b) Broadcasting. (c) 7 Kg/ha. (d) 56 cm.×14 cm. (e) 1. (v) 12 C.L/ha. of F.Y.M. (vi) G—3. (vii) Un-irrigated. (viii) Weeding twice, working Junior hoe twice, working country plough once. (ix) N.A. (x) 7,22.1.66 ; 22.2.66.

2. TREATMENTS :

T_0=Water spray (2 plots), T_1=Dithane 2-78 at 2·6 Kg. with 843 litres of water/ha., T_2=Bordeaux mixture 1 % with 843 litres of water/ha., T_3=Cuman at 2·6 Kg. with 843 litres of water/ha., T_4=Cosan at 1 8 Kg. with 843 litres of water/ha., T_5=Blitox at 3·9 Kg. with 843 litres of water/ha., T_6=Capton 1·8 Kg. with 843 litres of water/ha

3. DESIGN :

(i) R.B.D. (ii) (a) 8 . (b) N.A. (iii) 4. (iv) (a) 14·4 m.×2 2 m. (b) 12·4 m.×1·1 m. (v) 100 cm.×55 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (iii) Incidence of *collectrotrichum*. (iii) % incidence of *collectrotrichum* and yield of chillies. (iv) (a) 1965—67. (b) No. (c) Nil. (v) Nil. (vi) Drought during the period. (vii) Nil.

5. RESULTS :

% affected plants

(i) 5·2 %. (ii) 0·8 %. (iii) Treatment differences are significant. (iv) Av. percentage of affected plants.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Mean	6·1	6·8	4·2	3·7	3·4	5·0	6·6

C.D.=1·18%.

Dry pod yield

(i) 726 Kg/ha. (ii) 110 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of dry pod in Kg/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	759	634	827	682	811	805	555

C.D.=161·8 Kg/ha.

Crop :- Chillies. **Ref :- A.P. 65(121).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'D'.**

Object :—To fix up a suitable insecticide for effective control of thrips.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) 12 C.L./ha. of F.Y.M. (ii) Black soil. (iii) 24.7.65. (iv) (a) Ploughing with country plough. (b) N.A. (c) 7 Kg/ha. (d) 56 cm.×14 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M. (vi) G—3. (vii) Unirrigated. (viii) Weeding thrice, working junior hoe twice, working country plough once. (ix) N.A. (x) 7, 21.1. 66, 10.2.66.

2. TREATMENTS :

T_0=Control (no insectiade), T_1=B.H.C. 0·39 % strength, T_2=Malathion 0·15 % strength, T_3=Trithion 0·10 % strength, T_4=Phosphamidon 0·10 % strength, T_5=Lindane dust 0·65 % strength.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 10·0 m.×2·8 m. (b) 8·0 m.×1·6 m. (v) 100 cm.×60 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Thrips, Aphids, Pod borer. (iii) % of effected plants at periodical intervals, dry pod yield. (iv) (a) 1965—contd. (treatments modified every year). (b) No. (c) Nil. (v) Nil. (vi) Drought during the season. (vii) Nil.

5. RESULTS :

% of affected plants

(i) 34·8 % (ii) 16·5 % (iii) Treatment differences are not significant, (iv) Av. percentage of affected plants.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
% affected	36·0	34·2	20·4	49·3	21·7	46·6

Dry pod yield

(i) 343 Kg/ha. (ii) 250 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of dry pod in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	447	486	657	563	350

Crop :- Chillies. **Ref :- A.P. 65(122).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'D'.**

Object :—To find out a suitable measure for the effective control of powdery mildew.

1. BASAL CONDITIONS :

(i) (a) Chillies. (b) Chillies. (c) 12 C.L./ha. of F.Y.M. (ii) Black. (iii) 24.7.65. (iv) (a) Ploughing with country plough. (b) Broadcasting. (c) 7 Kg/ha. (d) 56 cm.×14 cm. (e) 1. (v) 12 C.L./ha. of F.Y.M. (vi) G—3. (vii) Unirrigated. (viii) Weeding thrice, working junior hoe twice, working country plough once. (ix) N.A. (x) 7, 21.1.66.

2. TREATMENTS :

T_0=Control (no spray), T_1=Applying sulphur to the soil in single dose, T_2=Dusting Sulphur, T_3=Spraying Cosan 71 gm. with 341 litres of water/ha., T_4=Spraying solabar 3·2 Kg. with 341 litres of water/ha., T_5=Spraying Karathane 22·6 gm. with 341 litres of water/ha., and (Dose of Sulphur—N.A.)

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 27·8 sq. m. (b) 13·4 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Powdery mildew. (iii) Yield of Ripe chillies, % incidence of Powdery mildew. (iv) (a) 1965—67. (b) No. (c) Nil. (v) Nil. (vi) Drought during the period. (vii) Nil.

5. RESULTS :

% of mildew affected plants.

(i) 39·8 % (ii) 6·7 % (iii) Treatment differences are not significant. (iv) Av. percentage of mildew affected plants.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. percentage	48·7	44·1	38·5	43·2	38·2	37·1

Dry pod yield

(i) 974 Kg/ha. (ii) 56 6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of dry pod in Kg/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	883	1023	1031	989	1001	937

Crop :- Chillies. **Ref :- A.P. 65(124).**

Site :- Millet Res. Stn., Lam, Guntur. **Type :- 'D'.**

Object :—To find out an effective measure for the control of pod borer.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) 12 C.L./ha. of F.Y.M. (ii) Black soil. (iii) 24.7.65. (iv) (a) Ploughing with country plough. (b) N.A. (c) 7 Kg/ha. (d) 56 cm. × 14 cm. (e) 1. (v) 12 C.L /ha. of F.Y.M. (vi) G-3 (vii) Unirrigated. (viii) Weeding twice, working junior hoe twice, working country plough once. (ix) N.A. (v) 20.12.65 ; 5, 21.1.66.

2. TREATMENTS :

T_6=Control, T_1=Aldrin, T_3=Chlordane, T_2=Heptachlor and T_4=Telodrin.
(Actual doses of chemicals—N.A.)

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 34·6 sq. m. (b) 18·9 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of pod borer. (iii) % incidence of pod borer, yield of chillies. (iv) (a) 1965-67. (b) No. (c) Nil. (v) Nil. (vi) Draught during the period. (vii) Nil.

5. RESULTS :

% of bored pods

(i) 13 7%. (ii) 12·4%. (iii) Treatment difference is not significant. (iv) Av. percentage of bored pods.

Treatment	T_6	T_1	T_3	T_2	T_4
Av. percentage	16·2	14 0	12·6	13·8	11·8

Dry pod yield

(i) 1092 Kg/ha. (ii) 159·2 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of dry pods in Kg/ha.

Treatment	T_6	T_1	T_2	T_3	T_4
Av. yield	1008	1077	1092	1134	1150

Crop :- Turmeric. **Ref :-A.P. 60(71), 61(67).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K on the yield of Turmeric.

1. BASAL CONDITIONS :

(i) (a) Turmeric--Paddy+Red gram—Turmeric. (b) Paddy+Red gram. (c) 137·9 Kg/ha. of A/S as top dressing for 60 ; 193·9 Kg/ha. of A/S as top dressing for 61. (c) Stiff clayey soils. (iii) 5.8.1960 ; 8 to 10.7.61. (iv) (a) 7 ploughings with country plough. (b) Hand dibbling in furrows. (c) 1336 Kg/ha. 1278 Kg/ha. (d) 45 cm.×23 cm. (e) One rhizome. (v) 251·1 Q/ha. of F.Y.M. applied before 1st ploughing for 60 and before planting for other. (vi) Duggirala (local) ; Curcumma longa. (vii) Irrigated. (viii) Hand weedings 11 to 13 times and intercultivations 4 times. (ix) 75·3 cm. ; 111·3 cm. (x) 19 to 22.3.61 ; 12.3 62.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=224·2 and N_2=448·3 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=224·2 and P_2=448·3 Kg/ha.

(3) 3 levels of K_2O as Pot. Sul. : K_0=0, K_1=224·2 and K_2=448·3 Kg/ha.

$\frac{1}{4}$ N+$\frac{1}{4}$ P_2O_5+$\frac{1}{4}$ K_2O applied at planting and 3/8 N+$\frac{1}{4}$$P_2O_5$+$\frac{1}{4}$$K_2O$ applied 2$\frac{1}{2}$ months after planting and 3/8 N+$\frac{1}{4}$ P_2O_5+$\frac{1}{4}$ K_2O applied 4 months after planting. Fertilizers applied by placement in pockets.

3. DESIGN :

(i) 3^3 partially Confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 32·4 m.×48 6 m. (iii) 2. (iv) (a) 11·0 m.×5·5 m. (b) 10·1 m.×4·6 m. (v) 66 cm.×46 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of leaf spot disease was heavy and uncontrollable and was responsible for low yield Foliar spray with 1 % Bordeaux mixture for 60. Foliar spraying twice and soil application once with 1 % Bordeaux mixture against Leaf spot and early wilt disease for 61. (iii) Shoots height, no. of leaves per plant, No. of tillers and yield rhizone. (iv) (a) 1960—61. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

(i) 77·8 Q/ha, (ii) 27·9 Q/ha. [based on 18 d.f. made up of interaction of various components of treatments with years]. (iii) None of the effects is significant (iv) Av. yield of Turmeric in Q/ha.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	82·1	79·5	80·1	89·0	70·0	82·7	80·6
N_1	82·8	64·8	84·4	77·6	82·7	71·7	77·3
N_2	72·7	61·7	92·1	75·4	72·9	78·1	75·5
Mean	79·2	68·7	85·5	80·7	75·2	77·5	77·8
K_0	76·6	66·6	98·8				
K_1	78·3	71·1	76·3				
K_2	82·6	68·3	81·5				

Treatments	N_0	N_1	N_2	Sig.	P_0	P_1	P_2	Sig.
Years								
1960	43·2	52·9	45·1	N.S.	53·2	42·0	46·0	N.S.
1960	118·1	101·8	105·9	*	105·3	95·3	125·2	**
Pooled	80·6	77·3	75·5	N.S.	79·2	68·7	85·5	N.S.

K_0	K_1	K_2	Sig	G.M.	S.E./plot
47·9	42·2	51·1	N·S.	47·1	16·4
113·4	108·3	104·1	N.S.	108·6	19·9
80·7	75·2	77·5	N.S.	77·8	27·9

Crop :- Turmeric. **Ref :- A.P. 62(82), 63(70), 64(8), 65(210).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'M'.**

Object :— To study the effect of different levels of N, P and K on the yield of Turmeric.

1. BASAL CONDITIONS:

(i) (a) Turmeric-Paddy+Redgram-Turmeric. (b) Paddy+Red gram. (c) 214 Kg/ha. of A/S as top dressing. (ii) Stiff clay soil. (iii) 2.8.62; 16.7.53; 13.7.64; N.A. for 65. (iv) (a) 4 to 6 ploughings. (b) Hand dibbling. (c) 4048 Kg/ha. for 62; 3605 Kg/ha. for 63. N.A. for 64 and 1278 Kg/ha. for 65. (d) 45 cm.×23 cm. (e) 1. (v) 251·1 Q/ha. of F.Y.M. (vi) Duggirela (Local). (vii) Irrigated. (viii) 2 intercultures. (iv) 137 cm. for 62, 228·3 cm. for 63, N.A. for others. (x) 17.3.63, 23.3.64, 18.3.65 and 24.3.66.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of P_2O_5 as Super : P_0=0 and P_2=61·8 Kg/ha.

(2) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_2=123·6 Kg/ha.

Sub-blot treatments :

5 levels of N as A/S : N_0=0, N_1=62, N_2=124, N_3=185 and N_4=247 Kg/ha.

Fertilizers were applied in pockets. N applied in 3 equal doses, Ist at planting, 2nd and 3rd at 2 month and 3 month age of crop.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) 31·5 m.×14·4 m. (iii) 5. (iv) 3·2 m.×1·8 m. for 62. 1/617·8 Kg/ha. for 64. (b) 3·1 m.×1·8 m., 2·9 m.×1·3 m. for 62, 63 ; 2·9m.×1·3m. for 65; N.A. for 64. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of leaf spot 1% Bordeaux mixture. (iii) Yield of rhizomes. (iv) (a) 1962 to 65. (b) No. (c) Nil. (v) No. (vi) Nil. (vii) Sub-plot error variances are heterogeneous therefore individual years results are presented below.

5. RESULTS:

62(82)

(i) 47·7 Q/ha. (ii) (a) 14·3 Q/ha. (b) 13·3 Q/ha. (iii) Main effect of N alone is significant. (iv) Av. yield of rhizome in Q/ha.

	N_0	N_1	N_2	N_3	N_4	K_0	K_1	Mean
P_0	45·7	53·7	48·8	48·8	41·4	43·0	52·4	47·7
P_1	45·7	52·5	54·4	47·0	38·9	45·7	49·6	47·7
Mean	45·7	53·1	51·6	47·9	42·2	44·4	51·0	47·7
K_0	42·0	52 5	45·1	45·1	37·1			
K_1	49·4	53·7	58·1	50·7	43·2			

C.D. for N marginal means=8·4 Q/ha.

63(70)

(i) 120·2 Q/ha. (ii) (a) 43·0 Q/ha. (b) 34·1 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of rhizomes in Q/ha.

	N_0	N_1	N_2	N_3	N_4	K_0	K_1	Mean
P_0	117·4	129·7	113·7	112·4	112·4	115·6	118·6	117·1
P_1	126·0	117·4	121·1	128·5	123·6	132·9	113·7	123·3
Mean	121·7	123·6	117·4	120·5	117·9	124·3	116·1	120·2
K_0	122·3	130·9	119·9	126·0	122·3			
K_1	121·1	116·1	114·9	114·9	113·7			

64(8)

(i) 163·6 Q/ha. (ii) (a) 27·1 Q/ha. (b) 44·8 Q/ha. (iii) Only interaction P and K is significant. (iv) Av. yield of rhizome in Q/ha.

	N_0	N_1	N_2	N_3	N_4	K_0	K_1	Mean
P_0	146·4	174·8	182·9	174·8	161·2	166·1	170·0	168·0
P_1	143·9	150·1	181·6	169·9	150·1	172·5	145·7	159·1
Mean	145·2	162·5	182·2	172·3	155·7	169·3	157·9	163·6
K_0	144·6	168·7	205·7	168·7	158·8			
K_1	145·8	156·3	158·8	176·1	152·6			

C.D. for means in the body of P×K table=16·7 Q/ha.

65(210)

(i) 484·9 Q/ha. (ii) (a) 103·5 Q/ha. (b) 103·5 Q/ha. (iii) None of the effects is significant. (iv) Av. yield of rhizome in Q/ha.

	N_0	N_1	N_2	N_3	N_4	K_0	K_1	Mean
P_0	489·3	558·5	514·3	473·9	475·9	508·5	596·3	502·4
P_1	527·5	479·3	461·1	453·9	414·9	468·8	465·9	467·4
Mean	508·4	518·9	487·7	463·9	445·4	488·7	481·1	484·9
K_0	469·5	536·6	517·9	494·9	424·4			
K_1	547·3	501·2	457·4	433·0	465·4			

Crop :- Turmeric. **Ref :- A.P. 60(35), 61(40).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'C'.**

Object: — To ascertain the comparative merits of planting different types of seed material.

1. BASAL CONDITIONS :

(i) (a) Paddy—Turmeric for 60 ; Paddy+Red gram-Turmeric for 61. (b) Paddy for 60. ; Paddy+Red gram for other. (c) 143·5 Kg/ha. of A/S in two doses for 60 ; 193·9 Kg/ha. of A/S for 61. (ii) Stiff clayey soil (iii) 30, 31.7.60 ; 13, 14.7.61. (iv) (a) 2 ploughings for 60 ; 6 ploughings for others. (b) Hand dibbling. (c) 31·4 Q/ha. for 60 ; 22·0 Q/ha. for 61. (d) As per treatments. (e) 1. (v) 62·8 Q/ha. of F.Y.M. and compost+67·2 Kg/ha. of P_2O_5 as Super for 60 ; 125·6 Q/ha. of F.Y.M. and compost+67·5 Kg/ha. of P_2O_5 as Super for 61. (vi) Duggirala local (late). (vii) Irrigated. (viii) 12 hand weedings+1 to 2 intercultivations. (ix) 75 cm. ; 111 cm. (x) 27 to 31.3.61 ; 10 to 12.3.62.

2. TREATMENTS :

Main-plot treatments :

2 methods of planting : M_1=Planting on broad ridges 1·2 m. wide with row spacing 31 cm. and M_2=Planting in ridges and furrows with row spacing 51 cm.

Sub-plot treatments :

6 seed type cum plant spacing treatments : T_1=Whole mothers planted 31 cm. deep apart, T_2=Whole mothers 20 cm. apart, T_3=Cut half of mothers 20 cm. apart, T_4=Cut halves of mothers 10 cm. apart, T_5=Primary fingers 20 cm. apart and T_6=Primary fingers 10 cm. apart.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) 38·4 m.×13·5 m. for 60 ; 28·8 m. ×18·0 m for 61. (iii) 4. (iv) (a) 44·5 sq. m. (b) 27·9 sq. m. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Heavy incidence of leaf spot disease which was not controllable for 60, foliar spraying with 10% Brodeaux mixture twice, incidence of leaf spot and early Wilt for 61, foliar spray was done thrice with 1% Bordeaux mixture. (iii) Yield of green rhizomes. (iv) (a) 1958-61. (b) No. (c) Nil. (v) N.A (vi) Nil. (vii) Expts. 58, 59 have also been included. Sub-plot error variances are heterogeneous therefore results of individual years are presented below.

5. RESULTS :

60(35)

(i) 197·2 Q/ha. (ii) (a) 48·2 Q/ha. (b) 50·2 Q/ha. (iii) Main effect of T alone is significant. (iv) Av. yield of greeen rhizomes in Kg/ha.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
M_1	147·0	299·5	171·0	167·8	255·5	235·0	212·6
M_2	184·6	182·9	148·0	174·0	184·6	216·0	181·7
Mean	165·8	241·2	159·5	170·9	220·0	225·5	197·2

C.D. for T marginal means=51·2 Q/ha.

61(40)

(i) 199·2 Q/ha. (ii) (a) 51·9 Q/ha. (b) 27·2 Q/ha. (iii) Main effect of T is significant and interaction M×T is highly significant. (iv) Av. yield of green rhizome in Q/ha.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
M_1	180·1	183·8	226·8	170·3	199·2	197·2	192·9
M_2	185·6	164·1	203·6	219·7	253·8	207·1	205·6
Mean	182·8	173·9	215·2	195·0	226·5	202·1	199·2

C.D. for T marginal means =27·8 Q/ha.
C.D. for T means at the same level of M=39·3 Q/ha.
C.D. for M means at the same level of T=58·2 Q/ha.

———

Crop :- Turmeric. **Ref :- A.P. 60(36). 61(41), 62(43).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'C'.**

Object :— To find out the optimum seed size and to determine the comparative profits from planting different sizes of seed Turmeric rhizomes.

1. BASAL CONDITIONS :

(i) (a) Paddy+Red gram-Turmeric for 60, 62 ; Paddy followed by *Jowar* for fadder-Turmeric for 61. (b) Paddy+Red gram for 60, 62 ; Paddy followed by *Jowar* for 61. (c) 39·2 Kg/ha. of A/S as top dressing for 60 ; 104·2 Kg/ha. of A/S as top dressing for 61 ; Nil for 62. (ii) Stiff clayey soil. (iii) 1.8.60 ; 5.7.61 ; 14.7.62. (iv) (a) 4 ploughings. (b) Hand dibbling in furrows. (c) 1075 Kg/ha. ; 1918 Kg/ha; 1037 Kg/ha. (d) 45 cm. × 23 cm. (e) One rhizome/hill. (v) 6276 Kg/ha. of F.Y.M. and compost before 1st ploughing and 67·2 Kg/ha. of P_2O_5 as Super in last ploughing for 60 ; 12804 to 25608 Kg/ha. of F.Y.M. and compost before 1st ploughing and 61·8 Kg/ha. of P_2O_5 as Super for 61, 62. (vi) Duggirala (Local). (vii) Irrigated. (viii) 10 hand weedings and intercultivations. (ix) 75 cm. ; 111 cm. ; 138 cm. (x) 22, 22.3.61 ; 7.3.62 ; 12, 13.3.63.

2, TREATMENTS :

6 cultural treatments : C_1=Whole mother rhizome weighing 13 numbers per 0·45 Kg ; C_2=Same size mother rhizome as in C_1 cut lengthwise into halves, C_3=Same size mother rhizomes as in C_1 cut into four bits, D_4=Whole primary fingers weighing 21 numbers per 0 45 Kg, C_5=Same size fingers as in C_4 cut transversely into halves and C_6=Same size fingers as in C_4 cut transversely into three pieces.

3. DESIGN :

(i) R.B D. (ii) (a) 6. (b) 16·2 m × 10·8 m. (iii) 4. (iv) (a) 1/338·5 ha. (b) 1/549·1 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactary. (ii) Foliar spraying twice and soil dressing once with 1% Boredeaux against Leaf spot and early Wilt disease (iii). Yield of green rhizomes. (iv) (a) 1960-62. (b) No. (c) As under 5. Results (v) N.A. (vi) Nil. (vii) Error variances are heterogeneous and Treatments × years interaction is present.

5. RESULTS :

Pooled aesults

(i) 137·0 Q/ha. (ii) 38·3 Q/ha. (based on 10 d.f. made up of interaction of treatment with years). (iii) Treatment differences are highly significant. (iv) Av. yield of green rhizome in Q/ha.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. ylied	179·3	152·3	141·0	129·6	118·0	101·6

C.D.=34 8 Q/ha.

Individual rssults

Treatments	C_1	C_2	C_3	C_4	C_5	C_6	Sig.	G.M.	S.E./plot
Years 1960	195·2	163·1	145·8	123·6	96·4	64·2	**	131·4	17·5
1961	196·0	155·2	148·3	140·1	137·4	126·3	N.S.	150·6	26·7
1962	146·8	138·6	129·0	125·0	120·8	115·4	*	129·3	13·6
Pooled	179·3	152·3	141·0	129·6	118·0	101·6	**	137·0	38·3

Crop :- Turmeric. **Ref :- A.P. 60(34).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'CV'.**

Object :—To find out optimum time for planting Turmeric of different durations with particular reference to the incidence of leaf-spot disease and final Turmeric yields.

1. BASAL CONDITIONS :

(i) (a) Turmeric—Dry paddy (*Budama*)+Red gram. (b) Dry paddy (*Budama*)+Red gram. (c) 137·9 Kg/ha. of A/S as top dressing. (ii) Stiff clayey soil. (iii) As per treatments. (iv) (a) 4 ploughings. (b) Hand dibbling with furrows. (c) 1473 Kg/ha. (d) 46 cm.×23 cm. (e) 1 rhizome/hill. (v) 6276 Kg/ha. of F.Y.M. and compost before 1st ploughing and 67·2 Kg/ha. of P_2O_5 with last ploughing. (vi) As per treatments, (vii) Irrigated. (viii) 1 hand weeding and intercultures. (ix) 75·3 cm. (x) 11 to 19.3.61.

2. TREATMENTS :

Main-plot treatments:

3 dates of planting: D_1=15.7.60, D_2=15.8.60 and D_3=15.9.60.

Sub-plot treatments :

4 varieties of turmeric : V_1=*Duggirala* local (late), V_2=*Tekurpeta* (late), V_3=*Kesari Duvvur* and V_4=*Kasturi Kothapeta* (early.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 4 sub-plots/main plot. (b) 43-2 m×8·1 m. (iii) 5. (iv) (a) 1/338 ha. (b) 1/548 ha. (v) N,A. (vi) Yer.

4. GENERAL :

(i) Satisfactory. (ii) Heavy incidences of 'leaf spot' disease which was uncontrollable. Foliar spraying with 1% Bordeaux mixture against *colletotrichum* leaf spot disease was done during the year. (iii) Yield of turmeric. (iv) (a) 1960 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 50·0 Q/ha. (ii) (a) 24·5 Q/ha. (b) 22·0 Q/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of turmeric in Q/ha.

	V_1	V_2	V_3	V_4	Mean
D_1	97·8	132·9	81·3	30·6	85 6
D_2	19·8	61·5	32·9	14·3	32·1
D_3	60·3	47·2	13·1	8·9	32·4
Mean	59·3	80·5	42·4	17·9	50·0

C.D. for D marginal means =17·7 Q/ha.
C.D. for V marginal means =16·2 Q/ha.
C.D. for V means at same level of D =28·2 Q.ha.
C.D. for D means at same level of V =30·2 Q/ha.

Crop :- Turmeric. **Ref :- A.P. 61(39).**

Site :- Turmeric Res. Stn., Pedadpalem. **Type :- 'CV'.**

Object :—To find out optimum time for planting different varieties of Turmeric.

1. BASAL CONDITIONS :

(i) (a) Paddy followed by *Jowar*—Turmeric. (b) Paddy followed by *Jowar*. (c) 104·2 Kg/ha. of A/S as top dressing on 15. 15.8.60. (ii) Stiff clayey soils. (iii) As per treatments. (iv) (a) 4 ploughings commencing from 15.9.61. (b) Hand dibbling in furrows. (c) 1274 Kg/ha. (d) 65 cm.×23 cm. (e) One rhizome/hole. (v) 12804 Kg/ha. of F.Y.M. and compost before 1st ploughing and 67·5 Kg/ha, of P_2O_5 as Super in the last ploughing. (vi) As per treatments. (vii) Irrigated. (viii) 14 hand weedings and intercultivation thrice. (ix) 111·3 cm. (x) 17 to 23.2.62 and 8.3.62.

2. TREATMENTS :

Main-plot treatments :

5 dates of planting : D_1=15.5.61, D_2=15.6.61, D_3=15.7.61, D_4=15.8.61 and D_5=15.9.61.

Sub-plot treatments :

4 varieties : V_1=*Duggirala* local, V_2=*Tekurpeta*, V_3=*Kesari Duvvur* and V_4=*Kasturi Kothopeta*.

3. DESIGN :

(i) Split-plot, (ii) (a) 5 main-plots/replication ; 4 sub-plots/main-plot. (b) 43·2 m.×13·5 m. (iii) 4. (iv) (a) 1/338 ha. (b) 1/548 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Foliar spraying with 1 % Bordeaux mixture twice during the year against leaf spot disease and leaf blotch diseases. Soil drenching with 1 % Bordeaux mixture was done against early Wilt. (iii) Yield of Turmeric. (iv) (a) 1961 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 100·6 Kg/ha. (ii) (a) 29·6 Kg/ha. (b) 17·3 Kg/ha. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of green rhizome in Q/ha.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	103·8	138·4	150·7	76·6	42·0	102·3
V_2	98·8	81·5	123·6	32·1	14·8	70·2
V_3	229·8	197·7	180·4	64·2	32·1	140·8
V_4	197·7	145·8	71·7	19·8	9·9	89·0
Mean	157·5	140·8	131·6	48·2	24·7	100·6

C.D. for D marginal means =22·9 Q/ha.
C.D. for V marginal means =11·1 Q/ha.
C.D. for V means at the same level of D =24·6 Q/ha.
C.D. for D means at the same level of V =31·2 Q/ha.

Crop :- Turmeric. **Ref :- A.P. 62(41), 63(71), 64(6).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'CV'.**

Object :—To find out the optimum time of planting Turmeric of different durations with particular reference to the incidence of leaf spot disease and final Turmeric yields,

1. BASAL CONDITIONS :

(i) (a) Paddy+Red gram—Turmeric for 62 ; Turmeric—Paddy followed by Maize—Turmeric for 63 ; Nil for 64. (b) Dry Paddy+Red gram for 62 ; Dry Paddy followed by Maize for 63 ; Paddy for 64. (c) 75·4 Kg/ha. of A/S as top dressing to dry paddy and 128·5 Kg/ha. of Super as basal dressing for 62 ; 312·8 Kg/ha. as top dressing to Maize crop for 63 and N.A. for others. (ii) Stiff clay soil. (iii) As per treatments. (iv) (a) 4 ploughings. (b) Hand dibbling in furrows. (c) 1997 Kg/ha. (d) 45 am.×23 cm. (e) One rhizome/hole. (v) 251·1 Q/ha. of F.Y.M. and compost before 1st ploughing 61·8 Kg/ha. of P_2O_5 as Super in the last ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Hand weedings and inter-culturings. (ix) 137·6 cm. ; 328·3 cm. ; Nil. (x) 11 to 23.2.63 ; 10, to 12.3.64 ; 2 to 4.3.65.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting: D_1=15th May, D_2=1st June, D_3=15th June and D_4=1st July.

Sub-plot treatments :

2 varieties : V_1=*Kasturi Kohapeta* and V_2=*Kesari Duvvur*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) 21·6 m. × 10 8 m. for 62 and 63; N.A. for 64. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) N.A. (iii) Yield of green rhizomes. (iv) (a) 1962—64. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Main and sub-plot error variances are homogeneous and Treatments × years interactions are present in both the cases.

5. RESULTS :

Pooled results

(i) 213·7 Q/ha. (ii) (a) 55·3 Q/ha. (based on 6 d.f. made up of interaction of D × years). (b) 76·5 Q/ha. [based on 8 d.f. made up of interaction of V, V × D with years]. (iii) Main effects of D and V are significant. (iv) Av. yield of turmeric in Q/ha.

	D_1	D_2	D_3	D_4	Mean
V_1	272·5	245·2	245·2	178·9	235·4
V_2	212·8	204·8	186·0	164·3	192·0
Mean	242·7	225·0	215·6	171·6	213·7

C.D. for D marginal means=39·0 Q/ha.

C.D. fpr V marginal means=36·0 Q/ha.

Individual results

Treatments	D_1	D_2	D_3	D_4	Sig.	S.E./main-plot	V_1	V_2	Sig.	S.E./sub. plot	G.M.
Years											
1962	205·1	176·7	156·9	137·2	**	25·2	174·2	163·7	N.S.	15·8	169·0
1964	228·5	223·6	248·3	184·1	**	23·6	233·5	208·8	*	30·8	221·1
1965	294·4	294·5	241·6	193·5	**	32·1	298·5	203·5	**	29·9	251·0
Pooled	227·7	214·9	200·8	168·0	*	55·3	192·0	213·7	**	76·5	213·7

Crop :- Turmeric. **Ref :- A.P. 62(42), 63(45), 64(5).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'CV'.**

Object : —To find out the optimum time of planting of Turmeric of different durations with particular reference to the incidence of leaf-spot disease and final Turmeric yields.

1. BASAL CONDITIONS :

(i) (a) Dry Paddy+Red gram—Turmeric for 62 ; dry Paddy followed by maize—Turmeric for 63, Nil for 64. (b) Dry Paddy+Red gram ; Dry Paddy followed by Maize ; Paddy+gram. (c) Paddy was top dressed with 30·5 Kg/ha. of A/S. The maize crop was given a basal dressing of 52 Kg/ha. of Super on 18·11.63 and top dressing of 126·6 Kg. of A/S and 27·2 Kg. of Pot. Sul. for 63. Nil. for others. (ii) Stiff claycy soils. (iii) As per treatments. (iv) (a) 1—6 ploughings with country plough. (b) Dibbling rhizomes and covering with country plough for 64; hand dibbling in furrows for others (c) 2451 Kg/ha. (d) 20 cm. × 11 cm. for 64 and 46 cm. × 23 cm. for others. (e) One rhizomes/hole, (v) 251·1 Q/ha. of F.Y.M. and compost before 1st ploughing and 61·8 Kg/ha. of P_2O_5 as Super in the last ploughing. (vi) As per treatments. (vii) Irrrigated. (viii) 2—3 interculturings, 13 to 14 hand weeding. (ix) 127·6 cm. for 62 ; 228·3 cm. for 63 ; N.A. for 64. (x) 7, 8, 9.3.63 ; 16, 17.3.64 : 13.3.65.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : D_1=15th June, D_2=1st July, D_3=15th July and D_4=1st August.

Sub-plot treatments :

2 varieties : V_1=*Duggirala* local (late) and V_2=*Tekurpeta* (late).

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) Nil. for 64 ; 21·6 m.×10·8 m. for others. (iii) 4. (iv) (a) 1/338 ha. (b) 1/548 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Leaf spot, Wild, Rhizomerot attack, controlled by spraying 1 % Bordeaux mixture and B.H.C. 10 % for 62 and 63 and nil for 64. (iii) Yield of green rhizome. (iv) (a) 1962—64. (b) No. (c) As under 5. Results. (v) N.A. (vi) Nil. (vii) Main and sub-plot error variances are homogeneous. Main-plot Treatments×years interaction is present and sub-plot Treatments×years interaction is absent.

5. RESULTS :

Pooled results

(i) 76·6 Q/ha. (ii) (a) 70·1 Q/ha. (based on 6 d.f. made up of Treatments×years interaction. (b) 16·9 Q/ha. (based on 44 d.f. made up of pooled error and interaction of V, V×D with years). (iii) None of the effects is significant. (iv) Av. yield of turmeric in Q/ha.

	D_1	D_2	D_3	D_4	Mean
V_1	107·9	90·6	91·4	65·1	88·7
V_2	74·4	70·0	59·3	51·1	64 4
Mean	92·6	80 3	75·4	58·1	76·6

Indivldual results

Treatments	D_1	D_2	D_3	D_4	Sig.	S.E./main-plot	K_0	K_1	Sig.	G.M.	S.E./plo
Years											
1962	113·6	107·4	81·6	44·5	**	1 8·3	97·6	76·0	**	86·8	15·1
1963	108·8	81·6	64·2	50·6	**	19·3	85·9	66·7	**	76·3	14·3
1964	55·6	51·8	80·3	79·0	**	20·1	82·7	50·6	**	66·7	20·7
Pooled	92·6	80·3	75·4	58·1	N.S.	70·1	88·7	64·4	N.S.	76·6	16·9

Crop :- Turmeric. **Ref :- A.P. 65(209).**

Site :- Turmeric Res. Stn., Peddapalem. **Type :- 'D'.**

Object :—To find out the comparative merits of different types of fungicides on the control of leaf spot-disease on Turmeric caused by *collectrichum capscici.*

1. BASAL CONDITIONS :

(i) (a) Turmeric—Paddy+Red gram—Turmeric. (b) Paddy+Red gram. (c) N.A. (ii) Clayey. (iii) N.A. (iv) (a) Through ploughing with country plough, making ridges and furrows. (b) Dibbling in furrows. (c) 1278 Kg/ha. (d) 22 cm.×11 cm. (e) 1 rhizome/hole. (v) No. (vi) Duggrala (local). (vii) Irrigated. (viii) 2 intercultures. (ix) and (x) N.A.

2. TREATMENTS :

10 fungicidal treatments : T_0=Control (untreated), T_1=Esso.406, T_2=Dithane M-22, T_3=1% Bordeaux, mixture, T_4=Hexathane, T_5=Melprex, T_6=Copramat, T_7=Esso 407, T_8=Cuman and T_9=Coman.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. . (iii) 4. (iv) (a) 1/343·2 ha. (b) 1/1900·8 ha. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of Leaf spot, control measures as per treatments. (iii) Yield of rhizome. (i) (a) 1965 only. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 46·5 Q/ha. (ii) N.A. (iii) Treatment differences are not significant. (iv) Av. yield of rhizome in Q/ha.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	45·2	55·7	55·1	49·4	47·1	45·6	45·6	42·8	41·4	36·7

Crop :- Onion (*Rabi*). **Ref :- A.P. 63(76), 64(258), 65(158).**

Site :- Agri. Res., Stn,. Amaravathi. **Type :- 'C'.**

Object :—To determine the optimum spacing and method of planting of Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sanhemp for 63 and fallow for others. (c) 11·2 Kg/ha. of N as A/S and 22·4 Kg/ha. of P_2O_5 as Super for 63 and Nil for others. (ii) Black soils. (iii) 24.12.63 ; N.A. ; 7.12.65. (iv) (a) 3 to 4 ploughings with country plough followed by working *gorru*. (b) As per treatments. (c) 7 Kg/ha. (d) As per treatments. (e) 1. (v) 215·0 Q/ha. of G.L. of sanhemp+49·4 C.L./ha. of F.Y.M.+504 K/ha. of Super+504 Kg/ha. of G.N.C.+45 Kg/ha. of N as A/S for 63 ; Nil for 64. ; 49 C.L./ha. of F.Y.M.+ 504 Kg/ha. of G.N.C.+504Kg/ha Super+112 Kg/ha. of K_2O as Sul. Pot.+224 Kg/ha. of N as A/S for 65. (vi) Bellary Big. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) N.A. (x) 12.4.64 ; N.A. for others.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 spacings within rows : R_1=10, R_2=13 and R_3=15 cm.
(2) 3 spacings between rows: P_1=15, P_2=18 and P_3=20 cm.
(3) 2 methods of sowing : M_1=Ridge method and M_2=Flat bed method.

3. DESIGN:

(i) $3^2 \times 2$ confd. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 8·84 m.×5·18 m. (b) 8·13 m.×5·18 m. for P_3; 8·18 m.×5·18 m. for P_2 and 8·24 m.×5·18 m. for P_1. (v) 30, 33 and 36 cm. dicarded at each and for P_1, P_2 and P_3 respectively. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of bulbs. (iv) (a) 1963—65. (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years interactions is present.

5. RESULTS:

Pooled results

(i) 168 Q/ha. (ii) 15·7 Q/ha. (based on 26 d.f. made up of Treatments×years interaction). (iii) Main effects of R and M and interaction R×P are highly significant. (iv) Av. yield of bulbs in Q/ha.

	R_1	R_2	R_3	M_1	M_2	Mean
P_1	164	170	167	172	162	167
P_2	171	179	160	178	162	170
P_3	190	158	153	175	159	167
Mean	175	169	160	175	161	168
M_1	183	177	165			
M_2	167	161	155			

C.D. for Rmarginal means=5·4 Q/ha.
C.D. for M marginal means=4·4 Q/ha.
C.D. for body of R×P table=9·3 Q/ha.

Individul results

Treatments	R_1	R_2	R_3	Sig.	P_1	P_1	P_3	Sig.
Years								
1963	174	170	163	N.S.	168	172	167	N.S.
1964	176	159	157	**	160	167	165	**
1965	175	175	160	**	171	171	168	N.S.
Pooled	175	169	160	**	167	170	167	N.S.

1	M_2	Sig.	G.M.	S.E./plot
176	162	*	169	21·7
170	158	**	164	8.0
179	161	**	169	9·5
175	161	**	168	15·7

Crop :- Onion. **Ref :- A.P. 61(187), 62(215), 63(211).**

Site :- Onion. Res. Stn., Anantharajupeta. Type :- 'C'.

Object :—To find out the relative merits of seed of bulbs and seedling in raising Onion crop.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) N.A. (ii) Clay loam. (iii) 2.1.61; 29.12.62; 30.12.63. (iv) (a) Ploughing, levelling and breaking of clods. (b) As per treatments. (c) 11 Kg/ha. (d) 8 to 10 cm. (e) One. (v) 112 Kg/ha. of Super+22417 Kg/ha. of F.Y.M. (vi) Bellary Big. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 15.6.61; 28.3.63; 15.6.64.

2. TREATMENTS :

2 types of seed material : S_1=Bulbs and S_2=Seedlings.

3. DESIGN :

(i) AB—BA method. (ii) (a) 2. (b) 15·2 m.×10·6 m. (iii) 6. (iv) (a) N.A. (b) 7·6 m.×5·3 m. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Stray incidence of Thrips and Leaf caterpillars. Spraying of 50 % B.H.C. with Sandorit at 0·01 % level as adhesive. (iii) Yield of Onion bulls. (iv) (a) 1961 to 63. (b) No. (c) Nil. (v) and (vi) Nil. (vii) As error variance are not available, hence the results of individual years are presented below.

5. RESULTS :

61(187)

(i) 18·9 Q/ha. (ii) N.A. (iii) Treatment difference is highly significant. (iv) Av. yield of onion in Q/ha.

Treatment	S_1	S_2
Av. yield	12·0	25·8

C.D.=N.A.

62(215)

(i) 58·2 Q/ha. (ii) N.A. (iii) Treatment difference is highly significant. (iv) Av. yield of onion in Q/ha.

Treatment	S_1	S_2
Av. yield	41·6	74·8

C.D.=N.A.

63(211)

(i) 24·3 Q/ha. (ii) N.A. (iii) Treatment difference is highly significant. (iv) Av. yieid of onion in Q/ha.

Treatment	S_1	S_2
Av. yield	16·1	32·5

C.D.=N.A.

Crop :- Onion. **Ref :- A.P. 61(188), 62(216), 63(212).**

Site :- Onion Res. Stn., Anantharajupeta. **Type :- 'C'.**

Object :—To find out optimum spacing and method of planting to be adopted in the cultivation of Onion for achieving the maximum production.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) N.A. (ii) Clay loam. (iii) 2.1.61 ; 25.12.62. ; 30.12-63. (iv) (a) Ploughing, levelling and breaking of clods. (b) As per treatments. (c) 11 Kg/ha. (d) As per treatments. (e) 1. (v) 112 Kg/ha. of Super+22417 Kg/ha. af F.Y.M. (vi) Bellary Big. (vii) Irrigated. (viii) Weeding and hand hoeing. (ix) N.A. (x) 14.6.61 ; 29.6.63 ; 14.6.64.

2. TREATMENTS :

Main-plot treatments:

All combinations of (1), and (2)

(1) 3 spacings between rows : R_1=12·7, R_2=15·2 and R_3=17·4 cm.

(2) 3 spacings between plants : P_1=7·6, P_2=12·7 and P_3=17·8 cm.

Sub-plot treatments:

2 methods of planting : M_1=Ridge and M_2=Bed planting.

3. DESIGN:

(i) Split-plot. (ii) (a) 9 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 7·6 m.×2·7 m. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Stray incidence of Thrips Leaf cater pillars spray of B.H.C. 50 % with sandovit .01 % levels as adhesive. 1 % Bordeaux mixture with Sandovit at ·01 % level as adhesive. (iii) Onion bulbs. (iv) (a) 1961 to 63. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Sub-plot error variances for 61 is N.A. and the sub-plot error variances of 62 and 63 are heterogeneous. Hence the results of individual years are presented under 5. Results.

5. RESULTS :

61(188)

(i) 1937 Kg/ha. (ii) (a) 859 Kg/ha. (b) N.A. (iii) None of the effects is significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	P_1	P_2	P_3	M_1	M_2	Mean
R_1	2130	1821	2073	2055	1962	2008
R_2	2354	2214	1793	1719	2522	2120
R_3	1933	1849	1261	1663	1700	1681
Mean	2139	1961	1709	1812	2061	1937
M_1	1887	1868	1681			
M_2	2391	2055	1737			

62(216)

(i) 834 Kg/ha. (ii) (a) 188 Kg/ha. (b) 299 Kg/ha. (iii) Main effect of R alone is significat. (iv) Av. yield of Onion bulbs in Kg/ha.

	P_1	P_2	P_3	M_1	M_2	Mean
R_1	896	927	958	1009	844	927
R_2	772	803	896	824	824	824
R_3	896	710	649	762	741	752
Mean	855	813	834	865	803	834
M_1	885	844	865			
M_2	824	783	803			

C.D. for R marginal means=112·0 Kg/ha.

63 (212)

(i) 800 Kg/ha. (ii) (a) 313 Kg/ha. (b) 215 Kg/ha. (iii) None of the effects is significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	P_1	P_2	P_3	M_1	M_2	Mean
R_1	865	988	741	885	884	865
R_2	834	834	772	803	824	814
R_3	680	865	618	700	741	720
Mean	793	896	710	796	803	800
M_1	783	885	721			
M_2	803	906	700			

Crop :- Onion. **Ref :- A.P. 61(186), 62(214).**

Site :- Onion Res. Stn., Anantharajupeta. **Type :- 'C'.**

Object :— To find out the most suitable crop rotation for Onion.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Same as under treatments. (ii) Clay loam. (iii) 2.1.61/22.2.61 ; 25.12.62/19.2.63. (iv) (a) Ploughing, levelling and breaking up of clods. (b) Transplanting. (c) 11 Kg/ha. (d) 8 to 10 cm. (e) One. (v) 112 Kg/ha. of Super+22417 Kg/ha. of F.Y.M. (vi) Bellary Big. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 15.6.61, 29.6.63.

2. TREATMENTS:

(i) 5 rotations : C_1=Onion-fallow-Onion-fallow, C_2=Onion-G.M.-Onion-G.M. ; C_3=Onion-ploughing-Onion-ploughing ; C_4=Korra-fallow-Onion-fallow and C_5=Kora-G.M.-Onion—G.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 38·2×26·5 m. (iii) 4. (iv) (a) and (b) 7·6 m.×5·3 m. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight incidence of thrips ; 50% B.H.C. sprayed alone with 1% Bordeaux mixture. (iii) Onion yield. (iv) (a) 1959 to 62 (not conducted in 1961. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Error variances are heterogeneous and Treatments×years. interaction is absent. Hence the results of dividual years are presented under 5. Results.

5. RESULTS:

61(186)

(i) 1749 Kg/ha. (ii) 627 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of onion in Kg/ha.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	1261	1541	1933	1597	2410

62(214)

(i) 507 Kg/ha. (ii) 144 Kg/ha. (iii) Treatment difference is not significant. (iv) Av. yield of onion in Kg/ha.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	525	525	494	494	494

Crop :- Onion (*Rabi*). **Ref :- A.P. 61(189), 62(217), 63(215).**

Site :- Onion Res. Stn., Anantharajupeta. Type :- 'IM'.

Object :— To determine the individual and combined effect of N, P and K and different frequencies of irrigation on the performance of Onion.

1. BASAL CONDITIONS :

(i) (a) Onion-Onion. (b) Onion. (c) Same as under treatments. (ii) Clay loam. (iii) 2 1.61/22.2.61 ; 2.1.62/15.2.62 ; 30.12.63/20.2.64. (iv) (a) Ploughing, levelling and breaking up of clods (c) 11 Kg/ha. (d) 8-10 cm. (e) 1. (v) As per treatments. (vi) Bellary Big. (vii) Irrigated. (viii) Weeding and hoeing. (ix) Nil. (x) 13.6.61; 5.6.62 ; 9.6.64,

2. TREATMENTS :

Main-plot treatments:

4 irrigational treatments : I_1=Irrigation once in 3 days, I_2=Irrigation once in 5 days, I_3=Irrigation once in 7 days and I_4=Irrigation once in 9 days.

Snb-plot treatments :

10 manurial treatments : M_0=No manure, M_1=22417 Kg/ha. of F.Y.M., M_2=34 Kg/ha. of N+M_1, M_3=34 Kg/ha. of P_2O_5+M_1, M_4=34 Kg/ha. of K_2O+M_1, M_5=34 Kg/ha. of P_2O_5+M_2, M_6=34 Kg/ha. of K_2O+M_2, M_7=34 Kg/ha. of K_2O+M_3, M_8=34 Kg/ha. of K_2O+M_5 and M_9=22417 Kg/ha. of compost.

3. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/replication; 10 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 7·6 m.×2·7 m. (b) 7·6 m.×1·8 m. (v) 45 cm. on either side. (v) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of Thrips and Leaf caterpillar controlled by 50% B.H.C.+1% Bordeaeux mixture. (iii) Yield of Onion. (iv) (a) 1559 to 63. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Sub-plot error variances are heterogeneous and hence results of individual years are presented under 5. Results.

5. RESULTS :

61(189)

(i) 2441 Kg/ha. (ii) (a) 1722 Kg/ha. (b) 744 Kg/ha. (iii) Main effects of I and M are highly significant and interaction I×M is significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	Mean
I_1	1614	2421	3183	2556	2197	6003	2825	3363	4252	2242	3067
I_2	1166	2670	2376	2852	3138	4797	3407	2287	4259	1883	2883
I_3	852	2107	2152	1923	2242	3587	2735	2645	4256	1300	2381
I_4	583	1121	1435	1166	762	2690	1524	1659	2645	762	1435
Mean	1054	2085	2287	2119	2085	4278	2623	2489	3856	1547	2441

C.D. for I marginal means =750·7 Kg/ha.
C.D. for M marginal means =463·5 Kg/ha.
C.D. for I means at the same level of M=1209·9 Kg/ha.
C.D. for M means at the same level of I=927·0 Kg/ha.

62(217)

(i) 1367 Kg/ha. (b) 336 Kg/ha. (b) 215 Kg/ha. (iii) Main effect of M alone is significant. (iv) Av. yield of Onion bullbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	Mean
I_1	1345	2466	1435	1211	2431	2018	1482	2869	1255	1793	1829
I_2	1255	2287	1300	1345	2511	2062	1480	2331	1166	1659	1740
I_3	807	1480	942	1031	1300	1390	1166	1524	986	986	1161
I_4	448	852	807	628	1121	1121	852	762	583	673	785
Mean	964	1771	1171	1054	1838	1648	1245	1872	998	1278	1367

C.D. for M marginal means=133·9 Kg/ha.

63(215)

(i) 1374 Kg/ha. (ii) (a) 1305 Kg/ha. (b) 375 Kg/ha. (iii) Main effect of I and M are highly significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	Mean
I_1	2107	2046	2654	2106	2091	2906	2269	2150	2491	2091	2291
I_2	1171	1572	1572	1349	1379	2284	1483	1468	2002	1082	1536
I_3	504	830	593	682	741	1201	890	682	1068	593	778
I_4	771	712	1142	638	593	1453	786	860	1246	712	891
Mean	1138	1290	1490	1194	1201	1961	1357	1290	1702	1120	1374

C.D. for I marginal means=568·7 Kg/ha.
C.D. for M marginal means=233·6 Kg/ha.

Crop :- Onion (*Rabi*). **Ref :- 61(190), 62(223), 63(209).**

Site :- Onion Res. Stn., Anantharajupeta. **Type :- 'IM'.**

Object :— To find out the optimum dosage of different manures and frequencies of irrigation for profitable growing of Onion.

1. BASAL CONDITIONS:

(i) (a) Onion-Onion. (b) Onion. (c) As per treatments. (ii) Clay loam. (iii) N.A. for 61, 2.1.62/14.2.62, 30.12.63/19.2.64. (iv) (a) Ploughing, levelling and breaking up of clods. (b) Transplanting. (c) 11 Kg/ha. (d) 8to 10 cm. (e) 1. (v) Nil. (vi) Bellary Big. (vii) As per treatments. (viii) Weeding and hoeing (ix) N.A. (x) 11.6.61, 2.6.62 and 6.6.64.

2. TREATMENTS:

Main-plot treatments :

4 irrigational treatments : I_1=Irrigation once in 3 days, I_2=Irrigation once in 5 days, I_3=Irrigation once in 7 days and I_4=Irrigation once in 9 days.

Sub-plot treatments :

5 manurial treatments : M_0=No manure, M_1=A basal dressing of 22417 Kg/ha. of F.Y.M., M_2=M_1 +56 Kg/ha. of A/S+168 Kg/ha. of G.N.C., M_3=M_1+112 Kg/ha. of A/S+336 Kg/ha. of G.N.C. and M_4=M_1+168 Kg/ha. of A/S+50 Kg/ha. of G.N.C,

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 5 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 7·6 m.× 2·7 m. (b) 7·6 m.×1·8 m. for 63 and 7·6 m.×2·7 m. for others. (v) 45 cm. on either sides for 63 and Nil for others. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of trips and Leaf blight, controlled by 50% B.H.C. and 1% Bordeaux mixture. (iii) Yield of Onion bulbs. (iv) (a) 1961-63. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) As the sub-plot error variances are heterogeneous, the results of individual years have been presented under 5. Results.

5. RESULTS:

61(190)

(i) 2768 Kg/ha. (ii) (a) 1520 Kg/ha. (b) 332 Kg/ha. (iii) Main effect of M and interaction I×M are highly significant. (iv) Av. yield of bulbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	Mean
I_1	1793	2959	4035	4842	2511	3228
I_2	1390	2959	3766	4663	2556	3067
I_3	1300	2466	2914	3676	2018	2475
I_4	1121	2556	2690	3183	1973	2305
Mean	1401	2735	3351	4091	2265	2768

C.D. for M marginal means =936·8 Kg/ha.
C. D. for I Means at the same level of M=1017·9 Kg/ha.
C.D. for M means at the same level of I =419·6 Kg/ha.

62(223)

(i) 2001 Kg/ha. (ii) (a) 1138 Kg/ha. (b) 426 Kg/ha. (iii) Main effects of I and M are highly significant. and interaction I × M in significant. (iv) Av. yield of bulbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	Mean
I_1	2285	1882	2868	3137	3137	2662
I_2	1658	2196	2554	2958	2778	2429
I_3	1255	1389	1793	1658	1524	1524
I_4	1031	1344	1703	1389	1479	1389
Mean	1557	1703	2230	2286	2230	2001

C.D. for I marginal means =701·3 Kg/ha.
C.D. for M marginal means =269·3 Kg/ha.
C.D. for I means at the same level of M=867·3 Kg/ha.
C.D. for M means at the same level of I=538·6 Kg/ha.

63(209)

(i) 2233 Kg/ha. (ii) (a) 1950 Kg/ha. (b) 475 Kg/ha. (iii) Main effect of M is highly significant and I × M interaction is significant. (iv) Av. yield of bulbs in Kg/ha.

	M_0	M_1	M_2	M_3	M_4	Mean
I_1	2209	2640	3203	2625	3930	2921
I_2	1513	1631	2269	1928	2298	1928
I_3	1453	1201	1794	1854	2491	1759
I_4	1601	2491	2298	1839	3381	2322
Mean	1694	1991	2391	2062	3025	2233

C D. for M marginal means =300·2 Kg/ha.
C.D. for M means at the same level of I=600·4 Kg/ha.
C.D. for I means at the same level of M=940·9 Kg/ha.

Crop :- Onion (*Rabi*). **Ref :- A.P. 60(5), 62(218).**

Site :- Onion Res. Stn., Anantharajupeta. **Type :- 'IM'.**

Object :—To find out the individual and combined effect of N, P and K and different frequencies of irrigation for assessing the optimum cultivation practices for Onion.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) As per treatments. (ii) Clay loam. (iii) N.A./Feb., 60 ; 29.11.62/26, 27.1.63. (iv) (a) Ploughings, levelling and breaking up of clods. (b) Transplanting. (c) 11 Kg/ha. (d) 8 cm.×10 cm. (e) 1. (v) Nil. (vi) Bellary Big. (vii) As per treatments. (viii) Hoeing and weeding. (ix) N.A. (x) May, 60 ; 21/22.5.63.

2. TREATMENTS :

Main-plot treatments :

4 irrigational treatments : I_1=Irrigation once in 3 days, I_2=Irrigation once in 5 days, I_3=Irrigation once in 7 days and I_4=Irrigation once in 9 days.

Sub-plot treatments :

All combinations of (1), (2) and (3)+2 extra treatments.

(1) 2 levels of N : N_0=0 and N_1=33·6 Kg/ha.

(2) 2 levels of P_2O_5 : P_0=0 and P_1=33·6 Kg/ha.

(3) 2 levels of K_2O : K_0=0 and K_1=33·6 Kg/ha.

Extra treatments : T_0=Control (no manure) and T_1=Basal dressing of 224 Q/ha. of Compost.

All sub-treatments except : T_0 and T_1 received 224 Q/ha. of F.Y.M. as basal dressing.

3. DESIGN :

(i) Split-plot. (ii) (b) 4 main-plots/replication and 10 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 7·6 m.×2·7 m. (b) N.A. (v) No. (vi) Yes.

4. GENERAL :

(i) Fair ; good. (ii) Nil for 60(5), Thrips were noticed on the crop and controlled effectively by spraying B.H.C. 50% Leaf blight disease was noticed and effectively controlled by spraying 1% of Bordeux mixture for 62(218). (iii) Yield of Onion bulbs. (iv) (a) 1959—62 (Expt. for 1961 N.A.) (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment No. 1959(5) also taken into consideration while pooling. As sub-plot error variances are heterogeneous, results of individual years are given under 5. Results.

5. RESULTS:

60(5)

(i) 3906 Kg/ha, (ii) (a) 2712 Kg/ha. (b) 1609 Kg/ha. (iii) Main effects of I and N and control *vs* others are highly significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	I_1	I_2	I_3	I_4	P_0	P_1	K_0	K_1	Mean
N_0	4102	4024	3563	1883	3402	3383	3178	3608	3393
N_1	7084	5302	4137	3171	4724	5123	4820	5028	4924
Mean	5593	4663	3850	2527	4063	3253	3999	4318	4158
K_0	5403	4461	3721	2410	3760	4238			
K_1	5783	4865	3979	2644	4367	4269			
P_0	5189	4563	4136	2364					
P_1	5997	4763	3564	2690					

Extra treatment means

	I_1	I_2	I_3	I_4	Mean
T_0	3945	3497	3721	2735	3475
T_1	3363	3138	2107	673	2320

C.D. for I marginal means=118·2 Kg/ha.

C.D. for N marginal means=498·5 Kg/ha.

C.D. for control *vs* others =557·5 Kg/ha.

62(218)

(i) 3234 Kg/ha. (ii) (a) 1400 Kg/ha. (b) 769 Kg/ha. (iii) Main effect of I is significant. (iv) Av. yield of Onion bulbs in Kg/ha.

	I_1	I_2	I_3	I_4	P_0	P_1	K_0	K_1	Mean
N_0	3979	4378	4063	2900	4126	3534	3425	4235	3830
N_1	3061	3251	3166	2620	2823	3226	3145	2904	3024
Mean	3520	3814	3614	2760	3474	3380	3285	3569	3427
K_0	3460	3503	3488	2690	3257	3313			
K_1	3580	4126	3741	2830	3691	3447			
P_0	3685	3601	3642	2970					
P_1	3355	4028	3587	2550					

Extra treatments mean

	I_1	I_2	I_3	I_4	Mean
T_0	1961	2354	2242	1457	2004
T_1	3138	3194	3363	1961	2914

C.D. for I marginal means=610·1 Kg/ha.

Crop :- Onion (*Rabi*). **Ref :- A.P. 60(6).**

Site :- Onion Res. Stn., Anantharajupeta. **Type :- 'IM'.**

Object :—To study the optimum dose of manure and frequency of irrigation for Onion crop.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) Same as under Treatments. (ii) Clay loam. (iii) Feb. 1960. (iv) (a) Ploughing, levelling, breaking up of clods. (b) to (e) N.A. (v) 22417 Kg/ha. of F.Y.M. (vi) Bellary Big. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) May, 1960,

2. TREATMENTS:

Main-plot treatments :

4 irrigational treatments : I_1=Irrigation once in 5 days, I_2=Irrigation once in 7 days, I_3=Irrigation once in 9 days and I_4=Irrigation once in 11 days.

Sub-plot treatments :

5 top dressings : M_0=No manure (control), M_1=56 Kg/ha. of N as A/S+168 Kg/ha. of N as G.N.C., M_2=112 Kg/ha. of N as A/S+336 Kg/ha. of G.N.C., M_3=168 Kg/ha. of N as A/S +504 Kg/ha. of N as G.N.C. and M_4=Basal dressing only.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 5 sub-plots/main-plot. (b) N,A. (iii) 5. (iv) 20·2 sq. m. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of onion bulbs. (iv) (a) 1958—60 (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 62·6 Q/ha. (ii) (a) 21·7 Q/ha. (b) 13·8 Q/ha. (iii) Main effects of I and M are highly significant. (iv) Av. yield of Onion bulbs in Q/ha.

	M_0	M_1	M_2	M_3	M_4	Mean
I_1	45·3	84·3	99·5	109·5	57·4	79·2
I_2	41·3	87·4	89·7	91·9	67·7	75·6
I_3	28·76	66·4	70·8	72·6	59·2	59·5
I_4	14·3	45·3	37·6	52·0	31·3	36·1
Mean	32·4	70·8	74·4	81·5	53·9	62 6

C.D. for I marginal means=13·4 Q/ha.
C D. for M marginal means= 8·7 Q/ha.

Crop :- Onion. **Ref :- A.P. 60(167), 62(221), 63(214), 64(213).**

Site :- Onion Res. Stn. Anantharajupeta. **Type :- 'D'.**

Object :—To find out the effects of chemical harmones on the storage quality of Onion bulbs.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) Same as under 2. Treatments. (ii) Clay loam. (iii) N.A. (iv) (a) Ploughing, levelling and breaking up of clodes. (b) Transplanting. (c) 11 Kg/ha. (e) 8-10 cm. (e) 1. (v) 112 Kg/ha. of Super+22417 Kg/ha. of F.Y.M. (vi) Bellary big. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 4.6 60, N.A. for 62, 10.1.64 and 20.6.64.

2. TREATMENTS :

Malice Hydrazide as preharvesting spray : T_0=Control, T_1= At 1000 ppm, T_2=At 1500 ppm,, T_3=2000 ppm T_4=2500 ppm and T_5=3000 ppm.

The chemical was sprayed on the crops 15 days prior to harvest. The spray is confined to 1/5th cent plot under each treatment. The bulbs after harvest under each treatment were stored in the usual manner.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N. A. (iii) 4. (iv) (a) and (b) 7·2 m.×1·1 m. (v) No. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Slight incidence of thrips and Leaf catter pillar. 50% B.H.C. and 1%mixture of Bordeaux sprayed. (iii) Loss in weight of Onion Bulbs. (iv) (a) 1959—64 (not conducted in 1961). (b) No. (c) As under 5. Results. (v) and (vi) Nil. (vii) Error variances are homogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled results

i) 46·04°. (ii) 5·27° (based on 15 d.f. made up of Treatments×years interaction). (iii) Treatment differences are highly significant. (iv) Av. % loss in weight of Onion bulbs in degrees.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. loss	55.25	50·37	47·32	45·02	42·72	35·55

C.D.=3·95°

Individual results

Av. loss weight of onion bulbs (in degrees.)

Treatments	T_0	T_1	T_2	T_3	T_4	T_5	Sig.	G.M.	S.E./plot
Years									
1960	54·45	54·88	49·70	49·00	47·90	40·30	**	49·37	3·39
1961	56·80	51·50	48·90	47·10	42·80	36·60	**	47·32	3·11
1962	46·82	42·64	41·25	39·00	38·20	31·75	**	39·95	2·14
1963	63·00	52·50	49·50	45·00	42·00	33·50	**	47·58	3·13
Pooled	55·25	50·37	47·32	45·02	42·72	35·55	**	46·04	5·27

Crop :- Banana. **Ref :- A,P. 63(121), 64(127).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'M'.**

Object :—To study the possible effects of organic and inorganic sources of N on growth, yield and storage life of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) Black clay loam. (iii) By planting sword suchers in pits of 46 cm. cube. (v) *Karpura Chakkarakeli*. (v) 1.7.6e ; 2 m. × 2 m. spacing. (vi) 2 to 3 months. (vii) Nil. (viii) weeding, propping and desuckering. (ix) Nil. (x) Irrigated. (xi) 129·0 cm. ; 97·1 cm. (xii) September and October, 63 for 63 : 64 for 64.

2. TREATMENTS :

5 ratios of G.N.C. and A/S : R_1=(1 : 0), R_2=(1 : 1), R_3=(2 : 1), R_4=(1 : 2) and R_5=(0 : 1).
Total manure of 210 gm./plant of N applied in four equal doses, once in two months from the time of planting.

3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) 50 m. × 10 m. (iii) 5. (iv) (a) 10 m. × 10 m. (25 plants). (b) 8 m. × 8 m. (16 plants). (v) one row on all sides.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of fruits. (iv) 1963—64. (v) N.A. (vi) to (viii) Nil.

5. RESULTS :

63(121)

(i) 12·5 Kg/plant. (ii) 1·0 Kg/plant. (iii) Treatment differences are not significant. (iv) Av. yield of Banana in Kg/ha.

Treatment	R_1	R_2	R_3	R_4	R_5
Av. yield	12·8	12·2	12·2	12·6	12·5

64(127)

(i) 9·1 Kg/plant. (ii) 0·9 Kg/plant. (iii) Treatment differences are not significant. (iv) Av. yield of Banana in Kg/ha.

Treatment	R_1	R_2	R_3	R_4	R_5
Av. yield	9·9	9·1	9·1	8·7	8·5

Crop :- Banana. **Ref :- A.P. 64(136), 65(7).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'M'.**

Object :— To determine the suitable manurial combination of the three important plant food elements for Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) Black clay loam, (iii) By planting sword suckers in pits of 46 cm. cube. (iv) Rarapara. chakkarakeli. (v) 22.2.63 ; 2 m. × 2 m. spacing. (vi) 2 to 3 months. (vii) Nil. (viii) Propping, weeding and de suckering. (ix) Nil. (x) Irrigated. (xi) 96·7 cm. ; 97·1 cm. (xii) Jan. and Feb., 64 ; Jan. to March, 65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S. N_0=0, N_1=140 and N_2=210 gm./plant, (N_0=0, N_1=350 and N_2=525 Kg/ha.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=60 and P_2=90 gm./plant, (P_0=0, P_1=150 and P_2=225 Kg/ha.

(3) 3 levels of K_2O as pot. Sul. : K_0=0, K_1=100 and K_2=150 gm./plant, (K_0=0, K_1=250 and K_2=375 Kg/ha.

N was applied by soil application in four equal doses at 2nd, 4th, 6th and 8th months, P_2O_5 and K_2O by soil application in two equal doses at 2nd and 6th month after planting.

3. DESIGN :

3^3 confd. Fact. (N, P, K is confd). (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 30 m. × 30 m. (iii) 2. (iv) (a) 10 m. × 10 m. (25 plants). (b) 8 m. × 8 m. (16 plants). (v) 1 plant on all sides. (vi) Yes.

4. GENERAL :

(i) Normal. (i) Nil. (iii) Yield of Banana. (iv) 64 contd. (v) N.A. (vi) to (vii) Nil.

5. RESULTS :

64(136)

(i) 11·3 Kg/plant. (ii) 0·9 Kg/plant. (iii) Main effect of N alone is significant. (iv) Av. yield of banana in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	10·0	10·0	9·6	9·5	9·6	10·4	9·8
N_1	11·7	12·0	12·2	11·7	12·3	11·9	12·0
N_2	12·1	12·2	11 8	12·0	11·9	12·2	12·04
Mean	11·3	11·4	11·2	11·1	11·3	11·5	11·29
K_0	10·6	11·3	11·3				
K_1	11·4	11·4	11·0				
K_2	11·8	11·5	11·2				

C.D. for N marginal means=0·6 Kg/plant.

Ist ratoon

65(7)

(i) 12·4 Kg/plant. (ii) 1·0 Kg/plant. (iii) Main effects of N and K are highly significant. (iv) Av. yield of banana in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
	10·7	10·9	11·8	11·2	11·1	11·1	11·1
N_1	13·4	12·7	13·6	12·1	13·4	14·2	13·2
N_2	12·9	12·7	12·8	11·7	13·5	13·1	12·8
Mean	12·3	12·1	12·7	11·7	12·7	12·8	12·4
K_0	11·8	11·4	11·8				
K_1	12·8	12·4	12·8				
K_2	12·4	12·4	13 6				

C.D. for N or K marginal means=0·7 Kg/plant.

Crop :- Banana. **Ref :- A.P. 64(129),**

Site :- Banana Res. Stn., Tanuku. **Type :- 'M'.**

Object :—To find out the time of application of nitrogen.

1. BASAL CONDITIONS:

(i) N.A. (ii) Black clay loam, (iii) Dry planting sword suckers in pits of 46 cm. cube. (iv) Tella chakkarekeli (v) 27.2.63 ; spacing 2 m.×2 m. (vi) 2 to 3 months. (vii) Nil. (viii) Weeding, propping and desuckering. (ix) Nil. (x) Irrigated. (xi) 96·7 cm. (xii) Dec. 63 and Jan., 64.

2. TREATMENTS :

7 times of application of N: T_1=In eight doses once in 30 days after planting, T_2=In four doses once in 60 days after planting, T_3=In four doses once at the time of planting and once in two months there after in three equal doses, T_4=In three doses once at the time of planting and once in three months there after in two equal doses, T_5=In three doses on 30th, 60th, and 90th days after planting T_6=In three doses on 60th, 90th and 120th day after planting and T_7=In three doses on 90th, 120th and 150th day after planting.

N applied as A/S at 140 grm/plant.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 12 m.×8 m. (24 plants). (b) 8 m.×4 m. (8 plants). (v) 2 m.×2 m. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of banana. (iv) (a) 1964 only. (b) and (c) Nil. (vi) to (vii) Nil.

5. RESULTS :

Banana yield

(i) 4·63 Kg/plant. (ii) 0·32 Kg/plant. (iii) Treatment differences are not significant. (iv) Av. yield of Banana in Kg/plant.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	4·38	4·92	4·79	4·52	4·72	4·65	4·47

Crop :- Banana. **Res. A.P. 61(100), 62(132).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'M'.**

Object :—To study the individual and combined effects of N, P and K on the yield of Banana.

1. BASAL CONDITIONS:

(i) N.A. (ii) Black clay loam. (iii) By planting sword suckers in pits of 46 cm. cube. (iv) Karpura chakkarakeli. (v) 3.8. 59 ; spacing 2·4 m.×2·4 m. (vi) 2 to 3 months. (vii) Nil. (vii) Propping, weeding and desuckering. (ix) Nil. (x) Irrigated. (xi) 122·2 cm. (xii) Nov, Dec. 1961 ; July—Sept 62.

2. TREATMENTS :

All Combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=84 and N_2=168 gm/plant.

(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=56 and P_2=112 gm/plant.

(3) 3 levels of K_2O as pot-Sul. : K_0=0, K_1=56 and K_2=112 gm/plant.

Fertilizer applied at—3rd and 6 months at equal doses.

3. DESIGN:

(i) 3^3 partial confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 19·5 m.×9 8 m. for 61 ; 9.8 m.×9 8 m. for 62. (iii) 2. (iv) (a) 9·8 m.×9·8 m. (16 plants). (b) 7·3 m.7·3 m. (9 plants). (v) One plant on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Banana. (iv) 1961—62. (v) and (vi) Nil. (vii) and (viii) Nil.

5. RESULTS :

1st ratoon

61(100)

(i) 10·9 Kg/plant. (ii) 0·9 Kg/plant. (iii) Main effect of N is highly significant and that of P is significant (iv) Av. yield of Banana in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	8·50	8·83	9·92	8·67	8·92	9 67	9·08
N_1	10·50	10·33	10·58	10·67	10·00	10·75	10·47
N_2	13·33	12·67	13·83	12·67	13·67	13·50	13·28
Mean	10 78	10·61	11·44	10·67	10·87	11·31	10·94
K_0	10·08	10·84	11·08				
K_1	11·08	10·17	11·33				
K_2	11·17	10·83	11·92				

C.D. for N or P marginal means=0·6 Kg/plant.

62(132)

(i) 12·4 Kg/plant. (ii) 1·0 Kg/plant. (iii) Main effect of N alone is highly significant. (iv) Av. yield of Banana in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	9·90	11·83	11·56	11·24	10·57	11·48	10·10
N_1	12·41	12·41	12·27	12·25	12·22	12·62	12·36
N_2	13·65	13·43	13·79	13·37	13·70	13·80	13·62
Mean	11·99	12·56	12·54	12·29	12·16	12·63	12·36
K_0	11·73	12·67	12·46				
K_1	11·63	12·39	12·47				
K_2	12·61	12·60	12·69				

C.D. for N marginal means=0·7 Kg/plant.

Crop :- Banana. **Ref :- A.P. 64(126), 65(5).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'MV'.**

Object : –To test the efficacy of different commercial nitrogenous in organic fertilizers.

1. BASAL CONDITIONS :

(i) N.A. (ii) Black clay loam. (iii) By planting sword suckers in pits of 46 cm. cube. (iv) As per treatments. (v) 24.9.63; spacing 2 m.×2 m. (vi) 2 to 3 months old. (vii) Nil. (viii) Weeding, propping. and desuckering, (ix) Nil. (x) Irrigated. (xi) 96·7 cm.; 97·1 cm. (xii) Sept. and Oct.; August and Sept., 1965.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=Karpura chakkarakeli and V_2=Tella chakkarakeli.

Sub-plot treatments :

4 sources of N : S_1=A/S, S_2=A/S/N, S_3=C/A/N and S_4=Urea.

N applied at 210 gm/plant in four equal instalments once in 2 months from the date of planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) main-plot 14 cm.×14 m. (b) 12 m.×12 m. ; sub-plot 6 m.×4 m. (6 plants). (v) A guard row around main-plots (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Banana. (iv) (a) (b) Yes. (c) Nil. 1964–65. (v) to (vii) Nil.

5. RESULTS :

64(126)

(i) 6·92 Kg/plant. (ii) (a) 0·94 Kg/plant. (b) 0·62 Kg/plant. (iii) Main effect of V alone is highly significant. (iv) Av. yield of banana in Kg/plant.

	S_1	S_2	S_3	S_4	Mean
V_1	9·45	9·25	9·58	9·33	9·40
V_2	4·40	4·35	4·62	4·42	4·45
Mean	6·92	6·80	7·10	6·88	6·92

C.D. for V marginal means=0·69 Kg/plant.

65(5)

1st ratoon

(i) 3238 Kg/ha. (ii) (a) 495·1 Kg/ha. (b) 538·9 Kg/ha. (iii) Main effect of V alone is highly significant (iv) Av. yield of banana in Kg/ha.

	S_1	S_2	S_3	S_4	Mean
V_1	5275	4811	5328	4937	5088
V_2	1370	1451	1428	1305	1388
Mean	3322	3131	3378	3121	3238

C.D. for V marginal means=367·4 Kg/ha.

Crop :- Banana. **Ref :- A.P. 60(97).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'C'.**

Object: To determine the economic feasibility of inter cropping as a measure of increasing the income by intensive utilisation of land space in Banana orchards.

1. BASAL CONDITIONS :

(i) N.A. (ii) Black clay loam. (iii) By planting board suckers in pits of 46 cm. cube. (iv) Karpura chakkarakeli. (v) 23.8.59 ; spacing 2·4 m.×2·4 m. (vi) 2 to 3 months. (vii) N.A. (viii) Weeding, propping and desuckering. (ix) As per treatments. (x) Irrigated (xi) 122·2 cm. (xii) July and August, 60

2. TREATMENTS :

4 inter cropping treatments : C_1=Banana only, C_2=Banana with pine apple, C_3=Banana with yam and C_4=Banana with *colacasia*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A, (iii) 8. (iv) 6. (v) A single guard between two plots (vi) Yes.

4. GENERAL :

(i) Establishment and growth of yam and colacasia were poor. (ii) Nil. (iii) Mean height of plant and yield of Banana. (iv) (a) 1958–N.A. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS :

Banana yield (IInd ratoon).
(i) 20365 Kg/ha. (ii) 2240·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of banana in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	21055	20866	19626	19912

Crop :- Banana. **Ref :- A.P. 60(76), 61(102).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'CV'.**

Object :— To determine a suitable desuckering practice for the common varieties of region.

1. BASAL CONDITIONS :

(i) N.A. (ii) Black clay loam. (iii) By planting sword suckers in pits of 46 cm. ;cube- (iv) As per treatments. (v) 4.7.58 ; spacing N.A. (vi) 2-3 months. (vii) Nil. (viii) Weeding, propping and desuckering. (ix) Nil. (x) Irrigated. (xi) 122·2 cm. ; 144·1 cm. (xii) N.A.

2. TREATMENTS :

Main-plot treatments :

5 varieties : V_1=Karpura chakkarakeli, V_2=Tella Chakkarakeli, V_3=Amruthapani, V_4=Bontha and V_5=Vamanaeli.

Sub-plot treatments :

7 desuckering practices : T_1=Allowing the earliest sucker and pruning all others suckers at ground level, T_2=Allowing the earliest sucker and pruning all others deep with rhizome, T_3=Allowing two suckers at three months and thinning out to six months and pruning all others at ground level, T_4=Allowing two suckers at three months and thining out to one at six months and pruning all others deep with rhizome, T_5=Allowing one sucker after flowering and pruning all others at ground level, T_6=Allowing one suckers after flowering and pruning all others deep with rhizome and T_7=Leaving all suckers.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) 3 trees/sub-plot. (v) A single ground row between two main-plot treatments. (vi) Yes

4. GENERAL :

(i) Severe casualties due to deep desuckering in 60 ; V_3 and V_5 damaged in 61. (ii) Nil. (iii) Yield of banana. (iv) (a) 1959-61. (b) Yes. (c) Nil. (v) to (viii) Nil.

5. RESULTS :

60(96)

(i) 8·84 Kg/plant. (ii) and (iii) N.A. (iv) Av. yield of banana in Kg/plant.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
V_1	11·25	9·53	11·79	9·39	9·75	11·25	11·48	10·63
V_2	4·35	4·31	5·03	4·35	5·17	4·54	4·54	4·61
V_3	6·94	6·80	9·16	7·55	12·29	8·35	5·99	8·13
V_4	10·66	10·21	10·70	10·02	11·25	10·97	9·07	10·28
V_5	10·89	10·70	12·02	9·16	10·30	10·43	10·21	10·53
Mean	8·82	8·31	9·74	8·03	9·75	8·93	8·26	8·84

61(102)

(i) 8·91Kg/plant. (ii) and (iii) N.A. (iv) Av. yield of banana in Kg/plant.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
V_1	11·56	9·75	11·56	9·80	10·74	10·60	7·34	10·19
V_2	7·81	8·20	8·10	8·70	8·36	7·67	7·84	8·10
V_3	9·05	8·48	8·74	8·56	9·33	8·06	6·94	8·45
Mean	9·47	8·81	9·47	9·02	9·48	8·78	7·37	8·91

Crop .- Banana. **Ref :- A.P. 60(95).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'CM'.**

Object :— To evolve suitable dosage and time of application of nitrogenous manure together with optimum spacing.

1. BASAL CONDITIONS :

(i) N A. (ii) Black clay loam (iii) Dry planting sword suckers in pits of 46 cm. cube. (iv) Bonthaculinary (v) 12.8.39 ; spacing as per treatments. (vi) 2-3 months. (vii) Nil. (viii) Weeding, propping and desuckering. (ix) Nil. (x) Irrigated. (xi) 142·8 cm, (xii) 20.7.60 to 2 8.60 ; June and July 61.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of A/S : L_1=28, L_2=56 gm /plant.

(2) 3 spacings : S_1=1·2 m.×1·2 m., S_2=1·8 m.×1 8 m., S_3=2·4 m.×2·4 m.

(3) 3 times of application of fertilizer: T_1=2, T_2=4 and T_3=6 months after planting.

3. DESIGN :

(i) $3^2 \times 2$ Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii)3. (iv) 18 plants for S_3, 32 plants for S_2, and 72 plants for S_1. (v) A single guard row. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of banana. (iv) (a) 1959-61. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 20518 Kg/ha. (ii) 5994·7 Kg/ha. (iii) Main effect of S alone is significant. (iv) Av. yield of banana in Kg/ha.

	S_1	S_2	S_3	T_1	T_2	T_3	Mean
L_1	21683	25590	16170	22832	21131	19480	21148
L_2	17055	25562	17045	22479	18061	19122	19887
Mean	19369	25576	16608	22656	19596	19301	20518
T_1	23818	26381	17767				
T_2	18176	24899	15717				
T_3	16113	25449	16340				

C.D. for S marginal means=4064·3 Kg/ha.

Crop :- Banana. **Ref :- A.P. 64(128), 65(6).**

Site :- Banana Res. Stn., Tanuku. **Type :- 'CM'.**

Object :— To determine suitable spacing and desuckering practice combined with the optimum dose of manuring for Banana.

1. BASAL CONDITIONS :

(i) N A. (ii) Black clay loam. (iii) By planting sword suckers in pits of 46 cm. cube. (iv) Karpura Chakkarakeli. (v) I4.11.63 ; spacing as per treatments. (vi) 2-3 months. (vii) Nil. (viii) Weeding, propping and desuckering. (ix) Nil. (x) Irrigated. (xi) 96·7 cm.; 97·1 cm. (xii) Sept. and Oct. 64 ; 1st ratoon from June to August and 2nd ratoon from August-Sept. 65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 spacings : S_1=2 m.×2 m. (25 plants/plot) and S_2=2·5 m.×2·5 m. (16 plants/plot).

(2) 2 desuckering practices : D_1=Leaving one flower at shooting of mother plant and D_2=Leaving one flower at shooting of mother plant and another at the time of harvest of mother plant,

(3) 2 levels of N as A/S : N_1=350 and N_2=525 Kg/ha.

3. DESIGN:

(i) 2^3 Fact. in R.B.D. (ii) (a) 8. (b) 36·0 m.×24·0 m. for S_1. 37·5×25·0 m. for S_2 ; (iii) 3. (iv) (a) 12·0 m.×12·0 m. for S_1 ; 12·5 m.×12·5 m. for S_2. (b) 10·0 m.×10·0 m. (25 plants for S_2 and 16 for S_1.) (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of banana. (iv) (a) 1964-65. (b) yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

64(128)

(i) 13·33 Kg/plant. (ii) 0·85 Kg/plant. (iii) Main effect of S alone is significant. (iv) Av. yield of banana in Kg/plant.

	D_1	D_2	N_1	N_2	Mean
S_1	13·03	12·68	12·97	12·74	12·86
S_2	13·65	13·94	13·90	13·69	13·80
Mean	13·34	13·31	13·44	13·22	13·33
N_1	13·60	13·27			
N_2	13·08	13·35			

C.D. for S marginal means=0·75 Kg/plant.

65(6)

1st ratoon

(i) 1430 Kg/ha. (ii) 158·7 Kg/ha. (iii) Main effect of S is highly significant and interaction S×N×D is significant. (iv) Av. yield of banana in Kg/ha.

	D_1	D_2	N_1	N_2	Mean
S_1	1235	1200	1240	1194	1217
S_2	1680	1605	1664	1621	1642
Mean	1458	1402	1452	1408	1430
N_1	1481	1423			
N_2	1434	1382			

C.D. for S marginal means=139·0 Kg/ha.

2nd ratoon

(i) 924 Kg/ha. (ii) 57·4 Kg/ha. (iii) Main effect of S is highly significant and interaction S×N is significant. (iv) Av. yield of banana in Kg/ha.

	N_1	N_2	Mean
S_1	857	904	880
S_2	1036	902	969
Mean	946	903	924

S×D and N×D two-way tables are not available.

C.D. for S marginal means=50·4 Kg/ha.

C.D. for body of S×N table=71·0 Kg/ha.

Crop :- Grape. **Ref :- A.P. 63(296), 64(294), 65(264).**

Site :- Grape Res. Stn., Hyderabad. **Type :- 'M'.**

Object: – To study the effects of N, P and K on the yield of Grapes.

1. BASAL CONDITIONS:

(i) N.A. (ii) Red loamy chalka. (iii) By cutting. (iv) Anab-e-shahi. (v) 18.3.61. (vi) 5 months. (vii) 100 Kg/plant of F.Y.M. during 1st and 2nd year and 100 Kg/plant of F.Y.M.+20 Kg/palnt of castor cake+15 Kg/plant of Bone meal during 3rd year and onward. (viii) Mulching once every month, pruning. tipping and thinning of shoots lowering of bunches. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) 5.3.63 to 10.4.63 ; 21.2.64 to 5.3.64 ; 25.2.65 to 8.4.65.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S in gm./vine : N_0=0 for 63 to 65 ; N_1=225 for 63, 450 for 64, 900 for 65 ; N_2=450 for 63, 900 for 64, 1800 for 65.

(2) 3 levels of P_2O_5 as Super in gm./vine: P_0=0 for 63 to 65 ; P_1=112 for 63, 225 for 64, 450 for 65 ; and P_2=225 for 63, 450 for 64, 900 for 65.

(3) 3 levels of K_2O as Mur. Pot. in gm./vine : K_0=0 for 63 to 65 ; K_1=225 for 63, 450 for 64, 900 for 65 ; K_2=450 for 63, 900 for 64, 1800 for 65.

2/3 of manures applied in Oct., Nov. and remaining during March, April.

3. DESIGN :

(i) 3^3 confd. (ii) 9 plots/block ; 3 blocks/replication. (iii) 1. (iv) (a) N.A. (b) 3. (v) 1 row all arround. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Sever attack of anthrocuasa ; Bordeaux mixture 5:5:50 was sprayed. Sul. Pot. Diathane sprayed as precautionary measure. (iii) Yield of grapes. (iv) (a) 1963-65. (b) Nil. (v) and (vi) N.A. (vii) Nil.

5. RESULTS:

63(296)

(i) 20·8 Kg/plant. (ii) 7·5 Kg/plant. (iii) Main effect of P alone is significant. (iv) Av. yield of grapes in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	15·2	12·8	34·0	22·6	17·1	22·4	20·7
N_1	16·7	24·1	17·3	14·5	17·8	25·6	19·4
N_2	17·3	12·1	37·8	28·7	17·0	21·6	22·4
Mean	16·4	16·4	29·7	21·9	17·3	23·2	20·8
K_0	27·0	13·1	25·8				
K_1	10·7	17·1	24·1				
K_2	11·5	18·9	39·2				

64(294)

(i) 9·3 Kg/plant. (ii) 6·7 Kg/plant. (iii) None of the effects is significant. (iv) Av. yield of grapes in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	8·6	7·6	25·7	11·1	10·4	20·4	14·0
N_1	6·6	6·6	10·9	7·4	6·4	10·4	8·1
N_2	5·8	6·1	5·6	12·3	2·2	3·0	5·8
Mena	7·0	6·8	14·1	10·3	6·3	11·3	9·3
K_0	10·9	9·9	10·4				
K_1	6·1	5·1	7·8				
K_2	4·4	5·3	24·0				

65(264)

(i) 46·4 Kg/plant. (ii) 28·8 Kg/plant. (iii) None of the effects is significant. (iv) Av. yield of grapes in Kg/plant.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	48·2	45·3	90·2	68·1	60·6	54·9	61·2
N_1	44·3	38·4	47·9	38·9	34·1	57·6	43·5
N_2	25·5	35·6	42·3	53·5	20·7	29·2	34·5
Mean	39·3	39·7	60·1	53·5	38·5	47·2	46·4
K_0	55·5	41·0	64·1				
K_1	30·1	41·4	43·9				
K_2	32·4	36·8	72·4				

Crop :- Grape. **Ref :- A.P. 64(297), 65(267).**

Site :- Grape Res. Stn., Hyderabad. **Type :- 'C'.**

Object :—To study the effect of cultural practices on the yield of Grape.

1. BASAL CONDITIONS :

Same as in expt. no. 64(295) and 65(265) given below.

2. TREATMENTS :

3 cultural practices: Training the vine with overhead lower at 3 different heights : T_1=1·2, T_2=1·7 and T_3=2·1 m.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 64(295), 65(265) given below.

5. RESULTS :

64(295)

(i) 315 Kg/ha. (ii) 244·3 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grape in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	304	246	396

65(267)

(i) 1300 Kg/ha. (ii) 418·6 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grape in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	1434	993	1475

—·=—

Crop :- Grape. **Ref :- A.P. 64(295), 65(265).**

Site :- Grape Res. Stn., Hyderabad, **Type :- 'C'.**

Object :—To study the effects of cultural practices on the yield of Grape.

1. BASAL CONDITIONS :

(i) N.A. (ii) Red loamy *chalka*. (iii) By cutting. (iv) *Anab-E-shahi*. (v) March, 1961. (vi) 5 months. (vii) 100 Kg/plant of F.Y.M.+20 Kg/plant of Castor cake+15 Kg /plant of Bone meal. (viii) Mulching once every month, pruning, tipping and thinning of shoots and lowering of bunches. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) 6.3.64 to 6.4.64 and 4.3.65 to 7·5.65.

2. TREATMENTS :

3 cultural practices: Training the vine with Kniffin system by spreading. T_1=2 arms, T_2=4 arms and T_3=6 arms.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 3. (v) One row all round. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Severe attack of Onthaenose, Bordeaux mixture and Diathane Z-78 were spread. (iii) Yield of grapes. (iv) (a) 1964—66. (b) yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

64(295)

(i) 44·5 Kg/ha. (ii) 30·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grapes in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	48	43	43

65(265)

(i) 258·5 Kg/ha. (ii) 96·2 Kg/ha. (iii) Treatment differences are highly significant. (iv) Av. yield of grapes in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	136	263	376

C.D.=123·7 Kg/ha.

Crop :- Grape. **Ref. :- A.P. 64(296), 65(266).**

Site :- Grape Res. Stn., Hyderabad. **Type :- 'C'.**

Object :—To study the effect of cultural practices on the yield of Grape.

1. BASAL CONDITIONS :

Same as in expt. no. 64(295), 65(265) on page 824.

2. TREATMENTS :

3 cultural practices: Training the vine with Condon system by spreading, T_1=2, T_2=4 and T_3=6 arms.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 3. (v) One row all arround. (vi) Yes.

4. GENERAL :

Same as in expt. no. 64(295), 65(265) on page 824.

5. RESULTS :

64(296)

(i) 173 Kg/ha. (ii) 155·4 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grapes in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	141	125	254

65(266)

(i) 815 Kg/ha. (ii) 206 Kg/ha. (iii) Treatment differences are not significant. (iv) Av. yield of grapes in Kg/ha.

Treatment	T_1	T_2	T_3
Av. yield	855	742	847

Crop :- Cotton, Groundnut and Sataria. **Ref :- A.P. 60(195).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'C'.**

Object :—To fix up the best strain of Cotton and the best proportion to be recommended for mixtures with sataria or Groundnut.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Mixed crop. (b) Sorghum. (c) N.A. (ii) Red soil. (iii) 8.6. 60 (iv) (a) 3 ploughings with *gorru* followed by one harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton 12 to 15 Kg/ha., setaria 12 Kg/ha , Groundnut 99 Kg/ha. (d) Cotton 69 cm., setaria 23 cm., Groundnut 23 cm. between lines. (e) 1. (v) 22 Kg/ha. of N as A/S as basal. (vi) As per treatments. (vii) Un-irrigated. (viii) 2 hand weedings, working *Danthulu* and *guntaka* once. (ix) N.A. (x) Setaria 27.9.60, Groundnut 27.10.60, Cotton 5.11.60 to 12.2.61.

2. TREATMENTS :

Main-plot treatments :

6 mixed cropping treatments : C_1=Cotton+setaria in 1 : 1 proportion, C_2=Cotton+Setaria in 1 : 2 proportion, C_3=Cotton+Setaria in 1 : 5 proportion, C_4=Cotton +Groundnut 1 : 1 proportion, C_5=Cotton+Groundnut 1 : 2 proportion and C_6=Cotton+Groundnut 1 : 5 proportion.

Sub-plot treatments :

6 varieties of Cotton : V_1=3930 A, V_2=3943 B, V_3=K—28, V_4=4616—D_2, V_5=R—1 and V_6=Local Mungari.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 49·4 m.×36·6 m. (iii) 4. (iv) (a) 12·2×4·1 m (b) 9·8 m.×4·1 m. (v) 122 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Severe incidence of Red haring cater pillar, spraying Folidol 0·04 % and Parathion 0·02 % (iii) Growth measurements, Groundnut-Pod yield, Setariagrain and straw, Cotton *Kapas* yield. (iv) (a) 1959—60 (varieties changed). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1039 Rs/ha. (ii) (a) 398·3 Rs/ha. (b) 197·8 Rs/ha. (iii) Main effects of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	766	700	959	1393	1223	1019	1010
C_2	791	769	973	1287	1420	1141	1064
C_3	877	847	966	1629	1215	1258	1132
C_4	758	686	775	1469	1510	1314	1085
C_5	870	741	988	1383	1129	1353	1077
C_6	597	538	750	1268	1078	980	868
Mean	776	714	902	1405	1262	1177	1039

C.D. for C marginal means=245·0 Rs/ha.

C.D. for V marginal means=113·6 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 60(193).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To decide the best strain of Cotton for mixed cropping and best time of sowing.

1. BASAL CONDITIONS :

(i) (a) Sorghum–Mixed crop. (b) Sorghum. (c) N A. (ii) Black soil. (iii) As per treatments. (iv) (a) 3 ploughings with *gorru* followed by one harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton 12 to 15 Kg/ha., Groundnut 99 Kg/ha., Setaria 12 Kg/ha. (d) Cotton 69 cm., Groundnut, 23 cm. Setaria 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments (vii) Un-irrigated. (viii) 2 hand weedings, working *Danthulu*, *guntaka* once. (ix) N.A. (x) Setaria 11.10.60 for D_1, 19.12.60 for D_2; Groundnut 31.10.60 for D_1, 19.12.60 for D_2; Cotton 28.12.60 to 28.2.61 for D_1, 8.2.61 to 28.2.61 for D_2

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 dates of sowing : D_1=Mid June, D_2=Mid July.

(2) Crop mixtures : M_1=Cotton+Groundnut in 1 : 2 proportion, M_2=Cotton+Setaria in 1 : 2 proportion.

Sub-plot treatments :

6 varieties of Cotton : V_1=3930 A, V_2=3943 B, V_3=K 28, V_4=4616—D_2, V_5=R–1, V_6=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 24·7 m.×23·8 m. (iii) 4. (iv) (a) 11·9 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 92 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of Red hairy cater pillar-spraying. Folidol 0·04 % and Parathion 0·02 %. Growth measurements, yield of Groundnut pods Setaria grain and straw, Cotton *Kapas*. (iv) (a) 1959–60. (b) No. (c) Nil. (v) Nil. (vi) Low rainfall during August 60. (vii) Nil.

5. RESULTS :

(i) 697 Rs/ha. (ii) (a) 160·9 Rs/ha. (b) 105·9 Rs/ha. (iii) Main effects of D and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	M_1	M_2	Mean
D_1	785	762	823	774	787	615	726	789	758
D_2	701	666	635	594	645	577	602	669	636
Mean	743	714	729	684	716	596	664	729	697
M_1	665	646	715	642	720	599			
M_2	821	782	743	726	712	593			

C.D. for D marginal means=74·3 Rs/ha

C.D. for V marginal means=75·7 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 60(188).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To decide the best strain of Cotton for mixed cropping and best time of sowing.

1. BASAL CONDITIONS :

(i) (a) Sorghum–Mixed crop. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) 3 ploughing with *gorru* followed by one harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton 12 to 15 Kg/ha., Groundnut 99 Kg/ha., Setaria 12 Kg/ha. (d) Cotton 69 cm., G. nut 23 cm., Setaria 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Un-irrigated. (viii) 2 hand weedings, working *danthulu guntaka* once. (ix) Nil. (x) 27.9.60, 22.10.60 for Setaria, 29.10.60 and 29.11.60 for Groundnut, 5.11.60 to 10.3.61 for Cotton.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2).

(1) 2 dates of sowing : D_1 = Mid June and D_2 = Mid July.

(2) 2 crop mixtures: M_1 = Cotton + Groundnut in 1 : 2 proportion and M_2 = Cotton + Setaria in 1 : 2 proportion.

Sub-plot treatments :

6 varieties of Cotton : V_1 = 3930 A, V_2 = 3243 B, V_3 = K—28, V_4 = 4616—D, V_5 = R – 1 and V_6 = Local *Mungari*.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 24·7 m. × 23·8 m. (iii) 4. (iv) (a) 11·9 m. × 2·1 m. (b) 10·1 m. × 2·1 m. (v) 92 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of Red hairy Cater pillar spraying, Folidol 0·04% and Parathion 0·02%. (iii) Grouth measurement, yield of Groundnut-pods, Setaria-grain and straw, Cotton-*kapas* produce in Rs/ha. (iv) (a) 1959—60. (b) No. (c) Nil. (v) Nil. (vi)Low rainfall during July and August 60. (vii) Nil.

5. RESULTS :

(i) 827·1 Rs/ha. (ii) (a) 339·4 Rs/ha. (b) 121·2 Rs/ha. (iii) Main effect of V and interaction D × M are highly significant. (iv) Av. value of product in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	M_1	M_2	Mean
D_0	951·2	884·8	880·6	892·0	858·9	734·0	1099·9	633·9	866·9
D_1	869·1	756·9	854·0	808·8	836·0	598·3	769·4	805 0	787·2
Mean	910·1	820·9	867·3	850·4	847·4	666·2	934·7	719·4	827·1
M_1	1069·4	906·5	953·0	945·1	978·9	755·1			
M_2	750'9	735·2	781·7	755·7	715·9	577·2			

C.D. for V marginal means = 85·6 Rs/ha.
C.D. for means in the body of D × M table = 221·6 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 60(197).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To see if by inter sowing Cotton at a latter date damage due to red hairy Cater-pillar can be evaded and see if there is any depression in Cotton yields due to late sowing.

1. BASAL CONDITIONS :

(i) (a) Sorghum—mixed crops. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) 3 ploughings with *gorru* followed by harrowing once with blade harrow. (b) *Gorru* sowing. (c) Cotton—12 15 Kg/ha., Groundnut—99Kg/ha., Setaria – 12 Kg/ha. (d) Cotton—69 cm., Groundnut—23 cm., Setaria—23 cm. (e) 1, (v) 22 Kg/ha. of N as A/S. (vi) As per treatments- (vii) Un-irrigated. (viii) 2 hand weedings, working *danthulu* and *guntaka* once. (ix) N.A. (x) Setaria—27.9.60, Groundnut—28.10.60, Cotton—5.11.60 to 15.2,61.

2. TREATMENTS:

Main-plot treatments :

6 mixed cropping treatments : C_1=Normal pure Cotton, C_2=Setaria+Cotton in 1 : 1 proportion sown together, C_3=Groundnut+Cotton in 1 : 1 proportion sown together, C_4=Late pure Cotton, C_5=Setaria+Cotton in 1 : 1 proportion inter sown and C_6=Groundnut+Cotton in 1 : 1 proportion inter sown.

Sub-plot treatments :

6 Cotton varieties : V_1=3930 A, V_2=3943 B, V_3=R—28, V_4=4616—D_2, V_5=R-1 and V_6=Local *Mungari*.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 36·6 cm.×24·7 cm. (iii) 4. (iv) (a) 12·2 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 56 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of red hairing Cater pillar. Spraying Folidole and Parathion 0·02%. (iii) Growth measurements, yield of Groundnut pods and haulms, yield of Setaria grain and straw, yield of Cotton *kapas*. (iv) (a) 1959-60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 692 Rs/ha. (ii) (a) 282·0Rs/ha. (b) 103·9 Rs/ha. (iii) Main effects of C and V are highly significant. Interaction C×V is significant. (iv) Av. yield of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	738	880	1295	207	359	681	693
C_2	815	942	1159	183	497	744	723
C_3	757	907	1249	168	456	779	719
C_4	617	1091	1229	217	375	686	702
C_5	839	1055	1273	159	361	763	742
C_6	595	592	1018	106	375	753	573
Mean	727	911	1204	173	404	734	692

C.D. for C marginal means =173·5 Rs/ha.
C.D. for V marginal means = 59·7 Rs/ha.
C.D. for C means at the same level of V=200·1 Rs/ha.
C.D. for V means at the same level of C=146·1 Rs/ha.

Crop :- Cotton, Setaria and Groundnut. **Ref :- A.P. 60(192).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To study the effect of mixed cropping on different varieties of Cotton.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Mixture crop. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) 11 6.60. (iv) (a) 3 ploughings. with *gorru* followed by one harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton at 12 to 15 Kg/ha. Groundnnt ; 99 Kg/ha., Setaria ; 12 Kg/ha. (d) Cotton ; 69 cm., Setaria ; 23 cm., Groundnut : 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Un-irrigated. (viii) 2 hand weedings, working *Danthulu guntaka* once. (ix) N.A. (x) Setaria 27.9.60, Groundnut : 29.10.60, Cotton ; 18.11 60 to 10.3.61.

2. TREATMENTS :

Main-plot treatments :

3 mixed cropping : C_1=Pure Cotton, C_2=Cotton+Setaria in 1 : 1 proportion and C_3=Cotton+Groundnut in 1 : 1 proportion.

Sub-plot treatments :

6 varieties : V_1=3930 A, V_2=B–32–48/51, V_3=C–6–14 A_2, V_4=5103, V_5=5368 and V_6=Local *Mungari*.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) 27·4 m.×12·3 m. (iii) 4. (iv) (a) 9·1 m.×2·1 m. (b) 7·9 m.×2·1 m. (v) 61 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of red hairy Cater-pillar, spraying of Folidol 0·04% and Parathion 0·02%. (iii) Growth measurements, groundnut-pod yield, haulms, Setaria-grain, straw yield, Cotton-*kapas* yield. (iv) (a) 1959–60. (b) No. (c) Nil. (v) Nil. (vi) Low rainfal during August 60. (vii) Nil.

5. RESULTS :

(i) 701 Rs/ha. (ii) (a) 165·4 Rs/ha. (b) 75·8 Rs/ha. (iii) Main effect of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	570	520	514	533	527	346	502
C_2	720	790	698	684	761	594	708
C_3	986	928	876	887	888	804	895
Mean	759	746	696	701	725	581	701

C.D. for C marginal means=116·8 Rs/ha.
C.D. for V marginal means= 62·3 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 60(194).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To study the effect of mixed cropping on different varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Mixture crop. (b) Sorghum. (c) N.A. (ii) Black soils. (iii) 30.6.60. (iv) (a) 3 ploughings with *gorru* followed by harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton ; 12 to 15 Kg/ha., Groundnut: 99 Kg/ha., Setaria ; 12 Kg/ha. (d) Cotton ; 69 cm., Setaria ; 23 cm., Groundnut ; 23 cm. (e) 1 (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Un-irrigated. (viii) 2 hand weedings, working *Danthulu* and *guntaka*. (ix) N.A. (x) Setaria ; 11.10.60, Groundnut ; 31.10.60, Cotton : 29.12.60 to 6.3.61.

2. TREATMENTS :

Main-plot treatments :

3 mixed cropping treatments : C_1=Pure Cotton, C_2=Cotton+Groundnut in 1 : 1 proportion and C_3=Cotton+Setaria in 1 : 1 proportion.

Sub-plot treatments :

6 varieties of cotton : V_1=3930 A, V_2=B–32–48151, V_3=C–6–14–A_2, V_4=5103, V_5=5368 and V_6=Westerns.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) 27·4 m.×12·3 m. (iii) 4. (iv) (a) 9·1 m.×2·1 m. (b) 7·9 m.×2·1 m. (v) 61 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of red hairy Cater-pillar, spraying of Folidol 0·04% and Parathion 0·02%. (iii) Growth measurements. groundnut-pod yields, haulms, Setaria-grain, straw yield and Cotton-*kapas* yield. (iv) (a) 1959—60. (b) No. (c) Nil. (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 400 Rs/ha. (ii) (a) 195·5 Rs/ha. (b) 58·3 Rs/ha. (iii) Main effect of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	251	214	239	300	281	179	244
C_2	475	562	527	448	514	459	498
C_3	481	502	462	496	441	367	458
Mean	402	426	409	415	412	335	400

C.D. for C marginal means=138·1 Rs/ha.

C.D. for V marginal means= 48·0 Rs/ha.

Crop :- Cotton, Setaria and Groundnut. **Ref :- A.P. 60(196).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To fix up the best strain of Cotton and the best proportion to be recommended for mixtures with Setaria or Groundnut.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Mixed crop. (b) Sorghum. (c) N.A. (ii) Black soil. (iii) 29.6.60. (iv) (a) 3 ploughings with *gorru* fallowed by one harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton—12 to 15 Kg/ha. Setaria—12 Kg/ha.; Groundnut—99 Kg/ha. (d) Cotton—69 cm.; Setaria—23 cm.; Groundnut 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S (vii) As per treatments. (vii) Un-irrigated. (viii) Cotton and Groundnut—2 hand weedings, working *Danthulu* and *guntaka* once. Setaria—2 hand weedings, working *Danthulu* once. (ix)N.A. (x) Setaria—8.10.60, Groundnut—30.10.60; Cotton—28.12.60 to 25.2.61.

2. TREATMENTS :

Main-plot treatments :

6 mixed-cropping treatments : C_1=Cotton+Setaria in 1 : 1 proportion, C_2=Cotton+Setaria in 1 : 2 proportion, C_3=Cotton+Setaria in 1 : 5 proportion, C_4=Cotton+G. nut in 1:1 proportion, C_5=Cotton+Groundnut in 1 : 2 proportion C_6=Cotton+Groundnut in 1 : 5 proportion.

Sub-plot treatments:

6 varieties : V_1=3930 A, V_2=3943 B, V_3=10—28, V_4=4616—D_2, V_5=R—1 and V_6=Westerns

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 49·4 m.×36·6 m. (iii) 4. (iv) (a) 12·2 m.×4·1 m. (b) 9·8 m.×4·1 m. (v) 122 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Severe incidence of red hairy Cater-pillar, spraying Folidol 0·04 % and Parathion 0·02 % (iii) Growth measurements, Groudnut—pod yield, haulms, Setaria—grain and straw, Cotton *Kapas* yield. (iv) (a) 1959—60 (varieties changed). (b) No. (c) Nil. (v) Nil. (vi) Low rainfal during July, August 60. (vii) Nil.

5. RESULTS :

(i) 719 Rs/ha. (ii) (a) 198·4 Rs/na. (b) 87·2 Rs/ha. (iii) Main effects of C and V are highly significant (iv) Av. value of produce in Rs/ha.

Mean	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	751	794	893	601	656	796	741
C_2	756	847	991	583	554	703	739
C_3	651	781	965	529	578	786	715
C_4	723	801	939	550	583	823	732
C_5	693	854	1025	491	578	719	727
G_6	596	761	816	531	495	741	657
Mean	695	806	938	541	674	761	719

C.D. for C marginal means=122·1 Rs/ha.
C.D. for V marginal means=50·1 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 60(198).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To fix up the best strain of Cotton and the best proportion to be recommended for mixture with Setaria or Groundnut.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Mixed crops. (b) Sorghum. (c) N.A. (ii) Black soil. (iii) Normal sowing : 30.6.60, inter sowing 11.9.60. (iv) (a) 3 ploughings with *gorru* fallowed by harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton 12—15 Kg/ha., Groundnut 99 Kg/ha., Setaria at 12 Kg/ha. (d) Cotton : 69 cm., Groundnut : 23 cm., Setaria : 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As Per treatments. (vii) Un-irrigated. (viii) 2 hand weedings, working *Danthulu* and *guntaka* once. (ix) N.A. (x) Setaria 10.10 62, Groundnut, 30.10.60, Cotton : 28.10.60 to 21.3.61.

2. TREATMENTS :

Main-plot treatments :

6 mixed cropping treatments : C_1=Normal pure Cotton, C_2=Setaria+Cotton in 1 : 1 proportion sown together, C_3=Groundnut+Cotton in 1 : 1 proportion sown together, C_4=Late pure Cotton, C_5=Setaria+Cotton in 1 : 1 proportion inter sown, C_6=Groundnut+Cotton in 1 : 1 proportion inter sown.

Sub-plot treatments :

6 varieties of Cotton : V_1=3930 A, V_2=3943 B, V_3=K—28, V_4=4616—D_2, V_5=R—1 and V_6=Westerns—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 36·6 m.×24·7 m. (iii) 4. (iv) (a) 12·2 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 56 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe incidence of red hairy Cater pillar. Spraying Folidol 0·04 % and Parathion 0·02 %. Incidence of stenosish was noticed on early planted crop. (iii) Growth measurements, yield of Groundnut in pods and haulms, yield of Setaria in grain and straw, yield of Cotton in *kapas*. (iv) (a) 1959—60. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 700 Rs/ha. (ii) (a) 344·9 Rs/ha. (b) 154·7 Rs/ha. (iii) Main effect of V alone is highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	690	908	709	752	775	831	778
C_2	482	893	696	521	813	755	693
C_3	487	851	734	704	770	687	707
C_4	443	937	694	728	792	711	718
C_5	482	688	770	583	755	775	676
C_6	528	715	651	464	734	674	628
Mean	519	832	709	625	777	739	700

C.D. far V marginal means=88·9 Rs/ha.

Crop :- Cotton Setaria and Groundnut. **Ref :- A.P. 61(217), 62(247).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :—To fix up the best strain of Cotton and its economical proportion for mixed cropping with Setaria and Groundnut.

1. BASAL CONDITIONS:

(i) (a) Sorghum—Mixed series. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) 21.6.61 ; 25.6.62. (iv) (a) 3 ploughings with *gorru* followed by harrowing with blade harrow. (b) *Gorru* sowing. (c) 12—15 Kg/ha. for Cotton ; 99 Kg/ha. for Groundnut : 12 Kg/ha. for Setaria. (d) 69 cm. for Cotton ; 23 cm. for Groudnut and Setaria. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments (vii) Unirrigated. (viii) 2 hand weedings and *guntaka* once. (ix) N.A. (x) Cotton: 4th June to 12th April, 62 ; 24th Nov. to 62 to 3rd April, 63, Groundnut : 6th Oct., 61 : 11.10.62 ; Setaria : 3.10.61 ;8.9.62.

2. TREATMENTS:

Main-plot treatments:

6 mixed cropping treatments : C_1=Normal pure Cotton, C_2=Setaria+Cotton in 1 : 1 proportion sown together, C_3=Groundnut+Cotton in 1 : 1 proportion sown together, C_4=Late pure Cotton, C_5=Setaria+Cotton in 1 : 1 proportion inter sown, and C_6=Groundnut+Cotton in 1 : 1 proportion. intersown.

Sub-plot treatments:

6 varieties : V_1=3930 A, V_2=3943—B, V_3=4616-D_2, V_4=B-32—48151, V_5=Laxmi and V_6=Local (*Mungari.*)

3. DESIGN:

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 36·5 m.×24·7 m. (iii) 4. (iv) (a) 12·2 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 106 cm. on either side along length. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Attack of Leaf minor on Groundnut and red hairy Catter pillar on Cotton. (iii) Growth measurement ; yield of cotton in *kapas*, Groundnut in pods and Setaria in grain and straw. (iv) (a) 1961–62. (b) No. (c) Nil. (v) No. (vi) Heavy and continuous rains during August, 1961. (vii) Sub-plot error variances are heterogeneous. Hence individual years results are presented under 5. Results.

5. RESULTS:

61(217)

(i) 460 Rs/ha. (ii) (a) 291·2 Rs/ha. (b) 100·1 Rs/ha. (iii) Main effect of C and V are highly significant. and interaction C×V is significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	595	586	846	210	343	725	551
C_2	443	569	706	147	461	460	464
C_3	578	579	742	163	414	460	489
C_4	457	624	696	176	381	511	474
C_5	248	636	539	103	378	394	383
C_6	307	520	641	129	329	462	398
Mean	438	586	695	155	384	502	460

C.D. for C marginal means =179·1 Rs/ha.
C.D. for V marginal means = 57·9 Rs/ha.
C.D. for V means at the same level of C=140·8 Rs/ha.
C.D. for C means at the same level of V=203·3 Rs/ha.

62(247)

(i) 576 Rs/ha. (ii)(a) 53·5 Rs/ha. (b) 78·7 Rs/ha. (iii) Main effect of C and V are highly significant.
(iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	579	555	1049	362	458	832	639
C_2	531	531	905	388	410	699	569
C_3	307	458	917	326	422	869	583
C_4	519	470	905	350	410	893	591
C_5	483	507	881	398	398	857	587
C_6	398	410	808	277	290	736	487
Mean	503	488	911	342	398	814	576

C.D. for C marginal means=32·9 Rs/ha.
C.D. for V marginal means=45·8 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 61(214), 62(250).**

Site :- Cotton Res. Farm, Adoni, **Type :- 'X'.**

Object :—To decide the best time of sowing and best strain of Cotton for mixed cropping.

1. BASAL CONDITIONS :

(i) (a) Sorghum—mixed series. (b) Sorghum. (c) N.A. (ii) Black soils. (iii) [illegible] (iv) (a) 3 ploughings and harrowing. (b) Sown by *gorru*. (c) Cotton 12-15 Kg/ha., [illegible] and Setaria 12 Kg/ha. (d) Cotton : 69 cm. ; Groundnut : 23 cm. and Setaria : 23 cm. [illegible] of N as A/S. (vi) As per treatments. (vii) Un-irrigated. (viii) 2 hand weedings (ix) N.A. (x) [illegible] 1.11.61 to 1.12.61 for 61, 10.10.62 to 8.11.62 for 62 ; Groundnut : 21, 22.11.61 and 62 and Cotton : 30.12.61 to 24.4.62 and 19.1.62 to 24.4.62 for 61 and 31.12.62 to 19.4.63 and 8.1.63 to 19.4.63 for 62.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 dates of sowing : D_1=25.7.61 for 61, 9.7.62 for 62 and D_2=13.8.61 for 61, 8.8.62 (for 62).

(2) 2 mixed series : M_1=Cotton+Groundnut in 1 : 2 ratio and M_2=Cotton+Setaria in 1 : 2 ratio.

Sub-plot treatments :

6 varieties of Cotton : V_1=3930—A, V_2=3943—B, V_3=4616—D_2, V_4=B—32—48151, V_5=*Laxmi* and V_6=Western—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) 24·7 m.×23·8 m. (iii) 4. (iv) (a) 11·9 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 92 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 3 to 4 spraying of Endrin. (iii) Money value of yield. (iv) (a) 1961—62. (b) No. (c) As under 5. results. (v) Nil. (vi) Heavy rains. (vii) Main-plot as well as Sub-plot error variances are homogeneous. Also main-plot as well as sub-plot Treatments×years interaction are absent.

5. RESULTS :

Pooled results

(i) 626·7 Rs/ha. (ii) (a) 102·00 Rs/ha. (based on 21 d.f. made up of pooled error and main-plot Treatments×years interaction). (b) 51·50 Rs/ha. (based on 35 d.f. made up of pooled error and sub-plot Treatments×years interaction). (iii) Main effect of D is significant where as the main effect of V and interaction D×V are highly significant. (iv) Av. Value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	M_1	M_2	Mean
D_1	744·5	685·0	660·5	676 0	621·0	468·0	644·5	640.5	642·5
D_2	660·5	634·0	636·5	635·0	624·0	476·0	603·5	618·5	611·0
Mean	702·5	659·5	648·5	655·5	622·5	472·0	624·0	629 5	626·7
M_1	697·5	661·5	643·0	665·0	626·0	451·0			
M_2	707·5	657·5	654·0	646·0	619·0	493·0			

C.D. for D marginal means =30·6 Rs/ha.

C.D. for V marginal means =12·9 Rs/ha.

C.D. for D means of the same level of V=22·2 Rs/ha.

C.D. for V means of the same level of D=35·7 Rs/ha.

Individual years results

Treatment	D_1	D_2	Sig.	M_1	M_2	Sig.	V_1	V_2	V_3	V_4	V_5	V_6	Sig.
Years													
1961	450·3	421·7	N.S.	410.8	461·2	**	485·5	459·6	464·7	458·4	404·0	343·8	**
1962	835·4	800·2	N.S.	837·4	798·2	N.S.	919·8	859·5	832·3	853·4	841·4	600·4	**
Pooled	642·5	611·0	*	624·0	629·5	N.S.	702·5	659·5	648·5	655·5	622·5	472·0	**

G.M.	S.E./Main-plot	S.E./sub-plot
436·0	72·66	54·47
817·8	126·66	46 28
626·7	102·00	51·50

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 61(216), 62(248).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :— To fix up the best strain of Cotton and its economical proportion for mixed cropping with Setaria and Groundnut.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Mixed series. (b) Sorghum. (c) N.A. (ii) Black soils. (iii) Normal : 25.7.61 intersowing : 13.8.61. for 61 and normal : 9.7.62 and intersowing : 8.8.62 for 62. (iv) (a) 3 ploughings with gorru followed by horrowing once with blade harrow. (b) *Gorru* sowing. (c) Cotton : 12-15 Kg/ha., Groundnut : 99 Kg/ha., Setaria : 12 Kg/ha. (d) Cotton : 69 cm., groundnut : 23 cm., setaria : 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Unirrigated. (viii) Cotton : 2 hand weedings, working *danthulu* and *guntaka*. once, Groundnut : same as Cotton, Setaria : 2 hand weedings, working *danthulu* once. (ix) Setaria : 31.10.61, Groundnut : 21.11.61, Cotton : 28.12.61 to 23.4.62 for 61. and Setaria : 10.10.62, Groundnut : 20.11.62, Cotton : 15.12.62 to 18.4.63.

2. TREATMENTS :

Main-plot treatments:

6 mixed cropping treatments : M_1=Normal pure Cotton, M_2=Setaria and Cotton in 1 : 1 proportion sown together, M_3=Groundnut and Cotton in 1 : 1 proportion sown together, M_4=Late pure Cotton, M_5=Setaria and Cotton in 1 : 1 proportion intersown and M_6=Gronndnut and Cotton in 1 : 1 proportion intersown.

Sub-plot treatments :

6 cotton varieties : V_1=3930—A, V_2=3943—B, V_3=4616—D_2, V_4=B-32-4815, V_5=Laxmi and V_6=Westerns—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication, 6 sub-plots/main-plot. (b) 36·6 m.×24·7 m. (iii) 4. (iv) (a) 12·2 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 106 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of leaf minor on Groundnut and attack of red hairy Caterpillar on cotton. (iii) Growth measurements, yield of groundnut in pods and haulms, yield of setaria in grain and straw, yield of cotton in *kapas*. (iv) (a) 1961-62 (b) No. (c) Nil. (v) Nil. (vi) Continuous and heavy rains during August 61. (vii) Main-plot as well as sub-plot error variances are homogeneons. Also main-plots Treatments×years as well as sub-plots Treatments×years interaction are present.

5. RESULTS :

Pooled results.

(i) 457·4 Rs/ha. (ii) (a) 219·2 Kg/ha. (based on 5 d.f. made up of main-plot Treatments × years interaction) (b) 116·5 Rs/ha. (based on 30 d.f. made up of sub-plot Trearments × years interaction). (iii) Main effects of M and V are highly significant. (iv) Av. value of produce in Kg/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
M_1	560·5	489·0	642·0	516·5	449·5	509·0	527·7
M_2	506·0	489·0	616·5	439·0	422·0	478·0	500·5
M_3	499·0	446·0	607·0	455·5	409·0	456·0	478·7
M_4	492·0	472·0	588·5	467·0	429·5	451·0	483·3
M_5	396·5	455·5	477·0	402·5	525·5	423·0	430·0
M_6	291·0	310·0	391·0	289·0	333·5	332·5	324·5
Mean	457·5	443·5	553·6	437·0	411·5	441·5	457·4

C.D. for M marginal means = 115·0 Rs/ha.
C.D. for V marginal means = 48·6 Rs/ha.

Individual years results

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	Sig.
Years							
1961	364·0	373·8	337·2	365·5	295·2	254·9	**
1962	691·6	627·3	621·3	601·2	565·0	394·1	*
Pooled	527·7	500·5	478·7	483·3	430·0	324·5	**

V_1	V_2	V_3	V_4	V_5	V_6	Sig.	G.M.	S.E./main-plot	S.E./sub-plot
356·2	346·6	429·7	323·4	294·7	239·9	**	331·8	80·08	50·07
558·9	540·8	677·7	550·9	528·9	643·4	**	583·4	172·10	55·65
457·5	443·5	553·6	437·0	411·5	441·5	**	457·4	219·2	116·5

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 61(215), 62(249).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :— To decide the best srtain of Cotton for mixed cropping and best time of sowing.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Mixed series. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) As per treatments. (iv) (a) 8 ploughings with *gorru* followed by horrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton at 12 to 15 Kg/ha., Groundnut at 99 Kg/ha., Setaria at 12 Kg/ha. (d) Cotton 69 cm., Groundnut 23 cm, Setaria 23 cm. between lines. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Unirrigated. (viii) 2 hand weedings, working *Danthulu, guntaka* once. (ix) N.A. (x) Varying according to treatments.

2. TRETMENTS

Main-plot treatments:

All combinations of (1) and (2)

(1) 3 dates of sowing : D_1=21.5.61 ; 25.6.62, D_2=13.7.61 ; 2.7.62 and D_3=3.8.61 ; 30.7.62.

(2) 2 mixed series : M_1=Cotton+Groundnut in 1 : 2 proportion and M_2=Cotton+Setaria in 1 : 2 proportion.

Sub-plot treatments :

6 varieties : V_1=3930—A, V_2=3943—B, V_3=4616—D_2, V_4=B—32—48151, V_5=Laxmi and V_6=Local Mungari.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 35·7 m.×24·7 m. (iii) 4. (iv) (a) 11·9 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 92 cm. on either side along breadth. (vi) Yes.

4. GENERAL :

(i)Satisfactory. (ii) Attack of leaf minor on groundnut and attack of Red hairy caterpillar on Cotton. (iii) Growth measurments : yield of Groundnut pods and haulms, yield of setaria grain and straw, yield of Cotton *Kapas*. (iv) (a) 1961-62. (b) No. (c) Nil. (v) Nil. (vi) Continuous and heavy rains during August 61. (vii) Sub-plot error variances are heterogeneous. Hence individual years results are presented under 5. Results.

5. RESULTS:

61(215)

(i) 524·5 Rs/ha. (ii) (a) 308·3 Rs/ha. (b) 155·6 Rs/ha. (iii) Main effects of D and V and interaction D×M are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	M_1	M_2	Mean
D_1	758·1	778·0	752·1	683·3	583·8	525·9	465·8	894·7	680·2
D_2	510·8	413·7	395·6	412·5	361·9	347·4	474·7	339·3	407·0
D_3	559·1	559·1	528·9	446·3	401·1	422·8	486·9	485·5	486·2
Mean	609.4	583·6	558·9	514·1	448·9	432·0	475·8	573·2	524·5
M_1	519·5	505·4	536·8	518·3	398·9	375·9			
M_2	699·2	661·8	581·0	509·8	499·0	488·1			

C.D. for D marginal means =134·1 Rs/ha.
C.D. for V marginal means =89·4 Rs/ha.
C.D. for means in the body of D×M table =189·6 Rs/ha.

62(249)

(i) 607·8 Rs/ha. (ii) (a) 130·7 Rs/ha. (b) 81·6 Rs/ha. (iii) Main effects of D, M and V and interaction M×V are highly significant and interaction D×M is significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	M_1	M_2	Mean
D_1	711·7	735·8	615·2	772·0	735·8	663·4	878·6	532·8	705·7
D_2	693·6	627·3	579·0	729·8	681·5	639·3	798·2	518·7	658·4
D_3	464·4	476·5	410·1	464·4	458·4	482·5	548·8	369·9	459·4
Mean	623·2	613·2	534·8	655·4	625·2	595·1	741·9	473·8	607·8
M_1	719·7	747·9	583·0	824·3	764·0	812·2			
M_2	526·7	478·5	486·5	486·5	486·5	377·9			

C.D. for D morginal means =56·8 Rs/ha.
C.D. for M marginal means =46·4 Rs/ha.
C.D. for V marginal means =46·9 Rs/ha.
C.D. for M means at the same level of V =74·5 Rs/ha.
C.D. for V means at the same level of M =83·1 Rs/ha.
C.D. for means in the body of D×M table =40·2 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- 61(220), 62(252).**

Site :- Cotton Res. Farm, Adoni, **Type :- 'X',**

Object: —To study the effects of mixed cropping with different varieties of Cotton.

1. BASAL CONDITIONS:

(i) (a) Sorghum-Mixed crop. (b) Sorghum. (c) N.A. (ii) Black soil. (iii) 26.7.61 ; 9.7.62. (iv) (a) 3 ploughings followed by one horrowing. (b) *gorru* sowing. (c) Cotton 12-15 Kg/ha., Groundnut 99 Kg/ha., Setaria 12 Kg/ha. (d) Cotton 69 cm., Groundnut 23 cm.. Setaria 23 cm. (e) 1. (v) 22 Kg/ha. of N as A/S (vi) As per treatments. (vii) Unirrigated. (viii) 2 hand weedings, working *Danthula*. (ix) N.A. (v) Varying according to treatments.

2. TREATMENTS:

Main-plot treatments:

3 mixed cropping treatments: M_1=Pure Cotton, M_2=Cotton+Setaria in 1 : 2 proportion and M_3=Cotton+Groundnut in 1 : 2 proportion.

Sub-plot treatments:

6 varieties: V_1=3930—A, V_2=5368, V_3=5688, V_4=170, V_5=Laxmi and V_6=Western—1.

3. DESIGN:

(i) Split-plot. (ii) (a) 3 main-plots/replication; 6 sub-plots/main-plot. (b) 27·4 m.×12·3 m. (iii) 4. (iv) (a) 9·1 m.×2·1 m. (b) 7·9 m.×2·1 m. (v) 61 cm. on either side. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) 3 to 4 spraying of Endrin. (iii) Groundnut-pod yield, setaria-grain and straw yield, Cotton-*Kapas* yield. (iv) (a) 1961-62. (b) No. (c) Nil. (v) No. (vi) Nil. (vii) Main-plot as well as sub-plot error variances are homogeneous. Also main-plot as well as sub-plot Treatments×years interactions are present.

5. RESULTS:

Pooled results
(i) 487·3 Rs/ha. (ii) (a) 306 8 Rs/ha. (based on 2 d.f. made up of main-plot Treatments×years). (b) 79·9 Rs/ha. (based on 15 d.f. made up of sub-plot Treatments×years interaction). (iii) Main effects of V is highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	575·5	547·5	525·0	501·5	405·5	323·5	479·7
C_2	514·5	509·5	477·5	476·0	480·0	420·5	479·6
C_3	603·0	537·5	499·5	516·0	471·0	389·5	502·7
Mean	564·3	531·5	500·6	497·8	452·1	377·8	487·3

C.D. for V marginal means=49 2 Rs/ha.

Individual years results.

Treatments	C_1	C_2	C_3	Sig	V_1	V_2	V_3	V_4	V_5	V_6	Sig.
Years											
1961	376·9	456·1	405·0	*	469·4	434·2	423·9	428·5	373·4	346·8	**
1962	582·3	503 1	600·2	N.S.	658·9	628·2	577·2	566·9	531·2	408·6	**
Pooled	479·7	479·6	502·7	N.S.	564·3	531·5	500·6	497·8	452·1	377·8	**

G.M.	S.E/main-plot	S.E./sub-plot
412·7	72·47	49·16
561·8	111·67	46·21
487.3	306·80	79·90

Crop :- Cotton, Setaria and Groundnut. **Ref :- A.P. 61(213), 62(251).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :— To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Mixed crop. (b) Sorghum. (c) N.A. (ii) Red soil. (iii) 20.6.61 ; 25.6.62. (iv) (a) 3 ploughings with *gorru* followed by one horrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton at 12 to 15 Kg/ha., Groundnut at 99 Kg/ha. and Setaria at 12 Kg/ha. (d) 69 cm. between rows for Cotton, 23 cm. between rows for others. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Unirrigated. (viii) 2 hand weedings and working *guntaka*. (ix) N.A. (x) Varying according to different treatments.

2. TREATMENTS :

Main-plot treatments:

3 mixed cropping treatments : C_1=Pure cotton, C_2=Cotton+Setaria in 1 : 2 proportion and C_3=Cotton+Groundnut in 1 : 2 proportion.

Sub-plot treatments :

6 varieties of cotton : V_1=3930—A, V_2=5368, V_3=5688, V_4=170, V_5=Laxmi and V_6=Local (Mungari).

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) 27·4 m.×12·3 m. (iii) 4. (iv) (a) 9·1 m.×2·1 m. (b) 7·9 m.×2·1 m. (v) 61 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Leaf minor on Groundnut and attack of Red hairy catter piller on Cotton. Endrin sprayed for 62. (iii) Groundnut—pod yield, setaria—grain yield and Cotton—*Kapas* yield. (iv) (a) 1961-62. (b) No. (c) Nil. (v) Nil. (vi) Continuous and heavy rains during August. (vii) Since the sub-plot error variances are heterogeneous, individual years results are presented under 5. Results.

5. RESULTS :

61(213)

(i) 480 Rs/ha. (ii) (a) 199·3 Rs/ha. (b) 115·2 Rs/ha. (iii) Main effect of C is significant. and that of V is highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	509	492	458	383	271	336	408
C_2	487	489	446	622	331	376	458
C_3	671	757	556	521	476	463	574
Mean	556	579	487	509	359	392	480

C.D. for C marginal means=140·8 Rs/ha.
C.D. for V marginal means=94·8 Rs/ha.

62(351)

(i) 646 Rs/ha. (ii) (a) 202·7 Rs/ha. (b) 52·7 Rs/ha. (iii) Main effects of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	542	503	503	503	519	329	483
C_2	591	565	525	568	587	403	540
C_3	872	939	908	945	984	836	914
Mean	668	669	645	672	697	523	646

C.D. for C marginal means=143·2 Rs/ha.
C.D. for V marginal means=43·3 Kg/ha.

Crop :- Cotton, Setaria and Groundnut. **Ref :- A.P. 61(218), 62(246).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :— To find up the best strain and best proportin most economical for m)ved cropping.

1. BASAL CONDITIONS :

(i) (a) Sorghum-Mixed series. (b) Sorghum. (c) N.A. (ii) Black soils. (iii) 25.7.61 ; 9.7.62. (iv) (a) 3 ploughings with *gorru* followed by harrowing with blade harrowing. (b) *Gorru* sowing. (c) Cotton at 12 to 15 Kg/ha. ; Groundnut at 99 Kg/ha. ; Setaria 12 Kg/ha. (d) 69 cm. between rows for Cotton and 23 cm. for others. (e) 1. (v) 22 Kg/ha. of N as A/S. (vi) As per treatments. (vii) Unirrigated. (viii) 2 hand weedings. working *Danthulu* and *guntaka* once. (ix) N.A. (x) Varying for different treatments.

2. TREATMENTS :

Main-plot treatments :

6 mixed cropping treatments : C_1=Setaria and Cotton in 1 : 1 proportion, C_2=Setaria and Cotton in 1: 2 proportion, C_3=Setaria and Cotton in 1 : 5 proportion, C_4=Cotton+Groundnut in 1 : 1 proportion, C_5=Cotton+Groundnut in 1 : 2 C_6=and Cottoon and Groundnut in 1 : 5 proportion.

Sub-plot treatments :

6 Cotton varieties : V_1=3930—A, V_2=3943—B, V_3=4616—D_2, V_4=32—48151, V_5=Laxmi and V_6=Western—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 49·4 m.×36·6 m. (iii) 4. (iv) (a) 12·2 m.×4·1 m. (b) 10·1 m.×4·1 m. (v) 106 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Leaf minor on groundnut and attack of Red hairy catter piller on Cotton. Endrin sprayed. (iii) Yield of cotton-*Kapas*, Setaria-grain and groundnut-pod. (iv) (a) 1961-62. (b) No. (c) Nil. (v) Nil. (vi) Continuous and heavy rains during August for 61 and during October to December for 62. (vii) Sub-plot error variances are heterogeneous, therefore individual years results are presented under 5. Results.

5. RESULTS:

61(218)

(i) 531 Rs/ha. (ii) (a) 121·6 Rs/ha. (b) 94·8 Rs/ha. (iii) Main effects of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	538	463	503	678	718	803	617
C_2	501	491	446	563	467	747	536
C_3	479	520	512	538	623	255	571
C_4	480	497	467	633	625	684	564
C_5	440	431	385	489	510	561	469
C_6	345	378	368	471	510	513	431
Mean	464	463	447	562	575	677	531

C.D. for C marginal means=74·8 Rs/ha.
C.D. for V marginal means=54·5 Ks/ha.

62(246)

(i) 475 Rs/ha. (ii) (a) 141·4 Rs/ha. (b) 54·9 Rs/ha. (iii) Main effects of C and V are highly significant. Interaction C×V is significant. (iv) Av. value of produce in Rs/ha.

	C_1	C_2	C_3	C_4	C_5	C_6	Mean
C_1	586	441	423	623	574	640	548
C_2	502	393	393	550	562	616	504
C_3	586	411	350	550	544	568	501
C_4	501	344	381	580	562	623	498
C_5	447	393	381	435	423	526	361
C_6	386	302	302	369	405	405	475
Mean	502	382	372	518	512	563	475

C.D. for C marginal means =87·0 Rs/ha.
C.D. for V marginal means =31·5 Rs/ha.
C.D. for V means at the same level of C=77·2 Rs/ha.
C.D. for C means at the same level of V=101·8 Rs/ha.

Crop :- Setaria, Cotton and Groundnut. **Ref :- A.P. 61(219), 62(245).**

Site :- Cotton Res. Farm, Adoni. **Type :- 'X'.**

Object :— To fix up the best strain and best proportion, most economical for mixed cropping.

1. BASAL CONDITIONS :

(i) (a) Sorghum-mixed crops. (b) Sorghum. (c) N.A. (ii) Red soils. (iii) N.A. for 61 ; 25.6.62. (iv) (a) 3 ploughings with *gorru* fallowed by harrowing with blade harrow. (b) *Gorru* sowing. (c) Cotton at 12 to 15 Kg/ha., Groundnut at 99 Kg/ha. and Setaria at 12 Kg/ha. (d) 69 cm., 23 cm., 23 cm. between rows for Cotton, Groundnut and Setaria respectively. (e) 1. (v) 22 Kg/ha. of N as A/S, (vi) As per treatments. (vii) Unirrigated. (viii) 2 hand weedings, working *Danthulu* and *Guntaka* once. (ix) N.A. (x) Varying for different treatments.

2. TREATMENTS :

Main-plot treatments :

6 mixed cropping treatments : C_1=Setaria+Cotton in 1 : 1 ratio, C_2 – Setaria+Cotton in 1 :2 ration, C_3=Setaria+Cotton in 1 : 5 ratio, C_4=Groundnut+Cotton in 1 : 1 ratio, C_5=Groundnut+Cotton in 1 : 2 ratio and C_6=Groundnut+Cotton in 1 : 5 ratio.

Sub-plot treatments :

6 cotton varieties : V_1=3930—A, V_2=3943—B, V_3=4616—D_2, V_4=B—32 –48151, V_5=Laxmi and V_6=Local.

3. DESIGN:

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) 73·2 m.×12·3 m. (iii) 4. (iv) (a) 12·2 m.×2·1 m. (b) 10·1 m.×2·1 m. (v) 106 cm. on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Leaf minor and Catter piller on groundnut and cotton for 61 respectively ; Attack of Leaf minor, Bon worm and incidence of stenaris for 62 and Endrin sprayed. (iii) Yield of Setaria in grain, Cotton *kapas* and Groundnut in pod. (iv) (a) 1961-62. (b) No. (c) Nil (v) Nil. (vi) Continuous and heavy rains during August for 61 : and during October to December for 62. (vii) As the sub-plot error variances are heterogeneous therefore individual years results are presented under 5. Results.

5. RESULTS:

61(219)

(i) 1356 Rs/ha. (ii) (a) 514·0 Rs/ha. (b) 337·9 Rs/ha. (iii) Main effects of C and V are highly significant, (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	2329	1824	1252	1485	1622	1222	1622
C_2	1939	1511	1305	1357	1221	1117	1408
C_3	1951	1502	1441	1379	1555	1122	1492
C_4	1569	1422	1086	1589	1597	821	1347
C_5	1056	1270	1547	822	1238	819	1125
C_6	1411	1376	1131	1025	1140	761	1141
Mean	1709	1484	1294	1276	1395	977	1356

C.D. for C marginal means=316·2 Rs/ha.

C.D. for V marginal means=194·1 Rs/ha.

62(245)

(i) 763 Rs/ha. (ii) (a) 253·1 Rs/ha. (b) 85.6 Rs/ha. (iii) Main effects of C and V are highly significant. (iv) Av. value of produce in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
C_1	816	761	513	1082	1033	931	856
C_2	761	701	471	979	1004	840	793
C_3	689	610	477	810	925	870	730
C_4	671	634	465	955	979	834	756
C_5	689	695	459	925	1070	876	786
C_6	538	526	332	882	864	804	658
Mean	694	655	453	939	979	859	763

C.D. for C marginal means=155·7 Kg/ha.
C.D. for V marginal means=49·2 Kg/ha.

Crop :- As per treatments. **Ref :- A P. 65(125).**
Site :- Soil Conservation Res. Stn., Ananthapur. **Type :- 'X'.**

Object :— To study the possibility of use of legumes (green manure crops) as inter crops with *Jowar* for increasing mixture retention capacity of the soil and yield of *Jowar* and maintenance of fertility.

1. BASAL CONDITIONS :

(i) (a) *Jowar* -Follow-*Jowar*. (b) Follow. (c) Nil. (ii) Red loam. (iii) 12.6.65. (iv) (a) Ploughing once with country plough. harrowing once with blade harrow. (b) Drilling. (c) *Jowar* : 7 Kg/ha., green manure: 37 Kg/ha. (d) 23 cm. between lines. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal and 99 Kg/ha. of P_2O_5 as Super. (vi) N-12 : (*Jowar*) green manure crops : as per treatments. (vii) Unirrigated. (viii) Interculture once with metla *Guntaka*, harrowing once with hand how. (ix) N.A. (x) 15.10.65.

2. TREATMENTS :

T_1=*Jowar* and sunhemp, T_2=*Jowar* and *Dhaincha*, T_3=*Jowar* and indigo and T_4=*Jowar* and Pillipesara. One row of green manure crop and 8 rows of *Jowar* green manure crop will be incorporated in to the soil 40 days after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 16·5 m.×9·1 m. (b) 15·2 m.×7·9 m. (v) 61 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Incidence of ear head Bug at grain formation stage. Dusting B.H.C. 10% at grain formation stage once. (iii) Grain yield. (iv) (a) 1965-69. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 157·8 Kg/ha. (ii) 17·5 Kg/ha. (iii) Treatment differences are significant. (iv) Av. yield of *Jowar* in Kg/ha.

Treatment	T_1	T_2	T_3	T_4
Av. yield	180·6	154·9	145 0	150·8

C.D.=21·5 Kg/ha.

Crop :- Groundnut and Jowar. **Ref :- A.P. 65(129).**

Site :- Soil Conservation Res. Stn., Ananthapur. **Type :- 'X'.**

Object :— To fix up the ratio between crosion resistant (Groundnut) strip and crosion permilting (Jowar) strip for strip cropping.

1. BASAL CONDITIONS:

(i) (a) *Jowar*+groundnut—Fallow—*Jowar*+groundnut. (ii) Fallow. (iii) Nil. (ii) Red loam. (iii) *Jowar* 10,11.65, Groundnut 2.7.65. (iv) (a) Ploughing once with country plough, harrowing once with blade harrow. (b) Drilling. (c) *Jowar* : 7 Kg/ha., Groundnut : 99 Kg/ha. (d) 23 cm. (e) 1. (v) 63 Q/ha. of F.Y.M. as basal. (vi) *Jowar* N-12,Groundnut TMV-3. (vii) Unirrigated. (viii) Interculture twice with metla *guntaka* and harrrowing once with hand hoe. (ix) N.A. (x) *Jowar* 21, 22.10.65 : Groundnut 27.11.65.

2. TREATMENTS :

Ratios of Groundnut to *Jowar* strips: *Jowar* T_1=1: 6, T_2=1 : 5, T_3=1 : 4,T_4=1 : 3 and T_5=1 : 2.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 53·6×20·1, 44·5×20·1, 35·4×20·1, 26·2×20·1, 17·1×20·1. for T_1 to T_5 reetively. (b) 51·8×18·3. 42·7×18·3, 33·5×18·3, 24·4×18·3, 15·2×18·3 forT_1 to T_5 respectively for *Jowar*; groundnut : 20·1×7·9.(v) 92 cm.×92 cm. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Groundnut : incidence of Leaf webber, spraying Endrin 28 gm. with 64 litres of water twice, once at flowering, and there at pod formation stage. *Jowar* : incidence of ear head Bug dusting B.H.C. 10% once at grain formation stages. (iii) Economics of strip cropping. (iv) (a) 1965-67. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

89·3 Rs/ha. (ii) 7·1 Rs/ha. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs/ha.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	85·2	77·4	88·5	103·5	92·1

C.D.=9·5 Rs/ha.

———

Crop :- Mixed cropping with Castor. **Ref :- A.P. 60(27), 62(24), 63(16).**

Site :- Reg. Oilseeds Res. Stn., Kadiri. **Type :- 'X'.**

Object :— To determine the ideal component crop that can be grown with Castor to realise minimum monetary returns.

1. BASAL CONDITIONS :

(i) (a) Groundnut-Castor. (b) Groundnut. (c) 75·3 Q/ha. of F.Y.M. for 60, 62 ; 75·3 Q/ha. of F.Y.M. +23·5 Kg/ha. of A/S+9·5 Kg/ha. of Super+7·8 Kg/ha. of Pot, Sul. for 63. (ii) Red loam. (iii) 6.9.60 ; 30, 31.7.62 ; 18.7.63. (iv) (a) Working country plough twice followed by *guntaka* twice. (b) and (c) N.A. (d) 122 cm.×61 cm. (e) N.A. (v) 16·1 C.L./ha. of F.Y.M. for 60 ; 14·3 C.L./ha. of C.M. for 62; 62·8 Q/ha. of F.Y.M.+22·4 Kg/ha. of A/S, 11·2 Kg/ha. of Super+11.2 Kg/ha. of Pot. Sul- for 63. (vi) Castor : TMV-1 ; Groundnut : TMV-3 ; Jonna : G-3 ; Setaria M-1. (vii) Unirrigated. (viii) Interculture with pilli *Guntaka* twice followed by hand weeding and hoeing twice. (ix) 66 cm. ; 60 cm. ; 57 cm. (x) Castor on 4.4.61 to 12.5.61 ; Cowpea on 7.12.60 to 12.1.61 ;Green gram 26.11.60 to 29.12.60, Gronndnut on 20.2.61, Setaria 29.12.60, Sorghum on 16.1.61 and Bajra on 16.1.61 for 60, N.A. for others.

2. TREATMENTS :

7 mixed cropping treatments : M_0=Castor pure, M_1=Castor+Cowpea, M_2=Castor+Green gram, M_3=Castor+Groundnut, M_4=Castor+Setaria, M_5=Castor+Sorghum and M_6=Castor+*Bajra*.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 18·3 m.×7·3 m. (b) 15·9 m.×4·9 m. (v) 122 cm.×122 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. for 60 ; Nil for 62 ; incidence of semi-looper controlled by hand picking and killing. Spraying Endrin. (iii) Yield in Rs/ha. (iv) (a) 1959-63 (61 vitiated). (b) No, (c) Nil. (v) No. (vi) Nil. (vii) Expt. for 19 59 has also been taken into account while pooling the results. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS :

Pooled Results

(i) 365 Rs/ha. (ii) 209·8 Rs/ha. (based on 18 d.f. made up of interaction of treatments with years). (iii) Trearment differenees are not significant. (iv) Av. value of the produce in Rs/ha.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. value of produce	340	376	390	496	324	285	341

Individual years results

Treatments	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Sig.	G.M.	S.E./plot
Years										
1960	209	278	144	384	167	66	154	**	202	42·4
1961	94	301	106	161	143	74	114	**	142	35·0
1962	605	294	442	647	467	447	482	**	483	89·0
1963	452	630	857	791	519	558	613	**	632	37·1
Pooled	340	376	390	496	324	286	341	N.S.	365	209·8

Crop :- Mixed Cropping with Groundnut (*Kharif*). **Ref :- 60(23), 61(19), 62(22), 63(19).**

Site :- Reginal Oil seeds Res. Stn., Kadiri. **Type :- 'X'.**

Object : —To find out the suitable economic crop to be grown with spreading variety of Groundnut and compare the economics with pure Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil for 60, 61, 62 ; Grounddnut—Castor for 63. (b) Groundnut for 60 ; Castor for others. (c) N.A. for 60, 61, 62 ; 7532 Kg/ha. of F.Y.M.+22·4 Kg/ha. of A/S+9·5 Kg/ha. of Super+7·8 Kg/ha. of Pot. Sul. for 63. (ii) Red loam. (iii) 9.9.60 ; 23,24.6.61 ; 2, 3.8.62 ; 18.7.63. (iv) (a) Working country plough once followed by *Chekkala guntaka* twice. (b) and (c) N.A. (d) 23 cm. between rows. (e) N.A. (v) 16·1 C.L./ha. of F.Y.M. for 60 ; 27·2 C.L./ha. of C.M.+27·2 Kg/ha. of A/S+69 Kg/ha. of Super+11·1 Kg/ha. of Pot. Sul. for 61 ; 62 ; 6276 Kg/ha. of F.Y.M.+22·4 Kg/ha. of A/S+11·2 Kg/ha. of each of Super and Pot.Sul. (vi) Groundnut : TMV—3, Castor : TMV—1, Red Gram : RF—37, Jonna : G—3, Bajra : AKP—1 and Korra H—1. (vii) Unirrigated. (viii) Hand weeding and hoeing. (ix) 66 cm. ; 42 cm. ; 60 cm. ; 57 cm. (x) Korra and Groundnut in Dee, Red Gram in Feb., *Jowar* and *Bajra* in Jan , Castor in March.

2. TREATMENTS :

6 mixed cropping treatments : C_1=Groundnut alone, C_2=Groundnut+*Bajra*, C_3=Groundnut+*Jowar*, C_4=Groundnut+Red Gram, C_5=Groundnut+*Korra* and C_6=Groundnut +Castor.

7 rows of Groundnut and 1 row of Component crop mixed.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14·6 m.×6·2 m. for 60, 61, 62; 14·6 m.×5·5 m. for 63. (b) 14·2 m.×5·7 m. for 60, 61, 62; 14·0 m.×5·0 m. for 63. (v) 23 cm.×23 cm. for 60, 61, 62; 30 cm.×23 cm. for 63. (vi) Yes.

4. GENERAL:

(i) Satisfactory for 63; Normal for others. (ii) N.A. for 60; Nil for 61; Mild attack of semi-looper on Castor for 62 and incidence of semi looper on Castor and leaf Webber on groundnut, Endrin sprayed in 63. (iii) Yield data, monetory return. (iv) (a) 1959—63. (b) No. (c) As under 5 results. (v) No. (vi) Nil. (vii) Expt. for the year 1959 has also been included while giving combined results. Error variances are heterogeneous and Treatments×years interaction is present.

5. RESULTS:

Pooled results

(i) 699 Rs/ha. (ii) 329·5 Rs/ha. (based on 20 d.f. made up of Treatments×years interaction). (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs/ha.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. value of produce	729	664	653	682	687	781

Individual years results :

Treatments / Years	C_1	C_2	C_3	C_4	C_5	C_6	Sig.	G.M.	S.E./plot
1959	413	403	369	396	425	511	N.S.	396	29·2
1960	448	410	394	360	358	357	N.S.	388	37·0
1961	363	314	309	358	311	N.A.	N.S.	331	104·3
1962	954	942	917	918	937	1661	N.S.	1055	693·0
1963	1468	1250	1275	1376	1404	1517	N.S.	1382	296·5
Pooled	729	664	653	682	687	781	N.S.	699	329·5

Crop :- Mixed cropping with Groundnut. **Ref :- A.P. 64(49).**

Site :- Reg. Oilseed Res. Stn., Kadiri. **Type :- 'X'.**

Object :- To determine the best component crop that can be grown mixed with Groundnut and an ideal proportion for mixture to realise maximum monetory outturn.

1. BASAL CONDITIONS:

(i) (a) No. (b) Castor. (c) N.A. (ii) Red sandy soil. (iii) 22.7.64. (iv) (a) Working country plough once followed by chekkala *guntaka* twice. (b) and (c) N.A. (d) 23 cm. between rows. (e) N.A. (v) F.Y.M. at 30 Q/ha. (vi) Groundnut : TMV-3, Red gram : RG-37, Castor : TMV-1, Cotton-Adonicum. (vii) Unirrigated. (viii) Hand weeding and hoeing. (ix) 46 cm. (x) Groundnut : 28.12.64, Red gram : 23.1.65, Castor : 1.4.65 and Cotton : 1.4.65.

2. TREATMENTS :

Main-plot treatments :

4 mixed cropping treatments : M_0=Groundnut (pure), M_1=Groundnut+Red gram, M_2=Groundnut +Castor and M_3=Groundnut+Cotton.

Sub-plot treatments :

Groundnut was mixed in the following proportion with the component crop : R_1=4 rows of Groundnut and one row of Component crop, R_2=7 rows of Groundnut and one row of Component, R_3=10 rows of Groundnut and one row of Component crop.

3. DESIGN :

(i) Split-plot (ii) (a) 4 main-plots/replication; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 16·5 m.×5·5 m. (b) 16·0 m.×5·0 m. (v) 25 cm.×25 cm. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Mild semi Looper attack on Castor. (iii) Yield per plot and monetory outturn. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1266 Rs/ha. (ii) (a) 57 Rs/ha. (b) 92 Rs/ha. (iii) None of the effects is significant. (iv) Av. value of produce in Rs/ha.

M_0=1284 Rs/ha.

	R_1	R_2	R_3	Mean
M_1	1262	1273	1310	1282
M_2	1166	1290	1282	1246
M_3	1245	1263	1255	1254
Mean	1224	1275	1282	1261

Grop :- Sesamum Red gram and Jowar. **Ref :- A.P. 65(110).**

Site :- Agri. Res. Stn., Karimnagar. **Type :- 'X'.**

Object :—To study the economics of mixed cropping of sesamum with *Jowar* and Red gram.

1. BASAL CONDITIONS

(i) (a) Sesamum—Fallow—Sesamum. (b) Sesamum. (c) 20 N as A/S+10 P_2O_5 as Super+10 K_2O as Mur. Pot. Kg/ha. (ii) Sandy loams. (iii) 5.8.65. (iv) (a) Ploughing and levelling. (b) Hand dibbling. (c) 5 Kg/ha. for Sesamum. (d) 90 cm.×45 cm. (e) 1. (v) 20 Kg. of N as A/S+10 Kg. of P_2O_5 as Super+10 Kg. of K_2O as Mur. Pot. per ha. applied 3 weeks after planting (vi) Sesamum : T—85 ; Red gram; R.G.—37; *Jowar* : Pj—224. (vii) Un-irrigated. (viii) 2 to 3 weedings and thinning. (ix) N.A. (x) Sesamum 30.10.65 Red gram 13 to 17.12.65/4 to 11.12.65.

2. TREATMENTS:

9 mixed cropping treatments : T_1=Sesamum only, T_2=Red gram only, T_3=*Jowar* only, T_4=One row of Red gram+3 rows of Sesamum, T_5=One row of Red gram+6 rows of Sesamum, T_6=One row of Red gram+9 rows of Sesamum, T_7=One row of *Jowar*+3 rows of Sesamum, T_8=One row of *Jowar*+6 rows of Sesamum and T_9=One row of *Jowar*+9 rows of Sesamum.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 7·9 m.×9·8 m. (b) 7·3 m.×8·5 m. (v) 30 cm.×61 cm. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yields. (iv) (a) 1965—67. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 147·5 Rs/ha. (ii) 21·0 Rs/ha. (iii) Treatment differences are highly significant. (iv) Av. value of produce in Rs/ha.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9
Av. yield	144·1	58·6	108·5	142·2	172·0	128·5	186·8	170·6	209·2

C.D.=30·6 Rs/ha.

Crop :- Cotton, Groundnut and Setaria. **Ref :- A.P. 65(181).**

Site :- Cotton Res. Stn., Nandyal. **Type :- 'X'.**

Object :—To fix up a suitable variety of Cotton under mixed cropping conditions either with Setaria or Groundnut in 1 : 2 and 1 : 5 proportion.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) 12 CL/ha. of F.Y.M. (ii) Black cotton soil. (iii) 20.7.65. (iv) (a) Working *gorru* and *guntaka* alternatively. (b) Drilling. (c) N.A. (d) 53 cm. × 30 cm. (e) Cotton, Groundnut : 1, Setaria : 1 to 2. (v) 22 Kg/ha. of N as C/A/N. (vi) Cotton : as per treatments, Groundnut : TMV-2 (bunch), Setaria : N-1. (vii) Unirrigated. (viii) Hand weeding once, thinning cotton and setaria once. (ix) N.A. (x) Cotton : 15, 26.11.65 ; 16.12.65, 25.1.66; 10, 25.2.66; 10, 25.3.66. Groundnut : 1.11.65 and setaria : 19.10.65.

2. TREATMENTS:

Main-plot treatments :

7 mixed cropping treatments : M_1=Cotton+Groundnut in 1 : 2 proportion, M_2=Cotton+Groundnut in 1 : 5 proportion, M_3=Cotton+Setaria in 1 : 2 proportion, M_4=Cotton+Setaria in 1 : 5, M_5=Groundnut pure, M_6=Setaria pure and M_7=Cotton pure.

Sub-plot treatments :

6 varieties of cotton : V_1=G—6, V_2=Virnar, V_3=741, V_4=Adonicum, V_5=122 and V_6=Nandicum.

3. DESIGN:

(i) Split-plot. (ii) (a) 7 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 13·4 m. × 3·2 m (b) 12·8 m. × 3·2 m. (v) 30 cm. on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Boll worm on cotton. Spraying Sevin 28 gm./18 litres of water once and Endrin spraying once. (iii) Yield data. (iv) (a) 1964—66 (treatments changed in 1965). (b) No. (c) Nil. (v) Nil. (vi) Failure of monsoon rains. (vii) Nil.

5. RESULTS :

(i) 1176 Rs/ha. (ii) (a) 826·0 Rs/ha. (b) 387·4 Rs/ha. (iii) Main effect of M alone is highly significant. (iv) Av. monetary returns in Rs/ha.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
M_1	1972	2278	1915	1735	1680	2041	1937
M_2	1715	1853	2187	2187	2301	2120	2060
M_3	964	474	791	813	1016	1092	858
M_4	781	633	647	694	810	818	731
M_5	1446	1433	1396	1705	1248	2026	1542
M_6	188	188	133	104	131	114	143
M_7	974	966	1018	860	897	1033	958
Mean	1149	1118	1155	1157	1155	1321	1176

C.D. for M marginal means=501·1 Rs/ha.

INDEX (Crop-wise and Type-wise) (Page Number)

Type / Crop	M	MV	C	CV	CM	CMV	I	IV	IM	IMV	IC	D	X
Paddy	1	200	208	239	256	268	270	—	—	—	—	272	—
Wheat	—	—	—	347	—	—	—	—	348	—	—	349	—
Jowar	350	356	358	365	—	366	—	—	—	—	—	—	—
Maize	370	371	385	389	395	399	—	401	402	—	—	406	—
Bajra	408	—	—	—	—	—	—	—	—	—	—	—	—
Variga	—	—	—	—	—	—	—	411	—	—	—	—	—
Ragi	411	—	418	—	423	—	—	—	—	—	—	425	—
Korra	429	—	—	—	—	—	—	—	—	—	—	—	—
Red gram	430	—	434	—	—	—	—	—	—	—	—	—	—
Green gram	—	—	—	—	—	—	—	—	—	—	—	435	—
Black gram	—	—	—	—	—	—	—	—	—	—	—	436	—
Horse gram	437	—	—	—	—	—	—	—	—	—	—	—	—
Brinjal	—	—	—	438	4[illegible]	—	—	—	—	—	—	441	—
French beans	—	—	—	445	—	—	—	—	—	—	—	—	—
Potato	448	—	—	—	—	—	—	—	—	—	—	—	—
Raddish	—	—	—	—	—	—	—	—	—	—	—	449	—
Tomato	450	—	—	—	451	—	—	—	—	—	—	453	—
Bhindi	455	—	—	456	458	—	—	—	—	—	—	460	—
Sugarcane	465	537	550	559	574	579	580	581	582	585	586	587	—
Cotton	603	632	634	649	670	683	—	—	686	—	—	687	—
Mesta	705	—	709	—	—	—	—	—	—	—	—	—	—
Tobacco	711	—	713	—	714	715	—	—	—	—	—	—	—
Groundnut	717	—	740	—	761	—	—	—	766	—	—	—	—
Caster	767	—	772	—	775	—	—	—	—	—	—	—	—
Gingelly	776	—	778	—	—	—	—	—	782	—	—	—	—
Chillies	784	—	786	—	—	—	—	—	—	—	—	789	—
Turmeric	792	—	795	797	—	—	—	—	—	—	—	801	—
Onion	—	—	802	—	—	—	—	—	806	—	—	812	—
Banana	813	817	818	818	820	—	—	—	—	—	—	—	—
Grape	822	—	823	—	—	—	—	—	—	—	—	—	—
Mixed cropping	—	—	—	—	—	—	—	—	—	—	—	—	825

LIST OF PUBLICATIONS

OF

NATIONAL INDEX OF AGRICULTURAL FIELD EXPERIMENTS

Volume No.	Region	Part 1 (1948-53)		Part 2 (1954-59)	
		No. of pages	Price per copy (Excld. postage)	No. of pages	Price per copy (Excld. postage)
1.	Andhra Pradesh	386	Rs. 12.00	510	Rs. 12.80
2.	Assam	87	Rs. 4.00	152	Rs. 6.80
3.	Bihar	303	Rs. 9.75	933	Rs. 21.85
4.	Gujarat	185	Rs. 6.75	444	Rs. 9.25
5.	Kerala	204	Rs. 7.25	292	Rs. 8.05
6.	Madhya Pradesh	357	Rs. 11.25	554	Rs. 13.70
7.	Tamil Nadu	436	Rs. 13.25	466	Rs. 11.70
8.	Maharashtra	886	Rs. 25.00	1035	Rs. 24.25
9.	Mysore	467	Rs. 14.00	866	Rs. 20.45
10.	Orissa	70	Rs. 3.50	213	Rs. 6.30
11.	Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir	672	Rs. 19.50	799	Rs. 19.20
12.	Rajasthan	84	Rs. 4.00	213	Rs. 6.20
13.	Uttar Pradesh	1274	Rs. 35.75	1724	Rs. 42.10
14.	West Bengal	226	Rs. 7.75	297	Rs. 8.15
15.	Central Institutes	348	Rs. 11.00	666	Rs. 16.50
	Complete set (excluding postage)		Rs. 184.75		Rs. 227.30

For copies, please write to :

The Chief Administrative Officer,

INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

(I. C. A. R.)

Library Avenue, New Delhi-110012

Swan Press of Lahore, Delhi-6.