

INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

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OF

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FIELD

EXPERIMENTS

VOL. 1 PART 2

ANDHRA PRADESH

1954-59



सत्यमेव जयते

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FOREWORD

Increase in agricultural production is one of the main objectives of our agricultural planning. It is only by the exploitation of scientific methods of agriculture that we can hope to increase our agricultural production to the level needed for maintaining a reasonable standard of living to the country's population. The technical worth of improvement measures is best judged from carefully conducted field experiments. While it is true that a large number of agricultural field experiments are conducted in the country, the results of these experiments have not been brought together in an integrated manner for the use of research workers. The absence of such a unified account has often led to duplication of work and delay in the utilisation of results for practical farming. The Institute of Agricultural Research Statistics has rendered a very valuable service by preparing a compendium of agricultural field experiments conducted in the country. The first series of compendium containing the results of all agricultural field experiments during the period 1948-53 have already been published by the Institute.

The present compendium is the second in the series covering the period 1954-59. As in the earlier compendium, the present series also contains critical summaries of results of experiments bearing on important agronomic factors, such as the response of crops to fertilizers and manures, inter-relationship of fertilizers, varieties and cultivation practices and other information of value for giving sound advice to farmers in different regions. Judging from the demand for the first series of the compendium, I am sure that the present series will also prove equally useful.

A Standing Committee consisting of the Agricultural Commissioner with the Government of India, the Director, Indian Agricultural Research Institute, and the Statistical Adviser, Indian Council of Agricultural Research, has been set up to provide general guidance to the work under this scheme. I congratulate the members of this Committee and, in particular, the Statistical Adviser and his associates at the Institute of Agricultural Research Statistics for bringing out this compendium. The preparation of this compendium has been made possible only by the wholehearted co-operation of the States and other organisations in making available the results of their experimental researches for this purpose. My thanks are due to the officers of the State Departments of Agriculture and other 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, in a consolidated form, of results of scientific experiments in agriculture in India may be maintained up-to-date.

NEW DELHI,
March 26, 1965.

A. D. PANDIT
Vice-President,
Indian Council of Agricultural Research.

PREFACE

The present set of volumes form Part II in the series of compendia of Agricultural Field Experiments being published by the Indian Council of Agricultural Research under the project for National Index of Field Experiments and contains a unified record of experiments conducted at agricultural research stations and institutes all over the country. Volumes in Part I in this series were published in 1962 and contained results of some 7,500 experiments conducted during the period 1948-53. The present set of volumes includes results of experiments conducted during the next period that is 1954-59. After the period, covered by Part I of the series, agricultural research and experimentation has expanded so much that for the period 1954-59, to which the present volumes refer, results of more than 15,000 experiments are available.

The present compendium is prepared on the same pattern as the previous one and is divided into 15 volumes one each for (1) Andhra Pradesh, (2) Assam, Manipur and Tripura, (3) Bihar, (4) Gujarat, (5) Kerala, (6) Madhya Pradesh, (7) Madras, (8) Maharashtra, (9) Mysore, (10) Orissa, (11) Punjab, Jammu and Kashmir and Himachal Pradesh, (12) Rajasthan, (13) Uttar Pradesh (14) West Bengal and (15) All Central Institutes. In each volume, background information of the respective state regarding its division into different soils and agro-climatic regions, rainfall and cropping pattern followed in each region and agricultural production and area under different crops in the state is given. The experiments reported in each volume have been arranged crop-wise for each state. All the experiments belonging to a particular crop at various research stations are grouped together. For a particular crop, experiments are arranged according to the following classification :

Manurial (M), Cultural (C), Irrigational (I), Diseases, pests and chemicals other than fertilizers (D), Rotational (R), Mixed cropping (X) and combinations of these wherever they occur (*e.g.* CM as Cultural-cum-Manurial). Experiments in which crop varieties also form a factor are denoted by adding V to their symbol and are grouped together (*e.g.* MV as Manurial-cum-Varietal).

This publication owes its origin to the guidance and help of Dr. D.J. Finney, F.R.S., Professor of Statistics, Aberdeen University, Scotland, in formulating the project during his stay at the Institute of Agricultural Research Statistics as an F.A.O. expert in 1952-53.

At the Institute of Agricultural Research Statistics the work under the scheme was carried out under the supervision of Shri. T.P. Abraham, Assistant Statistical Adviser. The actual working of the scheme was conducted by Shri G.A. Kulkarni, Statistician till he left the Institute in July, 1964. The work was subsequently taken over by Shri O.P. Kathuria, Assistant Statistician. Messrs. L.B.S. Somayazulu, P.P. Rao, M.L. Sahni, Harbhajan Singh, A.L. Punhani, M.K. Joshi, N.K. Worrier, H.C. Jain and J.K. Kapoor of the statistical staff of the Institute deserve special mention for careful and painstaking work in editing and scrutiny of the manuscript as well as proofs of the compendium.

The burden of collecting the data from the various research stations and the analysis of a large number of experiments once again fell on the regional staff of the Council placed in different States. They deserve to be congratulated for the hard work they have put in.

Thanks are due to the State Departments of Agriculture, the Central Institutes and the Commodity Committees who made the data of the experiments conducted under their jurisdiction readily available to the staff of the Institute. The present publication has become possible only through their unstinted co-operation. The Institute is also thankful to the various

officers in the States who worked as Regional Supervisors for the project from time to time and took keen interest in the working of the Scheme. The list of the names of the regional supervisors and the regional staff of the project is given on the following page.

NEW DELHI,
March 25, 1965.

V.G. PANSE
Statistical Adviser,
Institute of Agricultural Research Statistics (I.C.A.R.).

REGIONAL SUPERVISORS AND REGIONAL STAFF FOR THE NATIONAL
INDEX OF FIELD EXPERIMENTS

<i>Region and Headquarter</i>	<i>Statistical staff from the Institute of Agricultural Research Statistics.</i>	<i>Regional Supervisors</i>
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9. ORISSA (BHUBANESWAR)	L.B.S. SOMAYAZULU	SHRI B. MISRA, Deputy Director of Agriculture (Hq.) SHRI D. MISRA, Principal, Uttakal Krushi Mahavidyalaya, Bhubaneswar.
10. WEST BENGAL (CALUTTA)	S.N. NATH	SHRI S.N. MUKERJEE, Statistical Officer, Directorate of Agriculture.

11. MADRAS
(COIMBATORE) P. PRABHAKARA RAO LATE SHRI M. BHAVANI SANKAR RAO,
V. VENKATESWARA RAO Vice-Principal and Secretary, Research
Council, Agricultural College and Research
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SHRI T. NATARAJAN,
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SHRI A.H. SARMA,
Extension Specialist.
SHRI V. RAMAN,
Secretary, Research Council.
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12. ASSAM T.K. GUPTA DR. S.R. BAROOHA,
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(TRIVANDRUM) Director of Agriculture.
SHRI N. SHANKARA MENON
Director of Agriculture.
SHRI P.D. NAIR,
Director of Agriculture.

**ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL
CROPS AND EXPERIMENTS ON CULTIVATORS' FIELDS.**

Crops :- 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 given in brackets.

Abbreviations adopted for States are as follows :-

- | | |
|---------------------------|------------------------|
| 1. A.P.—Andhra Pradesh | 9. M.—Madras |
| 2. As.—Assam | 10. Mh.—Maharashtra |
| 3. Bh.—Bihar | 11. Ms.—Mysore |
| 4. Gj.—Gujarat | 12. Or.—Orissa |
| 5. H.P.—Himachal Pradesh | 13. Pb.—Punjab |
| 6. J.K.—Jammu and Kashmir | 14. Rj.—Rajasthan |
| 7. K.—Kerala | 15. U.P.—Uttar Pradesh |
| 8. M.P.—Madhya Pradesh | 16. W.B.—West Bengal |

For the experiments conducted under the schemes sponsored by the Indian Council of Agricultural Research like the Model Agronomic Experiments or the 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 abbreviations MAE, SFT or TCM are given in the brackets against the year in which the experiment is conducted.

Site :- Name of the Research Station is mentioned alongwith the place where it is located, e.g. Agri. Res. Stn. for Agricultural Research Station.

For Central Institutes, the corresponding standard abbreviations have been adopted e.g. I.A.R.I. for the Indian Agricultural Research Institute.

In case of the experiments conducted on cultivators' fields whether under an Indian Council of Agricultural Research scheme or by the State Government, the abbreviation (c.f.) is given along with the site 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. e.g. CM is to be read as Cultural-cum-manurial.

Object :- A statement of the objective of the experiment is given indicating the main crop and type of the experiment. In case of M.A.E., S.F.T. and T.C.M. experiments, the type to which the experiment corresponds is also given, e.g. Type V, Type A or B or C etc.

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 S.E. of comparison(s).

Other abbreviations used in the text of experiments :

Nitro. Phos.—Nitrogen Phosphate	A/N—Ammonium Nitrate
Ammo. Phos.—Ammonium Phosphate	A/C—Ammonium Chloride
A/S—Ammonium Sulphate	C/N—Chilean Nitrate
A/S/N.—Ammonium Sulphate Nitrate	N—Nitrogen
C/A/N—Calcium Ammonium Nitrate	P—Phosphate

K—Potash	F.M.—Fish Manure
B.M.—Bone meal	G.N.C.—Groundnut cake
Mur. Pot.—Muriate of Potash	M.C.—Municipal Compost
Pot. Sul.—Potassium Sulphate	T.C.—Town Compost
Super—Super Phosphate	lb.—Pounds
Zn. Sul.—Zinc Sulphate	Srs.—Seers
C/S—Copper Sulphate	B.D.—Basal dressing
G.M.—Green Manure	C.L.—Cart load
F.Y.M.—Farm Yard Manure	ac.—Acre
F.W.C.—Farm Waste Compost	Dical. Phos.—Dicalcium Phosphate

Under the item (ii) (b) of the sub-heading 'Basal conditions' in the text of the experiment, the respective farm station at which the experiment was conducted has been referred to for the soil analysis. The soil analysis of the farm, with other details of the research station is given under the background information of each state. The information regarding the details of experimental stations may be obtained under the respective items as given below :

DETAILS OF EXPERIMENTAL STATIONS

A. General information :

(i) District and the nearest railway station with Latitude, Longitude and Altitude if available. General topography 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 monthly 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 as given below.

BASAL CONDITIONS

A. For experiments on annual crops :

(i) (a) Crop rotation if any. (b) Previous crop. (c) Manuring of previous crop. (State amount and kind). (ii) (a) Soil type. (b) Soil analysis. (iii) Date of sowing/planting. (iv) Cultural practices. (a) Preparatory cultivation. (b) Method of sowing/planting. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (v) Basal manuring with time and method of application. (vi) Variety. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season (x) Date of harvest.

B. For experiments on perennial crops :

(i) History of site including manuring and other operations. (ii) (a) Soil type. (b) Soil analysis. (iii) Method of propagation of plants. (iv) Variety. (v) Date and method of sowing/planting. (vi) Age of seedlings at the time of planting. (vii) Basal dressing with time and method of application. (viii) Cultural operations during the year. (ix) Inter cropping if any. (x) Irrigated or Unirrigated. (xi) Rainfall during crop season. (xii) Date of harvest.

C. For experiments on cultivators' fields :

- (i) (a) Crop rotation, if any. (b) Previous crop. (c) Manuring of previous crop. (ii) Soil type in general. (iii) Basal manuring with 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) Period of sowing/planting. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season. (x) Period of harvesting.

DESIGN

A. For experiments on annual crops :

- (i) Abbreviations for design : C.R.D.—Completely Randomised Design. R.B.D.—Randomised Block Design, L. Sq.—Latin Square, Confd.—Confounded, Fact.—Factorial. (other designs and modifications of the above to be indicated in full.). (ii) (a) No. of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) Plot size. (a) Gross. (b) Net. (v) Border or guard rows kept. (vi) Whether treatments are randomised (separately 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 ; Confd.—Confounded. (other designs and modifications of the above indicated in full). (ii) (a) No. of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) No. of trees/plot. (v) Border or guard rows kept. (vi) Are treatments randomised.

C. For experiments on cultivators' fields :

- (i) Method of selection of experimental sites. (ii) No. and distribution of experiments. (iii) Plot size. (a) Gross. (b) Net. (iv) Whether treatments are randomised.

GENERAL

A. For experiments on annual crops :

- (i) Crop conditions during growth with date of lodging, if any. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places (a) names of the places along with reference and (b) reference to combined analysis, if any. (vi) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vii) Any other important information.

B. For experiments on perennial crops :

- (i) Crop condition during the year. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) reference to combined analysis, if any. (v) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vi) Any other important information.

C. For experiments on cultivators' fields :

- (i) Crop condition during growth. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years, (a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places names of places alongwith reference. (vi) Abnormal occurrences, like heavy rains, frost, storm etc., if any. (vii) Any other important information.

TABLE OF CONVERSIONS TO METRIC UNITS

1 foot	=	304.8 mm.
1 acre	=	0.404606 hectare.
1 gram	=	0.035274 ounce = 0.085735 tola = 0.017147 chatak
1 kg.	=	2.20462 pounds = 1.07169 seers.
1 metric tone	=	0.9842 ton = 26.7923 maunds.
1 maund	=	0.373242 quintal = 37.3242 kg.
1 lb./ac.	=	1.12085 kg./hectare.
1 md./ac.	=	92.23002 kg./hectare = 0.9223 quintal/hectare
1 ton/ac.	=	2.51071 metric tones/hectare.
1 gallon (Imp.)	=	4.54596 litres.

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	<i>Oryza sativa</i> L.	Dhan	Dhan	Dhano	Vadlu ; Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chaul ; Dhan
2.	Wheat	<i>Triticum sativum</i> Lamk <i>Triticum aestivum</i> L.	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Jowar	<i>Andropogon Sorghum</i>	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari Jondhla	Jowari ; Jura	Jowar ; Jaur	Jowar
4.	Ragi	<i>Eleusine coracana</i> Gaertn	—	Marwa	Mandia	Ragi ; Chodi	Keppai ; Ragi	Muthari Ragi	Ragi	Nagli ; Nachni	Nagli ; Bavto	Ragi ; Mandika ; Marwah	Mandhuka ; Mandhal
5.	Maize	<i>Zea mays</i> L.	Gom dhan	Bhutta	Macca	Mokkajonna	Makka- Cholam	Cholam Makka- cholam	Musukina Jola	Makka	Makkai	Makka	Makki ; Makayee
6.	Tenai	<i>Setaria italica</i> Beauv	—	Kaon	Kanghu ; Kangam Kora	Korra	Tenai	Thena	Navane	Kang ; Rala	Kang	Kakum	Kangni
7.	Onion	<i>Allium cepa</i> L.	Piyaz	Piaj	Peas, ulli	Ulli	Vengayam Erangayam	Ulli	Eerulli	Kanda	Dungli Kando	Piaz	Ganda, Payaz
8.	Bhindi (Lady's finger)	<i>Hibiscus esculentus</i> ; <i>Abelmoschus esculentus</i> Moench.	Bhendi	Dhenrosh	Vendi	Benda	Bendai kai	Venda	Bende kayi	Bhendi	Bhida ; Bhinda	Bhindi	Bhindi ; Tori
9.	Brinjal ; Egg plant	<i>Solanum melongena</i> L.	Bengena	Begun	Baigan	Vankaya	Katharikai	Vazhuthana	Badane kayi	Vange	Vengan	Baingan	Bengan Bataun
10.	Tomato	<i>Lycopersicum esculentum</i>	Bilahi	Bilati begun	Bilati baigan	Tomato	Thakkali	Thakka li	Tomato	Welwangi ; Tambati	Vilaiti wagan ; Tameta	Tamatter	Tamatar
11.	French beans	<i>Phaseolus vulgaris</i> L.	French bean	Pharash bin	Farasi Simba	Bangalore Beans	Avarai ; Seemai avarai	Beans	Hurali kayi	Shravan gevda	Phanasi	Jangli Sem	Frans bean
12.	Cluster bean	<i>Cyamopsis psoraloides</i> Dc ; <i>Cyamopsis</i>	Thupi Urani	Guar	Gunar Chhuin	Goruchi- kkudu	Kothavar- kai Seeni- varaikai	Kothavara	Gori kayi	Guwar	Gavar	Gaur	Guara
13.	Horse gram	<i>Dolichos bifloras</i> Roxb	—	Kulhi Kalai	—	Vulavalu	Kollu ; Kaanam	Muthira	Huruli	Kulthi Hulga	Kulthi	Kultha	Kulthi
14.	Black gram	<i>Phaseolus mungo</i> var. <i>radiatus</i> Linn.	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhuonu	Uddu	Udid	Adad, Udad	Urd	Mash, Urd
15.	Bengal gram	<i>Cicer arietinum</i> L.	Butmah	Chola	Boot	Senagalu	Kadalai ; Sundal Kadalai	Kadala	Kadale	Harbara	Chana	Chana	Chholes Chana
16.	Green gram (Mung)	<i>Phaseolus aureus</i> Roxb.	Magumah	Sonamug	Mung	Pacha- pesalu	Pachai payru Pasipayaru	Cerupayaru Payaru	Hesaru	Mug	Mag	Moong	Moong, Mug

GLOSSARY OF VERNACULAR NAME OF CROPS—contd.

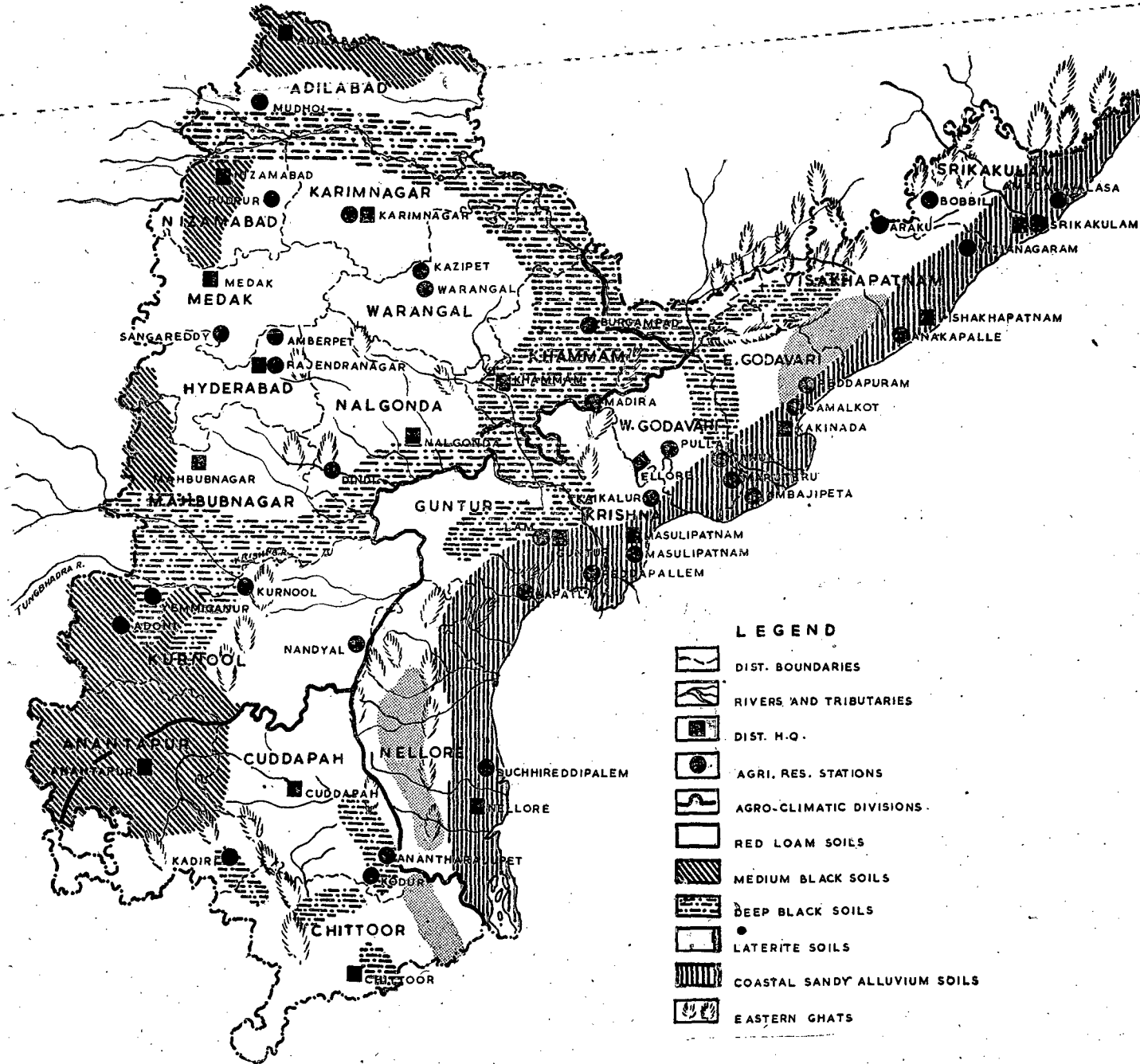
Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malyalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
17.	Tur	<i>Cajanus cajan</i> Millsp, <i>Cajanus indicus</i> Sprengl	Arhar	Arahar	Harad	Kandulu	Thuvarai	Thuvara Payaru	Thogari	Tur	Tuver	Arhar	Harhar ; Arhar
18.	Sugarcane	<i>Saccharum officinarum</i> L.	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
19.	Cotton	<i>Gossypium</i> spp.	Kapah	Karpas, Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
20.	Tobacco	<i>Nicotiana tabacum</i> L.	Dhopat	Tamak	Uanpatra	Pogaku	Pugayilai	Pukayila	Hoge Sappu	Tambaku	Tamaku	Tambaku	Tamaku Tambaku
21.	Groundnut	<i>Arachis hypogaea</i> L.	China badam	Cheena badam	China badam	Nelashanga	Nilakadalai	Nilakkadala	Kadala kayi	Bhuimug	Bhoising Magafali	Mungphali	Mungfali
22.	Castor	<i>Ricinus Communis</i> L.	Eri	Rehri	Jada	Amudalu	Amanakku	Avanakku	Haralu	Erandi	Diveli Erando	Rehri	Arind ; Harind ; Rind
23.	Gingelly	<i>Sesamum indicum</i> L. <i>Sesamum orientale</i> L.	Til	Til	Rasi	Nuvvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
24.	Jute	<i>Corchorus</i> spp.	Marapat	Shadapat Toshpat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti Chhunchh	Jute	Patsan
25.	Mesta	<i>Hibiscus Cannabinus</i> L.	San	Bimli	Kaunria	Gogu	Pulimanchi; Pulichai	—	Holadapun- drike	Ambadi	Ambadi Moti	Patsan	Sanukra Sankukra
26.	Rozelle	<i>Hibiscus Sabderiffa</i> L.	Tengra Mora	Mesta	Khata Kaunria	Erragogu	Sivappu Kashmakai	—	Kempupun- drike	Tambdi ambadi	Lal sheria	Patua	—
27.	Turmeric	<i>Curcuma longa</i> ; <i>Curcumedomestica</i> Val.	Halodhi	Halud, haldi	Haldi	Pasupu	Manjal	Manjal	Arisina	Halad	Halдар	Haldi	Hald, Haldi Bassar
28.	Chillies	<i>Capsicum frutescens</i> L.	Jalakiya	Lanka Marich	Lanka	Mirapa- kaya	Milakai	Mulaku	Menasina kayi	Mirchi	Marcha	Lal mirch	Lal mirch
29.	Berseem	<i>Trifolium alexandrinum</i> L.	—	Berseem	Gini Ghasa	—	—	—	—	Bersim Gavat	Barsim	Berseem	Berseem
30.	Cowpea	<i>Vigna catiangu</i> Walp, <i>Vigna sinensis</i> Savi	Lasaramah	Barbati	Baragadi	Bobbaru	Thatapayaru	Mambayar	Alasande	Chavli	Chola, choli	Lobia	Lobia
31.	Sannhemp	<i>Crotalaria juncea</i> L.	San	Shan	Chani	Janumu	Sadamtu	Kattu Chanam	Apsenabu	Tag	San	Sann	San
32.	Acid lime	<i>Citrus aurantifolia</i>	Kagzi	Kagzi lebu	Kagji Lumbu	Nimma	Flummi chai	Naranga	Kittale	Kagdi limbu	Limbu ; khata limbu	Kagzi Nemboo	Nimbu
33.	Lemon	<i>Citrus limonia</i> Ozbeck <i>Citrus limon</i> Burm F.	Nemu- Tenga	Patr ; Gora lebu	Lembu	Peddanimma	—	Naranga	Herale	Limboo	Limbu	Bara Nemboo	Walaiti Nimbu
34.	Mango	<i>Mangifera indica</i> L.	Am	Am	Amba	Mamidi	Mangai	Mavu	Mavu	Amba	Keri	Aam	Amb
35.	Banana	<i>Musa paradisiaca</i> L.	Kol	Pakakala	Kadali	Arati	Vazhaipa- zam	Vazha	Bale	Kele	Kela	Kela	Kela

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**MAP OF ANDHRA PRADESH STATE
SHOWING AGRO-CLIMATIC REGIONS,
SOILS, AGRICULTURAL RESEARCH
STATIONS ETC.**



ANDHRA PRADESH

1. General:— The State of Andhra Pradesh is situated in a tropical region between 13° N and 77° E. It is bounded on the east by the Bay of Bengal, on the north-east by the States of Orissa and Madhya Pradesh, on the north by Maharashtra, on the west by Mysore and on the south by Madras. It has a 600 mile stretch of coast line and an area of about 106,041 sq. miles. The state is divided into 20 districts for administrative convenience. The classification of the area according to utilisation is given in table I below.

Table I.

Land utilisation statistics of Andhra Pradesh (1958-59)
(Area in '000 acres)

Reporting area as per village papers	67748
Land under forests	14712
Barren and uncultivable land	5900
Land put to non-agricultural use	4071
Culturable waste	4527
Permanent pastures and other grazing land	3046
Land under miscellaneous tree crops	703
Current fallows	5247
Fallow land other than current fallows	2240
Net area sown	27302
Total cropped area	29867
Area sown more than once	2565

2. Topography:— The state can be divided into three physiographic divisions (i) The mountainous region, (ii) Plateau or elevated plains with an elevation of 300 to 2500 ft. and (iii) The deltas or plains of rivers and the sea coast. Nallamalai and Erramalai Hills of Rayalaseema and the Eastern Ghats come under the mountainous region while the whole of Telengana and Rayalaseema districts come under the plateau region.

The major rivers of the state i.e., the Godavari, the Krishana and the Pennar pass through the Deccan Plateau in deep cutting and well-defined valleys. The rivers, after they emerge from the hills and uplands, flow to the sea, between embankments through their deltas and their flood levels higher than the surrounding areas.

3. Soil Types and Agroclimatic regions of Andhra Pradesh:— Most regions of the State are semi-arid with little or no water surplus excepting, (i) North west portion (Districts of Nizamabad, Karimnagar and Adilabad), having sub-humid climate with moderate summer water surplus, (ii) North-East portion of Srikakulam having sub-humid climate with little or no water surplus, (iii) South western portion (Major portion of Ananthapur and Kurnool districts) having arid climate with little or no water surplus.

The average total rainfall of 45" is highest in the north gradually decreasing to 20" in the south-west. The State receives rainfall from both the south-west and the north-east monsoons. The maximum temperature is about 112° F in summer and minimum temperature is 66° F in winter.

The main soil groups found in the state are the black cotton *regur*, red and alluvial soils. There are also patches of lateritic soils in the districts of Nellore and East Godavari. Besides, coastal sands are found all along the coast in the districts of Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur and Nellore.

The black cotton and *regur* soils are grey, dark-brown and dark grey brown in colour. They are both shallow and deep with depths varying from 6" to 8" and over. They are found

spread in the districts of Adilabad, Karimnagar, Nizamabad, Medak, Hyderabad Mahaboobnagar, Kurnool, Ananthapur, Chittoor, Cuddapah, Nellore, Guntur, Krishna, Khammam and West Godavari.

There are gypsecious and non-gypsecious soils in the deeper layers. They are heavy textured, comparatively ill-drained and high in soluble-salt content (0.05 to 4.5%). Invariably these soils are calcareous except in the areas of high rainfall where surface layers are relatively free from precipitated calcium carbonate due to leaching. In regions of low rainfall, these soils contain very high amount of free lime occurring as nodules of pepper to soapnut size embedded in soil mass. Invariably such nodules are encountered at depths ranging from 3' to 8'. The 'pH' value ranges from 7.0 in the high rainfall regions to 8.5 in the low rainfall areas. The soils are poor in humus and nitrogen and are in general extremely deficient in available phosphates. The clay content of these soils varies from 30 to 60% and over. The clay minerals are of montmorillonite and beodelite groups with exchange capacity of 1.0 me/gram of clay.

The red soils include the coarse textured sandy loam and the medium fine textured loams. The soils are found scattered in a maximum area of the state, spreading in nearly all the districts. The sandy loams in Telangana are locally called the *Chalkas*.

The soils are brown to red in colour and are shallow with a depth of 6" to 24". They are well-drained and low in soluble salt content. The 'pH' value ranges from 6.5 to 7.5. They are poor in humus content. Nitrogen and phosphate contents are usually low (0.02 to 0.05%). They are very deficient in calcium but are fairly rich in potassium. The clay content varies from 15 to 25% and the clay minerals belong to the kaolinite group with a low exchange capacity of 0.5% me/gram of clay.

The loams, on the other hand, are shallow to medium deep and are usually located in elevated regions and are mostly derived from quartzites and sand stones. They resemble the sandy loams in many respects and differ from them in that they are more water retentive due to higher clay content.

The alluvial soils are observed either along the sea coast or at the deltaic areas of the rivers. The coastal alluvial soils are sandy having excessive drainage and least water-holding capacity, but the river alluvials are the rich soils with a high content of fine fraction. These soils include the silts, silty clay loams and silty loams.

Based on the variation in climate and soil, the state can be divided into the following agroclimatic regions.

(i) *Telangana region.*

This includes the districts of Hyderabad, Mahaboobnagar, Khammam, Nizamabad, Medak, Karimnagar, Warangal, Nalgonda, Adilabad and north-west part of Anantapur. The annual rainfall varies from 25 to 30 inches. The soils are *chalkas* derived from Granite. There are also patches of medium black soils, largely derived from trap and genissic parent material. They are neutral in reaction. The dominant 'pH' range is 6.5 to 7.5. A large number of different crops grown include paddy-jowar, castor, sugarcane and groundnut. However, in general, the soil fertility is low.

(ii) *Coastal region*

This is the region of high rainfall, both summer and winter. The average rainfall varies from 40 to 50 inches. Besides this the canal irrigation facilities are extensively developed which enable the cultivators to raise two to three crops a year. The districts covered by this region are Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna and Guntur. Based on the different major soil types occurring in this region, the area is divided into two sub-divisions.

- (a) Coastal region with coastal alluvium soil :— This runs across all the districts adjoining the sea coast and covers nearly half the cultivated area. The soil type is coastal alluvial in nature. The annual rainfall ranges from 45 to 50 inches.
- (b) Coastal region of red loam :— It differs with the previous sub-division mainly in soil characteristics. This region runs parallel to the coast and has red loam soil type. The annual rainfall ranges from 40 to 50 inches.

This entire region as a whole is very rich in soil fertility. Two crops of paddy are raised by double cropping. The other important crops are tobacco, *chillies* and sugarcane.

(iii) *The Southern region of Andhra Pradesh.*

This region consists of Chittoor, Cuddapah, and South of Anantapur district. The soil type is red loam. The average annual rainfall is about 30 to 40 inches. The field crops grown in this region are paddy, potato, *chillies* and groundnut.

4. **Irrigation** :— The State has a total irrigated area of 7046 thousand acres. The area irrigated through different sources is given in table 2 below :

TABLE 2.

Area irrigated (1958-59)

Source	Area in '000 acres	%
Government canals	3087	43.8
Private canals	22	0.3
Tanks	2944	41.8
Wells	728	10.3
Others sources	265	3.8
Total	7046	100.0

5. **Agricultural production and normal cropping pattern** :— The important crops of the State are paddy, jowar, groundnut and crops like cotton, pulses and minor millets also cover large areas. The figures for area, production and average yield per acre of various crops in the state are given in table 3 below :

TABLE 3

Area and production of principal crops (1963-64)

Crop	Area in	Production in	Yield in
	'000 acres	'000 tons	lb./ac.
Rice	8298	4274	1154
Jowar	6472	1381	478
Bajra	1492	328	490
Maize	500	161	721
Ragi	844	234	754
Minor Millets	2355	398	381
Pulses	3471	306	198
Sugarcane	307	10612	34.6 tons/ac.
Cotton	1046	134*	50
Groundnut	2425	742	685
Castor	761	46	135
Sesamum	547	41	168
Mesta	221	462**	836

* Bales of 392 lb. each.

** Bales of 400 lb. each.

6. **Experimentation and Agricultural Research** :—There are 677 experiments reported from the state for the period 1954—59. The distribution of these experiments, type wise for different crops is given in table 4. Besides these, 171 experiments belonging to different central schemes like the T.C.M. trials, Model Agronomic Experiments and Simple Fertiliser Trails, are also included in the compendium.

TABLE 4

Crop and type-wise distribution of experiments (1954—1959)

Crop	M	MV	C	CV	CM	CMV	I*	D	X	Total
Paddy	173	8	24	2	48	—	3	14	—	272
Wheat	4	—	—	—	—	—	—	—	—	4
Jowar	17	—	—	—	3	—	3	—	—	23
Ragi	27	—	—	—	—	—	—	—	—	27
Maize	2	—	3	—	4	—	—	—	—	9
Korra	3	—	—	—	—	—	—	—	—	3
Onion	—	—	8	—	—	—	4	—	—	12
Bhindi	—	—	—	2	1	2	—	—	—	5
Brinjal	1	—	—	2	—	2	—	—	—	5
Tomato	—	—	1	2	1	3	—	—	—	7
French Bean	—	—	1	2	—	2	2	—	—	7
Cluster Bean	—	—	—	1	—	2	1	—	—	4
Horse gram	1	—	—	—	—	—	—	—	—	1
Bengal gram	—	—	—	—	—	—	—	1	—	1
Tur	6	—	—	—	—	—	—	—	—	6
Sugarcane	57	1	11	5	—	1	8	11	—	94
Cotton	10	—	—	—	2	—	4	—	—	16
Tobacco	7	—	6	—	—	—	—	—	—	13
Groundnut	15	—	19	—	—	—	—	8	—	42
Castor	5	—	8	—	—	—	—	—	—	13
Mesta	1	—	2	—	—	—	—	—	—	3
Roselle	1	—	2	—	—	—	—	—	—	3
Turmeric	4	—	8	—	—	—	—	—	—	12
Chillies	12	—	2	—	—	—	—	1	—	15
Legumes	2	—	—	—	—	—	—	—	—	2
Green manures	3	—	—	—	—	—	—	—	—	3
Mixed cropping	—	—	—	—	—	—	—	—	38	38
Acid lime	—	—	10	—	—	—	—	—	—	10
Lemon	—	—	5	—	—	—	—	—	—	5
Citrus	—	—	9	—	—	—	—	—	—	9
Mango	—	—	4	—	5	—	—	—	—	9
Banana	1	—	1	—	1	—	—	1	—	4
Total	352	9	124	16	65	12	25	36	38	677

*includes experiments of types I, IV, IM, IMV, IC and IMC.

Anakapalle, Bapatla, Rajendranagar, Raichur, Samalkot, Maruteru, Kodur and Anantapur are some of the main centres in the state where intensive agricultural research is

carried out. 42.0 percent of the experiments under report are on paddy while sugarcane and millets account for 13.9 percent and 9.2 percent respectively. 52 per cent of the experiments are of manurial type while cultural experiments cover 30.2 percent of the total.

About 73.4 percent of the experiments are laid out in randomised block design and 18.5 per cent in split-plot and strip-plot designs. A few experiments are laid out in Latin Square and confounded designs each accounting for 3 per cent and 5.1 per cent respectively. The block size varied from 2 to 27 in a randomised block design while in split-plot the number of sub-plots per main-plot varied from 2 to 12. The net plot size adopted in different designs varied from $1/36$ ac. to $1/6$ ac. Number of replications in general varied from 1 to 20.

PARTICULARS OF RESEARCH STATIONS AND SOIL ANALYSIS

1. Government Cotton Farm, Adoni.

A. General information :

(i) In Adoni taluka of Kurnool district. (ii) Represents mungari and western tract of cotton growing areas. (iii) Year of establishment is N.A. (iv) *Jowar*-cotton is the normal cropping pattern. (v) Research is conducted on cotton for the improvement of mungari and western cotton.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
102	138	159	138	103	139	10	2	1	9	51	41	770

(Av. rainfall is based on the 10 year period 1953-54 to 1962-63).

C. Irrigation and drainage facilities :

(i) No irrigation facilities exist in the farm. (ii) Information about the drainage facilities is not available.

D. Soil type and soil analysis :

(i) Black cotton and red soils. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Mixed cropping—20. Total—20.

2. Mesta Research Station, Amadalavalasa.

A. General information :

(i) In Srikakulam taluka of the Srikakulam district, at a distance of half a mile from Srikakulam station. (ii) Information about the type of tract it represents is N.A. (iii) Established in 1958. (iv) No particular cropping pattern is followed. (v) The main programme of research is to evolve superior types of *H. sabdariffa* and to find out the remunerative cultural and agronomical methods of cultivation practices.

B. Normal rainfall in mm.

Information—N.A.

C. Irrigation and drainage facilities :

As there is no permanent farm of the station the particulars vary from year to year.

D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Mesta—3. Rosella—3. Total=6.

3. Regional Coconut Research Station, Ambajipeta.

A. General information :

(i) In Amalapuram taluka of the East Godavari district, at a distance of 38 miles from Rajahmundry. R. S. Lat—82°, long. 16° 35' and altitude 14.05 above mean sea level. (ii) Represents the deep alluvial soils of the Goadvari delta area. (iii) Established in 1955. (iv) As the station conducts research on perennial crops like coconut, no particular cropping pattern is observed year after year. (v) Introduction and acclimatisation of promising varieties and their hybridisation and conducting agronomical and ancillary trials are the main items in the programme of research.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
132	230	187	132	346	52	6	1	6	9	19	31	1201

(Av. rainfall is based on the 8 year period of 1956 to 1963.)

C. Irrigation and drainage facilities :

(i) Irrigation facilities are not available. (ii) The land is not favourable for efficient drainage.

D. Soils type and soil analysis :

(i) Alluvial black soil, deep, clayey in structure. (ii) Chemical analysis : Moisture 10.46%, Lime (CaO) 1.47%, Total P_2O_5 0.088%, Total K_2O 0.452%, Available P_2O_5 0.0197%, Available K_2O 0.081%, Nitrogen 0.0336% and pH value 6.6. (iii) Mechanical analysis N.A.

E. No. of experiments :

G.M. crops—3. Total=3.

4. Agricultural Research Station (Maize Breeding Station), Amberpet.**A. General information :**

(i) In Hyderabad district at a distance of 3 miles from Kachiguda railway station. Lat.—17°N, Long.—78°E, altitude—1750 feet. (ii) Represents Telangana regions of Andhra Pradesh. (iii) Established in 1951. (iv) N.A. (v) Research on paddy and maize.

B. Normal rainfall in mm :

Annual rainfall is 559 mm. Details—N.A.

C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Sandy loam, sandy clay, clay loam and silt soils. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—3, Maize—1, Total=4.

5. Sugarcane Research Station, Anakapalle.**A. General information :**

(i) In Anakapalle taluka of the Visakhapatnam district, at a distance of half a mile from Anakapalle R. S. It has level lands. Lat.—17.41°N, Long.—83.30°E and altitude 88 feet above mean sea level. (ii) Represents coastal plains (iii) Established in 1913. (iv) In wet lands : Sugarcane—Sugarcane, Sugarcane—Green manure crops and Millet-Paddy, in garden lands : Ragi-fodder crop, Sugarcane—fodder-vegetables and in dry lands : —Ganti-ragi-fallow ; Ganti-Jonna, are the crop rotations followed. (v) Selection of high yielding and rich cane varieties, manurial and irrigational experiments on sugarcane ; studies in nutrition and control of pests and diseases and improvement of gur quality ; selection and improvement work on Paddy varieties and millets, propagation and distribution of vegetable seeds, fruits and coconut seedlings are the main items of the programme of research.

B. Normal rainfall in mm :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
113	138	140	203	228	79	8	7	23	14	28	28	982

(Av. rainfall is based on 50 years i.e., 1913—1962.)

C. Irrigation and drainage facilities :

- (i) Irrigation is done from wells which are sunk from time to time and also from a diversion canal of river Sarada which flows only in monsoon months from July to November.
 (ii) There is a natural drainage system.

D. Soil type and soil analysis :

- (i) Coastal alluvial (loam), 10 to 15 feet deep, light to dark brown in colour no stable structure but crumb structure when dry.

(ii) Chemical analysis :

Constituents	0—12" deep	12"—24" deep
1. pH	7.5	7.4
2. Total Nitrogen %	0.039	0.035
3. Organic carbon %	0.37	0.31
4. Sesquionides %	11.53	10.41
5. Lime%	0.367	0.382
6. Exchangeable CO	12.60	11.13
7. Available P ₂ O ₅ %	0.0175	0.0159
8. Available K ₂ O	0.0234	0.0111
9. Total water soluble	0.058	0.060

(iii) Mechanical analysis :

Constituents	0—12"	12"—24"
1. Clay %	27.70	24.75
2. Silt %	9.70	9.75
3. Sand %	59.36	63.14

E. No. of experiments :

Paddy—22, Ragi—9, Sugarcane—41. Total=72

6. Government Fruit Research Station, (Onion Research Station), Anantharajupet.**A. General information :**

- (i) In district Cuddapah at a distance of 2 miles from Koduru railway station at an altitude of 642 feet above mean sea level. (ii) Representative of Rayalaseema tract. (iii) Established in 1951. (iv) Citrus fruits, guava etc. (v) Programme of research is to study different aspects of fruits and vegetables and to conduct rootstock trials on citrus.

B. Normal rainfall in mm :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
58	133	119	92	119	96	65	—	3	5	12	72	774

(Av. rainfall based on 5 years.)

C. Irrigation and drainage facilities :

- (i) Irrigation by pumping water from the wells. (ii) Proper drainage system is also available.

D. Soil type and soil analysis :

- (i) Red loamy soils 4' to 6' deep with sufficiently fine structure. (ii) Chemical analysis : pH 9.5, Soils 0.3, Organic matter 0.37. (iii) Mechanical analysis : Depth 0 to 8', clay 17.1 to 40.2 %, salt 9.3 to 18.2 %, fine sand 43.4 to 65.7 %, coarse sand 5.7 to 10.4 %.

E. No of experiments :

Acidlime—5, Citrus—4, Mango—9, Onion—12. Total=30.

7. Agricultural Research Station, Araku.

A. General information :

(i) In Paderu taluka of the Visakhapatnam district, at a distance of 55 miles from Kothvalasa railway station. Long.—82°E and Lat.—18°N. (ii) The valley is a narrow strip of land about 7 miles in length and 2 miles wide and has an altitude ranging from 3,000 to 3,200 ft. above sea level. The soils are poor, often subject to denudations. (iii) Established in 1944. (iv) Dry crops (rainfed) : three year rotations with *ragi*, peddasama, dry paddy and niger. Irrigated crop : paddy followed by *ragi* or groundnut in small areas. Garden land crops (irrigated) : sugarcane, vegetable, cotton etc. orchards of fruits and coffee. (v) The main programmes of research are to try different crops and their strains in wet land, garden land and dry land for cultivation and trials of tropical and sub-tropical fruits in the Government orchards.

B. Normal rainfall in mm. :

The tract receives an average annual rainfall of about 1560 mm. Monthwise break up is not available.

C. Irrigation and drainage facilities :

Information not available.

D. Soil type and soil analysis :

(i) Red loamy soils with fairly good depth but are very poor in essential plant nutrients due to constant leaching. (ii) Chemical analysis : pH value—4.7 to 5.4, acidic soluble salts (EC)—0.25 normal, organic matter 0.59% medium, available phosphate—12 to 38 lb./ac. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Ragi—2. Total=2.

8. Agricultural College Farm, Bapatla.

A. General information :

(i) In Bapatla taluka of Guntur district, 1½ miles from Bapatla railway station. The tract is 5 miles from Bay of Bengal. (ii) Coastal sandy soil belt. (iii) Established in 1950. (iv) *Bajra*, cowpea, horse gram and *jowar* under rainfed conditions and *ragi* and chillies under irrigated conditions. (v) Programme of research N.A.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
129	134	183	193	229	77	10	1	2	3	15	25	1001

(Av. rainfall based on 10 years i.e. from 1955 to 1964.)

C. Irrigation and drainage facilities :

(i) The farm is irrigated from the Krishna delta canal system. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Depth 6' to 8', colour normal and sandy in structure. (ii) Chemical analysis.—Loss on ignition 0.87%, CaO 0.11%, total P₂O₅ 0.027%, total K₂O 0.132%, nitrogen 0.021 %, available P₂O₅ 0.008% and K₂O 0.016%. (iii) Mechanical analysis—Clay 2.60 %, silt 0.78%, fine sand 62.29% and coarse sand 33.30%.

E. No. of experiments :

Paddy—12, Ragi—6, Horse gram—1, Bengal gram—1, Groundnut—2. Total=22.

9. Sugarcane Liaison Farm, Bobbili.*A. General information :*

(i) In Srikakulam district. (ii) It represents black clay type of tract. (iii) to (v) Information—N.A.

B, C and D.

Information—N.A.

E. No. of experiments :

Sugarcane—3. Total=3.

10. Rice Research Station, Buchireddipalem.*A. General information :*

(i) In Nellore, district at a distance of 9 miles from Kodavalur railway station. Lat.—14°55'N, Long.—79°88' E and altitude 40 ft. above mean sea level. (ii) It is a plain levelled area. (iii) Established in 1937. (iv) It is mainly a single crop wet land area second crop is taken in alternate years only in restricted areas. The main crop is from July to January. Horse gram or *pillipesara* is taken as a catch crop after the main crop of rice. (v) To evolve blast resistant varieties of rice suitable for Andhra Pradesh.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
62	81	93	113	303	281	91	6	3	—	16	44	1103

(Av. of 10 years from 1954 to 1963).

C. Irrigation and drainage facilities :

(i) Irrigation facilities available from Kanigiri reservoir. (ii) There is no proper drainage.

D. Soil type and soil analysis :

(i) Sandy loam soil. (ii) Chemical analysis and (iii) Mechanical analysis are not available.

E. No. of experiments :

Paddy—29. Total=29.

11. Tobacco Research Station, Burgamphad.*A. General information :*

(i) In Burgamphad taluka of Khammam district, 35 Km. from Bhadrachalam railway station (Kothagudem). Research station is existing on leased land of cultivators and no permanent site. (ii) It represents silt loamy, clay soils (alluvial soils) (iii) It was started in January 1962. (iv) Tobacco after tobacco (being silty soils). (v) To conduct research on cigarette tobacco in respect of manurial, varietal and cultural aspects for this tract.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	Total
178	287	267	119	10	17	—	—	3	3	19	44	959

(Av. is based on the rainfall for the last 4 years).

C. Irrigation and drainage facilities :

(i) and (ii) No.

D. Soil type and soil analysis :

(i) Silty clay loam soil (alluvial soils), 4' to 10' deep, brown to black in colour. (ii) Chemical analysis : pH value 7.5 to 7.8, organic carbon—medium to high, available P_2O_5 —11 to 15 lb./ac., available potash 400 to 500 lb./ac. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Tobacco—4. Total=4.

12. Government Agricultural Farm, Dindi.*A. General information :*

(i) In Devarkonda taluka of Nalgonda district, 48 miles from Jadeherla railway station ; slopy land with rocky sub-strata and of loose texture. Lat.—16°32'N, Long.—78°41'E and altitude 1300 feet above mean sea level. (ii) It represents chalka (sandy loam) soils. (iii) Started in 1949. (iv) Rice, *jowar*, castor and groundnut are the main crops grown in the tract. (v) Cultural, varietal and manurial experiments on paddy, castor, groundnut, *jowar*, cotton and seed multiplication of paddy, castor etc.

B. Normal rainfall in mm :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
69	110	101	185	113	18	—	—	—	—	—	—	596

(Av. based on the rainfall data for the last 5 years).

C. Irrigation and drainage facilities :

(i) (a) Irrigation facilities are available since 1949 from Dindi reservoir. (ii) In wet land main and sub-drains are opened but dry land need no drainage as the land is very porous and slopy and rainfall is very low.

D. Soil type and soil analysis :

(i) Red, gravelly with alkaline patches, 6" to 9" deep, loose structure subject to leaching. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—15. Tur—3. Groundnut—3. Total=21.

13. Regional Oilseed Research Station, Kadiri.*A. General information :*

(i) In Kadiri taluka of Anantapur district. Lat. 14.75°N, Long. 78.10°E and altitude 2011' M.S.L. Bunding was done along the contours. Previously this farm was at Anantapur. (ii) The soil and seasonal conditions obtainable on the station are mostly representative of the entire Rayalaseema region. (iii) It was started 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 in mm :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
42	61	70	119	124	33	8	1	3	4	31	51	547

(The average is based on the rainfall data from 1947—1963.)

C. Irrigation and drainage facilities :

(i) (a) and (b) No irrigation facilities available. (ii) No artificial drainage 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 9" to 12" deep. (ii) Chemical analysis : pH—7.5, total soluble salts (electrical conductivity m/mhos/acre) 0.41, organic carbon 0.42%, total nitrogen 0.043%, available P₂O₅ 0.005% and available potash 0.017%. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Groundnut—6, Castor—12, Mixed cropping—4, Total=22.

14. Groundnut Research Station, Kaikalur.*A. General information :*

(i) In Kaikalur taluka of Krishna district. Kaikalur railway station. It is plain and well levelled land suitable for paddy cultivation. (ii) Information—N.A. (iii) Established in 1958. The station was shifted to Masulipatnam in 1959. (iv) Paddy is the main crop. (v) To evolve high yielding bunch varieties of groundnut.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	Total
105	382	186	156	244	101	1	—	9	—	15	2	1301

(Av. rainfall is based on 2 years ie 1958—1959).

C. Irrigation and drainage facilities :

(i) The farm is irrigated from the Krishna delta canal. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Clay loam, black in colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Groundnut—1, Total=1.

15. Maize Research Station, Karimnagar.*A. General information :*

(i) In Karimnagar district. (ii) Chalka (red loam) Telengana tract soils. (iii) Established in 1952. (iv) Cropping pattern and (v) Programme of research—N.A.

B. Normal rainfall in mm :

Annual rainfall is 813 mm. Details—N.A.

C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Sandy loam soil. (ii) Chemical analysis and. (iii) Mechanical analysis are not available.

E. No. of experiments :

Maize—8, Total=8.

16. Tobacco Research Station, Kazipet.*A. General information :*

(i) In Warangal district. (ii) Represents eastern Telengana tract. (iii) to (v) Information N.A.

B, C and D.

Information—N.A.

E. No. of experiments :

Tobacco—5, Total=5.

17. Citrus Root Stock Trial Station, Kodur.**A. General information.**

(i) In Cuddapah district. (ii) Represents Rayalaseema tract. (iii) to (v) Information—N.A.

B, and C.

Information—N.A.

D. Soil type and soil analysis.

(i) Red loamy soil. (ii) Chemical analysis and (iii) Mechanical analysis. as given below :

Depth in ft.	Clay %	Silt %	Fine Sand %	Coarse Sand %	Clay + Silt	Fine Sand + coarse sand	Water soluble salts	pH value
0—1	17.1	10.4	65.7	10.4	25.7	76.1	0.014	7.71
1—2	26.3	9.3	56.7	10.4	35.6	67.1	0.042	7.85
2—3	34.6	10.3	50.5	8.8	44.9	59.3	0.015	8.04
3—4	36.1	11.9	48.2	5.1	48.6	53.3	0.012	7.70
4—5	37.3	11.6	45.1	8.3	48.9	53.4	0.014	7.76
5—6	40.2	12.0	43.4	7.1	52.2	50.5	0.012	7.76
6—7	38.7	10.1	46.3	6.8	48.8	53.1	0.015	7.56
7—8	36.7	12.2	47.8	6.6	48.9	54.4	0.016	7.73

There is no effervescence with dilute acid at any depth.

E. No. of experiments.

Acid lime—5, Lemon—5, Citrus—5, Total=15.

18. Vegetable Research Station, Kurnool.**A. General information.**

(i) At a distance of 1 Km. from Kurnool railway station. It is a level and even land. (ii) Represents Deccan tract. (iii) Established in 1958. (iv) Vegetables grown in rotation with green manure crops. (v) Hybridization and selection of promising varieties of vegetables suitable for the tract and to conduct survey of vegetable crops in the State.

B. Normal rainfall in mm.

Information—N.A.

C. Irrigation and drainage facilities.

(i) Canal irrigation from July to April and well irrigation in May and June. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Black clay loam soils, 2' to 5' deep. (ii) Chemical analysis pH 7.9 to 8.5, alkaline, soluble salts (E.C.) : 0.76 to 0.6 (normal), organic matter 0.54 to 0.72 (medium), 0.76 to 0.96 (high) and 1.03 (very high), and available P_2O_5 35 lb./ac. (medium) 11 to 17 (low) and 2 to 10 (very low). (iii) Mechanical analysis—N.A.

E. No. of experiments.

Bhindi—1, Tomato—1. Total=2.

19. Agricultural Research Station, (Millet Research Station), Lam.**A. General information.**

(i) In district Guntur, at a distance of 6 miles from Guntur railway station and altitude 105 feet above mean sea level. (ii) Deep black soil tract. (iii) Established in 1923.

D. Soil type and soil analysis :

(i) Black cotton soil, 4 to 6 feet deep and clayey in structure. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Cotton—5, Total=5.

24. Agricultural Research Station, Nandyal.**A. General information :**

(i) In Nandyal taluka of the Kurnool district at a distance of 1 mile from Nandyal railway station. It is situated in Nandyal valley. Lat.—15.3°N, Long.—78.3°E and altitude 690 feet above mean sea level. (ii) It represents northern tract of the Nandyal valley area. (iii) Established in 1906. (iv) Both rainfed as well as irrigated crops are being cultivated on this station, the main crops cultivated on dry lands are cotton, *jowar*, groundnut and *korra* while on wet lands paddy is cultivated. (v) The research is being carried out mainly on cotton and *jowar* both by *pure* line selection as well as hybridisation.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
108	155	170	129	98	17	12	—	2	10	27	54	784

(Av. rainfall is based on 10 years i.e. 1953-63.)

C. Irrigation and drainage facilities :

(i) This is mostly dry land farm but after remodelling K.C. canal in the year 1960 there are sufficient irrigation facilities for raising wet land crops. The sub-channel of K.C. canal flows through the farm. (ii) Drainage system of the farm is satisfactory.

D. Soil type and soil analysis :

(i) Deep black cotton soil, extends upto 6 feet. (ii) Chemical analysis : Nitrogen 0.045%, P_2O_5 0.030%, Potash 0.50% and Moisture 7.56%. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Jowar—5, Cotton—2. Total=7.

25. Turmeric Research Station, Peddapallem.**A. General information :**

(i) In Guntur district. (ii) It represents sandy and clay soil tract. (iii) to (v) Information—N.A.

B, C and D.

Information—N.A.

E. No. of experiments :

Turmeric—12, Total=12.

26. Millet Research Station Peddapuram.**A. General information :**

(i) In Peddapuram taluka of East Godavari district at a distance of 2½ miles from Samalkot railway station. It has plain area. (ii) It represents uplands of East Godavari and West Godavari districts. (iii) Established in 1954. (iv) Millets rotated with pulses. (v) Evolution of high yielding strains of *ragi*, *ganti* and *jonna* suitable for dry lands of East and West Godavari districts are the main items in the programme of research.

B. Normal rainfall of in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
97	211	153	170	207	108	34	1	18	8	16	111	1134

C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Red sandy loam soil about 9" deep. (ii) Chemical analysis

S. No.	Block No.	Crop	pH	T.S.S. m. mohos/ @ 25°C	% organic carbon	Av. P ₂ O ₅ lb./ac.	Av. K ₂ O
1	I	Millets and pulses	6.7	Traces	0.231	16.4 (M)	Low
2	II	„	6.3	„	0.312	14.0 (M)	Low
3	III	„	6.2	„	0.234	22.4 (H)	Low
4	IV	„	6.4	„	0.351	26.0 (H)	Low

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Ragi—3, Total=3.

27. Deep Water Paddy Research Station, Pulla.**A. General information :**

(i) In Eluru taluka of the West Godavari district at a distance of 5½ miles from Pulla railway station, Climate—tropical ; Lat. 17°N, Long. 82°E and Altitude 5' to 10' above mean sea level. (ii) It represents black clay type of tracts. (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 in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
162	287	159	204	203	22	2	2	20	4	8	27	1080

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 9" deep. (ii) Chemical analysis : Moisture : 5.62%, lime : 0.75, K₂O : 0.81%, P₂O₅, 0.04%, available K₂O : 0.04%, available P₂O₅ : 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—5, Total=5.

28. Agricultural Research Institute, Rajendra Nagar.**A. General information :**

(i). Situated in the West Hyderabad at a distance of 10 miles from Hyderabad railway station. The experimental area is fairly levelled. Lat.—17.2°N, Long.—78.22°E and altitude 1:80 feet above mean sea level. (ii) Represents Telengana region of Andhra Pradesh. (iii) Established in 1927. (iv) Paddy in *Abi* and *Tabi*. In the *kharif* season crops like *jowar*, red gram, castor and groundnut are taken while in the *rabi* season wheat, safflower and linseed are grown. (v) This is the principal research institute of Andhra Pradesh and conducts research on paddy, pulses, oilseeds, vegetables etc. on breeding, agronomic, entomo-

logical and plant pathological aspects.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
73	190	162	216	97	33	19	2	4	20	31	30	876

(Av. rainfall is based on five years i.e. 1958-63.)

C. Irrigation and drainage facilities :

(i) Perennial canal flowing across the farm provides irrigation to the farm. (ii) Except a small area, the entire farm has a good drainage system.

D. Soil type and soil analysis :

(i) Sandy loam (*chalka*) medium black and silt soil. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—44, *Bhendi*—1, Brinjal—5, Tomato—6, French bean—7, Cluster bean—4, Groundnut—8, Castor—1, Fodder—2, Total=78.

29. Agricultural Research Station, Rudrur.

A. General information :

(i) In Bodhan taluka of Nizamabad district at a distance of 6 miles from Bodhan railway Station. 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 with. Lat.—18.38°N, Long.—77.51°E and altitude—1325 feet above mean sea level. (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 monsoon 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 in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
224	375	400	207	222	19	10	4	6	11	36	29	1543

(Av. rainfall is based on a period of 10 years 1954—64.)

C. Irrigation and drainage facilities :

(i) Irrigation facilities are available from the Nizamsagar canal from the year 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 8 to 10 feet. (ii) Chemical analysis

Type	SiO ₂	FeO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO	CaO	K ₂ O
<i>Chalka</i>	70.0	0.30	13.0	5.35	0.05	1.80	4.40
<i>Regur</i>	73.0	0.50	10.0	5.35	0.15	1.25	1.75
Type	NaO	P ₂ O ₅	pH	Loss on ignition		Moisture	
<i>Chalka</i>	1.90	0.035	7	3.00		2.25	
<i>Regur</i>	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
<i>Chalka</i>	53	23	6	18	0	2	0.5.
<i>Regur</i>	22	16	18	44	2	5	1.0

No. of experiments :

Paddy—59, Sugarcane—27, Total=86.

30. Agricultural Research Station (Sugarcane Liaison Farm), Samalkot.*A. General information :*

(i) In Kakinada taluka of East Godavari district at a distance of about 2 miles from Samalkot railway station. It is a plain area. Lat.—17°03' N, Long.—82°1'E and altitude 2816 feet. (ii) It represents Godavari eastern delta. (iii) Established in 1902. (iv) Paddy-G.M.-paddy is the cropping pattern. (v) Multiplication of nucleus seed of improved and exotic paddy varieties. Hybridisation of Indica—Japonica varieties and raising seed material of pulses and vegetables are some of the items of research.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
139	269	167	195	313	32	3	7	3	8	11	62	1209

(Av. rainfall is based on 10 years from 1954—1963).

C. Irrigation and drainage facilities :

(i) Irrigation from the Godavari river canal. (ii) There is no proper drainage.

D. Soil type and soil analysis :

(i) Clay loam soil deep black in colour. (ii) Chemical analysis : Texture : Clay loam, moisture : 5.55%, pH : 7.3 (normal), available P_2O_5 0.076%, soluble salts : 0.7 (normal), nitrogen : 0.083%, organic carbon : 0.58 (medium) and water holding capacity : 55.85%. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—23. Total=23.

31. Fruit Research Station, Sangareddy.*A. General information :*

(i) In Sangareddy taluka of Medak district at a distance of 14 miles from Shankarapalli railway station. The experimental area under Annonacea and mango fruits is of red *chalka* type in levelled and terraced plots while that under *chalkas* is of *regur* type and is a levelled land. Lat.—17° 37' N., Long.—78°5' E.L. (ii) Represents a predominantly red sandy 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 *bhendi*, bringal, 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 strains 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 in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
107	225	283	249	112	18	10	—	5	15	14	30	1068

(Av. of 5 years i.e. 1958—62).

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*) 1 to 2 feet deep, black *regur* and wet land. (ii) Chemical analysis For *chalka* soils, N : 0.043%, pH : 7.34, P₂O₅ : 6.62 lb./ac. and K₂O : 44.9 lb./ac. (iii) Mechanical analysis—N.A.

E. No of experiments :

Bhendi—3, *Chillies*—2. Total=5.

32. Belal Farm, Shakkarnagar (Nigam Sugar Factory).

A. to D.

Information—N.A.

E. No. of experiments :

Sugarcane—2. Total=2.

33. Demonstration-cum-Research Farm, Srikakulam.

A. General information :

(i) At a distance of 5 miles from Srikakulam-Palakonda road. (ii) It represents clay loam tract. (iii) Established in 1956. (iv) In wet lands *burada ragi* followed by rice or G.M. followed by rice and in dry lands *ganti* or *ragi* followed by *jonna*. (v) Evaluation of improved strains of rice and millets and to work out improved cultural and manurial practices of rice and millets are the items of research.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
129	165	192	203	187	67	18	6	2	16	20	66	1095

(Av. of 80 years of rainfall i.e. 1870 to 1949).

C. Irrigation and drainage facilities ;

(i) A channel from the Nagavali river and tanks irrigates part of rice area. A well for irrigation of dry land crops was sunk in 1964. (ii) Major area of rice is provided with good drainage system.

D. Soil type and soil analysis :

(i) Black soil 9" to 10" deep. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No of experiments :

Paddy—3. Total=3.

34. Sugarcane Liaison Farm, Tanuku.

A. General information :

(i) In west Godavari district. (ii) Represents Godavari delta tract. (iii) to (v) Information—N.A.

B., C. and D.

Information—N.A.

E. No. of experiments :

Sugarcane—8. Total=8.

35. Banana Research Station, Tanuku.**A. General information :**

(i) In Tanuku taluka of West Godavari district at a distance of $\frac{1}{2}$ Km. from Tanuku railway station. The fields are fairly levelled. (ii) Represents Godavari delta tract. (iii) Established in 1958. (iv) Banana—Green manure—Banana is the crop rotation followed in the state. (v) To improve banana industry in the state by undertaking varietal, cultural, manurial and other investigations with a view to evolve new techniques and improve the existing practices.

B. Normal rainfall in mm :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
168	328	189	301	259	38	7	7	104	5	45	38	1429

(Av. rainfall is based on 3 years from 1960—1963).

C. Irrigation and drainage facilities .

(i) Irrigation from tube wells. (ii) Surface drainage and drainage ditches along the contours to drain off the excess water during rainy season.

D. Soil type and soil analysis :

(i) Black clay loam soil. (ii) Chemical analysis : pH 7.2 to 7.8. Organic matter content is very poor, Available P_2O_5 is classed as very low to medium and Available K_2O is classed as very high. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Banana—4. Total=4.

36. Government Millet Farm, Vizianagaram.**A. General information :**

(i) In Vizianagaram taluka of Visakhapatnam district at a distance of one mile from Vizianagaram railway station. Experimental area is a levelled piece of land. (ii) Represents red loamy tract. (iii) Established in 1954. (iv) Millets followed by pulses and green manure crops. (v) To evolve improved strains of major millets and to find out optimum requirements of fertilizers.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
191	181	153	233	317	12	7	19	17	3	19	48	1201

(Av. rainfall is based on 4 years i.e., 1959—1963).

C. Irrigation and drainage facilities :

(i) There are two wells for irrigation purpose for a limited area of 2 to 3 areas. (ii) Well drained soil.

D. Soil type and soil analysis :

(i) Red loamy soil with a depth of 6 feet and porous structure. (ii) Chemical analysis—pH 7.5 to 8.1. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Ragi—7. Total=7.

37. Government Main Farm, Warangal.**A. General information :**

(i) In district Warangal, at a distance of 5 miles from Warangal railway station. It represents plain area. Lat.—18.01° N, Long.—39.04° E and altitude 111 feet above mean sea

level. (ii) Represents eastern Telangana tract. (iii) Established in 1933. (iv) Paddy, *jowar*, cotton and pulses etc. are the main crops. (v) Programme of research is to conduct seed multiplication trials and varietal, manurial and cultural trials on paddy, *jowar*, cotton, maize and pulses.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
126	243	166	217	90	12	—	1	5	13	22	45	940

(Av. rainfall based on 10 years).

C. Irrigation and drainage facilities :

(i) Two small tanks whose supply is entirely dependant on rainfall from 1933. (ii) There is proper drainage system wherever required.

D. Soil type and soil analysis :

(i) Sandy loam (*chalka*) and *regur* or black cotton soil. (ii) Chemical analysis : *Chalka*—pH 6.9 to 8.2, P_2O_5 available 6.2 to 3.7, K_2O available 80 to 173 *Regur*—pH 8.0 to 8.2, available P_2O_5 0.46 to 6.4 and available K_2O 164.3 to 249.6. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—10, *Tur*—3, Groundnut—4. Total=17.

38. Agricultural Research Farm, Yemmiganur.

A. General information :

(i) In Adoni taluka of Kurnool district at a distance of 30 Km. from Adoni railway station. (ii) Represents black soils of the Tungbhadra project ayacut area. (iii) Established in 1963. (iv) *Jowar* cotton or *korra* is the cropping pattern. (v) To conduct manurial, cultural and varietal trials on *jowar*, cotton, and *korra* and to find out their optimum requirement of water.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
74	101	99	151	26	32	8	—	—	2	17	41	551

(Av. rainfall is based on 10 years).

C. Irrigation and drainage facilities :

(i) Land with complete irrigation facility from the Tungbhadra project is proposed to be acquired for the major river valley project. (ii) There is no proper drainage.

D. Soil type and soil analysis :

(i) Deep black, medium black, shallow and red soil with different depth. The structure depends upon the above soils. (ii) and (iii) Chemical and Mechanical analysis—N.A.

E. No. of experiments :

Paddy—6 Wheat—4, *Jowar*—6, *Korra*—3 and Cotton—9. Total=28.

Crop :- Paddy.**Ref :- A.P. 55(50).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object:—To study the effect of manuring Paddy with urban compost, F.Y.M. and G.L. at different level of N.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 12.8.1955/N.A. (iv) (a) Puddling with country plough and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 6"×6". (e) N.A. (v) As per treatments. (vi) GEB—24. (vii) Irrigated. (viii) 2 weedings (ix) N.A. (x) 6.12.1955.

2. TREATMENTS :

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

(1) 3 levels of N : $N_1=40$, $N_2=60$ and $N_3=80$ lb./ac.

(2) 3 sources of N : $S_1=$ Urban compost, $S_2=$ F.Y.M. and $S_3=G.L.$

Compost and F.Y.M. spread a few days before transplanting. G.M. ploughed with the soil a month before transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 60'×6'. (b) 54½'×4'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging due to cyclonic weather. (ii) Nil. (iii) Yield of grain, height and tiller count. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2448 lb./ac. (ii) 296 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 2350 lb./ac.

	N_1	N_2	N_3	Mean
S_1	2200	2475	2325	2333
S_2	2500	2650	2425	2525
S_3	2575	2450	2525	2517
Mean	2425	2525	2425	2459

S.E. of any marginal mean = 85.4 lb./ac.

S.E. of body of table or control mean = 148.0 lb./ac.

Crop :- Paddy.**Ref :- A.P. 58(28).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object:—To find out the effect of applying N, P and K fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Paddy. (b) Sugarcane—Fallow. (c) 100 lb./ac. of N. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A./17.8.1958. (iv) (a) 4 puddlings and pressing *patti* for levelling. (b) Transplanted. (c) About 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) Nil. (vi) GEB—24 (medium). (viii) Weeding. (ix) N.A. (x) 25.12.1958.

2. TREATMENTS :

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

(1) 2 levels of N : $N_0=0$ and $N_1=45$ lb./ac. of N.

(2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=45$ lb./ac. of P_2O_5 .

(3) 2 levels of K_2O : $K_0=0$ and $K_1=45$ lb./ac. of K_2O .

N as A/S applied one month after planting, P_2O_5 as Super and K_2O as Pot. Sul. applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 30' × 10'. (b) 21'8" × 10'. (v) 4'1" either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, tiller count and yield of grain. (iv) (a) Not contd. (b) and (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2289 lb./ac. (ii) 220.2 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	Mean	K ₀	K ₁
P ₀	2211	2437	2324	2374	2274
P ₁	2071	2437	2254	2218	2290
Mean	2141	2437	2289	2296	2282
K ₀	2113	2479			
K ₁	2169	2395			

S.E. of any marginal mean = 55.1 lb./ac.

S.E. of body of any table = 77.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(42).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of manuring Paddy with urban compost as against F.Y.M. and G.L. at different levels of N.

1. BASAL CONDITIONS :

(i) Sugarcane—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 31.8.1956/N.A. (iv) (a) Puddling with country plough and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 6" × 6". (e) N.A. (v) As per treatments. (vi) GEB—24 (medium) (vii) Irrigated. (viii) Two weedings. (ix) 28.81". (x) 24.11.1956.

1. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(50) on page 1.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2422 lb./ac. (ii) 70.0 lb./ac. (iii) All the effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2205 lb./ac.

	N ₁	N ₂	N ₃	Mean
S ₁	2230	2325	2325	2293
S ₂	2295	2526	2540	2454
S ₃	2465	2632	2680	2592
Mean	2330	2494	2515	2446

S.E. of any marginal mean = 20.2 lb./ac.
 S.E. of body of table or control mean = 35.0 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 54(90).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Ragi. (c) 40 lb./ac. of N in different forms. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./13.8.1954. (iv) (a) Puddling. (b) Transplanting. (c) 40 lb./ac. in nursery. (d) 6" between rows. (e)—. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Working push hoe twice in between rows. (ix) 26.57". (x) 1.12.1954.

2. TREATMENTS :

5 sources of 60 lb./ac. of N : S₀=Control (no manure), S₁=A/S, S₂=G.N.C., S₃=F.Y.M and S₄=G.N.C. and A/S in 2 : 1 ratio.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) 198'×181.5'. (iii) 5. (iv) (a) 39.6'×36.3'. (b) 33'×26.4'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—contd. (b) Yes. (c) No. (v) (a) and (b) No. (vi) Nil. (vii) No.

5. RESULTS :

(i) 2682 lb./ac. (ii) 326.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	2205	2430	3060	2630	3085

S.E./mean = 145.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 55(46).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Ragi. (c) 40 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 20.8.1956/N.A. (iv) (a) 3 to 4 times ploughing and puddling fertilizers on soil fertility and Paddy yield and levelling. (b) Transplanting. (c) N.A. (d) 6" between rows. (e) 2 to 3. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Rotary hoe worked in between rows after manuring. (ix) 27.20". (x) 27.11.1956.

2. TREATMENTS :

Same as in expt. no. 54(90) above.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) 39.6'×33'. (b) 33'×26.4'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Plots with A/S lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—contd. (b) Yes. (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2275 lb./ac. (ii) 155.5 lb./ac. (iii) Treatments are highly significant. (iv) Av. yield of grain in lb./ac

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	2345	2575	2550	2450	1455

S.E./mean = 69.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 55(99).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Rice. (b) Ragi. (c) 40 lb./ac. of N in different forms. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./9.8.1955. (iv) (a) Puddling. (b) Transplanting. (c) 400 lb./ac. in nursery. (d) 6" between rows. (e) —. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Working push hoe twice in between rows. (ix) 35.66". (x) 28.11.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(90) on page 3.

5. RESULTS :

(i) 2641 lb./ac. (ii) 105.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	2070	2680	2807	2890	2760

S.E./mean = 47.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 57(116).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Rice. (b) Ragi. (c) 40 lb./ac. of N in different forms. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./5.8.1957. (iv) (a) Puddling. (b) Transplanting. (c) 400 lb./ac. in nursery. (d) 6" between rows. (e) —. (v) Nil. (vi) G.E.B—24. (vii) Irrigated. (viii) Working push hoe. (ix) 29.5". (x) 3.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(90) on page 3.

5. RESULTS :

(i) 2975 lb./ac. (ii) 247.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	1597	3133	3350	3498	3295

S.E./mean = 110.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(145).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. **BASAL CONDITIONS :**

(i) (a) Sugarcane—Ragi—Rice. (b) Ragi. (c) 40 lb./ac. of N in different forms. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./6.8.1958. (iv) (a) Puddling. (b) Transplanting. (c) 400 lb./ac. in nursery. (d) 6" between rows. (e) —. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Working push hoe. (ix) 47.92". (x) 17.12.1958.

2. **TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(90) on page 3.

5. **RESULTS :**

(i) 2179 lb./ac. (ii) 471.82 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	1920	1960	2245	2440	2330

S.E./mean = 211.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(134).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of different nitrogenous fertilizers on soil fertility and Paddy yield.

1. **BASAL CONDITIONS :**

(i) (a) Sugarcane—Ragi—Paddy—Sugarcane. (b) Ragi. (c) 18 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./14, 15.8.1959. (iv) (a) Puddling the soil with cattle. (b) Transplanting. (c) 400 lb./ac. in nursery. (d) 6" between rows. (e) 2 to 3. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Hoeing twice. (ix) 22.7". (x) 22.12.1959.

2. **TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(90) on page 3.

5. **RESULTS :**

(i) 3028 lb./ac. (ii) 2205 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	2425	3115	3300	3265	3035

S.E./mean = 102.2 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(61).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of Dical Phos. on Paddy as compared to Triple Super.

1. **BASAL CONDITIONS :**

(i) (a) Sugarcane—Fallow—Paddy. (b) Sugarcane—Fallow. (c) 100 lb./ac. of N. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A./6.8.1957. (iv) (a) 4 puddlings pressing, *patti*, and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 6" × 6". (e) 2 to 3. (v) As per treatments. (vi) GEB—29 (medium). (vii) Irrigated. (viii) Working hoe twice. (ix) N.A. (x) 2.1.1958.

Crop :- Paddy.**Ref :- A.P. 54(34).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the continuous application of organic and inorganic manures and their combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Bapatla. (iii) 1.6.1954, 22.7.1954 to 26.7.1954. (iv) (a) Digging plots and trimming bunds. (b) Transplanted. (c) 20 lb./ac. (d) 6'×6'. (e) N.A. (v) As per treatment. (vi) MTU 19 (late). (vii) Irrigated. (viii) Weeded on 28.8.1954. (ix) 39.83%. (x) 28.12.1954.

2. TREATMENTS :**Main-plot treatments :**

5 sources of N : S_0 =Control (no manure), S_1 =60 lb./ac. as A/S, S_2 =60 lb./ac. as compost, S_3 =60 lb./ac. as C.M. and S_4 =60 lb./ac. as G.M.

Sub-plot treatments :

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

(1) 2 levels of P : P_0 =0 and P_1 =60 lb./ac. of P_2O_5 .

(2) 2 levels of K_2O : K_0 =0 and K_1 =60 lb./ac. of K_2O .

(3) 2 levels of Lime : L_0 =0 and L_1 =1500 lb./ac.

Treatments : 1= $P_0K_0L_0$, 2= $P_0K_1L_0$, 3= $P_1K_0L_0$, 4= $P_1K_1L_0$, 5= $P_0K_0L_1$, 6= $P_0K_1L_1$, 7= $P_1K_0L_1$ and 8= $P_1K_1L_1$.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 35.6'×15.8'. (b) 34.6'×14.8'. (v) 6'×6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) and (iii) Nil. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2712 lb./ac. (ii) (a) and (b) N.A. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	1	2	3	4	5	6	7	8	Mean
S_0	2113	2461	2546	2503	2640	2138	2324	2178	2363
S_1	3149	3221	3170	2857	2874	2929	2866	2512	2947
S_2	2451	2631	2716	2681	2478	2849	2553	2476	2604
S_3	2757	2684	2939	2788	2828	2852	2919	2778	2818
S_4	2583	2921	2925	2683	2936	2794	2871	2872	2831
Mean	2611	2784	2871	2702	2751	2712	2707	2563	2712

S.E.'s. N.A.

Crop :- Paddy (Kharif).**Ref :- A.P. 55(67).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the effect of continuous application of organic and inorganic manures and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay. (b) Refer soil analysis, Bapatla. (iii) 4.6.1955/6.7.1955. (iv) (a) Digging once. (b) Transplanted. (c) 30 lb./ac. (d) 6'×6'. (e) N.A. (v) Nil. (vi) MTU—19. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 16 to 18.12.1955.

2. TREATMENTS :**Main-plot treatments :**

5 sources of 60 lb./ac. of N : S_0 =Control, S_1 =A/S, S_2 =Compost, S_3 =C.M. and S_4 =G.M.

Sub-plot treatments :

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

- (1) 2 levels of P_2O_5 : $P_0=0$ and $P_1=60$ lb./ac. of P_2O_5 .
 (2) 2 levels of K_2O : $K_0=0$ and $K_1=60$ lb./ac. of K_2O .
 (3) 2 levels of lime : $L_0=0$, and $L_1=1500$ lb./ac. of slaked lime.

3. DESIGN :

- (i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) $35.6' \times 15.8'$.
 (b) $34.6' \times 14.8'$. (v) $6'' \times 6''$. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 2268 lb./ac. (ii) (a) 1498.2 lb./ac. (b) 459.3 lb./ac. (iii) Only interactions $L \times P$ and $L \times P \times K$ are significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	L_0	L_1	K_0	K_1	Mean
P_0	2019	2302	2385	2161	2253	2150	2298	2295	2153	2224
P_1	2157	2352	2293	2491	2271	2382	2242	2315	2309	2312
Mean	2088	2327	2339	2326	2262	2266	2270	2305	2231	2268
K_0	2221	2242	2384	2411	2270					
K_1	1955	2412	2294	2241	2254					
L_0	2165	2248	2287	2463	2167					
L_1	2011	2406	2391	2189	2357					

S.E. of difference of two

1. S marginal means = 374.5 lb./ac.
 2. P, K or L marginal means = 72.6 lb./ac.
 3. P, K or L means at the same level of S = 162.3 lb./ac.
 4. S means at the same level of P, K or L = 391.74 lb./ac.
 S.E. of body of $P \times K$, $P \times L$ or $K \times L$ table = 114.81 lb./ac.

Crop :- Paddy.**Ref :- A. P. 56(1).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the effect of continuous application of organic and inorganic manures and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

- (i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black soil. (b) Refer soil analysis, Bapatla. (iii) 13.6.1956/26.7.1956 to 29.7.1956. (iv) (a) 2, 3 ploughings. (b) Transplanted. (c) N.A. (d) $6'' \times 6''$. (e) N.A. (v) Nil. (vi) MTU—19 (medium). (vii) Irrigated. (viii) Weeding once two-months after planting. (ix) $41.5''$. (x) 19.12.1956 and 20.12.1956.

2. TREATMENTS :

Same as in expt. no. 55(67) on page 8.

3. DESIGN :

- (i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) $35.6' \times 15.8'$.
 (b) $34.6' \times 14.8'$. (v) $6'' \times 6''$. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2920 lb./ac. (ii) (a) 771.6 lb./ac. (b) 432.8 lb./ac. (iii) Only main effects due to S and P are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	L ₀	L ₁	K ₀	K ₁	Mean
P ₀	3172	2084	2798	2893	3043	2861	2735	2908	2688	2798
P ₁	3367	2353	2873	3213	3407	3025	3060	3222	3063	3042
Mean	3269	2218	2836	3053	3225	2942	2898	2965	2876	2920
K ₀	3291	2183	2981	3178	3193	3019	2912			
K ₁	3248	2255	2691	2927	3258	2867	2885			
L ₀	3299	2255	2832	3130	3198					
L ₁	3240	2183	2839	2976	3252					

S.E. of difference of two

1. S marginal means = 192.9 lb./ac.
 2. P, K or L marginal means = 68.5 lb./ac.
 3. P, K or L means at the same level of S = 153.0 lb./ac.
 4. S means at the same level of P, K or L = 221.7 lb./ac.
- S.E. of body of P×K or P×L or K×L table = 96.8 lb./ac.

Crop :- Paddy.

Ref :- A. P. 54(37).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :-To study the effect of placement and broadcasting of A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Bapatla. (iii) 1.6.1954/23.7.1954. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 3 (v) P₂O₅ at 30 lb./ac. of Super. (vi) MTU -3 (early). (vii) Irrigated. (viii) Weeding twice. (ix) 39.83%. (x) 25.12.1954.

2. TREATMENTS :

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

(1) 2 methods of application of N : M₁=Broadcasting and M₂=Placement.

(2) 3 levels of N as A/S : N₁=30, N₂=45 and N₃=60 lb./ac.

Broadcasting 4 weeks after planting and placement of $\frac{2}{3}$ N done on 22.8.1955 with clay formed into pellets and $\frac{1}{3}$ placed similarly after 4 weeks.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 13.2'×26.4'. (b) 12.2'×25.4'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Lodged due to heavy floods. (ii) Nil. (iii) Tiller count and yield of grain. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2853 lb./ac. (ii) 347.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2784 lb./ac.

	N ₁	N ₂	N ₃	Mean
M ₁	2802	2854	2812	2822
M ₂	2885	2877	2965	2909
Mean	2843	2865	2888	2865

S.E. of M marginal mean	= 100.2 lb./ac.
S.E. of N marginal mean	= 122.7 lb./ac.
S.E. of body of table	= 173.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 55(3).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :--To study the effect of placement and broadcasting of A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 22.6.1955/22.8.1955. (iv) (a) *Mummatty* digging once. (b) Transplanted. (c) 30 lb./ac. (d) 8"×8". (e) N.A. (v) As per treatments. (vi) MTU—19. (vii) Irrigated. (viii) 2 weedings. (ix) 22.5". (x) 14.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(37) on page 10.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 13.2'×26.4'. (b) 12.2'×25.4'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2706 lb./ac. (ii) 389.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Control = 2607 lb./ac.

	N ₁	N ₂	N ₃	Mean
M ₁	2861	2628	2696	2728
M ₂	2677	2862	2615	2718
Mean	2769	2745	2655	2723

S.E. of M marginal mean	= 137.8 lb./ac.
S.E. of N marginal mean	= 112.5 lb./ac.
S.E. of body of table	= 194.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(4).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :--To study the effect of placement and broadcasting of A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 10.6.1956/31.7.1956. (iv) (a) Usual ploughing. (b) Transplanted. (c) N.A. (d) 8"×8". (e) 3. (v) 4000 lb./ac. of G.L. applied on 29.7.1956 and 30.7.1956 and 150 lb./ac. of P₂O₅ as Super on 30.7.1956. (vi) MTU—3 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 41.5". (x) 13.11.1956.

2. TREATMENTS :

Same as in expt. no. 54(37) on page 10.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 13.2'×26.4'. (b) 12.2'×25.4'. (v) 6'×6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2523 lb./ac. (ii) 270.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Control = 2425 lb./ac.

	N ₁	N ₂	N ₃	Mean
M ₁	2526	2534	2508	2522
M ₂	2522	2499	2649	2556
Mean	2524	2516	2598	2539

S.E. of N marginal mean = 95.6 lb./ac.

S.E. of M marginal mean = 78.0 lb./ac.

S.E. of body of table = 135.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(35).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :—To study the effect of N and P applied at different levels on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Bapatla. (iii) 18.6.1954/12 to 14.8.1950. (iv) (a) Trimming bunds and digging plots and incorporation of manures and weeding. (b) N.A. (c) 30 lb./ac. (d) 6'×6". (e) N.A. (v) As per treatments. (vi) MTU—19 (late). (vii) Irrigated. (viii) Weeding twice at monthly intervals. (ix) 39.83". (x) 4.1.1955.

2. TREATMENTS :

Main-plot treatments :

4 levels of N as A/S: N₀=0, N₁=30, N₂=45 and N₃=60 lb./ac.

Sub-plot treatments :

4 levels of P₂O₅ : P₀=0, P₁=30, P₂=45 and P₃=60 lb./ac. P₂O₅.

N as A/S applied on 16.9.1954 and P₂O₅ as Super applied on 10.8.1954.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33'×13.2'. (b) 52'×12.2'. (v) 6'×6". (vi) Yes.

4. GENERAL :

(i) Crop lodged due to heavy rainfall. (ii) Incidence of leaf roller was noticed and was removed by dusting 5% Gammexane. (iii) Yield records were taken. (iv) (a) 1953—Contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3666 lb./ac. (ii) N.A. (iii) No effect is significant. (iv) Av. yield of grain lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	2594	3846	3802	3339	3395
P ₁	3715	3926	3819	3495	3739
P ₂	3873	4074	3961	3819	3932
P ₃	3214	4128	3350	3698	3598
Mean	3349	3994	3733	3588	3666

S.E.'s N.A.

Crop :- Paddy.**Ref :- A.P. 55(2).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the effect of N and P applied at different levels on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 17.5.1955/24.25.8.1955. (iv) (a) *Mummatty* digging once. (b) N.A. (c) 30 lb./ac. (d) 6"×6". (e) N.A. (v) Nil. (vi) MTU—19 (vii) Irrigated. (viii) Two weedings. (ix) 23.5". (x) 21.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(35) on page 12.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33'×13.2'. (b) 32'×12.2'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2022 lb./ac. (ii) (a) 573.0 lb./ac. (b) 449.0 lb./ac. (iii) Main effects of N and P and interaction N×P are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1874	1827	2257	1905	1966
P ₁	2067	1872	2436	1954	2082
P ₂	1737	1987	2413	2046	2046
P ₃	2078	2001	1973	1923	1994
Mean	1939	1922	2270	1957	2022

S.E. of difference of two

1. N marginal means = 202.6 lb./ac.
2. P marginal means = 159.0 lb./ac.
3. P means at the same level of N = 318.0 lb./ac.
4. N means at the same level of P = 342.0 lb./ac.

Crop :- Paddy.**Ref :- A.P. 56(3).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To determine the manurial requirements for high yields of Paddy.

1. BASAL CONDITIONS.

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 13.6.1956/31.8.1956. (iv) (a) Usual ploughing. (b) Transplanted. (c) N.A. (d) 6"×6". (e) 3. (v) Nil. (vi) MTU—19 (medium). (vii) Irrigated. (viii) Weeding twice. (ix) 41.5". (x) 19.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(35) on page 12.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33'×13.2'. (b) 32'×12.2'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1671 lb./ac. (ii) (a) 236.4 lb./ac. (b) 291.0 lb./ac. (iii) Only main effects N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	979	1363	1623	1511	1369
P ₁	1676	1774	1913	1907	1817
P ₂	1481	1746	2028	1694	1737
P ₃	1192	1628	2189	2035	1761
Mean	1332	1628	1938	1786	1671

S.E. of difference of two

1. N marginal means = 83.6 lb./ac.
2. P marginal means = 102.9 lb./ac.
3. P means at the same level of N = 205.8 lb./ac.
4. N means at the same level of P = 196.8 lb./ac.

Crop :- Paddy.

Site :- Agri. College Farm, Bapatla.

Ref :- A.P. 57(31).

Type :- 'M'.

Object :—To determine the optimum manurial treatments for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) F.Y.M. and A/S. (ii) (a) Alluvial soil. (b) Refer soil analysis, Bapatla. (iii) 16.8.1957—N.A. (iv) (a) Ploughing and puddling. (b) to (e) N.A. (v) Basal dressing of G.L. at 3000 lb./ac. (vi) MTU—19 (long duration). (vii) Irrigated. (viii) Hand weeding and Japanese push hoes. (ix) 40.7". (x) 15.12.1957.

2. TREATMENTS :

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

- (1) 2 levels of N: N₀=0 and N₁=45 lb./ac. as A/S.
- (2) 2 levels of P₂O₅: P₀=0 and P₁=45 lb./ac. P₂O₅ as Super.
- (3) 2 levels of K₂O: K₀=0 and K₁=45 lb./ac. as Pot. Sul.

Extra treatments: T₁=45 lb./ac. of N as F.Y.M. and T₂=Fertilizer mixture of 30 lb./ac. N+30 lb./ac. of K₂O applied before transplanting and mixture of 15 lb./ac. of N+15 lb./ac. of P₂O₅+15 lb./ac. of K₂O applied as top-dressing part before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 1.3 cents. (b) 1 cent. (v) and (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Shoot borer attack. (iii) Tiller count, height and grain and straw yield. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

2. RESULTS :

(i) 2466 lb./ac. (ii) 200.3 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is significant. (iv) Av. yield of grain in lb./ac.

$T_1=2375$ lb./ac. $T_2=2818$ lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	2101	2236	2168	2154	2183
N ₁	2601	2798	2700	2630	2769
Mean	2351	2517	2434	2392	2476
K ₀	2336	2447			
K ₁	2366	2587			

S.E. of any marginal mean = 50.0 lb./ac.

S.E. of body of any table or extra treatment mean = 70.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(61).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To assess the relative merits of B.M. and Super applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Compost at 100 C.L. + A/S at 100 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 4.7.1956 19 and 20.8.1956. (iv) (a) 2 to 3 dry ploughings and two puddlings with country plough followed by one puddling with puddle. (b) Transplanting. (c) 30 lb./ac. (d) 8" × 6". (e) 3. (v) 4000 lb./ac. of G.L. (vi) BCP—2 (late). (vii) Irrigated. (viii) 3 hand weedings. (ix) 60.92". (x) 20.1.1957.

2. TREATMENTS :

Main-plot treatments :

2 sources of P₂O₅ : S₁=B.M. and S₂=Super.

Sub-plot treatments :

3 levels of P₂O₅ : P₀=0, P₁=30 and P₂=45 lb./ac. of P₂O₅.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-p'ot. (b) N.A. (iii) 4. (iv) (a) 42' × 8'. (b) 41'6" × 7'6". (v) 9" × 4". (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of stem-borer. (iii) Yield of grain. (iv) (a) 1950—contd. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 4183 lb./ac. (ii) (a) 291.0 lb./ac. (b) 361.7 lb./ac. (iii) No main effect or interaction is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean
S ₁	3996	4142	4348	4164
S ₂	4277	4197	4133	4203
Mean	4137	4170	4241	4183

S.E. of difference of two

1. S marginal means	= 118.8 lb./ac.
2. P marginal means	= 181.0 lb./ac.
3. P means at the same level of S	= 256.0 lb./ac.
4. S means at the same level of P	= 240.0 lb./ac.

Crop :- Paddy.**Ref :- A.P. 57(20).****Site :- Rice. Res. Stn., Buchireddipalem.****Type :- 'M'.**

Object :—To assess the relative merits of B.M. and Super applied to Paddy through different methods.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Second crop paddy followed to *sesbania*. (c) 4000 lb.ac. of G.L. 10 C.L. of F.Y.M. before ploughing. 75 lb./ac. Triple Super at the time of last puddling ; A/S at 100 lb./ac. as top-dressing. (ii) (a) Sandy loam. (b) N.A. (iii) 17.7.1957 to 30, 31.8.1957. (iv) (a) Ploughed twice with iron plough, puddling twice and trimming of bunds. (b) Transplanted. (c) N.A. (d) 8"×6". (e) 2. (v) 4000 lb./ac. of G.L. (vi) BCP—1 (late). (vii) Irrigated. (viii) 3 weeding and 3 hoeings. (ix) 26.66". (x) 31.1.1958.

2. TREATMENTS :

Main-plot treatments :

2 sources of P_2O_5 : S_1 =B.M. and S_2 =Super.

Sub-plot treatments :

3 doses of P_2O_5 : $M_0=0$, $M_1=P_2O_5$ at 30 lb./ac. applied in plough furrows, $M_2=P_2O_5$ broadcast at 30 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42'×8'. (b) 4'6"×7'4". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. Lodged at pre-harvest stage. (ii) Attack of jassids—sprayed D.D.T. 50%. (iii) Height measurement and tiller count for 25 clumps at random. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2188 lb./ac. (ii) (a) 405.8 lb./ac. (b) 160.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2155 lb./ac.

	S_1	S_2	Mean
M_1	2107	2301	2204
M_2	2139	2269	2204
Mean	2123	2285	2204

S.E. of difference of two

1. S marginal means	= 202.8 lb./ac.
2. M marginal means	= 80.2 lb./ac.
3. M means at the same level of S	= 113.4 lb./ac.
4. S means at the same level of M	= 232.4 lb./ac.

Crop :- Paddy.**Ref :- A.P. 58(6).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'M'.**

Object :—To assess the relative merits of B.M. and Super applied to Paddy through different methods.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 16.7.1958/10.9.1958. (iv) (a) 3 dry ploughings. (b) Transplanted. (c) 21 lb./ac. (d) 8"×6". (e) 3. (v) 4000 lb./ac. of G.L. applied and wetland puddler worked. (vi) BCP-1 (late). (vii) Irrigated. (viii) 3 hand weedings. Push hoe working at fortnightly intervals upto shot-blade stage. (ix) 46.98%. (x) 28.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(20) on page 16.

4. GENERAL :

(i) Satisfactory during growth, lodged in the first week of December due to rains. (ii) Affected by leaf roller and stem borer. BHC 10% dusted and Endrine sprayed. (iii) Height measurement and tiller count. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2074 lb./ac. (ii) (a) 374.5 lb./ac. (b) 257.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2043 lb./ac.

	S ₁	S ₂	Mean
M ₁	2071	2186	2129
M ₂	1799	2302	2015
Mean	1935	2244	2072

S.E. of difference of two

1. M marginal means = 187.0 lb./ac.
2. S marginal means = 128.7 lb./ac.
3. S means at the same level of M = 182.1 lb./ac.
4. M means at the same level of S = 226.2 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(31).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To study the incidence of blast on Paddy against different combinations of N and K.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1956/8.8.1956. (iv) (a) 2 to 3 dry ploughings and two puddlings with country plough followed by one puddling with puddle. (b) N.A. (c) 25 lb./ac. (d) 10"×6". (e) 3. (v) As under treatments. (vi) BCP-1 (late). (vii) Irrigated. (viii) 3 hand weedings and working push hoe. (ix) 60.92%. (x) 15.1.1957.

2. TREATMENTS :

All combinations of (1) and (2) + one extra treatment (E).

(1) 2 levels of K₂O : K₁=30 and K₂=45 lb./ac.

(2) 2 levels of N as A/S : N₁=30 and N₂=45 lb./ac.

E=4000 lb./ac. of G.L. + 75 lb./ac. of P₂O₅ as Super + 100 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 8'×25'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal lodged in December, 1956. (ii) Stem-borer and leaf-roller, jassids and *cirphis* pest in epidemic form—Spraying Endrine and dusting BHC 10%. (iii) Grain and straw yield, neck infection. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 3199 lb./ac. (ii) 281.2 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

E = 3068 lb./ac.

	K ₁	K ₂	Mean
N ₁	3425	3173	3299
N ₂	3019	3312	3166
Mean	3222	3242	3232

S.E. of any marginal mean = 81.2 lb./ac.
 S.E. of body of table = 114.8 lb./ac.

Crop :- Paddy.**Ref :- A.P. 57(21).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'M'.**

Object :—To study the effect of different combinations of N and K on the incidence of blast disease on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.1957/14 and 15.8.1957. (iv) (a) Ploughed twice, puddled twice trimming of bunds and working wetland puddler. (b) Transplanting. (c) —. (d) 10'×6'. (e) 2. (v) As per treatments. (vi) BCP-1 (late). (vii) Irrigated. (viii) 3 weedings and gap filling, push hoe working were done. (ix) 26.66'. (x) 31.1.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)+one extra treatment (E)

(1) 2 levels of N as A/S : N₁=30 and N₂=45 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=30 lb./ac.

(3) 2 levels of K₂O as Pot. Sul. : K₁=30 and K₂=45 lb./ac.

E=4000 lb./ac. of G.L.+150 lb./ac. of P₂O₅ as Super+100 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 4. (iv) (a) and (b) 45'×8'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good, lodged at pre-harvest stage. (ii) Mealy bug, stem-borer and leaf-roller attack—Endrine sprayed and BHC dusted. No blast ; neck infection was severe. Helminthosporium was also noticed. (iii) Height measurement, tiller count and neck infection count were taken before harvest from a random sample of 25 clumps. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 945 lb./ac. (ii) 142.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

E = 877 lb./ac.

	P ₀	P ₁	Mean	K ₁	K ₂
N ₁	953	938	946	908	984
N ₂	998	922	960	983	938
Mean	976	930	953	945	961
K ₁	983	908			
K ₂	968	953			

S.E. of any marginal mean = 35.7 lb./ac.
S.E. of body of any table = 50.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 58(4).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To study the effect of different combinations of N and K on the incidence of blast disease on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 16.7.1958/18.9.1958. (iv) (a) Ploughed dry thrice and puddled after letting in water. Wetland puddler worked thrice. Trimming bunds and digging corners. (b) Transplanted. (c) 21 lb./ac. (d) 10"×6". (e) 3. (v) Nil. (vi) BCP—1 (late). (viii) Irrigated. (vii) 2 hand weedings push hoe worked at fortnightly intervals upto shot blade stage. (ix) 46.98". (x) 28.1.1959.

2. TREATMENTS :

Same as in expt. no. 57(21) on page 18.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 22'×92'. (iii) 4. (iv) (a) and (b) 20'×8'. (v) No. (vi) Yes.

4. GENERAL :

(i) Early establishment and growth were quite satisfactory. (ii) Paddy leaf-roller and rice stem-borer. No incidence of blast—control measures N.A. (iii) Tiller count height measurement and blast count. (iv) (a) 1955. (b) Yes. (c) No. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1897 lb./ac. (ii) 368.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

E = 2033 lb./ac.

	P ₀	P ₁	Mean	K ₁	K ₂
N ₁	1854	1926	1890	1828	1952
N ₂	1844	1899	1871	1888	1854
Mean	1849	1912	1880	1858	1903
K ₁	1854	1862			
K ₂	1844	1962			

S.E. of any marginal mean = 92.2 lb./ac.
S.E. of body of any table = 130.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(5).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To assess the relative merits of C/A/N and A/S as sources of N for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) G.L. at 4000 lb./ac.+ Ammo. Phos. to supply 30 lb./ac. of N. (ii) (a) Sandy loam. (b) N.A. (iii) 31.8.1958./11.10.1958. (iv) (a) Field ploughed dry four times ; puddled soon after letting in water ; trimming bunds and digging corners. Working wetland puddler worked forming bunds, channels and small plots sowing G.M. in nursery. (b) Transplanted. (c) 21 lb./ac. (d) 10"×6". (e) 3. (v) Nil. (vi) BCP—1. (late). (vii) Irrigated. (viii) 3 hand weedings push hoe working at fortnightly intervals upto shot-blade stage. (ix) 46.91". (x) 12.2.1959.

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 : $N_1=30$ and $N_2=45$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) $30' \times 74'$. (iii) 4. (iv) (a) and (b) $30' \times 16'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Badly affected due to late planting and early incidence of blast and borer. (ii) Attack of stem-borer and blast—control measures N.A. (iii) Height measurement and tiller count ; yield of paddy. (iv) (a) 1958—contd. (b) and (c) No. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 846 lb./ac. (ii) 145.2 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	Mean
N_1	806	896	851
N_2	862	821	842
Mean	834	858	846

S.E. of any marginal mean = 51.3 lb./ac.

S.E. of body of table = 72.6 lb./ac.

Crop :- Paddy (Kharif).

Ref. :- A.P. 55(93).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To compare the relative merits of B.M. and Super.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) Sandy loam. (b) Nil. (iii) 4.8.1955/6.9.1955. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) $10' \times 6'$. (e) 2. (v) As per treatments. (vi) BCP—2 (late). (vii) Irrigated. (viii) Weeding and gap filling. (ix) 22.95%. (x) 10.2.1956.

2. TREATMENTS :

Main-plot treatments :

2 Sources of P_2O_5 : $M_1=B.M.$ and $M_2=Super$.

Sub-plot treatments :

3 levels of P_2O_5 : $P_0=0$, $P_1=30$ and $P_2=45$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot. (b) $266' \times 8'$. (iii) 4. (iv) (a) $42' \times 8'$. (b) $40' \times 7'$. (v) 1' at the ends and $\frac{1}{2}'$ along the sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield date. (iv) (a) No. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2357 lb./ac. (ii) (a) 705.8 lb./ac. (b) 269.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean
M ₁	2343	2173	2557	2358
M ₂	2226	2433	2411	2357
Mean	2285	2303	2484	2357

S.E. of difference of two

1. M marginal means = 288.1 lb./ac.
2. P marginal means = 134.9 lb./ac.
3. P means at the same level of M = 190.8 lb./ac.
4. M means at the same level of P = 327.5 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 55(91).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'M'.**Object :- To study the incidence of blast on Paddy under different doses of N and K₂O.**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Nil. (iii) 4.8.1955/3.9.1955. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 10" × 6". (e) 2. (v) As per treatments. (vi) BCP--1 (late). (vii) Irrigated. (viii) Weeding and gap filling. (ix) 22.95". (x) 11.2.1956.

2. TREATMENTS :

T₁ = 30 lb./ac. K₂O + 30 lb./ac. of N.
 T₂ = 30 lb./ac. K₂O + 45 lb./ac. of N.
 T₃ = 45 lb./ac. K₂O + 30 lb./ac. of N.
 T₄ = 45 lb./ac. K₂O + 45 lb./ac. of N.
 E = 4000 lb./ac. of G.M. + 150 lb./ac. of P₂O₅ as Super + 100 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 137' × 8'. (iii) 6. (iv) (a) 44' × 10'. (b) 23½' × 7'. (v) 10' at the ends and 1½' at the sides. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Neck infection %. (iv) (a) 1955. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8.7 degrees. (ii) 3.45 degrees. (iii) Treatments do not differ significantly. (iv) Mean infection in degrees.

Treatment	T ₁	T ₂	T ₃	T ₄	E
Mean angle	8.6	10.2	9.4	7.3	8.2

S.E./mean = 1.41 degrees.

Crop :- Paddy (Rabi).**Ref :- A.P. 57(103).****Site :- Govt. Agri. Farm, Dindi.****Type :- 'M'.**

Object :- To study the effect of Paddy—Fertilizer—Mixtures on Paddy yield.

1: BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 2.2.1957. (iv) (a) 3 puddlings. (b) Transplanting. (c) 50 lb./ac. (d) 6" × 6". (e) 2 to 3. (v) No. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 4.00". (x) 3.5.1957.

2. TREATMENTS :

4 methods of application of manure : $M_0=0$, M_1 =At first puddle, M_2 =half at first puddle and half one month after transplanting and M_3 =One month after transplanting.
30 lb./ac. of N applied as Paddy—Fertilizer—Mixture.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) and (b) $32' \times 25'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1956—contd. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2818 lb./ac. (ii) 155.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	2069	2886	2586	3730

S.E./mean = 110.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 54(24).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :—To find out the response of different organic and inorganic manures.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Chalka (sandy loam). (b) N.A. (iii) 23.6.1954. (iv) (a) 2 dry ploughings, puddling and levelling. (b) and (c) N.A. (d) $9' \times 9'$. (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings by weeder. (ix) 43.25". (x) 8.11.1954.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments each repeated twice.

(1) 4 sources of 50 lb./ac. of N : S_1 =F.Y.M., S_2 =G.M., S_3 =G.N.C. and S_4 =A/S.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=25$ lb./ac.

T_0 =Control and $T_1=25$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) N.A. (b) $26' \times 21'$. (v) 2 rows all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1954—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1116 lb./ac. (ii) 311.2 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

$T_0=1010$ lb./ac. ; $T_1=887$ lb./ac.

	S_1	S_2	S_3	S_4	Mean
P_0	742	1772	1195	1195	1226
P_1	1277	1483	824	1112	1174
Mean	1010	1628	1010	1154	1200

S.E. of S or T marginal mean = 155.6 lb./ac.

S.E. of P marginal mean = 110.0 lb./ac.

S.E. of body of table = 220.1 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 57(104).****Site :- Govt. Agri. Farm, Dindi.****Type :- 'M'.**

Object :—To find out the response of different organic and inorganic fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after paddy. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 4.2.1957. (iv) (a) 3 puddlings. (b) Transplanting. (c) 50 lb./ac. (d) 6"×6". (e) 2 to 3. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) 4.00". (x) 3.5.1957.

2. TREATMENTS :

Same as in expt. no. 54(24) on page 22.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 26'×21'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2613 lb./ac. (ii) 245.6 lb./ac. (iii) 'Control vs. others effect' is highly significant. S effect is highly significant. Interaction S×P is significant. (iv) Av. yield of grain in lb./ac.

$$T_0=1835 \text{ lb./ac. ; } T_1=2413 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean.
P ₀	2114	2952	2912	2832	2702
P ₁	2912	3072	3191	2872	3012
Mean	2513	3012	3052	2852	2857

S.E. of P marginal mean = 86.8 lb./ac.
 S.E. of S or T marginal mean = 122.8 lb./ac.
 S.E. of body of table = 173.7 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 58(126).****Site :- Govt. Agri Farm, Dindi.****Type :- 'M'.**

Object :—To find out the response of different organic and inorganic manures on Paddy.

1. BASAL CONDITIONS :

(i) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 12.7.1958/22.8.1958, (iv) Two puddlings and levelling. (b) Transplanting. (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Working of weeders and hand weeding. (ix) 18.29". (x) 17.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments each repeated twice.

(1) 4 sources of 50 lb./ac. of N : S₁=G.N.C, S₂=G.M, S₃=Compost and S₄=A/S.(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=50 lb./ac.T₀=control and T₁=50 lb./ac. of P₂O₅ as Super.**3. DESIGN :**

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 26'×21' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1157 lb./ac. (ii) 184.4 lb./ac. (iii) Main effects of S and 'control vs. others' are highly significant. 'Extra treatment vs. others' is significant. (iv) Av. yield of grain in lb /ac.

$$T_0 = 838 \text{ lb./ac.}; T_1 = 1037 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	1516	1157	997	1396	1266
P ₁	1516	1396	878	1276	1266
Mean	1516	1276	938	1336	1266

S.E. of P marginal mean	=	65.2 lb /ac.
S.E. of S or T marginal mean	=	92.2 lb./ac.
S.E. of body of table	=	130.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(103).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :-To find out the response of different organic and inorganic manure on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments (ii) (a) Chalka. (b) N.A. (iii) 11.2.1959. (iv) (a) 3 puddings and levelling. (b) Transplanting. (c) Nil. (d) 6' × 6'. (e) 2. (v) Nil. (vi) HR-19. (vii) Irrigated. (viii) 2 weedings with rotary weeder and one hand weeding. (ix) 1.06". (x) 1.5.1959.

2. TREATMENTS :

Same as in expt. 58(126) on page 23.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 26' × 21'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954-1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1489 lb./ac. (ii) 370 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb /ac.

$$T_0 = 1227 \text{ lb./ac}; T_1 = 1541 \text{ lb./ac.}$$

	'S ₁	S ₂	S ₃	S ₄	Mean
P ₀	1536	1795	1256	1456	1511
P ₁	1775	1237	1436	1835	1571
Mean	1656	1516	1346	1646	1541

S E. of P marginal mean	=	130.8 lb./ac.
S.E. of S or T marginal mean	=	185.0 lb./ac.
S.E. of body of table	=	261.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(14).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :- To find out the response of different fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) *Chalka* soil. (b) N.A. (iii) 25.6.1959 to 29.7.1959. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR-19. (vii) Irrigated. (viii) 2 weedings after transplanting. (ix) 22.43". (x) 1.11.1959.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments (P₀ and P₁)

(1) 2 levels of P₂O₅ : P₀=0 and P₁=Super.

(2) 5 sources of N : S₀=0, S₁=Compost, S₂=G.M., S₃=G.N.C. and S₄=A/S.

Levels of N and P₂O₅ are N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) and (b) 21'×26'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield data. (iv) (a) 1956. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2189 lb./ac. (ii) 256.54 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

$$S_0P_0 = 1895 \text{ lb./ac. ; } S_0P_1 = 2124 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	2194	2752	2234	1994	2294
P ₁	2154	2892	2074	1935	2264
Mean	2174	2822	2154	1964	2279

S.E. of S marginal mean or S₀P mean = 128.3 lb./ac.

S.E. of P marginal mean = 90.7 lb./ac.

S.E. of body of table = 181.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(16).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :- To find out the response of lime along with other fertilizers.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 88 lb./ac. Urea and 125 lb./ac. Super. (ii) (a) *Chalka* soil. (b) N.A. (iii) 26.6.1959. (vi) (a) 6 puddlings. (b) Transplanting by Japanese method. (c) and (d) N.A. (e) 3. (v) Nil. (vi) HR-33 (medium). (vii) Irrigated. (viii) 4 weedings. (ix) 22.43". (x) 3.11.1959.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : N₀=0 and N₁=4½ lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=3 lb./ac.

(3) 2 levels of lime : C₀=0 and C₁=5 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 1. (iv) (a) and (b) 43'×20.3'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory due to sulphite injury. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—N.A. (b) N.A. (c) Nil. (v) to (vi) Nil.

RESULTS :

(i) 1057 lb./ac. (ii) 555.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	Mean	P ₀	P ₁
C ₀	861	1385	1123	1347	899
C ₁	836	1148	992	1311	673
Mean	848	1266	1057	1328	986
P ₀	1085	1571			
P ₁	611	961			

S.E. of any marginal mean = 277.9 lb./ac.
S.E. of body of any table = 393.0 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A. P. 54(66).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :- To determine the optimum requirement of organic manure with a basal dose of Super and A/S for Paddy.

1. BASAL CONDITIONS :

(i) (a) Rice—Rice. (b) Rice. (c) As per treatments. (ii) (a) Heavy black clay. (b) N.A. (iii) 20.5.1954/22.7.1954. (iv) (a) Water puddling thrice, levelling. (b) Transplanting. (c) to (e) N.A. (v) 60 lb./ac. of P₂O₅ as Super before transplanting and 45 lb./ac. of N as A/S as top dressing. (vi) MTU-1 (medium). (vii) Irrigated. (viii) Weeding twice. (ix) 55.4°. (x) 27.11.1954.

2. TREATMENTS:

All combinations of (1) and (2) + a control (no manure)

(1) 3 sources of N : S₁=F.Y.M., S₂=G.L and S₃=Compost.

(2) 3 levels of N : N₁=2500, N₂=5000 and N₃=7500 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 24' × 38'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) The crop had excessive vegetative growth at shot blade stage. (ii) Nil. (iii) Yield, height measurement and tiller count at preflowering and drought stages (iv) (a) 1953—1954. (b) Yes. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) Nil. (vii) As the crop prelodged the yield of the individual plots was affected.

5. RESULTS :

(i) 1687 lb./ac. (ii) 158.3 lb./ac. (iii) Main effect of S and interaction N × S are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control = 1716 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1720	1608	1778	1702
N ₂	1859	1561	1671	1697
N ₃	1752	1570	1644	1655
Mean	1777	1580	1697	1684

S.E. of any marginal mean = 30.5 lb./ac.
S.E. of body of table or control mean = 52.8 lb./ac.

Crop :- Paddy (Sarava).
Site :- Agri. Res. Stn., Maruteru.

Ref :- A. P. 56(58).
Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2000 lb./ac. of G.L. (ii) (a) Clay. (b) N.A. (iii) 21.6.1956/28.7.1956. (iv) (a) Puddling thrice. (b) N.A. (c) 30 lb./ac. (d) 10"×6". (e) N.A. (v) 30 lb./ac. of P₂O₅ as Super to the entire experimental area applied before planting. Broadcast and puddled. (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding thrice. Interculture thrice with Japanese push hoe. (ix) 53.35". (x) 10.12.1956.

2. TREATMENTS :

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

(1) 2 sources of N : S₁=A/S and S₂=A/C.

(2) 2 levels of N : N₁=30 lb./ac. and N₂=45 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 17'6"×26'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) In the early stage the crop was affected with silver shoot (Gall fly). (iii) Yield, tiller count and height measurement. (iv) (a) 1956—contd. (b) No. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2118 lb./ac. (ii) 190.6 lb./ac. (iii) 'Only control vs. others effect' is significant. (iv) Av. yield of grain in lb./ac.

Control = 1897 lb./ac.

	S ₁	S ₂	Mean
N ₁	2166	2220	2193
N ₂	2094	2209	2152
Mean	2130	2215	2173

S.E. of N or S marginal mean = 67.4 lb./ac.

S.E. of body of table or control mean = 95.3 lb./ac.

Crop :- Paddy (Sarava).
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 57(55).
Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 7.6.1957/13.7.1957. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Raised seed-bed with Japanese method of planting. (c) 35 lb./ac. (d) 8"×6". (e) 2. (v) Nil. (vi) GEB—24 (late). (vii) Irrigated. (viii) Interculturing thrice with Japanese push hoe. (ix) 36.03". (x) 2.12.1957.

2. TREATMENTS :

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

(1) 2 levels of N : N₁=30 and N₂=45 lb./ac.

(2) 2 sources of N : S₁=A/S and S₂=A/C.

Extra treatments are : E₀=Control (no manure), and E₁=30 lb./ac. of P₂O₅ as Super. All four combinations received a basal dressing E₁.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 17½'×26'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield, tiller count and height measurement. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2811 lb./ac. (ii) 206.8 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

$$E_0 = 2884 \text{ lb./ac. and } E_1 = 2848 \text{ lb./ac.}$$

	S ₁	S ₂	Mean
N ₁	2776	2968	2872
N ₂	2561	2824	2693
Mean	2669	2896	2783

$$\text{S.E. of N or S marginal mean} = 73.1 \text{ lb./ac.}$$

$$\text{S.E. of body of table or control mean} = 103.4 \text{ lb./ac.}$$

Crop :- Paddy (Sarava).

Ref :- A.P. 58(20).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Objec :—To study the effect of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2000 lb./ac. of G.L.+35 lb./ac. of Ammo. Phos. (ii) (a) Heavy black clay. (b) N.A. (iii) 7.7.1958/4.8.1958. (iv) (a) Puddled thrice and levelled. (b) Sown and transplanted. (c) 35 lb./ac. (d) 10' × 6'. (e) 2. (v) Nil. (vi) GEB—24 (late). (vii) Irrigated. (viii) Gap-filling and weeding was done. Japanese push hoe was worked for four times. (ix) 37.87'. (x) 19.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(55) on page 27.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height measurement and yield data. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2609 lb./ac. (ii) 169.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

$$E_0 = 2441 \text{ and } E_1 = 2681 \text{ lb./ac.}$$

	S ₁	S ₂	Mean
N ₁	2561	2681	2621
N ₂	2681	2609	2645
Mean	2621	2645	2633

$$\text{S.E. of N or S marginal mean} = 59.9 \text{ lb./ac.}$$

$$\text{S.E. of body of table} = 84.7 \text{ lb./ac.}$$

Crop :- Paddy (*Dalua*).

Ref :- A.P. 58(21).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4000 lb./ac. of G.L.+112 lb./ac. of B.M. and 50 lb./ac. of A/S
(ii) (a) Heavy black clay. (b) N.A. (iii) 29.12.1958/31.1.1959. (iv) (a) Puddled thrice, levelled. (b) dibbling and transplanting (c) 40 lb./ac. (d) 8"×4". (e) 2. (v) Nil. (vi) MTU—15 (early). (vii) Irrigated. (viii) Gap-filling and weeding was done. Japanese push hoe was worked for three times at an interval of 15 days. (ix) 7.12". (x) 7.5.1959.

2. TREATMENTS :

Same as in expt. no. 57(55) on page 27.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×14'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Blast attack was noted—Bordeaux mixture was sprayed. (iii) Height measurement and yield data. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2148 lb./ac. (ii) 273.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

$E_0=2152$ and $E_1=2178$ lb./ac.

	S ₁	S ₂	Mean
N ₁	2048	2204	2126
N ₂	2152	2152	2152
Mean	2100	2178	2139

S.E. of N or S marginal mean = 96.8 lb./ac.

S.E. of body of table = 136.9 lb./ac.

Crop :- Paddy (*Dalua*).

Ref :- A.P. 59(87).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) G.L. at 2000 lb./ac.+Super at 150 lbs./ac. and A/S at 50 lb./ac. (ii) (a) Clayey. (b) N.A. (iii) 22.12.1959/16.2.1960 (vi) (a) 3 puddlings and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 6"×6". (e) 2. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (ii) Gap-filling and weeding was done month after planting. (ix) 2.81". (x) 11.5.1960.

2. TREATMENTS :

Same as in expt. no. 57(55) on page 27.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 30'×14'. (b) 29'×13'. (v) One row kept. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe blast attack was noticed and it was controlled by spraying of 1% Bordeaux mixture. (iii) Yield data. (iv) (a) 1956—1960. (b) Yes, from 1958 onwards. (c) Nil (v) to (vii) Nil.

5. RESULTS :

(i) 2217 lb./ac. (ii) 118.0 lb./ac. (iii) 'Extra treatments vs. others' effect is highly significant. (iv) Av. yield of grain in lb./ac.

$E_0=1827$ lb./ac. and $E_1 = 1906$ lb./ac.

	S ₁	S ₂	Mean
N ₁	2441	2397	2419
N ₂	2354	2376	2365
Mean	2397	2387	2392

S.E. of N or S_i marginal mean = 41.7 lb./ac.
S.E. of body of table = 59.0 lb./ac.

Crop :- Paddy (Sarava).

Ref. :- A.P. 59(88).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clayey soil. (b) N.A. (iii) 6.5.1959/30.6.1959. (iv) (a) 3 puddings and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 10"×6". (e) 2. (v) As per treatments. (vi) GEB—24 (late). (vii) Irrigated. (viii) Gap-filling and weeding was done one month after transplanting. (ix) 45.44". (x) 9.12.1959.

2. TREATMENTS :

Same as in expt. no. 57(55) on page 27.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 15'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Yield data. (iv) (a) 1956—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1198 lb./ac. (ii) 50.8 lb./ac. (iii) 'Only control vs. others' effect is significant. (iv) Av. yield of grain in lb./ac.

$E_0=1257$ lb./ac. and $E_1=1191$ lb./ac.

	S ₁	S ₂	Mean
N ₁	1219	1153	1186
N ₂	1200	1168	1184
Mean	1209	1161	1185

S.E. of N or S marginal mean = 17.9 lb./ac.
S.E. of body of table = 25.4 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(70).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To study the effect of different sources and levels of N, P and lime 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) 12.5.1954/22, 23.7.1954. (iv) (a) Ploughings, puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—19(late). (vii) Irrigated. (viii) 2 weeding. (ix) 55.4". (x) 17.12.1954.

2. TREATMENTS :

Main-plot treatments :

5 basal manures : S_0 =Nil S_1 =A/S, S_2 =Compost, S_3 =C.M. and S_4 =G.M.

Sub-plot treatments :

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

(1) 2 levels of K_2O as Pot. Sul. : K_0 =0 and K_1 =60 lb./ac.

(2) 2 levels of P_2O_5 as Super : P_0 =0 and P_1 =60 lb./ac.

(3) 2 levels of lime : L_0 =0 and L_1 =1500 lb./ac.

N applied at 60 lb./ac. in the main-plots.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 89'6" × 46'3" (main-plot). (b) 43' × 11', (sub-plot). (v) One row of each sub-plot was left off. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield data. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4072 lb./ac. (ii) (a) 1163 lb./ac. (b) 531 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean	L_0	L_1	P_0	P_1
K_0	4092	3850	4092	4199	4201	4087	4074	4099	4040	4135
K_1	4072	3704	4122	4111	4279	4057	4035	4080	4042	4071
Mean*	4082	3777	4107	4155	4240	4072	4055	4089	4041	4103
P_0	4089	3745	4037	4167	4170	4041	3973	4109		
P_1	4075	3809	4177	4143	4310	4103	4137	4069		
L_0	4107	3700	4061	4129	4277	4055				
L_1	4057	3854	4153	4181	4203	4089				

S.E. of difference of two

1. S marginal means	= 290.8 lb./ac.
2. P, K or L marginal means	= 83.9 lb./ac.
3. P, K or L means at the same level of S	= 187.7 lb./ac.
4. S means at the same level of P, K or L	= 319.3 lb./ac.
S.E. of body of $P \times K$, $P \times L$ or $K \times L$ table	= 83.9 lb./ac.

Crop :- Paddy (*Dalua*).

Ref :- A. P. 54(71).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :- To study the effect of different sources and levels of N, P and lime 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) 10.12.1954/10, 11.2.1955. (iv) (a) Ploughings, puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Weeding twice. (ix) Nil. (x) 10, 12.5.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(70) on page 30.

5. RESULTS :

(i) 2641 lb./ac. (ii) (a) 391.2 lb./ac. (b) 217.2 lb./ac. (iii) Main effect of S is highly significant. Effects of L, P and K are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2159	3001	2343	2538	3192	2648	2656	2638	2563	2731
K ₁	2175	3015	2359	2480	3148	2636	2626	2644	2547	2723
Mean	2167	3008	2351	2509	3170	2641	2641	2641	2555	2727
P ₀	2054	2943	2227	2497	3054	2555	2557	2553		
P ₁	2280	3073	2475	2521	3286	2727	2725	2729		
L ₀	2163	3021	2313	2525	3182	2641				
L ₁	2171	2995	2389	2492	3158	2641				

S.E. of difference of two

1. S marginal means	= 97.8 lb./ac.
2. P, K or L marginal means	= 34.3 lb./ac.
3. P, K or L means at the same level of S	= 76.8 lb./ac.
4. S means at the same level of P, K or L	= 111.8 lb./ac.
S.E. of body of P×K, P×L or K×L table	= 97.8 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 55(64).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black clay. (b) N.A. (iii) 11.5.1955/25, 26.7.1955. (iv) (a) Water let in ; puddled thrice and levelled. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—19 (late). (vii) Irrigated. (viii) Weeding twice. (ix) 43 61". (x) 11, 12.12.1955.

2. TREATMENTS :

Main plot treatments :

5 B.D. of N : S₀=Nil. S₁=30 lb./ac. as A/S, S₂=60 lb./ac. of N as compost, S₃=60 lb./ac. of N as C.M. and S₄=60 lb./ac. of N as G.M.

Sub-plot treatments :

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

- (1) 2 levels of P₂O₅ as Super : P₀=0 and P₁=60 lb./ac.
- (2) 2 levels of K₂O as Pot. Sul. : K₀=0 and K₁=60 lb./ac.
- (3) 2 levels of lime : L₀=0 and L₁=1500 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 46'3"×89'6" (main-plot). (b) 11'×43' (sub-plot). (v) Nil. (vi) Yes.

4. GENERAL :

(i) Crop satisfactory. No lodging. (ii) Nil. (iii) Tiller count, height measurement, ear-head measurement, grain and chaff counts and yield Samples of grain, straw, chaff, stalk and soil sent for analysis. (iv) (a) 1953 —contd, (b) Yes. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2596 lb./ac. (ii) (a) 282.8 lb./ac. (b) 215.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2497	2676	2618	2498	2532	2564	2589	2539	2541	2587
K ₁	2515	2751	2682	2566	2624	2628	2652	2603	2610	2645
Mean	2506	2713	2650	2532	2578	2596	2620	2571	2576	2616'
P ₀	2446	2750	2607	2486	2590	2576	2615	2537		
P ₁	2566	2676	2693	2578	2566	2616	2626	2605		
L ₀	2515	2716	2722	2578	2572	2620				
L ₁	2497	2710	2578	2486	2584	2571				

S.E. of difference of two

- | | |
|---|----------------|
| 1. S marginal means | = 70.7 lb./ac. |
| 2. P, K or L marginal means | = 34.1 lb./ac. |
| 3. P, K or L means at the same level of S | = 76.2 lb./ac. |
| 4. S means at the same level of P, K or L | = 88.9 lb./ac. |
| S.E. of body of P×K, P×L or K×L table | = 34.1 lb./ac. |

Crop :- Paddy (*Dalua*).

Ref :- A.P. 55(65).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To study the effect of different sources and levels of N, P and lime 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) 15.12.1955/15.2.1956. (iv) (a) N.A. (b) Bulk planting. (c) to (e) N.A. (v) As per treatments. (vi) MTU—15 (early). (viii) Weeding twice. (ix) 43.61" (x) 16, 17.5.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 55(64) on page 32.

5. RESULTS :

(i) 2521 lb./ac. (ii) (a) 356.4 lb./ac. (b) 260.9 lb./ac. (iii) Main effects of S, P, K and L are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2058	2822	2284	2295	3126	2517	2453	2581	2374	2660
K ₁	2076	2860	2191	2376	3126	2526	2505	2547	2415	2636
Mean	2067	2841	2237	2335	3126	2521	2479	2564	2394	2648
P ₀	1897	2759	2087	2174	3057	2394	2377	2413		
P ₁	2237	2924	2387	2497	3195	2648	2581	2715		
L ₀	2059	2758	2203	2295	3080	2479				
L ₁	2075	2924	2272	2376	3172	2564				

S.E. of difference of two

1. S marginal means	= 89.1 lb./ac.
2. P, K or L marginal means	= 41.2 lb./ac.
3. P, K or L means at the same level of S	= 92.2 lb./ac.
4. S means at the same level of P, K or L	= 110.9 lb./ac.
S.E. of body of P×K, P×L or K×L table	= 41.2 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 56(74).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'M'.**

Object :- To study the effect of different sources and levels of N, P and lime 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) 27.8.1956/14, 15.7.1956. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—19 (late). (vii) Irrigated. (viii) Weeding twice. (ix) 53.36%. (x) 15, 16.12.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(64) on page 32.

4. GENERAL :

(i) Good. (ii) There was hispa attack against which gammexane was dusted. There was stem borer attack to a considerable extent. (iii) Yield data. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2602 lb./ac. (ii) (a) 223.1 lb./ac. (b) 204.3 lb./ac. (iii) Main effect of S is highly significant. Main effect of L, P and K are significant. All interactions are significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2573	2526	2791	2582	2601	2614	2626	2602	2543	2685
K ₁	2473	2570	2755	2622	2529	2590	2650	2530	2597	2583
Mean	2523	2548	2773	2602	2565	2602	2638	2566	2570	2634
P ₀	2417	2535	2727	2560	2610	2570	2599	2541		
P ₁	2629	2559	2819	2644	2520	2634	2677	2591		
L ₀	2595	2634	2859	2610	2496	2633				
L ₁	2451	2462	2687	2594	2634	2566				

S.E. of difference of two

1. S marginal means	= 55.8 lb./ac.
2. P, K or L marginal means	= 32.3 lb./ac.
3. P, K or L means at the same level of S	= 72.2 lb./ac.
4. S means at the same level of P, K or L	= 75.6 lb./ac.
S.E. of body of P×K, P×L or K×L table	= 32.3 lb./ac.

Crop :- Paddy (Dalua).**Ref :- A.P. 56(75).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'M'.**

Object :- To study the effect of different sources and levels of N, P and lime 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) 24.12.1956/23, 24.2.1957. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Weeding twice. (ix) Nil. (x) 21 to 23.5.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(70) on page 30.

5. RESULTS :

(i) 2665 lb./ac. (ii) (a) 462.6 lb./ac. (b) 214.2 lb./ac. (iii) All effects are significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2475	2670	2577	2710	2923	2671	2640	2702	2627	2715
K ₁	2451	2834	2601	2640	2773	2659	2594	2724	2605	2713
Mean	2463	2752	2589	2675	2848	2665	2617	2713	2616	2714
P ₀	2359	2785	2497	2611	2831	2616	2571	2661		
P ₁	2567	2719	2681	2739	2865	2714	2663	2765		
L ₀	2371	2686	2549	2651	2831	2617				
L ₁	2555	2818	2629	2699	2865	2713				

S.E. of difference of two

- | | |
|---|-----------------|
| 1. S marginal means | = 115.7 lb./ac. |
| 2. P, K or L marginal means | = 33.9 lb./ac. |
| 3. P, K or L means at the same level of S | = 75.7 lb./ac. |
| 4. S means at the same level of P, K or L | = 127.5 lb./ac. |
| S.E. of body of P×K, P×L or K×L table | = 33.9 lb./ac. |

Crop :- Paddy (Sarava).

Ref :- A.P. 57(51).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To find the effect of basal dose of N with and without P, K and lime and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 2.6.1957/23.7.1957. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 300 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—19(late). (vii) Irrigated. (viii) Inter-culturing twice with Japanese push hoe uniformly to all treatments. (ix) 36.03%. (x) 7, 8.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(64) on page 32.

4. GENERAL :

(i) Good. (ii) Stem-borer—controlled by the spray of Endrine at 0.037%. (iii) Tiller count, height measurement and yield data. (iv) (a) 1953—1957. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2158 lb./ac. (ii) (a) 782.9 lb./ac. (b) 250.7 lb./ac. (iii) Main effect of L is highly significant. Interaction K×L and S effect are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	2020	1899	2394	2342	2181	2168	2178	2157	2129	2206
K ₁	1894	1957	2481	2406	2003	2148	2243	2054	2125	2171
Mean	1957	1928	2437	2374	2092	2158	2211	2107	2127	2189
P ₀	1899	1969	2458	2302	2009	2127	2184	2070		
P ₁	2014	1888	2417	2446	2175	2189	2236	2141		
L ₀	1997	1928	2515	2429	2181	2210				
L ₁	1916	1928	2359	2319	2003	2106				

S.E. of difference of two

1. S marginal means = 195.7 lb./ac.
 2. P, K or L marginal means = 39.6 lb./ac.
 3. P, K or L means at the same level of S = 88.6 lb./ac.
 4. S means at the same level of P, K or L = 205.5 lb./ac.
- S.E. of body of P×K, P×L or K×L table = 39.6 lb./ac.

Crop :- Paddy (*Dalua*).

Ref :- A.P. 57(52).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To find the effect of basal dose of N with and without P, K and lime and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 31.12.1957, 1.8.1958/19.2.1958. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Interculturing twice with Japanese push hoe uniformly to all treatments. (ix) Nil. (x) 22 to 28 5.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(64) on page 32.

4. GENERAL :

Same as in expt. no. 57(51) on page 35.

5. RESULTS :

(i) 2199 lb./ac. (ii) (a) 752.0 lb./ac. (b) 299.1 lb./ac. (iii) Main effect of P is highly significant. Effect of L is significant. Other effects and interactions are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	L ₀	L ₁	P ₀	P ₁
K ₀	1807	2187	2124	2153	2527	2159	2097	2221	2097	2221
K ₁	1813	2315	2130	2175	2763	2239	2185	2293	2157	2321
Mean	1810	2251	2127	2164	2645	2199	2141	2257.	2127	2271
P ₀	1692	2223	2032	2055	2636	2127	2061	2193		
P ₁	1928	2279	2222	2273	2654	2271	2221	2321		
L ₀	1744	2189	2026	2175	2573	2141				
L ₁	1876	2313	2228	2153	2717	2257				

S.E. of difference of two

- | | | |
|---|---|---------------|
| 1. S marginal means | = | 188.0 lb./ac. |
| 2. P, K or L marginal means | = | 47.3 lb./ac. |
| 3. P, K or L means at the same level of S | = | 105.7 lb./ac. |
| 4. S means at the same level of P, K or L | = | 202.3 lb./ac. |
| S.E. of body of P×K, P×L or K×L table | = | 47.3 lb./ac. |

Crop :- Paddy (*Dalua*).**Site :- Agri. Res. Stn., Maruteru.**

Ref :-

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 30.12.1957/19.2.1958. (iv) (a) Puddling thrice, levelling, digging corners and trimming bunds. (b) Raised seed beds ; Japanese method of planting. (c) 35 lb./ac. (d) 10"×6". (e) 2. (v) Nil. (vi) MTU—15 (early). (vii) Irrigated. (viii) Intercultivations twice with Japanese push hoe. (ix) Nil. (x) 18.5.1958.

2. TREATMENTS :**Main-plot treatments :**2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=30$ lb./ac.**Sub-plot treatments :**All combinations of (1) and (2)+a control (N_0S_0).(1) 2 levels of N : $N_1=30$ and $N_2=45$ lb./ac.(2) 3 sources of N : $S_1=A/S$, $S_2=C/A/N$ and $S_3=A'C$.**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 45'×6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, height measurement and yield data. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1735 lb./ac. (ii) (a) 229.7 lb./ac. (b) 200.0 lb./ac. (iii) Main effect of NS is highly significant. Effect of P is significant. Interaction $NS \times V$ is not significant. (iv) Av. yield of grain in lb./ac.

	N_0S_0	N_1S_1	N_1S_2	N_1S_3	N_2S_1	N_2S_2	N_2S_3	Mean
P_0	1170	1664	1412	1502	1896	1492	1865	1571
P_1	1293	2057	1623	2086	2117	1714	2097	1898
Mean	1381	1860	1517	1794	2007	1603	1981	1735

S.E. of difference of two

- | | | |
|------------------------------------|---|---------------|
| 1. P marginal means | = | 86.5 lb./ac. |
| 2. NS marginal means | = | 100.0 lb./ac. |
| 3. NS means at the same level of P | = | 141.4 lb./ac. |
| 4. P means at the same level of NS | = | 144.6 lb./ac. |

Crop :- Paddy (*Sarava*).**Site :- Agri. Res. Stn., Maruteru.**

Ref :- A.P. 58(18).

Type :- 'M'.

Object :—To find out the effect of A/S and C/A/N applied at different times on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 2000 lb./ac. of G.L.+35 lb./ac. of A/S. (ii) (a) Heavy black clay. (b) N.A. (iii) 5.7.1958/3.8.1958. (iv) (a) Puddled thrice and levelled. (b) Dibbled and transplanted. (c) 35 lb./ac. (d) 10"×6". (e) 2. (v) As per treatments. (vi) MTU—10 (late). (vii) Irrigated. (viii) Gap-filling and weeding was done. Japanese push hoe was worked for four times. (ix) 32.01". (x) 12.12-1958.

2. TREATMENTS :

5 methods of applying N : $M_0=0$, M_1 =Full dose a fortnight after planting, $M_2=\frac{1}{2}$ a fortnight after planting and $\frac{1}{2}$ at one month after planting, $M_3=\frac{1}{4}$ a fortnight after planting + $\frac{1}{2}$ one month after planting of + $\frac{1}{4}$ applied a week before planting and $M_4=\frac{1}{2}$ at planting and the other × one month later.

N applied at 40 lb./ac. as C/A/N in M_1 , M_2 , M_3 and as A/S in M_4 . 30 lb./ac. of P_2O_5 was applied as B.D. except in control.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 14'×31'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height measurement and yield data. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2969 lb./ac. (ii) 146.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	3036	2961	2911	3020	2919

S.E./mean = 59.8 lb./ac.

Crop :- Paddy (*Dalua*).

Ref :- A. P. 58(19).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To find out the effect of A/S and C/A/N applied at different times on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4000 lb./ac. of G.L.+112 lb./ac. of B.M. and 50 lb./ac. of A/S. (ii) (a) Heavy black clays. (b) N.A. (iii) 29.12.1958/30.1.1959. (iv) (a) Puddled thrice and levelled. (b) Dibbled and transplanted. (c) 35 lb./ac. (d) 8"×4". (e) 2. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Gap-filling and weeding was done. Japanese push hoe was worked for three times, at interval of 15 days. (ix) 7.12". (x) 6.5.1959.

2. TREATMENTS :

Same as in expt. no. 58(18) on page 37,

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 22'×18'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Blast attack was noticed—Bordeaux mixture was sprayed. (iii) Height measurements and yield data. (iv) (a) and (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2207 lb./ac. (ii) 235.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1998	2181	2273	2328	2255

S.E./mean = 96.2 lb./ac.

Crop :- Paddy (Dalua).**Ref :- A.P. 59(86).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'M'.**

Object :—To test the efficacy of C/A/N as nitrogenous fertilizer to Paddy crop in comparison with A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Heavy black clayey. (b) N.A. (iii) 22.12.1959/15.2.1960. (iv) (a) 3 puddlings and breaking of clods. (b) Transplanted. (c) 30 lb./ac. (d) 6"×6". (e) 2. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Gap-filling, weeding and intercultivation. (ix) 2.81". (x) 12.5.1960.

2. TREATMENTS :

Same as in expt. no. 58(18) on page 37.

DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 22'×98'. (iii) 6. (iv) (a) 22'×18'. (b) 21'×17'. (v) One row on all sides. (vi) Yes

4. GENERAL :

(i) Satisfactory. (iii) Severe attack of paddy blast was controlled by spraying 1% Bordeaux mixture. (iii) Yield data. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2338 lb./ac. (ii) 164.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	1749	2278	2369	2455	2837

S.E./mean = 67.1 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 59(89).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'M'.**

Object :—To test the efficacy of C/A/N as nitrogenous fertilizer to Paddy crop in comparison with A/S.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) N.A. (ii) (a) Heavy black clay. (b) N.A. (iii) 27.6.1959. (iv) (a) 3 puddlings and breaking of clods. (b) Transplanting. (c) 35 lb./ac. (d) 10"×6". (e) 2. (v) As per treatments. (vi) MTU—10 (late). (vii) Irrigated. (viii) Gap-filling and weeding done one month after planting. (ix) 45.39". (x) 5.12.1959.

2. TREATMENTS

Same as in expt. no. 58(18) on page 37.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 30'×83'. (iii) 6. (iv) (a) and (b) 15'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3385 lb./ac. (ii) 469.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	3404	3404	3437	3356	3324

S.E./mean = 191.5 lb./ac.

Crop :- Paddy (*Dalu*).

Ref :- A.P. 54(68).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :-To find the best method of application of phosphatic manures to Paddy either by direct or indirect application with G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super applied to G.M. as per treatments. (ii) (a) Heavy black clay. (b) N.A. (iii) 19.12.1953/6.2.1954. (iv) (a) Water let, puddled thrice and levelled. (b) Transplanted and bulk planting. (c) 300 lb./ac. (d) and (e) N.A. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 0.22" (Dec. to May). (x) 4.5.1954.

2. TREATMENTS :

Main plot treatments :

2 G.M. crop: $G_1 = \text{Dhaincha}$ and $G_2 = \text{Sannhemp}$.

Sub-plot treatments :

3 manurial treatments: $M_1 = \text{G.M. + Paddy without } P_2O_5$, $M_2 = \text{G.M. + 45 lb./ac. of } P_2O_5$ to Paddy crop and $M_3 = 45 \text{ lb./ac. to G.M. + Paddy crop}$.

Dhaincha and sannhemp sown on 24.11.1953 in the standing paddy crop of the main crop paddy and the G.M. ploughed *in situ*.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 22'x90'. (v) No. (vi) Yes.

4. GENERAL :

(i) Growth and germination satisfactory for sannhemp. *Dhaincha* failed completely. Paddy crop in Sannhemp plots was satisfactory. (ii) Nil. (iii) Straw yield. (iv) (a) 1954—1956. (b) Yes. (c) N.A. (v) (a) (b) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2847 lb./ac. (ii) (a) 321.1 lb./ac. (b) 237.6 lb./ac. (iii) Only G effect is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
G_1	2271	2337	2349	2319
G_2	3371	3384	3366	3374
Mean	2821	2861	2858	2847

S.E. of difference of two

1. G marginal means = 131.1 lb./ac.
2. M marginal means = 118.8 lb./ac.
3. M means at the same level of G = 163.0 lb./ac.
4. G means at the same level of M = 189.2 lb./ac.

Crop :- Paddy (*Sarava*).

Ref :- A.P. 54(67).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :-To find out the merits and demerits of application of phosphatic manure [to Paddy applied directly and indirectly with G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. crop. (c) As per treatments. (ii) (a) Clay (b) N.A. (iii) 12.5.1954/11, 12.7.1954. (iv) (a) 3 ploughings, trimming bunds, and levelling. (b) Transplanting and bulk planting. (c) to (e) N.A. (v) Nil. (vi) MTU—5 (late). (vii) Irrigated. (viii) 2 Weedings. (ix) 55.40". (x) 2, 3.12.1954.

TREATMENTS :

Main-plot treatments :

2 G.M. crop : $G_1 = \text{Sesbania}$ and $S_2 = \text{Phillipesara}$.

Sub-plot treatments :

3 manurial treatments : $M_1 = \text{G.M. followed by Paddy with no } P_2O_5$, $M_2 = \text{G.M.} + 45 \text{ lb./ac. of } P_2O_5$ as Super applied to Paddy crop and $M_3 = 45 \text{ lb./ac. of } P_2O_5$ applied to G.M. followed by Paddy (indirect method).

G.M. was puddled *in situ* after estimation in every plot. G.M. sown on 8.3.1954. The estimated yield of G.M. are : *Sesbania* : 17206 lb./ac. to 39422 lb./ac. and *Phillipesara* : 871 to 15681 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 24' x 99'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count and height measurements were recorded. Grain and straw samples sent for analysis. (iv) (a) 1953—1956. (b) Yes. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3385 lb./ac. (ii) (a) 406.9 lb./ac. (b) 171.6 lb./ac. (iii) Only the interaction $M \times G$ is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
G_1	3330	3380	3278	3329
G_2	3233	3513	3575	3440
Mean	3282	3447	3427	3385

S.E. of difference of two.

1. G marginal means = 135.6 lb./ac.
2. M marginal means = 70.0 lb./ac.
3. M means at the same level of G = 99.0 lb./ac.
4. G means at the same level of M = 157.8 lb./ac.

Crop :- Paddy (*Sarava*).

Ref :- A.P. 55(54).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :—To find out merits and demerits of application of phosphatic manures to Rice directly with G.M. and indirectly applied to the G.M. crop in single crop wet lands.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy followed by G.M. crop. (c) Super at 45 lb./ac. P_2O_5 applied to the G.M. crop as per schedule. (ii) (a) Clay. (b) N.A. (iii) 11.5.55/16, 17.7.55. (iv) (a) Ploughing thrice, trimming bunds, digging corners and levelling. (b) Transplanting. (c) —. (d) Bulk planting. (e) N.A. (v) As per treatments. (vi) MTU—5. (vii) Irrigated. (viii) Weeding twice. (ix) 43.61". (x) 29.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(67) on page 40.

G.M. puddled *in situ* after estimation in every plot. G.M. sown on 18.3.1955. The estimated yield of green matter in the plots are : *Sesbania* : 5227 lb. to 34848 lb./ac.; *Phillipesara* : 0 to 20,909 lb./ac.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(67) on page 40.

5. RESULTS :

(i) 2567 lb./ac. (ii) (a) 417.4 lb./ac. (b) 117.9 lb./ac. (iii) Only interaction $G \times M$ is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
G ₁	2676	2602	2517	2598
G ₂	2441	2551	2615	2536
Mean	2558	2577	2566	2567

S.E. of difference of two

1. G marginal means = 139.1 lb./ac.
2. M marginal means = 48.1 lb./ac.
3. M means at the same level of G = 68.0 lb./ac.
4. G means at the same level of M = 149.7 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(65).

Site :- Agri. Res. Stn., Marutera.

Type :- 'M'.

Object :—To find out the best method of application of phosphatic manures to Paddy crop by direct and indirect application to preceding G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super at 45 lb./ac. of P₂O₅ applied to G.M. as per treatments. (ii) (a) Clay. (b) N.A. (iii) 12.5.1954/19.7.1954. (iv) (a) Ploughing thrice, trimming bunds, digging corners and levelling. (b) Transplanting and bulk planting. (c) to (e) N.A. (v) As per treatments. (vi) MTU—5 (late). (vii) Irrigated. (viii) Weeding twice. (ix) 53.40°. (x) 4.12.1954.

2. TREATMENTS :

Same as in expt. no. 54(68) on page 40.

G.M. were puddled in *situ* after estimation in every plot. G.M. sown on 28.4.1954. Estimated yield of G.M. in the plots is : *Dhaincha* : 8, 118 lb. to 28, 314 lb./ac. *Sannhemp* : 1, 100 lb. to 2200 lb./ac.

3. DESIGN :

Same as in expt. no. 54(68) on page 40.

4. GENERAL :

Same as in expt. no. 54(67) on page 40.

5. RESULTS :

(i) 3528 lb./ac. (ii) (a) 140.4 lb./ac. (b) 217.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
G ₁	3581	3493	3462	3512
G ₂	3586	3424	3622	3544
Mean	3584	3459	3542	3528

S.E. of difference of two

1. G marginal means = 57.3 lb./ac.
2. M marginal means = 108.7 lb./ac.
3. M means at the same level of G = 153.8 lb./ac.
4. G means at the same level of M = 137.8 lb./ac.

Crop :- Paddy (Dalua).

Ref :- A.P. 54(64).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :- To find out the best method of application of phosphatic manures to Paddy either by direct or indirect application to preceding green manure.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed G.M. (c) Super at 45 lb./ac. of P_2O_5 applied to G.M. as per treatments. (ii) (a) Clay. (b) N.A. (iii) 12.12.1954/21, 22.2.1955. (iv) (a) Ploughing thrice, trimming bunds, digging corners, levelling. (b) Transplanting and bulk planting. (c) to (e) N.A. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) Weeding twice. (ix) 3.24°. (x) 18.5.1955.

2. TREATMENTS :

Same as in expt no. 54(68) on page 40.

G.M. puddled *in situ* after estimation in each plot. G.M. sown on 30.11.1954 in the standing crop of main crop Paddy. The estimated yield of green matter ranged from 2831 to 6525 lb./ac. of sannhemp and from 1504 to 4574 lb./ac. of *dhanicha*.

3. DESIGN :

Same as in expt no. 54(68) on page 40.

4. GENERAL :

Same as in expt. no. 54(67) on page 40.

5. RESULTS :

(i) 2626 lb /ac. (ii) (a) 200.6 lb./ac. (b) 148.1 lb./ac. (iii) Only main effect of G is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
G ₁	2299	2376	2305	2327
G ₂	2822	3014	2937	2924
Mean	2561	2695	2621	2626

S.E. of difference of two

1. G marginal mean = 81.9 lb./ac.
2. M marginal means = 74.1 lb./ac.
3. M means at the same level of G = 104.7 lb./ac.
4. G means at the same level of M = 118.3 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 55(56).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'M'.

Object :- To find out the best method of application of phosphate manures to Paddy either by direct or by indirect method to preceding G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super Phosphate at 945 lb./ac. of P_2O_5 applied to G.M. crop as per schedule. (ii) (a) Clay. (b) N.A. (iii) 11.5.1955/26.7.1955. (iv) (a) Ploughing thrice, trimming bunds, digging corners, levelling and transplanting. (b) Bulk planting. (c) to (e) N.A. (v) G.M. as per treatments. (vi) MTU—5 (late). (vii) Irrigated. (viii) Weeding twice. (ix) 43.61°. (x) 7.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(68) on page 40.

G.M. were applied and puddled *in situ* after estimation in every plot. G.M. sown on 8.5.1955. Estimated yield of green matter in the plots ranges from 5226 lb./ac. to 12194 lb./ac. in *Dhanicha* and from 0 to 7400 lb./ac. in sannhemp.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(67) on page 40.

5. RESULTS :

(i) 2598 lb./ac. (ii) (a) 204.6 lb./ac. (b) 66.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
G ₁	2609	2558	2673	2613
G ₂	2530	2634	2585	2583
Mean	2569	2596	2629	2598

S.E. of difference of two

1. G marginal means = 83.5 lb./ac.
2. M marginal means = 33.2 lb./ac.
3. M means at the same level of G = 46.9 lb./ac.
4. G means at the same level of M = 91.9 lb./ac.

Crop :- Paddy (*Dalua*).**Ref :- A.P. 55(55).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'M'.**

Object:—To find out the best method of application of phosphatic manures to Paddy either by direct or by indirect method.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super at 45 lb./ac. of P₂O₅ applied to G.M. crop as per treatments. (ii) (a) Clay. (b) N.A. (iii) 21.12.1955/18.2.1956. (iv) (a) Ploughing thrice, trimming bunds, digging corners and levelling. (b) Bulk planting. (c) to (e) N.A. (v) As per treatments. (vi) MTU—15 (early) (vii) Irrigated. (viii) 3 weedings. (ix) 4.90". (x) 12.5.1956.

2. TREATMENTS :

Same as in expt. no. 54(68) on page 40.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(67) on page 40.

5. RESULTS :

(i) 2604 lb./ac. (ii) (a) 199.0 lb./ac. (b) 172.3 lb./ac. (iii) Only main effect of G is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
G ₁	2827	2810	2893	2843
G ₂	2354	2365	2376	2365
Mean	2591	2588	2634	2604

S.E. of difference of two

1. G marginal means = 81.2 lb./ac.
2. M marginal means = 86.2 lb./ac.
3. M means at the same level of G = 121.8 lb./ac.
4. G means at the same level of M = 128.4 lb./ac.

Crop :- Paddy (Sarava).
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 56(56).
Type :- 'M'.

Object :—To find out the merits and demerits of application of phosphatic manures to Paddy directly and indirectly.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super at 45 lb./ac. of P_2O_5 applied to G.M. crop as per treatments. (ii) (a) Clay. (b) N.A. (iii) 22.5.1956/10, 11.7.1956. (iv) (a) Ploughing thrice, trimming bunds, digging corners and levelling. (b) Transplanting and bulk planting. (c) to (e) N.A. (v) G.M.—As per treatments. (vi) MTU—10 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 53.76%. (x) 29.11.1956 and 1.12.1956.

2. TREATMENTS :

3 manurial treatments : M_1 =G.M. without P_2O_5 , M_2 =G.M.+ 45 lb./ac. of P_2O_5 as Super to Paddy crop and M_3 =45 lb./ac. of P_2O_5 as Super to G.M. followed by Paddy. Where the G.M. is *Sesbania* :

G.M. was puddled *in situ* after estimation in every plot. G.M. was sown on 25.3.1956. The yield of green matter ranges from 4066 to 3078 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 12. (iv) (a) and (b) 24'×99'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count and height measurements. Grain and straw samples were sent for analysis. (iv) (a) 1953—1956. (b) Yes. (c) N.A. (v) (a) Agri. Res. Stn., Samalkot. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2997 lb./ac. (ii) 226.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2952	3012	3028

S.E./mean = 65.4 lb./ac.

Crop :- Paddy (Dalua).
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 57(12).
Type :- 'M'.

Object :—To find out the best method of application of phosphatic manures to Paddy either by direct or indirect application to preceding G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy followed by G.M. (c) Super phosphate at 45 lb./ac. P_2O_5 to G.M. crop as per schedule. (ii) (a) Clay. (b) N.A. (iii) 10.1.1957/14, 15.2.1957. (iv) (a) Ploughing thrice and trimming bunds, digging corners, levelling and transplanting. (b) Bulk planting. (c) to (e) N.A. (v) G.M. as per treatments. (vi) MTU—15 (early) (vii) Irrigated. (viii) 2 weedings. (ix) 2.14%. (x) 9, 10.5.1957.

2. TREATMENTS :

Same as in expt. no. 56(56) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 22'×90'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count and height measurement. Grain and straw samples sent for analysis. (iv) (a) 1953—1956. (b) Yes. (c) N.A. (v) (a) Agri. Res. Stn., Samalkot. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2830 lb./ac. (ii) 24.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatments	M ₁	M ₂	M ₃
Av. yield	2790	2873	2821

S.E./mean = 8.7 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 58(61).

Site :- Agri. Res. Instt. Rajendranagar.

Type :- 'M'.

Object : -To study the effect of different placements of chemical fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*), (b) N.A. (iii) 22.12.1958/23.1.1959. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) As per treatments. (vi) HR -19 (medium). (vii) Irrigated. (viii) One manuring and 2 weedings. (ix) 0.5". (x) 29.4.1959.

2. TREATMENTS :

15 manurial treatments : M₀=No manure, M₁=45 lb./ac. of N in puddle, M₂=45 lb./ac. of N smeared, M₃=22 lb./ac. of N smeared+23 lb./ac. of N at first weeding, M₄=22 lb./ac. of N in puddle+23 lb./ac. of N at first weeding, M₅=22 lb./ac. of P₂O₅ in puddle, M₆=22 lb./ac. of P₂O₅ smeared, M₇=M₁+M₅, M₈=M₁+M₆, M₉=M₂+M₅, M₁₀=M₂+M₆, M₁₁=M₃+M₅, M₁₂=M₃+M₆, M₁₃=M₄+M₅, and M₁₄=M₄+M₆.

Sources of N and P₂O₅ are N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 2. (iv) (a) 1/33.33 ac. (b) 1/34.25 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrine sprayed as preventive measure. (iii) Grain yield. (iv) (a) 1958-1959. (b) Yes. (c) N.A. (v) (a) Rudrur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1610 lb./ac. (ii) 174.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	830	1841	1267	1464	1892	634	993	2380
Treatment	M ₈	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	
Av. yield	1866	1712	1318	2089	1935	1883	2055	

S.E./mean = 123.4 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(55).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object : -To study the effect of different placements of chemical fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Red sandy loam (*chalka*), (b) N.A. (iii) 16.6.1958/12.7.1958. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) As per treatments. (vi) HR-19 (medium). (vii) Irrigated. (viii) One manuring and two weedings. (ix) 27.9". (x) 27.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(61) above.

5. RESULTS :

(i) 2378 lb./ac. (ii) 263.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	1815	2312	1798	2363	2603	2038	2397	2911
Treatment	M ₈	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	
Av. yield	2757	2312	1815	2586	2551	2808	2603	

S.E./mean = 186.1 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 59(79).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of placement of different chemical fertilizer on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 1.6.1959/11.7.1959. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) N.A. (vi) HR—19 (medium). (vii) Irrigated. (viii) One hand weeding. (ix) 26". (x) 7.10.1959.

2. TREATMENTS :

Same as in expt. no. 58(61) on page 46.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 50'×25'. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) and (vii) Nil.

5. RESULTS :

(i) 4839 lb./ac. (ii) 268.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	3694	4704	3659	4809	5297	4147	48.9	5924
Treatment	M ₈	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	
Av. yield	5111	4704	3694	5262	5192	5.15	5297	

S.E./mean = 189.9 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(54).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of Plantomine as an activisor of organic manures like F.Y.M. and G.N.C. for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) Red sandy loam (*chalka*). (b) N.A. (iii) 16.6.1958/16.7.1958. (iv) (a) 3 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium) (vii) Irrigated. (viii) 2 weedings. (ix) 27.9". (x) 28.10.1958.

2. TREATMENTS :

18 manurial treatments : M₀=Control (no manure), M₁=45 lb./ac. of N as F.Y.M. M₂=45 lb./ac. of N as G.N.C., M₃=M₁+Plantomine, M₄=M₂+Plantomine, M₅=22.5 lb./ac. N as F.Y.M.+Plantomine, M₆=22.5 lb./ac. of N, as G.N.C.+Plantomine, M₇=Plantomine, alone. M₈=Plantomine+22 lb./ac. of P₂O₅, M₉=Plantomine +11 lb./ac. of P₂O₅, M₁₀=M₁+22 lb./ac. of P₂O₅, M₁₁=M₂+22 lb./ac. of P₂O₅, M₁₂=M₁+M₈, M₁₃=M₂+M₈, M₁₄=M₁+M₉, M₁₅=M₂+M₉, M₁₆=M₁+11 lb./ac. of P₂O₅ and M₁₇=M₂+11 lb./ac. of P₂O₅.

25 lb./ac. of Plantomine is given.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 1/43.48 ac. (b) 1/45.45 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No insect attack was observed—Endrine sprayed as a preventive measure. (iii) Grain yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2071 lb./ac. (ii) 298.5 lb./ac. (iii) Treatment differences are significant. (vi) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Av. yield	1829	2022	2477	1375	2375	1829	2568	1954	1659
Treatment	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	M ₁₅	M ₁₆	M ₁₇
Av. yield	1920	1443	2420	2125	2091	2034	2386	2170	2602

S E /mean = 211.1 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 58(62).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of Plantomine as an activisor of organic manures like F.Y.M. and G.N.C. for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 7.12.1958/17.1.1959. (iv) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 0.3". (x) 18.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(51) on page 47.

5. RESULTS :

(i) 1232 lb./ac. (ii) 184.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Av. yield	614	795	1909	852	1613	1011	1579	727	898
Treatment	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	M ₁₅	M ₁₆	M ₁₇
Av. yield	932	1148	1727	1318	1773	875	1773	864	1773

S.E./mean = 130.2 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 59(80).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of Plantomine as an activisor of organic manures like F.Y.M. and G.N.C. for Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 1.6.1959/10.7.1959. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 26.0". (x) 5.10.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(54) on page 47.

5. RESULTS :

(i) 1236 lb./ac. (ii) 246.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Av. yield	750	1205	1341	989	1625	1080	1466	784	1114
Treatment	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃	M ₁₄	M ₁₅	M ₁₆	M ₁₇
Av. yield	909	1068	1636	1500	1409	1068	1625	1250	1432

S.E./mean = 174.4 lb./ac.

Crop :- Paddy (Abi).**Ref :- A.P. 54(77).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'M'.**

Object :- To study the effect of phosphate on paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) N.A./27.7.1954. (iv) (a) One ploughing and 2 to 3 puddlings. (b) Transplanting. (c) —. (d) 9" x 6". (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 29 and 30.10.1954.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12
P ₂ O ₅ applied as basic dose	0	200	0	0	200	100	0	0	100	200	0	0
N applied every season	0	50	0	50	50	50	50	50	50	50	50	50
P ₂ O ₅ applied every season	0	37.5	37.5	25	12.5	25	37.5	50	37.5	25	75	100

N applied as A/S and P₂O₅ as Super in lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/47.6 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1905 lb./ac. (ii) 274.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	26	2905	500	714	2917	2690	881	1774	2702	2798	2310	2643

S.E./mean = 137.2 lb./ac.

Crop :- Paddy (Tabi).**Ref :- A.P. 55(73).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'M'.**

Object :- To study the effect of phosphate on paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil. (b) N.A. (iii) N.A./27.1.1955. (iv) (a) One ploughing and 2 to 3 puddlings. (b) Transplanting. (c) —. (d) 9" x 6". (e) 2 (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Two weedings. (ix) N.A. (x) 21.5.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(77) above.

5. RESULTS :

(i) 2002 lb./ac. (ii) 207.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	238	2476	988	1940	2250	2119	2226	2274	2333	2333	2298	2548

S.E./mean = 103.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(75).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of phosphate on Paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil. (b) N.A. (iii) 18.6.1957/17.7.1957. (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) 24.10.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(77) on page 49.

5. RESULTS :

(i) 1266 lb./ac. (ii) 336.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	331	1531	1081	1269	1500	1175	1137	1537	1144	1369	1737	1387

S.E./mean = 168.4 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 57(38).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of phosphate on Paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) N.A. (iii) 19.12.1957/29.1.58. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) As per treatments. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 7.5.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(77) on page 49.

5. RESULTS :

(i) 1234 lb./ac. (ii) 337.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	169	1363	744	1100	888	1419	1213	1594	1300	1587	1381	2050

S.E./mean = 168.9 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(57).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of phosphate on paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) N.A. (iii) 16.6.1958/19.7.1958. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR-19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 27.9°. (x) 23.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(77) on page 49.

5. RESULTS :

(i) 621.5 lb./ac. (ii) 158.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	150	719	475	381	525	569	563	694	619	681	863	1219

S.E./mean = 79.4 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 58(60).

Site :- Agri. Res. Inst., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of phosphate on paddy and its residual effect on the subsequent Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 45 lb./ac. of N as A/S applied to all the plots except one and three. (ii) (a) Black soil. (b) N.A. (iii) 22.12.1958/25.1.1959. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) No manure was applied to study the residual effects. (vi) HR-19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 0.5°. (x) 4.5.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(77) on page 49.

4. GENERAL :

(i) Not satisfactory. (ii) Endrine sprayed as a preventive measure. (iii) Yield data. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rudrur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 336.9 lb./ac. (ii) 73.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	156.2	375.0	418.8	231.2	262.5	287.5	243.8	262.5	312.5	450.0	456.3	587.5

S.E./mean = 36.7 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 54(78)

Site :- Agri. Res. Inst., Rajendranagar.

Type :- 'M'.

Object :—To study the relative effect of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (chalka) (b) N.A. (iii) N.A.—1st week of July 1954. (iv) (a) One ploughing and 2 puddlings. (b) Transplanting. (c) Nil. (d) 9°×6°. (e) 2. (v) Nil. (vi) HR-19. (vii) Irrigated (viii) Weeding. (ix) N.A. (x) 13.10.1954.

2. TREATMENTS :

All the combinations of (1) and (2)

- (1) 5 sources of nitrogenous manures : S_0 =No manure, S_1 =50 lb./ac. of N as G.M., S_2 = 50 lb./ac. of N as A/S, S_3 = 50 lb./ac. of N as F.Y.M., S_4 =50 lb./ac. of N as G.N.C.
 (2) 2 levels of P_2O_5 : P_0 =0, P_1 =25 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/52.7 ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) In repl. II the crop under 4 treatments was affected due to very fast percolation, these plots being located at the verge of an abrupt fall. In these plots only 4% of the seedlings established.

5. RESULTS :

(i) 2403 lb./ac. (ii) 605.7 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	1976	2451	2793	2266	2477	2392
P_1	2213	2925	2345	2372	2213	2414
Mean	2095	2688	2569	2319	2345	2403

S.E. of S marginal mean = 191.5 lb./ac.
 S.E. of P marginal mean = 302.8 lb./ac.
 S.E. of body of table = 428.3 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 55(72).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the relative effect of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (*chalka*) (b) N.A. (iii) N.A./12.1.1955. (iv) (a) One ploughing and 2 puddlings. (b) Transplanting. (c) Nil. (d) 9" × 6". (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 19.4.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(78) on page 51.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Crop failed due to lack of water supply.

5. RESULTS :

(i) 1731 lb./ac. (ii) 59.4 lb./ac. (iii) Main effects of S and P are highly significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	474	1924	2082	1028	2108	1523
P_1	553	2345	2556	1133	3109	1939
Mean	514	2134	2319	1080	2609	1731

S.E. of S marginal mean	= 18.8 lb./ac.
S.E. of P marginal mean	= 29.7 lb./ac.
S.E. of body of table	= 42.0 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 57(70).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :- To study the relative effect of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (*chalka*) (b) N.A. (iii) 18.6.1957/17.7.1957. (iv) (a) 4 puddlings. (b) Transplanting. (c) N.A. (d) 8" x 8". (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigation (viii) 2 weedings. (ix) N.A. (x) 25.10.1957.

2. TREATMENTS :

All the combinations of (1) and (2)

(1) 5 sources of nitrogenous manures : $S_0=0$, $S_1=G.M.$, $S_2=A/S$, $S_3=F.Y.M.$ and $S_4=G.N.C.$

(2) 2 levels of application of P_2O_5 as Super : $P_0=0$ and $P_1=25$ lb./ac.

N applied at 50 lb./ac. A/S and G.N.C. applied in two doses. G.M., F.Y.M. and P_2O_5 applied at second puddle. All manures broadcast.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) 1/50 ac. (b) 1/52.7 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) A spray was given as a precautionary measure. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1235 lb./ac. (ii) 253.4 lb./ac. (iii) Main effect of S is highly significant. Main effect of P and interaction $S \times P$ are not significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	663	1825	1163	1163	1187	1200
P_1	1025	1687	1375	975	1287	1270
Mean	844	1756	1269	1069	1237	1235

S.E. of S marginal mean	= 126.7 lb./ac.
S.E. of P marginal mean	= 80.1 lb./ac.
S.E. of body of table	= 179.2 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 57(72).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :- To study the relative effect of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 19.12.1957/31.1.1958. (iv) (a) 4 puddlings. (b) Transplanted. (c) N.A. (d) 8" x 8". (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Two weedings. (ix) N.A. (x) 3.5.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt no. 57(70) above:

5. RESULTS :

(i) 831 lb./ac. (ii) 233.1 lb./ac. (iii) Main effect of S is highly significant. Main effect of P is significant. Interaction S×P is not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₁	263	1421	1039	329	605	731
P ₂	447	1329	1302	381	1197	931
Mean	355	1375	1171	355	901	831

S.E. of S marginal mean = 116.5 lb./ac.
 S.E. of P marginal mean = 73.7 lb./ac.
 S.E. of body of table = 164.8 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(56).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the relative effects of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (*chalka*). (b) N.A. (iii) 16.6.1958/10.7.1958. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19(medium). (vii) Irrigated. (viii) 2 weedings. (ix) 27.9°. (x) 23.10.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(70) on page 53.

4. GENERAL :

(i) Good. (ii) No insect attack was observed—Endrine sprayed as a preventive measure. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes (c) Nil. (v) (a) Rudrur and Warangal. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2716 lb./ac. (ii) 823.1 lb./ac. (iii) Main effects of S and P are significant. Interaction S×P is not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	2053	2960	2605	2079	2974	2534
P ₁	2513	3368	2947	2947	2710	2897
Mean	2283	3164	2776	2513	2842	2716

S.E. of S marginal mean = 161.5 lb./ac.
 S.E. of P marginal mean = 102.2 lb./ac.
 S.E. of body of table = 228.5 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 58(65).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the relative effects of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 7.12.1958/14.1.1959. (iv) (a) 4 puddlings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 0.3". (x) 19.4.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(70) on page 53.

4. GENERAL :

(i) Good. (ii) No insect attack was observed—Endrine sprayed as preventive measure. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) Rudrur and Warangal. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1735 lb./ac. (ii) 316.1 lb./ac. (iii) Main effects of S is highly significant. Main effect of P and interaction S×P are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	842	2408	1868	1368	1868	1671
P ₁	999	2605	2092	1395	1908	1799
Mean	921	2507	1980	1382	1888	1735

S.E. of S marginal mean = 158.1 lb./ac.

S.E. of P marginal mean = 99.9 lb./ac.

S.E. of body of table = 223.5 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 58(113).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the relative effect of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 7.12.1958/ N.A. (iv) (a) 1 ploughing and 2 puddlings. (b) Transplanting. (c) Nil. (d) 9"×6". (e) 2. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 19.4.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(70) on page 53.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1738 lb./ac. (ii) 316.5 lb./ac. (iii) Main effect of S is highly significant. Main effect of P and interaction S×P are not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	843	1370	2411	1871	1871	1673
P ₁	1001	1397	2609	1910	2095	1802
Mean	922	1384	2510	1891	1983	1738

S.E. of S marginal mean = 100.1 lb./ac.

S.E. of P marginal mean = 158.3 lb./ac.

S.E. of body of table = 223.8 lb./ac.

Crop :- Paddy (Abi).**Ref :- A.P. 59(78).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'M'.**

Object:—To study the relative effects of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 1.6.1959/3.7.1959. (iv) (a) 4 puddings and 2 weedings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 1 weeding and puddings. (ix) 26.0°. (x) 5.10.1959.**2. TREATMENTS and 3. DESIGN :**

Same as in expt. no. 57(70) on page 53.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rudrur and Warangal. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1866 lb./ac. (ii) 236.0 lb./ac. (iii) Main effects of S and P are not significant. Interaction S×P is not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	1658	2013	1974	1316	2026	1797
P ₁	1737	1934	2132	1868	2000	1934
Mean	1698	1974	2053	1592	2013	1866

S.E. of S marginal mean = 118.0 lb./ac.

S.E. of P marginal mean = 74.6 lb./ac.

S.E. of body of table = 166.9 lb./ac.

Crop :- Paddy (Tabi).**Ref :- A.P. 59(43).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'M'.**

Object:—To study the relative effects of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (*chalka*) (b) N.A. (iii) 24.12.1959/29.1.1960. (iv) (a) 4 puddings, 2 weedings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR - 19 (medium). (vii) Irrigated. (ix) and (x) N.A.**2. TREATMENTS to 3. DESIGN :**

Same as in expt. no. 57(70) on page 53.

5. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rudrur and Warangal. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1967 lb./ac. (ii) 128.3 lb./ac. (iii) Main effects of S and P are highly significant. Interaction S×P is not significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	961	2237	2039	1711	2421	1874
P ₁	1092	2539	2316	1816	2539	2060
Mean	1026	2388	2177	1763	2480	1967

S.E. of S marginal mean	=	64.2 lb./ac.
S.E. of P marginal mean	=	40.6 lb./ac.
S.E. of body of table	=	90.7 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 54(79).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 3.6.1954/N.A. (iv) (a) 1 ploughing and 2 puddlings. (b) Transplanting. (c) Nil. (d) 9'×6'. (e) 2. (v) Nil. (vi) HR—35. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 6.12.1954.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
t ₁	—	N	—	—	½N	½N	—	¾N	½N+½P
t ₂	—	—	N	—	½N	—	½N	¾N	½N+½P
t ₃	—	—	—	N	—	½N	¾N	¾N	—

N as A/S applied at 45 lb./ac. and P applied at 45 lb./ac. of P₂O₅. t₁=application before planting, t₂=40 days after planting and t₃=80 days after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 1/50 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3492 lb./ac. (ii) 437.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	2813	3638	3838	3638	3738	3563	3888	3225	3088

S.E./mean = 218.9 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 55(74).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*Chalka*). (b) N.A. (iii) 20.1.1955. (iv) (a) 1 ploughing and 3 puddlings. (b) Broadcasting. (c) to (e) N.A. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 12 to 13.5.1955.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
t ₁	—	N	—	—	½N	½N	—	¾N	½N+½P
t ₂	—	—	N	—	½N	—	½N	¾N	½N+½P
t ₃	—	—	—	N	—	½N	½N	¾N	—

N as A/S applied at 45 lb./ac. and P applied at 45 lb./ac. of P_2O_5 . t_1 =application before broadcasting, t_2 =30 days after broadcasting and t_3 =50 days after broadcasting.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 1/50 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of thrips—Endrine sprayed. Slight attack of Helminthosporium—Perenox sprayed. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1433 lb./ac. (ii) 240.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1063	1400	1425	1588	1600	1575	1525	1500	1225

S.E./mean = 120.5 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 57(71).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 3.6.1957/27.6.1957. (iv) (a) 4 puddlings. (b) Transplanted. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 28.11.1957.

2. TREATMENTS :

Same as in expt. no. 54(79) on page 57.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/47.6 ac. (b) 1/50 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying was done as precautionary measure. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rudrur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS ;

(i) 2122 lb./ac. (ii) 315.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	2037	2581	2006	1950	2387	2025	1969	2200	1944

S.E./mean = 157.6 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 58(37).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 18.1.1958. (iv) (a) 4 puddlings. (b) Broad casting. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 3.5.1958.

2. TREATMENTS :

same as in expt. no. 55(74) on page 57.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/47.6 ac (b) 1/50 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rudrur. (b) Nil (vi) and (vii) Nil.

5. RESULTS :

(i) 1406 lb./ac. (ii) 309.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1070	1438	1225	1288	1413	1505	1600	1655	1463

S.E./mean = 154.9 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 59(77).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M':

Object :- To study the comparative efficacy of Urea as manure and as spray in different concentrations to Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) *Chalka*. (b) N.A. (iii) 1.6.1959/3.7.1959. (iv) (a) 4 puddlings and 2 weedings. (b) to (e) N.A. (v) Urea as manure is applied in puddle at time planting. (vi) HR—19 (medium). (vii) Irrigated. (viii) 1 weeding and 1 puddling. (ix) 26.0%. (x) 5.10.1959.

2. TREATMENTS :

All combinations of (1), (2) and (3) + 3 extra treatments

(1) 3 levels of N as Urea applied at puddling : $N_0=0$, $N_1=22.5$ and $N_2=45$ lb./ac.

(2) 3 levels of spray of Urea (100 gallons/ac.): $S_0=1$, $S_1=2$ and $S_3=3$ sprays.

(3) 3 concentrations of Urea spray : $C_0=1\%$, $C_1=2\%$ and $C_2=3\%$

3 extra treatments : N_0 , N_1 and N_2 as in (1) above

3. DESIGN :

(i) 3^3 confd design with 3 extra treatments in each block. (ii) (a) 12 plots/block ; 3 block/replication. (b) N.A. (iii) 1. (iv) (a) 1/45.4 ac. (b) 1/47.6 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1669 lb./ac. (ii) 240.1 lb./ac. (iii) Main effects of N is significant. Main effects of S and C are not significant. Interactions $N \times S$, $N \times C$ and $S \times C$ are not significant. Effect of 'extra treatment vs. others' is significant. (iv) Av. yield of grain in lb./ac.

$N_0=1285$; $N_1=1535$; $N_2=1804$ lb./ac.

	N_0	N_1	N_2	Mean	C_0	C_1	C_2
S_0	1517	1753	1703	1657	1398	1670	1906
S_1	1558	1698	1884	1713	1833	1510	1796
S_2	1492	1791	2008	1763	1925	1725	1641
Mean	1522	1747	1865	1711	1719	1635	1781
C_0	1662	1651	1844				
C_1	1275	1743	1887				
C_2	1631	1848	1864				

S E. of N, S or C marginal mean = 80.0 lb./ac.
 S E. of body of table = 138.6 lb./ac.
 S.E. of extra treatment mean = 138.6 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 57(73).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To compare the efficacy of different sources of N with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 18.6.1957/15.7.1957. (iv) (a) 4 puddings. (b) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 26.10.1957.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
S	—	—	—	S_1	S_1	S_1	S_1	S_1	S_1	S_2	S_2	S_2	S_2	S_2	S_2	S_3	S_3	S_3
N	—	—	—	$\frac{1}{2}N$	$\frac{1}{2}N$	$\frac{1}{2}N$	N	N	N	$\frac{1}{2}N$	$\frac{1}{2}N$	$\frac{1}{2}N$	N	N	N	$\frac{1}{2}N$	$\frac{1}{2}N$	N
P	—	$\frac{1}{2}P$	P	—	$\frac{1}{2}P$	P	—	$\frac{1}{2}P$	P	—	$\frac{1}{2}P$	P	—	$\frac{1}{2}P$	P	—	P	P

$S_1=A/S$, $S_2=A/N$, $S_3=Urea$. N applied at 60 lb./ac. as S and P_2O_5 at 30 lb./ac. as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 1/45.4 ac. (b) 1/50 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spray was given as a precautionary measure. (iii) Grain yield. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1041 lb./ac. (ii) 212.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	600	750	975	1038	1363	1150	1363	1113	1313
Treatment	10	11	12	13	14	15	16	17	18
Av. yield	975	750	900	950	888	1463	888	1025	1225

S.E./mean = 150.0 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 57(74).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To study the effect of Dical. Phos. on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*chalka*). (b) N.A. (iii) 18.6.1957/16.7.1957. (iv) (a) 4 puddlings. (b) to (c) N.A. (v) Nil. (vi) HR—19(medium). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 26.10.1957.

2. TREATMENTS :

T₁=No manure (control).

T₂=45 lb./ac. of N as A/S.

T₃=T₂+25 lb./ac. of P₂O₅ as Dical. Phos.

T₄=T₂+25 lb./ac. of P₂O₅ as Super.

Half dose of N was supplied at planting and other half after a month.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 1/27.8 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) A spray was given as precautionary measure. (iii) Grain yield. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1189 lb./ac. (ii) 243.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄
Av. yield	1065	1162	1310	1218

S.E./mean = 99.5 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 54(45).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To test the direct and indirect application of phosphate through G.M. crops on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) As per treatments. (ii) (a) Red sandy loam. (b) N.A. (iii) N.A./25.1.1954. (iv) (a) Usual ploughing and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×4". (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding. (ix) 0.8%. (x) 21.4.1958.

2. TREATMENTS :

T₁=Control.

T₂=Sannhemp followed by paddy.

T₃=Sannhemp receiving 15 lb./ac. of P₂O₅ followed by paddy.

T₄=T₂+15 lb./ac. of P₂O₅ at planting.

T₅=T₂+7.5 lb./ac. of P₂O₅ at planting+7.5 lb./ac. of P₂O₅ and 15 lb./ac. of N at weeding.

T₆=T₂+15 lb./ac. of P₂O₅ at planting+15 lb./ac. of N at weeding.

T₇=T₂+15 lb./ac. of P₂O₅ and 15 lb./ac. of N at planting.

T₈=T₃+15 lb./ac. of N at planting.

T₉=T₃+15 lb./ac. of N at weeding.

N as A/S and P₂O₅ as Super. Since it was not possible to raise the G.M. crop in *Tabi* season, 30 lb./ac. of N as G.N.C. was used in place of G.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) and (iii) Nil. (iv) (a) 1951—1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 2295 lb./ac. (ii) 488 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈	T ₉
Av. yield	1413	1800	1913	2213	2600	2338	2738	2663	2975

S.E./mean = 244 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 54(46).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To test the direct and indirect application of phosphate through G.M. crops on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) As per treatments. (ii) (a) Red sandy loam. (b) N.A. (iii) N.A./20.7.1954. (iv) (a) Usual ploughings and levelling. (b) Transplanted. (c)—. (d) 6"×4". (e) N.A. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Weeding. (ix) 27.61". (x) 28.10.1954.

2. TREATMENTS :

T₁=Control.

T₂=Sannhemp followed by paddy.

T₃=Sannhemp receiving 15 lb./ac. of P₂O₅ followed by paddy.

T₄=T₂+15 lb./ac. of P₂O₅ at planting.

T₅=T₂+7.5 lb./ac. of P₂O₅ at planting+7.5 lb./ac. of P₂O₅ and 15 lb./ac. of N at weeding.

T₆=T₂+15 lb./ac. of P₂O₅ at planting+15 lb./ac. of N at weeding.

T₇=T₂+15 lb./ac. of P₂O₅ and 15 lb./ac. of N at planting.

T₈=T₃+15 lb./ac. of N at planting.

T₉=T₃+15 lb./ac. of N at weeding.

N applied as A/S and P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2971 lb./ac. (ii) 590 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈	T ₉
Av. yield	1425	2675	2838	3225	3763	3500	3087	2800	3525

S.E./mean = 295 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 54(47).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To determine the best time and method of application of N and P to Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 30 lb./ac. of N (20 lb./ac. as G.N.C. and 10 lb./ac. as A/S) and 15 lb./ac. of P₂O₅ as Super. (ii) (a) Sandy loam. (b) N.A./28.1.1954 (iv) (a) Usual ploughings and levelling. (b) Transplanted. (c) 30 lb./ac. (d) 6"×4". (e) N.A. (v) Nil. (vi) HR—19. (vii) Irrigated. (viii) Weeding. (ix) 0.8". (x) 23.4.1954.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
At last puddling	N+P	N+½P	N	¾N+P	¾N+¾P	¾N	P	½P	—
At weeding	—	½P	P	¾N	¾N+¾P	¾N+P	N	N+½P	N+P

30 lb./ac. of N (20 lb./ac. as G.N.C.+10 lb./ac. as A/S) and 15 lb./ac. of P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) and (iii) Nil. (iv) (a) 1951—1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2285 lb./ac. (ii) 324 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatments	1	2	3	4	5	6	7	8	9
Av. yield	2375	2288	2563	2400	2225	2338	2013	2113	2250

S.E./mean = 162 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 55(12).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To determine the effect of different levels of N, P and K alone and in combination on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Sandy loam (*chalka*). (b) N.A. (iii) 12.6.1955/N A. (vi) (a) 4 to 5 puddlings and levelling. (b) and (c) N.A. (d) 6'×4". (e) N.A. (v) Nil. (vi) HR-21 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 23.27". (x) 2nd to 6th Dec. 1955.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₀=0, N₁=30, and N₂=60 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb./ac.

(3) 3 levels of K₂O as Pot. Sul. : K₀=0, K₁=30 and K₂=60 lb./ac.

Time and method of application N.A.

3. DESIGN :

(i) 3³ confd. design (Y and Z components of ABC confd.). (ii) (a) 9 plots/block ; 3 blocks/replication (b) N.A. (iii) 2. (iv) (a) 1/75.6 ac. (b) 1/113.4 ac. (v) Two rows around. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Hispa attack—Gammexane at 10 lb./ac. dusted. (iii) Grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5 RESULTS :

(i) 3453 lb./ac. (ii) 308.6 lb./ac. (iii) Main effect of N is significant. Main effects of P, K and interactions N×P, N×K, P×K are not significant. (iv) Ay. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	3111	3031	3162	3101	3157	3049	3098
N ₁	2484	3682	3649	3605	3455	3686	3673
N ₂	3598	3784	3575	3652	3791	3409	3757
Mean	3398	3499	3462	3453	3468	3381	3509
K ₀	3498	3469	3436				
K ₁	3368	3324	3452				
K ₂	3328	3703	3497				

S.E. of N, P or K marginal means = 72.6 lb./ac.
S.E. of body of any table = 126.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 54(40).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :-To find out whether different times of application of G.M. can completely replace the usage of compost and Paddy-Fertilizer-Mixture for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam (*chalka*). (b) Refer soil analysis, Rudrur. (iii) N.A./22, 23.7.1954. (iv) (a) N.A. (b) Transplanting. (c) Nil. (d) 6' x 6'. (e) N.A. (v) Nil. (vi) HR-35 (late). (vii) Irrigated. (viii) 1 hand weeding and 3 rotary weedings. (ix) 25.61'. (x) 8.12.1954.

2. TREATMENTS :

All combinations of (1) and (2) + 3 extra treatments.

(1) 3 G.M. crops : G_1 =Sannhemp, G_2 =*Phillipesara*, and G_3 =*Dhaincha*.

(2) 3 times of sowing of G.M. crops : S_1 =4th week of April, S_2 =2nd week of May and S_3 =At paddy harvesting.

3 extra treatments : T_1 =Control, T_2 =30 C.L./ac. of F.Y.M. and T_3 =30 lb./ac. of N as Paddy-Fertilizer-Mixture.

3 DESIGN :

(i) R.B.D. (ii) 12. (iii) 6. (iv) (a) 47.5' x 18'. (b) 45.5' x 16'. (v) 2 rows on all sides. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1952-1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2461 lb./ac. (ii) 524.4 lb./ac. (iii) Only differences between extra treatments are highly significant. (iv) Av. yield of grain in lb./ac.

$T_1 = 1840, T_2 = 2910$ and $T_3 = 2540$ lb./ac.

	S_1	S_2	S_3	Mean
G_1	2490	2460	2550	2500
G_2	2450	2280	2750	2493
G_3	2150	2370	2750	2423
Mean	2363	2370	2683	2472

S.E. of marginal mean of S or G = 123.6 lb./ac.

S.E. of body of table = 214.1 lb./ac.

S.E. of extra treatment mean = 214.1 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 54(43).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :-To determine the best time and method of application of N and P to Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton. (b) Refer soil analysis, Rudrur. (iii) 19.1.1954. (iv) (a) 2 ploughings, 3 puddling and levelling. (b) Broadcast. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) HR-19. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 20.5.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 applications of N : $N_1=45$ lb./ac. of N (30 lb./ac. as G.N.C + 15 lb./ac. as A/S at last puddle)
 $N_2=30$ lb./ac. of N as G.N.C. at last puddle+15 lb./ac. of N as A/S at ear-primordium, $N_3=45$ lb./ac. of N at ear-primordium.

(2) 3 applications of P_2O_5 : $P_1=30$ lb./ac. at last puddle, $P_2=15$ lb./ac. at last puddle+15 lb./ac. at ear-primordium and $P_3=30$ lb./ac. at ear primordium.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) $48' \times 20'$. (b) $46' \times 19'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory, growth not satisfactory. (ii) Severe attack by stem-borer at tillering stage. (iii) Grain and straw yield. (iv) (a) 1951—1954. (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 388 lb./ac. (ii) 80 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is not significant. Interaction $N \times P$ is significant. (iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	Mean
P_1	450	475	350	425
P_2	363	475	325	388
P_3	263	550	238	350
Mean	359	500	304	388

S.E. of marginal mean of N or P = 23 lb./ac.

S.E. of body of table = 40 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 57(3).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the part played by drainage, gypsum, G.M., Super pressmud, molasses individually and in various combinations in correcting alkalinity.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Alkaline patch. (b) Refer soil analysis, Rudrur. (iii) 21.1.1957. (iv) (a) 1 to 2 dry ploughings, 2 to 3 wet puddlings and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) HR—33 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 6.44". (x) 6.5.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 main-treatments (drainage) : $D_1=$ Drained and $D_2=$ Undrained.

(2) 10 sub-treatments (manuring) : $M_0=$ Control, $M_1=30$ lb./ac. of P_2O_5 , $M_2=10000$ lb./ac. of G.M., $M_3=M_1+M_2$, $M_4=$ Gypsum (full dose in first season)+ M_1 , $M_5=M_2+M_4$, $M_6=$ Gypsum ($\frac{1}{3}$ dose every season)+ M_1 , $M_7=M_2+M_6$, $M_8=$ Pressmud (full dose in first season)+ M_1 , $M_9=10000$ lb./ac. Molasses+ M_1 every season.

Dose of gypsum and pressmud used and time and method of application N.A.

3. DESIGN :

(i) Split-plot. (ii) (a) 10 sub-plots/main-plot ; 2 main-plots/replication. (b) N.A. (iii) 3. (iv) (a) N.A. (b) $30' \times 20'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Slightly lodged and grain shed due to rain received during April. (ii) Nil. (iii) Tiller count, yield of grain and straw. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 779 lb./ac. (ii) (a) 783.4 lb./ac. (b) 497.3 lb./ac. (iii) Main effects of M is significant. Main effect of D and interaction $M \times D$ are not significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	Mean
D ₁	218	508	1452	436	363	799	341	1923	748	1126	791
D ₂	152	1081	711	842	51	1016	276	1764	1154	631	768
Mean	185	795	1082	649	207	908	309	1844	952	879	779

S.E. of difference of two

1. D marginal means = 202.2 lb./ac.
2. M marginal means = 287.1 lb./ac.
3. M means at the same level of D = 406.1 lb./ac.
4. D means at the same level of M = 436.0 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A. P. 59(123).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the effect of C/A/N in increasing Paddy yield and also its deleterious effect on soil.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 4.2.1959. (iv) (a) Ploughing, puddling, levelling. (b) Broadcast. (c) 80 lb./ac. (d) and (e) —. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) Weeding. (ix) 3.01". (x) 7.5 1959.

2. TREATMENTS :

	1	2	3	4	5
At the time of broadcasting	—	—	—	—	½ N as A/S
14 days after broadcasting	—	N as C/A/N	½ N as C/A/N	¼ N as C/A/N	—
One month after broadcasting	—	—	½ N as C/A/N	½ N as C/A/N	½ N as A/S
One week before harvesting	—	—	—	¼ N as C/A/N	—

N applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 1/80 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 86 lb./ac. (ii) 180.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	525	785	977	827	1115

S.E./mean = 73.6 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 55(22).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam (*chalka*). (b) Refer soil analysis, Rudrur. (iii) 1.2.1955. (iv) (a) 1 dry ploughing, 2 puddlings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) N.A. (v) Nil. (vi) RDR—7 (very early). (vii) Irrigated. (viii) 4 weedings. (ix) 0.59%. (x) 9.5.1955.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
At final puddle	P	N	—	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N + $\frac{1}{2}$ P
30 days after broadcasting	—	—	N	—	$\frac{1}{2}$ N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	$\frac{1}{2}$ N + $\frac{1}{2}$ P
50 days after broadcasting	—	—	—	N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	$\frac{1}{2}$ N	—

N applied at 45 lb./ac. as A/S and P applied at 22½ lb./ac. of P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 55' × 14'. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) and (iii) Nil. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2214 lb./ac. (ii) 552 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1714	2929	2143	1929	2321	2107	2050	2179	2571

S.E./mean = 276 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 57(6).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'

Object :- To find out the optimum time of application of N to Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 23.1.1957. (iv) (a) 1 to 2 dry ploughings, 2 to 3 wet puddlings and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 6.44%. (x) 9.5.1957.

2. TREATMENTS :

Same as in expt. no. 55(22) on page 66.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48' × 20'. (b) 46' × 19'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodged and the grain shed due to rains received in April. Had a set-back due to hail-storm during last week of February. (ii) Very mild attack of stem-borer. (iii) Tiller count, yield of grain and straw. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1175 lb./ac. (ii) 166.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	963	1163	1150	1338	1225	1325	1163	1113	1138

S.E./mean = 83.0 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A. P. 58(36).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 25.1.1958. (iv) (a) 1 dry ploughing, 3 puddlings, levelling. (b) Broadcasting sprouted seeds, (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 1.77". (x) 9.5.1958.

2. TREATMENTS :

Same as in expt. no. 55(22) on page 66.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) 1'×½'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of stem-borer. (iii) Tiller count and grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1962 lb./ac. (ii) 274.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1195	1969	2019	2019	2181	2193	2043	2330	1707

S.E./mean = 137.0 lb./ac.

Crop :- Paddy (Abi).**Ref :- A.P. 55(24).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam (*chalka*). (b) Refer soil analysis, Rudrur. (iii) N.A./4, 5.7.1955. (iv) (a) N.A. (b) Transplanted. (c) 30 lb./ac. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) 1 hand weeding and 2 with rotary weeder. (ix) 46.09". (x) 6.12.1955.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
At planting	P	N	—	—	½N	½N	—	¼N	¼N+¼P
40 days after planting	—	—	N	—	½N	—	¼N	¼N	¼N+¼P
80 days after planting	—	—	—	N	—	½N	¼N	¼N	—

N applied at 45 lb./ac. as A/S and P applied at 22½ lb./ac. of P₂O₅ as Super.**3. DESIGN :**

(i) R.B.D. (ii) 9. (iii) 4. (iv) (a) 55'×14'. (b) 53'×12'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain yield. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2481 lb./ac. (ii) 356 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1884	2937	2346	2440	2371	2689	2398	2508	2757

S.E./mean = 178 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 56(80).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) N A. (b) Paddy. (c) As per treatments. (ii) (a) Light clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./29.6.1956. (iv) (a) 2 dry ploughings and 2 puddlings. (b) Transplanting. (c) N.A. (d) 6'×6'. (e) N A. (v) Nil. (vi) HR—35(late). (vii) Irrigated. (viii) 2 weedings. (ix) 63.97%. (x) 2.12.1956.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9
At planting	P	N	—	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N+ $\frac{1}{2}$ P
30 days after planting	—	—	N	—	$\frac{1}{2}$ N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	$\frac{1}{2}$ N+ $\frac{1}{2}$ P
50 days after planting	—	—	—	N	—	$\frac{1}{2}$ N	$\frac{1}{2}$ N	$\frac{1}{2}$ N	—

N applied at 45 lb./ac. of N as A/S and P₂O₅ applied at 22½ lb./ac. as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) 1'×½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi and (vii) Nil.

5. RESULTS :

(i) 3100 lb./ac. (ii) 391.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	2193	3364	2928	3389	3028	3078	3152	3190	3576

S.E./mean = 195.8 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 57(69).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./15.7.1957. (iv) (a) 1 dry ploughing, 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) 6'×6'. (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 28.59%. (x) 30.11.1957.

TREATMENTS :

Same as in expt. no. 55(24) on page 68.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 46'×19'. (v) 1'×½'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller count and grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2667 lb./ac. (ii) 257.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9
Av. yield	1938	2638	2712	2925	2725	2950	2750	2738	2625

S.E./mean = 128.7 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 58(67).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To study the effect of deep placement of manures through smearing on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./21.7.1958. (iv) (a) 1 dry ploughing, and 2 puddlings. (b) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weedings. (ix) 25.98". (x) 29.10.1958.

2. TREATMENTS :

T_1 = No manure (control) ; (4 plots)	$T_9 = T_2 + T_7$.
T_2 = 45 lb./ac. of N applied in puddle.	$T_{10} = T_3 + T_6$.
T_3 = 45 lb./ac. of N smeared.	$T_{11} = T_3 + T_7$.
T_4 = 22 lb./ac. of N smeared + 23 lb./ac. of N dressed at first weeding.	$T_{12} = T_4 + T_6$.
T_5 = 22 lb./ac. of N in puddle + 23 lb./ac. of N dressed at first weeding.	$T_{13} = T_4 + T_7$.
T_6 = 30 lb./ac. of P_2O_5 in puddle.	$T_{14} = T_5 + T_6$.
T_7 = 30 lb./ac. of P_2O_5 smeared.	$T_{15} = T_5 + T_7$.
$T_8 = T_2 + T_6$.	

N applied as A/S and P_2O_5 as Super.

3. DESIGN :(i) R.B.D. (ii) (a) 18. (b) $195' \times 100'$. (iii) 2. (iv) (a) N.A. (b) $46' \times 19'$ (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Satisfactory. (ii) Negligible. (iii) Grain yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :(i) 3006 lb./ac. (ii) 507 lb./ac. (iii) Treatment differences are significant. T_1 vs. rest effect is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	2344	2725	2225	3325	3550	2725	2650	3725
Treatment	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	T_{15}	
Av. yield	3475	3375	3050	3550	3200	3550	3350	

S.E./mean (excluding T_1) = 358.5 lb./ac.S.E./mean (for T_1) = 179.2 lb./ac.**Crop :- Paddy. (Kharif).****Ref :- A.P. 59(124).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To study the effect of deep placement of manures through smearing on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatment. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 12.6.1959/12.7.1959. (iv) (a) Ploughing, puddling, levelling. (b) Transplanting. (c) 30 lb./ac. (d) $6' \times 6'$. (e) 2 to 3 seedlings/hill. (v) As per treatments. (vi) HR—19. (vii) Irrigated. (viii) Gap filling and weeding. (ix) N.A. (x) 16, 19 to 24.10.1959.

2. TREATMENTS :

Same as in expt. no. 58(67) above.

3. DESIGN :(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) $48' \times 20'$. (b) $46' \times 19'$. (v) $1' \times \frac{1}{2}'$. (vi) Yes.**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1496 lb./ac. (ii) 289.3 lb./ac. (iii) Treatments differences are highly significant. T_1 vs. rest effect is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	968	1238	1058	1351	880	1236	1285	2068
Treatment	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	T_{15}	
Av. yield	1848	1909	1595	1628	1726	1826	1825	

S.E./mean (excluding T_1) = 204.6 lb./ac.; S.E./mean (for T_1) = 102.3 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(10).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the effect of deep placement of manures through smearing on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./16, 17.2.1959. (iv) (a) 1 dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeding by Japanese weeder and hand weeding. (ix) 0.51". (x) 17.5.1959.

2. TREATMENTS :

Same as in expt. no. 58(67) on page 70.

3. DESIGN :

(i) R.B.D. (ii) (a) 18 (b) 195'×100'. (iii) 2. (iv) (a) and (b) 46'×19'. (v) Nil. (vi) Yes

4. GENERAL :

(i) Satisfactory. (ii) Initial effect of stem-borer—controlled by Folidal spray at 10 c.c. in one gallon of water. (iii) Grain yield. (iv) 1958—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 351 lb./ac. (ii) 169.7 lb./ac. (iii) Treatment differences are highly significant. T_1 vs. rest effect is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	121	45	79	91	157	159	340	1032
Treatment	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}	T_{15}	
Av. yield	896	669	590	261	204	715	601	

S.E./mean (excluding T_1) = 120.0 lb./ac.

S.E./mean (for T_1) = 60.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(76).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Light clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./23.6.1956. (iv) (a) 2 dry ploughings and puddlings. (b) Transplanting. (c) N.A. (d) 6"×6". (c) N.A. (v) Nil (vi) HR—16 (early). (vii) Irrigated (viii) 1 weeding. (ix) 63.97" (x) 16.10.1956.

2. TREATMENTS :

T_0 =Control (no manure), T_1 =50 lb./ac. N as A/S, T_2 = T_1 +25 lb./ac. of P_2O_5 as B.M., T_3 = T_1 +25 lb./ac. of P_2O_5 as Super, T_4 =Paddy-Fertilizer-Mixture (50 lb./ac of N+25 lb./ac. of P_2O_5), T_5 =25 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 2. (iv) (a) and (b) 20'×10'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (iii) Grain yield. (iv) (a) 1956. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1851 lb./ac. (ii) 832.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1089	1525	1416	2505	2723	1851

S.E./mean = 588.5 lb./ac.

Crop :- Paddy. (Kharif).

Ref :- A.P. 54(41).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the effect of different sources of N in increasing the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton (*regur*). (b) Refer soil analysis, Rudrur. (iii) N.A./18. 19.7.1954. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR-19 (early). (vii) Irrigated. (viii) 3 intercultures, and 4 with rotary handweeder. (ix) 26.23". (x) 21.10.1954.

2. TREATMENTS :

T_0 =Control, T_1 =20 lb./ac. of N as A/S+15 lb./ac. of P_2O_5 as super, T_2 =20 lb./ac. of N as A/C+15 lb./ac. P_2O_5 as Super, T_3 =20 lb./ac. of N as C/N+15 lb./ac. of P_2O_5 as Super, T_4 =40 lb./ac. of N as A/S+30 lb./ac. P_2O_5 as Super, T_5 =40 lb./ac. of N as A/C+30 lb./ac. of P_2O_5 as Super and T_6 =40 lb./ac. as C/N+30 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 66'×14'. (b) 64'×12'. (v) 2 rows on all sides. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and Straw yield, (iv) (a) 1952-1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1464 lb./ac. (ii) 296.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	350	1408	1418	1295	2108	2023	1645

S.E./mean = 121.2 lb./ac.

Crop :- Paddy. (Kharif).

Ref :- A.P. 55(23).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the effect of different sources of N in increasing the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton (*regur*). (b) Refer soil analysis, Rudrur. (iii) N.A./6.7.1955. (iv) (a) 3 ploughings, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR-19 (early). (vii) Irrigated. (viii) 1 hand weeding and 1 rotary weeder. (ix) 45.84". (x) 20.10.1955.

2. TREATMENTS :

Same as in expt. no. 54(41) on page 72.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 66'×14'. (b) 64'×12'. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) and (iii) Nil. (iv) (a) 1952—1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1375 lb./ac. (ii) 333.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇
Av. yield	217	1319	1408	1064	2004	1928	1687

S.E./mean = 136.0 lb./ac.

Crop :- Paddy. (Rabi).

Ref :- A.P. 55(21).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the effect of different sources of N in increasing the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton (*regur*). (b) Refer soil analysis, Rudrur. (iii) 2.2.1955. (iv) (a) 3 ploughings, 1 puddling and levelling. (b) Broadcast. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 2 hand weedings. (ix) 0.59". (x) 21.5.1955.

2. TREATMENTS :

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

(1) 3 sources of N : S₁=A/S, S₂=A/C and S₃=C/N.

(2) 2 levels of N : N₁=20 lb./ac. and N₂=40 lb./ac.

Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 68'×14'. (b) 64'×12'. (v) Two rows. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) and (iii) Nil. (iv) (a) 1952—1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 898 lb./ac. (ii) 161.6 lb./ac. (iii) Main effects of S and N are significant. Interaction S×N is not significant. 'Control vs. others' effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 170 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	754	811	573	713
N ₂	1520	1446	1010	1325
Mean	1137	1128	792	1019

S.E. of S marginal mean = 46.6 lb./ac.

S.E. of N marginal mean = 38.1 lb./ac.

S.E. of body of table or control mean = 65.9 lb./ac.

Crop :- Paddy. (Kha if)

Ref :- A.P. 54(87).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'

Object :- To compare the effects of G.M and A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 1.7.1954
(iv) (a) 2 Ploughings, 2 puddlings and formation of bunds. (b) Transplanting. (c) 30 lb./ac. (d) 6' × 6'.
(e) 2-3 seedlings/hill. (v) Nil. (vi) HR—35. (vii) Irrigated. (viii) Gap filling, tilling and weeding.
(ix) 39.71'. (x) 10.12.1954

2. TREATMENTS :

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

(1) 3 doses of N : $N_0=0$, $N_1=30$ lb./ac. and $N_2=60$ lb./ac.

(2) 2 sources of N : $S_1=G.M.$ and $S_2=A/S.$

(3) 2 doses of P_2O_5 as Super : $P_1=15$ lb./ac. and $P_2=30$ lb./ac.

G.M. (*pillipesara*) receiving P_2O_5 grown in the site and after harvest adjusted to N dose as required for the treatments, G.M. was broadcast.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) 48' × 20'. (b) 46' × 19'. (v) 1' × ½'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A.
(vi) and (vii) Nil.

5. RESULTS :

(i) 3191 lb./ac. (ii) 343.9 lb./ac. (iii) Main effect of N is highly significant, Main effect of S is significant.
Main effect of P and interactions $N \times S$, $P \times S$, $N \times P$ are not significant. N_0P vs. others effect is highly
(iv) Av. yield of grain in lb./ac.

$$N_0P_1=2243 ; N_0P_2=2176$$

	S_1	S_2	Mean	P_1	P_2
N_1	3755	3007	3381	3431	3331
N_2	4195	3771	3983	3879	4087
Mean	3975	3389	3682	3655	3709
P_1	3979	3331			
P_2	3971	2447			

S.E. of marginal mean of S, N or P = 99.3 lb./ac.
S.E. of body of table = 140.4 lb./ac.

Crop :- Paddy (Kharif)

Ref :- AP . 55(86)

Site :- Agri. Res. Stn. Rudrur.

Type :- 'M'

Object :- To compare the effects of G.M. and A/S on Paddy

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur.
(iii) 24.5.1954/26.6.54. (iv) (a) 2 ploughings, puddlings, formation of bunds. (b) Transplanting (c) 30 lb./ac.
(d) 6' × 6'. (e) 2-3 seedlings per hill. (v) Nil. (vi) HR—35. (vii) Irrigated. (viii) Gap-filling, tilling,
and weeding. (ix) 62.71' (x) 16.12.1955.

2. TREATMENTS and 3. DESIGN.

Same as in expt. no. 54 (87) above.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958 (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3116 lb./ac. (ii) 398.2 lb./ac. (iii) Main effect of N is highly significant. Main effect of S is significant. Main effect of P and interactions $N \times S$, $N \times P$ and $S \times P$ are not significant. ' N_0P vs. rest' effect is highly significant. (iv) Av. yield of grain in lb./ac.

$$N_0P_1 = 2010 ; N_0P_2 = 2052$$

	S ₁	S ₂	Mean	P ₁	P ₂
N ₁	3638	3190	3414	3539	3289
N ₂	3995	3813	3904	3838	3971
Mean	3817	3501	3659	3688	3630
P ₁	3696	3680			
P ₂	3937	3323			

S.E. of marginal mean of S, N or P = 1.4.9 lb./ac.
S.E. of body of table = 162.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(78).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To compare the effect of G.M. and A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black soil (light clay loam). (b) Refer soil analysis, Rudrur. (iii) N.A./30.6.1956. (iv) (a) 3 dry ploughing sand puddling. (b) Transplanting (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 63.97%. (x) 5.12.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(87) on page 74.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil

5. RESULTS :

(i) 3296 lb./ac. (ii) 313.7 lb./ac. (iii) Main effects of S and N are highly significant. Main effect of P and interactions $S \times N$, $S \times P$, $N \times P$ are not significant. Effect of N_0P vs. others is highly significant. (iv) Av. yield of grain in lb./ac.

$$N_0P_1 = 2450 ; N_0P_2 = 2251$$

	S ₁	S ₂	Mean	P ₁	P ₂
N ₁	3854	3298	3576	3522	3630
N ₂	4261	3664	3962	3864	4060
Mean	4057	3481	3769	3693	3845
P ₁	4012	3373			
P ₂	4102	3589			

S.E. of marginal mean of S, N or P = 90.6 lb./ac.
 S.E. of body of any table = 128.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 57(67).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To compare the effect of G.M. and A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A /7.7 1957. (iv) (a) 1 dry ploughing, 3 puddlings and levelling. (b) Transplanted. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 32.36". (x) 30.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(87) on page 74.

4. GENERAL :

(i) Satisfactory, (ii) Nil. (iii) Tiller counts and grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3551 lb./ac. (ii) 353.7 lb./ac. (iii) Main effect of N and effect of N₀P vs. others are highly significant. (iv) Av. yield of grain in lb./ac.

$N_0P_1 = 3040 \text{ lb./ac.}; N_0P_2 = 2808 \text{ lb./ac.}$

	S ₁	S ₂	Mean	P ₁	P ₂
N ₁	3481	3647	3564	3406	3722
N ₂	3950	4348	4164	4230	4098
Mean	8715	4013	3864	3818	3910
P ₁	3647	3989			
P ₂	3783	4037			

S.E. of marginal mean of S, N or P = 102.1 lb./ac.
 S.E. of body of any table = 144.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(134).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To compare the effect of G.M. and A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 23.1.1958. (iv) (a) 2 ploughings, 2 puddlings and formation of bunds. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) Nil. (v) As per treatments. (vi) RDR—7. (vii) Irrigated. (viii) Weeding. (ix) 2.07". (x) 11, 12.5.1958.

2. TREATMENTS to 3. DESIGN :

Same as in expt. no. 54 (87) on page 74.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1251 lb./ac. (ii) 198.4 lb./ac. (iii) Main effect of P alone is significant. (iv) Av. yield of grain in lb./ac.

$N_0P_1=1105$ lb./ac., $N_0P_2=1312$ lb./ac.

	S ₁	S ₂	Mean	P ₁	P ₂
N ₁	1312	1337	1325	1279	1371
N ₂	1321	1121	1221	1155	1287
Mean	1317	1239	1273	1217	1329
P ₁	1213	1221			
P ₂	1420	1238			

S.E. of marginal mean of S, N or P = 57.3 lb./ac.
S.E. of body of any table = 81.0 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 55(87).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS:

(i) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 19.1.1955. (iv) (a) 2 ploughings, 2 puddlings and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) Nil. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) Weedings. (ix) 0.9%. (x) 7.5.1955.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 5 sources of 50 lb./ac. of N: S₀=Control, S₁=F.Y.M., S₂=G.M., S₃=G.N.C. and S₄=A/S.

(2) 2 levels of P₂O₅ as Super: P₀=0 and P₁=25 lb./ac.

G.M. puddled a week before broadcasting of seed. Other manures applied before broadcasting of seeds.

3. DESIGN:

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) and (b) 40'×20'. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Stem-borer attack checked. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1572 lb./ac. (ii) 162.6 lb./ac. (iii) Main effects of S, P and interaction S×P are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	765	708	2181	2096	1048	1359
P ₁	878	1133	2266	2379	2266	1784
Mean	821	921	2223	2237	1657	1572

S.E. of P marginal mean = 51.4 lb./ac.
S.E. of S marginal mean = 81.3 lb./ac.
S.E. of body of table = 115.0 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 57(5).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analys.s, Rudrur. (iii) 23.1.1957. (iv) (a) 2 dry ploughings, 3 wet puddlings and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil (vi) RDR—7 (early). (vii) Irrigated (viii) 2 weedings. (ix) 6.44*. (x) 6.5.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(87) on page 77.

4. GENERAL :

(i) Lodged and grain shed due to rains received in April. Had a set back due to hail-storm during last week of February. (ii) Very mild attack of stem-borer. (iii) Tiller count, yield of grain and straw. (iv) (a) 1954—contd. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 781 lb./ac. (ii) 243.4 lb./ac. (iii) S and P effects are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	109	599	654	981	41	477
P ₁	763	790	1499	1281	1090	1085
Mean	435	695	1076	1131	565	781

S.E. of S marginal mean = 121.7 lb./ac.
 S.E. of P marginal mean = 77.0 lb./ac.
 S.E. of body of table = 172.1 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(34).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 24.1.1958. (iv) (a) 1 to 2 dry ploughings, 2 to 3 wet ploughings and levellings. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 1.77*. (x) 5.5.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(87) on page 77.

4. GENERAL :

(i) Good. (ii) Very mild attack of stem borer. (iii) Tiller counts, yield of grain and straw. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1181 lb./ac. (ii) 162.5 lb./ac. (iii) Main effects of S and P are highly significant. Interaction S×P highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	327	953	708	1225	54	653
P ₁	980	1334	2123	2205	1906	1710
Mean	653	1143	1415	1715	980	1181

S.E. of S marginal mean = 81.3 lb./ac.
 S.E. of P marginal mean = 51.4 lb./ac.
 S.E. of body of table = 114.9 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(11)

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 31.1.1959. (iv) dry ploughing with victory plough, two puddlings and levelling (b) Broadcasting (c) to (e) N.A. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) 1 hand weeding, (ix) N.A. (x) 6.5.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(87) on page 77.

4. GENERAL :

(i) Satisfactory. (ii) Negligible. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) Nil. (v) (a) Rajendra-Nagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 893 lb./ac. (ii) 140.0 lb./ac. (iii) Main effects of S, P and interaction S×P are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	123	790	708	545	71	447
P ₁	735	1007	1770	1606	1579	1339
Mean	429	899	1239	1075	825	893

S.E. of S marginal mean = 70.0 lb./ac.
 S.E. of P marginal mean = 44.3 lb./ac.
 S.E. of body of table = 99.0 lb./ac.

Crop :- Paddy :- (Kharif).

Ref :- A.P. 54(88).

Site :- Agri. Res. Stn. Rudrur.

Type :- 'M'.

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 30.6.1954. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6'×6'. (e) 2-3 seedlings/hill. (v) Nil. (vi) RDR—4. (vii) Irrigated. (viii) Gap filling and weeding. (ix) 39.71". (x) 22, 25.11.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 sources of 50 lb./ac. of N: S_0 =control, S_1 =F.Y.M., S_2 =G.M., 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 =25 lb./ac.

G.M. puddled a week before planting. Other fertilizers applied at planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a). 10 (b) N.A. (iii) 2. (iv) (a) and (b) 40'×20' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3230 lb./ac. (ii) 368.8 lb./ac. (iii) Main effect of S is highly significant. Main effect of P and interaction $S \times P$ are not significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	2295	2408	3825	3513	3655	3139
P_1	2550	3173	3485	3909	3485	3320
Mean	2423	2791	3655	3711	3570	3230

S.E. of P marginal mean = 116.6 lb./ac.

S.E. of S marginal mean = 184.4 lb./ac.

S.E. of body of table = 260.8 lb./ac.

Crop :- Paddy. (Kharif).

Ref :- A.P. 55(88).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./30.6.1955. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6'×6'. (e) 2—3 seedlings/hill. (v) Nil. (vi) RDR—4. (vii) Irrigated. (viii) Gap filling and weeding. (ix) 62.71'. (x) 23.11.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(88) on page 79.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2249 lb./ac. (ii) 287.2 lb./ac. (iii) Main effects of P and S are highly significant. Interaction $S \times P$ is not significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	S_2	S_3	S_4	Mean
P_0	1161	1869	2068	2096	1105	1660
P_1	2068	2436	3399	2861	3427	2838
Mean	1615	2153	2733	2479	2266	2249

S.E. of P marginal mean	=	90.8 lb./ac.
S.E. of S marginal mean	=	143.6 lb./ac.
S.E. of body of table	=	203.1 lb./ac.

Crop :- Paddy. (Kharif).

Ref :- A.P. 56(77).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Light clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./27.6.1956. (iv) (a) One dry ploughing and 3 puddlings. (b) Transplanted. (c) N.A. (d) 6" x 6". (e) N.A. (v) Nil. (vi) RDR-4 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 63.97%. (x) 19.11.1956

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(88) on page 79.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) 1954—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2229 lb./ac. (ii) 538.1 lb./ac. (iii) Main effect of S is significant. Main effect of P and interaction S x P are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	735	2396	2732	1824	327	1601
P ₁	2069	1851	3267	3321	3784	2858
Mean	1402	2123	2995	2573	2055	2229

S.E. of S marginal mean	=	269.1 lb./ac.
S.E. of P marginal mean	=	170.2 lb./ac.
S.E. of body of table	=	380.5 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 57(66).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./16.7.1957. (iv) (a) 1 dry ploughing, 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) 8" x 8". (e) N.A. (v) Nil. (vi) RDR-4 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 27.86%. (x) 30.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(88) on page 79.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tiller count, yield of grain and straw. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2006 lb./ac. (ii) 185.4 lb./ac. (iii) Main effects of S and P and interaction S×P are highly significant. (iv) Av. y.eld of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	694	1838	1865	1702	762	1372
P ₁	2055	2355	2750	2831	3212	2641
Mean	1375	2097	2307	2267	1987	2006

S.E. of S marginal mean = 92.7 lb./ac.

S.E. of P marginal mean = 58.6 lb./ac.

S.E. of body of table = 131.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(66).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./3.7.1958. (iv) (a) 1 dry ploughing with victory plough, puddling, levelling and cutting bunds. (b) to (e) N.A. (v) Nil. (vi) RDR—4 (late). (vii) Irrigated. (viii) 1 weeding by Japanese weeder and 1 hand weeding. (ix) 41.96°. (x) 4.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(88) on page 79.

4. GENERAL :

(i) Satisfactory. (ii) Negligible. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1313 lb./ac. (ii) 282.6 lb./ac. (iii) Main effects of S and P and interaction S×P is are highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	177	1443	817	762	150	670
P ₁	1742	1906	2178	1906	2042	1955
Mean	960	1675	1497	1334	1096	1313

S.E. of S marginal mean = 141.3 lb./ac.

S.E. of P marginal mean = 89.4 lb./ac.

S.E. of body of table = 199.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(136).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object:—To study the comparative merits of organic and inorganic manures with and without P on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./June 1959. (iv) (a) 1 ploughing, 3 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) Nil. (vi) RDR—4 (medium). (vii) Irrigated. (viii) Gap filling and weeding. (ix) N.A. (x) November 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(88) on page 79.

4. GENERAL :

(i) Satisfactory. (ii) N¹. (iii) Grain yield. (iv) (a).1954—contd. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1534 lb./ac. (ii) 174.5 lb./ac. (iii) Main effects of S and P are highly significant. Interaction S×P is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	84	1497	1497	1280	117	895
P ₁	1661	1987	2287	2532	2396	2173
Mean	873	1742	1892	1906	1257	1534

S.E. of P marginal mean = 55.2 lb./ac.

S.E. of S marginal mean = 87.3 lb./ac.

S.E. of body of table = 123.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 54(89).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the residual effect of P over a period of eight Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Rudrur. (iii) 6.7.1954/6.8.1954. (iv) (a) Ploughing, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) Gap-filling and weeding. (ix) 39.71%. (x) 22.10.1954.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12
P as B.D.	0	0	0	200	100	0	200	100	0	200	0	0
N every season	0	0	50	50	50	50	50	50	50	50	50	50
P every season	0	37.5	25	12.5	25	37.5	25	37.5	50	37.5	75	100

N applied as A/S and P₂O₅ as Super in lb./ac. P as B.D., as per the levels shown, was applied only initially in the 1st season.

3. DESIGN :

(i) R.B.D (ii) (a) 14 (3 control plots in each replication) (b) N.A. (iii) 4. (iv) (a) 48'×20'. (b) 1/50 ac. (v) 1'×½'. (vi) Yes.

GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

RESULTS :

(i) 1703 lb./ac. (ii) 464.0 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	546	675	1613	2575	2025	1937	2223	2287	2113	2500	2225	2050
S.E./mean (excluding control)						= 232.0 lb./ac.						
S.E./control mean						= 133.9 lb./ac.						

Crop :- Paddy. (Rabi).

Ref :- A.P. 55(89).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :-To study the residual effect of P over a period of eight Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis. Rudrur. (iii) 24.1.1955. (iv) (a) 2 ploughings, puddlings and levelling. (b) Sprouted seeds broadcast. (c) 80 lb./ac. (d) and (e) —. (v) Nil. (vi) RDR—7. (vii) Irrigated. (viii) Weeding. (ix) 0.98". (x) 3 to 6.5.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83.

4. GENERAL :

(i) Normal. (ii) Folidol sprayed as a precaution against stem-borer. (iii) Grain yield. (iv) (a) 1954—1958, (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1586 lb./ac. (ii) 249.5 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	279	763	1750	2275	1825	1825	2150	2200	1887	2313	2063	2325
S.E./mean (excluding control)						= 124.7 lb./ac.						
S.E./control mean						= 72.0 lb./ac.						

Crop :- Paddy. (Kharif).

Ref :- A.P. 55(90).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :-To study the residual effect of P over a period of eight Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Rudrur. (iii) 22.6.1955/27.7.1955. (iv) (a) 2 ploughings, puddlings and levellings. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2-3. (v) Nil. (vi) RDR—7. (vii) Irrigated, (viii) Gaps-filling and weeding. (ix) 62.71". (x) 1.10.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2266 lb./ac. (ii) 270.5 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	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	277	1075	2250	3163	2963	2575	3175	3063	3000	3575	2913	3150

S.E./mean (excluding control) = 135.3 lb./ac.
S.E./control mean = 78.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(79).

Site :- Agri. Res. Stn., Rudrur..

Type :- 'M'.

Object :- To study the residual effect of P over a period of 8 Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./16.7.1956. (iv) (a) 2 dry ploughings and 2 puddlings. (b) Transplanting. (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 63.97%. (x) 11.10.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2731 lb./ac. (ii) 451.9 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	594	1470	3588	3483	3526	3265	3464	3782	3539	3265	3583	3483

S.E./mean (excluding control) = 225.9 lb./ac.
S.E./control mean = 130.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(68).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the residual effect of P over a period of 8 Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./16.7.1957. (iv) (a) 1 dry ploughing, 3 puddlings and levellings. (b) Transplanting. (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 21.49%. (x) 9.10.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1682 lb./ac. (ii) 396.6 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	116	812	2006	2262	2300	2256	2194	2194	2475	1969	2300	2432
S.E./mean (excluding control)							= 198.3 lb./ac.					
S.E./control mean							= 114.5 lb./ac.					

Crop :- Paddy (Kharif).

Ref :- A. P. 58(135).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the residual effect of P over a period of 8 Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Rudrur. (iii) N.A./18 to 20.7.1958. (iv) (a) Ploughing, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2-3 seedlings/hill. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) Gap-filling and weeding. (ix) 52.74". (x) 14.10.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1969 lb./ac. (ii) 327.5 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	183	1587	1975	2575	2413	2700	2813	2550	2663	2613	2463	2663
S.E./mean (excluding control)							= 163.7 lb./ac.					
S.E./control mean							= 94.5 lb./ac.					

Crop :- Paddy (Rabi).

Ref :- A.P. 57(4)

Site :- Agri. Res. Stn. Rudrur.

Type :- 'M'

Object :—To study the residual effect of P over a period of 8 Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 31.1.1957. (iv) (a) 2 ploughings, 2 to 3 wet puddlings, and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e)—. (v) As per treatments. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 6.44". (x) 1st week of May 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 54(89) on page 83.

4. GENERAL :

(i) Lodged and grains shed due to rains received in April. (ii) Very mild attack of stem control measure N.A. (iii) Yield of grain and straw. (iv) (a) 1954 and 1958. (b) Yes. (c) Nil. (v) (a) Rajendranagar. (b) N.A. (vi) Crop had set back due to hail-storm during last week of February. (vii) Nil.

5. RESULTS :

(i) 1315 lb./ac. (ii) 222.0 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	175	800	1500	1550	1713	1475	1525	1725	1650	1887	1937	2125
S.E./mean (excluding control)												= 111.0 lb./ac.
S.E./control mean												= 64.1 lb./ac.

Corp :- Paddy (Rabi).

Ref :- A P. 58(35).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To study the residual effect of P over a period of 8 Paddy seasons.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy, (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 24.1.1958. (vi) (a) 2 dry ploughings, 2—3 wet puddlings and levelling. (b) Broadcasting sprouted seed. (c) At 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) RDR—7 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 1.51". (x) 1.5.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(89) on page 83.

4. GENERAL :

(i) Good. (ii) Very mild attack of stem-borer—control measures N.A. (iii) Grain yield. (iv) (a) 1954. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1844 lb./ac. (ii) 173.8 lb./ac. (iii) Treatment differences are highly significant. Effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Av. yield	342	1263	2300	2287	2175	2400	2337	2337	2437	2463	2375	2413
S.E./mean (excluding control)												= 86.9 lb./ac.
S.E./control mean												= 50.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 55(24).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- Time of application of N to Paddy in Chalka soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Chalka. (b) Refer soil analysis, Rudrur. (iii) 4, 5.7.1955. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) One hand weeding and 2 by rotary weeder. (ix) 46 09". (x) 6.12.1955.

2. TREATMENTS :

9 manurial treatments : M_1 = Full dose at planting, M_2 = Full dose 40 days after planting, M_3 = Full dose 80 days at planting, M_4 = $\frac{1}{2}$ dose at planting + $\frac{1}{2}$ dose 40 days later, M_5 = $\frac{1}{2}$ dose at planting + $\frac{1}{2}$ dose 80 days later, M_6 = $\frac{1}{2}$ dose 40 days after planting + $\frac{1}{2}$ dose 80 days after planting, M_7 = $\frac{1}{2}$ dose at planting + $\frac{1}{2}$ after 40 days + $\frac{1}{2}$ after 80 days after planting, M_8 = P_2O_5 alone and M_9 = $\frac{1}{2}$ N + $\frac{1}{2}$ P at planting and $\frac{1}{2}$ N + $\frac{1}{2}$ P 40 days later. N applied at 45 lb./ac. as A/S and P_2O_5 applied at 22 $\frac{1}{2}$ lb./ac. as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 55'×14'. (b) 53'×12'. (v) 1 row around, (b) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—55. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2481 lb./ac. (ii) 356 lb./ac. (iii) The treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈	T ₉
Av. yield	2937	2346	2440	2371	2689	2378	2508	1884	2757

S.E./mean = 178 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(83).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To find out the effect of organic manures on the soil and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Fallow. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 21.6 1954/3.8.1954. (iv) (a) 4 ploughings and levellings. (b) Transplanting. (c) —. (d) 6'×6'. (e) 2. (v) 4000 lbs./ac. of G.L. 100 lb./ac. of Super and 100 lb./ac. of A/S. (vi) SLO—15 (late) (vii) Irrigated. (viii) Weeding one month after planting. (ix) 44.12". (v) 19.12.1954.

2. TREATMENTS :

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

(1) 3 levels of manure : L₁=2500, L₂=5000 and L₃=7500 lb./ac.

(2) 3 sources : M₁=C.M., M₂=Compost equivalent to C.M. and M₃=G.L. equivalent to C.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N A. (iii) 4. (iv) (a) and (b) 13.2'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952—1954. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3677 lb./ac. (ii) 297.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3912 lb./ac.

	L ₁	L ₂	L ₃	Mean
M ₁	3889	3722	3719	3777
M ₂	3714	3733	3491	3646
M ₃	3717	3620	3250	3529
Mean	3773	3692	3487	3651

S.E. of any marginal mean = 85.9 lb./ac.

S.E. of body of table or control mean = 148.8 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 55(77).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object:—To find out the relative merits of T.C. as a manure to Paddy against G.L. and F.Y.M. at different levels of N.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Fallow. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 26.6.1955/4.8.1955. (iv) (a) 4 puddlings and levelling. (b) Transplanting. (c) —. (d) 10"×6". (e) 2. (v) 30 lb./ac. of P_2O_5 as Super at planting. (vi) SLO—15 (late). (vii) Irrigated. (viii) 1 weeding one month after planting. (ix) 34.65". (x) 29.11.1955.

2. TREATMENTS :

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

(1) 3 levels of N : $L_1=40$, $L_2=60$ and $L_3=80$ lb./ac.

(2) 3 sources of N : $M_1=T.C.$, $M_2=F.Y.M.$ and $M_3=G.L.$

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 18'×45'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1958. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2275 lb./ac. (ii) 252.5 lb./ac. (iii) Main effect of M, interaction $L \times M$ and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1895 lb./ac.

	L_1	L_2	L_3	Mean
M_1	2419	1902	2286	2202
M_2	2245	2010	2117	2124
M_3	2286	2803	2783	2624
Mean	2317	2238	2395	2317

S.E. of any marginal mean = 72.9 lb./ac.

S.E. of body of table or control mean = 126.3 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 56(7).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :—To find out the relative merits of T.C. as a manure to Paddy against G.L. and F.Y.M at different levels of N.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 10.6.1956/20.7.1956. (iv) (a) 2 ploughings after letting in water. (b) Bulk planting in lines. (c) N.A. (d) 8" between lines. (e) N.A. (v) Triple Super at 30 lb./ac. of P_2O_5 before planting. (vi) SLO—15. (vii) Irrigated. (ix) 39.16". (x) 1.12.1956.

2. TREATMENTS :

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

(1) 3 sources of N : $M_1=Urban\ compost$, $M_2=F.Y.M.$ and $M_3=G.L.$

(2) 3 levels of N : $L_1=40$, $L_2=60$ and $L_3=80$ lb./ac.

Manures applied as basal dressing at the time of puddling.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 14'×42'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Crop lodged. (ii) Moderate attack of gall-fly—control measures N.A. (iii) Yield of grain and straw. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2913 lb./ac. (ii) 360.4 lb./ac. (iii) Effect of M is significant and effect of L is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2759 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₁	2630	2800	2592	2674
L ₂	2777	2851	3222	2950
L ₃	2926	2907	3666	3166
Mean	2778	2853	3160	2930

S.E. of marginal mean of S or L = 65.8 lb./ac.

S.E. of body of table or control mean = 114.0 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 57(15)****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :—To find out the merits of T.C. as a manure to Paddy against G.L. and F.Y.M. at different levels of N.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 19.5.1957/4.7.1957. (iv) (a) 2 ploughings and puddling. (b) Bulk planting. (c) to (e) N.A. (v) Bulky organic manures and Triple Super applied to all plots to supply 30 lb./ac. of P₂O₅ before planting. (vi) SLO-15 (vii) Irrigated (viii) Weeding one month after planting. (ix) 34.37" (x) 25.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(7) above.

4. GENERAL :

(i) Crop lodged. (ii) N.I. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3816 lb./ac. (ii) 212.9 lb./ac. (iii) Interaction M×L and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 3444 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₁	3537	3722	4259	3839
L ₂	3852	3963	3870	3895
L ₃	3907	3944	3666	3839
Mean	3765	3876	3932	3858

S.E. of L or M marginal mean = 61.5 lb./ac.

S.E. of body of table or control mean = 106.4 lb./ac.

Corp :- Paddy (Sarava).**Ref :- A.P. 58(9).****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :—To find out the relative merits of T.C. as a manure to Paddy against G.L. and F.Y.M. at different levels of N.

BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments and 30 lb./ac. P_2O_5 as Triple Super as B.D. (ii) (a) Heavy alluvial (b) Refer soil analysis, Samalkot. (iii) 7.7.1958. (iv) (a) 2 ploughings and 2 puddlings (b) Bulk planting (c) 21 lb./ac. (d) N.A. (e) 2 (v) Bulky organic manures applied as B.D. and Triple Super applied to to all plots at 30 lb./ac. of P_2O_5 . (vi) SLO—15 (vii) Irrigated (viii) Weeding one month after planting. (ix) 57.73". (x) 3.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(7) on page 89.

4. GENERAL :

(i) Due to heavy rain fall pre-lodging was noticed in some plots. (ii) Nil. (iii) Tiller count and height measurement were recorded 48, 90, 120 and 150 days after planting and yield of grain. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4206 lb./ac. (ii) 196.2 lb./ac. (iii) Effect of L is highly significant and 'control vs. others' is significant (iv) Av. yield of grain in lb./ac.

Control = 4437 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₁	4358	4583	4057	4333
L ₂	4420	4070	3633	4041
L ₃	4357	4600	3548	4168
Mean	4378	4418	3746	4181

S.E. of any marginal mean = 85.5 lb./ac.

S.E. of body of table or control mean = 148.1 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 56(9).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To test the efficiency of A/C against A/S applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) G.L. at 2000 lb./ac. + Super at 100 lb./ac. and A/S at 100 lb./ac. each. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 15.6 1956/26.7.1956. (iv) (a) 2 puddlings. (b) Transplanting. (c) —. (d) Between lines 8". (e) N.A. (v) Triple Super to give 30 lb./ac. of P_2O_5 . (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 35.27". (x) 3.12.1956.

2. TREATMENTS :

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

(1) 2 levels of N : N₁ = 30 and N₂ = 45 lb./ac.

(2) 2 sources of N : S₁ = A/S and S₂ = A/C.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 26' × 36'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal ; no lodging. (ii) Slight attack of gall-fly—spraying of BHC 5%. (iii) Grain and straw yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2162 lb./ac. (ii) 369.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2073 lb./ac.

	S ₁	S ₂	Mean
N ₁	2027	2237	2132
N ₂	2202	2272	2237
Mean	2114	2254	2184

S.E. of any marginal mean = 130.6 lb./ac.
 S.E. of body of table or control mean = 184.8 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 57(14).****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :- To test the efficiency of A/C against A/S applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 13.6.1957/11.7.1957. (iv) (a) 3 puddlings. (b) and (c) N.A. (d) Lines 8" apart. (e) N.A. (v) 30 lb./ac. of P₂O₅ as Triple Super. (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 34.37". (x) 26.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(9) above.

4. GENERAL :

(i) Good ; lodged in some plots. (ii) Nil. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3644 lb./ac. (ii) 248.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3437 lb./ac.

	S ₁	S ₂	Mean
N ₁	3693	3518	3606
N ₂	3774	3797	3786
Mean	3734	3658	3696

S.E. of any marginal mean = 87.8 lb./ac.
 S.E. of body of table or control mean = 124.2 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 58(8).****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :- To test the efficiency of A/S against A/S applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 10.6.1958/25.7.1958. (vi) (a) 2 puddlings. (b) Japanese method of planting. (c) 21 lb./ac. (d) 8"×8". (e) 2. (v) 30 lb./ac. of P₂O₅ as B.M. broadcast before final puddlings. (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 57.73". (x) 10.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(9) on page 91.

4. GENERAL :

(i) Good ; lodging in some plots. (ii) Nil. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2725 lb./ac. (ii) 186.7 lb./ac. (iii) 'Control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 3076 lb./ac.

	S ₁	S ₂	Mean
N ₁	2586	2898	2742
N ₂	2514	2552	2533
Mean	2550	2725	2638

S.E. of any marginal mean = 66.0 lb./ac.
S.E. of body of table or control mean = 93.3 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(84).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object : - To study the effect of P to Paddy, directly and indirectly through a preceding crop of G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) G.M. (c) Nil. (ii) (a) Heavy alluvial. (c) Refer soil analysis, Samalkot. (iii) 21.6.1954/22.7.1954. (iv) (a) 2 ploughings and levelling. (b) Transplanting. (c) —. (d) 8"×8". (e) 2. (v) Nil. (vi) SLO—13 (medium). (vii) Irrigated (viii) Weeding one month after planting. (ix) 44.12". (x) 19.11.1954.

2. TREATMENTS :

All combinations of (1) and (2) + a control (no manure)

(1) 3 green manure crop ploughed in situ : M₁=*Pillipesara*, M₂=*Sesbania* and M₃=Wild Indigo.

(2) 3 levels of manuring : L₀=No manure to G.M. crop, L₁=45 lb./ac. of P₂O₅ to G.M. crop and L₂=45 lb./ac. of P₂O₅ to paddy crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 17'×42.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—1956. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3305 lb./ac. (ii) 297.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3162 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₀	3554	3223	3343	3373
L ₁	3456	3117	3208	3260
L ₂	3373	3359	3253	3328
Mean	3461	3233	3268	3321

S.E. of any marginal mean = 86.0 lb./ac.

S.E. of body of table or control mean = 148.9 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 55(80)****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :—To study the effect of P to Paddy directly and indirectly through a preceding crop of G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) G.M. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 14.6.1955 30.7.1955. (iv) (a) 2 ploughings and levelling. (b) Transplanting (c) —. (d) 8"×8" (e) 2. (v) Nil. (vi) SLO—13 (medium). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 34.65". (x) 17.11.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(84) on page 93.

4. GENERAL :

(i) Satisfactory. (ii) Attack of *Kodu* and stem-borer—Endrine sprayed at the concentration of 1 oz. in 4 gallons of water. (iii) Yield of grain. (iv) (a) 1952—1956. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2680 lb./ac. (ii) 155.5 lb./ac. (iii) Effects of M and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2453 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₀	2887	2535	2569	2664
L ₁	2880	2770	2476	2709
L ₂	2990	2536	2701	2742
Mean	2919	2614	2582	2705

S.E. of any marginal mean = 44.9 lb./ac.

S.E. of body of table or control mean = 77.8 lb./ac.

Crop :- Paddy (Sarava).**Ref :- A.P. 55(85).****Site :- Agri. Res. Stn., Samalkot.****Type :- 'M'.**

Object :—To find out the direct manurial values of organic and inorganic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow-Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 26.6.1955/2.8.1955. (iv) (a) 4 ploughings and levelling. (b) Transplanting. (c) — (d) 8"×8". (e) 2. (v) Nil. (vi) SLO—15(late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 34.65". (x) 26.11.1955.

2. TREATMENTS :

Main-plot treatments :

5 sources of 60 lb./ac. of N : S₀=No nitrogen, S₁=A/S, S₂=G.L. S₃=C.M. and S₄=Compost.

Sub-plot treatments :

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

- (1) 2 levels of P₂O₅ as Super : P₀=0 and P₁=60 lb./ac.
- (2) 2 levels of K₂O as Pot. Sul. : K₀=0 and K₁=60 lb./ac.
- (3) 2 levels of lime : L₀=0 and L₁=1500 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 17.67'×11.61' (b) 17'×11'. (v) 4' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe attack of *kōdir* (silver-shoot) and moderate attack of stem-borer—Endrine sprayed at 10 oz. in 4 gallons of water. (iii) Yield of grain. (iv) (a) 1952—1956. (b) Yes. (c) Nil.(v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3147 lb./ac. (ii) (a) 117.7 lb./ac. (b) 608.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	P ₀	P ₁	K ₀	K ₁
L ₀	3060	3185	3179	3149	3258	3166	3181	3151	3179	3153
L ₁	3045	2952	3189	3280	3175	3128	3047	3211	3129	3127
Mean	3053	3068	3184	3215	3217	3147	3114	3181	3154	3140
K ₀	3069	3140	3260	3138	3163	3154	3117	3191		
K ₁	3037	2996	3108	3292	3271	3141	3111	3171		
P ₀	3099	3063	3158	3107	3141	3114				
P ₁	3007	3073	3210	3323	3293	3181				

S.E. of difference of two

- 1. S marginal means = 29.4 lb./ac.
- 2. P, K or L marginal means = 96.0 lb./ac.
- 3. P, K, or L means at the same level of S = 214.9 lb./ac.
- 4. S means at the same level of P, K or L = 154.9 lb./ac.
- S.E. of body of P×K, P×L or K×L table = 96.1 lb./ac.

Crop :- Paddy (*Sarava*).

Ref :- A.P. 56(70).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To find out the manurial value of organic and inorganic fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 21.6.1956/25.7.1956. (iv) (a) 2 ploughings. (b) Planting in lines. (c) N.A. (d) 8' apart. (e) N.A. (v) Nil. (vi) SLO—15 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 35.27". (x) 30.11.1956.

2. TREATMENTS

Same as in expt. no. 55(85) on page 94.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 31 × 12'6". (v) Nil. (vi) Yes.

4. GENERAL :

(i) Crop lodged in patches on 26.10.1956 due to cyclonic weather. (ii) Slight attack of gall-fly (*pachytiploses oryzae*) was seen in all treatments—a general spray of BHC. 5% was given. (iii) Grain yield. (iv) (a) 1952—1956. (b) Yes. (c) N.A. (v) (a) Maruteru and Anakapalle. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2219 lb./ac. (ii) (a) 463.4 lb./ac. (b) 272.8 lb./ac. (iii) Effect of S and interactions S × L and S × P × L are significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	S ₃	S ₄	Mean	P ₀	P ₁	K ₀	K ₁
L ₀	2020	2057	2500	2322	2139	2208	2194	2221	2229	2186
L ₁	2064	1868	2740	2318	2164	2231	2165	2296	2250	2212
Mean	2042	1963	2620	2321	2152	2219	2180	2259	2239	2199
K ₀	2058	2015	2693	2311	2119	2239	2218	2261		
K ₁	2026	1910	2547	2329	2184	2199	2142	2257		
P ₀	1981	1918	2641	2206	2153	2180				
P ₁	2102	2007	2599	2434	2151	2259				

S.E. of difference of two

1. S marginal means	= 115.8 lb./ac.
2. L, P or K marginal means	= 43.1 lb./ac.
3. L, P or K means at the same level of S	= 96.4 lb./ac.
4. S means at the same level of L, P or K	= 134.4 lb./ac.
S.E. of body of L × P, L × K or P × K table	= 43.2 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 58(7).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To find out a suitable source of N for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4000 lb./ac. of G.L. + 100 lb./ac. of A/S + 150 lb./ac. of Super. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 10.6.1958/26.7.1958. (iv) (a) Puddling twice before planting. (b) Japanese method of planting. (c) 21 lb./ac. (d) 8" × 8". (e) 2. (v) B.M. at 30 lb./ac. of P₂O₅ applied in the last puddling by broadcasting. (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 57.73". (x) 10.12.1958.

2. TREATMENTS :

5 sources of 40 lb./ac. of N : S₀=No nitrogen, S₁=C/A/N applied 14 days after planting, S₂=C/A/N applied in two equal doses 14 days and one month after planting, S₃=C/A/N applied in three doses, 10 lb./ac. 14 days after planting, 20 lb./ac. one month after planting and 10 lb./ac. one week before flowering and S₄=A/S in two equal doses at planting and one month after planting.

Basal manuring of 30 lb./ac. of P₂O₅ was not given to S₀.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 20'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Pre-lodging in S_4 on 24.10.1958. Lodging in other treatments also noticed on 3.11.1959. (ii) N.A. (iii) Tiller-count, height measurement and grain yield. (iv) (a) 1958-1960. (b) Yes. (c) Nil. (v) Maruteru, Buchireddipalem, Rudrur, Dindi and Amberpet. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2844 lb./ac. (ii) 253.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	3031	2656	3015	3054	2464

S.E./mean = 126.7 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 59(99).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :—To find out a suitable source of N for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 23.6.1959./18.7.1959. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) —. (d) 8"×8". (e) 2. (v) 30 lb./ac. of P_2O_5 as Super. (vi) GEB—24 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 43.89". (x) 13.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(7) above.

4. GENERAL :

(i) Satisfactory. (ii) Gall-fly attack—no control measures were taken. (iii) Grain yield. (iv) (a) 1958-1960. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1918 lb./ac. (ii) 1174 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	1285	2135	2302	1656	2211

S.E./mean = 587 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(82).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :—To find out N and P requirements of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 21.6.1954/4.7.1958. (iv) (a) 4 ploughings and levelling. (b) Transplanting. (c) Nil. (d) 6"×6". (e) 2. (v) 4000 lb./ac. of G.L.+ 100 lb./ac. of A/S + 100 lb./ac. of Super. (vi) SLO—13 (medium). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 44.12". (x) 1.12.1954.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 4 levels of P_2O_5 : $P_0=0$, $P_1=30$, $P_2=45$ and $P_3=60$ lb./ac.

(2) 4 levels of N : $N_0=0$, $N_1=30$, $N_2=45$ and $N_3=60$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) and (b) 25.1' × 15.8'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—1957. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3875 lb./ac. (ii) 179.5 lb./ac. (iii) Effect of N is highly significant and effect of P is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	4446	4094	3550	3278	3842
P ₁	4509	3808	3578	3763	3915
P ₂	4251	3684	4120	3497	3888
P ₃	4516	3667	3467	3778	3857
Mean	4431	3813	3679	3579	3875

S.E. of any marginal mean = 44.9 lb./ac.

S.E. of body of table = 89.8 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 55(81).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :—To find out N and P requirements of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial. (b) Refer soil analysis. Samalkot. (iii) 26.6.1955/3.8.1955. (iv) (a) A ploughings and levelling. (b) Transplanting. (c) Nil. (d) 6" × 6". (e) 2. (v) 4000 lb./ac. of G.L., 100 lb./ac. of A/S and 100 lb./ac. of P₂O₅. (vi) SLO—13 (medium). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 34.65". (x) 2.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(82) above.

5. RESULTS :

(i) 3029 lb./ac. (ii) 174.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	2987	3545	3128	3295	3239
P ₁	3111	2673	2912	3098	2949
P ₂	2864	2786	3278	2864	2948
P ₃	2922	2997	2778	3218	2979
Mean	2971	3000	3024	3119	3029

S.E. of marginal mean of N or P = 43.7 lb./ac.

S.E. of body of table = 87.3 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 56(10).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To find out N and P requirements of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 2.6.1956/6.7.1956. (iv) (a) 2 ploughings. (b) Planting in lines. (c) N.A. (d) 8" apart. (e) N.A. (v) Nil. (vi) SLO—15 (late). (vii) Irrigated. (viii) Weeding one month after planting. (ix) 42.08". (x) 30.11.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(82) on page 97.

4. GENERAL :

(i) Crop in N_2 and N_3 plots had pre-lodged on 20.10.1956. Crop in the remaining plots had lodged completely on 26.10.1956 due to cyclonic weather. (ii) slight attack of gall-fly—general spray of 5% BHC. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) N.A. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2672 lb./ac. (ii) 184.2 lb./ac. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean
P_0	2812	2782	2450	2283	2582
P_1	2892	2784	2717	2614	2752
P_2	2930	2724	2803	2408	2717
P_3	2806	2806	2549	2391	2638
Mean	2861	2775	2631	2424	2672

S.E. of N or P marginal mean = 46.0 lb./ac.

S.E. of body of table = 92.1 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 56(8).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :- To find out the best method of applying P to Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy (b) G.M. (c) Nil. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 10.6.1956/22.7.1956. (iv) (a) 2 ploughings. (b) Planting in lines. (c) —. (d) 8" apart. (e) N.A. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) Weeding one month after planting. (ix) 37.28" (x) 20.11.1956.

2. TREATMENTS :

4 methods of application of P_2O_5 : $P_0=N_0 P_2O_5$, $P_1=$ Sesbania grown in situ. $P_2=45$ lb./ac. of P_2O_5 to sesbania grown in situ. and $P_3=$ Sesbania grown in situ + 45 lb./ac. of P_2O_5 direct to paddy.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 32' × 28'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Straw and grain yield. (iv) (a) No. (b) and (c) —. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2530 lb./ac. (ii) 192.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	2221	2625	2625	2650

S.E./mean = 78.6 lb./ac.

Crop :- Paddy (Sarava).

Ref :-A.P. 58(120)

Site :- Agri. Res. Stn., Samalkot.

Type :- 'M'.

Object :-To compare different methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Rice—Fallow—Rice. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 9.5.1958/27.6.1958. (iv) (a) As per treatments. (b) Transplanting. (c) —. (d) and (e) As per treatments. (v) As per treatments. (vi) GEB—24 (late). (vii) Irrigated. (viii) As per treatments. (ix) 57.72*. (x) 11.12.1958.

2. TREATMENTS :

5 methods of planting : M₁=Ryots method : 5 C.L./ac. of F.Y.M., bulk planting, 2 seedlings/hole and 2 weedings. M₂=Departmental method : 4000 lb./ac. of G.L.+100 lb./ac. of Super+100 lb./ac. of A/S, bulk planting, 2 seedlings/hole and 2 weedings. M₃=Japanese method : 20 C.L./ac. of compost+100 lb./ac. of super+100 lb./ac. of A/S applied in puddle, bulk planting, 4 seedlings/hole and 4 intercultures with junior hoe. M₄=M₃+planting at 10'×10' spacing, M₅=M₂+planting at 10'×10' spacing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) 40'×22'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) N.A. (c) Nil. (iv) Av. yield of grain in lb./ac. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2870 lbs./ac. (ii) 136.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatments	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	3789	2563	2866	2845	2287

S.E./mean = 60.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(32).

Site :- Demonstn.-Cum-Res. Farm, Srikakulam.

Type :- 'M'.

Object :-To work out the suitable manurial schedule for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Green gram. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1957/1, 2 and 3.8.1957. (iv) (a) 3 puddlings, levelling and digging with *mummatties* after applying G.L. (b) Transplantation in lines. (c)—. (d) and (e) N.A. (v) 2000 lb./ac of G.L (vi) MTU—19(late). (vii) Irrigated. (viii) Working push hoe fortnightly one month after transplantation till formation of ear primordia. (ix) N.A. (x) 23 and 24.12.1957.

TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of P₂O₅ as Super in single dose : P₀=0, P₁=20 and P₂=40 lb./ac.

(2) 5 levels of N as A/S : N₀=0, N₁=20 lb./ac. as single dose, N₂=20 lb./ac. in two doses, N₃=40 lb./ac. as single dose and N₄=40 lb./ac. in two doses.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 28.7'×24.3'. (b) 28'×23.6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2540 lb./ac. (ii) 111.7 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2267	2400	2433	2633	2567	2460
P ₁	2350	2533	2567	2733	2733	2583
P ₂	2450	2467	2417	2833	2717	2577
Mean	2356	2467	2472	2733	2672	2540

S.E. of P marginal mean = 25.0 lb./ac.

S.E. of N marginal mean = 32.2 lb./ac.

S.E. of body of table = 55.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 54(5).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To study the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Paddy-Fertilizer-Mixture at 40 lb./ac. of N. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 24.6.1956. (iv) (a) 3 ploughings and levelling. (b) and (c) N.A. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—19(early). (vii) Irrigated. (viii) 1 weeding. (ix) 36.30". (x) 23.10.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P₂O₅ : P₀=0 and P₁=25 lb./ac.

(2) 5 sources of 50 lb./ac. of N : S₀=No nitrogen, S₁=F.Y.M., S₂=G.M., S₃=G.N.C. and S₄=A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (two plots for S₀). (b) N.A. (iii) 2. (iv) (a) 30'×17½'. (b) 28'×15½'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—N.A. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1787 lb./ac. (ii) 214.0 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

S₀P₀ = 1263 lb./ac. and S₀P₁ = 1419 lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	1563	1975	1950	2325	1953
P ₁	1700	2575	1937	2050	2066
Mean	1632	2275	1943	2188	2010

S.E. of S marginal mean or S_0P mean	=	107.0 lb./ac.
S.E. of P marginal mean	=	75.7 lb./ac.
S.E. of body of table	=	151.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 55(4).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To study the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 4.1.1955/4.2.1955. (iv) (a) 3 puddlings and levelling. (b) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) Weeder worked once on 7.3.1955. (ix) 1.20". (x) 20.4.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(5) on page 100.

4. GENERAL :

(i) Plots with A/S+ P_2O_5 showed good growth. But plots without P_2O_5 were poor in growth. Other plots were normal. (ii) Attack of stem-borer in the early stages. (iii) Straw and grain yield. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 942 lb./ac. (ii) 133 lb./ac. (iii) S effect is highly significant and interaction $S \times P$ is significant. (iv) Av. yield of grain in lb./ac.

$$S_0P_0 = 693 \text{ lb./ac. and } S_0P_1 = 613 \text{ lb./ac.}$$

	S_1	S_2	S_3	S_4	Mean
P_0	1087	887	994	1175	1036
P_1	900	1319	1133	1200	1138
Mean	994	1103	1064	1187	1087

S.E. of S marginal mean or S_0P mean	=	66.5 lb./ac.
S.E. of P marginal mean	=	47.0 lb./ac.
S.E. of body of table	=	94.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 55(5).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To study the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 11.7.1955/13.8.1955. (iv) (a) 3 ploughings and levelling. (b) to (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) 3 weedings. (ix) 39.41". (x) 7.11.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(5) on page 100.

4. GENERAL :

(i) Growth normal in all plots except in control plots where it was poor. (ii) The crop was infested with thrips which was controlled to an extent by spraying D.D.T. 50% on 14.9.1955. The crop showed stem-borer attack at the time of flowering upto 20%. There was an attack of gall-fly also. (iii) Grain yield. (iv) (a) 1954—N.A. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1233 lb./ac. (ii) 156.0 lb./ac. (iii) P effects is significant and S effect is highly significant. (iv) Av. yield of grain in lb./ac.

$$S_0P_0 = 925 \text{ lb./ac. and } S_0P_1 = 1125 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	900	1250	1600	1250	1250
P ₁	1250	1500	1550	1400	1425
Mean	1075	1375	1575	1325	1338

S.E. of S marginal mean or S₀P mean = 78.0 lb./ac.

S.E. of P marginal mean = 55.1 lb./ac.

S.E. of body of table = 110.3 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 56(114).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To study the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal (iii) 20.12.1956/1.2.1957. (iv) (a) Three ploughings, (b) Transplanting. (c) Nil. (d) 6"×6". (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) One hand weeding and working puddler twice. (ix) N.A. (x) 10.4.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(5) on page 100.

4. GENERAL :

(i) Poor. (ii) No. (iii) Grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 243 lb./ac. (ii) 394.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

$$S_0P_0 = 65 \text{ lb./ac. and } S_0P_1 = 180 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	55	228	291	169	186
P ₁	156	178	150	1194	419
Mean	105	203	221	681	303

S.E. of marginal mean of S or S₀P mean = 197.1 lb./ac.

S.E. of marginal mean of P = 139.4 lb./ac.

S.E. of body of table = 278.7 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 58(74).****Site :- Govt. Main Farm, Warangal.****Type :- 'M'.**

Object :—To study the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 22.7.1958. (iv) (a) 3 puddlings and levelling. (b) Transplanted. (c) Nil. (d) 6"×6". (e) N.A. (iv) Nil. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) 2 interculturings and 2 hand weedings. (ix) 19.1". (x) 23.10.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (5) on page 101.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4481 lb./ac. (ii) 282.9 lb./ac. (iii) S effect is highly significant and P effect and interaction S×P are significant. (iv) Av. yield in grain lb./ac.

$$S_0P_0 = 2664 \text{ lb./ac. and } S_0P_1 = 4830 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
P ₀	4931	4733	4928	4874	4867
P ₁	4626	5153	4479	5100	4839
Mean	4778	4943	4704	4987	4853

S.E. of S marginal mean or S₀P mean = 141.4 lb./ac.

S.E. of P marginal mean = 100.0 lb./ac.

S.E. of body of table = 200.0 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(22).****Site :- Govt. Main Farm, Warangal.****Type :- 'M'.**

Object :—To determine the long range effect of P and different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 10.6.1959/21.7.1959. (iv) (a) Ploughings, puddlings and levelling. (b) Transplanted. (c) N.A. (d) 6"×6". (e) 3. (v) Nil. (vi) HR—19 (early). (vii) Irrigated. (viii) Interculturing twice by weeder and hand weeding once. (ix) 18.6". (x) 21.10.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(5) on page 101.

4. GENERAL :

(i) Poor. Crop lodged at the time of flowering. (ii) Slight attack of gull-fly—control measures N.A. (iii) Grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2758 lb./ac. (ii) 372.7 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield in lb./ac.

$S_0P_0 = 2450$ lb./ac. and $S_0P_1 = 2725$ lb./ac.

	S_1	S_2	S_3	S_4	Mean
P_0	3050	2050	2350	3450	2725
P_1	2450	2450	3150	3800	2922
Mean	2750	2250	2750	3625	2844

S.E. of S marginal mean or S_0P mean = 186.4 lb./ac.
 S.E. of P marginal mean = 131.8 lb./ac.
 S.E. of body of table = 263.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(48).

Site :- Demonstn.-cum-Res. Stn., Yemmiganur.

Type :- 'M'.

Object :—To find out the optimum dose of N for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Sannhemp. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 26.6.1957/11.8.1957. (iv) (a) Puddled twice, levelled with *pallagorru*. (b) to (e) N.A. (v) G.L. at 5000 lb./ac. and Super at 200 lb./ac. (vi) GEB—24 (medium). (vii) Irrigated. (viii) 1 weeding and working push hoe thrice. (ix) 26.42". (x) 22.12.1957.

2. TREATMENTS :

5 levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=30$, $N_3=40$ and $N_4=50$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $40' \times 12'$. (b) $38'4" \times 11'$. (v) 10' along side and 6" at the ends. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Endrine was sprayed on 23.9.1957 against a light incidence of stem-borer attack. (iii) Grain yield. (iv) (a) 1957—contd. (b) Yes. (c) No. (v) (a) N.A. (b)—. (vi) and (vii) Nil.

5. RESULTS :

(i) 2536 lb./ac. (ii) 236.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	N_0	N_1	N_2	N_3	N_4
Av. yield	1929	2319	2583	2822	3026

S.E./mean = 118.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(41).

Site :- Demonstn.-cum-Res. Stn., Yem miganur.

Type :- 'M'.

Object :—To find out the optimum dose of N for Paddy Crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil. (b) N.A. (iii) 29.6.1958/29.7.1958. (iv) (a) Three puddings and levelling. (b) to (e) N.A. (v) 5000 lb./ac. of G.L. and 200 lb./ac. of Super. (vi) GEB—24 (medium). (vii) Irrigated. (viii) One weeding and three hoeings at periodical intervals. (ix) 18.11". (x) 10.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(48) on page 105.

5. RESULTS :

(i) 3214 lb./ac. (ii) 284.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃	N ₄
Av. yield	2873	3313	3390	3209	3287

S.E./mean = 142.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(48).

Site :- Demonstn.-cum-Res. Stn., Yemmiganur.

Type :- 'M'.

Object :—To find out the optimum dose of N for Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 2000 lb./ac. of G.L., 200 lb./ac. of Super, 400 lb./ac. of G.N.C. and 50 lb./ac. of A/S as basal dressing. A top-dressing of A/S at 50 lb./ac. was applied after a month of transplantation. (ii) (a) Black soil. (b) N.A. (iii) 26.6.1959/2.8.1959. (iv) (a) Three puddlings were given. (b) to (e) N.A. (v) 5000 lb./ac. of G.L.+200 lb./ac. of Super. (vi) GEB—24 (late). (vii) Irrigated. (viii) After one month of transplanting, intercultivation with Japanese hoe was given. Two weedings were also done. (ix) 16.7. (x) 3.12.1959.

2. TREATMENTS :

Same as in expt. no. 57(48) on page 105.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 8'6"×43'. (b) 8'×42'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3322 lb./ac. (ii) 162.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃	N ₄
Av. yield	2804	3128	3192	3565	3922

S.E./mean = 81.28 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(89).

Site :- Demonstn.-cum-Res. Stn., Yemmiganur.

Type :- 'M'.

Object :—To study the effect of N and P on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M. (b) Sannhemp.(c) Nil. (ii) (a) Deep black cotton soil. (b) N.A. (iii) 16.7.1956/6.9.1956. (iv) (a) 2 puddlings and levelling with *pallagorru*. (b) to (e) N.A. (v) 5000 lb./ac. of G.L. (vi) GEB—24 (medium). (vii) Irrigated, (viii) One weeding 20 days after planting. Japanese push hoe was worked twice (ix) 22.43". (x) 18, 19 12 1956.

2. TREATMENTS :

3 levels of manures : M₀=Control (no manure), M₁=25 lb./ac. of P₂O₅+30 lb./ac. of N as A S and M₂=25 lb./ac. of P₂O₅ +15 lb./ac. of N as A/S+15 lb./ac. of N as G.N.C.

Manures applied as basal dressing at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 1/220 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of stem-borer. As the attack was noticed in only later stage, no preventive measure was possible. (iii) Grain yield. (iv) (a) 1956—N.A. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1729 lb./ac. (ii) 21.67 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	1393	1906	1887

S.E./mean = 8.85 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(46).

Site :- Demonstn.-cum-Res. Stn., Yemmiganur.

Type :- 'M'.

Object :—To study the effect of N and P on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy. (b) Sannhemp. (c) Nil. (ii) (a) Deep black cotton soil. (b) N.A. (iii) 26.6.1957/6.8.1957. (iv) (a) Puddled twice and levelled with *pallagorru*. (b) to (e) N.A. (v) 500 lb./ac of G.L. was applied as basal dressing a week before transplanting. (vi) GEB—24 (medium). (vii) Irrigated. (viii) 1 weeding and push hoe worked thrice. (ix) 26.42". (x) 21.12.57.

2. TREATMENTS :

Same as in expt. no. 56(89) on page 106.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 1/84.7 ac. (b) 1/105 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrine was sprayed in all plots in the month of September against light incidence of stem-borer. (iii) Grain yield. (iv) (a) 1956—contd. (b) and (c) No. (v) (a) N.A. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 2677 lb./ac. (ii) 310.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	2027	2960	3044

S.E./mean = 126.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 58(39).

Site :- Demonstn.-cum-Res. Stn., Yemmiganur.

Type :- 'M'.

Object :—To study the effects of N and P on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) Indigo. (c) Nil. (ii) (a) Deep black cotton soil. (b) N.A. (iii) 29.6.1958/30.7.1958. (iv) (a) 2 puddlings and levelling. (b) to (e) N.A. (v) 5000 lb./ac. of G.L. was applied as basal dressing. (vi) GEB—24 (medium). (vii) Irrigated. (viii) One weeding and push hoe was worked thrice. (ix) 18.11". (x) 10.12.1958.

2. TREATMENTS :

Same as in expt. no. 56(89) on page 106.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 52'×9'2". (b) 51'×7'6". (v) 10' along the sides and 6' at the ends. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N 1. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3353 lb./ac. (ii) 385.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	2999	3511	3549

S.E./mean = 157.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 57(MAE).

Site :- M. A. E. Farm, Chinnagonehal.

Type :- 'M'.

Object:—Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black loam. (b) N.A. (iii) N.A./3rd-4th week of July 1957. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) N.A. (vi) GEB—24. (vii) Irrigated. (viii) N.A. (ix) 23'. (x) 2nd-3rd week of December 1957.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

- (1) 3 levels of N as A/S : N₀=0, N₁=30 and N₂=60 lb./ac.
- (2) 3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb./ac.
- (3) 3 levels of K₂O as Mur. Pot. : K₀=0, K₁=30 and K₂=60 lb./ac.
- (4) 2 levels of F.Y.M. : F₀=0 and F₁=5000 lb./ac.

3. DESIGN :

(i) 3³×2 Fact confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/50 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 792 lb./ac. (ii) 288.8 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	319	596	434	214	464	673	463	498	390	450
F ₁	831	1236	1333	913	1227	1261	1152	1069	1180	1134
Mean	576	916	884	564	846	967	808	784	785	792
K ₀	582	914	926	534	852	1037				
K ₁	531	1134	686	530	816	1005				
K ₂	615	700	1039	627	869	858				
P ₀	512	537	641							
P ₁	584	1069	884							
P ₂	632	1143	1126							

S.E. of N, P or K marginal mean = 68.1 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 117.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(MAE).

Site :- M.A.E. Farm, Chinnagonehal.

Type :- 'M'.

Object :—Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 4.7.1958/1.8.1958. (iv) (a) N.A. (b) Transplanting. (c) 20 lb./ac. (d) 8"×4". (e) N.A. (v) Nil. (vi) GEB—24. (vii) Irrigated. (viii) Weeding. (ix) 23". (x) 2.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type II conducted at Chinnagonehal on page 108.

5. RESULTS :

(i) 950 lb./ac. (ii) 331.5 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	421	695	747	79	704	1080	579	592	692	621
F ₁	846	1338	1654	762	1514	1561	1412	1110	1315	1279
Mean	634	1016	1200	421	1109	1321	996	851	1004	950
K ₀	571	1204	1212	419	1206	1362				
K ₁	577	797	1180	412	862	1280				
K ₂	753	1048	1208	431	1259	1320				
P ₀	349	380	532							
P ₁	722	1230	1375							
P ₂	829	1440	1693							

S.E. of N, P or K marginal mean = 78.1 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 135.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(MAE).

Site :- M.A.E. Farm, Chinnagonehal.

Type :- 'M'.

Object :—Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) July/Aug. 1959. (iv) (a) N.A. (b) Transplanting. (c) 20 lb./ac. (d) 8"×4". (e) N.A. (v) N.A. (vi) GEB—24. (vii) Irrigated. (viii) N.A. (ix) 13". (x) December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type II conducted at Chinnagonehal on page 108.

5. RESULTS :

(i) 1658 lb./ac. (ii) 364.5 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	943	1527	2191	1230	1685	1746	1548	1607	1506	1554
F ₁	1174	1558	2559	1553	1775	1963	1756	1931	1604	1763
Mean	1058	1542	2375	1391	1730	1855	1652	1769	1555	1658
K ₀	1041	1598	2318	1363	1814	1779				
K ₁	1247	1434	2626	1441	1842	2024				
K ₂	887	1595	2182	1370	1533	1761				
P ₀	824	1369	1982							
P ₁	1114	1736	2339							
P ₂	1237	1522	2804							

S.E. of N, P or K marginal mean = 85.9 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 148.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(MAE).

Site :- M A E. Farm, Maruteru.

Type :- 'M'.

Object :—Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) and (c) Nil. (ii) (a) Medium black. (b) N.A. (iii) 3rd July 1958/N.A. (iv) (a) Puddling. (b) Transplanting. (c) 32 lb./ac. (d) 8"×8". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—1. (vii) Irrigated. (viii) N.A. (ix) 50". (x) 1.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type II conducted at Chinnagonehal on page 103.

5. RESULTS :

Direct Effect

(i) 3055 lb./ac. (ii) 450.1 lb./ac. (iii) Main effect of P alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	3065	3194	2922	2666	3123	3393	3094	3199	2889	3061
F ₁	3322	3015	2811	2916	3011	3222	3200	3083	2866	3050
Mean	3194	3104	2866	2791	3067	3308	3147	3141	2878	3055
K ₀	3242	3400	2799	2725	3450	3265				
K ₁	3365	3140	2917	3124	2999	3299				
K ₂	2974	2774	2884	2525	2751	3357				
P ₀	2883	2750	2741							
P ₁	3217	3275	2708							
P ₂	3482	3290	3150							

S.E. of N, P or K marginal mean = 106.1 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 183.8 lb./ac.

Cummulative Effect

(i) 3090 lb./ac. (ii) 601.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	3199	3077	2989	2838	3106	3322	3088	3278	2899	3088
F ₁	3327	2938	3011	2977	2982	3317	3261	3138	2877	3092
Mean	3263	3008	3000	2908	3044	3319	3174	3208	2888	3090
K ₀	3375	3199	2950	2824	3250	3450				
K ₁	3332	3140	3151	3149	3066	3409				
K ₂	3081	2684	2899	2750	2815	3099				
P ₀	3024	2748	2950							
P ₁	3024	3158	2950							
P ₂	3741	3117	3101							

S.E. of N, P or K marginal mean = 141.8 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 245.6 lb./ac.

Residual Effect

(i) 2200 lb./ac. (ii) 294.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2116	2262	2145	1988	2179	2356	2072	2395	2056	2174
F ₁	2417	2211	2049	2178	2355	2144	2339	2133	2205	2226
Mean	2266	2236	2097	2083	2267	2250	2206	2264	2130	2200
K ₀	2318	2282	2016	2065	2408	2142				
K ₁	2359	2301	2132	2201	2359	2233				
K ₂	2124	2126	2142	1983	2034	2375				
P ₀	2108	2016	2126							
P ₁	2475	2383	1942							
P ₂	2217	2309	2223							

S.E. of N, P or K marginal mean = 69.4 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 120.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :- Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) and (c) Nil. (ii) (a) Medium black. (b) N.A. (iii) 3rd July 1959/N.A. (iv) (a) Puddling. (b) Transplanting. (c) 32 lb./ac. (d) 8"×8". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—1. (vii) Irrigated. (viii) N.A. (ix) 50". (x) 1.12.1959.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type II conducted at Chinnagonehal on page 108.

3. DESIGN :

(i) $3^3 \times 2$ Fact. confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) $30' \times 14\frac{1}{2}'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :**Direct Effect**

(i) 2487 lb./ac. (ii) 189.2 lb./ac. (iii) Main effects of N, P and K are highly significant. Others effects are not significant (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2276	2510	2566	2294	2422	2638	2084	2437	2832	2451
F ₁	2377	2553	2638	2331	2504	2733	2116	2565	2886	2523
Mean	2327	2532	2602	2313	2463	2685	2100	2501	2859	2487
K ₀	2057	2142	2101	1924	2016	2360				
K ₁	2257	2556	2691	2249	2533	2722				
K ₂	2666	2898	3014	2765	2840	2973				
P ₀	2215	2290	2433							
P ₁	2259	2566	2564							
P ₂	2507	2740	2808							

S.E. of N, P or K marginal mean = 44.6 lb./ac.

S.E. of body of N×P, N×K or P×K table = 77.2 lb./ac.

Cummulative Effect

(i) 3046 lb./ac. (ii) 76.5 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2610	3017	3176	2716	2910	3177	2483	2966	3354	2934
F ₁	2823	3237	3416	2905	3111	3460	2666	3188	3623	3159
Mean	2716	3127	3296	2811	3010	3318	2574	3077	3488	3046
K ₀	2275	2633	2815	2375	2541	2807				
K ₁	2725	3181	3324	2807	3058	3365				
K ₂	3150	3567	3749	3250	3432	3783				
P ₀	2516	2866	3050							
P ₁	2633	3117	3282							
P ₂	3000	3393	3557							

S.E. of N, P or K marginal mean = 18.0 lb./ac.

S.E. of body of N×P, N×K or P×K table = 31.2 lb./ac.

Residual Effect

(i) 3003 lb./ac. (ii) 105.1 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2588	2961	3117	2689	2855	3122	2428	2926	3311	2888
F ₁	2727	3223	3355	2849	3073	3428	2623	3189	3538	3117
Mean	2680	3092	3236	2769	2964	3275	2526	3058	3424	3003
K ₀	2259	2593	2725	2334	2500	2743				
K ₁	2700	3149	3324	2815	3024	3334				
K ₂	3081	3534	3659	3157	3368	3749				
P ₀	2499	2841	2966							
P ₁	2600	3033	3258							
P ₂	2942	3401	3483							

S.E. of N, P or K marginal mean = 25.0 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 43.3 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 56(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :—Type II—To study the long term effect of three levels each of N, P, K, and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(MAE) type II conducted at Maruteru on page 111.

5. RESULTS :

(i) 2761 lb./ac. (ii) 297.0 lb./ac. (iii) Main effects of N, P and interactions N×P×F and P×K×F are highly significant. Interactions N×K, P×K and N×K are significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2370	2854	3182	3026	2726	2654	2848	2809	2748	2802
F ₁	2425	2698	3037	2765	2709	2687	2748	2659	2754	2720
Mean	2398	2776	3110	2896	2718	2670	2798	2734	2751	2761
K ₀	2278	2879	3238	3029	2729	2637				
K ₁	2453	2812	2937	2654	2779	2770				
K ₂	2462	2637	3154	3004	2645	2604				
P ₀	2478	2820	3388							
P ₁	2462	2704	2987							
P ₂	2253	2804	2954							

S.E. of N, P or K marginal mean = 49.5 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 70.0 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 59(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :—Type II—To study the long term effect of three levels each of N, P, K and two levels of bulky manure on three course rotation crops.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(MAE) type II conducted at Maruteru on page 111.

5. RESULTS :**Direct Effect**

(i) 3078 lb./ac. (ii) 641.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2870	3119	3426	2920	3159	3336	3504	2852	3058	3138
F ₁	2836	2747	3470	2703	3024	3326	2936	3137	2980	3018
Mean	2853	2933	3448	2812	3092	3331	3220	2994	3019	3078
K ₀	3070	3253	3338	2803	3354	3504				
K ₁	2869	2911	3203	2862	3219	2903				
K ₂	2619	2636	3803	2770	2702	3586				
P ₀	2652	2396	3387							
P ₁	2703	3118	3453							
P ₂	3203	3286	3504							

S.E. of N, P or K marginal mean = 151.3 lb./ac.

S.E. of body of N×P, N×K or P×K table = 262.0 lb./ac.

Cummulative Effect

(i) 3170 lb./ac. (ii) 641.8 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2680	3670	3515	3515	3136	3213	3704	2924	3237	3288
F ₁	2698	3198	3258	2981	2885	3288	3152	3015	2987	3051
Mean	2689	3434	3386	3248	3010	3250	3428	2970	3112	3170
K ₀	2810	4054	3420	3253	3368	3663				
K ₁	2503	3136	3269	3220	3036	2652				
K ₂	2754	3112	3471	3272	2627	3437				
P ₀	2903	3371	3471							
P ₁	2385	3527	3120							
P ₂	2778	3404	3570							

S.E. of N, P or K marginal mean = 151.3 lb./ac.

S.E. of body of N×P, N×K or P×K table = 262.0 lb./ac.

Residual Effect

(i) 2582 lb./ac. (ii) 641.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2618	2686	2824	2501	2891	2736	2730	2618	2780	2709
F ₁	2359	2624	2379	2324	2180	2858	2392	2556	2414	2454
Mean	2488	2655	2602	2412	2536	2797	2561	2587	2597	2582
K ₀	2512	2736	2434	2511	2419	2752				
K ₁	2534	2593	2634	2377	2451	2935				
K ₂	2419	2636	2736	2350	2736	2704				
P ₀	2378	2643	2217							
P ₁	2519	2652	2434							
P ₂	2569	2670	3153							

S.E. of N, P or K marginal mean = 151.3 lb./ac.
 S.E. of body of N×P, N×K or P×K table = 262.0 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57 (MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Object :—Type IV—To find the effect of application of P to legume on the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) 1st—2nd week of July, 1957. (iv) Ploughings. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) MTU—19. (vii) Irrigated. (viii) N.A. (ix) 43". (x) 2nd week of December, 1957.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)+a control (L₀P₀)

(1) 2 legumes : L₁=*Phillipesara* and L₂=*Cow-pea*.

(2) 3 levels of P₂O₅ as Super : P₂=0, P₁=40 and P₂=80 lb./ac.

Sub-plot treatments :

3 levels of N as A/S : N₀=0, N₁=15 and N₂=30 lb./ac.

P₂O₅ applied to legumes and N applied to Paddy crop broadcast at transplanting.

3. DESIGN :

(i) Split-plot. (ii) 7 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Gall-fly noticed—control measures taken are N.A. (iii) Grain yield. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 840 lb./ac. (ii) (a) 207.3 lb./ac. (b) 263.3 lb./ac. (iii) Main effects of P and 'control vs. others' are highly significant. Interactions L×N and P×N are significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₂ P ₀	L ₁ P ₁	L ₂ P ₁	L ₁ P ₂	L ₂ P ₂	Mean
N ₀	694	853	735	741	837	872	996	818
N ₁	661	924	708	856	883	1141	826	857
N ₂	883	730	584	902	845	826	1138	844
Mean	746	836	676	833	855	946	987	840

S.E. of difference of two

- | | | |
|------------------------------------|---|---------------|
| 1. LP marginal means | = | 97.7 lb./ac. |
| 2. N marginal means | = | 81.3 lb./ac. |
| 3. N means at the same level of LP | = | 215.0 lb./ac. |
| 4. LP means at the same level of N | = | 200.9 lb./ac. |

Crop :- Paddy (Kharif).**Ref :- A.P. 57(MAE).****Site :- M.A.E. Farm, Chinnagonehal.****Type :- 'M'.**

Object :- Type IV—To find the effect of application of P to legume on the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Black loam. (b) N.A. (iii) 3rd-4th week of July, 1957. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) 8'×8'. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) N.A. (ix) 23'. (x) 2nd-3rd week of December, 1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type IV conducted at Chavai on page 115.

5. RESULTS :

(i) 1007 lb./ac. (ii) (a) 311.0 lb./ac. (b) 283.9 lb./ac. (iii) Main effects of P and N and 'control vs. others' and interaction N×P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₂ P ₀	L ₁ P ₁	L ₂ P ₁	L ₁ P ₂	L ₂ P ₂	Mean
N ₀	123	264	353	1081	1191	1232	1372	802
N ₁	137	370	515	1276	1171	1725	1518	959
N ₂	117	279	344	1542	1940	2147	2456	1261
Mean	126	304	404	1300	1434	1701	1782	1007

S.E. of difference of two

- | | | |
|------------------------------------|---|---------------|
| 1. LP marginal means | = | 146.6 lb./ac. |
| 2. N marginal means | = | 87.6 lb./ac. |
| 3. N means at the same level of LP | = | 133.8 lb./ac. |
| 4. LP means at the same level of N | = | 239.4 lb./ac. |

Crop :- Paddy (Kharif).**Ref :- A.P. 58(MAE).****Site :- M.A.E. Farm, Chinnagonehal.****Type :- 'M'.**

Object :- Type IV—To find the effect of application of P to legume on the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 3.7.1958. (iv) (a) Ploughing. (b) Transplanting. (c) 32 lb./ac. (d) 8'×8'. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—1. (vii) Irrigated. (viii) N.A. (ix) 50'. (x) 1.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type IV conducted at Chavai on page 115.

5. RESULTS :

(i) 947 lb./ac. (ii) (a) 399.9 lb./ac. (b) 367.0 lb./ac. (iii) Main effects of L, P and 'control vs. rest' are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₂ P ₀	L ₁ P ₁	L ₂ P ₁	L ₁ P ₂	L ₂ P ₂	Mean
N ₀	189	708	469	1185	708	1539	683	783
N ₁	263	880	255	1703	1053	2049	905	1015
N ₂	173	691	206	1646	1168	1917	1506	1044
Mean	208	760	310	1511	976	1835	1031	947

S.E. of difference of two

1. LP marginal means = 188.5 lb./ac.
2. N marginal mean = 113.3 lb./ac.
3. N means at the same level of LP = 299.7 lb./ac.
4. LP means at the same level of N = 308.9 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 56(MAE).

Site :- M A E, Farm, Maruteru.

Type :- 'M'.

Object :- Type IV—To find the effect of application of P to legume on the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Coastal alluvial. (b) Nil. (iii) 12.2.1957. (iv) (a) Ploughing and puddling. (b) Transplanting. (c) 20 lb./ac. (d) 8" x 4". (e) N.A. (v) Nil. (vi) MTU-20. (vii) Irrigated. (viii) N.A. (ix) 1.12". (x) 24.5.1957.

2. TREATMENTS:

Main-plot treatments :

All combinations of (1) and (2) + a control (L₀P₀)

(1) 2 legumes : L₁=*Sannhemp* and L₂=*Dhaincha*.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=40 and P₂=80 lb./ac.

Sub-plot treatments :

3 levels of N as A/S : N₀=0, N₁=15 and N₂=30 lb./ac.

P₂O₅ applied to legumes at sowing and N applied to Paddy at the time of planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(MAE) type IV conducted at Chalvai on page 115.

5. RESULTS :

(i) 1903 lb./ac. (ii) (a) 1086.1 lb./ac. (b) 453.4 lb./ac. (iii) Main effect of N is highly significant. Main effect of 'control vs. others' and interaction N x P are significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₁ P ₁	L ₁ P ₂	L ₂ P ₀	L ₂ P ₁	L ₂ P ₂	Mean
N ₀	670	1340	1641	1976	1373	1641	2110	1536
N ₁	904	1976	2043	1875	2110	2176	2176	1894
N ₂	1071	3148	2612	1809	2244	2645	2411	2277
Mean	882	2155	2099	1887	1909	2154	2232	1903

S.E. of difference of two

1. LP marginal means = 511.9 lb./ac.
2. N marginal means = 139.9 lb./ac.
3. N means at the same level of LP = 370.2 lb./ac.
4. LP means at the same level of N = 594.6 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 57(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :—Type IV—To find the effect of application of P to legume on the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 8.1.1958/9.2.1958. (iv) (a) 3 puddlings. (b) Transplanting. (c) 32 lb./ac. (d) 8"×4". (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) Nil. (x) 10.5 1958.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type IV conducted at Maruteru on page 117.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 27'×16'. (v) N.A. (vi) Yes.

4. GENERAL :(i) Satisfactory. (ii) Affected by *spodophora maurities*—control measures taken are N.A. (iii) Grain yield. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) to (vii) Nil.**5. RESULTS :**

(i) 2149 lb./ac. (ii) (a) 631.1 lb./ac. (b) 411.4 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₁ P ₁	L ₁ P ₂	L ₂ P ₀	L ₂ P ₁	L ₂ P ₂	Mean
N ₀	1580	1764	1630	2084	1697	2084	1714	1792
N ₁	1697	2084	2319	2722	2067	2117	1664	2096
N ₂	2470	2638	2285	2773	2672	2722	2353	2559
Mean	1916	2162	2078	2526	2143	2308	1910	2149

S.E. of difference of two

1. LP marginal means = 297.5 lb./ac.
2. N marginal means = 127.0 lb./ac.
3. N means at the same level of LP = 335.9 lb./ac.
4. LP means at the same level of N = 404.6 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 55(MAE).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :—Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) Second fortnight of July, 1955. (iv) (a) N.A. (b) Transplanted. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) MTU—19. (vii) Irrigated. (viii) N.A. (ix) 55.0". (x) Second fortnight of December 1955.

2. TREATMENTS :

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

(1) 2 sources of N : S₁=Urea and S₂=A/S.(2) 7 times of application of N : T₁=Before planting, T₂=At planting, T₃=At tillering, T₄=Half before planting and half at planting, T₅=Half at planting and half at tillering, T₆=½ before planting, ½ at planting and ½ a week before flowering and T₇=½ at planting, ½ at tillering and ½ a week before flowering.

N applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) and (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3021 lb./ac. (ii) 305.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2756 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2798	3143	2847	2666	2863	3382	3225	2989
S ₂	3118	3077	3069	2863	2979	3316	3209	3090
Mean	2958	3110	2958	2764	2921	3349	3217	3040

S.E. of T marginal mean = 124.6 lb./ac.

S.E. of S marginal mean = 66.6 lb./ac.

S.E. of body of table or control mean = 176.3 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 56(MAE).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :—Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 55(MAE) type V conducted at Chalvai on page 118.

5. RESULTS :

(i) 3353 lb./ac. (ii) 367.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3209 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3316	3168	3242	3480	3110	3472	3464	3322
S ₂	3653	3143	3192	3332	3472	3415	3620	3404
Mean	3484	3156	3217	3405	3291	3444	3542	3363

S.E. of T marginal mean = 149.8 lb./ac.

S.E. of S marginal mean = 80.1 lb./ac.

S.E. of body of table or control mean = 211.9 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(MAE).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :—Type V—To study the effect of time of applications of N on Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 55(MAE) type V conducted at Chalvai on page 118.

5. RESULTS :

(i) 2097 lb./ac. (ii) 289.6 lb./ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2032 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	1909	2180	1958	2304	2073	2427	2296	2164
S ₂	2008	1934	1777	2370	1753	1785	2658	2041
Mean	1958	2057	1868	2337	1913	2106	2477	2102

S.E. of T marginal mean = 118.2 lb./ac.

S.E. of S marginal mean = 63.2 lb./ac.

S.E. of body of table or control mean = 167.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(MAE).

Site :- M.A.E. Farm, Chinnagonehal.

Type :- 'M'.

Object :- Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black loam. (b) N.A. (iii) N.A./3rd—4th week of July, 1957. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 8' × 8'. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) N.A. (ix) 23°. (x) 2nd—3rd week of December, 1957.

2. TREATMENTS :

Same as in expt. no. 55(MAE) type V conducted at Chalvai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 612 lb./ac. (ii) 348.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 461 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	922	1119	576	403	765	601	346	676
S ₂	461	650	469	354	576	592	897	571
Mean	692	884	522	378	670	596	622	623

S.E. of T marginal mean = 142.4 lb./ac.

S.E. of S marginal mean = 76.1 lb./ac.

S.E. of body of table or control mean = 201.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(MAE).

Site :- M.A.E. Farm, Chinnagonahal.

Type :- 'M'.

Object :- Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 4th July/1st Aug. 1958. (iv) (a) N.A. (b) Transplanting. (c) 20 lb./ac. (d) 8"×4" (e) —. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) Weeding. (ix) 23". (x) 2.12.1958.

2. TREATMENTS :

Same as in expt. No. 55 (MAE) type V conducted at Chalvai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 535 lb./ac. (ii) 297.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 527 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	300	430	433	420	747	663	590	512
S ₂	510	443	593	607	653	483	637	561
Mean	405	436	513	514	700	573	614	536

S.E. of T marginal mean = 121.6 lb./ac.

S.E. of S marginal mean = 65.0 lb./ac.

S.E. of body of table or control mean = 172.0 lb./ac.

Corp :- Paddy (Kharif).

Ref :- A.P. 58(MAE)

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :- Type V—To study the effect of time of application of N on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Medium black. (b) N.A. (iii) 3rd July, 1958. (iv) (a) Ploughing and Puddling. (b) Transplanting. (c) 32 lb./ac. (d) 8"×8". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—1. (vii) Irrigated. (viii) Weeding. (ix) 50". (x) 1.12.1958.

2. TREATMENTS :

Same as in expt. No. 55(MAE) type V conducted at Chalvai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3221 lb./ac. (ii) 509.3 lb./ac. (iii) Main effect of 'control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2098 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3513	3184	3053	3579	3966	3003	3036	3333
S ₂	2830	3818	3365	3053	3168	3201	3448	3269
Mean	3172	3501	3209	3316	3567	3102	3242	3301

S.E. of T marginal mean = 207.9 lb./ac.
 S.E. of S marginal mean = 111.1 lb./ac.
 S.E. of body of table or control mean = 294.1 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :- Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) July, 1959. (iv) (a) N.A. (b) Transplanting. (c) 20 lb./ac. (d) 8"×4". (e) —. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) Weeding. (ix) 23". (x) Dec. 1959.

2. TREATMENTS :

Same as in expt. no. 55(MAE) type V conducted at Chavai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 140'×250'. (b) 30'×14½'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3388 lb./ac. (ii) 213.9 lb./ac. (iii) Main effects of T and 'control vs. others' are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control = 2131 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3299	3299	3431	3703	3234	3703	3604	3468
S ₂	3350	3332	3489	3439	3234	3834	3703	3489
Mean	3345	3315	3460	3571	3234	3769	3653	3478

S.E. of T marginal mean = 87.3 lb./ac.
 S.E. of S marginal mean = 46.7 lb./ac.
 S.E. of body of table or control mean = 123.5 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 56(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :- Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 9th to 14th Feb. 1956. (iv) (a) N.A. (b) Transplanting. (c) 25 lb./ac. (d) 8"×4". (e) N.A. (v) 2000 lb./ac. of straw and 5000 lb./ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 1.12". (x) 18th to 21st May, 1956.

2. TREATMENTS :

Same as in expt. no. 55(MAE) type V conducted at Chavai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3648 lb./ac. (ii) 136.6 lb./ac. (iii) Main effects of N, T, 'control vs. others' and interaction N×T are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control = 1533 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	4032	3565	6531	4399	3632	2632	3766	4080
S ₂	3832	2466	2999	4098	4265	3632	3332	3518
Mean	3932	3016	4765	4248	3949	3132	3549	3799

S.E. of T marginal mean = 55.8 lb./ac.
 S.E. of S marginal mean = 29.8 lb./ac.
 S.E. of body of table or control mean = 78.9 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 57(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :- Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 8.1.1958. (iv) (a) Puddling and levelling. (b) Transplanting. (c) 32 lb./ac. (d) 8"×4". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) Nil. (x) 10.5.1958.

2. TREATMENTS :

Same as in expt. no. 55(MAE) type V conducted at Chavai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2727 lb./ac. (ii) 448.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2855 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2518	2937	2551	3020	2468	2567	2435	2642
S ₂	3184	2707	3267	3069	2872	2205	2254	2794
Mean	2851	2822	2909	3045	2670	2386	2345	2718

S.E. of T marginal mean = 183.1 lb./ac.
 S.E. of S marginal mean = 97.8 lb./ac.
 S.E. of body of table = 258.9 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :—Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 2nd February, 1958. (iv) (a) N.A. (b) Transplanting. (c) 25 lb./ac. (d) 8"×4". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—10. (vii) Irrigated. (viii) N.A. (ix) 6.77". (x) 1st May, 1958.

2. TREATMENTS :

Same as in expt. no. 55(MAE) type V conducted at Chalvai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3026 lb./ac. (ii) 472.3 lb./ac. (iii) Main effect of 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2103 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3205	3288	3238	3555	3221	2904	3255	3238
S ₂	3455	2703	3271	2537	3455	2870	2336	2947
Mean	3330	2996	3254	3046	3338	2887	2796	3092

S.E. of T marginal mean = 192.8 lb./ac.
 S.E. of S marginal mean = 103.1 lb./ac.
 S.E. of body of table or control mean = 272.7 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 59(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'M'.**

Object :—Type V—To study the effect of time of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 2nd Feb. 1959. (iv) (a) N.A. (b) Transplanting. (c) 25 lb./ac. (d) 8"×4". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) SLO—16. (vii) Irrigated. (viii) and (ix) N.A. (x) 1st May, 1959.

2. TREATMENTS :

Same as in expt. no. 55 (MAE) type V conducted at Chalvai on page 118.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3068 lb./ac. (ii) 654.9 lb./ac. (iii) Main effects of 'control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1966 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2666	2765	2463	3631	3733	2767	3533	3080
S ₂	2534	3066	2836	4265	3330	3434	3031	3214
Mean	2600	2916	2650	3948	3532	3100	3282	3147

S.E. of T marginal mean = 142.9 lb./ac.

S.E. of S marginal mean = 267.4 lb./ac.

S.E. of body of table or control mean = 378.1 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 56(MAE).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :- Type VI—To determine the method of placement of fertilizers for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) Second fortnight of July, 1956. (iv) (a) N.A. (b) Transplanted. (c) N.A. (d) 8" × 8". (e) N.A. (v) Nil. (vi) MTU-19. (vii) Irrigated. (viii) N.A. (ix) 55.0°. (x) Second fortnight of December, 1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control.

(1) 3 sources of P₂O₅ : S₁=Super, S₂=Ammono. Phos. and S₃=Dical. Phos.(2) 2 levels of P₂O₅ : P₁=20 and P₂=40 lb./ac.(3) 3 methods of application of P₂O₅ : M₁=Broadcasting at puddling time, M₂=Dipping the seedlings in mud-slush mixed with fertilizers before transplanting and M₃=Application in the form of pellets to be placed near the roots at the time of planting.

A/S applied at planting to make up 30 lb./ac. of N.

3. DESIGN :

(i) Fact. confd. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 23' × 24'. (b) 20' × 21.5'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Gall-fly attack noticed. 33 gallons/ac. containing 100 c.c. of Folidol sprayed. (iii) Grain yield. (iv) (a) 1956—N.A. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3309 lb./ac. (ii) 142.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3535 lb./ac.

	S ₁	S ₂	S ₃	Mean	P ₁	P ₂
M ₁	3449	3530	3046	3342	3446	3239
M ₂	3452	3218	3216	3295	3406	3185
M ₃	3383	3167	3201	3250	3397	3103
Mean	3428	3305	3154	3296	3416	3176
P ₁	3489	3309	3449			
P ₂	3366	3301	2860			

S.E. of S or M marginal mean	=	41.1 lb./ac.
S.E. of P marginal mean	=	33.6 lb./ac.
S.E. of body of S × M or P × S table	=	70.8 lb./ac.
S.E. of body of M × P table	=	58.2 lb./ac.
S.E. of control mean	=	100.8 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :- Type VI—To determine the method of placement of fertilizers for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 2nd Feb. 1958. (iv) (a) N.A. (b) Transplanting. (c) 25 lb./ac. (d) 8" × 4". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—10. (vii) Irrigated. (viii) N.A. (ix) 6.77". (x) 1st May, 1958.

2. TREATMENTS :

All combinations of (1), (2) and (3) + a control.

(1) 2 sources of P_2O_5 : S_1 =Super and S_2 =Ammo. Phos.

(2) 2 levels of P_2O_5 : P_1 =20 and P_2 =40 lb./ac.

(3) 3 methods of application of P_2O_5 : M_1 =Broadcasting, M_2 =Dipping the seedlings in mud-slush mixed with the fertilizer and M_3 =Pellet application.

A/S applied at planting to make up 30 lb./ac. of N.

3. DESIGN :

(i) $2^2 \times 3$ Fact. confd. (ii) (a) 5 plots/block ; 3 blocks/replication. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 30' × 14½'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2884 lb./ac. (ii) 309.0 lb./ac. (iii) Main effect of 'control vs. others' is highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control = 2169 lb./ac.

	M_1	M_2	M_3	P_1	P_2	Mean
S_1	2745	2854	2912	2820	2854	2837
S_2	3088	3154	2912	3082	3021	3052
Mean	2917	3004	2912	2951	2938	2944
P_1	2871	3054	2929			
P_2	2962	2954	2896			

S.E. of S or P marginal mean	=	72.8 lb./ac.
S.E. of M marginal mean	=	89.2 lb./ac.
S.E. of body of S × M or P × M table	=	126.1 lb./ac.
S.E. of body of S × P table	=	103.0 lb./ac.
S.E. of control mean	=	178.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'M'.

Object :- Type VI—To determine the method of placement of fertilizers for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) Feb. 1959. (iv) (a) N.A. (b) Transplanting. (c) 25 lb./ac. (d) 8'×4". (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) MTU-10. (vii) Irrigated. (ix) N.A. (x) 6.77".

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 58(MAE) type V conducted at Maruteru on page 124.

5. RESULTS :

(i) 3251 lb./ac. (ii) 381.3 lb./ac. (iii) Only main effect of M is significant. (iv) Av. yield of grain in lb./ac.

Control = 2471 lb./ac.

	M ₁	M ₂	M ₃	P ₁	P ₂	Mean
S ₁	3522	3118	3299	3347	3279	3313
S ₂	3554	2946	3456	3269	3369	3319
Mean	3538	3032	3378	3308	3324	3316
P ₁	3614	2946	3365			
P ₂	3464	3118	3390			

S.E. of S or P marginal mean = 89.9 lb./ac.
 S.E. of M marginal mean = 110.1 lb./ac.
 S.E. of body of S×M or P×M table = 155.7 lb./ac.
 S.E. of body of S×P table = 127.1 lb./ac.
 S.E. of control mean = 220.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Objects :- Type VI (TCM)—To find out the residual value of P on the yield of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) 2nd fortnight of July, 1956. (iv) (a) Ploughing (b) Transplanted. (c) N.A. (d) 8"×8". (e) —. (v) N.A. (vi) MTU-19. (vii) Irrigated. (viii) N.A. (ix) 55.0". (x) 2nd fortnight of December, 1956.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12
First year :	0	C	C	P ₁	P ₂	0	0	0	0	P _½	P ₁	P ₂
Second year :	0	C	C	0	0	P ₁	P ₂	0	0	P _½	P ₁	P ₂
Third year :	0	C	C	0	0	0	0	P ₁	P ₂	P _½	P ₁	P ₂

Treatments are three year rotations, there being 11 distinct treatments, plots under treatment (1) do not receive any fertilizer N or P. Plots under the other ten treatments receive a basal application of N. One of the ten treatments consists of the application of basal dose of N only. This treatment which serves as control is applied to two plots in each block. Various symbols denote : p_½=10 lb./ac. ; p₁=20 lb./ac. and p₂=40 lb./ac. of P₂O₅.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 42'×22' (b) 40'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Gall-fly attack—control measures N.A. (iii) Grain yield. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3480 lb./ac. (ii) 432.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Treatment	0000	cccc	p ₁ ccp ₁	p ₁ p ₁ p ₁ p ₁	p ₂ ccp ₂	p ₂ p ₂ p ₂ p ₂	ccp ₂ c	cp ₂ cc	cp ₁ cc	ccp ₁ c	p ₁ p ₁ p ₁ p ₁	p ₂ p ₂ p ₂ p ₂
Av. yield	2987	3274	3571	3581	3624	3621	3467	3466	3533	3713	3442	
	S.E./mean (cccc)				= 152.7 lb./ac.							
	S.E./mean (others)				= 216.0 lb./ac.							

Crop :- Paddy (Kharif).

Ref :- A.P. 57(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Object :—Type VI (TCM)—To find out the residual value of P on the yield of Paddy crop.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56(MAE) type VI (TCM) conducted at Chalvai on page 127.

5. RESULTS :

(i) 2713 lb./ac. (ii) 351.3 lb./ac. (iii) Only 'effect of control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	000	ccc	p ₁ cc	p ₂ cc	cp ₁ c	cp ₂ c	ccp ₁	ccp ₂	p ₁ p ₁ p ₁	p ₂ p ₂ p ₂	p ₁ p ₁ p ₁ p ₁
Av. yield	2238	2452	2904	2427	2691	2715	2863	3094	2913	2584	2962
	S.E./mean (ccc)				= 124.2 lb./ac.						
	S.E./mean (others)				= 175.7 lb./ac.						

Crop :- Paddy (Kharif).

Ref :- A.P. 59 (MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Object :—Type VI (TCM)—To study the residual value of phosphatic manure.

2. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56(MAE) type VI (TCM) conducted at Chalvai on page 127.

5. RESULTS :

(i) 2023 lb./ac. (ii) 346.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Treatment	000	ccc	ccp ₁	ccp ₂	cp ₁ c	cp ₂ c	p ₁ cc	p ₂ cc	p ₁ p ₁ p ₁	p ₂ p ₂ p ₂
Av. yield	1686	1777	1892	2304	1999	1901	2073	2049	2065	2551
	S.E./mean (ccc)				= 84.5 lb./ac.					
	S.E./mean (others)				= 173.2 lb./ac.					

Crop :- Paddy.

Ref :- A.P. 54(TCM).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Object :—Type I (a)—To study the effect of different sources and levels of N and P on non-acid soils for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) June—July. (iv) (a) N.A. (b) Transplanting. (c) (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) Nov-Dec.

2. TREATMENTS :

All combinations of (1), (2) and (3) + 3 extra treatments

(1) 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 sources of N : $S_1=A/S$, $S_2=A/N$ and $S_2=Urea$.

(3) 3 levels of P_2O_5 as Triple Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

3 extra treatments : $T_1=60$ lb./ac. of N+40 lb./ac. of P_2O_5 , $T_2=40$ lb./ac. of N+80 lb./ac. of P_2O_5 and $T_3=60$ lb./ac. of N+80 lb./ac. of P_2O_5 .

N as A/S and P_2O_5 as Triple Super.

3. DESIGN :

(i) 3^3 confd. factorial with 3 plots for extra treatments in each block. (ii) (a) 12 plots/block and 3 blocks per replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) $1/62.05$ ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation—control manures N.A. (iii) Yield data. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 4479 lb./ac. (ii) 637.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

$$T_1 = 4938 \text{ lb./ac.}, T_2 = 4771 \text{ lb./ac. and } T_3 = 3499 \text{ lb./ac.}$$

	N_0	N_1	N_2	Mean.	S_1	S_2	S_3
P_0	4418	4747	4641	4602	4190	4906	4711
P_1	4525	4256	4565	4449	4186	4492	4667
P_2	4316	4532	4388	4412	3848	4276	5112
Mean	4420	4512	4531	4488	4075	4558	4830
S_1	—	4381	4100				
S_2	—	4316	4619				
S_3	—	4838	4875				

S.E. of any marginal mean in $P \times N$ or $P \times S$ table = 212.6 lb./ac.
 S.E. of S marginal mean in $S \times N$ table = 260.3 lb./ac.
 S.E. of body of table or extra treatment mean = 367.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(TCM).

Site :- M.A.E. Farm, Chalvai.

Type :- 'M'.

Object :—Type II—To study the most suitable time for application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) June-July. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) Nov.-Dec.

2. TREATMENTS.

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

(1) 2 sources of N= $S_1=A/S$ and $S_2=Urea$

(2) 7 times of application : T_1 =before planting, T_2 =at planting, T_3 =at tillering, T_4 =half before planting and half at planting, T_5 =half at planting and half at tillering, T_6 = $\frac{1}{3}$ before planting, $\frac{1}{3}$ at planting and $\frac{1}{3}$ a week before flowering and T_7 = $\frac{1}{3}$ at planting, $\frac{1}{3}$ at tillering and $\frac{1}{3}$ a week before flowering.

N was applied at 30 lb./ac. with a basal dressing of 20 lb./ac. of P_2O_5 .

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation—control manures N.A. (iii) Yield data. (iv) (a) 1953-1956. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3365 lb./ac. (ii) 400.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3026 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3231	3517	3420	3232	3657	3267	3118	3349
S ₂	3457	3663	3241	2975	3059	3693	3644	3390
Mean	3344	3590	3330	3104	3358	3480	3381	3370

S.E. of T marginal mean = 163.6 lb./ac.

S.E. of S marginal mean = 87.4 lb./ac.

S.E. of body of table = 231.4 lb./ac.

Crop :- Paddy.**Ref :- A.P. 54(TCM).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :—Type IV—To study the effect of sources, levels and method of application of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) June-July. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) Nov.+Dec.

2. TREATMENTS :

All combinations of (1), (2) and (3)+2 controls (no phosphate)

(1) 2 sources of P₂O₅ : S₁=Super and S₂=Ammono. Phos.(2) 2 levels of P₂O₅ : P₁=20 and P₂=40 lb./ac.(3) 4 methods of placement : M₁=Broadcasting at puddling time, M₂=Drilling at puddling time, M₃=Dipping in mud. slush and M₄=Pellet method.

N was equalised to 30 lb./ac. by broadcasting A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/73.2 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation—control measures N.A. (iii) Yield data. (iv) (a) 1933–1956. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3971 lb./ac. (ii) 370.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3618 lb./ac.

	M ₁	M ₂	M ₃	M ₄	Mean	S ₁	S ₂
P ₁	4035	4186	4002	4024	4062	4051	4074
P ₂	4017	4126	3972	3754	3967	3969	3965
Mean	4026	4156	3987	3889	4015	4010	4020
S ₁	4183	4239	3932	3686			
S ₂	3869	4072	4042	4093			

S.E. of M marginal mean = 185.2 lb./ac.

S.E. of P or S marginal mean = 130.9 lb./ac.

S.E. of body of P×M or S×M table = 261.8 lb./ac.

S.E. of body of P×S table = 185.2 lb./ac.

Crop :- Paddy.**Ref :- A.P. 54(TCM)****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :-Type VI—To find out the residual effect of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) June—July. (iv) (a) N.A. (b) Transplanting (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12
First year :	0	C	C	P ₁	P ₂	0	0	0	0	P _½	P ₁	P ₂
Second year :	0	C	C	0	0	P ₁	P ₂	0	9	P _½	P ₁	P ₂
Third year :	0	C	C	0	0	0	0	P ₁	P ₂	P _½	P ₁	P ₂

Treatments are three course rotations there being 9 distinct treatments. Plots under treatment 1 do not receive any fertilizer N or P. Plots under other treatments receive a basal application of N. One of the treatments consists of the application of basal dose of N only. This treatment which serves as control is applied to two plots in each block. Various symbols denote—P_½=10 lb./ac. P₁=20 lb./ac. and P₂=40 lb./ac. of P₂O₅.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 54'×10'. (b) 52'×8'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation—control measures N.A. (iii) Yield data. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) to (viii) Nil.

5. RESULTS .

(i) 803 lb./ac. (ii) 239.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Treatment	C0	cc	P ₁ C	P ₂ C	CP ₁	CP ₂	P _½ P _½	P ₁ P ₁	P ₂ P ₂
Av. yield	707	810	763	873	900	709	922	787	753

S.E./mean (cc) = 59.7 lb./ac.

S.E./mean (others) = 119.5 lb./ac.

Crop :- Paddy.**Ref :- A.P. 54(TCM).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :-Type IX—To study the effect of artificial fertilisers in conjunction with organic manures on Paddy:

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₀=0, N₁=20 and N₂=40 lb./ac.(2) 3 levels of P₂O₅ as super=P₀=0 P₁=20 and P₂=40 lb./ac.(3) 3 levels of F.Y.M. : F₀=0, F₁=10 and F₂=20 C.L./ac.**3. DESIGN :**(i) 3³ confd. factorial. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1 (iv) (a) N.A. (b) 1/62 ac. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) Crop suffered from gall-fly infestation—control measures N.A. (iii) Yield data. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

- (i) 3084 lb./ac. (ii) 129.2 lb./ac. (iii) Main effects of N, P and interaction $P \times F$ are highly significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	F ₀	F ₁	F ₂
P ₀	2703	3007	3072	2927	2651	3178	2953
P ₁	3086	2915	3269	3090	3244	3019	3008
P ₂	3134	3359	3209	3234	3274	3298	3128
Mean	2974	3094	3183	3084	3056	3165	3030
F ₀	2904	3082	3183				
F ₁	3133	3050	3311				
F ₂	2886	3148	3056				

S.E. of any marginal mean = 43.1 lb./ac.
 S.E. of body of any table = 74.6 lb./ac.

Crop :- Paddy (1st crop).

Ref :- A.P. 54(TCM).

Centre :- Bodhan (c.f.).

Type :- 'M'.

Object :- Type II—To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in a few trials. (iv) N.A. (v) (a) N.A. (b) Transplanted.
 (c) to (e) N.A. (vi) June—July. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) Nov.—Dec.

2. TREATMENTS :

- 0 = Control.
 p = 20 lb./ac. of P₂O₅ as Super.
 n₁p = 20 lb./ac. of N as A/S + 20 lb./ac. of P₂O₅ as Super.
 n₂p = 40 lb./ac. of N as A/S + 20 lb./ac. of P₂O₅ as Super.
 n₁'p = 20 lb./ac. of N as Urea + 20 lb./ac. of P₂O₅ as Super.
 n₂'p = 40 lb./ac. of N as Urea + 20 lb./ac. of P₂O₅ as Super.
 Fertilizers broadcast before puddling.

3. DESIGN :

- (i) and (ii) Eleven community project centres, representing the entire paddy growing tract of the country were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p	n ₁ p	n ₂ p	n ₁ 'p	n ₂ 'p
Av. yield	2413	2724	2946	3076	3001	2944

G.M. = 2851 lb./ac. ; S.E. = 87.0 lb./ac. and no. of trials = 22.

Crop :- Paddy (2nd crop).**Ref :- A.P. 54(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :-Type II - To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in a few trials. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35%. (x) May.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type II conducted at Bodhan (1st crop) on page 132.

5. RESULTS :

Treatment	0	p	n ₁ p	n ₂ p	n ₁ 'p	n ₂ 'p
Av. yield	1605	1885	2085	2262	2082	2129

G.M.=2008 lb./ac. ; S.E. =47.4 lb./ac. and no. of trials=18.

Crop :- Paddy (2nd crop).**Ref :- A.P. 55(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :-Type II—To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54(TCM) conducted at Bodhan type II (2nd crop) above.

5. RESULTS :

Treatment	0	p	n ₁ p	n ₂ p	n ₁ 'p	n ₂ 'p
Av. yield	2456	2730	2903	3147	2983	3138

G.M.=2893 lb./ac. ; S.E. =77.1 lb./ac. and no. of trials=21.

Crop :- Paddy (1st crop).**Ref :- A.P. 54(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :-Type III—To study the effect of different levels and sources of P along with N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in a few trials. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) June—July. (vii) Irrigated. (viii) N.A. (ix) 35%. (x) Nov.—Dec.

2. TREATMENTS :

0 =Control.

n =20 lb./ac. of N as A/S.

np₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.np₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.np₁' =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Dical. Phos.np₂' =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Dical. Phos.

Fertilizers broadcast before puddling.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type II conducted at Bodhan (1st crop) on page 132.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ '	np ₂ '
Av. yield	2390	2770	2901	3020	2955	3291

G.M.=2888 lb./ac. ; S.E.=71.9 lb./ac. and no. of trials=22.

Crop :- Paddy (2nd crop).**Ref :- A.P. 54(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :—Type III—To study the effect of different levels and sources of P along with N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in a few trials. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) May.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type III conducted at Bodhan (1st crop) on page 133.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ '	np ₂ '
Av. yield	1620	1888	2015	2183	1997	2133

G.M. = 1973 lb./ac. ; S.E. = 61.6 lb./ac. and no. of trials = 18.

Crop :- Paddy (2nd crop).**Ref :- A.P. 55(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :—Type III—To study the effect of different levels and sources of P along with N on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54(TCM) type III (2nd crop) conducted at Bodhan above.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ '	np ₂ '
Av. yield	2252	2679	2774	2979	2852	2908

G.M. = 2741 lb./ac. ; S.E. = 88.9 lb./ac. and no. of trials = 21.

Crop :- Paddy (1st crop).**Ref :- A.P. 54(TCM).****Centre :- Bodhan (c.f.).****Type :- 'M'.**

Object :—Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in few trials. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) June—July. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) Nov.—Dec.

2. TREATMENTS :

0 =Control.

n =20 lb./ac. of N as A/S.

np₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

np₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

np₁k₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Pot. Sul.

np₁k₂ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+40 lb./ac. of K₂O as Pot. Sul.
Fertilizers broadcast before puddling.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) (1st crop) type II conducted at Bodhan on page 132.

5. RESULTS

Treatment	0	n	np ₁	np ₂	np ₁ k ₁	np ₁ k ₂
Av. yield	2401	2700	2812	2805	3013	2856

G.M. = 2764 lb./ac. S.E. = 70.5 lb./ac. and no. of trials = 20

Crop :- Paddy (2nd crop).

Ref :- A.P. 54(TCM).

Centre :- Bodhan (c.f.).

Type :- 'M'.

*Object :-Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Medium black. (iii) F.Y.M. in a few trials. (iv) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35". (x) May.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type IV conducted at Bodhan (1st crop) on page 134.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	npk ₁	np ₁ k ₂
Av. yield	1754	1870	1988	2155	2143	2185

G.M. = 2016 lb./ac. ; S.E. = 50.6 lb./ac. and no. of trials = 19

Crop :- Paddy (2nd crop).

Ref :- A.P. 55(TCM).

Centre :- Bodhan (c.f.).

Type :- 'M'.

Object :-Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54(TCM) type IV (2nd crop) conducted at Bodhan above.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ k ₁	np ₁ k ₂
Av. yield	2312	2575	2796	2865	2741	2789

G.M. = 2680 lb./ac. ; S.E./mean = 73.6 lb./ac. and no. of trials N.A.

Crop :- Paddy (1st crop).

Ref :- A.P. 54(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal alluvium. (iii) Compost or G.L. (iv)(a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) May—June. (vii) Irrigated. (viii) N.A. (ix) 44". (x) Oct.—Nov.

2. TREATMENTS :

0 =Control.

n₁ =20 lb./ac. of N as A/S.

n₂ =40 lb./ac. of N as A/S.

n₁' =20 lb./ac. of N as Urea.

n₂' =40 lb./ac. of N as Urea.

All fertilizers applied before planting.

3. DESIGN :

(i) and (ii) Eleven community project centres representing the entire paddy growing tract of the country were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4 GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'
Av. yield	2611	2902	3132	2963	3099

G.M.=2941 lb./ac., S.E.=34.6 lb./ac. and no. of trials=26.

Crop :- Paddy (1st crop).

Ref :- A.P. 55(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54(TCM) type I conducted at Samalkot on page 135.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'
Av. yield	2812	3095	3291	3083	3193

G.M. = 3095 lb./ac. ; S.E. = 82.3 lb./ac. and no. of trials = 15.

Crop :- Paddy (1st crop).

Ref :- A.P.54(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

Object :—Type II—To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal alluvium. (iii) Compost or G.L. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) May-June. (vii) Irrigated. (viii) N.A. (ix) 44". (x) Oct.—Nov.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type II conducted at Bodhan (1st crop) on page 132.

5. RESULTS :

Treatment	0	p	n_1p	n_2p	$n_1'p$	$n_2'p$
Av. yield	2608	2829	3154	3306	3146	3406

G.M. = 3075 lb./ac., S.E. = 51.8 lb./ac. and no. of trials = 26.

Crop :- Paddy (1st crop).

Ref :- A.P. 55(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

Object :—Type II—To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54(TCM) type II conducted at Samalkot above.

5. RESULTS :

Treatment	0	p	n ₁ p	n ₂ p	n ₁ 'p	n ₂ 'p
Av. yield	2890	2997	3305	3548	3255	3543

G.M. = 3256 lb./ac. ; S.E. = 86.4 lb./ac. and no. of trials = 15.

Crop :- Paddy(1st crop).

Ref :- A.P. 55(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

Object :—Type III—To study the effect of different levels and sources of P along with N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal alluvium. (iii) Compost or G.L. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) May-June, 1955. (vii) Irrigated. (viii) N.A. (ix) 44". (x) Oct.-Nov. 1955.

2. TREATMENTS :

0 =Control.

n =20 lb./ac. of N as A/S.

np₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

np₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

np₁" =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Dical. Phos.

np₂" =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Dical. Phos.

All fertilizers applied before planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I conducted at Samalkot on page 135.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ "	np ₂ "
Av. yield	2880	3216	3605	3645	3541	3571

G.M. = 3409 lb./ac. ; S.E. = 64.2 lb./ac. and no. of trials = 15.

Crop :- Paddy (1st crop).

Ref :- A.P. 55(TCM).

Centre :- Samalkot (c.f.).

Type :- 'M'.

Object :—Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal alluvium. (iii) Compost or G.L. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c) to (e) N.A. (vi) May-June, 1955. (vii) Irrigated. (viii) N.A. (ix) 44". (x) Oct.-Nov. 1955.

2. TREATMENTS :

0 =Control.

n =20 lb./ac. of N as A/S.

np₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

np₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

np₁k₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Pot. Sul.

np₁k₂ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+40 lb./ac. of K₂O as Pot. Sul.

All fertilizers applied before planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I conducted at Samalkot on page 135.

5. RESULTS :

Treatment	0	n	np ₁	np ₂	np ₁ k ₁	np ₁ k ₂
Av. yield	2706	3048	3339	3235	3355	3352

G.M. = 3172 lb./ac. ; S.E. = 67.5 lb./ac. and no. of trials = 15.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(SFT).

Centre :- Chittoor (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Paddy to levels of N, P and K, applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) June-July 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October 1959.

2. TREATMENTS :

0 = Control (no manure).

n = 20 lb /ac. of N as A/S.

p = 20 lb./ac. of P₂O₅ as Super.

np = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

k = 20 lb /ac. of K₂O as Pot. Sul.

nk = 20 lb./ac. of N as A/S+20 lb./ac. of K₂O as Pot. Sul.

pk = 20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Pot. Sul.

npk = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Pot. Pul.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	510	296	165	32.9	58	33	-8	41	21.4

Control yield = 2732 lb./ac. and no. of trials = 8.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(SFT)

Centre :- Guntur (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A above conducted at chittoor.

3 RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	115	115	148	64.2	-41	-16	8	115	50.2

Control yield = 2164 lb./ac. no. of trials = 11.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(SFT).

Centre :- Hyderabad (c.f.).

Type :- 'M'.

Object :- Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) December 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in experiment No. 59(SFT) type A on page 138 conducted at chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	165	49	91	28.8	-91	0	-16	25	26.3

Control yield = 1913 lb./ac. and no. of trials = 14.

Crop :- Paddy (Kharif, Rabi).

Ref :- A.P. 59(SFT).

Centre :- Hyderabad (c.f.).

Type :- 'M'.

Object :- Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black (iii) Nil. (iv) *Kharif*-June—July 1959. *Rabi*-December 1959. (v) to (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) *Kharif*-October 1959. *Rabi*-March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	Kharif								
	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	206	66	181	32.9	-25	33	33	-16	47.7

Control yield = 3341 lb./ac. and no. of trials = 8.

Effect	Rabi								
	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	346	140	49	14.8	49	-82	-82	16	20.6

Control yield = 2304 lb./ac. and no. of trials = 11.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(SFT).

Centre :- Karim Nagar (c.f.).

Type :- 'M'.

Object :- Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) December 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in experiment No. 59(SFT) type A on page 138 conducted at chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	527	461	181	60.1	49	33	-8	16	65.0

Control yield = 1819 lb./ac. and no. of trials = 15.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(SFT)

Centre :- KarimNagar (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) December 1959. (v) and (vi) N.A. (vii) Irrigated (viii) and (ix) N.A. (x) April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in experiment No. 59(SFT) type A on page 138 conducted at chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	165	225	25	43.6	58	-25	0	49	35.4

Control yield = 1744 lb./ac. and no. of trials = 19.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(SFT).

Centre :- Krishna Dt. (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black and coastal. (iii) Nil. (iv) June—July. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	239	115	99	18.1	25	25	33	-16	10.7

Control yield = 2625 lb./ac. and no. of trials = 17.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(SFT).****Centre :- Mahboobnagar (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	206	74	58	14.0	-33	-25	8	0	11.5

Control mean = 2074 lb./ac. and no. of trials = 24.

Crop :- Paddy (Rabi).**Ref :- A.P. 59(SFT).****Centre :- Mahboobnagar (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) (a) December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	296	247	16	65.0	-58	-16	-49	-8	64.2

Control yield = 1802 lb./ac. of trials = 9.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	395	206	222	37.0	-49	16	123	82	31.3

Control yield = 1259 lb./ac. and no. of trials = 16.

Crop :- Paddy (Kharif, Rabi).**Ref :- A.P. 59(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black and coastal. (iii) Nil. (iv) *Kharif*: June—July 1959, and *Rabi* December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) *Kharif* in October, 1959 while *Rabi* in April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	Rabi								
	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	280	148	74	46.9	33	82	25	33	51.3

Control yield = 1070 lb./ac. and no. of trials = 7.

Effect	Kharif								
	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	329	189	115	33.7	—16	41	66	—33	25.5

Control yield = 2057 lb./ac. and no. of trials = 7.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Srikakulam (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and coastal. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	304	173	107	21.4	33	—16	49	58	15.6

Control yield = 1728 lb./ac. and no. of trials = 19.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Visakhapatnam (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	156	66	66	18.1	-25	-16	-8	25	11.5

Control yield = 2362 lb./ac. and no. of trials = 19.

Crop :- Paddy (Rabi).
Centre :- Warangal (c.f.).

Ref :- A.P. 58(SFT).
Type :- 'M'.

Object :- Type A—To study the response of Paddy to different levels of N, P and K applied individually and in combinations.

BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	197	197	58	29.6	25	25	8	41	24.7

Control yield = 1284 lb./ac. and no. of trials = 20.

Crop :- Paddy (Kharif).

Centre :- Warangal (c.f.).

Ref :- A.P. 59(SFT).

Type :- 'M'.

Object :- Type A—To study the response of Paddy to different levels of N, P and K, applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soils. (iii) Nil. (iv) June—July, 1956. (v) and (vi) Nil. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 138 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response	206	82	25	49.4	74	49	8	99	63.4

Control yield = 2798 lb./ac. and no. of trials = 12.

Crop :- Paddy (Kharif).

Centre :- Chittoor (c.f.).

Ref :- A.P. 59(SFT).

Type :- 'M'.

Object :- Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soils. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS :

- 0 = Control (no manure).
 n_1 = 20 lb./ac. of N as A, S.
 n_2 = 40 lb./ac. of N as A, S.
 n_1' = 20 lb./ac. of N as Urea.
 n_2' = 40 lb./ac. of N as Urea.
 n_1'' = 20 lb./ac. of N as A/S, N.
 n_2'' = 40 lb./ac. of N as A/S, N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1.40 ac. (b) 1.80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	2617	2913	3407	2962	3505	2938	3431

G.M. = 3110 lb./ac.; S.E. = 51.8 lb./ac. and no. of trials = 8.

Crop :- Paddy (*Rabi*).

Ref :- A.P. 58(SFT).

Centre :- Hyderabad (c.f.).

Type :- 'M'.

Object:—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	2757	2987	3152	2872	2913	2929	3020

G.M. = 2947 lb./ac.; S.E. = 41.3 lb./ac. and no. of trials = 12.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 59(SFT).

Centre :- Guntur (c.f.).

Type :- 'M'.

Object:—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2065	2419	2650	2312	2452	2345	2419

G.M. = 2380 lb./ac. S.E. = 59.3 lb./ac. and no. of trials = 12.

Crop :- Paddy (Kharif and Rabi).

Ref :- A.P. 59(SFT).

Centre :- Hyderabad (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) *Kharif*: June—July, 1959 and *Rabi*: December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) *Kharif* in October, 1959 and *Rabi* in April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	Kharif						
	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	3324	3357	3440	3415	3440	3555	3711

G.M. = 3463 lb./ac., S.E. = 96.0 lb./ac. and no. of trials = 8.

Treatment	Rabi						
	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2395	2666	2962	2740	2929	2814	3061

G.M. = 2795 lb./ac.; S.E. = 33.7 lb./ac. and no. of trials = 12.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in experiment no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1613	2065	2419	2016	2765	2238	2592

G.M. = 2244 lb./ac.; S.E. = 194.9 lb./ac. and no. of trials = 10.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soils. (iii) Nil. (iv) December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1960.

2. TREATMENTS :

- | | |
|-----------------------------|------------------------------|
| 1. Control (no manure). | 6. 20 lb./ac. of N as A/S/N. |
| 2. 20 lb./ac. of N as A/S. | 7. 40 lb./ac. of N as A/S/N. |
| 3. 40 lb./ac. of N as A/S. | 8. 20 lb./ac. of N as C/A/N. |
| 4. 20 lb./ac. of N as Urea. | 9. 40 lb./ac. of N as C/A/N. |
| 5. 40 lb./ac. of N as Urea. | |

3. DESIGN and 4. GENERAL :

Same as in experiment no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''	n ₁ '''	n ₂ '''
Av. yield	1991	2156	2485	2205	2378	2271	2320	2156	2469

G.M. = 2270 lb./ac. ; S.E. = 51.1 lb./ac. and no. of trials = 19.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 59(SFT).

Centre :- Krishna Dt. (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black and coastal soils. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2288	2485	2608	3403	2658	2444	2526

G.M. = 2487 lb./ac. ; S.E. = 22.1 lb./ac. and no. of trials = 18.

Crop :- Paddy (*Rabi*).

Ref :- A.P. 58(SFT).

Centre :- Mahboobnagar (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizer at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in experiment no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2246	2436	2633	2419	2551	2452	2625

G.M. = 2480 lb./ac. ; S.E. = 20.9 lb./ac. and no. of trials = 24.

Crop :- Paddy (Rabi).**Ref :- A.P. 59(SFT).****Centre :- Mahboobnagar (c.f.).****Type :- 'M'.**

Object :-Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black soil. (iii) N.A. (iv) December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2041	2329	2501	2419	2674	2353	2592

G.M. = 2416 lb./ac. ; S.E. = 79.7 lb./ac. and no. of trials = 6.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :-Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) December, 1958. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1473	1843	2065	1851	2222	1819	2238

G.M. = 1930 lb./ac. ; S.E. = 33.7 lb./ac. and no. of trials = 16.

Crop :- Paddy (Kharif and Rabi).**Ref :- A.P. 59(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :-Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) *Kharif* : June-July, 1959 ; *Rabi* : December, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) *Kharif* : October, 1959 ; *Rabi* : April, 1960.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	Kharif						
	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1744	2000	2205	2139	2378	2238	2452

G.M. = 2165 lb./ac. ; S.E. = 66.9 lb./ac. and no. of trials = 7.

Treatment	Rabi						
	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1366	1547	1613	1629	1679	1712	1695

G.M. = 1606 lb./ac. ; S.E. = 55.9 lb./ac. and no. of trials = 7.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Srikakulam (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and coastal soils. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	1514	1769	2041	1769	1983	1802	1991

G.M. = 1838 lb./ac. ; S.E. = 40.1 lb./ac. and no. of trials = 18.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Visakhapatnam (c.f.).****Type :- 'M'.**

Object :—Type B —To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal soil. (iii) Nil. (iv) June—July, 1959. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	2246	2518	2789	2501	2567	2510	2600

G.M. = 2533 lb./ac. ; S.E. = 19.8 lb./ac. and no. of trials = 20.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(SFT).****Centre :- Warangal (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	963	1234	1382	1201	1259	1259	1292

G.M. = 1227 lb./ac. ; S.E. = 41.3 lb./ac. and no. of trials = 12.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Warangal (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 143 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2115	2279	2403	2197	2271	2320	2370

G.M. = 2279 lb./ac. ; S.E. = 45.4 lb./ac. and no. of trials = 12.

Crop :- Paddy (Sarava).

Ref :- A.P. 55(62).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :—To find out the requirements of organic manures for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis Maruteru. (iii) 31.5.1955/20.7.1955. (iv) (a) Puddling thrice and levelled. (b) Bulk planting. (c) to (e) N.A. (vi) 60 lb./ac. of P₂O₅ as Super before transplanting and 45 lb./ac. of N as A/S top-dressed. (vi) As per treatments. (vii) Irrigated. (viii) Weeding twice. (ix) 43.61%. (x) 21.11.1955/27.11.1955.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)+a control (N₀S₀ no manure)

(1) 3 sources of N : S₁=F.Y.M., S₂=G.M. and S₃=Compost.

(2) 3 levels of N : N₁=N, N₂=2 N and N₃=3 N.

Sub-plot treatments :

2 varieties : V₁=MTU—1 (medium) and V₂=MTU—10 (late).

N applied at Nitrogen equivalent of 500 lb./ac. of F.Y.M.

3. DESIGN :

(i) Split-plot. (ii) (a) 10 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 38'×12'. (v) 1½' between plots. (vi) Yes.

4. GENERAL :

(i) MTU—1 prelodged. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) to (c) No. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2298 lb./ac. (ii) (a) 145.2 lb./ac. (b) 331.5 lb./ac. (iii) Effects of V and N×S are significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀ S ₀	N ₁ S ₁	N ₂ S ₁	N ₃ S ₁	N ₁ S ₂	N ₂ S ₂	N ₃ S ₂	N ₁ S ₃	N ₂ S ₃	N ₃ S ₃	Mean
V ₁	2161	2284	2269	2174	2042	1776	1946	2105	1399	2108	2026
V ₂	2836	2708	2869	2818	2206	2209	2137	2588	2731	2609	2571
Mean	2498	2496	2568	2496	2123	1992	2041	2345	2067	2358	2298

S.E. of difference of two

1. NS marginal means	= 72.6 lb./ac.
2. V marginal means	= 74.1 lb./ac.
3. V means at the same level of NS	= 234.4 lb./ac.
4. NS means at the same level of V	= 180.9 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 54(63).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :—To find out the optimum dose of N and P for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 30.4.1954 for V_1 and 12.5.1954/6.7.1954 for V_2 . (iv) (a) 3 puddlings and levelling. (b) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 55.4%. (x) 30.10.1954 for V_1 and 29.11.1954. for V_2 .

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_0=0$, $N_1=30$, $N_2=45$ and $N_3=60$ lb./ac.

(2) 4 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$, $P_2=45$ and $P_3=60$ lb./ac.

Sub-plot treatments :

2 varieties : $V_1=MTU-3$ (early) and $V_2=MTU-10$ (late).

3. DESIGN :

(i) Split-plot. (ii) (a) 16 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 6.5' x 38'. (v) No. (vi) Yes.

4. GENERAL :

(i) V_2 lodged in October. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1953—1956. (b) Yes. (c) Nil. (v) (a) Samalkot. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3101 lb./ac. (ii) (a) 758.4 lb./ac. (b) 493.8 lb./ac. (iii) Main effects of N, P and V are significant. Interactions are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean	V_1	V_2
P_0	3477	2993	2852	2589	2978	3658	2300
P_1	3654	3171	3219	2259	3076	3758	2544
P_2	4275	3149	2429	2729	3145	3700	2589
P_3	3693	3086	2790	2955	3131	3750	2514
Mean	3775	3100	2822	2633	3101	3716	2487
V_1	4455	3770	3356	3284			
V_2	3095	2430	2290	2132			

S.E. of difference of two

- | | |
|--|-----------------|
| 1. N or P marginal means | = 134.0 lb./ac. |
| 2. V marginal means | = 61.7 lb./ac. |
| 3. V means at the same level of N or P | = 174.6 lb./ac. |
| 4. N or P means at the same level of V | = 226.2 lb./ac. |
| S.E. of body of $N \times P$ table | = 263.2 lb./ac. |

Crop :- Paddy (Sarava).

Ref :- A.P. 55(57).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :- To find out the optimum dose of N and for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 4.5.1955 for V_1 and 4.4.1955/15.7.1955 for V_2 . (iv) (a) 3 puddlings and levelling. (b) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings. (ix) 43.61%. (x) $V_1=21.11.1955$ and $V_2=26.11.1955$.

2. TREATMENTS :

Main-plot treatments :

Same as in expt. no. 54(63) on page 149.

Sub-plot treatments :

$V_1=MTU-1$ (medium) and $V_2=MTU-10$ (late).

3. DESIGN :

Same as in expt. no. 54(63) on page 149.

4. GENERAL :

(i) V_1 lodged during October. (ii) Nil. (iii) Biometric observations and yield of grain. (iv) (a) 1953—1956. (b) Yes. (c) Nil (v) (a) Samalkot. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1907 lb./ac. (ii) (a) 356.2 lb./ac. (b) 504.4 lb./ac. (iii) Main effects of N, P and V are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean	V_1	V_2
P_0	2240	1875	1718	1685	1879	1426	2380
P_1	2158	1957	1794	1528	1859	1380	2363
P_2	2207	2184	1867	1892	2038	1582	2524
P_3	1793	1801	1684	1624	1803	1323	2284
Mean	2100	1954	1766	1682	1907	1427	2387
V_1	1541	1418	1382	1369			
V_2	2821	2509	2204	2017			

S.E. of difference of two

1. N or P marginal means	= 62.9 lb./ac.
2. V marginal means	= 63.0 lb./ac.
3. V means at the same level of N or P	= 178.3 lb./ac.
4. N or P means at the same level of V	= 154.5 lb./ac.
S.E. of body of $N \times P$ table	= 125.9 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 56(62).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :- To find out the optimum dose of N and P for varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) Refer soil analysis Maruteru. (iii) 8.5.1956/8.6.1956. (iv) (a) 3 puddlings and levelling. (b) Bulk planting. (c) 30 lb./ac. (d) and (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 53.36%. (x) $V_1=21.11.1956$ and $V_2=28.11.1956$.

2. TREATMENTS :

Same as in expt. no. 55(57) on page 150.

3. DESIGN :

(i) Split-plot. (ii) (a) 16 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) $6\frac{1}{2}' \times 38'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) V_2 was affected by continuous rain in October. (ii) Nil. (iii) Biometric observations and yield of grain. (iv) (a) 1953—1956. (b) Yes. (c) Nil. (v) (a) Samalkot. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3601 lb./ac. (ii) (a) 534.0 lb./ac. (b) 346.5 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	V ₁	V ₂
P ₀	3748	3660	3462	3396	3566	4134	2998
P ₁	3969	3903	3393	3661	3732	4200	3264
P ₂	3686	3683	3683	3396	3612	4013	3208
P ₃	3815	3683	3307	3197	3500	4002	2998
Mean	3804	3732	3461	3412	3601	4087	3117
V ₁	4222	4289	3925	3914			
V ₂	3385	3175	2999	2910			

S.E. of the difference of two

1. N or P marginal means = 94.4 lb./ac.
 2. V marginal means = 43.3 lb./ac.
 3. V means at the same level of N or P = 122.5 lb./ac.
 4. N or P means at the same level of V = 159.1 lb./ac.
- S.E. of body of N×P table = 202.8 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 58(22).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :-To find out the response of Japonica Indica hybrid Paddy to high fertilization.

1. BASAL CONDITIONS :

(i) (a) Paddy—paddy. (b) Paddy. (c) 2000 lb./ac. of G.M. and 35 lb./ac. of A/S. (ii) (a) Heavy black clay. (b) Refer soil analysis Maruteru. (iii) 28.6.1958/28.7.1958. (iv) (a) 3 puddlings and levelling. (b) Dibbling and transplanting. (c)—. (d) 6'×6'. (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling and weeding, Japanese push hoe was worked thrice at the interval of 15 days. (ix) 29.02'. (x) 13.11.1958.

2. TREATMENTS :

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

- (1) 3 varieties : V₁=MTU—3, V₂=I×J—1701 and V₃=HR—104.
- (2) 3 levels of N as A/S : N₀=0, N₁=40 and N₂=80 lb./ac.
- (3) 3 levels of P₂O₅ as Super : P₀=0, P₁=20 and P₂=40 lb./ac.

3. DESIGN :

(i) 3³ confd. (ii) (a) 3. (b) N.A. (iii) 2. (iv) (a) and (b) 14'×31'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height measurements and yield of grain. (iv) (a) 1958—1959. (b) and (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2560 lb./ac. (ii) 205.3 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	P ₀	P ₁	P ₂
V ₁	2861	2735	2677	2757	2785	2660	2827
V ₂	2844	2819	2660	2774	2743	2760	2819
V ₃	2124	2258	2066	2150	2200	2141	2108
Mean	2610	2604	2467	2560	2576	2520	2585
P ₀	2643	2601	2484				
P ₁	2593	2600	2367				
P ₂	2593	2611	2551				

S.E. of any marginal mean = 48.4 lb./ac.
S.E. of body of table = 83.8 lb./ac.

Crop :- Paddy (Sarava).

Ref :- A.P. 59(90).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'MV'.

Object :-To find out the response of Japonica Indica hybrid Paddy to high fertilization.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clayey. (b) Refer soil analysis, Maruteru. (iii) 24 to 26.6.1959. (iv) (a) Puddling and levelling. (b) Transplanting. (c)—. (d) 6"×6". (e) 2. (v) and (vi) As per treatments. (vii) Irrigated. (viii) Weeding one month after transplanting. (ix) 42.28". (x) 23, 24.10.1959.

2. TREATMENTS :

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

(1) 3 varieties : $V_1=MTU-3$, $V_2=I \times J-1701$ and $V_3=HR-104$.

(2) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.

(3) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

Super applied before planting. A/S applied half before planting and half a month after planting.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 27. (b) 150'×108'. (iii) 2. (iv) (a) 15'×32'. (b) 14'×31'. (v) One row left. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight earhead-bug attack and rat damage—control measures—N.A. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3115 lb./ac. (ii) 456.1 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
V_1	3697	3789	3449	3644	3789	3605	5538
V_2	3471	3304	2969	3248	3387	3103	3254
V_3	2501	2601	2258	2453	2426	2476	2459
Mean	3223	3231	2891	3115	3200	3061	3083
P_0	3245	3329	3028				
P_1	3170	3287	2727				
P_2	3254	3078	2919				

S.E. of any marginal mean = 107.5 lb./ac.
S.E. of body of any table = 186.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(108).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'MV'.

Object :-To find the best method of applying N to different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1957/10.7.1957. (iv) (a) Ploughing, puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) 4000 lb./ac of G.M.+30 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) Gap filling and weeding. (ix) N.A. (x) 27.9.1957 (RDR-7), 9.12.1957 (HR-35) and 11.12.1957 (RDR-4 and HR-38).

2. TREATMENTS :

Main-plot treatments :

3 methods of applying 45 lb./ac. of N as A/S. : M_1 =All N at puddle. M_2 = $\frac{1}{2}$ N at puddle+ $\frac{1}{2}$ at flowering of RDR-7, M_3 = $\frac{1}{2}$ N at puddle+ $\frac{1}{2}$ N at harvesting of RDR-7.

Sub-plot treatments :

7 combinations of varieties : V_1 =RDR-4, V_2 =RDR-7, V_3 =HR-35, V_4 =HR-38, V_5 =RDR-4 and RDR-7, V_6 =HR-35 and RDR-7 and V_7 =HR-38 and RDR-7.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block. ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 1,302 5 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957-1958. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3330 lb./ac. (ii) (a) 669.1 lb./ac. (b) 337.4 lb./ac. (iii) M effect is significant and V effect is highly significant. Interaction is not significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
M_1	4250	2774	3724	3980	3512	3200	3441	3556
M_2	3474	2373	2798	3370	2789	2590	3058	2922
M_3	4455	2401	3389	4259	3436	3271	3384	3513
Mean	4063	2516	3304	3870	3246	3020	3294	3330

S.E. of difference of two

1. M marginal means	= 178.8 lb./ac.
2. V marginal means	= 137.7 lb./ac.
3. V means at the same level of M	= 238.6 lb./ac.
4. M means at the same level of V	= 284.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(136).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'MV'.

Object :- To find the best method of applying N to different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1958, 15.7.1958. (iv) (a) Ploughing, puddlings and levelling. (b) Transplaning. (c) 30 lb./ac. (d) 6' x 6'. (e) 2 to 3. (v) 4000 lb./ac. of G.M.+30 lb./ac. of P_2O_5 as super. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling and weeding. (ix) 52.74%. (x) 27.9.58. for RDR-7 and 9.12.58. (other varieties).

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(108) on page 152.

5. RESULTS :

(i) 3212 lb./ac. (ii) (a) 767.2 lb./ac. (b) 947.5 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	Mean
M_1	3592	1541	3441	4575	3044	2770	3450	3202
M_2	3015	1947	3577	4348	3129	2420	4372	3273
M_3	3630	1895	3261	4055	3715	2613	2959	3161
Mean	3412	1794	3460	4326	3296	2601	3594	3212

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. M marginal means | = 205.0 lb./ac. |
| 2. V marginal means | = 386.8 lb./ac. |
| 3. V means at the same level of M | = 670.0 lb./ac. |
| 4. M means at the same level of V | = 653.3 lb./ac. |

Crop :- Paddy.**Site :- M.A.E. Farm, Chalvai.****Ref :- A.P. 54(TCM).****Type :- 'MV'.**

Object :—Type VIII—To study the effect of N and P along with varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) June—July, 1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) Nov.—Dec. 1954.

2. TREATMENTS :

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

- (1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
 (2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
 (3) 3 varieties ; $V_1=Local$, $V_2=R.D.R.$ and $V_3=UR-5$.

3. DESIGN :(i) 3^3 confd. fact. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/62 ac. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) Crop suffered from gall-fly infestation—control measures N.A. (iii) Yield data. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :(i) 3061 lb./ac. (ii) 178.9 lb./ac. (iii) Main effect of V is highly significant. Interaction $N \times V$ is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	V_1	V_2	V_3
P_0	3182	2825	2975	2994	3106	3017	2858
P_1	2977	3219	3159	3118	3129	3243	2982
P_2	3479	3106	2630	3072	2943	3186	3086
Mean	3213	3050	2921	3061	3059	3149	2975
V_1	3005	3130	3044				
V_2	3298	3134	3013				
V_3	3335	2886	2707				

S.E. of any marginal mean = 59.6 lb./ac.
 S.E. of body of any table = 103.3 lb./ac.

Crop :- Paddy.**Site :- Sugarcane Res. Stn., Anakapalle.****Ref :- A.P. 55(49).****Type :- 'C'.**

Object :—To study the comparative merits of dry sowing and transplanting of Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy (b) Sugarcane. (c) 100 lb./ac. of N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 11.7.1955 for T₁ and 15.8.1955. for T₂ (iv) (a) 3 ploughings. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 40 lb./ac. of N as A/S. for T₁, $\frac{1}{2}$ dose at 1st earthing and $\frac{1}{2}$ dose at 2nd earthing. For T₂, $\frac{1}{2}$ dose at planting and $\frac{1}{2}$ dose one month later. (vi) BAM—3. (vii) Irrigated. (viii) Earthing and weeding. (ix) N.A. (x) 12.12.1955.

2. TREATMENTS :

T₁=Dry sowing ; seeds dibbled in lines 10" apart.

T₂=Transplanting seedlings at 6"×6" spacing.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 10'×30'. (b) 8'×27 $\frac{1}{4}$ '. (v) 2 rows around for T₁ and 4 rows around for T₂. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2706 lb./ac. (ii) 268.0 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂
Av. yield	2867	2544

S.E./mean = 77.3 lb./ac.

Crop :- Paddy

Ref :- A.P. 54(38).

Site :- Agri. College Farm, Bapatla.

Type :- 'C'.

Object :—To study the influence of different spacings and number of seedlings per hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Bapatla. (iii) 16.6.1954./8.8.1954. (iv) (a) 2 to 3 ploughings, working *adda* and trimming bunds.(b) and (c) N.A. (d) and (e) As per treatments. (v) G.L. at 4000 lb./ac. applied as *Gliricidia* and Super at 150 lb./ac. (vi) MTU—7 (late). (vii) Irrigated (viii) 2 weedings. (ix) 39.83". (x) 31.12.1954.

2. TREATMENTS :

Main plot treatments :

3 spacings : S₁=4"×4", S₂=8"×8" and S₃=12"×12".

Sub-plot treatments :

No. of seedlings/hole : R₁=1, R₂=2 and R₃=3.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) Sub-plot: 15.8'×7.9'. (b) 14.5'×6.6'. (v) 3 rows around. (vi) Yes.

4. GENERAL :

(i) The crop was lodged due to floods. (ii) Nil. (iii) Tiller counts, height and grain yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) (a) and (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2787. (ii) N.A. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	2814	2739	2897	2817
R ₂	2939	2826	2537	2767
R ₃	2931	2710	2690	2777
Mean	2895	2758	2708	2787

S.E's. N.A.

Crop :- Paddy.**Ref :- A.P. 56(2).****Site :- Agri. College Farm, Bapatla.****Type :- 'C'.**

Object :—To study the influence of different spacings and number of seedlings per hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) 4000 lb./ac. of Gliricidia+Super at 150 lb./ac. and A/S at 100 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 11.6.1956/2.9.1956. (iv) (a) 2, 3 ploughings. (b) and (c) N.A. (d) and (e) As per treatments. (v) G.L. at 4000 lb./ac. and 150 lb./ac. of Super. (vi) MTU—7 (late) (vii) Irrigated. (viii) 2 weedings. (ix) 41.49". (x) 20.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(38) on page 156.

3. DESIGN :

(i) Split-Plot. (ii) (a) 3 main plots/replication ; 3 Sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 15.8'×7.9'. (b) 14.5'×6.6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—Contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3150 lb./ac. (ii) (a) 672.7 lb./ac. (b) 336.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	2963	2822	3286	3022
R ₂	2918	3145	3436	3168
R ₃	2991	3127	3677	3263
Mean	2959	3032	3468	3150

S.E. of difference of two

1. S marginal means	= 224.2 lb./ac.
2. R marginal means	= 112.1 lb./ac.
3. R means at the same level of S	= 194.2 lb./ac.
4. S means at the same level of R	= 274.6 lb./ac.

Crop :- Paddy (Main crop).**Ref :- A.P. 57(18).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'C'.**

Object :—To find out the relative merits of different methods of planting Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 10 C.L./ac. of F.Y.M., 75 lb./ac. of Triple Super and 50 lb./ac. of A/S as B.D.+ 50 lb./ac. of A/S at top dressing. (ii) (a) Sandy loam. (b) N.A. (iii) 27.7.1957/2.9.1957. (iv) (a) Dry ploughing and puddling. (b) and (c) As per treatments. (d) and (e) N.A. (v) 10 C.L./ac. of F.Y.M. before ploughing+G.L. at 4000 lb./ac. in last puddle. (vi) BCP—1 (late). (vii) Irrigated. (viii) 4 weedings, gap-filling and working push-hoe. (ix) 26.66". (x) 1.2.1958.

2. TREATMENTS :T₁=Broadcasting with seed rate of 30 lb./ac.T₂=Dibbling sprouted seed.T₃=Dibbling sprouted seed treated with cowdung solution.T₄=Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 20'×8'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mealy-bug and jassids—sprayed DDT. 50%. (iii) Biometric observations and grain yield. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2690 lb./ac. (ii) 683.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄
Av. yield	2042	2995	3131	2586

S.E./mean = 279.0 lb./ac.

Crop :- Paddy (Second crop).

Ref :- A.P. 57(2).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To find out the relative merits of different methods of planting Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 8 C.L./ac. of C.M.+75 lb./ac. of P₂O₅+100 lb./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 14.2.1957/21.3.1957. (iv) (a) 2 to 3 ploughings and 2 puddlings with country plough followed by one puddling. (b) and (c) As per treatments. (d) 8"×8". (e) 3. (v) 10 C.L. of C.M.+75 lb./ac. of P₂O₅ and 100 lb./ac. of A/S. (vi) PLA—1 (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 13.6.1957.

2. TREATMENTS :

T₁=Broadcasting with seed rate of 80 lb./ac.
 T₂=Dibbling sprouted seed.
 T₃=Dibbling sprouted seed treated with cowdung solution.
 T₄=Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 4.8'×20'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of stem-borer—control measures N.A. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) to (vii) Nil.

5. RESULTS :

(i) 2209 lb./ac. (ii) 247.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄
Av. yield	1636	2628	2242	2326

S.E./mean = 101.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(2).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To find out the relative merits of different methods of planting Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) G.L. at 4000 lb./ac.+30 lb./ac. of P_2O_5 +30 lb./ac. of N. (ii) (a) Sandy loam. (b) N.A. (iii) 7.9.1958/8.10.1958. (iv) (a) 3 dry ploughings, puddlings, working wet-land puddler and levelling. (b) As per treatments. (c) for T_1 : 80 lb./ac. (d) $10'' \times 6''$ for all except T_1 . (e) 3 seeds hole for T_2, T_3, T_4 . (v) G.L. at 4000 lb./ac. and A/S at 30 lb./ac. of N in split dose. (vi) BCP—1 (late). (vii) Irrigated. (viii) 2 weedings and working push hoe. (ix) 46.98%. (x) 11.2.1959.

2. TREATMENTS :

T_1 =Broadcasting.

T_2 =Dibbling sprouted seeds.

T_3 =Dibbling sprouted seeds treated with cowdung solution.

T_4 =Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) $22' \times 39.5'$. (iii) 6. (iv) (a) and (b) $20' \times 8'$. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of leaf-roller, stem-borer and jassids—BHC 10% dustings and Endrine sprayings given. (iii) Height measurement, tiller counts and grain yield. (iv) (a) 1956—contd. (b) and (c) No. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1105 lb./ac. (ii) 255.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1230	1014	1337	838

S.E./mean = 104.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(1).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To assess the relative merits of dibbling Paddy as against transplanting and broadcasting.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) G.L. at 4000 lb./ac.+30 lb./ac. of N as A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 18.2.1959/16.3.1959. (iv) (a) 3 ploughings, 2 puddlings and levelling. (b) As per treatments. (c) 80 lb./ac. for T_1 . (d) $8'' \times 4''$ for all except T_1 . (e) 3 seeds/hole for all except T_1 . (v) Nil. (vi) PLA—1 (early). (vii) Irrigated. (viii) 2 hand weedings. Rotary weeder worked upto shot blade stage. (ix) 46.98%. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(2) on page 158.

4. GENERAL :

(i) Good. (ii) Attack of blast disease—Spraying of Cupravit and Endrine. (iii) Height measurement, tiller count and grain yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2104 lb./ac. (ii) 312.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1905	2325	1996	2189

S.E./mean = 127.4 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 57(106).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'C'.

Object :- To find out optimum spacing and no. of seedlings/hole for Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 45 lb./ac. of N+22.5 lb./ac. of P_2O_5 . (ii) (a) Sandy *chalka*. (b) N.A. (iii) (iii) 25.12.1957. (iv) (a) 5 Puddings. (b) Transplanting by Japanese method. (c) N.A. (d) and (e) As per treatments. (v) 45 lb./ac. N, 22 lb./ac. P_2O_5 . (vi) HR—5 (medium). (vii) Irrigated. (viii) Hand weeding and working Japanese weeder. (ix) N.A. (x) 16.5.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) No. of seedlings : $R_1=1$, $R_2=2$, $R_3=3$ and $R_4=4$ seedlings/hill.

(2) 4 spacings : $S_1=6'' \times 6''$, $S_2=8'' \times 8''$, $S_3=10'' \times 10''$ and $S_4=12'' \times 12''$.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) $170' \times 45'$. (iii) 4. (iv) (a) and (b) $20' \times 10'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1645 lb./ac. (ii) 291 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
S_1	1987	1933	1715	1851	1872
S_2	1824	1824	1579	1497	1681
S_3	1661	1661	1416	1552	1572
S_4	1307	1606	1416	1497	1456
Mean	1695	1756	1531	1599	1645

S.E. of R or S marginal mean = 73.0 lb./ac.

S.E. of body of table = 145.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(129).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'C'.

Object :- To find out optimum spacing and no. of seedlings/hole for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 45 lb./ac. N+22 lb./ac. of P_2O_5 . (ii) (a) Sandy *chalka*. (b) N.A. (iii) 3.7.1958. (iv) (a) 5 puddings. (b) Transplanting by Japanese method. (c) N.A. (d) and (e) As per treatments. (v) 45 lb./ac. of N and 22 lb./ac. of P_2O_5 . (vi) HR—35 (late). (vii) Irrigated. (viii) Hand weeding and working of Japanese weeder. (ix) 26.74". (x) 4.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(106) on page 159.

5. RESULTS :

(i) 1667 lb./ac. (ii) 121.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
S_1	1661	1579	1579	1661	1620
S_2	1579	1797	1633	1552	1640
S_3	1688	1606	1742	1688	1681
S_4	1770	1688	1633	1824	1729
Mean	1674	1668	1647	1681	1667

S.E. of body of table = 60.8 lb./ac.
S.E. of R or S marginal mean = 30.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(105).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'C'.

Object :—To find out optimum spacing and no. of seedlings/hole for Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 45 lb./ac. of N+22 lb./ac. of P_2O_5 . (ii) (a) Sandy *chalka*. (b) N.A. (iii) 25.5.1959. (iv) (a) 5 puddlings. (b) Transplanting by Japanese method. (c) N.A. (d) and (e) As per treatments. (v) 45 lb./ac. of N and 22 lb./ac. of P_2O_5 . (vi) HR—35 (late). (vii) Irrigated. (viii) Hand weeding and working Japanese weeders. (ix) 24.37". (x) 30.11.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(106) on page 159.

5. RESULTS :

(i) 3765 lb./ac. (ii) 468.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	R ₄	Mean
S ₁	3654	4070	3566	3648	3734
S ₂	3552	3620	3662	4431	3816
S ₃	3784	3824	3818	4056	3870
S ₄	3443	3116	4049	3640	3637
Mean	3608	3732	3774	3944	3765

S.E. of R or S marginal mean = 117.04 lb./ac.
S.E. of body of table = 234.09 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(106).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'C'.

Object :—To find out optimum spacing and no. of seedlings/hole for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 45 lb./ac. of N+22 lb./ac. of P_2O_5 . (ii) (a) Sandy *chalka*. (b) N.A. (iii) 7.1.1959. (iv) (a) 5 puddlings. (b) Transplanting by Japanese method. (c) N.A. (d) and (e) As per treatments. (v) 45 lb./ac. of N+22 lb./ac. of P_2O_5 . (vi) HR—5 (medium). (vii) Irrigated. (viii) Hand weeding and working Japanese weeder. (ix) 4.11". (x) 20.5.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(106) on page 158.

5. RESULTS :

(i) 1103 lb./ac. (ii) 219.4 lb./ac. (iii) R effect is highly significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	R ₄	Mean
S ₁	1150	1157	1156	946	1102
S ₂	946	1157	1184	1368	1164
S ₃	796	1300	1204	1211	1128
S ₄	694	1041	1184	1157	1019
Mean	896	1164	1182	1170	1103

S.E. of R or S marginal mean = 54.8 lb./ac.
S.E. of the body of the table = 109.7 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(8).

Site :- Deep Water Paddy Res. Stn., Pulla.

Type :- 'C'.

Object :—To determine the optimum spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 100 lb./ac. of Super and 50 lb./ac. of A/S at puddling and 50 lb./ac. of A/S at first weeding. (ii) (a) Clayey. (b) Refer soil analysis, Pulla. (iii) 3.1.1957/10.2.1957. (iv) (a) 3 ploughings. (b) Transplanting. (c) 25 lb./ac. (d) As per treatments. (e) N.A. (v) 25 lb./ac. (vi) PLA—1 (early). (vii) Irrigated. (viii) One hand weeding and two rotary weedings. (ix) Nil. (x) 30.4.1958.

2. TREATMENTS :

3 spacings : D₁=Local, D₂=8"×4" and D₃=8"×8".

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 50'×36'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Plant height, tiller count and grain yield. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2749 lb./ac. (ii) 124.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃
Av. yield	2597	2957	2694

S.E./mean = 50.8 lb./ac.

Crop :- Paddy (Dalua).

Ref :- A.P. 58(1).

Site :- Deep Water Paddy Res. Stn., Pulla.

Type :- 'C'.

Object :—To determine the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 100 lb./ac. of Super+50 lb./ac. of A/S at puddle+50 lb./ac. of A/S at first weeding. (ii) (a) Clay. (b) Refer soil analysis, Pulla. (iii) 4.1.1958/9.2.1958. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Same as in (i) (c) above. (vi) PLA—1(early). (vii) Irrigated. (viii) Hand weeding and weeding by rotary weeder. (ix) 0.25". (x) 2.5.1958.

2. TREATMENTS :

Same as in expt. no. 57(8) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 48'×36'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; no lodging. (ii) Nil. (iii) Plant height, tiller count and grain yield. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2003 lb./ac. (ii) 125.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃
Av. yield	1949	2126	1933
S.E./mean = 51.3 lb./ac.			

Crop :- Paddy (Rabi).

Ref :- A.P. 59(17).

Site :- Deep Water Paddy Res. Stn., Pulla.

Type :- 'C'.

Object :—To determine the best spacing for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 100 lb./ac. of Super and 50 lb./ac. of C/A/N at puddle and 50 lb./ac. of C/A/N at first weeding. (ii) (a) Clay. (b) Refer soil analysis, Pulla. (iii) 6.1.1959/12.2.1959. (iv) (a) 3 puddlings. (b) N.A. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) Same as in (i) (c) above. (vi) PLA—1 (early). (vii) Irrigated. (viii) Hand weeding and weeding with rotary push hoe. (ix) N.A. (x) 5.5.1959.

2. TREATMENTS :

Same as in expt. no. 57(8) on page 162.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 144'×36'. (iii) 6. (iv) (a) 48'×36'. (b) 47'×35'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; no lodging. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1945 lb./ac. (ii) 88.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃
Av. yield	1867	2079	1889
S.E./mean = 36.2 lb./ac.			

Crop :- Paddy (Kharif).

Ref :- A.P. 56(108).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 4000 lb./ac. of G.M. and 30 lb./ac. of P₂O₅. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 1.6.1956/4.7.1956. (iv) (a) 2 ploughings, 2 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M. and 30 lb./ac. of P₂O₅ as Super. (vi) RDR—2. (vii) Irrigated. (viii) Gap filling and weeding. (ix) 64.02". (x) 17.10.1956.

2. TREATMENTS :

5 spacings : S₁=4"×4", S₂=6"×6", S₃=8"×8", S₄=10"×10" and S₅=12"×12".

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 1/435.6 ac. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3813 lb./ac. (ii) 493.2 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	4043	3879	3791	3757	3595

S.E./mean = 246.6 lb./ac.

Crop :- Paddy. (Kharif).
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 57(109).
Type :- 'C'.

Object :- To find the best spacing for Paddy.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Paddy. (c) G.M. and Super. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1957/6.7.1957. (iv) (a) Ploughing, puddling and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M. and 30 lb./ac. of P₂O₅ as Super. (vi) RDR-4 and HR-35. (vii) Irrigated. (viii) Gap filling and weeding. (ix) N.A. (x) 5.12.1957.**2. TREATMENTS :**4 spacings : S₁=6"×6", S₂=8"×8", S₃=10"×10" and S₄=12"×12".**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4 (for each variety). (iv) (a) and (b) 1/435.6 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :**I Variety HR-35**

(i) 2711 lb./ac. (ii) 197.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄
Av. yield	2831	2988	2539	2484

S.E./mean = 99.0 lb./ac.

II Variety RDR-4

(i) 3206 lb./ac. (ii) 484.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄
Av. yield	3131	3274	3049	3369

S.E./mean = 242.5 lb./ac.

Crop :- Paddy (Kharif).
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 57(110).
Type :- 'C'.

Object :- To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.M. and Super. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1957/8.7.1957. (iv) (a) 2 dry ploughings, puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M. and 30 lb./ac. of P_2O_5 as Super. (vi) RDR-7. (vii) Irrigated. (viii) Gap filling and weeding. (ix) N.A. (x) 17.10.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(108) on page 163.

5. RESULTS :

(i) 3212 lb./ac. (ii) 543.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatmen	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	3859	3185	3124	3369	2525

S.E./mean = 271.6 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(137).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :--To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Paddy. (b) Paddy. (c) G.M.+30 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 30.1.1958/28.2.1958. (iv) (a) Ploughings, puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M.+30 lb./ac. of P_2O_5 as Super. (vi) RDR-2. (vii) Irrigated. (viii) Weeding. (ix) 2.07". (x) 29.5.1958.

2. TREATMENTS :

5 spacings : S₁=4"×4", S₂=6"×6", S₃=8"×8", S₄=10"×10" and S₅=12"×12".

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 1/435.6 ac. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 729 lb./ac. (ii) 297.3 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	581	889	699	753	721

S.E./mean = 121.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(138).

Site :- Agri. Res., Stn., Rudrur.

Type :- 'C'.

Object :--To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.M. and Super. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1958/22.7.1958. (iv) (a) 2 dry ploughings, puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M.+30 lb./ac. of P_2O_5 as Super. (vi) RDR-7 (early) (vii) Irrigated. (viii) Gap-filling and weeding. (ix) 52.74". (x) 30.9.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(137) on page 165.

5. RESULTS :

(i) 2167 lb./ac. (ii) 580.8 lb./ac. (iii) Treatment differences are significant. (ix) Av. yield of grain in lb./ac.

Treatments	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	2877	2527	2183	1647	1602

S.E./mean = 237.11 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(139).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) G.M.+Super at 30 lb./ac. of P₂O₅. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 29.5.1958/12.7.1958 (iv) (a) Ploughing, puddlings, levellings and formation of bunds. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M.+30 lb./ac. of P₂O₅ as Super. (vi) RDR—4. (vii) Irrigated. (viii) Gap filling and weeding. (ix) 52.74". (x) 10.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(137) on page 165.

5. RESULTS.

(i) 4200 lb./ac. (ii) 823.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	4361	4323	4443	4269	3605

S.E./mean = 370.5 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 58(140).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To find the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.M. and Super. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 30.1.1958/28.2.1958. (iv) (a) Ploughing, puddling and levelling. (b) Transplanting. (c) 30 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 4000 lb./ac. of G.M.+30 lb./ac. of P₂O₅ as Super. (vi) RDR—7 ear'y'. (vii) Irrigated. (viii) Gap filling and weeding. (ix) 2.07". (x) 23.5.1958.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(137) on page 165.

5. RESULTS:

(i) 727 lb./ac. (ii) 244.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	721	690	1066	644	513

S.E./mean = 100.0 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(91).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To determine the best spacing for Paddy.

1. BASAL CONDITIONS .

(i) (a) Paddy—Paddy (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./3rd week of July, 1959. (iv) (a) Dry ploughing, three puddlings and leveling. (b) Transplanting. (c) N.A. (d) As per treatment. (e) N.A. (v) 50 lb./ac. of N as F.Y.M. and G.N.C., 25 lb./ac. of P_2O_5 as Super. (vi) RDR—7. (early). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 2nd week of Oct. 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58 (137) on page 165.

5. RESULTS :

(i) 1116 lb./ac. (ii) 327 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	1165	1315	1176	1043	879

S.E./mean = 133.6 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(92).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'C'.**

Object :—To determine the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A./3rd week of July, 1959. (iv) 1 dry ploughing, 3 puddlings and levelling. (b) Transplanting (c)—. (d) As per treatments. (e) N.A (v) 50 lb./ac. of N as F.Y.M. and G.N.C. 25 lb./ac. of P_2O_5 as Super. (vi) RDR—4 (late). (vii) Irrigated. (vi.i) 2 weedings. (ix) N.A. (x) 4th week of Nov., 1959.

2. TREATMENTS :

Same as in expt. no. 57(109) on page 164.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 1/435.6 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2255 lb./ac. (ii) 338.5 lb./ac. (iii) The treatment differences are not significant. (vi) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄
Av. yield	2450	2260	2088	2224

S.E./mean = 138.2 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(93).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'C'.**

Object :—To determine the best spacing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 3rd week of July, 1959. (iv) (a) Dry ploughing, three puddlings and levelling. (b) Transplan.ed. (c) —. (d) As per treatments. (e) N.A. (v) 50 lb./ac. of N as F.Y.M. and G.N.C. +25 lb./ac. of P_2O_5 as Super (vi) RDR—2 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 4th week of Oct. 1959.

2. TREATMENTS to 4. GENERAL ;

Same as in expt. no. 58(137) on page 165.

5. RESULTS :

(i) 1975 lb./ac. (ii) 419.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	2006	2110	2115	1865	1778

Crop :- Paddy (Kharif).

Ref :- A.P. 56(64).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'CV'.

Object :—To determine the optimum sowing date for different varieties to reduce borer infestation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) N.A. (As per treatments. (iv) (a) 2 dry ploughings+2 wet ploughings and leveling. (b) Transplanted. (c) 30 lb./ac. (d) and (e) N.A. (v) 60 lb./ac. of N+60 lb./ac. of P_2O_5 as on Nitro. Phos. broadcast at wet ploughing and levelling. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 63.97%. (x) 26th Sept. 1956 to 29th November, 1956.

2. TREATMENTS :

Main-plot treatments :

6 dates of transplanting: D₁=Last week of June, D₂=1st week of July, D₃=2nd week of July, D₄=3rd week of July, D₅=4th week of July and D₆=1st week of August.

Sub-plot treatments :

6 varieties V₁=RDR—7, V₂=CH—45. (both of short duration) V₃=RDR—2 and V₄=HR—19. (both of medium duration). V₅=RDR—4 and V₆=HR—35 (both of long duration).

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication. 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 50'×44' (main-plot). 50'×6' (sub-plot). (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of gall-fly and stem-borer—control measures N.A. (iii) Biometric observations and grain yield. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) Bapatla. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1679 lb./ac. (ii) (a) 710.0 lb./ac. (b) 429.8 lb./ac. (iii) D and V effect and interaction D×V are highly significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	Mean
V ₁	780	1398	1180	1361	944	1198	1143
V ₂	1561	1851	1561	1343	1089	1525	1488
V ₃	1978	2759	1379	1997	1579	1561	1876
V ₄	2051	2940	1343	1561	1089	1888	1812
V ₅	3104	3158	1851	2087	1597	1851	2275
V ₆	1597	1879	1162	1080	917	1833	1478
Mean	1912	2331	1413	1571	1202	1643	1679

S.E. of difference of two

1. D marginal means	= 144.9 lb./ac.
2. V marginal means	= 87.7 lb./ac.
3. V means at the same level of D	= 303.9 lb./ac.
4. D means at the same level of V	= 344.9 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 56(65).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'CV'.**

Object :- To determine the optimum sowing date for different varieties to reduce borer infestation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 60 lb./ac. of N+60 lb./ac. of P_2O_5 as Nitro. Phos. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) 2 dry ploughings, 2 wet ploughings and levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) 45 lb./ac. of N as A/S+45 lb./ac. of P_2O_5 as Super applied at final puddling. (vi) As per treatments. (vii) Irrigated. (viii) Two weedings. (ix) 7.48%. (x) April to June, 1957.

2. TREATMENTS :**Main-plot treatments :**

5 dates of sowing : D_1 =3rd week of Dec. 1956, D_2 =1st week of Jan. 1957, D_3 =2nd week of Jan., D_4 =3rd week of Jan., and D_5 =4th week of Jan.

Sub-plot treatments :

6 varieties : V_1 =RDR-7 and V_2 =CH-45 (both of short duration) V_3 =RDR-2, V_4 =HR-19 (both of medium duration) V_5 =CH-47, (125 days) and V_6 =MTU-15 (both of long duration).

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication, 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) Main-plot : 50'x44'. (b) Sub-plot : 50'x6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Heavy incidence of paddy stem borer ; control measures N.A. (iii) Biometric observations and grain yield. (iv) (a) 1955-1957. (b) Yes. (c) Nil. (v) (a) Bapatla. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1298 lb./ac. (ii) (a) 509.6 lb./ac. (b) 229.4 lb./ac. (iii) D and V effects as well as interaction $D \times V$ are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	355	698	473	406	1356	2383	945
D_2	213	469	164	221	1161	2013	707
D_3	384	800	220	426	1175	1980	831
D_4	2227	2292	2227	2163	2104	2451	2244
D_5	1613	1717	1868	1376	2003	1984	1760
Mean	958	1195	990	918	1560	2162	1298

S.E. of difference of two

D marginal means	= 104.1 lb./ac.
V marginal means	= 51.3 lb./ac.
V means at the same level of D	= 162.2 lb./ac.
D means at the same level of V	= 208.7 lb./ac.

Crop :- Paddy.**Ref :- A.P. 54(55).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'CM'.**

Object :—To compare the modified Japanese method of Paddy cultivation with Farm Method.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M.—Paddy. (b) *Ganti*. (c) Nil. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 16.8.1954. (iv) (a) 4 puddlings with country plough and levelling with board. (b) Transplanted. (c) to (e) N.A. (v) Nil. (vi) AKP—4 (medium). (vii) Irrigated. (viii) As per treatments. (ix) 27.47'. (x) 6, 7.12.1954.

2. TREATMENTS :

2 methods of cultivation : M_1 = Modified Japanese method : 45 lb./ac. of P_2O_5 + 15 lb./ac. of N + 10 ton/ac. of F.Y.M. in puddle ; 15 lb./ac. of N a fortnight after planting and 15 lb./ac. of N one month after planting. Working rotary hoe 4 times. M_2 = Farm method : 30 lb./ac. of P_2O_5 and 5000 lb./ac. of Glyricidia leaf in puddle ; 30 lb./ac. of N one month after planting. One weeding was given.

N applied as A, S and P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 35' × 20'. (b) 32' × 15'. (v) 2½' × 1½'. (vi) Yes.

4. GENERAL :

(i) Normal. Slight lodging. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3793 lb./ac. (ii) 235.0 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield	4183	3403

S.E./mean = 67.8 lb./ac.

Crop :- Paddy.**Ref :- A.P. 55(51).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'CM'.**

Object :—To study the merits of Japanese method of Paddy cultivation as compared to other methods.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Sweet potatoes. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 15.8.1955. (iv) (a) 3 ploughing and puddlings with country plough. (b) As per treatments. (c) to (e) N.A. (v) Nil. (vi) AKP—4. (vii) Irrigated. (viii) 3 intercultures with rotary hoe in M_4 , M_5 plots and hand weeding twice in others. (ix) N.A. (x) 13.12.1955.

2. TREATMENTS :

5 methods of cultivation : M_1 = Control (bulk planting), M_2 = Ryot's method : manured with 40 lb./ac. of N as A/S + 112 lb./ac. of Super + 5000 lb./ac. of G.L. in puddle, M_3 = Ryot's method with 6000 lb./ac. of G.L. + 100 lb./ac. each of A/S and Super in puddle ; M_4 = Japanese method : manuring as in M_3 with line planting and interculture, and M_5 = Japanese method : manuring as in M_2 with line planting and interculture.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 35' × 20'. (b) 32' × 15'. (v) 2 rows around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3369 lb./ac. (ii) 277.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	2825	3583	3456	3323	3667

S.E./mean = 113.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(44).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CM'.

Object :—To study the merits of Japanese method of Paddy cultivation as compared to other methods.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M.—Paddy. (b) Fallow. (c) Nil. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 31.8.1956. (iv) (a) Puddling with country plough and levelling. (b) As per treatments. (c) to (e) N.A. (v) Nil. (vi) AKP-4 (medium). (vii) Irrigated. (viii) Interculture thrice with rotary hoes and hand weeding twice. (ix) 28.81". (x) 7.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(51) on page 170.

5. RESULTS :

(i) 2745 lb./ac. (ii) 319.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	2583	2703	2870	2745	2828

S.E./mean = 130.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 56(43).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CM'.

Object :—To assess the merits of modified Japanese method of Paddy cultivation as compared to Farm method.

1 BASAL CONDITION :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) 10 tons/ac. of F.Y.M. and 100 lb./ac. of N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A./31.8.1956. (iv) (a) Puddling with country plough and levelling. (b) As per treatments. (c) to (e) N.A. (v) As per treatments. (vi) AKP-4 (medium). (vii) Irrigated. (viii) 3 intercultures with rotary hee in M₁ and weeding twice in M₂. (ix) 28.81". (x) 10.12.1956.

2. TREATMENTS :

Two methods of cultivation : M₁=Japanese method : 10 ton/ac. of C.M.+2000 lb./ac. of ash+2000 lb./ac. of compost. 1 lb. of 1 : 1 mixture of A/S and Super per lb. of seed in seed bed. 5 tons/ac. of F.Y.M. and 15 lb./ac. of N as A/S applied at planting, 15 lb./ac. of N as A/S applied 15 and 30 days after planting and 45 lb./ac. of P₂O₅ in one dose in puddle applied in field and M₂=Farm method : No manure in seed bed. 5000 lb./ac. of G.L.+30 lb./ac. of N as A/S one month after planting and 30 lb./ac. of P₂O₅ as Super in puddle.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 35'×20'. (b) 32'×15'. (v) 2 rows around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2645 lb./ac. (ii) 392.7 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂
Av. yield	3002	2288

S E./mean = 113.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(49).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To compare dry ploughing against puddling in paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1954/2.9.1954. (iv) (a) As per treatments. (b) N.A. (c) 30 lb./ac. (d) 6"×6". (e) 2. (v) Nil. (vi) BCP—1 (late). (vii) Irrigated. (viii) Weeding. (ix) 30.21". (x) 25, 26.1.1955.

2. TREATMENTS :

1. Dry ploughing 2 to 3 times.
2. Dry ploughing+4000 lb./ac. of G.L. applied.
3. G.M. raised and puddled.
4. Puddling after giving water.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 55'×22'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) and (iii) Nil. (iv) (a) 1952—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2093 lb./ac. (ii) 216.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1921	2266	2189	2018

S E./mean = 88.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 55(95).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To compare dry ploughing against puddling in Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.7.1955/30.7.1955. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 10"×6" (e) 2. (v) As per treatments. (vi) BCP—1 (late). (vii) Irrigated. (viii) Weeding and gap filling. (ix) 26.01". (x) 28.1.1956.

2. TREATMENTS :

Same as in expt. no. 54(49) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 230'×22'. (iii) 6. (iv) (a) 55'×22'. (b) 53'×21' (v) 1'×½'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2563 lb./ac. (ii) 282.6 lb./ac. (iii) The treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	2599	2717	2177	2759

S.E. mean = 115.4 lb./ac.

Crop :- Paddy.

Ref :-A.P. 56(29).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To compare dry ploughing against puddling in Paddy cultivation

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow—Sannhemp. (c) 100 lb./ac. of A/S : $\frac{1}{2}$ at planting and $\frac{1}{2}$ as top dressing 30 days after planting +75 lb./ac. of Triple Super. (ii) (a) Sandy loam. (b) N.A. (iii) 4.7.1956/23, 24.8.1956. (iv) (a) As per treatments (b) N.A. (c) 25 lb./ac. (d) $10^{\circ} \times 6^{\circ}$. (e) 2. (v) Same as in (i) (c). (vi) BCP—1 (late) (vii) Irrigated. (viii) 3 hand weedings (ix) 60.92%. (x) 22.1.1957.

2. TREATMENTS:

Same as in expt. no. 54(49) on page 172.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) $55' \times 22'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of stem-borer ; dusting B.H.C. 10%. (iii) Yield of grain. (iv) (a) 1952—1956. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2326 lb./ac. (ii) 280.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	2290	2450	2226	2336.

S.E./mean = 114.6 lb./ac.

Crop :- Paddy (Second crop).

Ref :- A.P. 54(39).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To find out the relative merits of Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 8000 lb./ac. of G.L.+2000 lb./ac. of lime and 112 lb./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 7.2.1954/9 to 12.3.1954. (iv) (a) 2 to 3 ploughings. (b) As per treatments. (c) N.A. (d) and (e) As per treatments. (v) 5000lb./ac. of G.L. and 30 lb./ac. of P_2O_5 as Super. (vi) SLO—19 (early). (vii) Irrigated. (viii) As per treatments. (ix) 0.73%. (x) 8.6.1954.

2. TREATMENTS :

All combination of (1) and (2)

(1) 2 levels of manure : $N_1=30$ lb./ac. of N as A/S and $N_2=45$ lb./ac. of N as A/S.

(2) 2 methods of cultivation : M_1 =Japanese method : Application of $\frac{1}{2}$ N at planting. $\frac{1}{4}$ N 15 days later and $\frac{1}{4}$ N one month after planting. Planting in line at $10^{\circ} \times 4^{\circ}$ with 2 or 3 seedlings. First weeding 15 days after planting and intercultivating with rotary hoe at fortnightly intervals till a month before flowering. and M_2 = Farm method : $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N 3 to 4 weeks later with weeding.

3. DESIGN :

(i) Factor in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) $9'11" \times 44'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height measurements, tiller count and grain yield. (iv) (a) 1954—contd. (b) and (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2325 lb./ac. (ii) 94.8 lb./ac. (iii) Main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
N ₁	2363	2196	2279
N ₂	2478	2263	2371
Mean	2420	2230	2325

S.E. of any marginal mean = 27.4 lb./ac.
S.E. of body of table = 38.3 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(44).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To find out the relative merits of Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 5.8.1954/23.9.1954. (iv) (a) 2 to 3 ploughings. (b) As per treatments. (c) N.A. (d) and (e) As per treatments. (v) As per treatments. (vi) BCP—1 (late). (vii) Irrigated. (viii) 5000 lb./ac. of G.I., and 30 lb./ac. of P₂O₅ as Super. (ix) 29.4". (x) 29.1.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(39) on page 173.

4. GENERAL :

(i) Fair. (ii) Attack of blast—control measures N.A. (iii) Height measurement, tiller count and grain yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1821 lb./ac. (ii) 243.5 lb./ac. (iii) Main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
N ₁	1782	1770	1777
N ₂	1950	1781	1866
Mean	1865	1776	1821

S.E. of N or M marginal mean = 70.3 lb./ac.
S.E. of body of table = 99.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 55(96).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To compare the Japanese method of Paddy cultivation with the Farm method.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.6.1955/6.8.1955. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2 to 3. (v) 5000 lb./ac. of G.L. and 30 lb./ac. of P_2O_5 . (vi) BCP—1 (late). (vii) Irrigated. (viii) As per treatments. (ix) 26.01". (x) 28.1.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of cultivation : M_1 =Japanese method : Transplanted at spacing $10'' \times 10''$ and working push hoe upto shot-blade stage and M_2 =Farm method : spacing $6'' \times 6''$ and 3 weedings.

(2) 2 levels of manuring : $N_1=30$ and $N_2=45$ lb./ac. of N.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) $186' \times 10'$. (iii) 6. (iv) (a) $44' \times 10'$. (b) $40'10'' \times 8'4''$ for M_1 and $43' \times 9'$ for M_2 . (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954-55 and 1958-59. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2376 lb./ac. (ii) 311.2 lb./ac. (iii) Main effect of M is highly significant. Effect of N is significant and interaction $N \times M$ is not significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
N_1	3168	2041	2605
N_2	2282	2012	2147
Mean	2725	2027	2376

S.E. of N or M marginal mean = 89.8 lb./ac.
S.E. of body of table = 127.1 lb./ac.

Crop :- Paddy (Rabi).

Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A. P. 56(110).

Type :- 'CM'.

Object :—To compare Japanese method of Paddy cultivation with the Farm method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.2.1956/11 and 12.3.1956. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2 to 3. (v) As per treatments. (vi) SLO—19 (early). (vii) Irrigated. (viii) 5000 lb./ac. of G.L. and 30 lb./ac. of P_2O_5 . (ix) 4.18". (x) 1.6.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of cultivation : M_1 =Japanese method : spacing $10'' \times 4''$, working push hoe upto shot blade stage and M_2 =Farm method : spacing $4'' \times 4''$ and 2 weedings.

(2) 2 manurial doses : $N_1=30$ and $N_2=45$ lb./ac. of N.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) $186' \times 10'$. (iii) 6. (iv) (a) $44' \times 10'$. (b) $40'10'' \times 9'4''$ for M_1 and $43'4'' \times 9'4''$ for M_2 . (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1872 lb./ac. (ii) 318.7 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
N ₁	1933	1967	1950
N ₂	1779	1809	1794
Mean	1856	1888	1872

S.E. of N or M marginal mean = 92.0 lb./ac.
S.E. of body of table = 130.1 lb./ac.

Crop :- Paddy (1st crop).

Ref :- A.P. 56(28).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :-To determine the relative merits of Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.7.1956/2 and 3.9.1956. (iv) (a) 2 to 3 dry ploughings, 2 puddings with country plough, and one with mechanical puddler. (b) to (e) As per treatments. (v) 5000 lb./ac. of G.L. and 30 lb./ac. P₂O₅ as Triple Super applied before transplanting. (vi) (vi) BCP-1 (late). (vii) Irrigated. (viii) 3 hand weedings. (ix) 60.92%. (x) 23.1.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N as A S : N₁=30 lb./ac., and N₂=45 lb./ac.

(2) 2 methods of cultivation : M₁=Japanese method : application of $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N one month later. Line planting at 10"×4" spacing with 3 to 4 seedlings hole. 1st weeding 15 days after planting and interculture in fortnightly intervals with rotary weeder till one month before flowering. M₂=Farm method : application of $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N 4 days later. Weeding every 3 weeks ; 2 to 3 seedlings/hole with spacing 4"×4".

3. DESIGN :

(i) Fact. in R.B.D. (i) (a) 4. (b) N.A. (iii) 6. (iv) (a) 44'×10'. (b) 43' 6"×9' 2" for M₁ and 43'6"×9'6" for M₂. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of stem-borer ; dusting of BHC 10%. (iii) Yield of grain. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2188 lb./ac. (ii) 221.3 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
N ₁	2222	2158	2190
N ₂	2309	2064	2186
Mean	2265	2111	2188

S.E. of M or N marginal mean = 63.9 lb./ac.
S.E. of body of table = 90.3 lb./ac.

Crop :- Paddy (2nd crop).**Ref :- A.P. 57(7).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'CM'.**

Object :—To ascertain the relative merits of Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 5.2.1957/11, 12.3.1957. (iv) (a) 2 to 3 dry ploughings and 2 puddlings with country plough followed by one puddle with mechanical puddler. (b) to (e) As per treatments. (v) 5000 lb./ac. of G.L. and 30 lb./ac. of P_2O_5 as Triple Super. G.L. ploughed *in situ* before sowing. Super applied at puddling time. (vi) SLO—19 (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 30.5.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of manure : $N_1=30$ lb./ac. of N and $N_2=45$ lb./ac. of N as A/S.

(2) 2 methods of cultivation : M_1 =Japanese method : Transplanting in lines at $10'' \times 4''$ spacing with 3 to 4 seedlings/hole. First weeding 15 days after planting and intercultivation with rotary weeder every 15 days till one month before flowering. Application of $\frac{1}{2}N$ at planting and $\frac{1}{2}N$ a month later, M_2 =Farm method : Transplanting at $4'' \times 4''$ spacing with 2 to 3 seedlings/hole. Application of $\frac{1}{2}N$ at planting and $\frac{1}{2}N$ 4 days later. Weeding every 3 weeks.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) $44' \times 10'$. (b) $43'8'' \times 9'2''$ for M_1 , $43'8'' \times 9'8''$ for M_2 . (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of stem borer—Control measure N.A. (iii) Yield of grain. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2397 lb./ac. (ii) 139.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
L_1	2318	2391	2354
L_2	2404	2476	2440
Mean	2361	2433	2397

S.E. of N or M marginal mean = 40.2 lb./ac.

S.E. of body of table = 56.7 lb./ac.

Crop :- Paddy (1st crop).**Ref :- A.P. 57(19).****Site :- Rice Res. Stn., Buchireddipalem.****Type :- 'CM'.**

Objects :—To find out the relative merits of Japanese method of Paddy cultivation and Farm method at different levels of fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 17.7.57/31.8.57 and 1.9.1957. (iv) (a) 3 dry ploughings and 3 puddlings. (b) to (e) As per treatments. (v) 5000 lb./ac. of G.L. and 30 lb./ac. of P_2O_5 . (vi) BCP—1 (late). (vii) Irrigated. (viii) As per treatments. (ix) 26.66. (x) 30.1.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : $N_1=30$ and $N_2=45$ lb./ac.

(2) 2 methods of cultivation : M_1 =Japanese method : Transplanting at $10'' \times 6''$ spacing with 4 seedlings/hole. $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N a month later before weeding ; intercultivation with rotary weeder. M_2 =Farm method : Transplanting at $6'' \times 6''$ with 2 seedlings/hole ; $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N one month later, before weeding.

4. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) $44' \times 10'$. (b) $43' 4'' \times 9' 2''$ for M_1 and $43' 6'' \times 9' 6''$ for M_2 (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good ; lodged at pre-harvest stage. (ii) Attack of mealy bugs and jassids—dusted DDT—50%. (iii) Height measurement and tiller count were recorded twice : at pre-flowering stage and after flowering and grain yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2950 lb./ac. (ii) 254.0 lb./ac. (iii) N and M effects are not significant, interaction $N \times M$ is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
N_1	2783	3003	2893
N_2	3185	2829	3007
Mean	2984	2916	2950

S.E. of any marginal mean = 73.3 lb./ac.
S.E. of body of table = 103.7 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(3).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To find out the relative merits of the Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) As per experimental schedule. (ii) (a) Sandy loam. (b) N.A. (iii) 16.7.1958/4.9.1958. (iv) (a) 2 dry ploughings and 3 wet puddlings. (b) As per treatments. (c) 21 lb./ac. (d) and (e) As per treatments. (v) 5000 lb./ac. of G.L. and 30 lb./ac. of P_2O_5 . (vi) BCP—1 (late). (vii) Irrigated. (viii) As per treatments (ix) 46.98%. (x) 25.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(19) on page 177.

4. GENERAL :

(i) Good, lodging at pre-flowering stage. (ii) Attack of leaf-roller and stem borer noticed. Brushwood was dragged over the crop and B.H.C. 10% dusted, Endrine sprayed. (iii) Tiller count, height measurement, and grain yield. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1401 lb./ac. (ii) 301.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
N_1	1496	1573	1534
N_2	1155	1379	1267
Mean	1325	1476	1401

S.E. of any marginal mean = 87.1 lb./ac.
S.E. of body of table = 123.2 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(2).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To find out the relative merits of Japanese and Farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) and (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 31.1.1959/1.3.1959. (iv) (a) 3 dry ploughings and 3 wet puddlings. (b) Transplanted. (c) 21 lb./ac. (d) and (e) As per treatments. (v) 5000 lb./ac. of G.L. lb./ac. of P_2O_5 . (vi) SLO—19 (early). (vii) Irrigated. (viii) As per treatments. (iv) 46.98". (x) 16.5.1959.

2. TREATMENTS :

Same as in expt. no. 57(19) on page 177.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 50' × 46'. (iii) 6. (iv) (a) 44' × 10'. (b) 43' 8" × 9' 2" for M_1 and 43' 8" × 9' 8" for M_2 . (v) One row around the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Rice stem-borer occurred—Endrine sprayed. (iii) Height measurement, tiller count and yield. (iv) (a) 1954—1959. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1892 lb./ac. (ii) 181.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
N_1	1750	1864	1807
N_2	1973	1981	1977
Mean	1862	1922	1892

S.E. of any marginal mean = 52.3 lb./ac.
S.E. of body of table = 73.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(106).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'CM'.

Object :—To study the effect of spacing, manuring and interculturing as under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 14.9.1956. (iv) (a) Two puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2. (v) No. (vi) HR—35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 17.70". (x) 22.12.1956.

2. TREATMENTS :

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

(1) 3 levels of manuring : $M_1=64$ lb./ac. of N+32 lb./ac. of P_2O_5 applied at last puddle, $M_2=22$ lb./ac. of N+32 lb./ac. of P_2O_5 at last puddle +42 lb./ac. of N top-dressed 40 and 80 days later and $M_3=22$ lb./ac. of N+11 lb./ac. of P_2O_5 applied at last puddle.

(2) 2 spacings : $S_1=10" \times 10"$ and $S_2=6" \times 6"$.

(3) 2 methods of interculture : $I_1=4$ intercultures with Japanese weeder and $I_2=2$ hand weedings.

N applied as Urea and P_2O_5 applied as Triple Super.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 12'×60'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1955—contd. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2431 lb./ac. (ii) 227.8 lb./ac. (iii) M effect is highly significant and S effect is significant. Interactions are not significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	I ₁	I ₂
M ₁	2193	2420	2307	2284	2329
M ₂	2465	2738	2602	2602	2602
M ₃	2435	2337	2386	2352	2420
Mean	2364	2498	2431	2412	2450
I ₁	2334	2491			
I ₂	2395	2306			

S.E. of M marginal mean = 56.9 lb./ac.

S.E. of S or I marginal mean = 46.5 lb./ac.

S.E. of body of M×S and M×I tables = 80.6 lb./ac.

S.E. of body of S×I table $t = 65.8$ lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 57(105).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'CM'.

Object:—To study the effect of spacing, manuring and interculturing as under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 2.2.1957. (iv) (a) 2 dry ploughings, 2 puddlings and levelling. (b) Transplanting. (c) 50 lb./ac. (d) As per treatments. (e) 2 to 3. (v) No. (vi) HR—19 (medium). (vii) Irrigated. (viii) As per treatments. (ix) 4.00°. (x) 4.5.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(106) on page 179.

5. RESULTS :

(i) 1835 lb./ac. (ii) 636.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	I ₁	I ₂
M ₁	1717	1951	1834	1777	1891
M ₂	1978	1698	1838	1962	1713
M ₃	1872	1796	1834	2000	1668
Mean	1855	1815	1835	1913	1757
I ₁	1906	1921			
I ₂	1805	1709			

S.E. of M marginal mean	= 159.0 lb./ac.
S.E. of S or I marginal mean	= 129.8 lb./ac.
S.E. of body of M×S or M×I table	= 224.9 lb./ac.
S.E. of body of S×I table	= 183.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(128).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'CM'.

Object :-To study the effect of spacing, manuring and interculturing as under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 22.8.1958. (iv) (a) Two puddlings and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) HR-35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 17.29". (x) 10.12.1958.

2. TREATMENTS :

Same as in expt. no. 56(106) on page 179.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×24'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1597 lb./ac. (ii) 422.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	I ₁	I ₂
M ₁	1399	1671	1535	1437	1633
M ₂	1641	1883	1762	1505	2079
M ₃	1414	1573	1494	1308	1679
Mean	1485	1709	1597	1417	1777
I ₁	1346	1487			
I ₂	1623	1931			

S.E. of M marginal mean	= 105.7 lb./ac.
S.E. of S or I marginal mean	= 86.3 lb./ac.
S.E. of body of M×S or M×I table	= 149.5 lb./ac.
S.E. of body of S×I table	= 122.0 lb./ac.

Crop :- (Kharif).

Ref :- A.P. 59(12).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'CM'.

Object :-To study the effect of spacing, manuring and interculturing as under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Chalka soil. (b) N.A. (iii) 29.7.1959. (iv) (a) 3 puddlings. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HR-35. (vii) Irrigated. (viii) As per treatments. (ix) 22.43". (x) 7.12.1959.

2. TREATMENTS:

Same as in expt. no. 56(105) on page 179.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×24'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2040 lb./ac. (ii) 501.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	I ₁	I ₂
M ₁	1649	2218	1933	1847	2020
M ₂	2271	2297	2284	2154	2414
M ₃	2020	1786	1903	1858	1948
Mean	1980	2100	2040	1953	2127
I ₁	1881	2025			
I ₂	2079	2176			

S.E. of M marginal mean = 125.5 lb./ac.
 S.E. of S or I marginal mean = 102.4 lb./ac.
 S.E. of body of M×S or M×I table = 177.4 lb./ac.
 S.E. of body of I×S table = 144.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(53).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'CM'.

Object :- To find out the effect of interculture with spacing and manuring on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 26.5.1957/3.7.1957. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) As per treatments. (vi) MTU—10 (medium). (vii) Irrigated. (viii) As per treatments. (ix) 36 03". (x) 20.11.1957.

2. TREATMENTS :

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

(1) 3 levels of manuring : M₀=No manure ; M₁=5000 lb./ac. of G.L. and 30 lb./ac. of P₂O₅ and M₂=M₁+20 lb./ac. of N as A/S in 2 doses.

(2) 2 spacings : S₁=10"×8" with 4 seedlings/hole and S₂=10"×6" with 3 seedlings/hole.

(3) 2 levels of interculture : I₀=No interculture and I₁=Interculture.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 45'×6'. (v) One row around the plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, height measurement and yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3798 lb./ac. (ii) 187.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean	S ₁	S ₂
I ₀	3731	3731	3912	3791	3764	3818
I ₁	3731	3832	3852	3805	3805	3805
Mean	3731	3781	3882	3798	3785	3811
S ₁	3711	3811	3832			
S ₂	3751	3751	3933			

S.E. of M marginal mean	= 47.0 lb./ac.
S.E. of S or I marginal mean	= 43.1 lb./ac.
S.E. of body of M×I or M×S table	= 66.4 lb./ac.
S.E. of body of S×I table	= 54.2 lb./ac.

Crop :-Paddy (Rabi).

Ref :-A.P. 57(57).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'CM'.

Object :-To find out the effect of interculture with spacing and manuring on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) 30.12.1957./17, 18.2.1958. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) As per treatments. (vi) MTU—15 (early). (vii) Irrigated. (viii) As per treatments. (ix) Nil. (x) 16, 17.4.1958.

2. TREATMENTS :

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

- (1) 3 levels of manure : M₀=No manure, M₁=4000 lb./ac. of G.L.+30 lb./ac. of P₂O₅ and M₂=M₁+20 lb./ac. of N as A/S in 2 doses.
- (2) 2 spacings : S₁=8"×8" with 4 seedlings/hole and S₂=6"×6" with 3 seedlings/hole.
- (3) 2 levels of interculture: I₀=No interculture, and I₁=Interculture.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(53) on page 182.

5. RESULTS :

(i) 2152 lb./ac. (ii) 260.6 lb./ac. (iii) Only M effect is highly significant. (iv) Av. yield of grain in lb./ac.

	I ₀	I ₁	Mean	S ₁	S ₂
M ₀	1574	1805	1689	1713	1666
M ₁	2325	2261	2293	2349	2237
M ₂	2488	2461	2425	2507	2443
Mean	2129	2176	2152	2190	2115
S ₁	2122	2258			
S ₂	2137	2094			

S.E. of M marginal mean	= 65.2 lb./ac.
S.E. of I or S marginal mean	= 53.3 lb./ac.
S.E. of body of M×I and M×S tables	= 92.2 lb./ac.
S.E. of body of I×S table	= 75.2 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 57(54).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'CM'.**

Object :—To compare Japanese method of Paddy cultivators with departmental and Ryot's methods.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy (b) Paddy. (c) As per treatment. (ii) (a) (b) Heavy clays. (iii) 4.6.1957/21.7.1957. (iv) (a) 3 puddings, levelling, trimming bunds and digging corners. (b) to (e) As per treatment. (v) As per treatments. (vi) MTU—19 (late). (vii) Irrigated. (viii) Interculting. (ix) 36.03%. (x) 6, 7.12.1957.

2. TREATMENTS :

5 different methods of cultivation : M_1 =Ryot's method=10 C.L./ac. of F.Y.M. with bulk planting, M_2 =Local method of planting at 6'×6' spacing and 2 seedings/hole. Manuring at 4000 lb./ac. of G.L.+10 C.L./ac. of F.Y.M.+100 lb./ac. of Super 50 lb./ac. of A/S before planting and 50 lb./ac. of A/S as top dressing before weeding, M_3 =Local method with 1000 lb./ac. of G.L.+10 C.L./ac. of C.M.+100 lb./ac. of Super+100 lb./ac. of A/S in puddle, M_4 =Japanese method with 13'×10'' spacing and manuring as in M_3 and M_5 =Japanese method with manuring as in M_2 .

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 30'×20'. (v) One row around net plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Stem-borer attacked—sprayed Edrine at 0.037%. (iii) Tileer count, height measurements and yield of grain. (iv) (a) 1955—cont'd. (b) Yes. (c) No. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3446 lb./ac. (ii) 211.0 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	3557	3388	3352	3449	3485

S.E./mean = 86.2 lb./ac.

Crop :- Paddy (Second crop).**Ref :- A.P. 54(69).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'CM'.**

Object :—To compare the Japanese and farm methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy black clay. (b) N.A. (iii) 9.1.1954/8 and 9.2.1954. (iv) (a) 3 puddings and levelling. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 5000 lb./ac. of G.L.+30 lb./ac. of P_2O_5 . (vi) MTU—15. (vii) Irrigated. (viii) 2 weedings. (ix) 0.22%. (x) 7.5.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of manure : N_1 =30 lb./ac. of N and N_2 =45 lb./ac. of N.

(2) 2 methods of cultivation : M_1 =Japanese method : with transplanting at 10'×10' spacing, $\frac{1}{2}$ N applied as B.D., $\frac{1}{4}$ N 15 days and $\frac{1}{4}$ N one month later and M_2 =Farm method : Transplanting at 6'×6' spacing. $\frac{1}{2}$ N applied as B.D. and $\frac{1}{2}$ N 21 days later.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) and (b) 15'×90'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) N.A. (c) Nil (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3461 lb./ac. (ii) 158.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
N ₁	3409	3503	3456
N ₂	3449	3483	3466
Mean	3429	3493	3461

S.E. of M or N marginal mean = 39.6 lb./ac.
S.E. of body of table = 56.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 57(65).

Site :- Agri. Res. Stn., Maruteru.

Type :- 'CM'.

Object :—To study the effect of organic manures and inorganic fertilizers on the yield and quality of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Sannhemp at 3200 lb./ac.+50 lb./ac. A/S as B.D., 40 lb. of A/S as top-dressings. (ii) (a) Heavy clay. (b) N.A. (iii) 25.5.1957/6, 7.7.1957. (iv) (a) 3 puddlings and levelling. (b) Japanese method. (c) N.A. (d) 10"×6" double spacing. (e) 2 to 3. (v) Nil. (vi) MTU—1 (medium). (vii) Irrigated. (viii) 2 intercultivations with Japanese push hoe. (ix) 36 03". (x) 27.11.1957.

2. TREATMENTS :

Main-plot treatments :

2 dates of harvest : M₁=Just when ready for harvest and M₂=At fully mature stage.

Sub-plot treatments :

12 manurial dose : L₁=No manure (control), L₂=30 lb./ac. of N as G.M., L₃=30 lb./ac. of N as F.Y.M., L₄=30 lb./ac. of N as A/S, L₅=30 lb./ac. of P₂O₅ as Super, L₆=30 lb./ac. of K₂O as Pot. Sul., L₇=30 lb./ac. of N as G.M.+30 lb./ac. of P₂O₅, L₈=30 lb./ac. of N as G.M.+30 lb./ac. of K₂O, L₉=30 lb./ac. N as F.Y.M.+30 lb./ac. of P₂O₅, L₁₀=30 lb./ac. of N as F.Y.M.+30 lb./ac. of K₂O, L₁₁=30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ and L₁₂=30 lb./ac. of N as A/S+30 lb./ac. of K₂O.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 5'×24'. (v) One row around the plot. (vi) Yes.

4. GENERAL :

(i) Normal growth, lodged on 16.10.1957. (ii) N.A. (iii) Tiller counts and yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4163 lb./ac. (ii) (a) 633.7 lb./ac. (b) 252.6 lb./ac. (iii) None of the effects or interaction is significant. (iv) Av. yield of grain in lb./ac.

	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	L ₁₂	Mean
M ₁	4333	4338	4157	3987	4293	4066	4169	4032	4173	4423	4315	4389	4223
M ₂	4281	4106	4123	4162	3908	3987	3981	4168	4156	4044	4203	4105	4102
Mean	4307	4222	4140	4075	4101	4027	4075	4100	4165	4233	4259	4247	4163

S.E. of difference of two

1. M marginal means = 129.4 lb./ac.
2. L marginal means = 126.3 lb./ac.
3. L means at the same level of M = 178.6 lb./ac.
4. M means at the same level of L = 214.4 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A. P. 58(33).****Site :- Agri. Res. Stn., Maruteru.****Type :- 'CM'.**

Object :—To test the effect of different organic and inorganic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) P ddy. (c) As per treatments. (ii) (a) Heavy black clay. (b) N.A. (iii) 8.6.1958/16.7.1958. (iv) (a) 3 puddings. (b) Transplanted. (c) N.A. (d) 10"×6". (e) 2. (v) As per treatments. (vi) MTU—1 (medium). (vii) Irrigated. (viii) Gap filling and weeding. Japanese push hoe was worked four times at 15 days intervals. (ix) 37.62". (x) 2, 10.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(65) on page 185.

4. GENERAL :

(i) Satisfactory ; lodged after flowering. (ii) Nil. (iii) Height measurement and yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3989 lb./ac. (ii) (a) 1092.8 lb./ac. (b) 479.2 lb./ac. (iii) Only L effect is significant. (iv) Av. yield of grain in lb./ac.

	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	L ₁₂	Mean
M ₁	4401	3902	4084	4129	4038	3948	3494	4175	4175	4129	4447	4175	4091
M ₂	4628	3675	4175	3902	3811	3811	3494	3630	4038	3857	3902	3721	3887
Mean	4515	3789	4129	4015	3925	3879	3494	3903	4107	3993	4175	3948	3989

S.E. of difference of two

1. M marginal means = 223.1 lb./ac.
2. L marginal means = 239.6 lb./ac.
3. L means at the same level of M = 338.8 lb./ac.
4. M means at the same level of L = 337.4 lb./ac.

Crop :- Paddy.**Ref :- A.P. 54(61).****Site :- Deep Water Rice Res. Stn., Pulla.****Type :- 'CM'.**

Object :—To determine the efficacy of Japanese method of paddy cultivation over the Farm method.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 100 lb./ac. of Super+50 lb./ac. of A/S in puddle+50 lb./ac. of A/S at first weeding+10 C.L./ac. of C.M. (ii) (a) Clayey. (b) Refer soil analysis, Pulla. (iii) 14.1.1954/14.2.1954. (iv) (a) 3 ploughings. (v) to (e) As per treatments. (v) Nil. (vi) SL0.—19. (vii) Irrigated. (viii) 1 hand weeding and 2 weedings by rotary weeder. (ix) Nil. (x) 28.4.1954.

2. TREATMENTS :

2 different methods of cultivation : M₁=Japanese method : 5000 lb./ac. of G.L., +30 lb./ac. of P₂O₅ as Super, 30 lb./ac. of N as A/S, $\frac{1}{2}$ N at planting, $\frac{1}{2}$ N 15 days and $\frac{1}{2}$ N a month after planting. Transplanting at 10"×4" spacing and 2 seedlings/hole ; 2 hand weedings 15 days and a month after planting and once with rotary weeder 45 days after planting. M₂=Farm method : Bulk planting with 2 seedlings/hole. 5000 lb./ac. of G.L.+30 lb./ac. of P₂O₅ as Super +30 lb./ac. of N as A/S, $\frac{1}{2}$ N at planting and $\frac{1}{2}$ N a month after planting.

3. DESIGN:

(i) R B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) and (b) 48 $\frac{1}{2}$ '×9'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) A mild attack of *Piricularia* ; seed treated with Agrosan before sowing. (iii) Plant height, tiller counts and yield of grain. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2268 lb./ac. (ii) 230.0 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂
Av. yield	2600	1937

S.E./mean = 94.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(62).

Site :- Deep water Rice Res. Stn., Pulla.

Type :- 'CM'.

Object :—To determine the efficacy of Japanese method of paddy cultivation over the Farm method.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 100 lb./ac. of Super+50 lb./ac. of A/S+10 C.L./ac. of C.M. in puddle and 50 lb./ac. of A/S at first weeding. (ii) (a) Clayey. (b) Refer soil analysis, Pulla. (iii) 25.12.1953/14.2.1954. (iv) (a) 3 ploughings. (b) to (e) As per treatments. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) One weeding by hand and two by rotary weeder. (ix) Nil. (x) 10.5.1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt in 54 (61) on page 186.

5. RESULTS :

(i) 2433 lb./ac. (ii) 124 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂
Av. yield	2667	2200

S.E./mean = 51.0 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 54(13).

Site :- Agri. Res. Inst. Rajendranagar.

Type :- 'CM'.

Object :—To determine the different factors which affect the yield of paddy in Japanese and local methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) N.A./25.6.1954. (iv) (a) Ploughing and harrowing. (b) Transplantings. (c) N.A. (d) As per treatments (e) N.A. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 27.64°. (x) 20.12.1954.

2. TREATMENTS :

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

(1) 3 levels of manuring : M₁=Japanese method : 64 lb./ac. of N+32 lb./ac. of P₂O₅ in puddle. M₂=Japanese method, split application : 22 lb./ac. of N+32 lb./ac. of P₂O₅ in puddle and 2 top dressing of 21 lb./ac. of N each and M₃=Local method : 22 lb./ac. of N+12 lb./ac. of P₂O₅ in Puddle. N as A/S and P₂O₅ as super.

(2) 2 spacings : S₁=10"×10" (Japanese method) and S₂=6"×4" (local method).

(3) 2 levels of interculture : I₁=4 intercultures (Japanese method), I₂=2 weedings (local method).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 1/57.5 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of paddy blast ; *Perenox* sprayed twice. (iii) Yield of grain and straw. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2355 lb./ac. (ii) 359.4 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	2823	2536	1796	2385	2299	2471
S ₂	2780	2450	1746	2325	2390	2261
Mean	2802	2493	1770	2355	2344	2366
I ₁	2838	2421	1774			
I ₂	2766	2565	1767			

S.E. of M marginal = 89.8 lb./ac.
 S.E. of S or I marginal mean = 73.4 lb./ac.
 S.E. of body of M×S or M×I table = 127.1 lb./ac.
 S.E. of body of S×I table = 103.7 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 54(14).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :—To determine the different factors which affect the yield of paddy in Japanese and local methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) N.A./25.1.1954. (iv) (a) Ploughing and harrowings. (b) Transplanting. (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) As per treatments. (ix) 0.82". (x) 1.5.1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(13) on page 187.

5. RESULTS :

(i) 1807 lb./ac. (ii) 492.2 lb./ac. (iii) Only S and M effects are significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	1907	1929	1135	1657	1585	1729
S ₂	2457	2119	1293	1957	1947	1966
Mean	2182	2024	1214	1807	1766	1848
I ₁	2317	1918	1063			
I ₂	2048	2130	1365			

S.E. of I or S marginal mean = 100.5 lb./ac.
 S.E. of M marginal mean = 123.0 lb./ac.
 S.E. of body of M×S or M×I tables = 174.0 lb./ac.
 S.E. of body of I×S table = 142.1 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 55(10).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :—To determine the different factors which affect the yield of paddy in Japanese and local methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 21.7.1955. (iv)(a) 4 puddlings and levelling. (b) As per treatments. (c) N.A. (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) HR—35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 23.27". (x) 8.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(13) on page 187.

4. GENERAL :

(i) Normal. (ii) Slight attack of paddy *Hispa*. Gammexane dusted and sprayed with Bordeaux mixture twice to prevent paddy blast. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2331 lb./ac. (ii) 358.8 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	2798	2536	1954	2429	2397	2462
S ₂	2582	2223	1893	2233	2217	2248
Mean	2690	2380	1923	2331	2307	2355
I ₁	2604	2414	1904			
I ₂	2776	2345	1943			

S.E. of S or I marginal mean	=	73.2 lb./ac.
S.E. of M marginal mean	=	89.7 lb./ac.
S.E. of body of S×M or M×I table	=	126.9 lb./ac.
S.E. of body of S×I table	=	103.6 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 55(11).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :- To determine the different factors which affect the yield of paddy under the Japanese and local methods of paddy cultivations.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 14.2.1955. (iv) (a) to (e) As per treatments. (v) Nil. (vi) HR—19 (medium). (vii) Irrigated. (viii) As per treatments. (ix) 2.72". (x) 30.5.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(13) on page 187.

4. GENERAL :

(i) N.A. (ii) Severe stem-borer attack. Light traps were set up and subsequently the attacked plants were destroyed. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 985 lb./ac. (ii) 368.6 lb./ac. (iii) M and S effects are significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	926	1048	578	851	773	928
S ₂	1669	1115	574	1120	1096	1143
Mean	1298	1082	576	985	935	1036
I ₁	1328	980	495			
I ₂	1267	1183	657			

S.E. of S or I marginal mean	= 75.2 lb./ac.
S.E. of M marginal mean	= 92.1 lb./ac.
S.E. of body of M×I or M×S table	= 130.3 lb./ac.
S.E. of I×S table	= 106.4 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 56(39).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :—To find out the efficacy of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 60 lb./ac. of N as A/S and 30 lb./ac. of P₂O₅ as Super. (ii) (a) Chalka. (b) N.A. (iii) 9.7.1956 for T₁ and 11.7.1956 for T₂. (iv) (a) 2 ploughings and levelling. (b) and (c) As per treatments. (d) 8'×8'. (e) N.A. (v) Nil. (vi) RDR—2 (early). (vii) Irrigated. (viii) Weeding twice, thinning and gap filling. (ix) 33.77%. (x) 8.11.1956.

2. TREATMENTS :

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

(1) 2 seed treatments : T₁=Soaked seed and T₂=Sprouted seed.

(2) 2 levels of manure : L₁=30 lb./ac. of N+15 lb./ac. of P₂O₅ and L₂=60 lb./ac. of N+30 lb./ac. of P₂O₅.

(3) 2 methods of planting : M₁=Broadcasting with seed rate of 80 lb./ac. and M₂=Dibbling with seed rate of 20 lb./ac.

N as A/S and P₂O₅ as Super. Half the dose of N and full dose of P₂O₅ broadcast before sowing. Second dose of N on 23.8.1956.

3. DESIGN :

(i) Fact. in R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 25'4"×13'4". (b) 22'8"×10'8". (v) 2 rows around the plot. (vi) Yes.

4. GENERAL :

(i) Normal, crop lodged after flowering. (ii) *Hsip*a attack in July and August. Dusting of gammexane. Rat damage in M₁ plots. (iii) Height, tiller count and grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Dindi and Rudrur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3042 lb./ac. (ii) 342.0 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean	L ₁	L ₂
T ₁	2570	3688	3129	3211	3047
T ₂	2430	3481	2955	2957	2954
Mean	2500	3584	3042	3084	3000
L ₁	2644	3524			
L ₂	2356	3645			

S.E. of any marginal mean = 120.9 lb./ac.
S.E. of body of any table = 171.0 lb./ac.

Crop :- Paddy (Tabi).

Ref :- A.P. 56(40).

Site :- Agri. Res. Instt., Rajendranagar.

Type 'CM'.

Object :- To find out the efficacy of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 24th Dec. 1956 for T₁ and 26th Dec. 1956 for T₂. (vi) (a) 3 ploughings and levelling. (b) and (c) As per treatments. (d) 8''×8''. (e) N.A. (v) Nil. (v) RDR—2 (early). (vii) Irrigated. (viii) 2 weedings, thinning and gap-filling. (ix) 1.63''. (x) 30.4.1957.

2. TREATMENTS :

Same as in expt no. 56(39) on page 190.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 25'4''×13'4''. (b) 24'0''×12'0''. (v) 1 row around the plot. (vi) Yes.

4. GENERAL ;

(1) Normal. Crop lodged in April 1957. (iii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Dinidi, Nalgonda and Rudrur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3602 lb./ac. (ii) 325.5 lb./ac. (iii) Only L effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean	L ₁	L ₂
T ₁	3532	3435	3483	3175	3792
T ₂	3692	3749	3721	3291	4150
Mean	3612	3592	3602	3233	3971
L ₁	3315	3152			
L ₂	3908	4033			

S.E. of any marginal mean = 115.1 lb./ac.
S.E. of body of any table = 162.7 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 57(9).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :- To find out the efficacy of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 2.7.1957 for T₁ and 4.7.1957 for T₂. (iv) (a) Two ploughings and levelling. (b) and (c) As per treatments. (d) 8''×8''. (e) N.A. (v) Nil. (vi) RDR—2 (early). (vii) Irrigated. (viii) 2 weedings, thinning and gap-filling. (ix) 24.44''. (x) 26 to 29.10.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(40) above.

4. GENERAL :

(i) Good ; crop lodged in Sept.-Oct. (ii) Rat damage was noticed. (iii) Height and tiller count, length of panicles and grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Dindi, Nalgonda and Rudrur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3330 lb /ac. (ii) 282 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean	L ₁	L ₂
T ₁	3069	3657	3363	3205	3521
T ₂	3143	3450	3296	3261	3332
Mean	3106	3553	3330	3233	3426
L ₁	3040	3426			
L ₂	3172	3682			

S.E. of any marginal mean = 99.7 lb./ac.
S.E. of body of any table = 141.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 57(45).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CM'.

Object :—To find out the efficacy of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 10.12.1957, for T₁ and 12.12.1957 for T₂. (iv) (a) N.A. (b) and (c) As per treatments. (d) 8"×8". (e) N.A. (v) Nil. (vi) RDR—2 (early). (vii) Irrigated. (viii) 2 weedings and gap filling. (ix) N.A. (x) 14.4.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(40) on page 191.

4. GENERAL :

(i) Good; crop lodged 2 to 3 weeks after flowering. (ii) Rat damage. (iii) Yield of grain, height, tiller count, length of panicle and grain yield. (iv) (a) 1955—contd. (b) Yes. Since *Abi* 1956—1957. (c) Nil. (v) (a) Dindi and Rudrur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3314 lb /ac. (ii) 298.0 lb./ac. (iii) Only M and L effects are significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean	L ₁	L ₂
T ₁	3094	3508	3299	2999	3599
T ₂	3263	3397	3329	2969	3689
Mean	3177	3451	3314	2984	3644
L ₁	2874	3094			
L ₂	3480	3808			

S.E. of any marginal mean = 105.4 lb./ac.
S.E. of body of any table = 149.0 lb. ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 58(58).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CM'.**

Object :—To find out the efficiency of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 17.6.1958. (iv) (a) 6 puddlings and levelling. (b) As per treatments. (c) 80 lb./ac. for M_1 and 16-17 lb./ac. for M_2 . (d) 8"×8" in dibbling. (e) 3-5 seeds/hill for M_2 . (v) As per treatments. (vi) RDR—2 (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 3.11.1958.

2. TREATMENTS:

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

(1) 2 seed treatments : T_1 = Soaked seeds, and T_2 = sprouted seeds.(2) 2 leve's of manure : L_1 = 30 lb./ac. of N + 15 lb./ac. of P_2O_5 , L_2 = 60 lb./ac. of N + 30 lb./ac. of P_2O_5 .(3) 2 methods of p'anting : M_1 = broadcasting and M_2 = dibbling.Half dose of N and full dose of P_2O_5 applied before sowing and remaining half dose of N applied after sowing.**3. DESIGN :**

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 25' 4"×13' 4". (b) 24'×12'. (v) 8"×8". (vi) Yes.

4. GENERAL :

(i) Good ; lodged after flowering. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—Contd. modified in 1956. (b) Yes. (c) Nil. (v) (a) Dindi. and Rudrur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2999 lb./ac. (ii) 280.1 lb./ac. (iii) L and M effects are highly significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean	L_1	L_2
T_1	2756	3217	2986	2810	3162
T_2	2727	3296	3012	2875	3149
Mean	2742	3256	2999	2843	3155
L_1	2693	2992			
L_2	2790	3521			

S.E. of any marginal mean = 70.0 lb./ac.

S.E. of body of any table = 99.0 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 58(64).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CM'.**

Object :—To find out the efficiency of dibbling over broadcasting under manuring.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 25.12.1958. (iv) (a) 6 puddlings and levelling. (b) As per treatments. (c) 80 lb./ac. for M_1 and 16-17 lb./ac. for M_2 . (d) 8"×8" for M_2 . (e) 3 to 5 for M_2 . (v) As per treatments. (vi) RDR—2 (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) April 1959.

2. TREATMENTS:

Same as in expt. no. 58(58) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 1/130 ac. (b) 1/150 ac. (v) 8"×8". (vi) Yes.

4. GENERAL :

Good ; crop lodged 3 weeks after flowering. (ii) No. (iii) Yield of grain. (iv) 1955—Contd. (modified in 1956). (b) Yes. (c) Nil. (v) (a) Dindi, Rudrur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2609 lb./ac. (ii) 280.7 lb./ac. (iii) L effect is highly significant, M effect is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean	L ₁	L ₂
T ₁	2585	2710	2647	2359	2935
T ₂	2423	2720	2571	2255	2887
Mean	2504	2715	2609	2307	2211
L ₁	2282	2333			
L ₂	2726	3097			

S.E. for any marginal mean = 70.2 lb./ac.

S.E. of the body of any table = 99.2 lb./ac

Crop :- Paddy (Abi).

Ref :- A.P. 58(72).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'CM'.

Object :—To find out the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Regur. (b) Refer soil analysis, Rudrur. (iii) 22.7.1958. (iv) (a) Ploughing, puddling and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) N.A. (vii) Irrigated. (viii) As per treatments. (ix) 50°. (x) 24.12.1958.

2. TREATMENTS :

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

(1) 3 levels of manuring : M₁=64 lb./ac. of N+32 lb./ac. of P₂O₅ in last puddle, M₂=22 lb./ac. of N +32 lb./ac. of P₂O₅ in last puddle and 2 top dressings of 21 lb./ac. of N and M₃=22 lb./ac. of N+11 lb./ac. of P₂O₅ in last puddle.

(2) 2 spacings : S₁=10'×10' and S₂=6'×4'.

(3) 2 levels of interculture : I₁=4 intercultures with weeder and I₂=2 hand weedings.

N applied as A/S and P₂O₅ as Super.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 48'×20'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Partial lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2423 lb./ac. (ii) 305.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	S ₁	S ₂
I ₁	2598	2377	2592	2522	2495	2548
I ₂	2337	2274	2359	2323	2374	2272
Mean	2467	2325	2476	2423	2435	2410
S ₁	2354	2541	2411			
S ₂	2581	2110	2541			

S.E. of M marginal mean	=	-76.3 lb./ac.
S.E. of S or I marginal mean	=	62.3 lb./ac.
S.E. of body of M×S or M×I table	=	107.9 lb./ac.
S.E. of body of S×I table	=	88.1 lb./ac.

Crop :- Paddy (Rabi).

Ref :- A.P. 59(18).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'CM'.

Object :-To find out the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Regur. (b) Refer soil analysis, Rudrur. (iii) N.A. (iv) (a) Ploughing, puddling and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) N.A. (vi) HR—19 (early). (vii) Irrigated. (viii) As per treatments. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(72) on page 194.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 734 lb./ac. (ii) 328.2 lb./ac. (iii) Main effects of M and S are highly significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	S ₁	S ₂
I ₁	1140	788	431	786	592	981
I ₂	1001	635	405	681	595	766
Mean	1070	712	418	734	594	873
S ₁	828	561	391			
S ₂	1313	862	445			

S.E. of M marginal mean	=	82.1 lb./ac.
S.E. of S or I marginal mean	=	67.0 lb./ac.
S.E. of body of M×S or M×I table	=	116.0 lb./ac.
S.E. of body of S×I table	=	94.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 54(81).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'CM'.

Object :-To study the efficiency of Japanese method against other methods of cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy - Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial (b) Refer soil analysis, Samalkot. (iii) 21.6.1954/7.7.1954. (iv) (a) N.A. (b) As per treatments. (c) N.A. (d) As per treatments. (e) 4 seedlings/hill for treatment M₃, M₄ and M₅ and 2 seedlings/hill for others. (v) As per treatments. (vi) GEB—24 (late). (vii) Irrigated. (viii) 4 intercultures with push hoe for treatments M₃, M₄ and M₅ and 2 weedings for others. (ix) 44.11. (x) 14.12.1954.

2. TREATMENTS :

5 methods of cultivation : M_1 =Ryot's method : Manuring at 5 C.L./ac. of F.Y.M. and bulk planting. M_2 = Departmental method : Manuring at 4000 lb./ac. of G.L.+100 lb./ac. of Super+100 lb./ac. of A/S and bulk planting. M_3 =Japanese method : Manuring at 20 C.L./ac. of compost+100 lb./ac. of Super+100 lb./ac. of A/S in puddle and bulk planting. M_4 =Japanese method : Manuring as in (3) above transplanting at $10' \times 10'$ spacing and intercultivation. M_5 = Japanese method : Manuring as in (2) above, transplanting at $10' \times 10'$ spacing and intercultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) $40' \times 22'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—1958. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3910 lb./ac. (ii) 164.2 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	3817	3976	3912	3912	3936

S.E./mean = 73.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 55(78).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'CM'.

Object :—To study the efficiency of Japanese method of Paddy cultivation over other methods.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 28.6.1955/22.7.1955. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 4 seedlings/hill for treatments M_3 , M_4 and M_5 and 2 seedlings/hill for others. (v) As per treatments. (vi) GEB—24 (late). (vii) Irrigated. (viii) 2 weedings for treatments M_1 and M_2 and 4 intercultures with junior hoe for others. (ix) 34.6". (x) 7.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(81) on page 195.

5. RESULTS :

(i) 3050 lb./ac. (ii) 97.5 lb./ac. (iii) The treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	2974	2969	2993	3390	2922

S.E./mean = 43.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(98).

Site :- Agri. Res. Stn., Samalkot.

Type :- 'CM'.

Object :—To study the efficiency of Japanese method of Paddy cultivation over other methods.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 10.6.1956/19.7.1956. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 4 seedlings/hill for M_3 , M_4 , M_5 and 2 seedlings/hill for others. (v) As per treatments. (vi) GEB—24 (late). (vii) Irrigated. (viii) 2 weedings for M_1 and M_2 and 4 intercultures with Junior hoe for others. (ix) 54.17''. (x) 2.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(81) on page 195.

5. RESULTS :

(i) 2314 lb./ac. (ii) 244.6 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	2247	2386	2267	2336	2336

S.E./mean = 109.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(98)

Site :- Agri. Res. Stn., Samalkot.

Type :- 'CM'.

Object :—To test the Chinese method of Paddy cultivation against the Japanese and local methods.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 3.7.1959/28.7.1959. (iv) 3 puddlings with country plough and levelling for M_1 and M_2 . (b) to (e) and (v) As per treatments. (vi) MTU—3 (short duration). (vii) Irrigated. (viii) As per treatments. (ix) 43.89''. (x) 13.11.1959.

2. TREATMENTS :

3 methods of cultivation : M_1 =Local improved : transplanting at 2 seedlings/hill with a spacing of 8"×8". Manuring at 4000 lb./ac. of G.L.+50 lb./ac. of A/S+100 lb./ac. of super. 3 weedings were given. M_2 =Japanese method ; transplanting at 3 to 4 seedling/hill with spacing of 10"×10". Manured with 6000 lb./ac. of G.L. and 6 C.L./ac. of F.Y.M. 3 inter cultivation were given. M_3 =Chinese method : transplanting at 2 seedlings/hill with a spacing of 5"×6". 20 ton/ac. of F.Y.M.+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O and 40 lb./ac. of N as A/S. 2 interculti- vations and the irrigated water changed daily.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 30'×30'. (b) 27½'×27½' for M_1 , 26½'×26½' for M_2 and 28'×28' for M_3 (v) Yes ; dimensions vary. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3900 lb./ac. (ii) 580.9 lb./ac. (iii) Treatment] differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. Yield	3665	4481	3555

S.E./mean = 237.1 lb /ac.

Crop :- Paddy (Rabi).

Ref :- A. P. 55(98).

Site :- Govt. Main Farm, Warangal

Type :- 'CM'.

Object :—To evaluate the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) *Chalka*. (b) Refer soil analysis, Warangal. (iii) 27.12.1955/5.2.1956. (iv) (a) 3 ploughings and thrice puddling and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) N.A. (v) As per treatments. (vi) HR—19. (vii) Irrigated. (viii) Ar per treatments. (xi) N.A. (x) 24.4.1956.

2. TREATMENTS :

Same as in expt. no. 58(72) on page 194.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of stem borer—Control measures N.A. (iii) Yield of grain. (iv) and (v) N.A. (vi and (vii) Nil.

5. RESULTS :

(i) 661 lb./ac. (ii) 211.1 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	544	519	462	508	525	492
S ₂	868	900	675	814	841	787
Mean	706	709	569	661	683	639
I ₁	612	768	668			
I ₂	800	650	469			

S.E. of M marginal mean = 52.8 lb./ac.
 S.E. of S or I marginal mean = 43.1 lb./ac.
 S.E. of body of S×I table = 60.9 lb./ac.
 S.E. of body M×S or M×I table = 74.6 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 56(115).

Site :- Govt. Main Farm, Warangal.

Type :- 'CM'.

Object :-To evaluate the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) *Chalka*. (b) Refer soil analysis, Warangal. (iii) 28.5 1956/9.7.1956. (iv) (a) Ploughing and levelling. (b) Transplanting. (c) N.A. (d) As per treatments. (e) N.A. (v) As per treatments. (vi) HR—35 (long duration). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 28.11.1956.

2. TREATMENTS :

Same as in expt. no. 58(72) on page 194.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×29'6". (v) One row around. (vi) Yes.

4. G NERAL :

(i) Fair, no lodging. (ii) There was an attack of gall-fly—control measures N.A. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 3555 lb./ac. (ii) 505.3 lb./ac. (iii) M effect is highly significant. S effect and interactions $M \times S$, $M \times I$ are significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	2953	3538	3699	3397	3262	3532
S ₂	3416	3938	3783	3712	3670	3755
Mean	3185	3738	3741	3555	3466	3643
I ₁	2946	3741	3711			
I ₂	3424	3735	3771			

S.E. of M marginal mean = 126.3 lb./ac.
 S.E. of S or I marginal mean = 103.2 lb./ac.
 S.E. of body of $M \times I$ or $M \times S$ table = 178.7 lb./ac.
 S.E. of $S \times I$ table = 145.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(75).

Site :- Govt. Main Farm, Warangal.

Type :- 'CM'.

Object :- To evaluate the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) N.A./16.7.1958. (iv) (a) 3 puddings and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) As per treatments. (vi) HR—35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 35.58". (x) 10.12.1958.

2. TREATMENTS :

Same as in expt. no. 58(72) on page 194.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 30' × 29'6". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3916 lb./ac. (ii) 332.1 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	4003	4096	3722	3940	4005	3875
S ₂	3899	4053	3722	3891	3941	3843
Mean	3951	4075	3722	3916	3973	3859
I ₁	4113	4047	3758			
I ₂	3789	4103	3686			

S.E. of M marginal mean	= 83.0 lb./ac.
S.E. of S or I marginal mean	= 67.8 lb./ac.
S.E. of body of M×I or M×S table	= 117.4 lb./ac.
S.E. of body of S×I table	= 96.0 lb./ac.

Crop :- Paddy (Kharif).

Ref. :- A.P. 59(20).

Site :- Govt. Main Farm, Warangal.

Type :- 'CM'.

Object :—To evaluate the effect of different factors under the Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Warangal. (iii) 10.6.1959/5.8.1959. (iv) (a) 3 ploughings, puddling and levelling. (b) Transplanted. (c) N.A. (d) As per treatments. (e) 3. (v) As per treatments. (vi) HR—35 (late). (vii) Irrigated. (viii) As per treatments. (ix) 19.1°. (x) 4.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(72) on page 194.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 30'×29'6". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Affected by gall-fly—Endrine was sprayed 3 to 4 times. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2875 lb./ac. (ii) 182.4 lb./ac. (iii) M and I effects are highly significant. S effect is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean	I ₁	I ₂
S ₁	3078	2931	2563	2857	2971	2742
S ₂	3017	2679	2446	2714	2829	2600
Mean	3047	2805	2504	2785	2900	2671
I ₁	3219	2912	2569			
I ₂	2875	2698	2440			

S.E. of M marginal mean	= 45.6 lb./ac.
S.E. of S or I marginal mean	= 37.2 lb./ac.
S.E. of body of M×S or M×I table	= 64.5 lb./ac.
S.E. of body of S×I table	= 52.6 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 56(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per ho'e, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red loam. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing. (b) Transplanted. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—19. (vii) Irrigated. (viii) N.A. (ix) 55.0°. (x) 2nd fortnight of December.

2. TREATMENTS :

Main-plot treatments :

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

(1) 3 times of planting : $D_1=15$ days before normal, $D_2=$ Normal and $D_3=15$ days after normal transplanting.(2) No. of seedlings per hole : $R_1=2$, $R_2=4$ and $R_3=6$.(3) 3 spacings : $S_1=6'' \times 6''$, $S_2=8'' \times 8''$ and $S_3=10'' \times 10''$.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=40$ lb./ac.(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=40$ lb./ac.N applied at the time of planting and P_2O_5 applied at final puddling.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 9 plots/block ; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A.

(iii) 1. (iv) (a) $19' \times 29'$. (b) $16' \times 27'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Gall-fly attack—Control measures N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes.

(c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3652 lb./ac. (ii) (a) 655.8 lb./ac. (b) 224.6 lb./ac. (iii) Main effect of N is highly significant. Main effect of P and interactions $N \times P \times S$ and $P \times S \times R$ are significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	S_1	S_2	S_3	N_0	N_1	P_0	P_1	Mean
D_1	3851	3817	3427	3679	3787	3629	3551	3846	3651	3746	3698
D_2	3738	3535	3357	3490	3531	3609	3461	3626	3484	3603	3543
D_3	3669	3676	3801	3628	3784	3735	3651	3779	3663	3768	3715
Mean	3753	3676	3528	3599	3701	3658	3554	3750	3599	3706	3652
P_0	3724	3623	3450	3573	3605	3620	3493	3705			
P_1	3781	3729	3607	3524	3797	3696	3616	3796			
N_0	3581	3619	3464	3521	3634	3508					
N_1	3923	3733	3593	3677	3767	3807					
S_1	3604	3737	3456								
S_2	3832	3742	3527								
S_3	3822	3549	3602								

S.E. of difference of two

1. D, R or S marginal means = 154.6 lb./ac.
2. N or P marginal means = 43.2 lb./ac.
3. N or P means at the same level of D, R or S = 74.9 lb./ac.
4. D, R or S means at the same level of N or P = 163.4 lb./ac.
5. Means in the body of $D \times R$, $D \times S$ or $R \times S$ table = 267.7 lb./ac.
6. Means in the body of $N \times P$ table = 61.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A. P. 57(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56 (MAE) type VII conducted at Chalvai on page 200.

5. RESULTS :

(i) 3723 lb./ac. (ii) (a) 493.7 lb./ac. (b) 423.7 lb./ac. (iii) Main effect of N is highly significant. Main effects of D, S and interaction D×R are significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	3982	3819	4099	3674	3916	4309	4016	3917	3923	4010	3967
D ₂	4101	3665	3154	3401	3522	3997	3905	3375	3675	3605	3640
D ₃	3571	3440	3671	3506	3458	3718	3687	3434	3471	3650	3561
Mean	3885	3641	3641	3527	3632	4008	3869	3575	3690	3755	3723
P ₀	3744	3623	3702	3533	3521	4015	3777	3602			
P ₁	4025	3659	3580	3522	3742	4000	3962	3548			
N ₀	4007	3806	3795	3749	3797	4062					
N ₁	3762	3476	3488	3305	3467	3954					
S ₁	3831	3349	3401								
S ₂	3742	3639	3515								
S ₃	4081	3935	4007								

S.E. of difference of two

1. D, R or S marginal means = 116.4 lb./ac.
2. N or P marginal means = 81.5 lb./ac.
3. N or P means at the same level of D, R or S = 141.2 lb./ac.
4. D, R or S means at the same level of N or P = 153.3 lb./ac.
5. Means in the body of D×R, D×S, or R×S table = 201.6 lb./ac.
6. Means in the body of N×P table = 115.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 56(MAE) type VII conducted at Chalvai on page 200.

2. TREATMENTS :

Main-plot treatments :

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

(1) 3 dates of transplanting : D₁=7.7.1958, D₂=16.7.1958 and D₃=30.7.1958.

(2) No. of seedlings per hole : R₁=2, R₂=4 and R₃=6.

(3) 3 spacings : S₁=6'×6', S₂=8'×8' and S₃=10'×10'.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=40 lb./ac.

N applied at the time of planting and P₂O₅ applied at final puddling.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 9 plots/block; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A.

(iii) 1. (iv) (a) N.A. (b) 1/80.7 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2380 lb./ac. (ii) (a) 386.7 lb./ac. (b) 238.6 lb./ac. (iii) Main effects of D and P and interaction N×P are highly significant. Main effect of N and interaction S×P are significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2629	2827	2741	2673	2811	2714	2636	2829	2602	2863	2733
D ₂	2381	2236	2455	2564	2102	2406	2364	2350	2164	2551	2357
D ₃	1995	2005	2151	2121	1937	2094	1969	2133	1852	2249	2051
Mean	2335	2356	2449	2453	2283	2405	2323	2437	2206	2554	2380
P ₀	2130	2185	2304	2368	2095	2155	2085	2327			
P ₁	2541	2527	2594	2537	2472	2654	2561	2547			
N ₀	2282	2247	2439	2427	2236	2306					
N ₁	2388	2464	2459	2478	2330	2503					
S ₁	2407	2395	2556								
S ₂	2241	2245	2365								
S ₃	2358	2428	2427								

S.E. of difference of two

1. D, R or S marginal means = 91.1 lb./ac.
2. N or P marginal means = 45.9 lb./ac.
3. N or P means at the same level of D, R or S = 79.5 lb./ac.
4. D, R or S means at the same level of N or P = 107.1 lb./ac.
5. Means in body of D×R, D×S or R×S table = 157.9 lb./ac.
6. Means in body of N×P table = 64.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(MAE).

Site :- M.A.E. Farm, Chalvai.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS and 2. TREATMENTS :

Same as in expt. no. 56(MAE) type VII conducted at Chalvai on page 200.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 9 plots/block; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 31'×21'. (b) 29'×19'. (v) N.A. (vi) Yes.

4. GENERAL :

(i). Good. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2238 lb./ac. (ii) (a) 594.9 lb./ac. (b) 384.2 lb./ac. (iii) Main effect of P is highly significant. Main effects of D and N and interaction S×P are significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2792	2311	2340	2602	2479	2362	2489	2473	2254	2708	2481
D ₂	2088	2374	2529	2480	2476	2035	2243	2418	2036	2624	2330
D ₃	1757	2006	1946	2042	1807	1861	1695	2112	1686	2120	1903
Mean	2212	2230	2272	2375	2254	2086	2142	2334	1992	2484	2238
P ₀	1911	2020	2045	2052	2148	1776	1969	2015			
P ₁	2514	2440	2499	2697	2360	2396	2315	2654			
N ₀	2104	2041	2282	2235	2232	1960					
N ₁	2321	2420	2261	2515	2275	2212					
S ₁	2422	2210	2492								
S ₂	2287	2346	2128								
S ₃	1928	2134	2196								

S.E. of difference of two

1. D, R or S marginal means = 140.2 lb./ac.
2. N or P marginal means = 73.9 lb./ac.
3. N or P means at the same level of D, R or S = 128.1 lb./ac.
4. D, R or S means at the same level of N or P = 166.9 lb./ac.
5. Means in body of D×R, D×S or R×S table = 242.9 lb./ac.
6. Means in body of N×P table = 104.5 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 57(MAE).

Site :- M.A.E. Farm, Chinnagonehal.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black loam. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) N.A. (ix) 23°. (x) 2nd—3rd week of December.

2. TREATMENTS :

Main-plot treatments :

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

(1) 3 times of planting : D₁=15 days before normal, D₂=Normal and D₃=15 days after normal transplanting.

(2) No. of seedlings per hole : R₁=2, R₂=4 and R₃=6.

(3) 3 spacings : S₁=6"×6", S₂=8"×8" and S₃=10"×10".

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=40 lb./ac.

N applied at the time of planting and P₂O₅ applied at final puddling.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 9 plots/block ; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 672 lb./ac. (ii) (a) 520.0 lb./ac. (b) 278.9 lb./ac. (iii) Main effects of P and N and interactions N×P, S×N and S×P are highly significant. Main effect of S and interaction R×S×N are significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	680	642	972	857	1021	415	601	928	546	982	764
D ₂	801	359	714	958	509	407	526	724	438	811	625
D ₃	563	448	872	768	756	359	473	783	351	905	628
Mean	682	483	853	861	762	394	533	812	445	899	672
P ₀	496	266	574	550	494	292	413	478			
P ₁	867	699	1132	1173	1030	496	653	1145			
N ₀	587	348	665	629	584	387					
N ₁	777	617	1041	1094	940	401					
S ₁	965	586	1033								
S ₂	774	500	1012								
S ₃	306	362	513								

S.E. of difference of two

1. D, R or S marginal means = 122.6 lb./ac.
2. N or P marginal means = 53.7 lb./ac.
3. N or P means at the same level of D, R or S = 93.0 lb./ac.
4. D, R or S means at the same level of N or P = 139.2 lb./ac.
5. Means in body of D×R, D×S or R×S table = 212.3 lb./ac.
6. Means in body of N×P table = 75.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 58(MAE).

Site :- M.A.E. Farm, Chinnagonehal.

Type :- 'CM'.

Object :- Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) Weeding and puddling. (ix) 23°. (x) 2nd December.

2. TREATMENTS :

Main-plot treatments :

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

- (1) 3 dates of transplanting : D₁=15.7.1958, D₂=30.7.1958 and D₃=15.8.1958.
- (2) No. of seedlings per holes ; R₁=2, R₂=4, and R₃=6.
- (3) 3 spacings : S₁=6"×6", S₂=8"×8" and S₃=10"×10".

Sub-plot treatments :

All combinations of (1) and (2)

- (2) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.
 - (2) 2 levels of P₂O₅ as super : P₀=0 and P₁=40 lb./ac.
- N applied at the time of planting and P₂O₅ at the time of final puddling.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(MAE) type VII conducted at Chinnagonehal on page 204.

5. RESULTS :

(i) 1282 lb./ac. (ii) (a) 439.4 lb./ac. (b) 418.0 lb./ac. (iii) Main effects of N and P and interaction N×P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	1321	1500	1306	1379	1411	1337	944	1807	1074	1677	1376
D ₂	1272	1223	1429	1428	1260	1235	801	1815	959	1657	1308
D ₃	1215	1174	1102	1111	1192	1188	880	1448	866	1462	1164
Mean	1269	1299	1279	1306	1288	1253	875	1690	966	1599	1282
P ₀	1029	985	885	1010	1006	883	725	1207			
P ₁	1509	1613	1673	1602	1569	1623	1025	2172			
N ₀	923	854	848	848	904	872					
N ₁	1616	1743	1711	1764	1671	1636					
S ₁	1208	1214	1496								
S ₂	1277	1395	1191								
S ₃	1322	1288	1150								

S.E. of difference of two

1. D, R or S marginal means = 103.6 lb./ac.
2. N or P marginal means = 80.4 lb./ac.
3. N or P means at the same level of D, R or S = 139.3 lb./ac.
4. D, R or S means at the same level of N or P = 142.9 lb./ac.
5. Means in the body of D×R, D×S or R×S table = 179.4 lb./ac.
5. Means in the body of N×P table = 113.7 lb./ac.

Paddy (Kharif).

Site :- M.A.E. Farm, Chinnagonehal.

Ref:- A.P. 59(MAE).

Type 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing (b) Transplanting. (c) —. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) GEB—24. (vii) Irrigated. (viii) Weeding and puddling. (ix) 23°. (x) 2nd December.

2. TREATMENTS to 4. GENERAL :

Same as expt. no. 57(MAE) type VII conducted at Chinnagonehal on page 204.

5. RESULTS :

(i) 1173 lb./ac. (ii) (a) 548.0 lb./ac. (b) 358.7 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of D is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	1311	1417	1540	1565	1442	1260	1063	1782	1290	1555	1423
D ₂	1162	907	1279	1155	1208	985	789	1443	989	1243	1116
D ₃	1038	1022	882	936	957	1049	696	1266	884	1078	981
Mean	1170	1115	1234	1219	1202	1098	849	1497	1054	1292	1173
P ₀	1029	988	1146	1065	1097	1002	775	1344			
P ₁	1312	1242	1321	1373	1308	1194	924	1660			
N ₀	858	790	900	912	845	791					
N ₁	1482	1441	1567	1525	1560	1405					
S ₁	1041	1121	1495								
S ₂	1308	1170	1129								
S ₃	1162	1055	1077								

S.E. of difference of two

1. D, R or S marginal means = 129.2 lb./ac.
2. N or P marginal means = 69.0 lb./ac.
3. N or P means at the same level of D, R or S = 119.6 lb./ac.
4. D, R or S means at the same level of N or P = 154.4 lb./ac.
5. Means in the body of D×R, R×S or D×S table = 223.7 lb./ac.
6. Means in the body of N×P table = 97.6 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 58(MAE).****Site :- M.A.E. Farm, Maruteru.****Type 'CM'.**

Object :- Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—1 and SLO—13. (vii) Irrigated. (viii) Weeding and puddling. (ix) 50°. (x) 1st December.

2. TREATMENTS :**Main-plot treatments :**

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

(1) 3 dates of transplanting : D₁=1.7.1958. D₂=16.7.1958 and D₃=31.7.1958.

(2) No. of seedlings per hole : R₁=2, R₂=4 and R₃=6.

(3) 3 spacings : S₁=6"×6", S₂=8"×8" and S₃=10"×10".

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.

(2) 2 levels of P₂O₅ as super : P₀=0 and P₁=40 lb./ac.

N applied at the time of planting and P₂O₅ applied at the time of final puddling.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(MAE) type VII conducted at Chinnagonehal on page 204.

5. RESULTS :

(i) 2933 lb./ac. (ii) (a) 413.9 lb./ac. (b) 371.9 lb./ac. (iii) Main effects of N and P and interaction N×P are highly significant. (iii) Main effect of D is significant. Other effects are not significant. (vi) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	3029	2967	2829	2783	2950	3092	2211	3672	2517	3367	2942
D ₂	3208	2938	3021	2846	3354	2967	2503	3608	2739	3372	3056
D ₃	2904	2804	2696	2783	2742	2879	2147	3456	2456	3147	2802
Mean	3047	2903	2849	2804	3015	2979	2287	3579	2571	3295	2933
P ₀	2767	2508	2436	2467	2733	2511	2146	2994			
P ₁	3328	3297	3261	3142	3297	3447	2428	4163			
N ₀	2483	2275	2103	2200	2490	2261					
N ₁	3611	3531	3594	3408	3631	3697					
S ₁	2938	2817	2658								
S ₂	3312	2854	2879								
S ₃	2892	3038	3008								

S.E. of difference of two

1. D, R or S marginal means = 97.6 lb./ac.
2. N or P marginal means = 71.6 lb./ac.
3. N or P means at the same level of D, R or S = 124.0 lb./ac.
4. D, R or S means at the same level of N or P = 131.2 lb./ac.
5. Means in the body of D×R, D×S or R×S table = 169.0 lb./ac.
6. Means in the body of N×P table = 101.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(MAE).

Site :- M.A.E. Farm, Maruteru.

Type :- 'CM'.

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) SLO—13 MTU—10. (vii) Irrigated. (viii) Weeding and puddling. (ix) N.A. (x) December.

2. TREATMENTS :

Main-plot treatments :

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

(1) 3 dates of planting : D₁=25.6.1959, D₂=9.7.1959 and D₃=24.7.1959

(2) No. of seedlings per hole : R₁=2, R₂=4 and R₃=6.

(3) 3 spacings : S₁=6''×6'', S₂=8''×8'' and S₃=10''×10''.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.

(2) 2 levels of P₂O₅ as super : P₀=0 and P₁=40 lb./ac.

N applied at the time of planting and P₂O₅ applied at the time of final puddling.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(MAE) type VII conducted at Chinnagonehal on page 204.

5. RESULTS :

(i) 3162 lb./ac. (ii) (a) 291.7 lb./ac. (b) 131.6 lb./ac. (iii) Main effects of D, N and P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	3371	3550	3454	3550	3655	3170	3158	3759	3317	3600	3458
D ₂	3073	3083	3287	3125	3398	2920	2899	3396	2979	3316	3148
D ₃	2833	2883	2928	2916	3003	2725	2641	3122	2774	2989	2881
Mean	3092	3172	3223	3197	3352	2938	2899	3426	3023	3302	3162
P ₀	2958	3033	3080	3055	3239	2776	2766	3281			
P ₁	3227	3311	3367	3339	3465	3160	3032	3570			
N ₀	2821	2877	3000	2944	3077	2677					
N ₁	3363	3467	3447	3450	3627	3200					
S ₁	3116	3271	3204								
S ₂	3203	3328	3524								
S ₃	2957	2916	2942								

S.E. of difference of two

1. D, R or S marginal means = 68.8 lb./ac.
2. N or P marginal means = 25.3 lb./ac.
3. N or P means at the same level of D, R or S = 43.9 lb./ac.
4. D, R or S means at the same level of N or P = 75.4 lb./ac.
5. Means in the body of D×R, D×S or R×S table = 119.1 lb./ac.
6. Means in the body of N×P table = 35.8 lb./ac.

Crop :- Paddy (Rabi).**Ref :- A.P. 59(MAE).****Site :- M.A.E. Farm, Maruteru.****Type :- 'CM'.**

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and the optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) and (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. (vi) MTU—10. (vii) Irrigated. (viii) Weeding and puddling. (ix) 6.77%. (x) May.

2. TREATMENTS :**Main-plot treatments :**

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

(1) 3 dates of transplanting : D₁=27.1.1960, D₂=11.2.1960 and D₃=26.2.1960.

(2) No. of seedlings per hole : R₁=2, R₂=4 and R₃=6.

(3) 3 spacings : S₁=6"×6", S₂=8"×8" and S₃=10"×10".

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=40 lb./ac.

N applied at the time of planting and P₂O₅ applied at the time of final puddling.

3. DESIGN :

- (i) Split-plot confd. (ii) (a) 9 plots/block ; 3 blocks/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 32'×16½'. (b) 30'×14½'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Stem borer attack—control measures N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3045 lb./ac. (ii) (a) 723.2 lb./ac. (b) 791.5 lb./ac. (iii) Main effect of N is highly significant. Main effect of D is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	3388	3224	3302	3353	3579	2983	2978	3631	3256	3354	3305
D ₂	3161	3102	3203	3052	3178	3236	2681	3632	3070	3242	3155
D ₃	2737	2620	2669	2904	2611	2511	2564	2786	2720	2631	2675
Mean	3095	2982	3058	3103	3123	2910	2741	3350	3015	3076	3045
P ₀	3048	2934	3064	3226	3059	2761	2656	3374			
P ₁	3142	3031	3053	2981	3187	3059	2825	3326			
N ₀	2825	2583	2814	2853	2820	2550					
N ₁	3365	3382	3304	3354	3426	3270					
S ₁	3220	2945	3144								
S ₂	3196	3202	2970								
S ₃	2870	2799	3060								

S.E. of difference of two

1. D, R or S marginal means = 170.5 lb./ac.
2. N or P marginal means = 152.3 lb./ac.
3. N or P means at the same level of D, R or S = 263.8 lb./ac.
4. D, R or S means at the same level of N or P = 252.7 lb./ac.
5. Means in the body of D×R, D×S or R×S table = 295.2 lb./ac.
6. Means in the body of N×P table = 215.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(48).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'I'.

Object :-To study the incidence of blast under different irrigational treatments.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Horse gram and wild indigo. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 9.8.1954/17.9.1954. (iv) (a) 1 dry ploughing with tractor, during the summer and subsequently with the country plough. 1 puddling before transplanting and levelling. (b) Transplanting. (c) —. (d) 6"×6". (e) 2. (v) 4000 lb./ac. of G.L.+150 lb./ac. of Supar and 50 lb./ac. of A/S applied before planting. (vi) BCP—2 (late). (vii) As per treatments. (viii) Weeding. (ix) 29.4". (x) 17.9.1954/28.1.1955.

2. TREATMENTS :

4 irrigational treatments : I₁=Irrigated as and when required (1½" level maintained throughout), I₂=As in I₁, upto shot-blade stage and then at one week interval, I₃=As in I₁, upto full flowering and then at one week interval and I₄=As in I₁, upto milk stage and then at one week intervals.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 12'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height measurement, tiller count and yield. (iv) (a) 1949—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1969 lb./ac. (ii) 140.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	1958	1914	1965	2032

S.E./mean = 57.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 55(92).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'I'.

Object :—To study the incidence of blast under different irrigational treatments.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.7.1955/8.8.1955. (iv) (a) 3 puddlings and levelling. (b) Transplanting. (c) 30 lb./ac. (d) 10"×6". (e) 2. (v) 4000 lb./ac. of G.L.+ 150 lb./ac. of Super+ 50 lb./ac. of A/S. (vi) BCP—1 (late). (vii) As per treatments. (viii) 2 weedings and gap filling. (ix) 26.01". (x) 28.1.1956.

2. TREATMENTS :

Same as in expt. no. 54(48) on page 210.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 60'×16'. (iii) 6. (iv) (a) 12½'×16'. (b) 10'10"×15'. (v) 10"×6". (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Neck infection count. (iv) (a) 1949—1956. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 17.9 degrees. (ii) 7.59 degrees. (iii) Treatment differences are not significant. (iv) Percentage of neck infection converted into degrees.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. value	18.3	17.9	19.5	15.7

S.E./mean = 3.09 degrees.

Crop :- Paddy.

Ref :- A.P. 56(30).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'I'.

Object :—To study the incidence of blast under different irrigational treatments.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 10 C L./ac. of C.M. and 75 lb./ac. of triple Super. Top dressing of 100 lb./ac. of A/S in two doses : one at planting and second one month later. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1956/4.8.1956. (iv) (a) 2 to 3 ploughings, 2 puddlings with country plough followed by one puddling with mechanical puddler. (b) N.A. (c) 25 lb./ac. (d) 10"×6". (e) 3. (v) As in (i) (c) above. (vi) BCP—1 (late). (vii) Irrigated. (viii) 3 hand weedings and working push hoe. (ix) 60.90". (x) 11.1.1957.

2. TREATMENTS :

Same as in expt. no. 54(48) on page 210.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 12½'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal, lodging in Dec. 1956. (ii) Stem borer and leaf roller attack. Spraying endrine and dusting of B.H.C. 10%. (iii) Neck infection, straw and grain yield. (iv) (a) 1949—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2557 lb./ac. (ii) 524.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	2455	2715	2632	2425

S.E./mean = 214.2 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(47).

Site :- Maize Breeding Stn., Amberpet.

Type :- 'D'.

Object :—To find out a suitable seed treatment against Paddy blast.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Sewage effluent water. (ii) (a) N.A. (b) Refer soil analysis, Amberpet. (iii) N.A./12.7.1958. (iv) (a) Japanese method. (b) and (c) N.A. (d) 10'×10'. (e) 2. (v) No manure. Sewage effluent water was given to supply 70 lb./ac. of N and 45 lb./ac. of P₂O₅. (vi) CH—45 (early). (vii) Irrigated. (viii) Weeding by hand and by Japanese weeder. (ix) 31.5°. (x) 24.10.1958.

2. TREATMENTS :

T ₀ =Control	T ₄ =ESD/AM
T ₁ =Agrosan	T ₅ =ESD/HS
T ₂ =Harvesan	T ₆ =Tillex
T ₃ =Flit—406	T ₇ =Ceresan (dry)

All chemicals applied at the rate of 5 oz./cwt of seed.

3. DESIGN :

(i) R B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) and (b) 16'×14'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good ; crop lodged at the time of harvest (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) The data of the expt. for the years 1954 to 1957 are N.A.

5. RESULTS :

(i) 5421 lb./ac (ii) 814.2 lb./ac. (iii) The treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇
Av. yield	3564	6806	5575	6353	4797	6287	4603	5381

S.E /mean = 470.0 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(46).

Site :- Maize Breeding Stn., Amberpet.

Type :- 'D'.

Object :—To test the efficacy of spraying and dusting chemicals on Paddy blast.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Sewage effluent water. (ii) (a) N.A. (b) Refer soil analysis, Amberpet. (iii) N.A./12.7.1958. (iv) (a) Japanese method. (b) and (c) N.A. (d) 10'×10'. (e) 2. (v) Sewage effluent to supply 70 lb./ac. of N and 45 lb./ac. of P₂O₅ was given. (vi) CH—45 (early). (vii) Irrigated. (viii) Weeding by hand and Japanese weeder. (ix) 31.5°. (x) 24.10.1958.

2. TREATMENTS :

8 seed treatments : T₀=Control, T₁=Bordeaux mixture (55-50), T₂=Parrycop (1 in 30), T₃=Perenox (.32%)
T₄=Wetcol -15 (1 in 25), T₅=Copper sandoz (1 in 40), T₆=Blitox (1 in 40) and T₇=
Sulphur (dusted).

Treatments were applied twice 3 and 6 weeks after transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) and (b) 29'×15'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good but crop lodged at the time of harvest. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) N.A. (c) Nil.
(v) to (vii) Nil.

5. RESULTS :

(i) 2307 lb./ac. (ii) 562.9 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain
in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇
Av. yield	2070	2804	2136	2771	2837	2036	1535	2270

S.E./mean = 325.0 lb./ac.

Crop :- Paddy (Abi).

Ref :- A.P. 58(45).

Site :- Maize Breeding Stn., Amberpet.

Type :- 'D'.

Object :—To test the efficacy of seed dressings against sprays on the blast disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Sewage effluent water. (ii) (a) N.A. (b) Refer soil analysis, Amberpet. (iii)
12.7.1958. (iv) (a) Japanese method. (b) and (c) N.A. (d) 10"×10". (e) 2. (v) No manure. Sewage
effluent water to supply 70 lb./ac. of N and 45 lb. of P₂O₅ was given. (vi) CH-45 (early). (vii) Irrigated.
(viii) Weeding by hand and by Japanese weeder. (ix) 31.5". (x) 24.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no treatment)

(1) Seed dressings : T₁=Agrosan, T₂=Harvesan, T₃=Tillex and T₄=Flit-406.

(2) 4 sprays : S₁=Bordeaux mixture 10%, S₂=Wetcol (1 in 25), S₃=Parry cop (1 in 40) and S₄=Sulphur
dusting.

Sprayed were given 3 and 6 weeks after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 2. (iv) (a) and (b) 68'×6'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good: crop lodged at the time of harvest. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) N.A. (c) Nil.
(v) to (vii) Nil.

5. RESULTS :

(i) 2590 lb./ac. (ii) 675.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2402 lb./ac.

	T ₁	T ₂	T ₃	T ₄	Mean
S ₁	2829	2242	2189	4270	2883
S ₂	2509	2295	1868	2776	2362
S ₃	2455	2669	2295	3256	2669
S ₄	2722	2776	2349	2135	2495
Mean	2627	2495	2175	3109	2602

S.E. of any marginal means = 238.8 lb./ac.
S.E. of body of table or control mean = 477.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(62).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :—To study the effect of soaking seeds in nutrient solutions prior to sowing.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy—Sugarcane. (b) Sugarcane—Fallow. (c) 100 lb./ac. of N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 3.8.1957/N.A. (iv) (a) 4 puddlings and then levelling. (b) N.A. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) 5000 lb./ac. of G.L. in puddle+A/S at 40 lb./ac. of N one month after planting. (vi) GEB—24 (medium). (vii) Irrigated. (viii) Working rotary hoe twice. (ix) N.A. (x) 19.12.1957.

2. TREATMENTS :

6 seed soaking chemicals : M_0 =Control (no soaking), M_1 =10% solution of Pot. Phos., M_2 =10% solution of Ammo. Phos., M_3 =10% solution of complete nutrients, M_4 =Solution of Ethyl Alcohol and M_5 =10% solution of $KMnO_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 30'×10'. (b) 27'3"×8'. (v) Two rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, tiller counts and grain yield. (iv) (a) 1957—1959. (b) and (c) No. (vi) to (vii) Nil.

5. RESULTS :

(i) 2465 lb./ac. (ii) 43.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av yield	2357	2545	2535	2567	2420	2367

S.E./mean = 21.7 lb./ac.

Crop :-Paddy.

Ref :- A.P. 58(32).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :—To study the effect of soaking seeds in nutrient solutions prior to sowing.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy—Sugarcane. (b) G.M. (c) 100 lb./ac. of N as A/S. (ii) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A./13.8.1958. (iv)(a) 4 puddlings and then, levelling. (b) N.A. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3 (v) 5000 lb./ac. of G.L. puddled+40 lb./ac. of N as A/S applied one month after planting. (vi) GEB—24 (medium). (vii) Irrigated. (viii) Working rotary hoe. (ix) N.A. (x) 29.12.1958.

2. TREATMENTS :

Same as in expt. no. 57(62) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 25'×21'. (b) 21'10"×10'. (v) 1' 7"×5½'. (vi) Yes.

4. GENERAL :

(i) Good, no lodging. (ii) No. (iii) Height, tiller count and yield of grain. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2518 lb./ac. (ii) 195.8 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatments	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	2502	2568	2402	2602	2508	2524

S.E./mean = 97.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 57(64).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :—To study the effect of mechanical weeding and spraying weedicides.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Paddy. (b) Sugarcane—Fallow (c) 100 lb./ac. of N. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 4.8.1957. (iv) (a) Four puddlings and passing *patti* for levelling. (b) Transplanting. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) 5000 lb./ac. of G.L. in puddle+40 lb./ac. of N as A/S one month after planting. (vi) GEB—24 (medium). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 19.12.1957.

2. TREATMENTS :

9 weed control treatments : T₀=No weeding. T₁=Fenoxone 0.25% at 6th week. T₂=Fenoxone 0.50% at 6th week. T₃=Malic hydroxide 0.125% at 6th week. T₄=Malic hydroxide 0.250% at 6th week. T₅=Phenoxylyene 0.25% at 6th week. T₆=Phenoxylyene 0.50% at 6th week. T₇=Hand weeding when necessary and T₈=Working with rotary hoe thrice at fortnightly intervals, one month after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 30'×10'. (b) 27'×8'. (v) 1½'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Height, tiller counts and yield of grain. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2339 lb./ac. (ii) 34.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	2317	2401	2367	2233	2198	2195	2170	2557	2617

S.E./mean = 17.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 58(29).

Site :- Sugarcane Res. Stn., Anakapalle.

Type 'D'.

Object :—To study the effect of mechanical weeding and spraying weedicides.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A./13.8.1958. (iv) (a) 4 puddlings and levelling. (b) N.A. (c) 30 lb./ac. (d) 6"×6". (e) 2 to 3. (v) 5000 lb./ac. of G.L. in puddle+40 lb./ac. of N as A/S one month after planting. (vi) GEB—24 (medium). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 29.12.1958.

2. TREATMENTS :

9 weed control treatments : T₀=No weeding, T₁=Fenoxone 0.25% at 6th week. T₂=Fenoxone 0.50% at 6th week, T₃=Malic hydroxide 0.125% at 6th week, T₄=Malic hydroxide 0.25% at 6th week, T₅=Coronox 0.25% at 6th week, T₆=Coronox 0.50% at 6th week. T₇=Hand weeding and T₈=Weeding with rotary hoe thrice at fortnightly intervals, from one month after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 25'×12'. (b) 21'×10'. (v) 2'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Height, tiller counts and yield of grain. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2563 lb./ac. (ii) 158.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	2482	2637	2585	2631	2566	2631	2482	2615	2440

S.E./mean = 79.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- A.P. 59(69).

Site :- Agri. College Farm, Bapatla.

Type :- 'D'.

Object :—To assess the usefulness of herbicides sprayed on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) F.Y.M. at ton/ac. Super at 100 lb./ac, both as B.D.+A/S at 100 lb./ac. applied 20 days after planting. (ii) (a) Black clayey. (b) Refer soil analysis, Bapatla. (iii) 8.7.1959/N.A. (iv) (a) Puddling with spades. (b) to (e) N.A. (v) N.A. (vi) MTU—7 (late). (vii) Irrigated. (viii) Nil. (ix) 31.50". (x) 10.12.1959.

2. TREATMENTS :

7 herbicides sprays : T₀=Control, T₁=Hand weeding, T₂=Fenoxone (20 lb.), T₃=Fenoxone (10 lb.), T₄=Tributon (2 gal.), T₅=Tributon (1.0 gal.) and T₆=Spontox (2.0 gal.).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 25.6'×19.6'. (b) 24'×18'. (v) 2 rows on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1843 lb./ac. (ii) 603 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
Av. yield	1700	2000	2100	2500	1300	2100	1200

S.E./mean = 301.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(23).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To test whether Maleic hydroxide has any hormonal effect on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 30 lb./ac. of N as A/S and 15 lb./ac. of P_2O_5 as Super. (ii) Sandy clay. (b) N.A. (iii) 21.7.1954/N.A. (iv) (a) 4 to 5 times puddling and levelling. (b) and (c) N.A. (d) 6"×4". (e) N.A. (v) 30 lb./ac. of N as A/S+15 lb./ac. of P_2O_5 as Super. (vi) H.R.—19 (medium). (vii) Irrigated. (viii) 2 weedings and working the Japanese weeder. (ix) 27.64°. (x) 2nd week of Dec., 1954.

2. TREATMENTS :

11 concentration of Maleic hydroxide : $T_0=0$, $T_1=0.1\%$, $T_2=0.2\%$, $T_3=0.3\%$, $T_4=0.4\%$, $T_5=0.5\%$, $T_6=0.6\%$, $T_7=0.7\%$, $T_8=0.8\%$, $T_9=0.9\%$ and $T_{10}=1.0\%$.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) and (b) 4'×3'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2350 lb./ac. (ii) 577.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

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	2570	2573	2390	2386	2370	2341	2310	2310	2301	2221	2081

S.E./mean = 288.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 54(36).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To find out the effect of seed dressings on the incidence of *Helminthosporium Oryzal*.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. Fertiliser mixture to give 40 lb./ac. of N and 25 lb./ac. of P_2O_5 was broadcast at puddling. (ii) (a) Light black soil. (b) N.A. (iii) 18.6.1954/—. (iv) (a) Levelling and puddling. (b) and (c) N.A. (d) 6"×4". (e) N.A. (v) Same as in (i) (c) above. (vi) H.R.—19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 31.15°. (x) 11.11.1954.

2. TREATMENTS :

7 seed treatment : T_0 =Control, T_1 =Agroan, G. N., T_2 =Landisan T_3 =Ceresan (dry), T_4 =Perenox (0.35%), T_5 =Bordeaux Mixture (1%). T_6 =Ceresan (wet) (1 lb. in 100 gal.). T_1 to T_3 applied at the rate of 6 oz. cwt. of seed. Seeds were dipped for 2 hours and dried under treatments T_4 , T_5 and T_6 .

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 41'×32'. (b) 39'×31'. (v) 1'×6". (6) Yes.

4. GENERAL :

(i) Normal. (ii) Paddy *Hispia* and blast were noticed. BHC dusted. (iii) Intensity of % infection and grain yield. (iv) (a) 1951—1954. (b) and (c) Yes. (v) to (vii) Nil.

5. RESULTS:

(i) 1540 lb./ac. (ii) 169.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1596	1638	1452	1440	1566	1596	1494

S.E./mean = 69.1 lb./ac.

Crop :- Paddy (Kharif).
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 56(66).
Type :- 'D'.

Object :—To test the efficiency of Folidol and emulsified Endrine against Paddy stem borer.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Fallow. (c) Nil. (ii) (a) Sandy clay. (b) Refer soil analysis, Rudrur. (iii) 14.7.1956.
 (iv) (a) 2 dry ploughings and 2 wet ploughings with levelling. (b) Transplanting. (c) 30 lb./ac. (d) and
 (e) N.A. (v) 60 lb./ac. of N+60 lb./ac. of P₂O₅ as Nitro. Phos. broadcast and ploughed during final
 ploughing. (vi) H.R.—19 (medium). (vii) Irrigated. (viii) 2 hand weedings. (ix) 63.97%. (x) 24.10.1956.

2. TREATMENTS :

7 sprayings: T₀=Control (spraying of water), T₁=Folidol (0.03%), T₂=Folidol (0.06%), T₃=Folidol
 (0.12%), T₄=Endrine (0.0215%), T₅=Endrine (0.031%) and T₆=Endrine (0.043%).
 Spraying given at 40 gallons per acre of fluid.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Little incidence of Paddy stem borer and gall-fly—control measures, as per treatments.
 (iii) No. of moths, egg-masses and dead heart counts before and after the sprayings. No. of healthy ear
 heads and grain yield. (iv) (a) 1956—1957. (b) Yes. (c) Nil. (v) (a) Bapatla. (b) Nil. (vi) and (vii) Nil.

RESULTS :

(i) 2174 lb./ac. (ii) 336.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain
 in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
Av. yield	2230	2000	2350	2160	1955	2210	2310

S.E./mean = 168.0 lb./ac.

Crop :- Paddy (Tabi).
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 57(11).
Type :- 'D'.

Object :—To test the efficiency of Folidol and emulsified Endrine against Paddy stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 60 lb./ac. of N+60 lb./ac. of P₂O₅ as Nitro. Phos. (ii) (a) Sandy
 clay. (b) Refer soil analysis, Rudrur. (iii) 29.1.1957. (iv) (a) 2 dry ploughings and 2 wet ploughings
 with levelling. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) 40 lb./ac. of N+25 lb./ac. of P₂O₅
 as A/S and Super broadcast at last puddle. (vi) HR—19 (medium). (vii) Irrigated. (viii) 2 hand weedings.
 (ix) 7.48%. (x) 13.5.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(66) above.

4. GENERAL :

(i) Satisfactory. (ii) Heavy incidence of stem-borer by moth. Control measures as per treatments. (iii)
 No. of moths, dead hearts and egg-masses were counted before and after treatments, count of affected
 ear heads and yield of grain. (iv) (a) 1956—1957. (b) Yes. (c) Nil. (v) (a) Bapatla. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1766 lb./ac. (ii) 225.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain
 in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
Av. yield	1391	1742	1900	2064	1562	1761	1938

S.E./mean = 112.6 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 55(79).****Site :- Agri. Res. Stn., Samalkot.****Type :- 'D'.**

Object :- To test the efficacy of different insecticides against stemborer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy alluvial. (b) N.A. (iii) 28.6 1955/1.8.1955. (iv) (a) 4 ploughings and levelling. (b) Transplanting. (c) N.A. (d) 8"×8". (e) 2. (v) 400 lb./ac. of G.L. and 200 lb./ac. of Super. (vi) MTU—19 (late). (vii) Irrigated. (viii) 1 weeding one month after planting. (ix) 34.65". (x) 11.12.1955.

2. TREATMENTS :

10 insecticidal sprays : T₁=Control—(no treatment), T₂=Endrine oil emulsion sprayed in nursery alone, T₃=Endrine dust sprayed in nursery alone, T₄=Parathion sprayed in nursery alone, T₅=Endrine oil emulsion sprayed in nursery and in field, T₆=Endrine dust sprayed in nursery and in field, T₇=Parathion sprayed in nursery and in field, T₈=Endrine oil emulsion sprayed in the field only, T₉=Endrine dust sprayed in field only and T₁₀=Parathion sprayed in field only.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 30'×15'. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Silver shoot attack ; Treatments could not check the infection. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3362 lb./ac. (ii) 232 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈	T ₉	T ₁₀
Av. yield	3466	3497	3401	3425	3255	3621	3141	3202	3376	3237

S.E./mean = 116 lb./ac.

Crop :- Paddy (Kharif).**Ref :- A.P. 59(85).****Site :- Agri. Res. Stn. Samalkot.****Type :- 'D'.**

Object :- To assess the usefulness of Fernoxone, sprayed one month after planting.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 1 ton/ac. of F.Y.M. and 100 lb./ac. of Super as B.D. 100 lb./ac. of A/S applied 20 days after planting. (ii) (a) Black clayey. (b) Nil. (iii) 28.7.1959. (iv) (a) Puddling with country plough. (b) to (e) N.A. (v) N.A. (vi) SLO=13 (medium). (vii) Irrigated. (viii) Working push hoe in between the lines in some plots. (ix) 80.00". (x) 27.11.1959.

2. TREATMENTS :

5 treatments: T₀=Control, T₁=Hand weeding, T₂=Hand and cultural method of weeding, T₃=One spraying of Fernoxone and T₄=2 sprayings of Fernoxone.
Fernoxone used at 1 lb. acid equivalent.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 125'×95'. (iii) 4. (iv) (a) 25'×20' (b) 21'×16'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No. (iii) Grain yield. (iv) (a) 1959—1961. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2240 lb./ac. (ii) 710 lb./ac. (iii) The treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄
Av. yield	1700	2600	2800	2100	2000

S.E./mean = 355 lb./ac.

Crop :- Wheat (Rabi).

Ref :- A.P. 56(90).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find out the manurial requirements of Wheat and the best method of application of manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sannhemp. (c) Nil. (ii) (a) Deep black cotton. (b) Refer soil analysis, Yemmiganur. (iii) 7.11.1956. (iv) (a) 2 ploughings, working *pedda guntaka*; beds formed. (b) Sown through *akkadis* behind *gorru*. (c) 70 lb./ac. (d) and (e) N.A. (v) 5000 lb./ac. of G.L. (vi) Glumed wheat (medium). (vii) Irrigated. (viii) *Dantulu* worked 5 times. (ix) 1.27". (x) 14 to 16.3.1957.

2. TREATMENTS :

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

(1) 2 levels of manures : M₁=10 lb./ac. of N as A/S+15 lb./ac. of P₂O₅, and M₂=20 lb./ac. of N as A/S+30 lb./ac. of P₂O₅.

(2) 2 methods of manuring : B₁=Drilled and B₂=Broadcast.

3. DESIGN :

(i) R B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 1/77.76 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; no lodging. (ii) Severe attack of pest—no control measures taken. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 626 lb./ac. (ii) 19.9 lb./ac. (iii) All the main effects and their interactions are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 432 lb./ac.

	M ₁	M ₂	Mean
B ₁	642	739	690
B ₂	639	676	658
Mean	640	708	674

S.E. of any marginal mean = 7.0 lb./ac.

S.E. of body of table or control mean = 9.9 lb./ac.

Crop :- Wheat.

Ref :- A.P. 57(47).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find out the manurial requirements of Wheat and the best method of application of manure.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Sesbania speciosa*. (c) Nil. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 1.11.1957. (iv) (a) Ploughing twice and working *pedda guntaka*. (b) to (e) N.A. (v) *Sesbania* was ploughed in the site at 5000 lb./ac. (vi) Glumed wheat. (vii) Irrigated. (viii) Interculture with *dantulu* and weeding. (ix) Nil. (x) 27.2.1958.

2. TREATMENTS :

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

(1) 2 methods of application of manure : B₁=Drilling and B₂=Broadcasting.

(2) 3 manurial doses : M₁=10 lb./ac. of N+15 lb./ac. of P₂O₅, M₂=20 lb./ac. of N+30 lb./ac. of P₂O₅ and M₃=30 lb./ac. of N+45 lb./ac. of P₂O₅.

N applied as A/S and P₂O₅ applied as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 1/77.8 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Medium growth. (ii) Incidence of rust—no control measures taken. (iii) Yield of grain. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 267 lb./ac. (ii) 83.8 lb./ac. (iii) Only B effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 262 lb./ac.

	M ₁	M ₂	M ₃	Mean
B ₁	206	222	234	221
B ₂	315	341	287	314
Mean	260	282	260	267

S.E. of M marginal mean = 24.1 lb./ac.
 S.E. of B marginal mean = 29.6 lb./ac.
 S.E. of body of table or control mean = 41.9 lb./ac.

Crop :- Wheat (Rabi).

Ref :- A.P. 58(40).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find out the manurial requirements of Wheat and the best method of application of manure.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Sesbania Speciosa*. (c) Nil. (ii) (a) Black cotton. (b) Refer soil analysis, Yemmiganur. (iii) 18.11.1952. (iv) (a) *Sesbania* ploughed in, ploughing twice, weeding *guntaka*. (b) to (e) N.A. (v) 5000 lb./ac. of G L. (vi) Glumed wheat. (vii) Irrigated. (viii) Gaps filled. Two weedings and intercultivated with *dantulu*. (ix) 2.07. (x) 3.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(47) on page 220.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 11'6"×44'0". (b) 10'×40'. (v) 9"×24". (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Replications 3 and 4 resown due to excessive rain after irrigations. (vii) Nil.

5. RESULTS :

(i) 645 lb./ac. (ii) 153.3 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 619 lb./ac.

	M ₁	M ₂	M ₃	Mean
B ₁	558	640	600	599
B ₂	715	749	633	699
Mean	636	695	616	649

S.E. of M marginal mean = 54.2 lb./ac.

S.E. of B marginal mean = 44.2 lb./ac.

S.E. of body of table or control mean = 76.7 lb./ac.

Crop :- Wheat (Rabi).**Ref :- A.P. 59(53).****Site :- Agri. Res. Farm, Yemmiganur.****Type :- 'M'.**

Object :—To find out the manurial requirements of Wheat and method of application of manures.

1. BASAL CONDITIONS :(i) (a) N.A. (b) Groundnut-Redgram. (c) 5 ton/ac. of F.Y.M. (ii) (a) Red soil. (b) Refer soil analysis, Yammiganur. (iii) 19.10.1959. (iv) (a) to (c) N.A. (v) 5000 lb./ac. of G.L. (vi) Glumed wheat. (vii) Irrigated. (viii) Thinning and two intercultivations with *Dantulu*. (ix) Nil. (x) 18.2.1960.**2. TREATMENTS :**

Same as in expt. no. 57(47) on page 220.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 11'6"×25'. (b) 11'×20'. (v) 0.25'×2.5'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 380 lb./ac. (ii) 101.8 lb./ac. (iii) Main effect of M alone is significant. (iv) Av. yield of grain in lb./ac.

Control = 321 lb./ac.

	M ₁	M ₂	M ₃	Mean
B ₁	290	526	408	408
B ₂	334	362	420	372
Mean	312	444	414	390

S.E. of M marginal mean = 36.0 lb./ac.

S.E. of B marginal mean = 29.4 lb./ac.

S.E. of body of table or control mean = 50.9 lb./ac.

Crop :- Wheat (Rabi).**Ref :- A.P. 58(MAE).****Site :- M.A.E. Farm, Chalvai.****Type :- 'M'.**

Object :—Type IV—To find the effect of application of P to legume on the succeeding Wheat crop

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Medium black. (b) N.A. (iii) 4.10.58. (iv) (a) to (c) N.A. (d) $10'' \times 10''$.
 (e) N.A. (v) Nil. (vi) NP-797. (vii) Irrigated. (viii) and (ix) N.A. (x) January 1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2) + a control (L_0P_0)

(1) 2 legumes : $L_1=Moong$ and $L_2=Urd$.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.

Sub-plot treatments :

(1) 3 levels of N as A/S : $N_0=0$, $N_2=15$ and $N_2=30$ lb./ac.

P_2O_5 applied to legumes at the time of sowing and N applied to wheat at the time of planting.

3. DESIGN :

- (i) Split-plot. (ii) (a) 7 main-plots/replication; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A.
 (b) $32' \times 17'$. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

- (i) 69.7 lb./ac. (ii) (a) 66.7 lb./ac. (b) 60.1 lb./ac. (iii) Main effect of L alone is significant. (iv) Av. yield of grain in lb./ac.

	L_0P_0	L_1P_0	L_1P_1	L_1P_2	L_2P_0	L_2P_1	L_2P_2	Mean
N_0	32.9	82.3	90.5	82.3	49.4	98.7	32.9	67.0
N_1	32.9	65.8	74.1	65.8	24.7	90.5	41.1	56.4
N_2	41.1	107.0	74.1	230.4	24.7	74.1	49.4	85.8
Mean	35.6	85.0	79.6	126.2	32.9	87.8	41.1	69.7

S.E. of difference of two

1. LP marginal means = 31.4 lb./ac.
 2. N marginal means = 18.5 lb./ac.
 3. N means at the same level of LP = 49.1 lb./ac.
 4. LP means at the same level of N = 50.9 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn., Lam.

Ref :- A.P. 57(38).

Type :- 'M'.

Object :—To compare the effects of different sources of N on Jowar.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (iii) 24.10.1957. (iv) (a) 6 ploughings. (b) to (e) N.A. (v) Nil. (vi) G-2. (vii) Unirrigated. (viii) Intercultivation with *papatam* in one month crop. (ix) $2.28''$ (x) 9.2.1958.

2. TREATMENTS :

5 sources of N at 20 lb./ac. : $S_0=N_0N$, $S_1=A/S$, $S_2=Urea$, $S_3=C/A/N$ and $S_4=G.N.C.$

3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) $1/51$ ac. (b) $1/66.7$ ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

- (i) No lodging, poor growth. (ii) Nil. (iii) Growth measurement and yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 756 lb./ac. (ii) 17.9 lb./ac. (iii) Treatment differences are not significant (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	685	808	783	764	738

S.E./mean = 7.4 lb./ac.

Crop :- Jowar.**Ref :- A.P. 55(47).****Site :- Agri. Res. Stn., Lam.****Type :- 'M'.**

Object :- To study the response of different treatments of organic manures on the dry land crop of Jowar.

1. BASAL CONDITIONS :

(i) (a) Chillies—*Jowar*. (b) Chillies. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (iii) 5.11.1955. (iv) (a) 5 ploughings. (b) to (e) N.A. (v) Nil. (vi) *Jonna* (late). (vii) Unirrigated. (viii) *Papatam* worked in one month crop. (ix) 1.12". (x) 23.2.1956.

2. TREATMENTS :

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

(1) 3 sources of N : S₁=Urban compost, S₂=F.Y.M. and S₃=G.L.(2) 3 levels of N : N₁=40, N₂=60 and N₃=80 lb./ac.

Manures applied a month before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 56'×23'. (b) 50'×19'. (v) 3'×2'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 473 lb./ac. (ii) 176.0 lb./ac. (iii) Main effects of S and 'control vs. others' effect are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 238 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	390	371	627	463
N ₂	406	485	617	503
N ₃	437	380	779	532
Mean	411	412	674	499

S.E. of any marginal mean = 51.0 lb./ac.

S.E. of body of table = 88.0 lb./ac.

Crop :- Jowar.**Ref :- A.P. 56(37).****Site :- Agri. Res. Stn., Lam.****Type :- 'M'.**

Object :- To study the effect of organic manures on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Chillies—*Jowar*. (b) Chillies. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (lii) 20.10.1956. (iv) (a) 5 ploughings. (b) Line sowing. (c) N.A. (d) 3' between rows. (e) N.A. (v) Nil. (vi) G—2 (early). (vii) Unirrigated. (viii) *Papatam* is worked in one month crop as intercultivation. (ix) 4.32". (x) 28.2.1957 to 1.3.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(47) on page 224.

5. RESULTS :

(i) 1370 lb./ac. (ii) 96.0 lb./ac. (iii) All effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1050 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	990	1425	1450	1288
N ₂	1475	1350	1590	1472
N ₃	1319	1400	1578	1432
Mean	1261	1392	1539	1397

S.E. of any marginal mean = 27.7 lb./ac.

S.E. of body of table = 48.0 lb./ac.

Crop :- Jowar.**Site :- Agri. Res. Stn., Lam.****Ref :- A.P. 57(36).****Type :- 'M'.**

Object :- To study the effect of organic manures on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Chillies—*Jonna*. (b) Chillies. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (iii) 25.10.1957. (iv) (a) 5 ploughings. (b) to (e) N.A. (v) Nil. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation *papatam* in one month crop. (ix) 2.27". (x) 12.2.1958.

2. TREATMENTS to 4. GENERAL.

Same as in expt. no. 55(47) on page 224.

5. RESULTS :

(i) 434 lb./ac. (ii) 87.0 lb./ac. (iii) 'Control vs. others' effect are highly significant. Effect of N is significant. (iv) Av. yield of grain in lb./ac.

Control = 295 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	425	470	425	440
N ₂	405	405	405	405
N ₃	520	520	475	505
Mean	450	465	435	450

S.E. of any marginal mean = 25.1 lb./ac.

S.E. of body of table = 43.5 lb./ac.

Crop :- Jowar.**Site :- Agri. Res. Stn., Lam.****Ref :- A.P. 54(9).****Type :- 'M'.**

Object :- To study the effect of N and G.N.C. with and without P and K.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Red gram + Groundnut. (b) *Chillies* + Cotton. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (iii) 30.10.1954. (iv) (a) 6 ploughings. (b) to (e) N.A. (v) *Glyricedia* at 3000 lb./ac. incorporated two months before sowing. (vi) G—2 (*Jonna*). (vii) Unirrigated. (viii) Interculturing with *Papatam* in one month old crop. (ix) 0.63%. (x) 25.2.1955.

2. TREATMENTS :

Main-plot treatments :

3 sources of 30 lb./ac. of N : S_0 =No manure, S_1 =A/S and S_2 =G.N.C.

Sub-plot treatments :

3 combinations of P and K : M_1 =20 lb./ac. of P_2O_5 as Super, M_2 =30 lb./ac. of K_2O as Pot. Sul. and M_3 =20 lb./ac. of P_2O_5 as Super + 30 lb./ac. of K_2O as Pot. Sul.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 82.5' × 13.2'. (b) 69.3' × 11.2'. (v) 6.6' × 1.0'. (vi) Yes.

4. GENERAL :

(i) Good ; no lodging. (ii) Nil. (iii) Growth at different intervals of grain and straw yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1584 lb./ac. (ii) (a) 397.8 lb./ac. (b) 124.2 lb./ac. (iii) Interaction S × M alone is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
S_0	1397	1470	1511	1459
S_1	1805	1538	1779	1707
S_2	1615	1638	1507	1587
Mean	1609	1549	1599	1584

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 162.7 lb./ac. |
| 2. M marginal means | = 50.5 lb./ac. |
| 3. M means at the same level of S | = 87.9 lb./ac. |
| 4. S means at the same level of M | = 177.5 lb./ac. |

Crop :- *Jowar*.

Site :- Agri. Res. Stn., Lam.

Ref :- A.P. 55(61).

Type :- 'M'.

Object :—To study the effect of N and G.N.C. with and without P and K.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Lam. (iii) 30.10.1955. (iv) (a) 6 ploughings. (b) to (e) N.A. (v) Nil. (vi) G—2. (vii) Unirrigated. (viii) Interculture with *papatam* in one month crop. (ix) 13.09%. (x) 30.2.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(9) on page 225.

5. RESULTS :

(i) 1571 lb./ac. (ii) (a) 1378.9 lb./ac. (b) 280.8 lb./ac. (iii) Interaction S × M alone is significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	M ₃	Mean
S ₀	1788	1360	1380	1508
S ₁	1402	1540	1529	1492
S ₂	1661	1790	1668	1714
Mean	1617	1563	1526	1577

S.E. of difference of two

1. S marginal means = 398 lb./ac.
2. M marginal means = 81 lb./ac.
3. M means at the same level of S = 189 lb./ac.
4. S means at the same level of M = 58 lb./ac.

Crop :- Jowar.

Ref :- A.P. 57(28).

Site :- Tobacco Res. Stn., Madira.

Type :- 'M'.

Object :- To determine the manurial requirements of Jowar.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Virginia tobacco. (c) 20 lb./ac. of N as A/S. (ii) (a) Black cotton. (b) N.A. (iii) 9.9.1957. (iv) (a) to (e) N.A. (v) Nil. (vi) PJ-22K (*Maghi-Jowar*), (vii) Rainfed. (viii) Thinning done. (ix) 4 50". (x) 6.1.1958.

2. TREATMENTS :

6 manurial treatments: M₀=Control, M₁=20 lb./ac. of N+10 lb./ac. of P₂O₅, M₂=40 lb./ac. of N+20 lb./ac. of P₂O₅, M₃=60 lb./ac. of N+30 lb./ac. of P₂O₅, M₄=80 lb./ac. of N+40 lb./ac. of P₂O₅ and M₅=100 lb./ac. of N+50 lb./ac. of P₂O₅.
N applied as A/S and P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 12'×100'. (b) 9'×100'. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—contd. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1389 lb./ac. (ii) 227.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	1130	1317	1296	1516	1446	1628

S.E./mean = 93.0 lb./ac.

Crop :- Maghi Jowar.

Ref :- A.P. 58(11).

Site :- Tobacco Res. Stn., Madira.

Type :- 'M'.

Object :- To determine the manurial requirements of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram. (c) Super at 60 lb./ac. (ii) (a) Black cotton. (b) N.A. (iii) 23.10.1958. (iv) (a) to (e) N.A. (v) Nil. (vi) PJ-22 K (*Maghi-Jowar*). (vii) Unirrigated. (viii) Thinning; cultivator worked. (ix) 1.7". (x) 5.2.1959.

2. TREATMENTS :

Same as in expt. no. 57(28) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) $13\frac{1}{2}' \times 200'$. (b) $10\frac{1}{2}' \times 200'$. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 561 lb./ac. (ii) 62.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	207	398	514	689	705	726

S.E./mean = 28.0 lb./ac.

Crop :- Jowar (*Rabi*).

Ref :- A.P. 59(40).

Site :- Tobacco Res. Stn., Madira.

Type :- 'M'.

Object :—To determine the manurial requirements of Jowar.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Green gram. (c) Super at 60 lb./ac. (ii) (a) Black cotton. (b) N.A. (iii) 25.9.1959. (iv) (a) Cultivator worked. (b) to (e) N.A. (v) Nil. (vi) PJ-22 K (*Maghi-Jowar*). (vii) Unirrigated. (viii) Thinning done, interculturing by cultivator and *guntaka*. (ix) 7.63". (x) 27.1.1960.

2. TREATMENTS :

Same as in expt. no. 57(28) on page 227.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) $13\frac{1}{2}' \times 200'$. (b) $10\frac{1}{2}' \times 200'$. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.I. (iii) Yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 699 lb./ac. (ii) 73.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	389	583	611	812	896	903

S.E./mean = 30.2 lb./ac.

Crop :- Jowar.

Ref :- A.P. 54(29).

Site :- Agri. Res. Stn., Nandyal.

Type :- 'M'.

Object :—To find out a suitable legume crop grown with Jowar with and without P₂O₅.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut and Redgram. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 4.10.1954. (iv) (a) Working *gorru* and *guntaka*. (b) to (e) N.A. (v) Nil. (vi) NI. *Jonna* (medium). (vii) Unirrigated. (viii) One interculture with *guntaka* and weeding. (ix) 16.27". (x) 25.1.1955.

2. TREATMENTS :

Main-plot treatments

2 levels of P_2O_5 : $P_0=0$ and $P_1=30$ lb./ac. of P_2O_5 .

Sub-plot treatments :

5 legumes crops : M_0 =No G.M., M_1 =Cow pea, M_2 =*Dhaincha*, M_3 =Sannhemp, and M_4 = G. M. grown in *situ* and ploughed in.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 26.4'×46.2' (b) 21.1'×41.2'. (v) 2.6'×2.5'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1083 lb./ac. (ii) (a) 196.0 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	Mean
P_0	1075	963	1000	875	1413	1065
P_1	1088	1100	1088	863	1363	1120
Mean	1081	1031	1044	869	1388	1083

S.E. of difference of two

- (1) P marginal means = 63.5 lb./ac.
 (2) M marginal means = 65.0 lb./ac.
 (3) M means at the same level of P = 92.0 lb./ac.
 (4) P means at the same level of M = 103.0 lb./ac.

Crop :- Jowar.

Ref :- A.P. 54(28).

Site :- Agri. Res. Stn., Nandyal.

Type :- 'M'.

Object :—To study the efficacy of G.M. as soil amendment as compared to F.Y.M. and compost.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Jonna*. (c) As per treatments. (ii) (a) Black cotton. (b) Refer soil analysis, Nandyal. (iii) 4.10.1954. (iv) (a) Working *gorru* and *guntaka* alternately. (b) Line sowing with *gorru*. (c) 5 lb./ac. (d) Between rows 10½" (e) N.A. (v) 45 lb./ac. of N as A/S and 30 lb./ac. of P_2O_5 as Super. A/S broadcasted and Super drilled. (vi) N—1. (medium). (vii) Unirrigated. (viii) one interculture with *Mella guntaka* and weeding. (ix) 7.18". (x) 27.1.1955.

2. TREATMENTS :

All combinations of (1) and (2) + control (3 plots)

(1) 3 manures : M_1 =G.L, M_2 =F.Y.M. and M_3 =Compost.(2) 3 levels of manures : L_1 =2500, L_2 =5000 and L_3 =7500 lb./ac.

G.L. applied on 30.8.1954. F Y.M. and compost on 10.9.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 26.4'×46.2'. (b) 21.1'—41.2'. (v) 2.6'×2.5'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1954. (b) and (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS

(i) 1265 lb./ac. (ii) 116.0 lb./ac. (iii) No. effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 1275 lb./ac.

	M ₁	M ₂	M ₃	Mean
L ₁	1150	1262	1238	1217
L ₂	1288	1288	1288	1288
L ₃	1288	1262	1312	1288
Mean	1242	1271	1279	1264

S.E. of any marginal mean = 33.5 lb./ac.
S.E. of body of table = 58.0 lb./ac.

Crop :- Jowar.**Ref :- A.P. 54(20).****Site :- Agri. Res. Stn., Nandyal.****Type :- 'M'.**

Object :—To find out the optimum dose of organic matter as soil amendment for Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*. (c) N.A. (ii) (a) Black cotton. (b) Refer soil analysis, Nandyal. (iii) 4.10.1954. (iv) (a) Working *gorru* and *guntaka* alternately. (b) Line sowing with *gorru*. (c) 5 lb./ac. (d) Between rows 1½". (e) N.A. (v) 45 lb./ac. of N as A/S and 30 lb./ac. of P₂O₅ as Super. A/S broadcast and Super drilled. (vi) N.I. (medium). (vii) Unirrigated. (viii) One interculture with *metta guntaka* and weeding. (ix) 7.18". (x) 24.1.1955.

2. TREATMENTS :

4 levels of G.L. : L₀=0, L₁=2500, L₂=5000 and L₃=7500 lb./ac.
G.L. as *gliricidia* incorporated on 28.8.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 26.4'×46.2'. (b) 21.1'×41.2'. (v) 2.6'×2.5'. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953–1954. (b) No. (c) Nil. (v) to (vii) N..

5. RESULTS :

(i) 1313 lb./ac. (ii) 138.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	L ₀	L ₁	L ₂	L ₃
Av. yield	1238	1275	1400	1338

S.E./mean = 69.3 lb./ac.

Crop :- Jowar.**Ref :- A.P. 55(66).****Site :- Agri. Res. Stn., Nandyal.****Type :- 'M'.**

Object :—To study the effect of urban compost as compared to F.Y.M. and G.L. on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*. (c) F.Y.M. at 2½ tons/ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 14.9.1955. (iv) (a) Cultivation with *gorru* and *guntaka*. (b) Line sowing. (c) 5 lb./ac. (d) 10½" between rows. (e) N.A. (v) Nil. (vi) N.I. (vii) Unirrigated. (viii) One interculture with *guntaka* and one weeding. (ix) N.A. (x) 25.1.1956.

2. TREATMENTS :

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

(1) 3 manures : $M_1 = \text{G.L.}$, $M_2 = \text{F.Y.M.}$ and $M_3 = \text{Urban compost.}$ (2) 3 levels of manures : $L_1 = 2000$, $L_2 = 3000$ and $L_3 = 4000$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) $26.4' \times 46.2'$, (b) $21.1' \times 41.2'$. (v) $2.6' \times 2.5'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of straw. (iv) (a) 1955 - contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 947 lb./ac. (ii) 192.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 1013 lb./ac.

	M_1	M_2	M_3	Mean
L_1	850	1000	838	896
L_2	1013	988	850	950
L_3	1088	913	913	971
Mean	984	967	867	939

S.E. of any marginal mean = 55.4 lb./ac.

S.E. of body of table = 56.0 lb./ac.

Crop :- Jowar.**Ref :- A.P. 56(60).****Site :- Agri. Res. Stn., Nandyal.****Type :- 'M'.**

Object :—To study the effect of urban compost as compared to F.Y.M. and G.L. on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) F.Y.M. at $2\frac{1}{2}$ tons/ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal.(iii) 26.9.1956. (iv) (a) Working *gorru* and *guntaka* twice. (b) By seed drill. (c) to (e) N.A. (v) Nil. (vi)N-1 *Jonna* (late). (vii) Irrigated. (viii) Interculture with *guntaka* once. (ix) 7.80°. (x) 9.2.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(66) on page 230.

5. RESULTS :

(i) 262 lb./ac. (ii) 105.0 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 234 lb./ac.

	M_1	M_2	M_3	Mean
L_1	298	331	293	307
L_2	342	205	153	233
L_3	323	240	201	255
Mean	321	259	216	265

S.E. of any marginal mean = 30.6 lb./ac.

S.E. of body of table = 53.0 lb./ac.

Crop :- Jowar (Kharif).

Ref :- A.P. 57(50).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find the effect of N applied with and without P on Jowar.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton—Groundnut. (b) Groundnut. (c) F.Y.M. at 5 tons/ac. (ii) (a) Red soil. (b) N.A. (iii) 5.8.1957. (iv) (a) Ploughing, working *guntaka* and *dantulu*. (b) to (e) N.A. (v) F.Y.M. at 5 tons/ac. (vi) (Early) variety. (vii) Irrigated. (viii) Weeding twice and intercultivation twice. (ix) 15.69°. (x) 14, 15.11.1957.

2. TREATMENTS :

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

(1) 3 levels of N : $N_1=15$, $N_2=30$ and $N_3=45$ lb./ac.

(2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=20$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 1/77.5 ac. (b) 1/96.1 ac. (v) 1 row on all sides. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 802 lb./ac. (ii) 16.6 lb./ac. (iii) Main effects of N, P and 'control vs. others' effect are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 489 lb./ac.

	N_1	N_2	N_3	Mean
P_0	646	913	973	844
P_1	692	919	980	864
Mean	669	916	977	854

S.E. of N marginal mean = 5.9 lb./ac.

S.E. of P marginal mean = 4.8 lb./ac.

S.E. of body of the table = 8.3 lb./ac.

Crop :- Jowar (Kharif).

Ref :- A.P. 58(43).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To find out the optimum manurial doses for Jowar under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) *Jonna*—Cotton. (b) Cotton. (c) N.A. (ii) (a) Red soil. (b) Refer soil analysis, Yemmiganur. (iii) 15.8.1958. (iv) (a) Ploughing. (b) to (e) N.A. (v) F.Y.M. at 5 tons/ac. (vi) CO—*Jonna* (early). (vii) Irrigated. (viii) Intercultivation done 4 times, 20 days after sowing with 10 days interval. Weeding done. (ix) N.A. (x) 14.11.1959.

2. TREATMENTS :

Same as in expt. no. 57(50) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 1/77.5 ac. (b) 1/96.1 ac. (v) 4 rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 2111 lb./ac. (ii) 28.3 lb./ac. (iii) Effect of N is highly significant. 'Control vs. others' effect is significant.
 (iv) Av. yield of grain in lb./ac.

Control = 1956 lb./ac.

	N ₁	N ₂	N ₃	Mean
P ₀	1956	2129	2248	2111
P ₁	1977	2224	2288	2163
Mean	1966	2176	268	2137

S.E. of N marginal mean = 10.0 lb./ac.
 S.E. of P marginal mean = 8.2 lb./ac.
 S.E. of body of table = 14.3 lb./ac.

Crop :- Jowar (Kharif).

Ref :- A.P. 59(54).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object:—To find out the optimum dose of manure for obtaining maximum yield of Jowar under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Cotton—Jawar. (b) Cotton. (c) F.Y.M. at 5 tons/ac. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 3 7.1959. (iv) (a) Ploughing and working *guntaka*. (b) to (e) N.A. (v) 5 tons/ac. of F.Y.M. broadcast after ploughing. 100 lb./ac. of A/S applied at sowing. (vi) N.A. (vii) Irrigated. (viii) Weeding and intercultivation with *dantulu*. (ix) 9.22%. (x) 5.11.1959.

2. TREATMENTS :

Same as in expt. no. 57(50) on page 232.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 56' × 11'. (b) 54' × 8'. (v) 1' × 1½'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—1959. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1392 lb./ac. (ii) 308.1 lb./ac. (iii) 'Control vs. others' effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 777 lb./ac.

	N ₁	N ₂	N ₃	Mean
P ₀	1233	1388	1627	1416
P ₁	1389	1577	1754	1573
Mean	1311	1483	1691	1495

S.E. of N marginal mean = 108.9 lb./ac.
 S.E. of P marginal mean = 89.0 lb./ac.
 S.E. of body of table = 154.1 lb./ac.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS :

0 =Control (no manure).

n =20 lb./ac. of N as A/S.

p =20 lb./ac. of P_2O_5 as Super.

np =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.

k =20 lb./ac. of K_2O as Mur Pot.

nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.

pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

npk=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on kharif cereal, 8 on rabi cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield (iv) (a) 1959—contd. (b) No (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	197	148	115	121.8	33	49	33	82	72.4

Control yield = 806 lb./ac. and no. of trials = 15.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Hyderabad (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A above conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	16	-107	8	121.0	-49	59	148	-33	65.0

Control yield = 675 lb./ac. and no. of trials = 5.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Krimnagar (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 234 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	165	140	82	58.4	0	0	33	33	28.8

Control yield = 411 lb./ac. and no. of trials = 3.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Site :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black coastal. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SET) type A on page 234 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	255	99	99	32.9	16	8	41	-8	13.2

Control yield = 724 lb./ac. and no. of trials = 11.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Mahboobnagar (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 234 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	99	58	-66	48.5	-33	-16	25	33	40.3

Control yield = 247 lb./ac. and no. of trials = 2.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Warangal (c.f.).****Type :- 'M'.**

Object:—Type A—To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 234 conducted at Guntur.

RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	58	41	0	35.4	—25	0	16	16	12.3

Control yield = 214 lb./ac. and no. of trials = 15.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre -- Guntur (c.f.).****Type :- 'M'.**

Object:—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS :

- 0 =Control (no manure).
- n_1 =20 lb./ac. of N as A/S.
- n_2 =40 lb./ac. of N as A/S.
- n_1' =20 lb./ac. of N as Urea.
- n_2' =40 lb./ac. of N as Urea.
- n_1'' =20 lb./ac. of N as A/S/N.
- n_2'' =40 lb./ac. of N as A/S/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	510	815	1053	823	1004	930	1012

G.M. = 818 lb./ac. ; S.E. = 25.6 lb./ac. and no. of trials = 6.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object:—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October, 1959.

2. TREATMENTS :

0 = Control (no manure).

n_1 = 20 lb./ac. of N as A/S.

n_2 = 40 lb./ac. of N as A/S.

n_1' = 20 lb./ac. of N as Urea.

n_2' = 40 lb./ac. of N as Urea.

n_1''' = 20 lb./ac. of N as C/A/N.

n_2''' = 40 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1531	1563	1399	1399	1234	1455	1366

G.M. = 1422 lb./ac. ; S.E. = 37.8 lb./ac. and no. of trials = 8.

Crop :- Jowar (Kharif).

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :- Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black soil. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	403	716	732	708	650	53	601

G.M. = 622 lb./ac. ; S.E. = 53.5 lb./ac. and no. of trials = 3.

Crop :- Jowar (Kharif).

Ref :- A.P. 59(SFT).

Centre :- Krishna Dist. (c.f.).

Type :- 'M'.

Object :- Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black coastal. (iii) Nil. (iv) June—July. (v) to (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59 (SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	568	658	732	683	823	732	716

G.M. = 702 lb./ac. ; S.E. = 37.8 lb./ac. and no. of trials = 11.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Mahboobnagar (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black soil. (iii) Nil. (iv) June—July, 1959. (v) to (ix) N.A. (x) October.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	239	239	403	280	280	288	304

G.M. = 290 lb ac. ; S.E. = 38.4 lb./ac. and no. of trials = 2.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Warangal (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	173	272	280	255	263	247	296

G.M. = 255 lb./ac. ; S.E. = 11.6 lb./ac. and no. of trials = 12.

Crop :- Jowar (Kharif).**Ref :- A.P. 59(SFT).****Centre :- Warangal (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) June—July, 1959. (v) to (ix) N.A. (x) October, 1959.

2. TREATMENTS :

0 =Control (no manure).

n₁ =20 lb./ac. of N as A/S.n₂ =40 lb./ac. of N as A/S.n₁' =20 lb /ac. of N as Urea.n₂' =40 lb./ac. of N as Urea.n₁'' =20 lb./ac. of N as C/A/N.n₂'' =40 lb /ac. of N as C/A/N.**3. DESIGN and 4. GENERAL :**

Same as in-expt. no. 59(SFT) type B on page 236 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	214	321	263	272	288	288	321

G.M. = 281 lb./ac. ; S.E. = 41.9 lb./ac. and no. of trials = 4.

Crop :- Jowar.**Ref :- A.P. 57(29).****Site :- Tobacco Res. Stn., Madira.****Type :- 'CM'.**

Object :—To compare improved method of cultivation with the ordinary method.

1. BASAL CONDITIONS :

(i) (a) Nil (b) *Jowar*. (c) As per treatments. (ii) (a) Black soil. (b) N.A. (iii) 10.9.1957. (iv) (a) 2 ploughings and 3 *buckarings*. (b) As per treatments. (c) 10 lb./ac. (d) As per treatments (e) N.A. (v) As per treatments. (vi) PJ—22K (*Maghi Jowar*). (vii) Unirrigated. (viii) As per treatments. (ix) 4.50" (x) 5.1.1958.

2. TREATMENTS :

2 methods of cultivation : M_1 = Improved : 5 C.L./ac. of F.Y.M. + 100 lb./ac. of A/S + 60 lb./ac. of Super F.Y.M. and $\frac{1}{2}$ lb./ac. of A/S and Super applied before sowing and the rest to one month old crop ; spacing 18" x 9", hand weeding [twice thinning hoeing and earthing up sowing with drill and M_2 = no manure, spacing 12" x 4", hand weeding and hoeing.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 3. (iv) (a) and (b) 1/6 ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1273 lb./ac. (ii) 97.3 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield	1446	1100

S.E./mean = 57 lb./ac.

Crop :- Jowar.**Ref :- A.P. 58(10).****Site :- Tobacco Res. Stn., Madira.****Type :- 'CM'.**

Object :—To compare improved method of cultivation with the ordinary method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) As per treatments. (ii) (a) Black soil, 3' deep. (b) N.A. (iii) 6.10.1958. (iv) (a) 2 ploughings and 3 *buckarings*. (b) As per treatments. (c) 10 lb./ac. (d) As per treatments. (e) N.A. (v) As per treatments. (vi) PJ—22K (*Maghi Jowar*). (vii) Unirrigated. (viii) As per treatment. (ix) 0.14" (x) 8.2.1959.

2. TREATMENTS :

Same as in expt. no. 57 (29) above.

4. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 3. (iv) (a) and (b) 1/6 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1226 lb./ac. (ii) 207.8 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield in lb./ac.	1545	906

S.E./mean = 120.0 lb./ac.

Crop :- Jowar (Kharif).

Ref :- A.P. 59(74).

Site :- Tobacco Res. Stn., Madira.

Type :- 'CM'.

Object :- To compare improved method of cultivation with the ordinary method.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Jowar*. (c) N.A. (ii) (a) Black sticky soil. (b) N.A. (iii) 17.9.1959. (iv) (a) N.A. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) As per treatments. (vi) PJ-22K. (*Maghi Jowar*). (vii) Unirrigated. (viii) Interculture by cultivator and *guntaka*. (ix) 7.63". (x) 27.1.1960.

1. TREATMENTS :

Same as in expt no. 57(29) on page 239.

3. DESIGN :

(1) R.B.D. (ii) (a) 2. (b) N.A. (iii) 3. (iv) (a) and (b) 1/6 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 644 lb./ac. (ii) 70.6 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₁	M ₂
Av. yield	744	544

S.E./mean = 40.8 lb./ac.

Crop :- Jowar (Rabi).

Ref :- A.P. 56(92).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'P'.

Object .—To find out the best irrigation interval for Jowar.

1. BASAL CONDITIONS :

(i) (a) Sannhemp—*Jonna*—Cotton—Groundnut. (b) Sannhemp. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 5.11.1956. (iv) (a) Ploughing. (b) to (e) N.A. (v) Sannhemp at 4970 lb./ac.+100 lb./ac. of A/S at sowing. (vi) *Hingari jonna* (late). (vii) Irrigated. (viii) 2 intercultivations with *guntaka* and *dantulu* and 2 weedings. (ix) 1.23". (x) 6.3.1957.

2. TREATMENTS :

4 intervals of irrigation : I₁=After every 15 days, I₂=20 days, I₃=25 days and I₄=30 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 1/99 ac. cents. (b) 1/135 ac. cents. (v) 1 row around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3266 lb./ac. (ii) 505.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	3243	3311	3401	3108

S.E./mean = 206.4 lb./ac.

Crop :- Jowar (Rabi).**Ref :- A.P. 57(84).****Site :- Agri. Res. Farm, Yemmiganur.****Type :- 'I'.**

Object :—To find out the best irrigation interval for Jowar.

1. BASAL CONDITIONS :

(i) (a) *Jonna*—Cotton—Groundnut. (b) *Sesbania*. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 8.10.1957. (iv) (a) Ploughing. (b) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) *Hingari*—*Jonna* (late). (vii) Irrigated. (viii) 3 weedings and 2 intercultivations with *guntaka* and *dantulu*. (ix) 2.40". (x) 14.2.1958.

2. TREATMENTS :

4 intervals of Irrigation + a control I_0 : I_1 = After every 15 days, I_2 = 20 days, I_3 = 25 days and I_4 = 30 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 1/99 ac. (b) 1/135.1 ac. (v) One row around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

RESULTS :

(i) 29 lb./ac. (ii) 15.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4
Av. yield	169	281	441	366	192

S.E./mean = 7.6 lb./ac.

Crop :- Jowar.**Ref :- A.P. 59(49).****Site :- Demonstn.-Cum-Res. Farm, Yemmiganur.****Type :- 'I'.**

Object :—To find out the best irrigation interval for Jowar.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) N.A. (c) 5 tons/ac. of F.Y.M. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 4.10.1959. (iv) (a) Ploughing. (b) to (e) N.A. (v) 5 tons/ac. of F.Y.M. broadcasted after ploughing and 100 lb./ac. of A/S broadcast at sowing. (vi) N.A. (vii) Irrigated. (viii) Line weeding, removing diseased leaves and intercultivations with *guntaka* and *dantulu*. (ix) N.A. (x) 15.3.1960.

2. TREATMENTS :

Same as in expt. no. 57(84) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 1/79.4 ac. (b) 1/97 ac. (v) Two rows. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—contd. (b) No. (c) —. (v) to (vii) Nil.

5. RESULTS :

(i) 80 lb./ac. (ii) 20.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4
Av. yield	74	94	95	60	80

S.E./mean = 5.0 lb./ac.

Crop :- Ragi (Kharif).**Ref :- A.P. 54(91).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the long range effect of continuous application of N on the soil composition and fertility as affecting crop performance of Sugarcane and rotational crops of Ragi and Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N in the forms as shown in the treatments.
 (ii) (a) Clay loam. (b) N.A. (iii) 29.5.1954. (iv) (a) Dry ploughing with victory and country plough. (b) Transplanting seedling in rows. (c) 40 lb./ac. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) Hoing and weeding. (ix) 10.03". (x) 2.8.1954.

2. TREATMENTS :

5 sources of N 40 at lb./ac. : $S_0=0$, $S_1=A/S$, $S_2=G.N.C.$, $S_3=F.Y.M.$ and $S_4=\frac{2}{3} G.N.C. + \frac{1}{3} A/S$.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6'×36'.3'. (b) 33.0'×26.4'. (v) 4.95' on either sides. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—contd. (b) Ycs. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1322 lb./ac. (ii) 145.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	753	1745	1403	1053	1655

S.E./mean = 65.0 lb./ac.

Crop :- Ragi (Kharif).**Ref :- A.P. 55(100).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the long range effect of continuous application of N on the soil composition and fertility as affecting crop performance of Sugarcane and rotational crops of Ragi and Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—paddy. (b) Sugarcane. (c) 100 lb./ac. of N in the forms as shown in treatments.
 (ii) Clay loam. (b) N.A. (iii) 4.6.1955. (iv) (a) Dry ploughing with country plough. (b) Transplanting. (c) 40 lb./ac. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) Hoing and weeding. (ix) 12.49". (x) 4.8.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(91) above.

5. RESULTS :

(i) 717 lb./ac. (ii) 145.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatments	S_0	S_1	S_2	S_3	S_4
Av. yield	401	814	811	679	880

S.E./mean = 65.1 lb./ac.

Crop :- Ragi (Kharif).**Ref :- A.P. 56(53).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the long range effect of continuous application of N on the soil composition and fertility as affecting crop performance of Sugarcane and rotational crops of Ragi and Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N as per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 20.8.1956. (iv) (a) 3 to 4 ploughings with country plough. (b) Transplanted. (c) 40 lb./ac. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) Hoeing. (ix) 20.86°. (x) 2.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(91) on page 242. (N applied 15 days after planting).

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 0.033 ac. (b) 1/50 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—1960. (b) Yes. (c) No. (v) (a) N.A. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 981 lb./ac. (ii) 145.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	475	1170	1000	900	1360

S.E./mean = 65.0 lb./ac.

Crop :- Ragi (Kharif).**Ref :- A.P. 57(117).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the long range effect of continuous application of N on the soil composition and fertility as affecting crop performance of Sugarcane and rotational crops of Ragi and Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N in the forms as mentioned in treatments. (ii) (a) Clay loam. (b) N.A. (iii) 28.5.1957. (iv) (a) Dry ploughing with country plough. (b) Transplanting. (c) 40 lb./ac. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 8.68°. (x) 28.7.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(91) on page 242.

5. RESULTS :

(i) 910 lb./ac. (ii) 314.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	460	1030	910	920	1230

S.E./mean = 140.4 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 58(146)

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the long range effect of continuous application of N on the soil composition and fertility as affecting crop performance of sugarcane and rotational crops of Ragi and Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Sugarcane. (c) 100 lb./ac. of N in the form as mentioned in treatments. (ii) (a) Clay loam. (b) N.A. (iii) 24.5.1958. (iv) (a) Dry ploughing with victory and country ploughs. (b) Transplanting (c) 40 lb./ac (d) 4" between rows. (e) 2 to 3 (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 7.66". (x) 2 8.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(91) on page 242.

5. RESULTS :

(i) 1267 lb./ac. (ii) 119.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	865	1550	1260	1245	1415

S.E./mean = 53.6 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 59(135).

Site :- Sugarcane Res. Stn. Anakapalle.

Type :- 'M'.

Objects :- To find out the effect of different nitrogenous manures on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy. (b) Sugarcane. (c) As per treatments with 100 lb/ac of N instead of 40 lb./ac. (ii) (a) Clay loam. (b) Refer soil Analysis, Anakapalle. (iii) 28, 29.5.1959. (iv) (a) Dry ploughing with victory and county ploughs. (b) Transplanting. (c) 10 lb./ac. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP—2. (vii) Irrigated. (viii) 2 Hoings and 2 weedings. (ix) 39.6". (x) 2, 3.8.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(91) on page 242.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS ;

(i) 1656 lb./ac. (ii) 147.4 lb./ac. (iii) The treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄
Av. yield	868	2048	1885	1525	1953

S.E./mean = 65.9 lb./ac.

Crop :- Ragi (Rabi).

Ref :- A.P. 54(51).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :- To study the effect of Glyricidia G.L., N and P on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 30.10.1954/25.11.1954. (iv) (a) 2 Ploughings and *guntaka* worked. (b) Transplanted. (c) 40 lb./ac. (d) 4"×4". (e) N.A. (v) Nil. (vi) AKP-6. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 10 to 11.1.1955.

2. TREATMENTS :

3 manurial treatments : $M_1=200$ lb./ac. of N as A/S 1 week after planting and 100 lb./ac. of N as A/S 4 weeks after planting. $M_2=M_1+100$ lb./ac. of P_2O_5 as super applied at planting and $M_3=M_2+5$ tons/ac. of Glyricidia G.L. as B.D., 15 tons/ac. of C.M. as B.D. given to M_1 and M_2 .

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 1/132.3 ac. (b) 1/200 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; no lodging. (ii) Attack of *Piricularia*—*Perenox* sprayed. (iii) Grain yield. (iv) (a) to (c) No (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1829 lb./ac. (ii) 248.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1739	1803	1944

S.E./mean = 87.7 lb./ac.

Crop :- Ragi.

Ref :- A.P. 54(54).

Site :- Sugarcane Res. Stn. Anakapalle.

Type :- 'M'.

Object :—To find out the optimum dose of organic and inorganic fertilizers for Ragi.

1. BASAL CONDITIONS :

(i) (a) *Ganti*—*Ragi*—Fallow. (b) *Ganti*. (c) F.Y.M. at 5 tons/ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 11.9.1954, N.A. (iv) (a) Ploughing with country plough 3 to 4 times and passing *patti*. (b) Transplanting. (c) N.A. (d) 6" between rows. (e) N.A. (v) Nil. (vi) AKP-7 (late). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 26.57". (x) 15.11.1954.

2. TREATMENTS :

All combination of (1) and (2)

(1) 2 levels of inorganic fertilizers : M_0 =No manure and $M_1=45$ lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super.

(2) 4 B.Ds : $B_0=N_0$ B.D., B_1 =Glyricidia leaf at 5000 lb./ac. B_2 =C.M. at 11510 lb./ac. B_3 =M.C. at 10130 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 87.12'×11.88'. (b) 85.14'×9.90'. (v) 1'×1' (vi) Yes.

4. GENERAL :

(i) Lodging. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1529 lb./ac. (ii) 127.2 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	B ₀	B ₁	B ₂	B ₃	Mean
M ₀	1056	1111	1114	1214	1124
M ₁	1932	1841	1906	2061	1935
Mean	1494	1476	1510	1638	1529

S.E. of M marginal mean = 31.8 lb./ac.

S.E. of B marginal mean = 45.0 lb./ac.

S.E. body of table = 63.6 lb./ac.

Crop :- Ragi.

Ref :- A.P. 55(9).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :-To find out the effect of applying G.L. in combination with A/S to irrigated Ragi.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fodder *Jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 7.1.1255/N.A. (iv) (a) Ploughing with iron and country plough. (b) Transplanting. (c) N.A. (d) 6" between rows. (e) N.A. (v) Nil. (vi) AKP—6 (medium). (vii) Irrigated, (viii) Hoeing and weeding with *hand rakes*. (ix) 2.36". (x) 31.3.1955.

2. TREATMENTS :

3 manurial treatments : T₀=No manure (control), T₁=G.L. at 4000 lb./ac.+20 lb./ac. of N as A/S and T₂=40 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 10. (iv) (a) 33'×13.20'. (b) 30.36'×10.56'. (v) 2 rows on all sides. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2233 lb./ac. (ii) 207.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1690	2640	2370

S.E./mean = 66 lb./ac.

Crop :- Ragi.

Ref :- A.P. 55(19).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :-To find out the best method of manuring to Ragi crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fodder *Jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A./7.1.1955. (iv) (a) Ploughing with iron and country plough. (b) Transplanting. (c) N.A. (d) 6" between rows. (e) N.A. (v) Nil. (vi) AKP—6 (medium). (vii) Irrigated. (viii) Hoeing and weeding with *hand rakes*. (ix) 2.36". (x) 31.3.1955.

2. TREATMENTS :

2 methods of application of 40 lb./ac. of N as A/S : M_1 =Placement and M_2 =Top dressing by broadcasting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) $33' \times 13.20'$. (b) $30.36' \times 10.56'$. (v) 2 rows on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2710 lb./ac. (ii) 127.7 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield	2850	2570

S.E./mean = 36.9 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 56(107).

Site :- Agri. Res. Stn., Araku.

Type :- 'M'.

Object :—To study the efficacy of lime on Ragi crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Brown clay loam. (b) Refer soil analysis, Araku. (iii) N.A./5.9.1956. (iv) (a) 3 ploughings. (b) Transplanting. (c) N.A. (d) $9'' \times 6''$. (e) 1. (v) 5000 lb./ac. of F.Y.M. (vi) *Jagaralamandya ragi* (vii) Irrigated. (viii) Weeding. (ix) 13.19%. (x) Nov. and Dec., 1956.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : $L_0=0$ and $L_1=1120$ lb./ac.

Sub-plot treatments :

4 manurial treatments : M_0 =Control, $M_1=30$ lb./ac. of N as A/S, $M_2=M_1+30$ lb./ac. of P_2O_5 as Super and $M_3=M_2+50$ lb./ac. of K_2O .

3. DESIGN :

Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) $16.5' \times 13.2'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1953. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 659 lb./ac. (ii) (a) 157.5 lb./ac. (b) 323.1 lb./ac. (iii) Only L effect is highly significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	Mean
L_0	387	606	531	350	469
L_1	966	738	1106	587	849
Mean	677	672	819	469	659

S.E. of difference of two

1. L marginal mean	=	45.5 lb./ac.
2. M marginal mean	=	131.9 lb./ac.
3. M means at the same level of L	=	186.5 lb./ac.
4. L means at the same level of M	=	167.8 lb./ac.

Crop :- Ragi (Kharif).**Ref :- A.P. 58(52).****Site :- Agri. Res. Stn., Araku.****Type :- 'M'.**

Object :—To study the efficacy of lime on Ragi crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar* (fodder). (c) 5 C.L./ac. of F.Y.M. (ii) (a) Red clayey loam. (b) Refer soil analysis, Araku. (iii) June 1958/N.A. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) N.A. (d) 9' × 9'. (e) 1. (v) 5 C.L./ac. of compost. (vi) *Local Jagaralamandya* (late). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 54.38%. (x) Nov. 1958.

2. TREATMENTS :**Main-plot treatments :**2 levels of lime : $L_0=0$ and $L_1=1120$ lb./ac.**Sub-plot treatments :**4 manurial treatments : $M_0=$ Control, $M_1=30$ lb./ac. of N as C/A/N, $M_2=M_1+30$ lb./ac. of P_2O_5 as Super and $M_3=M_2+30$ lb./ac. of K_2O .**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 27.06' × 17.16'. (b) 26.40' × 16.50'. (v) One row on all sides. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(107) on page 147.

5. RESULTS :

(i) 2479 lb./ac. (ii) (a) 232.0 lb./ac. (b) 332.2 lb./ac. (iii) Main effect of M alone is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	Mean
L_0	2243	2379	2639	2554	2454
L_1	2305	2459	2482	2772	2505
Mean	2274	2419	2561	2663	2479

S.E. of difference of two

1. L marginal means	=	67.0 lb./ac.
2. M marginal means	=	135.6 lb./ac.
3. M means at the same level of L	=	191.8 lb./ac.
4. L means at the same level of M	=	179.1 lb./ac.

Crop :- Ragi.**Ref :- A.P. 54(32).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To test the response of Ragi to the application of manures in the form of C/N and A/S at different levels of N and at different times.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ragi*. (a) As per treatment. (ii) (a) Sandy. (b) N.A. (iii) 14.6.1954/7 to 9.7.1954. (iv) (a) Digging the individual plots with *mammities*. (b) N.A. (c) 6 lb./ac. (d) 4"×4". (e) 1. (v) Lime at 675 lb./ac. F.Y.M. at 3 tons/ac. + Super at 300 lb./ac. of P₂O₅. Lime to be applied 9 days after preparatory cultivation. F.Y.M. to be applied 3 days after lime. Super to be applied on the following days. (vi) APK-6 (Medium) (vii) Irrigated. (viii) Gap-filling. (ix) 35.8". (x) 29.9.1954.

2. TREATMENTS .

All combinations of (1), (2) and (3) + 1 extra treatment.

(1) 2 B.D. : B₀=N₀ B.D. and B₁=675 lb./ac. of Lime + 3 tons/ac. of F.Y.M. + 30 lb./ac. of P₂O₅ as Super.

(2) 2 sources of N : S₁=A/S and S₂=C/N.

(3) 4 manurial treatments : M₁=40 lb./ac. of N in single dose, M₂=60 lb./ac. of N in single dose, M₃=60 lb./ac. of N in two equal doses, 10, 20 days after transplanting and M₄=60 lb./ac. of N in 3 equal doses, 10, 20 and 30 days after transplanting.

Extra treatment, E=B.D. as in (1) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) 15.84'×29.54'. (b) 13.20'×26.40'. (v) 3 rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, height of plant and grain yields. (iv) (a) 1952-1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 762 lb./ac. (ii) 244.4 lb./ac. (iii) Main effect of S is highly significant and that of M is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

$$E = 267 \text{ lb./ac.}$$

	M ₁	M ₂	M ₃	M ₄	Mean	S ₁	S ₂
B ₀	689	806	898	888	820	1113	528
B ₁	550	764	881	865	765	982	548
Mean	620	785	890	876	792		
S ₁	865	1173	1078	1074	1047		
S ₂	374	396	702	679	538		

S.E. of marginal mean of B or S = 43.2 lb./ac.

S.E. of marginal mean of M = 61.1 lb./ac.

S.E. of body of B×M or S×M table = 86.4 lb./ac.

S.E. of body of B×S table = 61.1 lb./ac.

Crop :- Ragi (2nd crop).

Ref :- A.P. 54(33)

Site :- Agri. College Farm Bapatla.

Type :- 'M',

Object :- To test the response of Ragi to the application of manures in the form of C/N and A/S at different levels of N and at different times.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ragi*. (c) As per treatment. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 30.10.1954. (iv) (a) Digging the individual plots with *mammities*. (b) N.A. (c) 6 lb./ac. (d) 4"×4". (e) 1. (v) Lime at 675 lb./ac. applied 9 days after pre cultivation. F.Y.M. at 3 tons/ac. 3 days after lime, super at 30 lb./ac. of P₂O₅ the following day. (vi) AKP-6 (medium). (vii) Irrigated. (viii) Gap-filling. (ix) 10.04". (x) 25.11.1954 to 1.12.1954. 23.2.1955.

2: TREATMENTS to 4. GENERAL:

Same as in expt. no. 54(32), on page 248.

5. RESULTS:

(i) 13.1 lb./ac. (ii) 303.8 lb./ac. (iii) Main effect of S is highly significant while that of B and M are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

$$E = 594 \text{ lb./ac.}$$

	M ₁	M ₂	M ₃	M ₄	Mean	S ₁	S ₂
B ₀	1197	1196	1476	1458	1332	1936	728
B ₁	1427	1422	1746	1375	1508	2024	991
Mean	1312	1339	1611	1416	1420		
S ₁	1792	1942	2198	1988	1980		
S ₂	832	736	1024	844	859		

S.E. of marginal mean of M = 75.9 lb./ac.

S.E. of marginal mean of B or S = 53.7 lb./ac.

S.E. of body of B×M or S×M table = 107.4 lb./ac.

S.E. of body of B×S table = 75.9 lb./ac.

Crop :- Ragi.

Site :- Agri. College Farm, Bapatla.

Ref :- A.P. 54(31).

Type :- 'M'.

Object :- To find out the influence of G.M. on the yield of Ragi.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Ragi*. (c) As per treatments. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 30.12.1954/4.2.1955. (iv) (a) Ploughing, removal of weeds (b) to (e) N.A. (v) As per treatments. (vi) AKP-6(late). (vii) Irrigated. (viii) 2 weedings. (ix) 10.04*. (x) 18.4.1955.

2. TREATMENTS:

4 levels of G.L.: G₀=0, G₁=2500, G₂=5000 and G₃=7500 lb./ac.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) 33.00'×16.50' (b) 31.68'×15.18'. (v) 00.66'×0.66'. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yields. (iv) (a) 1953—1955. (b) Yes (c) Nil (v) to (vii) Nil.

5. RESULTS:

(i) 480 lb./ac. (ii) 47.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	357	395	494	673

S.E./mean = 16.8 lb./ac.

Crop :- Ragi.

Ref :- A.P. 54(51).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :- To study the effect of Glyricidia G.L. and Super on irrigated Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 30.10.1954/25.11.1954.
 (iv) (a) 2 ploughings *guntaka* was worked. (b) N.A. (c) 6 lb./ac. (d) 4" x 4". (e) N.A. (v) Nil. (vi) AKP-6. (vii) Irrigated. (viii) Nil. (ix) 6.5". (x) 10/11.1.1955.

2. TREATMENTS :

3 manurial treatments : $T_1=5$ tons/ac. of compost as B.D.+300 lb./ac. of A/S in 2 doses (200, 100 lb.)
 1st dose a week after planting and 2nd 4 weeks after the 1st, $T_2=T_1+100$ lb./ac. of
 Super at planting and $T_3=5$ tons of glyricidia G.L. as B.D.+Super and A/S as in
 T_1 and T_2

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 35.64' x 9.24'. (b) 33.00' x 6.60' (v) 1.32' on all
 sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) *Piricularia* attacked—Spraying of *Perenox*. (iii) Grain and straw yield. (iv) (a)
 1954-1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1828 lb./ac. (ii) 248.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain
 in lb./ac.

Treatment	T_1	T_2	T_3
Av. yield	1739	1802	1944

S.E./mean = 87.6 lb./ac.

Crop :- Ragi.

Ref :- A.P. 55(8).

Site :- Agri. College, Bapatla.

Type :- 'M'.

Object :- To study the effect of glyricidia G.L. and Super on irrigated Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Ragi. (c) As per treatments. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii)
 4.11.1955/15.12.1955. (iv) (a) 2 ploughings. *Guntaka* was worked. (b) N.A. (c) 6 lb./ac. (d) 4" x 4". (e)
 N.A. (v) Nil. (vi) AKP-6. (vii) Irrigated. (viii) 1 weeding. (ix) 10.8". (x) 7, 8.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(51) above.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954-1955. (b) Yes. (c) Nil.
 (v) to (vii) Nil.

5. RESULTS :

(i) 1310 lb./ac. (ii) 187.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of
 grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	1243	1343	1345

S.E./mean = 73.1 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 57(197).

Site :- Millet Res. Stn., Peddapuram.

Type :- 'M'.

Object :—To study the effect of different fertilizers on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Horse gram. (c) 5 tons ac. of compost. (ii) (a) Red sandy loam. (b) Refer soil analysis, Peddapuram. (iii) 22.8.1957/22.9.1957. (iv) (a) 3 ploughings with country ploughs. (b) Transplanting. (c) 50 to 60 lb. ac. (d) .99' x .66'. (e) 1 to 2. (v) As per treatments. (vi) AKP—7. (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 11.93". (x) 20.12.1957.

2. TREATMENTS :

Main-plot treatments :

2 levels of B.D. : B₀ = No. C.M. and B₁ = C.M.

Sub-plot treatments :

4 doses of manures : M₀ = N₀ manure, M₁ = 45 lb./ac. of N as A/S, M₂ = M₁ + 20 lb./ac. of P₂O₅ as Super and M₃ = M₂ + 45 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 15.84' x 29.70'. (b) 13.86' x 28.38'. (v) 0.99' x 0.66'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1091 lb./ac. (ii) (a) 20.6 lb./ac. (b) 62.3 lb./ac. (iii) B and M effects are highly significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
B ₀	854	1229	1226	1119	1107
B ₁	777	1231	1098	1190	1074
Mean	816	1230	1162	1155	1091

S.E. of difference of two

1. B marginal means = 6.0 lb./ac.
2. M marginal means = 25.4 lb./ac.
3. M means at the same level of B = 36.0 lb./ac.
4. B means at the same level of M = 31.7 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 58(84).

Site :- Millet Res. Stn., Peddapuram.

Type :- 'M'.

Object :—To find out the effect of fertilizers on grain yield of dry Ragi.

1. BASAL CONDITIONS :

(i) (a) *Gingelly*—Dry Ragi. (b) *Gingelly*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Sandy loam. (b) N.A. (iii) 23.8.1958/3.10.1958. (iv) (a) 3 ploughings with country plough. (b) Dibbling seedlings by hand. (c) 5 lb./ac. (d) .99'×0.66'. (e) N.A. (v) Nil. (vi) AKP—7 (early). (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) 34.00'. (x) 19.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(107) on page 252.

5. RESULTS :

(i) 696 lb./ac. (ii) (a) 108.8 lb./ac. (b) 76.8 lb./ac. (iii) The main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
B ₀	406	751	783	731	668
B ₁	396	780	847	874	724
Mean	401	765	815	803	696

S.E. of difference of two

- | | |
|-----------------------------------|----------------|
| 1. B marginal means | = 31.4 lb./ac. |
| 2. M marginal means | = 31.3 lb./ac. |
| 3. M means at the same level of B | = 44.3 lb./ac. |
| 4. B means at the same level of M | = 49.6 lb./ac. |

Crop :- Ragi (*Kharif*).

Ref :- A.P. 59(119).

Site :- Millet Res. Stn., Peddapuram.

Type :- 'M'.

Object :—To study the effect of different fertilizers on the yield of Ragi crop.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Horse gram. (c) Nil. (ii) (a) Red sandy loam. (b) Refer soil analysis, Peddapuram. (iii) 20.8.1959/27.9.1959. (iv) (a) 3 ploughings with country plough. (b) Transplanting. (c) 50 to 60 lb./ac. (d) 0.99'×0.66'. (e) 1 to 2. (v) As per treatments. (vi) AKP—7. (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 16.17'. (x) 22.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(107) on page 252.

5. RESULTS :

(i) 972 lb./ac. (ii) (a) 219.8 lb./ac. (b) 168.9 lb./ac. (iii) Only M effect is highly significant (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
B ₀	449	1026	1067	1162	926
B ₁	572	1186	1145	1170	1018
Mean	510	1106	1106	1166	972

S.E. of difference of two

- | | |
|------------------------------------|-----------------|
| (1) B marginal means | = 63.4 lb./ac. |
| (2) M marginal means | = 68.9 lb./ac. |
| (3) M means at the same level of B | = 97.5 lb./ac. |
| (4) B means at the same level of M | = 105.6 lb./ac. |

Crop :- Ragi.**Ref :- A.P. 56(11).****Site :- Govt. Millet Farm, Vizianagaram.****Type :- 'M'.**

Object :— To find out the optimum manurial dose for the rainfed Ragi crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Gingells*. (c) 4 tons/ac. of F.Y.M. (ii) (a) Red loam. (b) Refer soil analysis Vizianagaram. (iii) 14.9.1956/5.10.1956. (iv) (a) 6 ploughings before planting. (b) Planted in lines. (c) N.A. (d) Rows 8' to 9' apart. (e) N.A. (v) Nil. (vi) AKP-7 (medium). (vii) Unirrigated. (viii) One weeding and hoeing. (ix) 18.40'. (x) 2.1.1957.

2. TREATMENTS :

T₁=Control
 T₂=5 tons/ c. of F.Y.M.
 T₃=10 lb./ac. of N as A/S.
 T₄=20 lb./ac. of N as A/S.
 F.Y.M. applied a week before planting and mixed up. Super applied one day before planting. A/S applied one month after planting.

T₅=100 lb./ac. of Super+10 lb./ac. of N as A/S.
 T₆=100 lb./ac. of Super+20 lb./ac. of N as A/S.
 T₇=145 lb. G.N.C./ac.
 T₈=290 lb. G.N.C./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 1/90.9 ac. (b) 1/113.6 ac. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Growth not normal owing to lack of rain after the application of manures. (ii) Seedling weres dipped in wetcol solution before planting. (iii) Height of plants, no. of tillers per plant, yield of grain. (iv) (a) 1956-1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Lack of rains after the application of manures effected crop. (vii) Nil.

5. RESULTS :

(i) 482 lb./ac. (ii) 101.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	466	409	386	628	557	483	528	403

S E./mean = 50.6 lb./ac.

Crop :- Ragi.**Ref :- A.P. 57(16).****Site :- Govt. Millet Farm, Vizianagaram.****Type :- 'M'.**

Object :—To find out the optimum manurial dose to the rainfed Ragi crop.

1. BASAL CON ITIONS :

(i) (a) *Punasa Gingelly*—*Mani Ragi*—Fallow. (b) *Punasa gingelly*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Red sandy loam. (b) Refer soil analysis, Vizianagaram. (iii) 14.8.1957/19.9.1957. (iv) (a) Ploughed repeatedly. (b) Ir nsplanted. (c) N.A. (d) 9'×9'. (e) N.A. (v) Nil. (vi) AKP-7 (medium). (vii) Unirrigated. (viii) 2 hand hoeings and weedings. (ix) 28.15'. (x) 25.11.1957.

2. TREATMENTS :

Same as in expt. no. 56(11) above.

3. DESIGN :

(i) R B D. (ii) (a) 8. (b) 46.2'×79.2'. (iii) 4 (iv) (a) 1/95.24 ac. (b) 1/109.9 ac. (v) One row on each side. (vi) Yes.

4 GENERAL :

(i) No lodging. (ii) Nil. (iii) Number of tillers, height of plant. (iv) (a) 1956-1958. (b) Yes (from 1957). (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 852 lb./ac. (ii) 107.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	579	634	878	1232	963	1127	656	746

S.E./mean = 53.7 lb./ac.

Crop :- Ragi (Kharif).

Ref :- A.P. 58(73).

Site :- Govt. Millet Farm, Vizianagaram.

Type :- 'M'.

Object :—To find out the optimum manurial dose for rainfed Ragi crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Gingelly*. (c) 5 tons/ac. of tank silt. (ii) (a) Red loam. (b) Refer soil analysis, Vizianagaram. (iii) 9.8.1958/4.9.1958. (iv) (a) 6 ploughings and levelling. (b) Transplanted. (c) 5 lb./ac. (d) 9" × 9". (e) 1. (v) Nil. (vi) AKP-7 (medium). (vii) Unirrigated. (viii) 1 weeding and hand hoeing. (ix) 59.83%. (x) 18.11.1958.

2. TREATMENTS :

Same as in expt. no. 56(11) on page 254.

3. DESIGN :

Same as in expt. no. 57(16) on page 254.

4. GENERAL :

(i) Stunted due to very heavy rains after planting. (ii) *Piricularia* noticed. 1% Bordeaux mixture sprayed. (iii) Grain yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 381 lb./ac. (ii) 60.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	255	290	361	515	524	485	255	363

S.E./mean = 30.3 lb./ac.

Crop :- Ragi.

Ref :- A.P. 56(12).

Site :- Govt. Millet Farm, Vizianagaram.

Type :- 'M'.

Object : - To study the effect of different fertilizers on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) *Punasa Gingelly*—Fallow—*Ragi*. (b) *Gingelly*. (c) 4 tons/ac. of F.Y.M. (ii) (a) Red loam. (b) Refer soil analysis, Vizianagaram. (iii) 19.11.1956/16 to 18.12.1956. (iv) (a) 8 ploughings. (b) Transplanted. (c) N.A. (d) Lines 9" apart. (e) N.A. (v) Nil. (vi) AKP-6 (medium). (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) 0.10%. (x) 1, 2.3.1957.

2. TREATMENTS :

Main-plot treatments :

2 levels of F.Y.M. : F₀=0 and F₁=3 tons/ac.

Sub-plot treatments :

4 manurial treatments : M₀=No manure, M₁=45 lb./ac. of N as A/S in 2 doses, M₂=M₁+20 lb./ac. of P₂O₅ as Super, and M₃=M₂+45 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (iii) 6. (iv) (a) 1/87.72 ac. (b) 1/109.65 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Tiller count, ear length, plant height and grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2135 lb./ac. (ii) (a) 283.2 lb./ac. (b) 214.8 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
F ₀	2446	1586	2336	2296	2166
F ₁	2318	1604	2234	2260	2104
Mean	2382	1595	2285	2278	2135

S.E. of difference of two

1. F marginal means	= 81.9 lb./ac.
2. M marginal means	= 87.7 lb./ac.
3. M means at the same level of F	= 124.0 lb./ac.
4. F means at the same level of M	= 135.1 lb./ac.

Crop :- Ragi.

Ref :- A.P. 57(17).

Site :- Govt. Millet Farm, Vizianagaram.

Type :- 'M'.

Object :—To study the effect of different fertilizers on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) *Punasa gingelly*—Fallow—*Pyru*—*Ragi* (Trial). (b) *Punasa gingelly*. (c) 3 tons/ac. of F.Y.M. (ii) (a) Red sandy loam. (b) Refer soil analysis, Vizianagaram. (iii) 8.11.1957/2, 5.12.1957. (iv) (a) Ploughed 10 times before planting till a fine tiller was obtained. (b) and (c) N.A. (d) .66' × .66'. (e) N.A. (v) Nil. (vi) AKP—6 (medium). (vii) Irrigated. (viii) 2 hoeings and weeding. (ix) 0.20". (x) 18, 19.2.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : F₀=0 and F₁=3 tons/ac.

(2) 4 manurial treatments : M₀=No fertilizer, M₁=45 lb./ac. of N as A/S, M₂=M₁+20 lb./ac. of P₂O₅ as Super and M₃=M₂+45 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 1/94.34 ac. (b) 1/125 ac. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(12) on page 255.

5. RESULTS :

(i) 2126 lb./ac. (ii) 192.5 lb./ac. (iii) Main effect of M alone is highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
F ₀	1569	1990	2279	2575	2103
F ₁	1544	2173	2344	2533	2149
Mean	1557	2081	2311	2554	2126

S.E. of F marginal mean = 39.3 lb./ac.

S.E. of M marginal mean = 55.5 lb./ac.

S.E. of body of table = 78.6 lb./ac.

Crop :- Ragi (Rabi).

Ref :- A.P. 58(83).

Site :- Govt. Millet Farm, Vizianagaram.

Type :- 'M'.

Object :- To find out the optimum manurial dose for the irrigated *Ragi* for the tract.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Gingelly* (c) 5 tons/ac. of tank silt. (ii) (a) Red loam. (b) Refer soil analysis, Vizianagaram. (iii) 17.11.1958/12,13.12.1958. (iv) (a) 6 ploughings (b) Transplanted. (c) 5 lb./ac. (d) 9"×9". (e) 1. (v) Nil. (vi) AKP-6 (medium). (vii) Irrigated. (viii) 2 weedings and hand hoeings. (ix) 1.93". (x) 10, 11.3.1959.

2. TREATMENTS :

Same as in expt. no. 56(12) on page 255.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) 69.96'×52.80'. (iii) 6. (iv) (a) 1/94.3 ac. (b) 1/125 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Piricularia attack ; 1% Bordeaux mixture sprayed. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2562 lb./ac. (ii) (a) 174.1 lb./ac. (b) 253.5 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
F ₀	1888	2669	2818	2876	2563
F ₁	1901	2579	2779	2984	2561
Mean	1895	2624	2799	2930	2562

S.E. of difference of two

1. F marginal means = 50.3 lb./ac.
2. M marginal means = 103.5 lb./ac.
3. M means at the same level of F = 146.3 lb./ac.
4. F means at the same level of M = 136.4 lb./ac.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(44).

Site :- Govt. Millet Farm, Vizianagaram.

Type :- 'M'.

Object :- To study the effect of different sources of N on the yield of *Ragi*.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Gingelly*. (c) 5 tons/ac. of tank silt. (ii) (a) Red loam. (b) Refer soil analysis, Vizianagaram. (iii) 20.11.1959/21.12.1959. (iv) (a) 6 ploughings. (b) Transplanting. (c) 5 lb./ac. (d) 9"×9". (e) 1. (v) Nil. (vi) VZM-2 (medium). (vii) Irrigated. (viii) 3 weedings and 2 hand hoeings. (ix) N.A. (x) 16.3.1960.

2. TREATMENTS :

7 sources of N : N_0 =No N, N_1 =45 lb./ac. as A/S, N_2 =45 lb./ac. as A/S/N, N_3 =45 lb./ac. as C/A/N, N_4 =45 lb./ac. as Urea, N_5 =10,000 lb./ac. of G.L. and N_6 =10 tons/ac. of F.Y.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 66'×46.2'. (iii) 6. (iv) (a) 1/100 ac. (b) 1/125 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of *Piricularia*. 1% Bordeaux mixture was sprayed. (iii) Grain yield. (iv) (a) 1959-1961. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2445 lb./ac. (ii) 197.8 lb./ac. (iii) The treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5	N_6
Av. yield	2062	2531	2536	2624	2567	2385	2394

S.E./mean = 80.75 lb./ac.

Crop :- Ragi (*Rabi*).

Ref :- A.P. 58(SFT).

Centre :- Chittoor (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS :

o = Control (no manure).

n = 20 lb./ac. of N as A/S.

p = 20 lb./ac. of P_2O_5 as Super.

np = 20 lb./ac. of N as A/S + 20 lb./ac. of P_2O_5 as Super.

k = 20 lb./ac. of K_2O as Pot. Sul.

nk = 20 lb./ac. of N as A/S + 20 lb./ac. of K_2O as Pot. Sul.

pk = 20 lb./ac. of P_2O_5 as Super + 20 lb./ac. of K_2O as Pot. Sul.

npk = 20 lb./ac. of N as A/S + 20 lb./ac. of P_2O_5 as Super + 20 lb./ac. of K_2O as Pot. Sul.

3. DESIGN :

(i) (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii), (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. DESIGN :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	222	181	82	28.8	-16	-16	0	33	9.9

Control yield = 1415 lb./ac. and no. of trials = 15.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Guntur (c.f.).

Type :- 'M'.

Object:—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 258 conducted at Chittor 258.

5. RESULTS

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	502	107	123	53.5	25	-25	-25	41	24.7

Control yield = 1333 lb./ac. and no. of trials = 3.

Crop :- Ragi (Rabi).

Ref :- A.P. 58(SFT)

Centre :- Srikakulam (c.f.).

Type -- 'M'.

Object:—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and coastal. (iii) N.A. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in Expt. no. 58(SFT) type A on page 258 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	592	255	230	48.5	-107	-107	-8	82	45.3

Control yield = 1588 lb./ac. and no. of trials = 16.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Srikakulam (c.f.).

Type :- 'M'.

Object:—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and others. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58 (SFT) type A on page 258 conducted at chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	222	123	181	8.2	-33	16	33	-33	8.2

Control yield = 1127 lb./ac. and no. of trials = 12.

Crop :- Ragi (Rabi).

Ref :- A.P. 58(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal sandy. (iii) N.A. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) on page type A on page 258 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	395	181	304	56.0	-74	-107	-222	140	55.1

Control yield = 1251 lb./ac. and no. of trials = 8.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Ragi to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 258 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	115	58	33	19.7	-8	-16	-16	8	11.5

Control yield = 1086 lb./ac. and no. of trials = 12.

Crop :- Ragi (Rabi).

Ref :- A P. 58(SFT).

Centre :- Chittoor (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses

1: BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS :

0 =Control.

n₁ =20 lb./ac. of N as A/S.

n₂ =40 lb./ac. of N as A/S.

n₁' =20 lb./ac. of N as Urea.

n₂' =40 lb./ac of N as Urea.

n₁" =20 lb./ac. of N as A/S/N.

n₂" =40 lb./ac. of N as A/S/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1506	1720	1958	1736	1983	1637	1917

G.M. = 1780 lb./ac.; S.E. = 25.0 lb./ac. and no. of trials = 13.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Guntur (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS :

0 = Control.

n₁ = 20 lb./ac. of N as A/S.

n₂ = 40 lb./ac. of N as A/S.

n₁' = 20 lb./ac. of N as Urea.

n₂' = 40 lb./ac. of N as Urea.

n₁''' = 20 lb./ac. of N as C/A/N.

n₂''' = 40 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 260 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield	1333	1909	2312	1415	1753	1670	1967

G.M. = 1766 lb./ac.; S.E. = 84.4 lb./ac. and no. of trials = 2.

Crop :- Ragi (Rabi).

Ref :- A.P. 58(SFT).

Centre :- Srikakulam (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and alluvial. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 260 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	1391	1851	2008	1695	1851	1670	1843

G.M. = 1758 lb./ac. ; S.E. = 57.6 lb./ac. and no. of trials = 16.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Centre :- Srikakulam (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different dose.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and alluvial. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 260 conducted at Chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	1333	1506	1654	1547	1654	1588	1703

G.M. = 1569 lb./ac. ; S.E. = 76.8 lb./ac. and no. of trials = 9.

Crop :- Ragi (Rabi).

Ref :- A.P. 58(SFT).

Site :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal sandy. (iii) Nil. (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 260 conducted at chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	1201	1637	1572	1572	1506	1473	1572

G.M. = 1505 lb./ac., S.E. = 44.2 lb./ac. and no. of trials = 8.

Crop :- Ragi (Rabi).

Ref :- A.P. 59(SFT).

Site :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal sandy. (iii) Nil, (iv) December. (v) to (ix) N.A. (x) April.

2. TREATMENTS :

- o = Control.
 n_1 = 20 lb./ac. of N as A/S.
 n_2 = 40 lb./ac. of N as A/S.
 n_1' = 20 lb./ac. of N as Urea.
 n_2' = 40 lb./ac. of N as Urea.
 n_1''' = 20 lb./ac. of N as C/A/N.
 n_2''' = 40 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 260 conducted at chittoor.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_2'''	n_2'''
Av. yield	1144	1292	1358	1325	1325	1243	1292

G.M. = 1283 lb./ac., S.E. = 407 lb./ac. and no. of trials = 3.

Crop :- Maize (Rabi).

Ref :- A.P. 54(4).

Site :- Maize Res. Stn., Karimnagar.

Type :- 'M'.

Object :- To find out the most economical manurial dose for Maize.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1954. (iv) (a) Two ploughings, harrowing and levelling. (b) Dibbling by hand. (c) 12 lb./ac. (d) 2' x 1'. (e) 1. (v) Nil. (vi) Jounpore (early). (vii) Irrigated. (viii) Twice cultivator run and once hand weeded. (ix) Nil. (x) 17.3.1955.

2. TREATMENTS :

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

- (1) 3 levels of N as A/S : $N_0=0$, $N_1=50$, and $N_2=100$ lb./ac.
 (2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
 (3) 3 levels of K_2O as Pot. Sul : $K_0=0$, $K_1=50$ and $K_2=100$ lb./ac.

P_2O_5 , K_2O and half of N applied at sowing and the other half of N 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) 1/70 ac. (b) 1/109 ac. (v) Two border rows and four end plants in each row. (vi) Yes.

4. GENERAL :

- (i) Normal 20% lodging at harvest. (ii) 10 to 12% attack of stem borer. Dead hearts removed, burnt and D.D.T. sprayed when the crop was 3 to 4 weeks old. (iii) Dry grain and Kadbi yield. (iv) (a) 1953-1954 (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 2216 lb./ac. (ii) 627.8 lb./ac. (iii) Main effect of N alone is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	Mean	P_0	P_1	P_2
N_0	1561	1483	1210	1418	1265	1592	1398
N_1	2640	2739	1957	2459	2693	2504	2179
N_2	2621	2787	2905	2771	2593	2506	3214
Mean	2274	2336	2038	2216	2184	2200	2264
P_0	2049	2509	1996				
P_1	2409	2133	2058				
P_2	2366	2366	2058				

S.E. of any marginal mean = 148 lb./ac.
S.E. of body of any table = 256 lb./ac.

Crop :- Maize (Kharif).

Ref :- A.P. 54(6).

Site :- Maize Res. Stn., Karimnagar.

Type :- 'M'.

Object :—To find out the most economical manurial doses for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 1.7.1954. (iv) (a) Two ploughings, harrowing and levelling. (b) Hand dibbling. (c) 12 srs./ac. (d) 2'×1', (e) 1. (v) Nil. (vi) Jounpore (early). (vii) Irrigated. (viii) Twice cultivator run and once hand weeded. (ix) 31.73". (x) 10.10 1954.

2. TREATMENTS to 3. DESIGN :

Same as in expt. no. 54(4) on page 263.

4. GENERAL :

(i) Normal. 20% lodging at harvest. (ii) 5 to 7% attack of stem-borer. Dead hearts removed, burnt and D.D.T. sprayed when the crop was 3 to 4 weeks old. (iii) Dry grain and kadbi yield. (vi) (a) 1953—1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1295 lb./ac. (ii) 402.2 lb./ac. (iii) Main effect of N alone is significant. (iv) Av. yield of grain in lb./ac.

	K ₀	K ₁	K ₂	Mean	P ₀	P ₁	P ₂
N ₀	991	931	1046	990	890	1006	1073
N ₁	1509	1304	1399	1404	1263	1444	1504
N ₂	1565	1192	1720	1492	1644	1292	1541
Mean	1355	1142	1388	1295	1266	1247	1373
P ₀	1377	932	1488				
P ₁	1259	1047	1436				
P ₂	1429	1448	1242				

S.E. of any marginal mean = 94.7 lb./ac.
S.E. of body of any table = 164.2 lb./ac.

Crop :- Maize (Rabi).

Ref :- A.P. 58(48).

Site :- Agri. Res. Stn., Amberpet.

Type :- 'C'.

Object :—To find the optimum spacing for Maize hybrids.

1. BASAL CONDITIONS :

(i) (a) Fallow—Maize—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam (b) N.A. (iii) 2.12.1958. (iv) (a) to (c) N.A. (d) and (e) As per treatments. (v) 50 lb./ac. of N as A/S and 50 lb./ac. of P₂O₅ as Super before sowing+25 lb./ac. of N as A/S 40 days after sowing. 25 lb./ac. of N as A/S 70 days after sowing. (vi) Hybrid NC—27 (medium). (vii) Irrigated. (viii) Three hand weedings. (ix) Nil. (x) 4.4.1959.

2. TREATMENTS :

5 cultural treatments : $T_1=1\frac{1}{2}'\times 1\frac{1}{2}'$ spacing with 1 plant/hill, $T_2=2'\times 1'$ spacing with 1 plant/hill, $T_3=2'\times 2'$ spacing with 2 plants/hill, $T_4=2\frac{1}{2}'\times 2\frac{1}{2}'$ spacing with 3 plants/hill and $T_5=3'\times 3'$ spacing with 4 plants/hill.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) $33'\times 33'$ for T_1 , $34'\times 32'$ for T_2 , $34'\times 34'$ for T_3 , $35'\times 35'$ for T_4 and $36'\times 36'$ for T_5 . (b) $30'\times 30'$. (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Mild attack of stem-borer—Endrin was Sprayed. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 6301 lb./ac. (ii) 1154 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	5537	6573	6577	6713	6103

S.E./mean = 516 lb./ac.

Crop :- Maize (Rabi).

Ref :- A.P. 54(3).

Site :- Maize Res. Stn., Karimnagar.

Type :- 'C'.

Object :—To find out the optimum spacing and date of sowing for Maize.

1. BASAL CONDITIONS :

(i) (a) *Mung—Maize—Mung*. (b) *Mung*. (c) Nil. (ii) (a) Sandy loam (*chalka*). (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings, harrowing and levelling. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 15 C.L./ac. of compost+60 lb./ac. of N+30 lb./ac. of P_2O_5 as A/S and Super respectively. Half of N and total quantity of P_2O_5 were given at the time of sowing and the remaining half of N one month later. (vii) Irrigated. (viii) Twice cultivator and one hand weeding. (ix) Nil. (x) 13, 28.3.1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 row spacings : R_0 =Broadcast (control). $R_1=1'$, $R_2=1\frac{1}{2}'$ and $R_3=2'$.

(2) 2 dates of sowing : $D_1=21.11.1954$ and $D_2=14.12.1954$.

Spacing between plants was 1' uniformly.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) Varying for each treatment. (b) $6'\times 60'$. (v) Two rows on either side of each plot and 2 plants from each end of each row. (vi) Yes.

4. GENERAL :

(i) Stand good. Growth normal in D_1 and rather poor in D_2 . 15 to 20% lodging at harvest. (ii) Attack of stem borer. Dead hearts removed and burnt. D.D.T. sprayed after 3 weeks of sowing. (iii) Dry grain and kadbi yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1180 lb./ac. (ii) 480.4 lb./ac. (iii) Main effect of D is significant. (iv) Av. yield of grain in lb./ac.

	R_0	R_1	R_2	R_3	Mean
D_1	1482	1603	1271	1603	1490
D_2	303	847	1240	1089	870
Mean	893	1225	1256	1346	1180

S.E. of R marginal mean	=	169.8 lb./ac.
S.E. of D marginal mean	=	120.1 lb./ac.
S.E. of body of table	=	240.2 lb./ac.

Crop :- Maize (Kharif).

Ref :- A.P. 54(1).

Site :- Maize Res. Stn., Karimnagar.

Type :- 'C'.

Object :- To find out the optimum spacing and date of sowing for Maize.

1. BASAL CONDITIONS :

(i) *Mung—Maize—Mung*. (b) *Mung*. (c) Nil. (ii) (a) Sandy loam (*chalka*). (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings, harrowing and levelling. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 15 C.L./ac. of compost + 60 lb./ac. of N + 10 lb./ac. of P_2O_5 in the form of A/S and Super respectively. Half of N and total quantity of P_2O_5 were given at the time of sowing and the remaining half one month later. (vi) HM—1 (medium). (vii) Irrigated. (viii) One hand weeding and twice with cultivator. (ix) 31.73°. (x) 21.10.1954 and 8.11.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 spacings : R_0 = Broadcast (control), $R_1 = 1' \times 1'$, $R_2 = 1\frac{1}{2}' \times 1'$ and $R_3 = 2' \times 1'$.

(2) 2 dates of sowing : $D_1 = 29.6.1954$ and $D_2 = 19.7.1954$.

3. DESIGN :

(i) Fact. in R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) Varying for each treatment. (b) $6' \times 60'$. (v) Two rows on either side of each plot and 2 plants from each end of each row. (vi) Yes.

4. GENERAL :

(i) Stand good. Growth normal in D_1 and rather poor in D_2 . 20 to 25% lodging at harvest. (ii) 5 to 7% attack of stem borer. Dead hearts removed and burnt. DDT sprayed after 3 weeks of sowing. (iii) Dry grain and *kadli* yie'd. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 400 lb./ac. (ii) 157.3 lb./ac. (iii) Main effects of R and D are significant. (iv) Av. yield of grain in lb./ac.

	R_0	R_1	R_2	R_3	Mean
D_1	666	575	605	393	560
D_2	333	219	151	257	240
Mean	500	397	378	325	400

S.E. of R marginal mean	=	55.6 lb./ac.
S.E. of D marginal mean	=	39.6 lb./ac.
S.E. of body of table	=	78.6 lb./ac.

Crop :- Maize (Kharif).

Ref :- A.P. 55(35).

Site :- Maize Res. Stn., Karimnagar.

Type :- 'CM'.

Object :- To find out the optimum spacing and dose of manures for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fodder maize. (c) Nil. (ii) (a) Sandy loam (*chalka*). (b) N.A. (iii) 9.7.1955. (iv) (a) 2 ploughings, harrowing and levelling. (b) and (c) N.A. (d) As per treatments (e) N.A. (v) Nil. (vi) HM—1 (medium). (vii) Irrigated. (viii) Two hand weedings. (ix) 51.93°. (b) 1.11.1955.

2. TREATMENTS :

Main-plot treatments :

4 spacings : $S_1=1' \times 1'$, $S_2=1\frac{1}{2}' \times 1'$, $S_3=2' \times 1'$ and $S_4=3' \times 1'$.

Sub-plot treatments :

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

(1) 3 levels of N as A/S : $N_0=0$, $N_1=50$ and $N_2=100$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.

(3) 3 levels of K_2O as Pot. Sul. : $K_0=0$, $K_1=50$ and $K_2=100$ lb./ac.

Half of N and whole of P_2O_5 and K_2O applied at sowing and the remaining half of N one month after sowing.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 4 main-plots/replication ; 3 blocks/main-plot and 9 sub-plots/block. NPK partially confounded 2 d.f. in each main-plot. (b) N.A. (iii) 1. (iv) (a) $26' \times 12'$. (b) $22' \times 12'$. (v) 2' on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Normal. 15% lodging at maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1569 lb./ac. (ii) (a) 786.0 lb./ac. (b) 406.9 lb./ac. (iii) Main effect of N is highly significant. Main effect of S, interactions $S \times N$ and $S \times N \times P$ are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	S_3	S_4	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	212	576	479	545	438	353	568	379	512	469	453
N_1	1058	1491	2465	1507	1637	1762	1492	1605	1671	1615	1630
N_2	2407	2354	3014	2543	2649	2542	2683	2698	1615	2538	2634
Mean	1226	1534	1986	1531	1574	1552	1580	1560	1607	1540	1569
K_0	1128	1642	1990	1480	1596	1563	1523				
K_1	1456	1490	1947	1535	1474	1615	1732				
K_2	1094	1470	2020	1578	1654	1479	1488				
P_0	1165	1419	2085	1627							
P_1	1031	1597	2059	1521							
P_2	1482	1586	1814	1438							

S.E. of difference of two

- | | |
|--|-----------------|
| 1. S marginal means | = 213.9 lb./ac. |
| 2. N, P or K marginal means | = 95.9 lb./ac. |
| 3. N, P or K means at the same level of S | = 191.8 lb./ac. |
| 4. S means at the same level of N, P or K | = 297.5 lb./ac. |
| S.E. of the body of table of $N \times P$, $N \times K$ or $P \times K$ | = 117.4 lb./ac. |

Crop :- Maize (Kharif).

Site :- Maize Res. Stn., Karimnagar.

Ref :- A.P. 56(81).

Type :- 'CM'.

Object :- To find out the optimum spacing and dose of NPK for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 6.7.1956. (iv) (a) Two ploughings, harrowing and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HM—1 (medium). (vii) Irrigated. (viii) Two hand weedings. (ix) 36.72%. (x) 23 to 25.10.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(35) on page 266.

4. GENERAL :

20% lodging at maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1228 lb./ac. (ii) (a) 539.4 lb./ac. (b) 279.2 lb./ac. (iii) Main effect of S is significant. Effects of N and K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	S ₄	K ₀	K ₁	K ₂	P ₀	P ₁	P ₂	Mean
N ₀	436	645	570	612	494	550	655	507	640	550	566
N ₁	1157	1490	1325	1027	1180	1183	1387	1181	1331	1238	1250
N ₂	1984	2132	1870	1483	1924	1629	2049	1827	1757	2017	1867
Mean	1192	1423	1256	1041	1199	1121	1364	1172	1243	1268	1228
P ₀	1177	1276	1239	995	1223	1132	1162				
P ₁	1166	1412	1325	1118	1260	1071	1398				
P ₂	1283	1580	1201	1008	1115	1159	1530				
K ₀	1087	1428	1197	1083							
K ₁	1210	1344	1005	924							
K ₂	1280	1496	1564	1115							

S.E. of difference of two

1. S marginal means	= 146.8 lb./ac.
2. N, P or K marginal means	= 65.8 lb./ac.
3. N, P or K means at the same level of S	= 131.5 lb./ac.
4. S means at the same level of N, P or K	= 128.6 lb./ac.
S.E. of body of N×P, N×K or P×K table	= 80.6 lb./ac.

Crop :- Maize (Rabi).

Site :- Maize Res. Stn., Karimnagar.

Ref :- A.P. 55(36).

Type :- 'CM'.

Object :—To find out the optimum spacing and dose of NPK for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam (*chalka*). (b) N.A. (iii) 8.12.1955. (iv) (a) Two ploughings, harrowing and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HM—1 (medium). (vii) Irrigated. (viii) Normal. (ix) Nil. (x) 16.4.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 55(35) on page 266.

4. GENERAL :

(i) 5% lodging at maturity. (ii) Stem-borer and shoot-borer 15%. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1070 lb./ac. (ii) (a) 254.5 lb./ac. (b) 302.0 lb./ac. (iii) Main effect of N is highly significant while $S \times N$ and $S \times N \times P$ interactions are significant and other effects are not significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	S ₄	K ₀	K ₁	K ₂	P ₀	P ₁	P ₂	Mean
N ₀	383	502	480	523	454	498	466	496	441	480	472
N ₁	469	1174	1087	1082	967	1016	877	899	979	982	953
N ₂	1482	1984	2081	1599	1804	1788	1767	1596	1889	1873	1786
Mean	778	1220	1216	1068	1075	1100	1037	997	1003	1111	1070
P ₀	735	1233	1001	1019	1004	1075	913				
P ₁	823	1252	1246	1091	1077	1177	1056				
P ₂	776	1175	1399	1094	1144	1049	1141				
K ₀	755	1239	1259	1047							
K ₁	860	1285	1199	1056							
K ₂	721	1136	1190	1101							

S.E. of difference of two

1. S marginal means = 69.3 lb./ac.
2. N, P or K marginal means = 71.2 lb./ac.
3. N, P or K means at the same level of S = 142.4 lb./ac.
4. S means at the same level of N, P or K = 168.3 lb./ac.
5. S.E. of body of table of $N \times P$, $N \times K$, or $P \times K$ = 87.2 lb./ac.

Crop :- Maize (*Rabi*).

Ref :- A.P. 56(82)-

Site :- Maize Res. Stn., Karimnagar.

Type :- 'CM'.

Object :- To find out the optimum spacing and dose of NPK for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 26.11.1956. (iv) (a) Two ploughings, harrowing and levelling. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) HM-1 (medium). (vii) Irrigated. (viii) Two hand weedings. (ix) 0.33". (x) 26.3.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 55(35) on page 266.

4. GENERAL :

(i) Normal. Lodging 25% at maturity. Mostly on 28.2.1957 due to dust storm. (ii) Attack of stem-borer 20%. Endrine was sprayed. (iii) Grain yield. (iv) (a) 1955-56. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1195 lb./ac. (ii) (a) 799.5 lb./ac. (b) 336.4 lb./ac. (iii) Main effect of S is significant and effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 270 conducted at Karimnagar.

5 RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ "	n ₂ "
Av. yield	230	329	362	321	337	453	444

G.M. = 354 lb./ac. ; S.E. = 29.1 lb /ac. and no. of trials = 7.

Crop :- Korra.

Ref :- A.P. 57(49).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :- To find the effect of N and P on Korra.

1. BASAL CONDITIONS :

(i) (a) Korra—Groundnut—Red gram. (b) Groundnut. (c) 5 tons/ac. of F.Y.M. (ii) (a) Black cotton soil. (b) N.A. (iii) 5.7.1956. (iv) (a) Ploughing, working *guntaka* and *dantulu*. (b) to (e) N.A. (v) 5 tons/ac. of F.Y.M. (vi) Early variety. (vii) Irrigated. (viii) Weeding twice and intercultivation twice. (ix) 20.48" (x) 22.12.1956.

2. TREATMENTS :

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

(1) 4 levels of N : N₁=10, N₂=20, N₃=30 and N₄=40 lb./ac.

(2) 2 levels of P₂O₅ : P₀=0 and P₁=20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N A. (iii) 4. (iv) (a) 1/78 ac. (b) 1/96 ac. (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5 RESULTS :

(i) 1100 lb /ac. (ii) 57.4 lb./ac. (iii) Main effect of N is significant. 'Control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1013 lb./ac.

	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1039	1112	1121	1136	1102
P ₁	1063	1119	1149	1154	1121
Mean	1051	1115	1135	1145	1111

S.E. of N marginal mean = 20.3 lb./ac.

S.E. of P marginal mean = 14.4 lb./ac.

S.E. of body of table or control mean = 28.7 lb./ac.

Crop :- Korra (Kharif).

Ref :- A.P. 58(42).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :- To find the effect of N and P on Korra.

1. BASAL CONDITIONS :

(i) (a) Korra—Groundnut+Redgram. (b) Groundnut. (c) 5 tons/ac. of F.Y.M. (ii) (a) Red soil. (b) N.A. (iii) 14.7.1958. (iv) (a) Ploughing, working *guntaka* as intercultivation, operation and working *dantulu*. (b) to (e) N.A. (v) 5 tons/ac. of F.Y.M. as B.D. and 100 lb./ac. of A/S at the time of sowing. (vi) H—2 (medium). (vii) Irrigated. (viii) Intercultivation was done 25 days after sowing and weeding. (ix) N.A. (x) 22.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(49) on page 272.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/93 ac. (b) 1/114 ac. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(49) on page 272.

5. RESULTS :

(i) 1514 lb./ac. (ii) 9.3 lb./ac. (iii) Effect of N is highly significant. Effect of P, interaction N×P and 'control vs. others' are significant. (iv) Av. yield of grain in lb./ac.

Control = 1023 lb./ac.

	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1309	1584	1639	1688	1555
P ₁	1372	1616	1669	1724	1595
Mean	1340	1600	1654	1706	1575

S.E. of N marginal mean = 3.3 lb./ac.
 S.E. of P marginal mean = 2.3 lb./ac.
 S.E. of body of table or control mean = 4.6 lb./ac.

Crop :- Korra (Kharif).

Ref :- A.P. 59(50).

Site :- Agri. Res., Stn., Yemmiganur.

Type :- 'M'.

Object :—To find the effect of N and P on Korra.

1. BASAL CONDITIONS :

(i) (a) Korra and groundnut. (b) Groundnut. (c) 5 tons/ac. of F.Y.M. (ii) (a) Red soil. (b) N.A. (iii) 21.7.1959. (iv) (a) Ploughing and working *guntaka*. Intercultivation with *dantulu*. (b) to (e) N.A. (v) 5 tons/ac. of F.Y.M. after ploughing, 100 lb./ac. of A/S broadcasted at the time of sowing. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 5.4". (x) 15.10.1959.

2. TREATMENTS :

Same as in expt. no. 57(49) on page 272.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/93 ac. (b) 1/156 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 782 lb./ac. (ii) 256.4 lb./ac. (iii) Main effect of N is significant and 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 437 lb./ac.

	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	589	794	824	1049	814
P ₁	618	797	837	1089	835
Mean	633	795	831	1069	825

S.E. of N marginal mean = 90.65 lb./ac.
 S.E. of P marginal mean = 64.10 lb./ac.
 S.E. of body of table or control mean = 128.21 lb./ac.

Crop :- Onion (Summer).**Ref :- A.P. 57(27).****Site :- Onion Res. Stn., Anantharajupet.****Type :- 'C'.**

Object :- To find out the optimum spacing for Onion.

1. BASAL CONDITIONS :

(I) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet (iii) 21.12.1957/ 8.2.1958. (iv) (a) Ploughing and preparatory cultivation. (b) and (c) N.A. (d) As per treatments. (e) 1. (v) F.Y.M. at 20,000 lb./a. and Super at 200 lb./ac. incorporated by ploughing. (vi) Bellary Small Onion. (vii) Irrigated. (viii) Weeding and hoeings. (ix) 4.39". (x) 22.5 1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 row spacings : R₁=3", R₂=5" and R₃=7".(2) 3 plant spacings : S₁=4", S₂=6" and S₃=8".**3. DESIGN :**

(i) Fcat. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 1/100 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Bulb yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(I) 5749 lb./ac. (ii) 1879 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of bulbs in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	6763	6037	6037	6278
R ₂	5987	5375	4813	5391
R ₃	6227	5150	5363	5579
Mean	6325	5520	5404	5749

S.E. of any marginal mean = 542.6 lb./ac.

S.E. of body of table = 939.8 lb./ac.

Crop :- Onion.**Ref :- A.P. 58(51).****Site :- Onion Res. Stn. Anantharajupet.****Type :- 'C'.**

Object :- To find out the optimum spacing for Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Onion. (c) 20,050 lb./ac. of C.M.+200 lb./ac. of Super+300 lb./ac. of G.N.C. and 100 lb./ac. of A/S. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 26.6.1958/27.8.1958. (v) (a) Ploughing, levelling and breaking up of clods. (b) and (c) N.A. (d) As per treatments. (e) 1. (v) F.Y.M. at 20,000 lb./ac. and Super at 100 lb./ac. at the time of preparing the land for planting. (vi) Bellary Big Onion. (vii) Irrigated. (viii) Weeding, and hoeing. (ix) 30.80". (x) 26.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(27) on page 274.

4. GENERAL :

(i) Due to heavy rain fall and inclement weather, there was no good crop. (ii) 1% Bordeaux mixture was sprayed as a preventive measure against leaf blight. 50% BHC has been sprayed against thrip attack. (iii) Bulb yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 972 lb./ac. (ii) 321.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of bulb in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	1125	1125	775	1008
R ₂	1100	1175	1025	1100
R ₃	700	800	925	808
Mean	975	1033	908	972

S.E. of any marginal mean = 92.7 lb./ac.

S.E. of body of table = 160.6 lb./ac.

Crop :- Onion.

Ref :- A.P. 59(9)

Site :- Onion Res., Stn., Anantharajupet.

Type 'C.'

Object :- To find out the optimum spacing for Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Onion. (c) 20,000 lb./ac. of F.Y.M.+100 lb./ac. of Super+300 lb./ac. of G.N.C. and 100 lb./ac. of A/S. (ii) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 1.1.1959/18.2.1959. (iv) Ploughing leveling and breaking up of clods, etc. (b) and (c) N.A. (d) As per treatments. (e) 1. (v) F.Y.M at 20,000 lb./ac. and Super at 100 lb./ac. at the time of preparing the land for planting. (vi) Bellary big Onion. (viii) Irrigated. (viii) Weeding and hoeing. (ix) 1.13". (x) 25.5.59.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57 (27) on page 274.

4. GENERAL :

(i) Good. (ii) 1% Bordeaux mixture was sprayed as a preventive measure against leaf blight. 50% BHC has been sprayed to control thrip attack (iii) Bulb yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5840 lb./ac. (ii) 1970.3 lb./ac. (iii) Main effect of R is highly significant. Main effect of S is significant (iv) Av. yield of bulb in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	10350	5225	7275	7616
R ₂	6500	4000	5275	5258
R ₃	5150	4950	3850	4649
Mean	7333	4725	5466	5840

S.E. of any marginal mean = 568.8 lb./ac.
S.E. of body of table = 985.2 lb./ac.

Crop :- Onion (Rainy).

Ref :- A.P. 59(68).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'C'.

Object :—To find out the optimum spacing for Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Onion. (c) 20,000 lb./ac. of F.Y.M.+100 lb./ac. of Super+300 lb./ac. of G.N.C. and 100 lb./ac. of A/S. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) June, 1959/N.A. (iv) (a) Ploughing levelling and breaking up of clods. (b) and (c) N.A. (d) As per treatments. (e) 1. (v) F.Y.M. at 20,000 lb./ac. and Super at 100 lb./ac. at the time of preparing the land for planting. (vi) Bellary big Onion. (vii) Irrigated. (viii) Weeding, and hoeing. (ix) N.A. (x) Nov 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(27) on page 274.

5. RESULTS :

(i) 962 lb./ac. (ii) 365.4 lb./ac. (iii) Only main effect of R is significant. (iv) Av. bulb yield in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	1375	1025	1013	1137
R ₂	1250	1050	900	1067
R ₃	875	700	475	683
Mean	1166	925	796	952

S.E. of any marginal mean = 105.5 lb./ac.
S.E. of body of table = 182.7 lb./ac.

Crop :- Onion (Rainy).

Ref :- A.P. 58(50).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'C'.

Object :—To find out the suitable method of growing Onions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 26.6.1958/23.8.1958. (iv) (a) Ploughing, levelling and breaking up clods. (b) As per treatments. (c) N.A. (d) As per treatments. (e) 1. (v) 20,000 lb./ac. of F.Y.M. and 100 lb./ac. of Super. (vi) Bellary Big onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 30.80". (x) 26.11.1958.

2. TREATMENTS :

2 methods of planting : M₁=Ridges formed at one foot apart and seedling planted 4" apart on either side of the ridge and M₂=Seedling planted in beds at a distance of 6"×4".

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) and (b) 1/100 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Due to heavy rainfall and inclement weather crop condition was not good. (ii) 1% Bordeaux mixture was sprayed as preventive measure against leaf blight. 50% of BHC has been sprayed against thrip attack. (iii) Bulb yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1792 lb./ac. (ii) 1132 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of bulb in lb./ac.

Treatment	M ₁	M ₂
Av. yield	1867	1717

S.E./mean = 483 lb./ac.

Crop :- Onion (Summer).

Ref :- A.P. 59(8).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'C'.

Object :—To find out the suitable method of growing Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Onion. (c) 20,000 lb./ac. of F.Y.M., 100 lb./ac. of Super, 100 lb./ac. of A/S and 300 lb./ac. of G.N.C. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 1.1.1959/21.2.1959. (iv) (a) Ploughing, levelling and breaking up clods. (b) As per treatments. (c) N.A. (d) As per treatments. (e) 1. (v) 100 lb./ac. of Super and 20,000 lb./ac. of F.Y.M. (vi) Bellery big onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 1.13". (x) 25/26.5.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(50) on page 276.

4. GENERAL :

(i) Good. (ii) 1% Bordeaux mixture was sprayed as a preventive measure against leaf blight. 50% BHC has been sprayed to control thrips. (iii) Bulb yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 12533 lb./ac. (ii) 879.4 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of bulb in lb./ac.

Treatment	M ₁	M ₂
Av. yield	12750	12317

S.E./mean = 621.8 lb./ac.

Crop :- Onion (Rainy).

Ref :- A.P. 59(66).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'C'.

Object :—To find out the suitable method of growing Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (ii) Onion. (c) 20,000 lb./ac. of F.Y.M., 100 lb./ac. of Super. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) June, 1958/N.A. (iv) (a) Ploughing, levelling and breaking up of clods. (b) As per treatments. (c) N.A. (d) As per treatments. (e) 1. (v) 20,000 lb./ac. of F.Y.M. (vi) Bellary big onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) Nov., 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(50) on page 276.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Bulb yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2075 lb./ac. (ii) 664.0 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of bulb in lb./ac.

Treatment	M ₁	M ₂
Av. yield	2183	1967

S.E./mean = 267.0 lb./ac.

Crop :- Onion (Summer).

Ref :- A.P. 59(7).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'C'.

Object :—To find out the best seed material between seed and bulbs.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Onion. (c) 20,000 lb./ac. of F.Y.M. + 100 lb./ac. of Super + 100 lb./ac. of A/S + 300 lb./ac. of G.N.C. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 11.1959/18.2.19 9. (iv) (a) Ploughing, levelling and breaking up of clods. (b) to (e) N.A. (v) F.Y.M. at 20,000 lb./ac. + Super at 100 lb./ac. at the time of preparing the land for planting. (vi) Bellary big onion. (vii) Irrigated. (viii) Weeding, hoeing and top dressing. (ix) 1.13". (x) 29.5.1959.

2. TREATMENTS :

2 seed materials : S₁=Bulb planting and S₂=Seed sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) and (b) 1/100 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) 1% Bordeaux mixture was sprayed as a preventive measure against leaf blight; 50% BHC was sprayed to control thrips. (iii) Bulb yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4133 lb./ac. (ii) 719.2 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of bulb in lb./ac.

Treatment	S ₁	S ₂
Av. yield	2667	5600

S.E./mean = 508.6 lb./ac.

Crop :- Onion (Rainy).

Ref :- A.P. 58(49).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'IM'.

Object :—To study the optimum dose of manuring and frequency of irrigation for Onion crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 26.6.1958/19 8.1958. (iv) (a) Ploughing, leveling and breaking up of clods. (b) to (e) N.A. (v) Nil. (vi) Bellary big onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 30.80". (x) 27.11.1958.

2. TREATMENTS :

Main-plot treatments :

4 intervals of irrigation : I₁=5, I₂=7, I₃=9 and I₄=11 days.

Sub-plot treatments :

5 levels of manures : M₀=Control (no manure), M₁=50 lb./ac. of A/S+150 lb./ac. of G.N.C., M₂=100 lb./ac. of A/S+300 lb./ac. of G.N.C., M₃=150 lb./ac. of A/S+450 lb./ac. of G.N.C. and M₄=B.D. of 20,000 lb./ac. of F.Y.M.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) and (b) 1/200 ac. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Good. (ii) 1% Bordeaux mixture sprayed as a preventive measure against Leaf Blight. 50% BHC was sprayed to control thrip attack. (iii) Bulb yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) As the irrigational levels were not maintained, the expt. was treated as simple randomised block with 5 manurial levels as treatments and 20 replications.

5. RESULTS:

(i) 1751 lb./ac. (ii) 547.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of bulb in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	1110	2050	1920	2110	1565

S.E./mean = 122.3 lb./ac.

Crop :- Onion.

Ref :- A.P. 59(6).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'IM'.

Object :—To study the optimum dose of manuring and frequency of irrigation for growing Onion crop.

1. BASAL CONDITIONS:

(i) (a) Onion—Onion. (b) Onion. (c) As per treatment. (ii) (a) N.A. (b) Refer soil analysis, Anantharajupet. (iii) 1.1.1959/20.2.1959. (iv) (a) Ploughing, levellings and breaking up of clods (b) to (e) N.A. (v) Nil. (vi) Bellary Big Onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 1.13". (x) 26.5.1959.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 58(49) on page 278.

4. GENERAL:

(i) Good. (ii) More of thrip attack was noticed and 50% BHC was sprayed to keep it under check. (iii) Bulb yield. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 7638 lb./ac. (ii) (a) 5511 lb./ac. (b) 3387 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of bulb in lb./ac.

	M ₀	M ₁	M ₂	M ₃	M ₄	Mean
I ₁	5160	7160	8400	10800	6720	7848
I ₂	5000	12280	13880	12720	8400	10456
I ₃	4160	8000	7640	6640	8280	6944
I ₄	2160	7600	3760	8680	4320	5304
Mean	4120	8760	8670	9710	6930	7638

S.E. of difference of two

1. I marginal means = 1559 lb./ac.
2. M marginal means = 1071 lb./ac.
3. M means at the same level of I = 2142 lb./ac.
4. I means at the same level of M = 2470 lb./ac.

Crop :- Onion.

Ref :- A.P. 59(67).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'IM'.

Object :—To study the optimum dose of manuring and frequency of irrigation for Onion crop.

1. BASAL CONDITIONS :

(i) (a) Onion—Onion. (b) Onion. (c) As per treatments. (ii) (a) and (b) Refer soil analysis, Anantharajupet. (iii) Aug. 1959/N.A. (iv) (a) Ploughing, levelling and breaking up of clods. (b) to (d) N.A. (e) 1. (v) Nil. (vi) Big Bellary Onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) Dec. 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(49) on page 278.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Bulb yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1742 lb./ac. (ii) (a) 1545 lb./ac. (b) 509 lb./ac. (iii) Main effect of M is highly significant. (iv) Av. yield of bulb in lb./ac.

	M ₀	M ₁	M ₂	M ₃	M ₄	Mean
I ₁	1120	1420	1420	1460	1140	1312
I ₂	1640	2500	2500	2520	1920	2216
I ₃	1200	1840	1640	1680	1760	1624
I ₄	1320	2100	1620	2260	1780	1816
Mean	1320	1965	1795	1980	1650	1742

S.E. of difference of two

- | | |
|-----------------------------------|---------------|
| 1. I marginal means | = 437 lb./ac. |
| 2. M marginal means | = 161 lb./ac. |
| 3. M means at the same level of I | = 322 lb./ac. |
| 4. I means at the same level of M | = 524 lb./ac. |

Crop :- Onion (Summer).

Ref :- A.P. 59(5).

Site :- Onion Res. Stn., Anantharajupet.

Type :- 'IM'.

Object :- To find out the individual and combined effect of NPK in general and frequency of irrigation for assessing the optimum cultivation practice.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) and (b) Refer soil analysis, Anantharajupet. (iii) 1.1.1959/19, 20.2.1959. (iv) (a) Ploughing, levelling and breaking up of clods. (b) to (e) N.A. (v) As per treatment. (vi) Bellary Big Onion. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 1.13. (x) 23.5.1959.

2. TREATMENTS

Main-plot treatments :

4 levels of irrigation : I₁=Once in 3 days, I₂=Once in 5 days, I₃=Once in 7 days and I₄=Once in 9 days.

Sub-plot treatments :

All combinations of (1), (2) and (3)+2 extra treatments

(1) 2 levels of N : N₀=0 and N₁=30 lb./ac.

(2) 2 levels of P₂O₅ : P₀=0 and P₁=30 lb./ac.

(3) 2 levels of K₂O : K₀=0 and K₁=30 lb./ac.

Extra treatments : T₁=Basal dressing with compost and T₀=Control (no manure).

All treatments except T₀ and T₁ received 20,000 lb./ac. of F.Y.M. as B.D.

3. DESIGN :

(i) Split—plot. (ii) (a) 4 main plots/replication ; 10 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) and (b) 1/200 ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Thrip attack was controlled by 50% BHC. (iii) Yield of bulb. (iv) (a) 1956—confd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5957 lb./ac. (ii) (a) 4519 lb./ac. (b) 2389 lb./ac. (iii) Sub-plot treatment effect is highly significant. (iv) Av. yield of bulb in lb./ac.

	T ₀	T ₁	N ₀ P ₀ K ₀	N ₁ P ₀ K ₁	N ₀ P ₁ K ₀	N ₁ P ₁ K ₀	N ₀ P ₀ K ₁	N ₁ P ₀ K ₁	N ₀ P ₁ K ₁	N ₁ P ₁ K ₁	Mean
I ₁	5600	7160	4800	8160	5760	8920	5480	8840	6160	9900	7078
I ₂	7280	8880	4320	7680	6800	9720	8080	9480	6080	7360	7568
I ₃	2980	4820	5020	5820	5420	7420	5000	6660	5040	7520	5570
I ₄	1580	3590	2860	3880	3390	5900	2430	3740	4750	5980	3610
Mean	4360	6113	4250	6385	5343	7990	5247	7180	5507	7190	5957

S.E. of difference of two :

1. I marginal means = 903 lb./ac.
2. Sub-plot treatment marginal means = 755 lb./ac.
3. Sub-plot treatment means at the same level of I = 1511 lb. ac.
4. I means at the same level of sub-plot treatment = 1694 lb./ac.

Crop :- Bhindi.

Ref :- A.P. 56(33).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CV'.

Object :—To find out the best spacing for different varieties of Bhindi.

1. BASAL CONDITIONS :

(i) (a) No. (b) Brinjal. (c) F.Y.M. at 20 C.L./ac. as basal dose. (ii) (a) Silty loam. (b) N.A. (iii) N.A./17.3.1956. (iv) (a) Two ploughings and two *bakharings*. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) F.Y.M. at 20 C.L./ac. as basal dose. (vi) As per treatments. (vii) Irrigated. (viii) 8 weedings. (ix) 8.28". (x) 8.7.1956.

2. TREATMENTS :

Main-plot treatments :

3 varieties : V₁=Rajasthan, V₂=Red wonder and V₃=Shankarpally.

Sub-plot treatments :

3 spacings : S₁=2'×1', S₂=2'×1½' and S₃=2'×2'.

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) 24'×18'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Yellow leaf worm mosaic—affected leave clipped and burnt. Fruit borer—Endrine sprayed at the rate of 5 c.c. per gallon. (iii) Yield of dry seed. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 445 lb./ac. (ii) (a) 241.0 lb./ac. (b) 167.4 lb./ac. (iii) Main effects of V and S are significant. (iv) Av. yield of dry seed in lb./ac.

	S ₁	S ₂	S ₃	Mean
V ₁	33	24	28	28
V ₂	777	706	540	674
V ₃	802	641	458	634
Mean	537	457	342	445

S.E. of difference of two

1. V marginal means	= 69.6 lb./ac.
2. S marginal means	= 48.3 lb./ac.
3. S means at the same level of V	= 118.3 lb./ac.
4. V means at the same level of S	= 137.9 lb./ac.

Crop :- Bhindi (Kharif).

Ref :- A.P. 57(93).

Site :- Fruit Res. Stn., Sangareddy.

Type :- 'CV'.

Object :—To find out the best spacing for different varieties of Bhindi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) *Chalka*. (b) Refer soil analysis, Sangareddy. (iii) 29.6.1957/ N.A. (iv) (a) 3 ploughings. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 1. (v) F.Y.M. applied at 15 C L./ac. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and filling the gaps. (ix) N.A. (x) 14.10.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 36(33) on page 282.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Bhindi yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Rajendranagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 161.2 lb./ac. (ii) (a) 123.6 lb./ac. (b) 52.1 lb./ac. (iii) Main effect of V is significant. (iv) Av. yield of dry seed in lb./ac.

	S ₁	S ₂	S ₃	Mean
V ₁	96	74	88	86
V ₂	160	164	161	162
V ₃	271	189	243	234
Mean	176	142	164	161

S.E. of difference of two

1. V marginal means	= 50.5 lb./ac.
2. S marginal means	= 21.3 lb./ac.
3. S means at the same level of V	= 36.8 lb./ac.
4. V means at the same level of S	= 58.7 lb./ac.

Crop :- Bhindi (Rainy).

Ref :- A.P. 59(116).

Site :- Vegetable Res. Stn., Kurnool.

Type :- 'CM'.

Object :—To find out the optimum spacing and manurial doses for Bhindi crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sesbania* as G.M. (c) Nil. (ii) (a) Black loam. (b) Refer soil analysis, Kurnool. (iii) 12, 13.7.1959. (iv) (a) 2 ploughings and working *pedda guntaka* and *gorru*. (b) Dibbling. (c) 1.87 lb./ac. (d) As per treatment (e) 1. (v) 10 ton/ac. of F.Y.M. (vi) Green long (early.) (vii) Irrigated. (viii) Gap filling, 2 hand weedings and *mumity* hoeing. (ix) N.A. (x) 20.8.1959 to 16.11.1959.

TREATMENTS :

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

- (1) 3 levels of spacing : $S_0=1' \times 2'$, $S_1=1\frac{1}{2}' \times 1\frac{1}{2}'$, and $S_2=2' \times 2'$.
 (2) 3 levels of N as A/S : $N_0=0$, $N_1=20$, and $N_2=40$ lb./ac.
 (3) 3 level of P as Super : $P_0=0$, $P_1=10$ and $P_2=20$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) 9 plots/block, 3 blocks/replication. (b) $72' \times 54'$. (iii) 1. (iv) (a) $24' \times 18'$ $20' \times 16'$ for S_0 , $21' \times 15'$ for S_1 and $20' \times 14'$ for S_2 . (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Jassid and occurrence of mildew. Endrine and Lindane sprayed. (iii) Lady finger yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Harvest was made every two days. When insecticides were sprayed it was delayed by a week.

5. RESULTS :

(i) 5846 lb./ac. (iii) 1142 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Bhindi in lb./ac.

	P_0	P_1	P_2	Mean	S_0	S_1	S_2
N_0	5398	6272	5555	5742	6003	6317	4906
N_1	6832	6205	5331	6123	6922	5645	5802
N_2	5914	6114	4995	5674	6586	6026	4410
Mean	6048	6197	5294	5846	6504	5996	5039
S_0	6541	7728	5243				
S_1	6138	6429	5421				
S_2	5465	4434	5218				

S.E. of any marginal mean = 380.7 lb./ac.

S.E. of body of any table = 659.4 lb./ac.

Crop :- Bhindi (Kharif).

Ref :- A.P. 58(116).

Site :- Fruit Res. Stn. Sangareddy.

Type :- 'CMV.'

Object :- To study the effect of spacing and manures on different varieties of Bhindi yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) —. (ii) (a) Red sandy loam. (b) Refer soil analysis, Sangareddy. (iii) 12.7.1958. (iv) (a) 3 ploughings and 2 weedings. (b) Transplanting. (c) N.A. (d) As per treatments. (e) 1. (v) As per treatments. (vi) As per treatments, (vii) Irrigated. (viii) Gap-filling after 15 days, ploughing the area around, weeding and hoeing. (ix) 29.6. (x) 15.10.1958.

2. TREATMENTS :

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

- (1) 3 levels of manuring : $M_1=20$ lb./ac. $N+20$ lb./ac. P_2O_5+10 lb./ac. of K_2O , $M_2=40$ lb./ac. of $N+40$ lb./ac. of P_2O_5+20 lb./ac. of K_2O and $M_3=60$ lb./ac. of $N+60$ lb./ac. of P_2O_5+30 lb./ac. of K_2O
 (2) 3 spacings : $S_1=2' \times 2'$, $S_2=2' \times 1\frac{1}{2}'$ and $S_3=2' \times 1'$.
 (3) 3 varieties : $V_1=Shankarpally$, $V_2=Red\ wonder$ and $V_3=Rajasthan$.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) $24' \times 18'$ for S_1 , $24' \times 17'$ for S_2 , $24' \times 16'$ for S_3 . (b) $20' \times 14'$. (v) One row around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of Aphids and root rot. Geigy 1250 and Endrine sprayed; Red Spider mite observed, spraying of sulphur 6 oz. and Endrine 3oz. (iii) Bhindi yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 369 lb./ac. (ii) 130.9 lb./ac. (iii) Main effect of S alone is significant. (iv) Av. yield of bhindi seed in lb./ac.

	S ₁	S ₂	S ₃	Mean	V ₁	V ₂	V ₃
M ₁	239	298	409	315	337	315	294
M ₂	271	380	501	384	496	373	283
M ₃	315	327	579	407	572	365	283
Mean	275	335	496	369	468	351	287
V ₁	334	371	700				
V ₂	283	311	459				
V ₃	208	322	331				

S.E. of any marginal mean = 43.7 lb./ac.

S.E. of body of any table = 75.6 lb./ac.

Crop :- Bhindi. (Kharif).

Ref :- A.P. 59(95).

Site :- Fruit Res. Stn., Sangareddy.

Type :- 'CMV'.

Object :- To study the effect of spacing and manures on different varieties of Bhindi.

1. BASAL CONDITIONS:

(i) (a) No. (b) Tomato. (c) A/S at 1 cwt/ac. and Super at 3 cwt/ac. (ii) (a) Red sandy soil. (*chatka*). (b) Refer soil analysis, Sangareddy. (iii) 23.6.1959. (iv) (a) 2 ploughings, 2 cultivator operations and one blade harrow operation. (b) Transplanting. (c) N.A. (d) As per treatments (e) 1. (v) 5 C.L./ac. of F.Y.M. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings. (ix) 24.8". (x) 23.10.1959.

2. TREATMENTS :

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

(1) 3 levels of manuring : M₁=30 lb./ac. of N+30 lb./ac. of P₂O₅ +20 lb./ac. of K₂O. M₂=40 lb./ac. of N+40 lb./ac. of P₂O₅+30 lb./ac. of K₂O. M₃=60 lb./ac. of N+60 lb./ac. of P₂O₅+40 lb./ac. of K₂O.

(2) 3 spacings : S₁=2'×2', S₂=2'×1½' and S₃=2'×1'.

(3) 3 Varieties : V₁=Shankarpally (early). V₂=Red wonder. (early). V₃=Hybrid Rajasthan (late).

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 108'×18'. (iii) 1. (iv) (a) 22'×16'. (b) 18'×12'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Endrin and D.D.T. 50%, B.H.C. 50% used against Aphids, jassids, shoot borers and fruit borers. (iii) Bhindi yield. (iv) (a) 1957—contd. (modified in 1958) (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 328 lb./ac. (ii) 50.8 lb./ac. (iii) Main effects of V and S are highly significant and effect of M is significant. (iv) Av. yield of Bhindi seed in lb./ac.

	S ₁	S ₂	S ₃	Mean	V ₁	V ₂	V ₃
M ₁	231	250	366	282	450	221	177
M ₂	219	319	518	352	555	245	256
M ₃	233	349	466	349	532	225	292
Mean	228	306	450	328	512	230	242
V ₁	361	506	668	512			
V ₂	210	185	295	230			
V ₃	111	227	387	242			

S.E. of any marginal mean = 16.94 lb./ac.
S.E. of body of any table = 29.33 lb./ac.

Crop :- Brinjal (Rabi).

Ref :- A.P. 58(98).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To find out the suitable levels of N, P and K for Brinjal.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. applied as basal dose. (ii) (a) Black cotton soils. (b) N.A. (iii) 12.12.1958/9.1.1959. (iv) (a) 4 ploughings with iron mould board plough as preparatory cultivation and levelling with *patta*. (b) to (e) N.A. (v) 20 C.L./ac. of F.Y.M. before levelling the soil and after 3rd preparatory ploughing. (vi) Purple long. (vii) Irrigated. (viii) Gap-filling and weeding regularly twice a month. (ix) 0.75". (x) 21.5.1959.

2. TREATMENTS :

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

- (1) 3 levels of N : N₀=0, N₁=25 and N₂=50 lb./ac.
(2) 3 levels of P₂O₅ : P₀=0, P₁=25 and P₂=50 lb./ac.
(3) 3 levels of K₂O : K₀=0, K₁=25 and K₂=50 lb./ac.

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) Nil. (iii) 2. (iv) (a) 15'×30'. (b) (b) 11'×26'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Growth normal, no. lodging. (ii) Attack of mosaic and little leaf—Sulphur dusted. (iii) Yield of Brinjal. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 13149 lb./ac. (ii) 3006 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of Brinjal in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	13084	12330	10132	11849	12213	10679	12655
N ₁	12867	12254	14137	13086	14214	12714	12330
N ₂	16260	12155	15117	14511	13349	13943	16240
Mean	14070	12246	13129	13149	13259	12445	13742
K ₀	13630	12049	14095				
K ₁	13643	11574	12118				
K ₂	14937	13114	13173				

S.E. of any marginal mean = 1002 lb./ac.
 S.E. of body of any table = 1735 lb./ac.

Crop :- Brinjal.

Ref :- A.P. 56(32).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CV'.

Object :—To find out the optimum spacing and variety for Brinjal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Tomato (c) F.Y.M. at 20 C.L./ac. (ii) (a) Black silty loam. (b) N.A. (iii) 27.8.1956.
 (iv) (a) 2 ploughings and 2 *bakharings*. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) F.Y.M.
 at 20 C.L./ac. applied at the time of ploughing and incorporated into the soil. (vi) As per treatments.
 (vii) Irrigated. (viii) 8 weedings and 2 earthings. (ix) 11.26'. (x) 6.2.1957.

2. TREATMENTS :

Main-plot treatments :

5 varieties : V_1 =Purple long cluster, V_2 =Green long cluster, V_3 =White long cluster, V_4 =Long purple
 and V_5 =Local.

Sub-plot treatments :

4 spacings : $S_1=2' \times 1\frac{1}{2}'$, $S_2=2' \times 2'$, $S_3=3' \times 1\frac{1}{2}'$ and $S_4=3' \times 2'$.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and
 (b) 1/100.8. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of *virus*, Brinjal leaf spot, Brinjal shoot and fruit borer. *Virus* affected plants
 uprooted and burnt. Bordeaux mixture and Endrine sprayed in concentration of 5 c.c. per gallon of water.
 (iii) Fruit yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4110 lb./ac. (ii) (a) 1424 lb./ac. (b) 988 lb./ac. (iii) Main effect of V is significant. (iv) Av. yield
 of Brinjal in lb./ac.

	V_1	V_2	V_3	V_4	V_5	Mean
S_1	4761	4709	3306	5554	2428	4151
S_2	5598	4515	2840	7138	2388	4496
S_3	3461	3865	3291	5767	2703	3817
S_4	3301	3879	3318	6226	3145	3974
Mean	4280	4442	3189	6171	2666	4110

S.E. of difference of two

- | | |
|-----------------------------------|---------------|
| 1. V marginal means | = 356 lb./ac. |
| 2. S marginal means | = 222 lb./ac. |
| 3. S means at the same level of V | = 700 lb./ac. |
| 4. V means at the same level of S | = 787 lb./ac. |

Crop :- Brinjal.

Ref :- A.P. 58(103).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CV'.

Object :—To study the effect of date of sowing on different varieties of Brinjal.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. before sowing. (ii) (a) Black cotton soil. (b) N.A. (iii) As per treatments. (iv) (a) 4 ploughings with iron mould plough, levelling with *patta* and forming ridges and furrows. (b) and (c) N.A. (d) 2' x 2'. (e) 1. (v) 20 C.L./ac. of F.Y.M. as basal dose at the time of 3rd preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling done one week after transplanting, weeding once in every 15 days. (ix) 29.9% (x) Approximately six months after sowing.

2. TREATMENTS :

Main-plot treatments :

9 dates of planting : $D_1=10.7.1958$, $D_2=10.8.1958$, $D_3=10.9.1958$, $D_4=10.10.1958$, $D_5=10.11.1958$, $D_6=10.12.1958$, $D_7=10.1.1959$, $D_8=10.2.1959$ and $D_9=10.3.1959$.

Sub-plot treatments :

2 varieties : V_1 =Purple long and V_2 =Purple long cluster.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication ; 2 sub-plots/main-plot (b) N.A. (iii) 3. (iv) (a) N.A. (b) 24' x 12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Brinjal yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2280 lb./ac. (ii) (a) 1520 lb./ac. (b) 680 lb./ac. (iii) Main effect of D is highly significant. (iv) Av. yield of Brinjal in lb./ac.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	Mean
V_1	4985	4849	5020	2940	1201	1225	1038	224	564	2450
V_2	3892	4525	4261	2940	1525	753	413	73	605	2110
Mean	4438	4687	4640	2940	1363	989	725	148	585	2280

S.E. of difference of two

- | | |
|-----------------------------------|---------------|
| 1. D marginal means | = 878 lb./ac. |
| 2. V marginal means | = 185 lb./ac. |
| 3. V means at the same level of D | = 556 lb./ac. |
| 4. D means at the same level of V | = 962 lb./ac. |

Crop :- Brinjal (Rabi).

Ref :- A.P. 58(97).

Site :- Agri. Res. Instt. Rajendranagar.

Type :- 'CMV'.

Object :—To find out the suitable combination of variety, spacing and manurial doses for Brinjal crop

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. (ii) (a) Black cotton soils. (b) N.A. (iii) 27.11.1958/22.12.1958. (iv) (a) 4 ploughings with iron mould plough as preparatory tillage, levelling with *patta*, forming of ridges and furrows with manual labour. (b) to (e) N.A. (v) 20 C.L./ac. of F.Y.M. at the time of third preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling attended after one week of transplantation. Weeding once in 15 days regularly (ix) 0.83'. (x) 12.6.1959.

2. TREATMENTS :

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

(1) 3 varieties : V_1 =Purple long, V_2 =Purple long cluster and V_3 =Green long cluster.

(2) 3 spacings : $S_1=2' \times 1\frac{1}{2}'$, $S_2=2' \times 2'$ and $S_3=2' \times 3'$.

(3) 3 levels of manures : $M_1=20$ lb./ac. of N+20 lb./ac. of P_2O_5 , $M_2=40$ lb./ac. of N+20 lb./ac. of P_2O_5 +10 lb./ac. of K_2O and $M_3=60$ lb./ac. of N+60 lb./ac. of P_2O_5 +20 lb./ac. of K_2O .

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 14'×16'. (b) 10'×12' (v) 2'×2. (v) Yes.

4. GENERAL :

(i) Normal. (ii) Epilachna bulls attack in primary stages—Geigy 1250 dusted regularly once a week. Little leaf virus—when the crop was 3 months old. Rouging attended and the diseased material burnt out side the field. (iii) Fruit yield. (iv) (a) 1958—1960. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 67685 lb. ac. (ii) 10909 lb./ac. (iii) Main effect of V is significant. (iv) Av. yield of brinjal in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	64291	55114	53223	57543	58272	53241	61118
V ₂	88035	74052	77061	79716	79802	81606	77744
V ₃	65968	64719	66694	65794	68465	63594	65325
Mean	72764	64628	65659	67685	68846	66147	68062
M ₁	72542	68012	65986				
M ₂	75580	57296	65561				
M ₃	70172	68578	65434				

S E. of any marginal mean = 3636 lb./ac.
S.E. of body of any table = 6298 lb./ac.

Crop :- Brinjal (Rabi).

Ref :- A.P. 59(59).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CMV'.

Object :—To find the suitable combination of variety, spacing and manurial doses for Brinjal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Wheat. (c) 20 CL./ac. of F.Y.M. before sowing. (ii) (a) Black cotton soil. (b) N.A. (iii) Nov. 1959 Dec. 1959. (iv) (a) 4 ploughings with iron mould plough, preparatory levelling with *patta* and forming of ridges and furrows with manual labour. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M. as basal dose at the time of 3rd preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of transplantation. Weeding once in every 15 days. (ix) 8.8". (x) June 1960.

2. TREATMENTS :

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

(1) 3 varieties : V₁=Purple long, V₂=Purple long cluster and V₃=Green long cluster.

(2) 3 spacings : S₁=2'×1½', S₂=2'×2' and S₃=2'×3'.

(3) 3 levels of manures : M₁=20 lb./ac. of N+20 lb./ac. of P₂O₅, M₂=40 lb./ac. of N+40 lb./ac. of P₂O₅+10 lb./ac. of K₂O and M₃=60 lb./ac. of N+60 lb./ac. of P₂O₅+20 lb./ac. of K₂O.

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) and (b) 1/201.67 ac. (v) 4'×4. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of Brinjal. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vi) Nil.

5. RESULTS :

(i) 7891 lb./ac. (ii) 2884 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Brinjal in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	5631	7080	6260	6323	6937	6953	7080
V ₂	8541	9055	10803	9466	8336	6895	13167
V ₃	8571	6709	8374	7884	5819	9067	8768
Mean	7581	7615	8479	7891	6364	7638	9672
M ₁	4576	7319	7197				
M ₂	7614	6895	8407				
M ₃	10554	8630	9832				

S.E. of any marginal mean

= 961 lb./ac.

S.E. of body of any table

= 1665 lb./ac.

Crop :- Tomato.**Ref :- A.P. 55(44).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'C'.**

Object :—To find the optimum spacing for Tomato.

1. BASAL CONDITIONS :

(i) (a) No. (b) The experiment was conducted in citrus interspaces. (c) Nil. (ii) (a) Black silty loam. (b) N.A. (iii) 30 12.1955, N.A. (iv) (a) 3 ploughings and *bakharings*. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M applied at the time of planting as basal dressing. (vi) *Porrdinesa* (medium). (vii) Irrigated. (viii) 8 weeding and 2 earthings. (ix) 5.18°. (x) First week of June, 1956.

2. TREATMENTS :

3 spacings : S₁ = 2' × 1½', S₂ = 2' × 2' and S₃ = 3' × 2'.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 36' × 80'. (v) Nil. (vi) Yes

4. GENERAL :

(i) Not good. (ii) Attack of Tomato fruit borer—Endrine was sprayed at 5 c.c. per gallon of water. Severe-virus attack. Affected plant uprooted and burnt. (iii) No. of fruits/plot and fruit yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 11967 lb./ac. (ii) 2060 lb /ac. (iii) Treatment differences are significant. (iv) Av. yield of fruit in lb./ac.

Treatment	S ₁	S ₂	S ₃
Av. yield	14408	11278	10213

S.E./mean = 841 lb./ac.

Crop :- Tomato.**Ref :- A.P. 56(35).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CV'.**

Object :—To find the best spacing for different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Bhindi*. (c) 20 C.L./ac. of F.Y.M. (ii) (a) Black silty loam. (b) N.A. (iii) 10.12.1956/ N.A. (iv) (a) 6 weedings and two *bakharings*. (b) Transplanted. (c) N.A. (d) As per treatments. (e) N.A. (v) F.Y.M. was given at 20 C.L./ac. as B.D. (vi) As per treatments. (vii) Irrigated. (viii) 8 weedings and 2 *bakharings*. (ix) 1.86". (x) 9.3.1957 to 15.5.1957.

2. TREATMENTS :

Main-plot treatments :

4 varieties : V_1 =Sioux, V_2 =Marglobe, V_3 =Meeruti and V_4 =Ponderosa.

Sub-plot treatments :

3 spacings : $S_1=2' \times 1\frac{1}{2}'$, $S_2=2' \times 2'$ and $S_3=3' \times 2'$.

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) $24' \times 18'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) *Virus* attack—dry rot of fruits—Bordeaux mixture sprayed. Fruit borer—Endrine sprayed at 5 c.c. per gallon. (iii) Yield of tomato. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 20231 lb./ac. (ii) (a) 7576 lb./ac. (b) 3914 lb./ac. (iii) Main effect of V is significant and effect of S is highly significant. (iv) Av. yield of fruit in lb./ac.

	V_1	V_2	V_3	V_4	Mean
S_1	31235	17874	30428	20974	25128
S_2	25008	13109	24529	17672	20079
S_3	19185	14722	15756	12277	15486
Mean	25143	15235	23571	16974	20231

S.E. of difference of two

1. V marginal means = 2187 lb./ac.
2. S marginal means = 979 lb./ac.
3. S means at the same level of V = 2768 lb./ac.
4. V means at the same level of S = 3831 lb./ac.

Crop :- Tomato.

Ref :- A.P. 58(102).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CV'.

Object :—To study the effect of date of transplanting on the yield of different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. (ii) (a) Black cotton. (b) N.A. (iii) N.A./As per treatment. (iv) (a) 4 ploughings with iron mould plough, levelling with *patta* and forming of ridges and furrows. (b) and (c) N.A. (d) $2' \times 2'$. (e) 1. (v) 40 C.L./ac. of F.Y.M. as B.D. at the time of 3rd preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling and weeding (ix) 29.9" during the year. (x) Approximately 5 months after planting.

2. TREATMENTS :

Main-plot treatments :

8 dates of transplanting : $D_1=10.7.1958$, $D_2=10.8.1958$, $D_3=10.9.1958$, $D_4=10.10.1958$, $D_5=10.11.1958$, $D_6=10.12.1958$, $D_7=10.1.1959$ and $D_8=10.2.1959$.

Sub-plot treatments :

2 varieties : V_1 =Marglobe and V_2 =Meeruti.

3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 20'×10'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Fruit yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Data of the expt. of 1957 is N.A.

5. RESULTS :

(i) 1378 lb./ac. (ii) (a) 847 lb./ac. (b) 706.6 lb./ac. (iii) Main effects of D and V are highly significant. Interaction D×V is significant. (iv) Av. yield of fruit in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅ *	D ₆	D ₇	D ₈	Mean
V ₁	727	1045	1248	1185	984	712	305	0	776
V ₂	3049	1320	3186	3853	2132	1420	871	9	1980
Mean	1888	1183	2217	2519	1558	1066	588	5	1378

S.E. of difference of two

1. D marginal means = 489.1 lb./ac.
2. V marginal means = 204.0 lb./ac.
3. V means at the same level of D = 576.9 lb./ac.
4. D means at the same level of V = 636.9 lb./ac.

Crop :- Tomato (winter).

Ref :- A.P. 59(115).

Site :- Vegetable Res. Stn., Kurnool.

Type :- 'CM'.

Object :—To find out the optimum spacing and manurial doses for Tomato crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black loam. (b) Refer soil analysis, Kurnool. (iii) N.A./26, 27.9.1959. (iv) (a) 2 ploughings, working *gorru* and *guntaka*. (b) Transplanting. (c) 6 to 8 ozs./ac. (d) As per treatments. (e) 1. (v) 10 ton./ac. of F.Y.M. (vi) Red round (medium). (vii) Irrigated. (viii) 2 weedings and hoeings with spade and forming bunds around the plots. (ix) N.A. (x) 7.12.1959 to 7.3.1960.

3. TREATMENTS :

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

- (1) 3 levels of spacing : S₀=1'×2', S₁=1½'×1½', and S₂=2'×2'.
- (2) 3 levels of N as A/S : N₀=0, N₁=20 and N₂=40 lb./ac.
- (3) 3 levels of P₂O₅ as Super : P₀=0, P₁=40 and P₂=80 lb./ac.

3. DESIGN :

(i) 3³ partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 72'×54'. (iii) 1. (iv) (a) 24'×18'. (b) 22'×14' for S₀, 21'×15' for S₁ and 20'×14' for S₂ (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tomato yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11692 lb./ac. (ii) 9072 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Tomato in lb./ac.

	P ₀	P ₁	P ₂	Mcan	S ₀	S ₁	S ₂
N ₀	9878	8915	9990	9594	10528	7706	10548
N ₁	8064	16330	15120	13171	13597	11939	13977
N ₂	11804	13462	11670	12312	11110	11178	14648
Mean	9915	12902	12260	11692	11745	10274	13058
S ₀	10595	12566	12074				
S ₁	7190	12589	11043				
S ₂	11950	13551	13663				

S.E. of any marginal mean = 3024 lb./ac.

S.E. of body of any table = 5238 lb./ac.

Crop :- Tomato (Rabi).

Ref :- A.P. 58(101).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CMV'.

Object :- To study the effect of spacings and manures on the yield of different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. after preparatory cultivation. (ii) (a) Black cotton. (b) N.A. (iii) 28.10.1958/26.11.1958. (iv) (a) 4 ploughings with iron mould plough as preparatory cultivation, levelling with *patta* and forming of ridges and furrows. (b) to (d) N.A. (e) 1. (v) 40 C.L./ac. of F.Y.M. as B.D. at the time of 3rd preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of transplanting. Weeding as and when required. (ix) 3.9". (x) 25.4.1959.

2. TREATMENTS :

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

(1) 3 varieties : V₁=Muruti, V₂=Marglobe and V₃=Sioux.

(2) 3 spacings : S₁=2'×1½', S₂=2'×2' and S₃=2'×3'.

(3) 3 manurial levels : M₁=10 lb./ac. of N+20 lb./ac. of P₂O₅+10 lb./ac. of K₂O, M₂=20 lb./ac. of N+40 lb./ac. of P₂O₅+20 lb./ac. of K₂O and M₃=30 lb./ac. of N+60 lb./ac. of P₂O₅+30 lb./ac. of K₂O.

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 24'×18'. (b) 20'×14'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of tomato. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8939 lb./ac. (ii) 1576 lb./ac. (iii) Main effects of V and S are significant. (iv) Av. yield of tomato in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	8413	9201	8325	8646	9562	8859	7518
V ₂	9999	14129	7957	10695	12186	8481	11419
V ₃	7500	7514	7417	7477	7812	6769	7850
Mean	8637	10281	7900	8939	9853	8036	8929
M ₁	9746	12139	7675				
M ₂	6351	9139	8618				
M ₃	9815	9566	7406				

S.E. of any marginal mean = 525 lb./ac.
S.E. of body of any table = 910 lb./ac.

Crop :- Tomato.

Ref :- A.P. 59(60).

Site :- Agri. Res. Instt., Rajindranagar.

Type :- 'CMV'.

Object :—To study the effect of spacings and manures on the yield different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. after preparatory cultivation. (ii) (a) Black cotton. (b) N.A. (iii) October 1959/- (iv) (a) 4 ploughings with iron mould board plough as preparatory cultivation, levelling with *patta* ridges and furrows were made with manual labour. (b) to (e) N.A. (v) 40 C.L./ac. of F.Y.M. as B.D. at the time of 3rd preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of transplantation. Weeding after every 15 days. (ix) 8.8". (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(101) on page 292.

5. RESULTS :

(i) 19827 lb./ac. (ii) 3300 lb./ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of fruit in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	21977	24509	28376	24954	22383	24572	27908
V ₂	16816	18417	12560	15931	16114	14841	16837
V ₃	19629	20587	15573	18596	18022	17847	19919
Mean	19476	21171	18836	19827	18840	19087	21555
M ₁	20236	22320	13964				
M ₂	18499	21051	17711				
M ₃	19688	20142	24835				

S.E. of any marginal mean = 1100 lb./ac.
S.E. of body of any table = 1905 lb./ac.

Crop :- Tomato (Rabi).

Ref :- A.P. 58(61).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CMV'.

Object :—To study the effect of spacings and manures on the yield of different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. after preparatory cultivation. (ii) (a) Black cotton soils. (b) N.A. (iii) 28.10.1958./26.11.1958. (iv) (a) Ploughings with iron mould board plough as preparatory cultivation, levelling with *patta*, making ridges and furrows. (b) to (e) N.A. (v) 40 C.L./ac. of F.Y.M. as basal dressing at the time of third preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of transplanting weeding twice a month regularly. (ix) 0.47". (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(101) on page 292.

Sub-plot treatments :2 varieties: V_1 =Canadian and V_2 =Bountiful.**3. DESIGN :**

(i) Split-plot. (ii) (a) 8 main-plots/replication; 2 sub-plots/main-plot. (iii) 3. (iv) (a) 24'×12'. (b) 20'×12'. (v) 2' on either side breadth wise. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Regular dusting with Geigy 1250 to prevent the attack of beetles. (iii) Pod yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 416 lb./ac. (ii) (a) 546.5 lb./ac. (b) 283.3 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of pods in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈	Mean
V ₁	428	259	628	741	445	410	88	8	376
V ₂	907	250	430	617	548	672	175	54	457
Mean	667	254	529	679	496	541	132	31	416

S.E. of difference of two

1. D marginal means = 315.5 lb./ac.
2. V marginal means = 81.8 lb./ac.
3. V means at the same level of D = 231.3 lb./ac.
4. D means at the same level of V = 355.4 lb./ac.

Crop :- French Beans.**Ref :- A.P. 58(94).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CMV'.****Object :-**To study the effect of spacing and manuring on the yield of different varieties of French Beans.**1. BASAL CONDITIONS :**(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 3.10 1958. (iv) (a) 6 ploughings with iron mould-board plough as preparatory tillage, levelling with *patta*, forming of ridges and furrows. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M as basal dose at the time of third preparatory ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of sowing. Weeding once a week regularly. (ix) 3'. (x) 17.2 1959.**2. TREATMENTS :**

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

(1) 3 varieties: V_1 =Canadian Red, V_2 =Bountiful and V_3 =Bolarum.(2) 3 spacings: $S_1=2 \times 1'$, $S_2=2' \times 1\frac{1}{2}'$ and $S_3=2' \times 2'$.(3) 3 manurial levels: $M_1=10$ lb./ac. of N+20 lb./ac. of P_2O_5 +10 lb./ac. of K_2O , $M_2=20$ lb./ac. of N+40 lb./ac. of P_2O_5 +20 lb./ac. of K_2O and $M_3=30$ lb./ac. of N+60 lb./ac. of P_2O_5 +30 lb./ac. of K_2O .**3. DESIGN :**(i) 3³ confd. (ii) (a) 9 plots/block; 3 blocks/replications. (b) N.A. (iii) 1. (iv) (a) 20'×14'. (b) 16'×10'. (v) 2'×2'. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) When the crop was 1½ months old signs of moisture worms appeared. When it was 2 months old, mist was noted; sulphur dusting done. After the formation of pods the fruit borers presence was noted. Endrine at 5cc per gallon of water sprayed. Regular dusting with Geigy-1250 dusted to prevent the attack of beetles. (iii) Nil. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4520 lb./ac. (ii) 1243 lb./ac. (iii) Main effects of V, S and M are significant. (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	4713	2624	2769	3369	2946	3283	3874
V ₂	5589	5110	4412	5037	3468	5371	6273
V ₃	6597	4394	4470	5154	3738	6055	5666
Mean	5633	4043	3884	4520	3384	4903	5271
M ₁	4024	2946	3183				
M ₂	6744	3956	4010				
M ₃	6131	5224	4459				

S.E. of any marginal mean = 414.4 lb./ac.

S.E. of the body of any table = 717.7 lb./ac.

Crop :- French Beans (Rabi).

Ref :- A.P. 59(56).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'CMV'.

Object :- To study the effect of spacing and manuring on the yield of different varieties of French Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) —. (ii) (a) Black cotton soil. (b) N.A. (iii) October, 1959. (iv) (a) 6 ploughings with iron mould-board plough as preparatory tillage, levelling with *patta*, forming of ridges and furrows. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M. as basal dose at the time of 3rd ploughing. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling was done after one week of transplantation. (ix) 9". (x) February, 1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(94) on page 296.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2487 lb./ac. (ii) 1106 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	2483	2016	1754	2084	2224	1679	2350
V ₂	2557	2363	1806	2242	2515	1883	2327
V ₃	3678	3166	2558	3134	3247	2617	3539
Mean	2906	2515	2039	2487	2662	2059	2739
M ₁	3436	2563	1987				
M ₂	2200	2272	1705				
M ₃	3082	2709	2425				

S.E. of any marginal mean = 368.8 lb./ac.

S.E. of body of any table = 638.6 lb./ac.

S.E. of difference of two

1. V marginal means	= 129.8 lb./ac.
2. S marginal means	= 72.2 lb./ac.
3. S means at the same level of V	= 144.4 lb./ac.
4. V means at the same level of S	= 194.2 lb./ac.

Crop :- Cluster Beans.**Ref :- A.P. 58(96).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CMV'.**

Object :—To find out a suitable combination of variety, spacing and manurial level for Cluster Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) 40 C.L./ac. of F.Y.M. as B.D.+20 lb./ac. of N as A/S+40 lb. of P_2O_5 as Super +20 lb./ac. of K_2O as Pot. Sul. (ii) Black cotton soil. (b) N.A. (iii) 2.7.1958. (iv) (a) Ploughing 4 times as preparatory cultivation, levelling with *patta* and forming of ridges and furrows with the help of manual labour. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M. after preparatory ploughing and before levelling the soil and making ridges and furrows. (vi) As per treatments. (vi) Irrigated. (vii) Gap-filling done after one week of sowing. Crop weeded regularly with the help of manual labour. (ix) 3' 8" (x) 2.11.1958.

2. TREATMENTS :

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

(1) 3 varieties : V_1 =Early long, V_2 =Surti long and V_3 =Nadiad.(2) 3 spacings ; S_1 =3'×1½', S_2 =2'×2' and S_3 =1½'×1'.(3) 3 manurial levels : M_1 =No manure, M_2 =30 lb./ac. of N+30 lb./ac. of P_2O_5 +15 lb./ac. of K_2O and M_3 =60 lb./ac. of N+60 lb./ac. of P_2O_5 +30 lb./ac. of K_2O .**3. DESIGN :**(i) 3³ confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) 54'×36'. (iii) 1. (iv) (a) 18'×12' (b) 16'×10'. (v) 2'×2'. (vi) Yes.**4. GENERAL ;**

(i) The growth was normal. No lodging. (ii) Powdery mildew was noticed when the crop was 5 months old. Sulphur dusting 3 times at an interval of one week. When the crop was 4 months old all the leaves and pods developed black spots. No control measures were taken for this. (iii) Pod yield. (iv) (a) 1938—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5260 lb./ac. (ii) 1073 lb./ac. (iii) Effect of S is highly significant. Other effects are not significant. (iv) Av. yield of pods in lb./ac.

	S_1	S_2	S_3	Mean	M_1	M_2	M_3
V_1	4319	4638	3390	5783	5714	5701	5932
V_2	4265	4230	6932	5142	5151	4950	5327
V_3	3545	4063	6954	4854	5559	5416	3588
Mean	4043	4311	7425	5260	5474	5356	4949
M_1	3813	5231	7378				
M_2	3736	4093	8239				
M_3	4579	3609	6659				

S.E. of any marginal mean = 357.7 lb./ac.

S.E. of body of any table = 619.5 lb./ac.

Crop :- Cluster Beans (Kharif).**Ref :- A.P. 59(57).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'CMV'.**

Object :—To study the effect of spacings and manurial doses on different varieties of Cluster Beans.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tomato. (c) 40 C.L./ac. of F.Y.M. as basal dose+20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Pot. Sul. (ii) (a) Black cotton soil. (b) N.A. (iii) July 1959/. (iv) (a) 4 ploughings, levelling with *patta*, forming of ridges and furrows with the help of manual labour. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 20 C.L./ac. of F.Y.M. after preparatory ploughing and before levelling the soil and making ridges and furrows. (vi) As per treatments. (vii) Unirrigated. (viii) Gap-filling was done after one week of transplanting. Crop weeded every 15 days with the help of manual labour. (ix) 26". (x) Nov. 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(96) on page 300.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield, (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 17983 lb./ac. (ii) 4305 lb./ac. (iii) Main effect of S is highly significant while that of V is significant. Other effects are not significant. (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
V ₁	23111	18006	24518	21878	21048	22182	22404
V ₂	15232	15360	21968	17520	19620	15498	17442
V ₃	11179	11747	20729	14552	13734	15847	14075
Mean	16507	15038	22405	17983	18134	17842	17974
M ₁	18137	17069	19196				
M ₂	15775	13675	24076				
M ₃	15609	14370	23943				

S.E. of any marginal mean = 1435 lb./ac.

S.E. of body of any table = 2485 lb./ac.

Crop :- Cluster beans (Kharif).**Ref :- A.P. 59(58).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'IV'.**

Object :—To study the effect of varieties and irrigation on the yield of different varieties of Cluster Beans.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) July 1959. (a) 4 ploughings, levelling with *patta*, forming of ridges and furrows with the help of manual labour. (b) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Gap-filling after one week of transplanting crop weeded after every 15 days with the help of manual labour. (ix) 26". (x) Nov. 1959.

2. TREATMENTS :

All combinations of (1) and (2)

2 varieties : V₁=Nadiad, V₂=Early long.3 irrigation levels : I₀=No irrigation, I₁=One irrigation, I₂=Two irrigations.**3. DESIGN :**

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 12'×16'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 10986 lb./ac. (ii) 1607 lb./ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of pod in lb./ac.

	I ₀	I ₁	I ₂	Mean
V ₁	9897	9444	9451	9597
V ₂	13017	11368	12736	12374
Mean	11457	10406	11094	10986

S.E. of I marginal mean = 568.2 lb./ac.
 S.E. of V marginal mean = 463.9 lb./ac.
 S.E. of body of table = 803.5 lb./ac.

Crop :- Horsegram.

Ref :- A.P. 55(20).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :—To study the effect of P₂O₅ on the yield of Horsegram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Horsegram. (c) As per treatments. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 21, 22.10.1955. (iv) (a) 3 ploughings. (b) N.A. (c) 20 lb./ac. (d) 6'×6'. (e) 2. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One weeding. (ix) N.A. (x) 11.2.1956.

2. TREATMENTS :

1. 5 tons/ac. of F.Y.M.
2. 5 tons/ac. of F.Y.M. + 20 cwts/ac. of Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 18.5'×15.2'. (b) 16.5'×13.2'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 122 lb./ac. (ii) 42.8 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	76	169

S.E./mean = 12.3 lb./ac.

Crop :- Bengal Gram.

Ref :- A.P. 54(15).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To study whether artificial introduction of N fixing bacteria (by the inoculation of legume seed) is necessary for soils at Rajendranagar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 275 lb./ac. of paddy fertilizer mixture. (ii) (a) Clay loam. (b) N.A. (iii) 13.11.1954. (iv) (a) and (b) One ploughing and two harrowings. (c) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) 2 weedings. (ix) .09%. (x) 26.2.1955.

2. TREATMENTS:

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

(1) 3 doses of inoculation : I_0 =Control (no inoculation), I_1 =Inoculam and I_2 =Double Inoculam.

(2) 2 levels of N as A/S : N_0 =0 and N_1 =30 lb./ac.

(3) 2 levels of P_2O_5 as Super : P_0 =0 and P_1 =30 lb./ac.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 65'×18'. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good. (ii) No. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 621 lb./ac. (ii) 109.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	Mean	P_0	P_1
N_0	623	584	656	621	624	617
N_1	603	678	582	621	553	688
Mean	613	631	619	621	589	653
P_0	618	560	589			
P_1	608	702	649			

S.E. of N or P marginal mean = 25.8 lb./ac.
 S.E. of I marginal mean = 31.6 lb./ac.
 S.E. of body of N×I or P×I table = 44.7 lb./ac.
 S.E. of body of N×P table = 36.5 lb./ac.

Crop :- Horsegram.

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object —Type C—To compare the responses of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) July 1959. (v) to (ix), NA. (x) October—November.

2. TREATMENTS:

0 =Control (no manure).

p_1 =30 lb./ac. of P_2O_5 as Super,

p_2 =60 lb./ac. of P_2O_5 as Super.

n_1p_1 =30 lb./ac. of P_2O_5 as Super+an equal amount of N present in p_1 .

n_2p_2 =60 lb./ac. of P_2O_5 as Super+an equal amount of N present in p_2 .

p_1' =30 lb./ac. of P_2O_5 as Mono ammonium phosphate.

p_2' =60 lb./ac. of P_2O_5 as Mono ammonium phosphate.

3. DESIGN:

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of Type A and the other half of Type B on crops other than the legumes. The three trials on legumes are of Type C. Residual effects of phosphate application are studied on Type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	P ₁	P ₂	n ₁ P ₁	n ₂ P ₂
Av. yield	181	230	263	280	337

G.M. = 258 lb./ac., S.E. = 30.3 lb./ac. and no. of trials = 3.

Crop :- Horsegram.

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) July 1959. (v) to (ix) N.A. (x) October—November.

2. TREATMENTS :

0 = Control (no manure).

p₁ = 30 lb./ac. of P₂O₅ as Super.

p₂ = 60 lb./ac. of P₂O₅ as Super.

n p₁ = 30 lb./ac. of P₂O₅ as Super + an equal amount of N present in p₁'.

n₂p₂ = 60 lb./ac. of P₂O₅ as Super + an equal amount of N present in p₂'.

p₁' = 30 lb./ac. of P₂O₅ as Mono ammonium phosphate.

p₂ = 60 lb./ac. of P₂O₅ as Mono ammonium phosphate.

3. DESIGN and 4. GENERAL :

Same as in experiment no. 59(SFT) type C on page 303 conducted at Karimnagar.

5. RESULTS :

Treatment	0	P ₁	P ₂	n ₁ P ₁	n ₂ P ₂	p ₁ '	p ₂ '
Av. yield	304	346	411	420	469	321	411

G.M. = 383 lb./ac. S.E. = 69.8 lb./ac. and no. of trials = 5.

Crop :- Horsegram.

Ref :- A.P. 58(SFT).

Site :- Krishna.

Type :- 'M'.

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) July. (v) to (ix) N.A. (x) October—November.

2. TREATMENTS :

0 = Control (no manure).

p₁ = 30 lb./ac. of P₂O₅ as Super.

p₂ = 60 lb./ac. of P₂O₅ as Super.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) Type C on page 303 conducted at Karimnagar.

5. RESULTS :

Treatment	0	p ₁	p ₂
Av. yield	123.4	139.9	148.1

G.M. = 137.1 lb./ac. S.E. = 2.91 lb./ac. and no of trials = 12.

Crop :- Black gram.**Ref :- A.P. 58(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the response of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) June—July, 1958. (v) to (ix) N.A. (x) September—October, 1958.

2. TREATMENTS :

0 = Control (no manure).

 $p_1 = 30 \text{ lb./ac. of } P_2O_5 \text{ as Super.}$ $p_2 = 60 \text{ lb./ac. of } P_2O_5 \text{ as Super.}$ **3. DESIGN :**

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	370	436	436

G.M. = 414 lb./ac. ; S.E. = 13.4 lb./ac. and no of trials = 17.

Crop :- Black gram.**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the response of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) June—July, 1959. (v) to (ix) N.A. (x) September—October, 1959.

2. TREATMENTS :

0 = Control (no manure).

 $p_1 = 30 \text{ lb./ac. of } P_2O_5 \text{ as Super.}$ $p_2 = 60 \text{ lb./ac. of } P_2O_5 \text{ as Super.}$ $n_1p_1 = 30 \text{ lb./ac. of } P_2O_5 \text{ as Super} + \text{an equal amount of N present in } p_1'$ $n_2p_2 = 60 \text{ lb./ac. of } P_2O_5 \text{ as Super} + \text{an equal amount of N present in } p_2'$ $p_1' = 30 \text{ lb./ac. of } P_2O_5 \text{ as Mono Ammonium phosphate.}$ $p_2' = 60 \text{ lb./ac. of } P_2O_5 \text{ as Mono Ammonium phosphate.}$ **3. DESIGN and 4. GENERAL :**

Same as in expt. no. 58(SFT) type C above conducted at Guntur.

5. RESULTS :

Treatment	0	p_1	p_2	n_1p_1	n_2p_2	p_1'	p_2'
Av. yield	354	494	592	502	568	494	543

G.M. = 507 lb./ac. ; S.E. = 26.8 lb./ac. and no. of trials = 6.

Crop :- Black gram.**Ref :- A.P. 58(SFT).****Centre :- Krishna. (c.f.).****Type :- 'M'.**

Object :— Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black coastal. (iii) Nil. (iv) June—July, 1958. (v) to (ix) N.A. (x) September—October, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 305 conducted at Guntur.

5. RESULTS :

Treatment	0	P ₁	P ₂
Av. yield	107	123	99

G.M. = 110 lb./ac.; S.E. = 9.3 and no. of trials = 5.

Crop :- Black gram.**Ref :- A.P. 59(SFT).****Centre :- Krishna. (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black coastal. (iii) Nil. (iv) June—July 1959. (v) to (ix) N.A. (x) September—October, 1959.

2. TREATMENTS :

0 =Control (no manure).

P₁ =30 lb./ac. of P₂O₅ as Super.P₂ =60 lb./ac. of P₂O₅ as Super.n₁P₁=30 lb /ac. of P₂O₅ as Super+an equal amount of N present in p₁'.n₂P₂=60 lb./ac. of P₂O₅ as Super+an equal amount of N present in p₂'.P₁' =30 lb./ac. of P₂O₅ as Mono Ammonium phosphate.P₂' =60 lb./ac. of P₂O₅ as Mono Ammonium phosphate.**3. DESIGN and 4. GENERAL :**

Same as in expt. no. 58(SFT) type C on page 305 conducted at Guntur.

5. RESULTS :

Treatment	0	P ₁	P ₂	n ₁ P ₁	n ₂ P ₂	P ₁ '	P ₂ '
Av. yield	607	667	708	732	806	634	691

G.M. = 692 lb./ac.; S.E. = 2.9 lb./ac. and no. of trials =15.

Crop :- Bengalgram.**Ref :- A.P. 59(SFT).****Centre :- Krishna (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) October—November, 1959. (v) to (ix) N.A. (x) March 1960.

2. TREATMENTS :

- 0 = Control (no manure).
 p_1 = 30 lb./ac. of P_2O_5 as Super.
 p_2 = 60 lb./ac. of P_2O_5 as Super.
 n_1p_1 = 30 lb./ac. of P_2O_5 as Super + an equal amount of N present in p_1 .
 n_2p_2 = 60 lb./ac. of P_2O_5 as Super + an equal amount of N present in p_2 .
 p_1' = 30 lb./ac. of P_2O_5 as Mono Ammonium phosphate.
 p_2' = 60 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year. 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of Type A and the other half of Type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly located villages in each of the 4 zones at the rate of one experiment per village (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2	n_1p_1	n_2p_2	p_1'	p_2'
Av. yield	132	255	272	272	321	230	239

G.M. = 246 lb./ac. S.E. = 9.9 lb./ac. and no. of trials = 3.

Crop :- Bengalgram.

Ref :- A.P. 58(SFT).

Centre :- Warangal (c.f.).

Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Red and deep black. (iii) Nil. (iv) October—November 1958. (v) to (ix) N.A. (x) March 1959.

2. TREATMENTS :

- 0 = Control (no manure).
 p_1 = 30 lb./ac. of P_2O_5 as Super.
 p_2 = 60 lb./ac. of P_2O_5 as Super.
 p_1' = 30 lb./ac. of P_2O_5 as Mono Ammonium phosphate.
 p_2' = 60 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59 (SFT) type C on page 306 conducted at Krishna.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	156	206	230	206	173

G.M. = 194 lb./ac. S.E. = 14.0 lb./ac. and no. of trials = 9.

Crop :- Bengalgram.**Ref :- A.P. 59(SFT).****Centre :- Warangal. (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) October—November, 1959. (v) to (ix) N.A. (x) March 1960.

2. TREATMENTS to 4. GENERAL ;

Same as in expt. no. 59(SFT) type C on page 306 conducted at Krishna.

5. RESULTS :

Treatment	0	P ₁	P ₂	n ₁ P ₁	n ₂ P ₂	P ₁ '	P ₂ '
Av. yield	181	222	214	280	263	230	255

G.M. = 235 lb./ac. S.E. = 24.4 lb./ac. and no. of trials = 6.

Crop :- Mung.**Ref :- A P. 58(SFT).****Centre :- Srikakulam. (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and others. (iii) Nil. (iv) N.A. (v) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).

P₁ =30 lb./ac. of P₂O₅ as Super.P₂ =60 lb./ac. of P₂O₅ as Super.**3. DESIGN :**

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on a oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on the crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	P ₁	P ₂
Av. yield	280	387	502

G.M. = 390 lb./ac. ; S.E. = 19.2 lb./ac. and no. of trials = 12.

Crop :- Greengram.**Ref :- A.P. 59(SFT).****Centre :- Srikakulam. (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and others. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

P_1 = 30 lb./ac. of P_2O_5 as Super.

P_2 = 60 lb./ac. of P_2O_5 as Super.

n_1P_1 = 30 lb./ac. of P_2O_5 as Super + an equal amount of N present in P_1 '.

n_2P_2 = 60 lb./ac. of P_2O_5 as Super + an equal amount of N present in P_2 '.

P_1' = 30 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

P_2' = 60 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 308 conducted at Srikakulam.

5. RESULTS :

Treatment	0	P_1	P_2	n_1P_1	n_2P_2	P_1'	P_2'
Av. yield	255	321	337	370	411	346	354

G.M. = 342 lb./ac. ; S.E. = 33.2 lb./ac. and no. of trials = 9.

Crop :- Mung.

Ref :- A.P. 58(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 308 conducted at Srikakulam.

5. RESULTS :

Treatment	0	P_1	P_2
Av. yield	230	321	485

G.M. = 345 lb./ac. ; S.E. = 36.1 lb./ac. and no. of trials = 9.

Crop :- Greengram.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to different sources and levels of P.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

P_1 = 30 lb./ac. of P_2O_5 as Super.

P_2 = 60 lb./ac. of P_2O_5 as Super.

n_1P_1 = 30 lb./ac. of P_2O_5 as Super + an equal amount of N present in P_1 '.

n_2P_2 = 60 lb./ac. of P_2O_5 as Super + an equal amount of N present in P_2 '.

P_1' = 30 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

P_2' = 60 lb./ac. of P_2O_5 as Mono Ammonium phosphate.

3. DESIGN and 4. GENERAL :

Same as in experiment no. 58(SFT) type C on page 308 conducted at Srikakulam.

5. RESULTS :

Treatment	0	P ₁	P ₂	n ₁ P ₁	n ₂ P ₂	P ₁ '	P ₂ '
Av. yield	609	741	765	773	806	699	732

G.M. = 732 lb./ac.; S.E. = 15.1 lb./ac. and no. of trials = 12.

Crop :-Tur.

Ref :-A.P. 56(105).

Site :-Agri. Expt. Farm, Dindi.

Type :- 'M'.

Object :—To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 7.7.1956. (iv) (a) Ploughing. (b) Behind the plough. (c) 8 lb./ac. (d) 3' between rows. (e) —. (v) Nil. (vi) C-11. (vii) Unirrigated. (viii) Harrowing. (ix) 35°40'. (x) 22.2.1957.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 levels of N: N₀=0, N₁=15 and N₂=30 lb./ac.

(2) 3 levels of P₂O₅: P₀=0, P₁=15 and P₂=30 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 33'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Tur. (iv) (a) 1955—contd. (expt. failed in 1955). (b) Yes. (c) Nil. (v) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 154 lb./ac. (ii) 50.6 lb./ac. (iii) N × P interaction alone is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	100	150	170	140
P ₁	200	200	150	183
P ₂	140	90	190	140
Mean	147	147	170	154

S.E. of any marginal mean = 20.6 lb./ac.

S.E. of body of table = 35.7 lb./ac.

Crop :-Tur.

Ref :-A.P. 58(127).

Site :-Agri. Expt. Farm, Dindi.

Type :-'M'.

Object :—To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tur. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (ii) 5.7.1958. (iv) (a) Ploughing. (b) Sowing behind the plough. (c) 8 lb./ac. (d) 3' between rows. (e) —. (v) Nil. (vi) C-11. (vii) Unirrigated. (viii) Harrowing. (ix) 21.04°. (x) 19.1.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(105) on page 310.

5. RESULTS :

(i) 256 lb./ac. (ii) 112.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	220	300	300	273
P ₁	260	260	220	247
P ₂	300	220	220	247
Mean	260	260	247	256

S.E. of any marginal mean = 45.9 lb./ac.

S.E. of body of table = 79.4 lb./ac.

Crop :-Tur.**Site :-Agri. Expt. Farm, Dindi.****Ref. :-A.P. 59(13).****Type :-'M'.**

Object :-To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) (a) Red chalka soil. (b) N.A. (iii) 4.7.1959. (iv) (a) 4 buckerings before sowing. (b) to (e) N.A. (v) Nil. (vi) C—11. (vii) Unirrigated. (viii) 4 buckerings. (ix) 22.43'. (x) 12.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(105) on page 310.

5. RESULTS :

(i) 372 lb./ac. (ii) 81.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	377	356	354	362
P ₁	390	387	240	339
P ₂	369	486	387	414
Mean	379	410	327	372

S.E. of any marginal mean = 33.4 lb./ac.

S.E. of body of table = 57.8 lb./ac.

Crop :- Tur.**Site :- Govt. Main Agri. Farm, Warangal.****Ref :- A.P. 55(6).****Type :- 'M'.**

Object :-To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Warangal. (iii) 23.6.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) C—11 (medium). (vii) Unirrigated. (viii) Hand weeding twice and inter-culturing twice. (ix) 39.41'. (x) 9.2.1956.

2. TREATMENTS :

Same as in expt. no. 56(105) on page 310.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 3' 6" 4" × 60'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Light attack of pod-borer observed. (iii) Grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 662 lb./ac. (ii) 14.8 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	605	640	645	630
P ₁	620	655	685	653
P ₂	650	695	765	703
Mean	625	663	698	662

S.E. of any marginal mean = 6.0 lb./ac.
S.E. of body of table = 10.5 lb./ac.

Crop :- Tur (Kharif).

Ref :- A.P. 57(113).

Site :- Govt. Main Agri. Farm, Warangal.

Type :- 'M'.

Object :—To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) 20 lb./ac. of N as A/S and 10 lb./ac. of P₂O₅ as Super. (ii) (a) *Chalka*. (b) Refer soil analysis, Warangal. (iii) 26.6.1957. (iv) (a) Ploughing twice. (b) Sowing behind the seed drill. (c) N.A. (d) 3' between rows. (e) —. (v) Nil. (vi) C—11 (S.T.I.). (vii) Unirrigated. (viii) Hand weeding. (ix) N.A. (x) 20.1.1958.

2. TREATMENTS :

Same as in expt. no. 56(105) on page 310.

3. DESIGN :

(i) 1 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 66' × 33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—contd. (expt. failed in 1956). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 592 lb./ac. (ii) 157.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	620	555	465	547
P ₁	645	655	577	626
P ₂	520	680	610	603
Mean	595	630	551	592

S.E. of any marginal mean = 64.1 lb./ac.
S.E. of body of table = 111.1 lb./ac.

Crop :- Tur (Kharif).

Ref. :- A.P. 59(19).

Site :- Govt. Main Agri. Farm, Warangal.

Type :- 'M'.

Object :- To study the effect of N and P on Tur.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sunhemp and *kulthi*. (c) Nil. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 9.6.1959. (iv) (a) Three ploughings. (b) Drilling by seed drill. (c) N.A. (d) 3' between rows. (e) —. (v) Nil. (vi) C—11 (late). (vii) Unirrigated. (viii) Interculturing twice and one hand weeding. (ix) 37". (x) 13.1.1960.

2. TREATMENTS :

Same as in expt. no. 56(105) on page 310.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 60' × 36'4". (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Slight incidence of pod borer. (iii) Grain yield. (iv) (a) 1955—contd. (expt. failed in 1956). (b) No. (c) Nil. (v) (a) Dindi. (b) Nil. (vi) Due to heavy rains the crop was not healthy. (vii) Nil.

5. RESULTS :

(i) 147 lb./ac. (ii) 24.17 lb./ac. (iii) Main effects of N and P and interaction N × P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	110	360	85	185
P ₁	45	230	170	148
P ₂	110	180	30	107
Mean	88	257	95	147

S.E. of any marginal mean = 9.86 lb./ac.
S.E. of body of table = 17.09 lb./ac.

Crop :- Sugarcane.

Ref :- A.P. 54(56).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of N on the yield and juice quality of cane.

1. BASAL CONDITIONS :

(i) (a) *Ragi*—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) (a) Sandy to clay loam. (b) Refer soil analysis. Anakapalle. (iii) 24, 25.3.1954. (iv) (a) N.A. (b) Planting in trenches. (c) 15,000 three budded setts./ac. (d) Rows 3.3' apart. (e) —. (v) Nil. (vi) 45.62". (vii) Irrigated. (viii) Weeding, earthing up, propping up of cane. (ix) 45.62". (x) 18.4.1955.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of N as A/S : N₁=100 and N₂=200 lb./ac.

(2) 7 split applications of N : T₁=½ dose at 1½ months (a) and the other ½ dose at 3 months. T₂=(a)+other half at 4½ months. T₃=(a)+other half at 6 months after sowing. T₄=½ dose at 3 months (b)+other half at 4½ months. T₅=(b)+other half 6 months after sowing. T₆=½ dose at 4½ months and the other 6 months after sowing. and T₇=Full dose at 6 months after sowing.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 36.96' × 29.70'. (b) 33' × 19.80'. (v) 1.02 × 4.95'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight incidence of white fly B.H.C. sprayed. (iii) Biometric observations and cane yield. (iv) (a) 1953—1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 40.88 tons/ac. (ii) 5.34 tons/ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
N ₁	42.96	41.70	37.35	38.18	37.31	34.00	39.96	38.78
N ₂	44.63	43.68	48.36	40.65	43.15	39.96	40.38	42.97
Mean	43.80	42.69	42.85	39.42	44.23	36.98	40.17	40.88

S.E. of N marginal mean = 1.01 tons/ac.

S.E. of T marginal mean = 1.89 tons/ac.

S.E. of body of table = 2.67 tons/ac.

Crop :- Sugarcane.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 54(85).

Type :- 'M'.

Object :- To study the effect of N on the yield of cane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 16.2.1954. (iv) (a) Trench Digging, (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3 between rows. (e) —. (v) Nil. (vi) CO—419. (vii) Irrigated. (viii) Trash twist propping and earthing up. (ix) 58.14". (x) 7 and 8.1.1955.

2. TREATMENTS :

2 levels of N : N₁=10, and N₂=200 lb./ac., N applied $\frac{1}{3}$ as G.N.C. and $\frac{2}{3}$ as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 42.24'×26.4' (b) 33.00'×19.8'. (v) 4.62'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Very mild attack of early shoot borer. (iii) Cane yield. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 52.2 tons/ac. (ii) 7.47 tons/ac. (iii) Treatment difference is not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂
Av. yield	49.7	54.7

S.E./mean = 3.04 tons/ac.

Crop :- Sugarcane.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 54(80).

Type :- 'M'.

Object :- To study the effect of continuous application of N to Sugarcane and its rotational crops.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Ragi—Sugarcane. (b) Paddy—Ragi. (c) As per treatments (ii) (a) Loam. (b) Refer soil analysis Anakapalle. (iii) —/11.3.1954. (iv) (a) Digging trenches, (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3'4"×3'4". (e) —. (v) As per treatments. (vi) CN—419. (vii) Irrigated. (viii) Three weedings. Two trash twist proppings. (ix) 44.10%. (x) 16 to 19.3.1955.

2. TREATMENTS :

5 manurial treatments : M_0 =No manure, M_1 =100 lb./ac. of N as A/S in two equal doses—1½ months after planting and in June. M_2 =100 lb./ac. of N as G.N.C. in two equal doses 1½ months after planting and in June, M_3 =100 lb./ac. of N as F.Y.M. as B.D. and M_4 =100 lb./ac of N as G.N.C. and A/S in 2 : 1 ratio of N.

3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6'×36.3'. (b) 33.0'×26.4'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of white fly—Parathion sprayrd. (iii) Cane yield. (iv) (a) 1951-61 (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 42.16 tons/ac. (ii) 1.04 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	25.73	49.06	46.62	39.79	49.60

S.E./mean = 0.47 tons/ac.

Crop :- Sugarcane.

Ref :- A P. 55(75).

Site :- Sugarcane Res. Stn , Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of N to Sugarcane and its rotational crops.

1. BASAL CONDITIONS :

(i) Sugarcane Paddy—Ragi—Sugarcane. (b) Paddy—Ragi. (c) As per treatments (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 18.3.1955. (iv) (a) Digging trenches. (b) Trench planting (c) 15,000 three budded setts/ac. (d) 3'4" between rows. (e) —. (v) As per treatments. (vi) CO—419. (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 64.29%. (x) 15.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 54(80) on page 314.

4. GENERAL :

(i) Satisfactory. (ii) Attack of white mite—control measure N.A. (iii) Cane yield. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 28.17 tons/ac. (ii) 0.92 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	18.94	31.76	30.29	27.67	32.17

S.E./mean = 0.41 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(45).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of N to Sugarcane and its rotational crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1956. (iv) (a) Digging trenches. (b) In trenches. (c) 15000 three budded setts/ac. (d) 3.3' between rows. (e)—. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Two weedings. (ix) 56.31". (x) 13 to 16.3.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(80) on page 314.

4. GENERAL :

(i) Normal. (ii) D.D.T. was sprayed to prevent incidence of early shoot borer. (iii) Biometric observations and cane yield. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 32.06 tons/ac. (ii) 2.6 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	20.27	36.50	33.87	29.85	39.82

S.E./mean = 1.17 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(63).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of N to Sugarcane and its rotational crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Ragi*—Sugarcane. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1957. (iv) (a) Digging trenches. (b) Planting in trenches. (c) 15000 three budded setts/ac. (d) 3.3' between lines. (e)—. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Two weedings, hoeing and two earthing up. (ix) N.A. (x) 9, 10.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(80) on page 314.

4. GENERAL :

(i) Satisfactory. (ii) Early shoot borer noticed—D.D.T. sprayed. (iii) Cane yield. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 27.08 tons/ac. (ii) 4.03 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	17.12	31.38	30.46	23.76	32.69

S.E./mean = 1.80 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(26).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of N to Sugarcane and its rotational crops.

1. BASAL CONDITIONS :

(i) (a) Rice—*Ragi*—Sugarcane. (b) Rice. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1958. (iv) (a) N.A. (b) In trenches. (c) 15000 three budded setts/ac. (d) 3.3' between trenches. (e)—. (v) Nil. (vi) CO—419(late). (vii) Irrigated. (viii) Two weedings and hoeings and two culturings. (ix) N.A. (x) 12.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(80) on page 314.

4. GENERAL :

(i) Good. (ii) Attack of early shoot borer.—D.D.T. sprayed. (iii) Yield of cane. (iv) (a) 1951—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 32.86 tons/ac. (ii) 3.93 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	23.05	39.97	36.28	26.09	38.90

S.E./mean = 1.76 tons/ac.

Crop :- Sugarcane.

Ref :- A P. 59(96).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of N to Sugarcane and its rotational crops.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy and *Ragi*—Sugarcane. (b) Paddy and *Ragi*. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1959. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3'4" between rows. (e)—. (v) As per treatments. (vi) CO—419. (vii) Irrigated. (viii) Weeding, hoeing and earthing up. (ix) 41.24%. (x) 2nd fortnight of March, 1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(80) on page 314.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1951—1961. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 35.66 tons/ac. (ii) 3.76 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	27.32	39.46	36.89	37.39	37.27

S.E./mean = 1.68 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 55(76).

Site :- Sugarcane Res. Stn , Anakapalle.

Type :- 'M'.

Object :—To find out the effects of different methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna* for fodder. (c) Nil. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 3.2.1955. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3'4" between rows. (e) —. (v) Nil. (vi) CO—419. (vii) Irrigated. (viii) Hoeing, weeding and earthing up. Propping by trash twist. (ix) 64.29%. (x) Jan, 1956.

2. TREATMENTS :

8 methods of application of N as Urea : $M_1=100$ lb./ac. in 2 equal doses by pocketing, $M_2=100$ lb./ac. in 2 equal doses by superficial application, $M_3=1$ st dose of 50 lb./ac. by pocketing+2nd dose of 20 lb./ac. by spraying, $M_4=1$ st dose of 20 lb./ac. by spraying+50 lb./ac. by pocketing, $M_5=40$ lb./ac. by spray in 2 equal doses, $M_6=1$ st dose of 20 lb./ac.+2nd dose of 40 lb./ac. by spraying, $M_7=1$ st dose of 40 lb./ac.+2nd dose of 20 lb./ac. by spraying, and $M_8=80$ lb./ac. by spraying in 2 equal doses.

The quantity of water used for spray is at the rate of 75 galls. for 20 lb. N.

1st and 2nd doses are given 45 and 90 days after planting respectively.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 40.92'×26.40'. (b) 33.00'×19.80' (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 44.09 tons/ac. (ii) 2.69 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	50.63	45.79	45.16	45.79	36.78	39.32	43.21	46.03

S.E./mean = 1.34 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(47).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To find out the effect of different methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna* for fodder. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 16.2.1956. (iv) (a) Digging trenches. (b) Planting in trenches. (c) 15,000 three-budded setts/ac. (d) 3'4" between rows. (e) Nil. (v) Nil. (vi) CO—419. (vii) Irrigated. (viii) Crop kept erect by trash twist propping. (ix) 56.21'. (x) 9, 10.2.1957.

2. TREATMENTS :

Same as in expt. no. 55(76) on page 317.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 47.52'×26.40'. (b) 33.00'×19.80'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Very satisfactory. (ii) D.D.T. was sprayed to prevent the incidence of early shoot-borer. (iii) Biometric observations and yield of cane. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 41.44 tons/ac. (ii) 4.01 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatments	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	46.16	41.56	40.90	45.76	36.34	36.80	42.32	41.67

S.E./mean = 2.00 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 57(97).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :- To find out the effect of different methods of application of N on the yield of sugarcane.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Jonna* for fodder. (c) Nil; (ii) (a) Loam. (b) Refer soil analysis Anakapalle (iii) 10.2.1957. (iv) (a) Diggin Trenches. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3'4" between rows. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Hoeing, weeding, earthing up and propping by trash twist. (ix) 44.70%. (x) 18.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 55(76) on page 317.

5. RESULTS :

(i) 39.49 tons/ac. (ii) 2.33 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Av. yield	47.11	44.08	42.49	40.02	32.09	38.43	32.29	39.39

S.E./mean = 1.17 ton/ac.

Crop :- Sugarcane.**Ref :- A.P. 56(54).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :- To study the effect of different levels of N, P and K and their combinations on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 15, 16.3.1956. (iv) (a) N.A. (b) In trenches. (c) 15000 three budded setts/ac. (d) Between trenches 3'4". (e) N.A. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) 4 weedings, 2 earthing up. Crop was given trash twist propping twice. (ix) 56.21%, (x) 25.3.1957 to 7.4.1957.

2. TREATMENTS :

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

(1) 3 levels of N : N₀=0, N₁=100 and N₂=200 lb./ac.(2) 3 levels of P₂O₅ : P₀=0, P₁=100 and P₂=200 lb./ac.(3) 3 levels of K₂O : K₀=0, K₁=200 and K₂=400 lb./ac.

Manures applied in two doses, 45 and 90 days after sowing.

3. DESIGN :(i) 3³ partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 1/32.9 ac.

(b) 1/60.6 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 35.31 tons/ac. (ii) 2.84 tons/ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	23.18	23.96	25.55	24.23	24.15	23.28	25.27
N ₁	37.26	38.41	41.99	39.22	36.96	41.11	39.59
N ₂	40.52	42.70	44.26	42.49	39.15	42.18	46.15
Mean	33.64	35.02	37.27	35.31	33.42	35.52	37.00
K ₀	31.55	32.71	36.00				
K ₁	34.04	34.91	37.62				
K ₂	35.37	37.45	38.19				

S.E. of any marginal mean = 0.49 ton/ac.

S.E. of body of any table = 0.85 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(76).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different levels of N, P and K and their combinations on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 60 lb./ac. of N (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) —/22, 23.3.1957. (iv) (a) Trenching and hoeing in trenches. (b) Planting in trenches. (c) to (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) 2 weedings and earthing up twice, trash twist propping—2 times. (ix) 42.74°. (x) March 1958.

2. TREATMENTS :

Same as in expt. No. 56(54) on page 319.

3. DESIGN :

(i) 3³ Partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 44.68' × 26.40'. (b) 39.6' × 16.5'. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(54) on page 319.

5. RESULTS :

(i) 33.12 tons/ac. (ii) 3.66 tons/ac. (iii) Main effects of N and K and interaction N × K are significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	24.41	23.61	26.51	24.84	24.61	25.49	24.42
N ₁	36.93	37.71	37.09	37.24	34.23	38.48	39.01
N ₂	37.87	37.18	36.83	37.29	29.98	41.51	40.38
* Mean	33.07	32.83	33.48	33.12	29.61	35.16	34.59
K ₀	28.45	29.69	30.69				
K ₁	35.31	35.25	34.92				
K ₂	35.45	33.55	34.83				

S.E. of any marginal mean = 0.86 tons/ac.

S.E. of body of any table = 1.50 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 58(68).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the effect of different levels of N, P and K and their combination on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (c) 60 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 25, 26.3.1958. (iv) (a) Trenching. (b) Planting in trenches. (c) to (e) N.A. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) 2 weedings, 2 earthings and 2 trash twist proppings. (ix) 49.76". (x) March, 1959.

2. TREATMENTS :

Same as in expt. no. 56(54) on page 319.

3. DESIGN :

(i) 3³ partially confd. (ii) (a) 9 plots/blocks ; 3 blocks/replication. (b) 39.60'×297.00'. (iii) 2. (iv) (a) 39.60'×33.00'. (b) 36.30'×19.80'. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(54) on page 319.

5. RESULTS :

(i) 32.42 tons/ac. (ii) 3.14 tons/ac. (iii) Main effects of N and P and interactions N×P and P×K are significant. Other effects are not significant. (iv) Av. cane yield in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	23.09	29.70	28.06	26.95	28.06	26.33	26.46
N ₁	34.15	36.78	37.06	36.00	33.39	37.94	36.67
N ₂	35.66	35.02	32.22	34.30	34.61	33.82	34.47
Mean	30.97	33.83	32.45	32.42	32.02	32.70	32.53
K ₀	29.05	35.07	31.94				
K ₁	30.24	35.32	32.54				
K ₂	33.62	31.10	32.87				

S.E. of any marginal mean = 0.74 tons/ac.

S.E. of body of any table = 1.28 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 57(95).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'M'.**

Object :—To study the effect of application of P by different methods.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Jonna*—Sugarcane. (b) *Jonna*. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) —/14.3.1957. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 45.11". (x) 31.3.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels and methods of application of P₂O₅ as Super : P₀=0, P₁=25 lb./ac. applied by spraying 90 days after planting and P₂=100 lb./ac. applied by placement 90 days after planting.

(2) 2 levels of G.L. : G₀=0 and G₁=5000 lb./ac.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 39.60' × 26.40'. (b) 33.00' × 19.8'. (v) 3.3' × 3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 45.19 tons/ac. (ii) 3.85 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean
G ₀	44.31	46.82	44.39	45.17
G ₁	43.70	48.29	43.60	45.20
Mean	44.01	47.56	44.00	45.19

S.E. of P marginal mean = 1.36 tons/ac.
 S.E. of G marginal mean = 1.11 tons/ac.
 S.E. of body of table = 1.93 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(118).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of application of P by different methods.

1. BASAL CONDITIONS:

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) —/14.3.1958. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Weeding, hoeing, earthing up and trash twist propping. (ix) 61.14%. (x) 31.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(95) on page 321.

5. RESULTS :

(i) 48.00 tons/ac. (ii) 7.04 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean
G ₀	45.66	46.76	47.93	46.78
G ₁	50.22	48.04	49.38	49.21
Mean	47.94	47.40	48.65	48.00

S.E. of P marginal mean = 2.48 tons/ac.
 S.E. of G marginal mean = 2.03 tons/ac.
 S.E. of body of the table = 3.52 tons/ac..

Crop :- Sugarcane.

Ref. :- A.P. 59(97).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of application of P by different methods.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) (a) Sandy loam. (b) N.A. (iii) —/14.3.1959. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Earthing up, weeding, hoeing and trash twist propping. (ix) 35.04". (x) 29.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expf. no. 57(95) on page 321.

5. RESULTS :

(i) 45.36 tons/ac. (ii) 2.59 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean
G ₀	44.22	46.31	46.15	45.56
G ₁	46.05	43.12	46.32	45.16
Mean	45.13	44.71	46.23	45.36

S.E. of P marginal mean = 0.91 tons/ac.

S.E. of G marginal mean = 0.75 tons/ac.

S.E. of body of the table = 1.29 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 57(96).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To find out the best time of application of N to Sugarcane under swamp conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) —/10.2.1957. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3'×4" between rows. (e) —. (v) Nil. (vi) CO-419(late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. Propping by trash twist. (ix) 44.70". (x) 28.2.1958.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of N as A/S : N₁=100 and N₂=200 lb./ac.

(2) 2 times of application : T₁=In two equal doses 45 and 90 days after planting. T₂=30% of N at planting and 70% during the 8th week after planting.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 39.60'×26.40'. (b) 33.00'×19.80'. (v) 3.3'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 38.97 tons/ac. (ii) 2.34 tons/ac. (iii) Effect of T alone is significant. (iv) Av. yield of cane in tons/ac.

	N ₁	N ₂	Mean
T ₁	40.28	41.33	40.81
T ₂	39.16	35.10	37.13
Mean	39.72	38.21	38.97

S.E. of any marginal mean = 0.83 tons/ac.
S.E. of body of table = 1.17 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 58(119).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out the best time of application of N to Sugarcane under swamp conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) Clayey loam. (b) N.A. (iii) 16.2.1958. (iv) (a) Digging trenches. (b) Trench planting. (c) 15,000 three-budded setts/ac. (e) —. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. Trash twist propping. (ix) 61.14%. (x) 22, 23.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(96) on page 323.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Phythium. Control Measures—N.A. (iii) Cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 43.49 tons/ac. (ii) 3.58 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	N ₁	N ₂	Mean
T ₁	42.71	42.84	42.77
T ₂	43.00	45.40	44.20
Mean	42.85	44.12	43.49

S.E. of any marginal mean = 1.27 tons/ac.
S.E. of body of the table = 1.79 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(130).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out best method of application of nitrogenous fertilizers when manuring is delayed unduly.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 5000 lb./ac. of G.L. and 40 lb./ac. of N as A/S. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 15.3.1959. (iv) (a) Trench digging. (b) Trench planting. (c) 15000 lb./ac. three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. trash-twist-propping. (ix) 41.97%. (x) 1 to 4.4.1960.

2. TREATMENTS :

7 levels-cum-methods of application of N as Urea : M₁=50 lb./ac. at t₁ and t₂ each to soil, M₂=50 lb./ac. at t₁ and t₃ each to soil, M₃: 50 lb./ac. at t₁ to soil+50 lb./ac. at t₃ as foliar spray. M₄= 50 lb./ac. at t₂ and t₃ each, to soil, M₅=50 lb./ac. at t₂ to soil+50 lb./ac. at t₃ as foliar spray, M₆=50 lb./ac. at t₁ to soil+25 lb./ac. at t₃ to soil and M₇= 50 lb./ac. at t₁ to soil+25 lb./ac. at t₃ as foliar spray. t₁=45th day, t₂=90th day and t₃=180th day after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 39.6'×171.6'. (iii) 4. (iv) (a) 39.6'×26.4'. (b) 33.0'×19.8'. (v) 3.3'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of early shoot borer. Endrine sprayed. (iii) Sugarcane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 48.23 tons/ac. (ii) 4.23 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	50.85	49.72	47.14	46.84	46.49	48.65	47.91

S.E./mean = 2.12 tons/ac.

Crop :- Sugarcane

Ref :- A.P. 59(131).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of different forms of nitrogen on yield and juice quality of cane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Sugarcane. (b) Ragi. (c) 4400 lb./ac. of G.L. and 40 lb./ac. of N as A/S. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 12.3.1959. (iv) (a) Trenching. (b) In trenches. (c) 15,000 setts/ac. (d) 3.3' between rows. (e) 3 buds/sett. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding, earthing up and trash twist propping. (ix) 41.97". (x) 20 to 23.3.1960.

2. TREATMENTS :

6 sources of N at 100 lb./ac. : S₁=A/S, S₂=Urea, S₃=Nitro phoska (blue), S₄=Nitrophoska (green), S₅=A/S/N and S₆=C/A/N.
P₂O₅ and K₂O were applied to all plots at 150 lb./ac. each.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 46.20'×138.60'. (iii) 4. (iv) (a) 46.2'×23.1'. (b) 39.6'×16.5'. (v) 3.3'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrine. (iii) Sugarcane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 57.39 tons/ac. (ii) 3.36 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆
Av. yield	57.54	58.73	56.59	56.90	55.47	58.70

S.E./mean = 1.68 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(38).

Site :- Sugarcane Liaison Farm, Bobbili.

Type :- 'M'.

Object :—To find out the optimum dose of N for Sugarcane.

1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Paddy. (b) Paddy. (c) 10 C.L./ac. of F.Y.M. and 100 lb./ac. of A/S as top dressing.
 (ii) (a) Red loam to clay loam. (b) N.A. (iii) 2.3.1959. (iv) (a) Light hoeing, trash-twist propping. (b) Planting in trenches. (c) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) CO—449 (mid season variety).
 (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 123.9°. (x) 20.1.1960.

2. TREATMENTS :

6 levels of N as A/S : $N_0=0$, $N_1=25$, $N_2=50$, $N_3=75$, $N_4=100$ and $N_5=125$ lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) 66.00'×118.80'. (iii) 4. (iv) (a) 66.00'×19.80'. (b) 66.00'×13.20'. (v) 3.3' on either side lengthwise. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Attack of early shoot borer ; spraying with Endrine 0.02%. (iii) Cane yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 17.29 tons/ac. (ii) 5.20 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N_0	N_1	N_2	N_3	N_4	N_5
Av. yield	14.84	16.75	17.16	20.34	16.01	18.67

S.E./mean = 2.60 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(39).

Site :- Sugarcane Liaison Farm, Bobbili.

Type :- 'M'.

Object :—To study the effect of different levels of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Sugarcane—Paddy. (b) Paddy (c) 100 lb./ac. of A/S. (ii) (a) Clay loam. (b) N.A. (iii) 4.3.1959. (iv) (a) Digging trenches. (b) Deep trench planting. (c) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) CO—449 (mid season variety). (vii) Unirrigated. (viii) Weeding. (ix) 123.9°. (x) 28.1.1960.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 4 levels of N as A/S : $N_0=0$, $N_1=60$, $N_2=120$ and $N_3=180$ lb./ac.
 (2) 2 levels of P_2O_5 : $P_0=0$, and $P_1=100$ lb./ac.

3. DESIGN :

- (i) Fact in R.B.D. (ii) (a) 8. (b) 158.40'×59.40'. (iii) 3. (iv) (a) 19.80'×59.40'. (b) 13.20'×59.40'. (v) 3.3 length wise on either side of the plot. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) 3 sprayings with Endrine. (iii) Cane yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 21.31 ton/ac. (ii) 3.45 ton/ac. (iii) Only N effect is highly significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	N_3	Mean
P_0	12.19	17.79	25.07	25.96	20.25
P_1	12.48	22.59	27.37	27.04	22.37
Mean	12.34	20.19	26.22	26.50	21.31

S.E. of P marginal mean	= 0.99 tons/ac.
S.E. of N marginal mean	= 1.41 tons/ac.
S.E. of body of table	= 1.99 tons/ac.

Crop :- Sugarcane (Rabi).

Ref :- A.P. 59(70).

Site :- Sugarcane Liaison Farm, Bobbili.

Type :- 'M'.

Object :—To study the effect of different levels and methods of application of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) 20 lb./ac. of N. (ii) (a) Loamy to clay soil. (b) N.A. (iii) 9.3.1959. (iv) (a) Deep trenching. (b) Trench planting. (c) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) CO-449 (mid season variety). (vii) Unirrigated. (viii) 3 hoeings. Trash-twist propping and weeding (ix) Nil. (x) 25.1.1960.

2. TREATMENTS :

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

(1) 2 levels of N : $N_1=50$ and $N_2=100$ lb./ac.

(2) 4 methods of application of N in 2 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) Fact. in R.B.D. (ii) (a) 10. (b) 66'×165'. (iii) 3. (iv) (a) 1/40 ac. (b) 1/66.7 ac. (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 3 sprayings with Endrine (iii) Cane yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) The yields in replication II and III were poor due to flooding in rainy season and lack of proper drainage facilities. (vii) Nil.

5. RESULTS :

(i) 10.23 tons/ac. (ii) 2.35 tons/ac. (iii) Only N effect is highly significant. (iv) Av. yield of cane in tons/ac.

Control = 9.04 tons/ac.

	M_1	M_2	M_3	M_4	Mean
N_1	10.67	9.45	9.84	8.09	9.51
N_2	11.64	11.06	10.99	12.53	11.55
Mean	11.15	10.25	10.41	10.31	10.53

S.E. of N marginal mean	= 0.68 tons/ac.
S.E. of M marginal mean	= 0.96 tons/ac.
S.E. of body of table	= 1.35 tons/ac.
S.E. of control mean	= 0.96 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(97).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To find the optimum N, P and K requirement of *Eksali* Sugarcane crop in the tract.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 10.12.1956. (iv) (a) Ploughing. (b) In ridges. (c) 10-12 thousand 3 budded-sets/ac. (d) 3' between rows. (e) —. (v) Nil. (vi) CO-419 (medium). (vii) Irrigated. (viii) 2 earthing up and weedings. (ix) 42.72'. (x) Feb. 1958.

2. TREATMENTS :

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

- (1) 3 levels of N as A/S : $N_0=0$, $N_1=150$ and $N_2=300$ lb./ac.
 (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=100$ and $P_2=200$ lb./ac.
 (3) 3 levels of K_2O as Pot. Sul. : $K_0=0$, $K_1=100$ and $K_2=200$ lb./ac.

3. DESIGN :

(i) (a) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) N.A. (b) $26' \times 21'$. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Cane yield. (iv) (a) 1956—contd. (b) Yes ; in alternate years. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.42 tons/ac. (ii) 3.89 tons/ac. (iii) The main effects of N and P are highly significant and $N \times P$ interaction is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	6.84	8.65	7.96	7.82	7.71	7.73	8.02
N_1	16.61	23.35	25.80	21.92	21.93	23.33	20.51
N_2	20.91	30.09	34.63	28.54	29.24	26.30	30.09
Mean	41.79	20.69	22.79	19.42	19.62	19.12	19.54
K_0	14.90	21.72	22.25				
K_1	14.07	20.86	22.43				
K_2	15.40	19.51	23.70				

S.E. of any marginal mean = 0.65 tons/ac.

S.E. of body of any table = 1.12 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(92).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :- To find the optimum N, P, K requirement of *Eksali* sugarcane crop in the tract.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 8.12.1957. (iv) (a) Ploughing. (b) In ridges. (c) 10 to 12 thousand three-budded sets/ac. (d) 3' between rows. (e) —. (v) Nil. (vi) CO-419 (medium). (vii) Irrigated. (viii) 2 earthing up and weedings. (ix) 40.50'. (x) February 1957.

2. TREATMENTS to 4. GENERAL :

Same as in Expt. no. 56(97) on page 327.

5. RESULTS :

(i) 15.58 tons/ac. (ii) 3.02 tons/ac. (iii) The main effects of N and P are highly significant and $N \times P$ interaction is significant. (iv) Average yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	4.46	6.88	6.81	6.05	6.45	5.15	6.55
N ₁	9.41	22.18	21.98	17.85	19.18	16.52	17.87
N ₂	15.43	26.18	26.97	22.86	22.38	22.41	23.79
Mean	9.76	18.41	18.59	15.58	16.00	14.69	16.07
K ₀	9.83	18.60	19.58				
K ₁	7.91	18.99	17.18				
K ₂	11.55	17.65	19.01				

S.E. of any marginal mean = 0.50 ton/ac.

S.E. of body of any table = 0.87 ton/ac.

Crop :- Sugarcane.

Ref :- A.P: 58(112)

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To find the optimum N, P, K requirement of *Eksali* sugarcane crop in the tract.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 12.12.1958. (iv) (a) Ploughing and forming the ridges. (b) In ridges. (c) 10 to 12 thousand three-budded setts/ac. (d) 3' between rows. (e) —. (v) Nil. (vi) CO—419 (medium). (vii) Irrigated. (viii) 2 Earthing up and weedings. (ix) 43.25%. (x) Jan, Feb. 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(97) on page 327.

5. RESULTS :

(i) 18.62 tons/ac. (ii) 3.91 tons/ac. (iii) N and P effects are highly significant and N×P interaction is significant. (iv) Av. yield of cane in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	2.95	5.41	5.88	4.74	4.50	5.05	4.68
N ₁	12.91	23.92	24.74	20.52	21.03	20.46	20.08
N ₂	20.11	34.36	37.41	30.62	28.71	31.17	31.99
Mean	11.99	21.22	22.67	18.62	18.08	18.89	18.91
K ₀	11.99	20.20	22.06				
K ₁	11.41	22.14	23.12				
K ₂	12.57	21.34	22.84				

S.E. of any marginal means = 0.65 ton/ac.

S.E. of body of any table = 1.13 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 57(112).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To study the effect of N in different forms on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) Last week of November, 1957. (iv) (a) Ploughing, levelling, formation of furrows and ridges. (b) Planting. (c) 10,000 setts/ac. (d) 4½' between rows. (e) 3 eye budded sett/hill. (v) N.A. (vi) CO—467 (*eksali*). (vii) Irrigated. (viii) Mulching, weeding and earthing up. (ix) 31.70", (x) Last week of December and 1st week of January 1959.

2. TREATMENTS :

8 manurial treatments : $M_0=0$, $M_1=N$ as A/S, $M_2=N$ as G.N.C., $M_3=N$ as A/S+G.N.C in 1 : 2 ratio, $M_4=N$ as A/S and G.N.C. in 1 : 1 ratio. $M_5=N$ as G.M. and A/S in 2 : 7 ratio, $M_6=N$ as Compost and A/S in 2 : 7 ratio and $M_7=100$ lb./ac. of P_2O_5+100 lb./ac. of K_2O .

In treatments M_1 to M_6 , N was applied at 225 lb./ac. and these treatments received 100 lb./ac. of P_2O_5 and 100 lb./ac. of K_2O at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 28'×48'. (b) 25'×39'. (v) 1½'×4½'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1960. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.50 tons/ac. (ii) 4.72 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	6.74	26.14	22.07	16.38	17.08	28.18	25.50	5.90

S.E./mean = 2.36 tons/ac.

Crop :- Sugarcane.**Ref. :- A.P. 58(143).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :—To study the effect of N in different forms on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 1st week of December, 1958. (iv) (a) Ploughing levelling, formation of furrows and ridges. (b) Planting. (c) 10,000 setts/ac. (d) 4½' between rows. (e) 3 eye buded sett/hill. (v) N.A. (vi) CO—467 (*eksali*) (vii) Irrigated. (viii) Mulching, weeding and earthing up. (ix) 55.57". (x) 2nd week of January, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(112) above

5. RESULTS :

(i) 24.70 tons/ac. (ii) 5.74 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	5.23	35.76	34.04	32.73	35.12	26.12	23.58	5.05

S.E./mean = 2.87 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 59(126).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :- To study the effect of N in different forms on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) Last week of Nov. and I week of Dec. 1959. (iv) (a) ploughing, levelling, formation of ridges and furrows. (b) Planting. (c) 10,000 setts/ac. (d) 4½' between rows. (e) 3 eye budded set/hill. (v) N.A. (vi) CO—467 (*eksali*). (vii) Irrigated. (viii) Mulching, weeding and earthing up. (ix) 55.11". (x) 2nd week of Jan. 1961.

2. TREATMENTS to 4. GENERAL :

Same as in expt. No. 57(112) on page 330.

5. RESULTS :

(i) 27.69 tons/ac. (ii) 4.23 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	6.28	35.25	31.57	36.37	33.29	37.22	33.97	7.55

S.E./mean = 2.11 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 59(127).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :- To study the effect of Nitrophoska (green) on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) End of Nov. and beginning of Dec. 1959. (iv) (a) Ploughing, levelling, formation of furrows, and ridges. (b) Planting. (c) 10,000 setts/ac. (d) 3' between rows. (e) 3 budded sets. (v) Nil. (vi) CO—419 (*eksali*). (vii) Irrigated. (viii) Weeding, mulching and earthing. (ix) 55.11". (x) End of Dec. 1960.

2. TREATMENTS :

4 manurial treatments : M₀=Control, M₁=225 lb./ac. N as A/S, M₂=M₁+50 lb./ac. of P₂O₅ as Super and M₃=225 lb./ac. of N as Nitrophoska (green).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 24'×24'. (b) 24'×18'. (v) One row on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1959—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) (vii) Nil.

5. RESULTS :

(i) 13.52 tons/ac. (ii) 2.42 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃
Av. yield	5.56	5.14	18.73	24.65

S.E./mean = 1.21 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 59(128).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'M'.**

Object :- To study the effect of nitrophoska (Blue) on cane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) End of Nov. and beginning of Dec., 1959. (iv) (a) Ploughing, levelling and formation of furrows and ridges. (b) Planting. (c) 1000 setts/ac. (d) 3' between rows. (e) 3 budded set/hill. (v) Nil. (vi) CO—419 (*eksali*). (vii) Irrigated. (viii) Weeding, mulching, earthing, (ix) 55.11". (x) End of Dec. 1960.

2. TREATMENTS :

4 manural treatments : M_0 =Control, M_1 =225 lb./ac. of N as A/S. M_2 = M_1 +50 lb./ac. of P_2O_5 as Super. M_3 =225 lb./ac. of N as Nitrophoska (blue).

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(127) on page 331.

5. RESULTS :

(i) 11.15 tons/ac. (ii) 1.46 tons/ac. (iii) The treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatments	M_0	M_1	M_2	M_3
Av. yield	3.38	5.01	17.13	19.10

S.E./mean = 0.73 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(83).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :-To study the effect of different levels and sources of N with and without P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) —/17.2.1957. (iv) (a) Ploughings. (b) In ridges. (c) to (e) N.A. (v) Nil. (vi) CO—467 (mid season to late). (vii) Irrigated. (viii) Weeding. (ix) 42.72". (x) February, 1958.

2. TREATMENTS :

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

(1) 2 level of P_2O_5 : P_0 =0 and P_1 =100 lb./ac.

(2) 2 levels of N : N_1 =200 and N_2 =300 lb./ac.

(3) 2 sources of N : S_1 =A/S, and S_2 =A C.

Extra treatments : E_1 =No manure and E_2 =100 lb./ac. of P_2O_5 .

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 3. (iv) (a) and (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 18.91 tons/ac. (ii) 3.85 tons/ac. (iii) Extra treatments vs. others and main effect of P are highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

E_1 = 6.07 tons/ac. and E_2 = 10.53 tons/ac.

	P_0	P_1	Mean	S_1	S_2
N_1	9.28	31.91	20.29	20.29	20.89
N_2	10.71	34.35	22.53	22.48	22.57
Mean	10.00	33.13	21.56	21.39	21.73
S_1	9.29	33.49			
S_2	10.70	32.77			

S.E. of any marginal mean	= 1.11 tons/ac.
S.E. of body of any table	= 1.57 tons/ac.
S.E. of E_1 or E_2 mean	= 2.22 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(106).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the effect of different levels, and sources of N with and without P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) February, 1958. (iv) (a) Deep trenching and hoeing 4" deep in trenches. (b) Trench planting. (c) 10 to 12 thousand setts/ac. (d) 3' between rows. (e) 3 buds/sett. (v) Nil. (vi) CO—467 (medium). (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) March, 1959.

2. TREATMENTS :

Same as in expt. no. 57(83) on page 332.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 34'×18'. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(83) on page 332.

5. RESULTS :

(i) 15.12 tons/ac. (ii) 3.97 tons/ac. (iii) Extra treatments vs. others and main effects of N and P and N×P interaction are highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

$E_1=3.49$ tons/ac. and $E_2=4.23$ tons/ac.

	P ₀	P ₁	Mean	S ₁	S ₂
N ₁	7.06	23.53	15.29	14.82	15.76
N ₂	7.67	33.05	20.35	20.90	19.81
	7.36	28.29	17.82	17.86	17.79
S ₁	7.26	28.46			
S ₂	7.46	28.12			

S.E. of any marginal mean	= 0.99 tons/ac.
S.E. of body of any table	= 1.40 tons/ac.
S.E. of E_1 or E_2 mean	= 1.99 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 59(82).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'M'.

Object :—To study the effect of different levels and sources of N with and without P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) February, 1959. (iv) (a) Deep trenching, hoeing 4" deep in trenches. (b) Trench planting. (c) 10 to 12 thousand three budded setts/ac. (d) 3' between rows. (e) —. (v) Nil. (vi) CO-467 (medium). (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) March, 1960.

2. TREATMENTS :

Same as in expt. no. 57(83) on page 332.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 34'×18'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 21.99 tons/ac. (ii) 3.81 tons/ac. (iii) Extra treatments vs others and main effect of P and P×S interactions are highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

$$E_1 = 8.64 \text{ tons/ac.} \quad E_2 = 13.12 \text{ tons/ac.}$$

	P ₀	P ₁	Mean	S ₁	S ₂
N ₁	14.15	33.70	23.92	24.63	23.21
N ₂	14.79	36.42	25.61	27.50	23.71
Mean	14.47	35.06	24.76	26.07	23.46
S ₁	17.72	34.41			
S ₂	11.22	35.71			

S.E. of any marginal mean = 0.95 tons/ac.
 S.E. of body of any table = 1.34 tons/ac.
 S.E. of E₁ or E₂ mean = 1.91 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 56(68).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :- To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Alluvial soils. (b) N.A. (iii) Last week of January and 2nd week of February, 1956. (iv) (a) Ploughing and formation of trenches. (b) Trench planting. (c) to (e) N.A. (v) Nil. (vi) CO-527 (early) and CO-419 (late). (vii) Irrigated. (viii) 2 weedings and propping. (ix) 61.01". (x) 2nd week of February, 1957.

2. TREATMENTS :

4 levels of N : N₁=100, N₂=150, N₃=200 and N₄=250 lb./ac.
 N was applied in one dose in June, 1956,

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 33.0'×39.6'. (b) 19.8'×33.0'. (v) 6.6'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying Guesaral 550 was done to prevent early shoot borer. (iii) Yield of cane. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) N.A. (vi) Nil. (vii) The same expt. was conducted on the two varieties CO-527 and CO-419 separately.

5. RESULTS :

CO-527

(i) 25.95 tons/ac. (ii) 4.06 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	24.84	26.12	25.43	27.41

S.E. mean = 1.65 tons/ac.

CO-419

(i) 30.88 tons/ac. (ii) 4.93 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	28.28	31.21	31.76	32.27

S.E./mean = 2.01 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 56(99).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :- To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (c) Nil. (ii) Clay loam. (b) N.A. (iii) 31.3.1956 and 1.4.1956. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Hoeing, weeding, trash-twist propping and earthing up. (ix) 61.01%. (x) 28.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Early shoot borer attack—Endrine sprayed. (iii) Cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 30.95 tons/ac. (ii) 4.94 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	28.34	31.28	31.83	32.34

S.E./mean = 2.02 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 57(101).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :- To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) Clay loam. (b) N.A. (iii) 10.2.1957 and 11.2.1957. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Hoeing, weeding, trash twist propping and earthing up. (ix) 34.54%. (x) 31.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 42.39 tons/ac. (ii) 2.45 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	40.31	42.57	43.01	43.68

S.E./mean = 1.00 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(122).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 28.2.1958. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows (e) —. (v) Nil. (vi) CO—419. (late). (vii) Irrigated. (viii) Hoeing, weeding, Earthing up, trash twist propping. (ix) 60.11". (x) 17 to 27.2.1959.

2. TREATMENTS and DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 31.92 tons/ac. (ii) 2.96 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	29.52	32.12	32.77	33.27

S.E./mean = 1.21 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(100).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To study the effect of different doses of N the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) Nil. (a) (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 28, 29.3.1956. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) N.A. (v) (vi) Co—527 (early). (vii) Irrigated (viii) Hoeing, weeding, earthing up and trash twist propping. (ix) 61.0". (x) 28.2.1957.

2. TREATMENTS and 3 DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Early shoot borer attack—Endrine sprayed. (iii) Cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 26.00 tons/ac. (ii) 4.07 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	24.89	26.17	25.48	27.47
	S.E./mean = 1.66 tons/ac.			

Crop :- Sugarcane.

Ref :- A.P. 57(100).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 14.2.1957. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3'. (e) —. (v) Nil. (vi) CO—527 (early). (vii) Irrigated. (viii) Horing, weeding, Earthing up and trash twist propping. (ix) 34.54". (x) 7.3 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield, (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

6. RESULTS :

(i) 39.75 tons/ac. (ii) 265 tons/ac. (iii) The treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	37.34	38.63	41.24	41.78
	S.E./mean = 1.08 tons/ac.			

Crop :- Sugarcane.

Ref :- A.P. 58(121).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To study the effect of different doses of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 5.2.1958. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—527 (early). (vii) Irrigated. (viii) Hceing, weeding, earthing up and trash twist propping. (ix) 60.11". (x) 14.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(68) on page 334.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 29.22 tons/ac. (ii) 2.12 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₁	N ₂	N ₃	N ₄
Av. yield	27.18	29.16	30.19	30.35
	S.E./mean = 0.87 tons/ac.			

Crop :- Sugarcane.**Ref :- A.P. 57(98).****Site :- Sugarcane Liaison Farm, Samalkot.****Type :- 'M'.**

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 12 to 14.2.1957. (iv) (a) Trench digging. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e)—. (v) 150 lb./ac. of N as A/S. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 34.54*. (x) 31.3.1958.

2. TREATMENTS :

4 levels cum methods of application of P_2O_5 as Super : $P_0=0$, $P_1=100$ lb./ac. by placement, $P_2=200$ lb./ac. by placement and $P_3=25$ lb./ac. by spray.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 33.0'×39.6'. (b) 19.8'×33.0'. (v) 6.6'×3.3'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 36.56 tons/ac. (ii) 2.96 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	P_0	P_1	P_2	P_3
Av. yield	35.89	36.84	37.20	36.31

S.E./mean = 1.21 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 58(123).****Site :- Sugarcane Liaison Farm, Samalkot.****Type :- 'M'.**

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 16.2.1958. (iv) (a) Trench digging. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e)—. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 60.11*. (x) 6.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(98) as above.

5. RESULTS :

(i) 29.87 tons/ac. (ii) 3.40 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	P_0	P_1	P_2	P_3
Av. yield	28.84	30.56	30.65	29.43

S.E./mean = 1.39 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 59(101).****Site :- Sugarcane Liaison Farm, Samalkot.****Type :- 'M'.**

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 11.2.1959. (iv) (a) Trench digging. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 49.09%. (x) 6.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(98) on page 338.

5. RESULTS :

(i) 32.22 tons/ac. (ii) 4.66 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	34.05	32.38	33.81	32.65

S.E./mean = 1.90 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(99).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15, 16.2.1957. (iv) (a) Trenching. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—527 (early). (vii) Irrigated. (viii) Hoeing, weeding, earthing up and trash twist propping. (ix) 34.54%. (x) 28.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(98) on page 338.

5. RESULTS :

(i) 34.84 tons/ac. (ii) 3.94 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	34.55	35.65	33.93	35.24

S.E./mean = 1.61 tons/ac.]

Crop :- Sugarcane.

Ref :- A.P. 58(124).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.2.1958. (iv) (a) Trench digging and trash twist propping. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—527 (early). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 49.09%. (x) 22.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(98) on page 338.

5. RESULTS :

(i) 28.93 tons/ac. (ii) 4.65 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of sugarcane in tons/ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	27.68	29.22	29.88	28.93

S.E./mean = 1.89 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(100).

Site :- Sugarcane Liaison Farm, Samalkot.

Type :- 'M'.

Object :—To find out the effect of application of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 15.2.1959. (iv) (a) Trench digging. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e)—. (v) Nil. (vi) CO—527 (early). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 49.09". (x) 28.2.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(98) on page 338.

5. RESULTS :

(i) 30.38 tons/ac. (ii) 2.55 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	29.13	30.83	31.46	30.09

S.E./mean = 1.04 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 55(37).

Site :- Belal Farm, Shakkarnagar (Nizam Sugar Factory). Type :- 'M'.

Object :—To study the effect of different levels of P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) *Regur* (black cotton soil). (b) N.A. (iii) June—July, 1955. (iv) (a) to (e) N.A. (v) 1000 lb./ac. of N as G.N.C. and A/S in the ratio of 2 : 1 applied in three doses first at planting, second three months after planting and third 6 months after planting. (vi) CO—419. (vii) Irrigated. (viii) and (ix) N.A. (x) November—December, 1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of P₂O₅ as Super : P₀=0, P₁=100 and P₂=200 lb./ac.

(2) 3 levels of K₂O as Pot. Sul. : K₀=0, K₁=100 and K₂=200 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/11.4 ac. (v) 3½'×3'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 64.51 tons/ac. (ii) 5.89 tons/ac. (iii) Only K effect and interaction P×K are significant. (iv) Av. yield of cane in tons/ac.

	K ₀	K ₁	K ₂	Mean
P ₀	58.27	72.40	60.58	63.75
P ₁	68.01	63.15	69.82	66.99
P ₂	53.49	68.71	66.12	62.77
Mean	59.92	68.09	65.51	64.51

S.E. of any marginal mean = 1.70 tons/ac.
S.E. of body of table = 2.95 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 55(38).

Site :- Belal Farm, Shakkarnagar (Nizam Sugar Factory). Type :- 'M'.

Object :—To study the effect of different levels of P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Chalka (sandy loam). (b) N.A. (iii) June-July 1955. (iv) (a) to (e) N.A. (v) 400 lb./ac. of N as G.N.C. and A/S in 2 : 1 applied in three doses first at planting second 3 months after planting and third 6 months after planting. (vi) CO-419. (vii) Irrigated. (viii) and (ix) N.A. (x) November—December 1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(37) on page 340.

5. RESULTS :

(i) 64.23 tons/ac. (ii) 6.73 tons/ac. (iii) Main effect of K alone is highly significant. (iv) Av. yield of cane in tons/ac.

	K ₀	K ₁	K ₂	Mean
P ₀	58.62	70.19	62.21	63.68
P ₁	63.88	69.49	60.71	64.69
P ₂	57.88	67.71	67.40	64.33
Mean	60.13	69.13	63.44	64.23

S.E. of any marginal mean = 1.94 tons/ac.
S.E. of body of table = 3.36 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(25).

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To find out the optimum time of application of N to Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 13.2.1959. (a) Ploughing and levelling. (b) In deep trenches. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) Nil. (vi) CO-527 (early). (vii) Irrigated. (viii) Weeding and trash twist propping. (ix) 63.18%. (x) 11.2.1960.

2. TREATMENTS :

3 split applications of 150 lb./ac. of N as A/S and G.N.C. in 2 : 1 ratio in equal doses : T₁=30th and 60th day of planting, T₂=45th and 90th day of planting and T₃=30th, 60th and 120th day of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 39.6'×99.0'. (iii) 8. (iv) (a) 39.6'×33.0'. (b) 33.0'×19.8' (v) 3.3'×6.6' (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed once to prevent the incidence of early shoot borer during March 1959. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 35.22 tons/ac. (ii) 13.24 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	36.66	34.44	34.57

S.E./mean = 4.68 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(26).

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To find out the optimum time of application of N to Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 10.2.1959. (iv) (a) Ploughing and levelling. (b) In deep trenches. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and trash-twish propping. (ix) 63.18%. (x) 24.2.1960 to 13.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(25) on page. 341.

5. RESULTS :

(i) 52.15 tons/ac. (ii) 6.19 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	54.34	50.16	51.94

S.E./mean = 2.19 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(27).

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To find out the optimum doses of N for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Sugarcane (*Ratoon*). (b) Paddy. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 6.2.1959. (vi) Ploughing and levelling. (b) Planting in trenches. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) N.A. (vi) CO—527 (early). (vii) Irrigated. (viii) Weeding, and trash twist propping. (ix) 63.18%. (x) 11.2.1960.

2. TREATMENTS :

5 levels of N as A/S : N₀=0, N₁=50 N₂=100, N₃=150 and N₄=200 lb./ac.

N was applied in two equal doses on 20.3.1959 and 6.4.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 39.6'×165.0'. (iii) 6. (iv) (a) 39.6'×33.0'. (b) 33.0'×19.8'. (v) 3.3'×6.6' (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed to prevent the incidence of early shoot borer once during March, 1959. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 32.64 tons/ac. (ii) 4.53 tons/ac. (iii) The treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₀	N ₁	N ₂	N ₃	N ₄
Av. yield	21.41	29.26	32.14	39.37	42.02

S.E./mean = 1.85 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(28).

Site :- Sugarcane Liaison, Fram, Tanuku.

Type :- 'M'.

Object :—To find out the optimum dose of N for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Sugarcane (ratoon). (b) Paddy. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 7.2.1959. (iv) (a) Ploughing and levelling. (b) Planting. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and trash-twist propping. (ix) 63.18%. (x) 18.2.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(27) on page. 342.

5. RESULTS :

(i) 36.93 tons/ac. (ii) 4.14 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in ton/ac.

Treatment	N ₀	N ₁	N ₂	N ₃	N ₄
Av. yield	23.36	32.12	37.23	42.57	49.37

S.E./mean = 1.69 Tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(29).

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To study the economic way of application of N for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 10.2.1959. (iv) (a) Ploughing and levelling. (b) Planting in trenches. (c) N.A. (d) Rows 3.3' apart. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and trash propping. (ix) 63.11%. (x) 1.3.1960.

2. TREATMENTS :

3 methods of application of N : M₁=150 lb./ac. of N applied to soil in two equal doses 1 and 2 months after planting. M₂=75 lb./ac. of N applied to soil after 1 month of planting and 25 lb./ac. of N as Urea by foliar spray and M₃=100 lb./ac. of N applied to soil in two equal doses 1 and 2 months after planting and 5000 lb./ac. of G.L. at earthing.

N applied to soil by pocket method as A/S and G.N.C. in 2 : 1 ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 39.6'×99.0'. (iii) 8. (iv) (a) 39.6'×33.0'. (b) 33.0'×19.8'. (v) 3.3'×6.6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed to prevent the incidence of early shoot borer once during March, 1954. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 52.27 tons/ac. (ii) 6.27 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M ₁	M ₂	M ₃
Av. yield	52.99	52.30	51.52

S.E./mean = 2.22 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(30).

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To study the effect of different levels of Super on cane yield and juice quality.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 30.1.1959. (iv) (a) Ploughing and levelling. (b) Planting in deep trenches. (c) N.A. (d) Rows 3.3' apart. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and trash-twist propping. (ix) 63.18". (x) 17.1.1960.

2. TREATMENTS :

4 levels of P₂O₅ as Super in 2 equal doses on 13.3.1959 and 1.4.1959 ; P₀=0, P₁=25, P₂=50 P₃=100 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 39.6' × 198.0'. (iii) 6. (iv) (a) 39.7' × 33.0'. (b) 33.0' × 19.8'. (v) 3.3' × 6.6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed to prevent the early incidence of shoot borer once during March, 1959. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 43.97 tons/ac. (ii) 8.40 tons/ac. (iii) The treatment differences are not significant. (iv) Av. yield of cane in ton/ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	42.67	44.12	45.08	43.99

S.E./mean = 3.42 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(31)

Site :- Sugarcane Liaison Farm, Tanuku.

Type :- 'M'.

Object :—To study the effect of application of N, P and K and their combinations on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 12.2.1959. (iv) (a) Ploughing and levelling. (b) Planting in trenches. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and trash-twist propping. (ix) 63.18". (x) 21.2.1960.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : N₀=0 and N₁=150 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=100 lb./ac.

(3) 2 levels of K₂O as Pot Sul. : K₀=0 and K₁=200 lb./ac.

The treatments were applied in two equal doses on 45th and 90th day after planting by pocketing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 39.6'×264.0'. (iii) 4. (iv) (a) 39.6'×33.0'. (b) 33.0'×19.5'. (v) 3.3'×6.6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed to prevent the incidence of early shoot borer once during March, 1959. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 33.76 tons/ac. (ii) 5.71 tons/ac. (iii) Only N effect is highly significant. (iv) Av. yield of cane in tons/ac.

	N ₀	N ₁	Mean	K ₀	K ₁
P ₀	27.99	36.04	32.01	33.85	30.19
P ₁	30.39	40.63	35.51	35.78	35.25
Mean	29.19	38.33	33.76	34.81	32.71
K ₀	29.77	39.85			
K ₁	28.61	36.82			

S.E. of any marginal mean

= 1.43 tons/ac.

S.E. of body of any table

= 2.01 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(SFT).

Centre :- Krishna (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) Feb—March, 1959. (v) to (ix) N.A. (x) Feb—March, 1960.

2. TREATMENTS :

0 =Control.

n =175 lb /ac. of N as A/S.

p = 80 lb /ac. of P₂O₅ as Super.

np =175 lb./ac. of N as A/S+80 lb./ac. of P₂O₅ as Super.

k = 80 lb./ac. of K₂O as Mur. Pot.

nk =175 lb./ac. of N as A/S+80 lb /ac. of K₂O as Mur. Pot.

pk = 80 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. of Pot.

npk =175 lb./ac. of N as A/S+80 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	3.94	2.54	2.74	1.983	-0.19	0.24	0.38	-0.01	0.469

Control yield = 27.66 tons/ac. and no. of trials = 4.

Crop :- Sugarcane.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—To study the response of Sugarcane to levels of N, P and K applied individually and combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) Feb—March, 1959. (v) to (ix) N.A. (x) Feb—March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 345 conducted at Krishna.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in ton/ac.	1.31	0.37	-0.06	0.545	-0.20	0.99	-0.86	0.36	0.793

Control mean = 38.50 ton/ac. and no. of trials = 6.

Crop :- Sugarcane.

Ref :- A.P. 59(SFT).

Centre :- Krishna (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) Feb—March, 1959. (v) to (ix) N.A. (x) Feb—March, 1959.

2. TREATMENTS :

0 = Control (no manure).

n₁ = 175 lb./ac. of N as A/S.

n₂ = 350 lb./ac. of N as A/S.

n₁' = 175 lb./ac. of N as Urea.

n₂' = 350 lb./ac. of N as Urea.

n₁" = 175 lb./ac. of N as A/S/N.

n₂" = 350 lb./ac. of N as A/S/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	31.84	37.59	40.94	37.87	40.21	41.07	43.63

G.M. = 39.02 tons/ac. ; S.E. = 0.079 ton/ac. and no. of trials = 4.

Crop :- Sugarcane.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam. (c.f.).

Type :- 'M'.

Object :- Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) Feb—March, 1959. (v) to (ix) N.A. (x) Feb—March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type B on page 346 conducted at Krishna.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	36.53	40.18	39.56	37.51	38.86	39.43	39.54

G.M. = 38.80 tons/ac. ; S.E. = 0.241 tons/ac. and no. of trials = 8.

Crop :- Sugarcane.

Ref :- A.P. 59(133).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'MV'.

Object :- To study the effect of different levels and methods of application of N on the yield of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 5000 lb./ac. of G.L. and 60 lb./ac. of A/S. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 13.2.1959. (iv) (a) Trenching. (b) In trenches. (c) 15000 setts/ac. (d) 3.3' between rows. (e) Three buds/sett. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Hoeing, weeding, trash-twist propping. (ix) 41.97%. (x) 28.1.1960 to 4.2.1960.

2. TREATMENTS :

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

(1) 2 varieties : $V_1=CO-527$. and $V_2=CO-997$.

(2) 2 levels of N : $N_1=100$ and $N_2=200$ lb./ac.

(3) 2 split applications : $T_1=3/7$ of N at planting and $4/7$ of N 60 days after planting and $T_2=$ In two equal doses on 45th and 90th day after planting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) $39.6' \times 211.2'$. (iii) 4. (iv) (a) $39.6' \times 26.4'$. (b) $33.0' \times 19.8'$. (v) (v) $3.3' \times 3.3'$. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Spraying of Endrine to prevent the incidence of early shoot borer in 4th, 6th and 9th week of crop. (iii) Cane yield. (iv) (a) 1955—contd. (b) No. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 56.82 ton/ac. (ii) 2.22 ton/ac. (iii) V effect is highly significant and T effect is significant. Other effects are not significant. (iv) Av. yield of cane in ton/ac.

	T ₁	T ₂	Mean	V ₁	V ₂
N ₁	56.92	55.64	56.28	58.21	54.35
N ₂	58.38	56.38	57.37	59.31	55.43
Mean	57.64	56.01	56.82	58.76	54.89
V ₁	59.98	57.54			
V ₂	55.30	54.48			

S.E. of any marginal mean = 0.55 ton/ac.
S.E. of body of any table = 0.78 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 55(63).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :-To find the optimum time of planting and harvesting of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) Ploughing, clod breaking and ridging. (b) and (c) N.A. (d) 3'×1½'. (e) N.A. (v) 5 tons/ac. of F.Y.M.+35 lb./ac. of N as G.N.C. and A/S in 2 : 1 ratio and 45 lb./ac. of P₂O₅ as Super. (vi) CO—419 (medium). (vii) Irrigated. (viii) Weeding and earthing up. (ix) 127". (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T₁=June, T₂=July, T₃=August and T₄=September, 1955.

Sub-plot treatments :

4 months of harvesting : H₁=October, 1956, H₂=November, 1956, H₃=December, 1956 and H₄=January 1957.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots replication ; 4 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) 42'×24'. (b) 33'×21'. (v) 4.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Partial lodging. (ii) Slight borer attack ; control measures—N.A. (iii) Yield of cane. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 52.71 tons/ac. (ii) (a) 41.60 tons/ac. (b) 13.80 tons/ac. (iii) Main effect of H alone is significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	58.76	51.53	64.58	54.34	57.30
T ₂	43.97	41.11	62.28	55.26	50.66
T ₃	55.13	49.47	62.32	48.56	53.87
T ₄	42.85	42.32	60.35	50.46	49.00
Mean	50.17	46.11	62.38	52.16	52.71

S.E. of difference of two

1. T marginal means	= 14.70 tons/ac.
2. H marginal means	= 4.90 tons/ac.
3. H means at the same level of T	= 9.81 tons/ac.
4. T means at the same level of H	= 17.00 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(30).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :- To find the optimum time of planting and harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur (iii) As per treatments. (iv) (a) to (e) N.A. (v) 5 C.L./ac. of F.Y.M.+350 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio. (vi) CO-419. (vii) Irrigated. (viii) N.A. (ix) 42.72". (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T₁=June, T₂=July, T₃=August and T₄=September, 1957.

Sub-plot treatments :

4 months of harvesting : H₁=October, H₂=November, H₃=December, 1958. and H₄=January 1959.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 38'×22'. (v) 3.5'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. Crop lodged after May, 1958. (ii) Nil. (iii) Biometric observations and yield of cane. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Crop suffered due to hailstorm in Feb., 1958.

5. RESULTS :

(i) 41.48 tons/ac. (ii) (a) 9.37 tons/ac. (b) 4.83 tons/ac. (iii) Main effect of H alone is highly significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	35.60	42.25	42.02	41.07	40.38
T ₂	34.45	39.47	39.52	39.98	38.35
T ₃	43.63	43.88	43.97	46.41	44.47
T ₄	34.90	44.83	46.14	44.75	42.68
Mean	37.14	42.78	42.91	43.05	41.48

S.E. of difference of two

1. T marginal means	= 3.29 tons/ac.
2. H marginal means	= 1.71 tons/ac.
3. H means at the same level of T	= 3.42 tons/ac.
4. T means at the same level of H	= 4.34 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(107).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :- To find the optimum time of planting and harvesting of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) Deep trenching. (b) Trench planting. (c) 10 to 12 thousand setts/ac. (d) 3' between rows. (e) 3 buds/sett. (v) 5 C.L./ac. of F.Y.M. + 350 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio. (vi) CO—419. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T_1 =June, T_2 =July, T_3 =August and T_4 =September, 1958.

Sub-plot treatments :

4 months of harvesting : H_1 =October 1959, H_2 =Nov., 1959, H_3 =Dec., 1959 and H_4 =Jan., 1960.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plot/main-plot. (b) N.A. (iii) 4. (iv) (a) 45 × 24'. (b) 39' × 22'. (v) 3' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 56.70 tons/ac. (ii) (a) 7.38 tons/ac. (b) 4.94 tons/ac. (iii) Interaction T × H alone is significant. (iv) Av. yield of cane in tons/ac.

	H_1	H_2	H_3	H_4	Mean
T_1	66.54	63.21	53.24	61.49	61.12
T_2	52.31	56.40	59.03	51.44	54.78
T_3	52.19	56.23	63.37	59.92	57.93
T_4	48.13	52.65	52.02	59.06	52.96
Mean	54.80	57.12	56.92	57.98	56.70

S.E. of difference of two

1. T marginal means = 2.61 tons/ac.
2. H marginal means = 1.74 tons/ac.
3. H means at the same level of T = 3.49 tons/ac.
4. T means at the same level of H = 3.99 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59 (84).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :- To find the optimum time of planting and harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) Deep trenching. (b) Trench planting. (c) 10 to 12 thousand setts/ac. (d) 3' between rows. (e) 3 buds/sett. (v) 5 C.L./ac. of F.Y.M. + 350 lb./ac. of N in 3 split doses in the form of A/S and G.N.C. in 1 : 2 ratio. (vi) CO—419. (vii) Irrigated. (viii) and (ix) N.A. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T_1 =June, T_2 =July, T_3 =August and T_4 =September, 1959.

Sub plot treatments :

4 month of harvesting : H_1 =October, 1960, H_2 =November, 1960, H_3 =December, 1960 and H_4 =January 1961.

3. DESIGN

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 45' × 24'. (b) 39' × 22'. (v) 3' × 1' (vi) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1955—contd. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 51.79 tons/ac. (ii) (a) 5.83 tons/ac. (b) 4.63 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	53.21	51.71	55.17	49.98	52.52
T ₂	57.02	50.24	55.58	50.73	53.39
T ₃	53.77	52.40	51.27	51.52	52.24
T ₄	49.58	50.16	47.57	48.66	48.99
Mean	53.40	51.13	52.40	50.22	51.79

S.E. of difference of two

1. T marginal means = 2.06 tons/ac.
2. H marginal means = 1.64 tons/ac.
3. H means at the same level of T = 3.27 tons/ac.
4. T means at the same level of H = 3.50 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(71).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :- To find the optimum time of planting and harvesting of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) Ploughing, clod breaking and ridging. (b) and (c) N.A. (d) 3'×3'. (e) N.A. (v) 5 tons/ac. of F.Y.M.+45 lb./ac. of P₂O₅ as Super+25 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio. (vi) CO-419 (medium). (vii) Irrigated. (viii) Weedings, mulching and earthing up. (ix) 70". (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T₁=November, 1956, T₂=December, 1956, T₃=January, 1957 and T₄=February, 1957.

Sub-plot treatments :

4 months of harvesting : H₁=December, 1957, H₂=January, 1958, H₃=February, 1958 and T₄=March, 1958.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/ main-plot. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 39'×21'. (v) 3'×1.5'. (vi) Yes.

4. GENERAL :

(i) Slight lodging. (ii) Slight borer attack ; control measures—N.A. (iii) Yield of cane. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 40.00 tons/ac. (ii) (a) 11.23 tons/ac. (b) 39.16 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	57.46	46.38	52.51	40.08	49.11
T ₂	45.81	45.83	46.45	37.88	43.99
T ₃	37.83	29.83	47.97	39.15	38.70
T ₄	25.45	30.01	31.01	26.27	28.19
Mean	41.64	38.01	44.49	35.85	40.00

S.E. of difference of two

1. T marginal means = 3.97 tons/ac.
2. H marginal means = 13.84 tons/ac.
3. H means at the same level of T = 27.69 tons/ac.
4. T means at the same level of H = 24.31 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(35).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To find the optimum time of planting and harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) to (e) N.A. (v) 5 C.L./ac. of F.Y.M. + 225 lb./ac. of N in three split-doses in the form of A/S and G.N.C. in 1 : 2 ratio. (vi) CO-419. (vii) Irrigated. (viii) N.A. (ix) 42.72'. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T₁=November, 1957, T₂=December, 1957, T₃=January, 1958 and T₄=February, 1958.

Sub-plot treatments :

4 months of harvesting : H₁=December, 1958, H₂=January, 1959, H₃=February, 1959 and H₄=March, 1959.

3. DESIGN :

(i) Spl t-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 39'×22'. (v) 3'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and yield of cane. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 24.43 tons/ac. (ii) (a) 5.37 tons/ac. (b) 4.05 tons/ac. (iii) Main effect of T is highly significant, while that of H is significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	34.75	33.81	34.40	28.13	32.77
T ₂	28.97	27.86	27.47	21.07	26.34
T ₃	29.73	29.90	39.90	27.79	29.58
T ₄	9.52	7.54	12.44	6.57	9.02
Mean	25.74	24.78	26.30	20.89	24.43

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. T marginal means | = 1.89 tons/ac. |
| 2. H marginal means | = 1.43 tons/ac. |
| 3. H means at the same level of T | = 2.87 tons/ac. |
| 4. T means at the same level of H | = 3.12 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 58(108).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'C'.**

Object :—To find out the optimum time of planting and harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis Rudrur. (iii) As per treatments. (iv) (a) Deep trenching. (b) Planting in trenches. (c) 10 to 12 thousand 3 budded setts/ac. (d) 3' between rows. (e)—. (v) 5 C.L./ac. of F.Y.M.+225 lb./ac. of N in three split doses as A/S and G.N.C. in 1 : 2 ratio. (vi) CO—419. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :4 months of planting : T₁=November, T₂=December 1958, T₃=January, and T₄=February, 1959.**Sub-plot treatments :**4 months of harvesting : H₁=December, 1959, H₂=January, H₃=February, and H₄=March, 1960.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 39'×22'. (v) 3'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 34.05 tons/ac. (ii) (a) 10.73 tons/ac. (b) 4.47 tons/ac. (iii) Only main effect of H is significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	H ₃	H ₄	Mean
T ₁	45.98	38.52	36.13	33.09	38.43
T ₂	40.47	36.65	38.20	31.20	36.63
T ₃	31.77	33.98	36.60	30.79	33.29
T ₄	30.53	31.26	25.43	24.24	27.87
Mean	37.19	35.10	34.09	29.83	34.05

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. T marginal means | = 3.79 tons/ac. |
| 2. H marginal means | = 1.58 tons/ac. |
| 3. H means at the same level of T | = 3.16 tons/ac. |
| 4. T means at the same level of H | = 4.67 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 59(83).****Site :- Agri. Res. Stn., Rudrur.****Type :- 'C'.**

Object :—To find the optimum time of planting and harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) As per treatments. (iv) (a) Deep trenching. (b) Trench planting. (c) 10 to 12 thousand 3 budded setts/ac. (d) 3' between rows. (e)—. (v) 5 C.L./ac. of F.Y.M.+225 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio. (vi) CO—419. (vii) Irrigated. (viii) and (ix) N.A. (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

4 months of planting : T_1 =November, T_2 =December, 1959, T_3 =January and T_4 =February, 1960.

Sub-plot treatments :

4 months of harvesting : H_1 =December 1960, H_2 =January, H_3 =February, and H_4 =March, 1961.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 39'×22'. (v) 3'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 35.35 tons/ac. (ii) (a) 10.99 tons/ac. (b) 3.56 tons/ac. (iii) Only main effects of T and H are significant. (iv) Av. yield of cane in tons/ac.

	H_1	H_2	H_3	H_4	Mean
T_1	43.52	43.98	43.15	34.85	41.38
T_2	42.03	42.75	42.49	37.94	41.30
T_3	31.54	35.53	34.26	31.60	33.23
T_4	24.52	28.01	25.31	24.07	25.48
Mean	35.40	37.57	36.30	32.12	35.35

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. T marginal means | = 3.88 tons/ac. |
| 2. H marginal means | = 1.26 tons/ac. |
| 3. H means at the same level of T | = 2.52 tons/ac. |
| 4. T means at the same level of H | = 4.45 tons/ac. |

Crop :- Sugarcane.

Ref :- A.P. 55(60).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To study the effect of earthing on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Rudrur. (iii) 15.12.1955. (iv) (a) Ploughing, clod breaking and ridging. (b) and (c) N.A. (d) 3' between rows. (e) N.A. (v) 240 lb./ac. of N as G.N.C. and A/S. (vi) CO—419 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 58.72". (x) 23.1.1957.

2. TREATMENTS :

6 intervals between planting and 1st earthing : E_0 =Control (no earthing), E_1 =6, E_2 =7, E_3 =8, E_4 =9 and E_5 =10 weeks.

2nd and 3rd earthings were given at 15 days interval.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 51'×33'. (b) 39'×33'. (v) 6' on either side of the plot breadthwise. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Early shoot borer and top shoot borer noticed. No control measures were taken. (iii) Yield of cane. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 26.63 tons/ac. (ii) 7.94 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	E ₀	E ₁	E ₂	E ₃	E ₄	E ₅
Av. yield	22.15	25.95	29.59	28.51	26.94	26.63

S.E./mean = 3.97 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(141).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'C'.

Object :—To find out the optimum spacing between rows and seed rate for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) 2nd week of December 1958. (iv) (a) Ploughing and levelling with the wooden plank. (b) Planting in rows. (c) and (d) As per treatments. (c) 3 buds/sett. (v) 3 to 5 tons/ac. of compost. 5000 lb./ac. of G.M. and 45 lb./ac. of P₂O₅ as Super. (vi) CO—419 (early). (vii) Irrigated. (viii) Mulching, weeding and earthing up. (ix) 55.75°. (x) Dec. 1959 and Jan. 1960.

2. TREATMENTS :

Main-plot treatments :

4 spacings between rows : S₁=3', S₂=3½', S₃=4' and S₄=4½'.

Sub-plot treatments :

3 seed rates : R₁=8,000, R₂=10,000 and R₃=12,000 setts/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 45'×15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) During 1959-60 expt. was not conducted.

5. RESULTS :

(i) 35.47 tons/ac. (ii) (a) 8.17 tons/ac. (b) 4.96 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	R ₁	R ₂	R ₃	Mean
S ₁	33.21	30.41	35.43	33.02
S ₂	38.61	33.06	41.19	37.62
S ₃	31.34	37.55	35.62	34.84
S ₄	35.85	37.62	35.74	36.40
Mean	34.75	34.66	37.00	35.47

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 3.34 tons/ac. |
| 2. R marginal means | = 1.75 tons/ac. |
| 3. R means at the same level of S | = 3.51 tons/ac. |
| 4. S means at the same level of R | = 4.40 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 59(32).****Site :- Sugarcane Liaison Farm, Tanuku.****Type :- 'C'.**

Object :—To study the relative merits of different planting practices of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 3.2.1959. (iv) (a) Ploughing, levelling and trench formation. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 150 lb./ac. of N as A/S. (vi) CO-419 (late). (vii) Irrigated. (viii) Weeding and trash twist propping. (ix) 63.18". (x) 31.1.1960 to 4.2.1960.

2. TREATMENTS :

3 methods of planting : M_1 =Ploughing in trenches 40" apart (8" deep) coupled with trash twist propping using 1000 bamboos/ac. M_2 =Bed method of planting with 32" spacing coupled with propping and wrapping with 5000 bamboos/ac. and M_3 =Local irregular planting (control).

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 39.6'×297.0'. (iii) 8. (iv) (a) 39.6'×99.0'. (b) 39.6'×52.8'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. was sprayed once to prevent early shoot borer. (iii) Yield of cane. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 44.34 tons/ac. (ii) 3.74 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3
Av. yield	45.50	50.81	36.70

S.E./mean = 1.32 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 54(86).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'CV'.**

Object :—To find out the effect of time of planting and age at harvest on the yield and Juice quality of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) Working of tractors for forming furrows, deepening the furrows, with V.P., making ridges, rectifying trenches and digging cross lains. (b) Planting. (c) 15,000 three-budded setts/ac. (d) 3'×4'. (e) —. (v) F.Y.M. at 10 tons/ac. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, 3 to 4 hoeings and earthing up. (ix) N.A. (x) As per treatments.

2. TREATMENTS :**Main-plot treatments :**

3 months of planting : T_1 =January, T_2 =May and T_3 =September 1954.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 ages at harvest : H_1 =10 H_2 =12 and H_3 =14 months.

(2) Two varieties : V_1 =CO-419 and V_2 =CO-527.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 55.4'×19.8'. (b) 49.4'×13.2'. (v) 3'×3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 43.4 tons/ac. (ii) (a) 9.83 tons/ac. (b) 3.39 tons/ac. (iii) Only main effects of T and V and interaction N×T are significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	T ₃	Mean	V ₁	V ₂
H ₁	44.8	46.5	36.0	42.4	42.9	42.0
H ₂	47.5	47.1	39.6	44.7	44.9	44.6
H ₃	52.0	37.3	39.6	43.0	39.5	46.4
Mean	48.1	43.6	38.4	43.4	42.4	44.3
V ₁	47.2	43.8	36.3			
V ₂	49.0	43.4	40.5			

S.E. of difference of two'

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 2.84 tons/ac. | 5. T means at the same level of H | = 3.16 tons/ac. |
| 2. H marginal means | = 0.98 tons/ac. | 6. V means at the same level of T | = 1.38 tons/ac. |
| 3. V marginal means | = 0.80 tons/ac. | 7. T means at the same level of V | = 3.00 tons/ac. |
| 4. H means at the same level of T | = 1.69 tons/ac. | S.E. of body of H×V table | = 0.98 tons/ac. |

Crop :- Sugarcane.

Ref :- A.P. 55(53).

Site:- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :-To find out the effect of time of planting and age at harvest on the yield and juice quality of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) 56 lb./ac. as A/S+3250 lb./ac. of G.L. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) N.A. (b) Trench planting (c) 15000 three-budded setts/ac. (d) and (e) N.A. (v) 20 C.L. of F.Y.M. and 100 lb./ac. of N as A/S. (vi) As per treatments. (vii) Irrigated. (viii) Crop kept erect by trash twist propping. (ix) Varies from 49.4" to 70.1" according to treatments. (x) As per treatments.

2. TREATMENTS

Main-plot treatments :

2 months of planting : T₁=January and T₂=May 1955.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 times of harvesting H₁=10, H₂=12 and H₃=14 months.

(2) 2 varieties : V₁=CO—419 and V₂=CO—527

3. DESIGN :

(i) Split-plot. (ii) (a) 2 Main-plots/replication ; 6 Sub-plots/main-plot. (iii) 4. (iv) (a) 42.2'×23.1'. (b) 39.6'×16.5'. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) D.D.T. sprayed to prevent incidence of early shoot borer. (iii) Biometric observations. and yield of cane (iv) (a) 1954—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 38.47 tons/ac. (ii) (a) 8.59 tons/ac. (b) 4.97 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	Mean	V ₁	V ₂
H ₁	46.84	29.34	38.09	39.57	36.61
H ₂	49.11	29.86	39.48	39.65	39.32
H ₃	43.24	32.40	37.82	38.69	36.95
Mean	46.40	30.53	38.97	39.30	37.63
V ₁	46.42	32.19			
V ₂	46.37	28.88			

S.E. of the difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 2.48 tons/ac. | 5. T means at the same level of H | = 3.21 tons/ac. |
| 2. H marginal means | = 1.76 tons/ac. | 6. V means at the same level of T | = 2.03 tons/ac. |
| 3. V marginal means | = 1.43 tons/ac. | 7. T means at the same level of V | = 2.87 tons/ac. |
| 4. H means at the same level of T | = 2.49 tons/ac. | S.E. of body of H×V table | = 1.76 tons/ac. |

Crop :- Sugarcane.

Ref :- A.P. 56(101).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :-To find out the effect of time of planting and age at harvest on the yield and juice quality of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) Trench digging. (b) Trench planting. (c) 15000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) 10 tons/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Trash twist propping and earthing up. (ix) 56.00°. (x) As per treatments.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(86) on page 356.

5. RESULTS :

(i) 27.8 tons/ac. (ii) (a) 7.83 tons/ac. (b) 4.23 tons/ac. (iii) Only main effect of T is highly significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	T ₃	Mean	V ₁	V ₂
H ₁	35.3	29.5	13.9	26.2	27.6	24.9
H ₂	38.0	30.5	20.1	29.5	29.1	30.0
H ₃	36.8	26.4	19.5	27.6	25.7	29.4
Mean	36.7	28.8	17.8	27.8	27.5	28.1
V ₁	36.1	29.9	16.4			
V ₂	37.3	27.7	19.2			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 2.26 tons/ac. | 5. T means at the same level of H | = 2.84 tons/ac. |
| 2. H marginal means | = 1.22 tons/ac. | 6. V means at the same level of T | = 1.73 tons/ac. |
| 3. V marginal means | = 1.00 tons/ac. | 7. T means at the same level of V | = 2.57 tons/ac. |
| 4. H means at the same level of T | = 2.11 tons/ac. | S.E. of body of H×V table | = 1.22 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 57(102).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'CV'.**

Object:—To find out the effect of time of planting and age at harvest on the yield and juice quality of different varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. N as A/S. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) Trench digging. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) 10 tons/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Trash twist propping and earthing up. (ix) 43.74". (x) As per treatments.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(86) on page 356.

RESULTS :

(i) 26.91 tons/ac. (ii) (a) 5.54 tons/ac. (b) 2.97 tons/ac. (iii) Main effects of T, H and interaction H×V are significant. Main effect of V is highly significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	T ₃	Mean	V ₁	V ₂
H ₁	27.0	29.2	22.3	26.2	27.6	24.7
H ₂	26.7	30.8	23.9	27.1	25.3	29.0
H ₃	28.2	26.4	27.3	27.3	23.2	31.4
Mean	27.3	28.8	24.5	26.9	25.4	28.4
V ₁	25.1	28.5	22.5			
V ₂	29.5	29.1	26.4			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 1.60 tons/ac. | 5. T means at the same level of H | = 2.01 tons/ac. |
| 2. H marginal means | = 0.86 tons/ac. | 6. V means at the same level of T | = 1.21 tons/ac. |
| 3. V marginal means | = 0.70 tons/ac. | 7. T means at the same level of V | = 1.81 tons/ac. |
| 4. H means at the same level of T | = 1.49 tons/ac. | S.E. of body of H×V table | = 0.86 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 58(144).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'CV'.**

Object:—To study the suitability of Rayungans as seed material under late planted conditions as compared to top setts.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fodder—Sugarcane. (b) Fodder (*Jowar*). (c) —. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 6.8.1958. (iv) (a) Trenching. (b) Trench planting (c) N.A. (d) 3.28' between rows. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Weeding, hoeing, earthing up and bamber propping. (ix) 90.1". (x) 19.1.1960 to 26.1.1960.

2. TREATMENTS :

All combination of (1) and (2)

- (1) 2 seed materials : S₁=Rayungans and S₂ Top setts.
 (2) 2 varieties : V₁=CO-419 and V₂=CO-527.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 105.6'×39.6'. (iii) 4. (iv) (a) 39.6'×26.4'. (b) 33.0'×19.8' (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Lodging due to heavy winds. (ii) Incidence of top shoot-borer, (iii) Yield of cane. (iv) (a) and (b) No. (c) Nil. (v) No. (vi) Heavy rains occurred during Oct. 1958 and crop was submerged in water for 12 hours on 21.10.1958. (vii) Nil.

5. RESULTS:

(i) 38.28 tons/ac. (ii) 5.39 tons/ac. (iii) All the effects are highly significant. (iv) Av. yield of cane in tons/ac.

	S ₁	S ₂	Mean
V ₁	36.16	24.89	30.53
V ₂	51.03	41.03	46.03
Mean	43.59	32.96	38.28

S.E. of any marginal mean = 1.91 tons/ac.

S.E. of body of table = 2.69 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 59(125).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'CMV'.

Object :—To study the cultural practices and nutrient requirements of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) N.A. (ii) (a) *Chalka*. (b) N.A. (iii) As per treatments. (iv) (a) 3 to 4 ploughings, levelling by running wooden plank-plate. (b) Planting. (c) 10,000 setts/ac. (d) 3' between rows. (e) 3 eye—budded/sett. (v) Nil. (vi) (*Eksali*) as per treatments. (vii) Irrigated. (viii) Mulching, weeding and earthing up. (ix) 55.11%. (x) 15th of Jan. and Feb. 1960.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 months of planting : D₁=Dec. 1958 and D₂=Jan. 1959.

(2) 3 varieties : V₁=CO—419, V₂=CO—467 and V₃=CO—527.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : M₁=175, M₂=225 and M₃=275 lb./ac.

(2) 2 times of application ; of N : T₁=90 and T₂=150 days of planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 21'×22½'. (b) 15'×22'. (v) 3' on either side of the plot and end plants of each row. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1959—contd. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 30.63 tons/ac. (ii) (a) 7.47 tons/ac. (b) 5.18 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	D ₁	D ₂	V ₁	V ₂	V ₃	M ₁	M ₂	M ₃	Mean
T ₁	31.78	29.78	30.07	32.67	29.60	29.57	30.61	32.17	30.78
T ₂	30.66	30.32	31.39	30.53	29.54	30.79	29.51	31.14	30.48
Mean	31.22	30.05	30.73	31.60	29.57	30.18	30.06	31.65	30.63
M ₁	29.37	30.99	29.45	32.92	28.17				
M ₂	31.52	28.60	30.19	29.92	30.07				
M ₃	32.75	30.56	32.54	31.96	30.47				
V ₁	30.52	30.94							
V ₂	31.46	31.74							
V ₃	31.67	27.46							

S.E. of difference of two

1. V marginal means	= 1.76 tons/ac.	8. V means at the same level of T	= 2.15 tons/ac.
2. D marginal means	= 1.44 tons/ac.	9. M means at the same level of D	= 1.73 tons/ac.
3. M marginal means	= 1.22 tons/ac.	10. D means at the same level of M	= 2.01 tons/ac.
4. T marginal means	= 1.00 tons/ac.	11. T means at the same level of D	= 1.41 tons/ac.
5. M means at the same level of V	= 2.11 tons/ac.	12. D means at the same level of T	= 1.75 tons/ac.
6. V means at the same level of M	= 2.47 tons/ac.	S.E. of body of V×D table	= 1.76 tons/ac.
7. T means at the same level of V	= 1.73 tons/ac.	S.E. of body of M×T table	= 1.22 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 58(25).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'IM'.**

Object :—To find out the effects of soil moisture in the formative and maturity phases of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane - Paddy. (b) Paddy. (c) G.L. at 5000 lb./ac. and N at 40 lb./ac. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) 22.2.1958. (iv) (a) Trénching. (b) Planting. (c) 15000 three-budded setts/ac. (d) 3.3' apart. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 61.14". (x) 12.3.1959.

2. TREATMENTS :

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

- (1) 3 levels of soil moisture during formation phase : A₁=25%, A₂=50% and A₃=75%.
- (2) 2 levels of soil moisture during maturing phase : B₁=25% and B₂=50%.
- (3) 2 levels of N as A/S : N₁=100 and N₂=200 lb./ac. of N.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 198'×85.8'. (iii) 3. (iv) (a) 1/30.8 ac. (b) 1/65.7 ac. (v) Yes. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) D.D.T. sprayed twice to check early shoot borer. (iii) Yield and no. of cane. (iv) (a) 1957—contd. with modification. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 47.39 tons/ac. (ii) 4.25 tons/ac. (iii) Only main effect of A is highly significant. (iv) Av. yield of cane in tons/ac.

	A ₁	A ₂	A ₃	Mean	N ₁	N ₂
B ₁	51.59	49.35	45.03	48.66	47.31	50.01
B ₂	48.19	48.05	42.13	46.12	45.21	47.03
Mean	49.89	48.70	43.58	47.39	46.26	48.52
N ₁	49.04	47.30	42.43			
N ₂	50.74	50.10	44.73			

S.E. of A marginal mean	= 1.23 tons/ac.
S.E. of B or N marginal mean	= 1.00 tons/ac.
S.E. of body of A×B or A×N table	= 1.73 tons/ac.
S.E. of body of B×N table	= 1.42 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 54(72).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'IM'.

Object :—To determine the water requirements and intervals of irrigation for sugarcane crop in relation to soil moisture, form and dose of manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fodder—*Jowar*. (c) F.Y.M. at 5 ton/ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 6.2.1954. (iv) (a) Forming furrows 1' deep. (b) Planting. (c) 15000 three-budded cane setts/ac. (d) 1.32'. (e) N.A. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Hoeing, weeding, earthing up, trash-twisting and propping. (ix) 44.28". (x) 15 to 17.2.1955.

2. TREATMENTS ;

Main-plot treatments :

2 soil moisture levels : H₁=above 10% and H₂=above 5%.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 sources of N : S₁=A/S and S₂=G,N.C.

(2) 2 levels of N : N₁=100 and N₂=200 lb./ac. of N.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/38.5 ac. (b) 1/60.6 ac. (v) Two rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of early shoot borer, Guesarol was sprayed. B.H.C. dusting was resorted to against white ant attack. (iii) Biometric observations and yield of cane. (iv) (a) 1954—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 34.35 tons/ac. (ii) (a) 3.87 tons/ac. (b) 6.57 tons/ac. (iii) H effect alone is highly significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	Mean	N ₁	N ₂
S ₁	40.59	28.07	34.33	34.75	33.90
S ₂	37.53	31.21	34.37	34.37	34.38
Mean	39.06	29.64	34.35	34.56	34.14
N ₁	37.84	31.26			
N ₂	40.28	28.02			

S.E. of difference of two

- | | |
|--|-----------------|
| 1. H marginal means | = 1.37 tons/ac. |
| 2. S or N marginal means | = 2.32 tons/ac. |
| 3. S or N means at the same level of H | = 3.29 tons/ac. |
| 4. H means at the same level of S or N | = 2.70 tons/ac. |
| S.E. of body of S×N table | = 2.32 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 56(51).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'IM'.**

Object :—To study the effect of soil moisture levels with two forms and levels of nitrogenous manures on the yield and juice quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna* for fodder. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 18.2.1956. (iv) (a) Formation of trends. (b) Trench planting. (c) 15,000 three-budded setts/ac. (d) 3.3' apart. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) 2 weedings, 2 earthings and removal of water shoots. (ix) 56.21". (x) 2.3.1957.

2. TREATMENTS :

Same as in expt. no. 54(72) on page 362.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/24.7 ac. (b) 1/60.06 ac. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) No lodging since it was propped with bamboos and wrapped periodically. (ii) Nil. (iii) Yield of cane. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 60.45 tons/ac. (ii) (a) 4.26 tons/ac. (b) 3.87 tons/ac. (iii) Only interaction H×S×N is significant. (iv) Av. yield of cane in tons/ac.

	H ₁	H ₂	Mean	N ₁	N ₂
S ₁	62.20	58.56	60.38	59.20	61.56
S ₂	61.69	59.34	60.52	57.70	63.33
Mean	61.94	58.95	60.45	58.45	62.45
N ₁	59.06	57.84			
N ₂	64.83	60.06			

S.E. of the difference of two

- | | |
|--|-----------------|
| 1. H marginal means | = 1.51 tons/ac. |
| 2. S or N marginal means | = 1.37 tons/ac. |
| 3. S or N means at the same level of H | = 1.94 tons/ac. |
| 4. H means at the same level of S or N | = 2.04 tons/ac. |
| S.E. of body of S×N table | = 1.37 tons/ac. |

Crop :- Sugarcane.**Ref :- A.P. 57(58).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'IM'.**

Object :—To study the effect of soil moisture in formative and maturity phases on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane—Paddy. (b) Paddy. (c) 5000 lb./ac. of G.L.+40 lb./ac. of N. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 21.3.1957. (iv) (a) Trenching. (b) Trench planting. (c) to (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Irrigated. (viii) Weeded twice, earthing up was done in July. (ix) 41.41". (x) 10.4.1958.

2. TREATMENTS :

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

(1) 2 levels of soil moisture during formation phase : $A_1=25\%$ and $A_2=50\%$.

(2) 2 levels of soil moisture during maturity phase : $B_1=25\%$ and $B_2=50\%$.

(3) 2 levels of N as A/S : $N_1=100$ and $N_2=200$ lb./ac. of N.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 1/35.7 ac. (b) 1/66.7 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The crop was kept erect by bamboo propping and regular wrapping. (ii) 2 sprayings of D.D.T. to check early shoot borer. (iii) Biometric observation and yield of cane. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS ;

(i) 32.89 tons/ac. (ii) 2.95 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	A_1	A_2	Mean	N_1	N_2
B_1	32.19	33.43	32.81	31.89	33.73
B_2	32.79	33.15	32.97	32.81	33.13
Mean	32.49	33.29	32.89	32.35	33.43
N_1	32.27	32.43			
N_2	32.71	34.15			

S.E. of any marginal mean = 0.74 tons/ac.

S.E. of body of any table = 1.04 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 59 (102).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CP'.

Object :—To study the effect of earthing up Sugarcane with reference to combination of soil moisture at different stages of crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac of N as A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 23.2.1959. (iv) (a) Trench digging. (b) Planting. (c) 15,000 three-budded setts/ac. (d) 3.3' between rows. (e) —. (v) Nil. (vi) CO—419. (vii) As per treatments. (viii) Trash-twist propping and earthing up. (ix) 36.21". (x) 10.2.1960.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : $I_1=Once$ in 12 days from the time of planting up to harvest and $I_2=Once$ in 24 days from planting time upto May and then once in 12 days upto harvest.

Sub-plot treatments :

2 earthing levels : $E_1=Once$ in 7 days after planting and $E_2=Once$ in 90 days after planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 39.6' × 33.0'. (b) 33.0' × 26.4'. (v) 3.3' × 3.3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 39.7 tons/ac. (ii) (a) 2.60 tons/ac. (b) 3.75 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	I ₁	I ₂	Mean
E ₁	38.2	37.1	37.7
E ₂	43.4	40.1	41.7
Mean	40.8	38.6	39.7

S.E. of difference of two

1. I marginal means = 1.30 tons/ac.
2. E marginal means = 1.88 tons/ac.
3. E means at the same level of I = 2.65 tons/ac.
4. I means at the same level of E = 2.29 tons/ac.

Crop :- Sugarcane.

Ref. :- A.P. 55(82).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'IMV'.

Object :- To study the possibility of maintaining the juice quality in spite of the high level of nitrogenous manuring by following an appropriate irrigation policy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) 18.2.1955. (iv) (a) Ploughing, formation of ridges and digging deep trenches. (b) Planting. (c) 15,000 three-budded setts/ac. (d) 3'×4'. (e) N.A. (v) Nil. (vi) and (vii) As per treatments. (viii) Weeding, hoeing and earthing up. (ix) 64.22%. (x) February, 1956.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I₁=6 days interval of irrigation during June to August and 12 days interval after wards. I₂=2 irrigations in first 15 days and subsequent irrigations once in 12 days.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 varieties of cane : V₁=CO-419, V₂=CO-888 and V₃=CO-527.

(2) 2 levels of N : N₁=100 lb./ac. of N in two doses, 30 lb./ac. at planting and 70 lb./ac. 8 weeks later and N₂=200 lb./ac. of N : 60 lb./ac. at planting and 140 lb./ac. 8 weeks later.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 46.2'×23.1' (b) 39.6'×16.5'. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mealy bugs. (iii) Yield of cane. (iv) (a) 1955-1956. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 43.0 tons/ac. (ii) (a) 5.29 tons/ac. (b) 3.85 tons/ac. (iii) Only V effect is highly significant. (iv) Av. yield of cane in tons/ac.

	I ₁	I ₂	Mean	N ₁	N ₂
V ₁	46.6	49.1	47.9	47.3	48.4
V ₂	44.1	44.1	44.1	42.5	45.7
V ₃	34.1	40.1	37.1	38.4	35.9
Mean	41.6	44.4	43.0	42.7	43.3
N ₁	41.1	44.4			
N ₂	42.2	44.5			

S.E. of difference of two

1. I marginal means = 1.53 tons/ac.
2. V marginal means = 1.36 tons/ac.
3. N marginal means = 1.11 tons/ac.
4. V means at the same level of I = 1.92 tons/ac.
5. I means at the same level of V = 2.19 tons/ac.
6. N means at the same level of I = 1.57 tons/ac.
7. I means at the same level of N = 1.89 tons/ac.
- S.E. of body of (N×V) table = 1.36 tons/ac.

Crop :- Sugarcane.**Ref. :- A.P. 56(59).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'IMV'.**

Object :—To study the possibility of maintaining the juice quality in spite of the high level of nitrogenous manuring by following an appropriate irrigation policy.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) 5,000 lb./ac. of *sesbania*+40 lb./ac. of N as A/S and 112 lb./ac. of P₂O₅ as Super.
(ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 22.2.1956. (iv) N.A. (b) Trench planting.
(c) 15,000 three-budded setts/ac. (d) 3' 4". (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated.
(viii) 3 weedings. Crop kept erect by trash-twist propping. (ix) 56.21%. (x) 13 to 16.2.1957.

2. TREATMENTS :

Same as in rept. no. 55(82) on page 365.

3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 46.2'×23.1'.
(b) 39.6'×16.5'. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) D.D.T. sprayed to prevent early shoot borer. (iii) Biometric observations and yield of cane. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Inconsistent and heavy rains. (vii) Nil.

5. RESULTS :

- (i) 45.54 tons/ac. (ii) (a) 3.64 tons/ac. (b) 3.09 tons/ac. (iii) Main effect of V alone is highly significant.
(iv) Av. yield of cane in ton/ac.

	I ₁	I ₂	Mean	N ₁	N ₂
V ₁	52.43	50.23	51.33	50.68	51.98
V ₂	43.41	44.16	43.78	42.96	44.61
V ₃	41.68	41.34	45.54	41.51	41.51
Mean	45.84	45.24	45.54	45.05	46.03
N ₁	45.35	44.75			
N ₂	46.33	45.74			

S.E. of difference of two

1. I marginal means	= 1.05 tons/ac.	5. I means at the same level of V	= 1.64 tons/ac.
2. V marginal means	= 1.09 tons/ac.	6. N means at the same level of I	= 1.26 tons/ac.
3. N marginal means	= 0.89 tons/ac.	7. I means at the same level of N	= 1.38 tons/ac.
4. V means at the same level of I	= 1.55 tons/ac.	S.E. of body of N×V table	= 1.09 tons/ac.

Crop :- Sugarcane.**Ref. :- A.P. 59(129).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'IMC'.**

Object .—To study the suitability of Dr. Clement's crop logging practices and effect of time of planting on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Rice—Sugarcane. (b) Rice. (c) 40 lb./ac. of N as A/S. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) Formation of trenches, 8" deep. (b) Planted in trenches. (c) 15,000 setts/ac. (d) 3.3' between rows. (e) 3 buds/sett. (v) Nil. (vi) CO-419 (late). (vii) Irrigated. (viii) Twice weeded, earthing up, wrapping and propping. (ix) 40.4%. (x) 17.3.1960.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 times of planting : T_1 = December planting and T_2 = February planting.
 (2) 2 levels of logging : L_0 = No crop logging practices and L_1 = Crop logging practices.

Crop log practices :

- (1) Irrigation : During formative phase till the end of June irrigations were based on tension meter reading and were given when tension of 0.35 atmosphere was developed. During maturity phase irrigations were given basing on the sheath moisture.
 (2) Manuring : 25 lb./ac. of N as A/S at planting. 25 lb./ac. of N on 30th day and 25 lb./ac. of N on 60th day after planting. Leaf 'N' was determined from samples on 165th day. Accordingly 65 lb./ac. of N for December planting and 35 lb./ac. of N for February planting were added in addition to 75 lb./ac. given to the crop.

Control :

- (1) Irrigation : Once in 7 days in formative phase and once 21 days in maturity phase.
 (2) Manuring : 100 lb./ac. of N as A/S in two equal doses on 45th and 90th days after planting added for both the plantings.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 271'×189'. (iii) 6. (iv) (a) 1/23.0 ac. (b) 1/62.5 ac. (v) 4 rows in each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) Nil. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 65.9 tons/ac. (ii) 4.12 tons/ac. (iii) No effect is significant. (iv) Av. yield of sugarcane in tons/ac.

	L_0	L_1	Mean
T_1	64.5	64.7	64.6
T_2	64.6	69.8	67.2
Mean	64.6	67.2	65.9

S.E. of any marginal mean = 1.19 tons/ac.

S.E. of body of table = 1.68 tons/ac.

Crop :- Sugarcane.**Ref :- A.P. 56(52).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'D'.**

Object :- To find out a suitable control measure for the early shoot borer of cane with insecticides applied as spray to soil.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) 40 lb./ac. of A/S. (ii) (a) Clay loam. (b) Refer soil analysis Anakapalle. (iii) 14, 15.3.1956 (vi) (a) N.A. (b) Trench planting. (c) 15,000 three budded setts/ac. (d) 3.3' between rows. (e) —. (v) 10 tons/ac. of F.Y.M. distributed in trenches and mixed with the loose soil at the bottom one month before planting. (vi) CO—419. (vii) Irrigated. (viii) Weeding, levelling, earthing, trenching and propping by trash-twist method. (ix) 57.51". (x) 11, 12.3.1957.

2. TREATMENTS :

6 insecticides. C_0 =Control, C_1 =spraying D.D.T. 0.32%, C_2 =Spraying D.D.T. 0.25%, C_3 =spraying Endrin 0.02%, C_4 =dusting D.D.T. 50% and C_5 =dusting Endrin 5.0%.
Dusting done to the soil at 20 lb./ac. before planting and 20 lb./ac. along with 1st dose of concentrates.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 59.4'×19.8'. (b) 52.8'×14.2'. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Good. (ii) As per object and treatments. (iii) Biometric observations and yield of cane. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 44.30 ton/ac. (ii) 3.32 ton/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in ton/ac.

Treatments	C_0	C_1	C_2	C_3	C_4	C_5
Av. yield	40.42	46.92	46.62	48.08	42.72	41.03

S.E./mean = 1.66 ton/ac.

Crop :- Sugarcane.**Ref :- A P. 56(48).****Site :- Sugarcane Res. Stn., Anakapalle.****Type :- 'D'.**

Object :- To work out a spray schedule with reduced number of sprayings to lessen the cost of spraying D.D.T. 0.32% against the early shoot borer.

1. BASAL CONDITIONS:

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) 40 lb./ac. of A/S. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1956. (iv) (a) Formation of 8" deep trenches. (b) N.A. (c) 15,000 three-budded setts /ac. (d) 3.3' between rows. (e) N.A. (v) 10 tons/ac. of F.Y.M. mixed up in the trenches one month before planting. (vi) CO—419. (vii) Irrigated. (viii) Weeding, levelling, earthing, trenching and propping. (ix) 57.51". (x) 8 to 11.3.1959.

2. TREATMENTS :

8 sprayings of D.D.T. at 0.32% at different ages : C_0 =Control (no spraying), C_1 =Spraying in 4th week, C_2 =Spraying during 6th week, C_3 =Spraying during 9th week. C_4 =Spraying during 4th and 6th weeks, C_5 =Spraying during 4th, 9th and C_6 =Spraying during 6th week and 9th weeks and C_7 =Spraying during 4th, 6th and 9th weeks.

3. DESIGN :

(i) R.B.D. (a) 8. (b) N.A. (iii) 2. (iv) 33.0'×26.4'. (b) 26.4'×19.8'. (v) Two rows on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Sprayed D.D.T. 0.32% against early shoot borer. (iii) Biometric observations and yield of cane. (iv) (a) 1956-1959. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 43.8 tons/ac. (ii) 6.92 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇
Av. yield	38.3	42.6	49.5	44.2	36.2	44.6	44.8	50.4

S.E./mean = 4.89 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(27).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :- To work out a spray schedule with reduced number of sprayings to lessen the cost of spraying D.D.T., 0.32% against the early shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N and 40 lb./ac. of P₂O₅. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 5.3.1958. (iv) (a) Trenches of 8" depth were formed. (b) Planting. (c) 15,000 setts/ac. (d) N.A. (e) 3 buds/sett. (v) F.Y.M. at 10 tons/ac.+100 lb./ac. of N as A/S applied in equal doses after 45 and 90 days of planting. (vi) CO-419 (late). (vii) Irrigated. (viii) Weeding. (ix) 61.14%. (x) 14, 15.3.1959.

2. TREATMENTS :

Same as in expt. no. 56(48) on page 368.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 39.6' x 25.4'. (b) 33.0' x 19.8'. (v) 2 guard rows on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1956-contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Yields are erratic due to floods.

5. RESULTS :

(i) 38.64 tons/ac. (ii) 7.93 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇
Av. yield	41.19	36.24	40.37	41.64	35.94	41.09	36.68	35.94

S.E./mean = 3.97 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(59).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :- To study the comparative effect of the two insecticides D.D.T. and Endrine in the control of early shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sugarcane-Paddy. (b) Paddy. (c) G.M., A/S and K. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 27.3.1957. (iv) (a) Formation of 8" deep trenches. (b) Planted in trenches. (c) 15,000 setts/ac. (d) and (e) N.A. (v) 10 tons/ac. of F.Y.M. and A/S at 100 lb./ac. of N in two doses. (vi) CO-419 (late). (vii) Irrigated. (viii) Earthing up, wrapping and propping twice. (ix) 41.41%. (x) 27.2.1958 to 2.3.1958.

2. TREATMENTS :

7 insecticidal sprayings : C₀=Control, C₁=D.D.T. at 0.32%, C₂=D.D.T. at 0.25%, C₃=D.D.T. at 0.16%,
C₄=Endrine at 0.02%, C₅=Endrine at 0.015% and C₆=Endrine at 0.01%.
Sprayings given during 4th, 6th and 9th weeks.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 40.9'×26.4'. (b) 34.2'×19.8'. (v) Two guard rows on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Nil. (ii) N.A. (iii) Yield of cane. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 50.02 tons/ac. (ii) 4.97 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆
Av. yield	41.45	51.91	51.57	50.03	51.57	53.30	50.28

S.E./mean = 2.48 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(24).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :-To study the comparative effect of the two insecticides D.D.T. and Endrine in the control of early shoot borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane—Paddy. (b) Paddy. (c) F.Y.M. at 10 C.L./ac. of A/S at 40 lb./ac. of N and Super at 40 lb./ac. of P₂O₅. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 2.3.1958. (iv) (a) Planting in trenches 8" deep with 4" loose soil beneath. (b) Planting. (c) 15,000, three-budded setts/ac. (d) and (e) —. (v) F.Y.M. at 10 tons/ac. and 100 lb./ac. of N as A/S in 3 equal doses. (vi) CO—419 (late). (vii) Irrigated. (viii) 2 earthings and propping. (ix) 61.14". (x) 16, 17.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(59) on page 369.

DESIGN :

(i) R.B.D (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 26.1'×39.6'. (b) 19.8'×33.0'. (v) Two guard rows on either side for each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Control measures as per treatments for early shoot borer. (iii) Yield of cane. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) No. (vi) Cylone on 15.5.1958 damaged the crop up to 10%. (vii) Nil.

5. RESULTS :

(i) 46.13 tons/ac. (ii) 6.03 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆
Av. yield	39.47	53.05	47.45	48.26	46.52	46.47	41.66

S.E./mean = 3.02 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 54(57).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :-To study the effect of inoculation of setts with smut pores.

1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) F.Y.M. and A/S, quantities—N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 8.3.1954. (iv) (a) Digging trenches. (b) Trench planting. (c) N.A. (d) 3.3' between rows. (e) N.A. (v) 10 tons/ac. of F.Y.M.+100 lb./ac. of N as A/s in two doses. (vi) CO-419. (vii) Irrigated. (viii) 3 to 4 weedings, wrapping and propping 3 times. (ix) 25.94" (x) 3 to 8.2.1965.

2. TREATMENTS :

2 levels of inoculation: T_0 =No inoculation and T_1 =S. tts inoculated with Smut.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 1/66.5 ac. (b) 1/133 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and yield of cane. (iv) 1951-1954. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 7.15 lb./clump. (ii) 80 lb./clump. (iii) Treatment difference is significant. (iv) Av. yield of cane in lb./clump.

Treatment	T_0	T_1
Av. yield	9.58	4.72

S.E./mean = 0.23 lb./clump.

Crop :- Sugarcane.

Ref :- A.P. 55(45).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'D'.

Object :- To study the effect of different chemical compounds on germination and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black clay loam *Regur*. (b) Refer soil analysis, Rudrur. (iii) 3.12.1955. (iv) (a) Ploughings, clod breaking and ridging. (b) and (c) N.A. (d) 18"×18". (e) N.A. (v) 5 tons/ac. of F.Y.M.+45 lb./ac. of P_2O_5 +225 lb./ac. of N as G.N.C. and A/S in 2:1 ratio. (vi) CO-419 (medium) (vii) Irrigated. (viii) Weeding, mulching and earthing up. (ix) 68". (x) 13.12.1956.

2. TREATMENTS :

4 chemical compounds : C_0 =Control, C_1 =Aretan, C_2 =Agallol and C_3 =Agrosan. One pound of compound dissolved in 2 gallons of water and the setts dipped in the solution for 5 minutes. Untreated setts were used for control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 51'×24'. (b) 45'×22'. (v) 3'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight borer attack—control measures N.A. (iii) Yield of cane. (iv) (a) 1955-58. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 52.66 tons/ac. (ii) 10.64 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C_0	C_1	C_2	C_3
Av. yield	47.89	52.41	54.60	55.76

S.E./mean = 5.32 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 56(109).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'D'.

Object :- To study the effect of different chemical compounds on germination and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam (*Regur*). (b) Refer soil analysis, Rudur. (iii) Nov.—Dec., 1956. (iv) (a) 3 to 4 ploughings, levelling and formation of furrows and ridges. (b) Planting. (c) 10,000 setts/ac. (d) 3' between rows. (e) 3 buds/sett. (v) 5000 lb./ac. of G.M. and 45 lb./ac. of P_2O_5 as Super added to G.M. (vi) CO—419, *Eksali*. (vii) Irrigated. (viii) Mulching weeding and earthing up. (ix) 69.40°. (x) 2nd week of Dec. 1957.

2. TREATMENTS :

Same as in expt. no. 55(45) on page 371.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 15'×60'. (b) 12'×54'. (v) 1.5'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of care. (iv) (a) 1955—1958. (b) N.A. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS ;

(i) 80.38 tons/ac. (ii) 11.47 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac

Treatment	C ₀	C ₁	C ₂	C ₃
Av. yield	72.96	80.04	83.37	85.14

S.E./mean = 5.73 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 57(111).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'D'.

Object :—To study the effect of different chemical compounds on germination and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) —/Nov. 1957. (iv) (a) 3 to 4 ploughings, levelling and formation of ridges and furrows. (b) Planting. (c) 10,000 setts/ac. (d) 3' between rows. (e) 3 buds/setts. (v) 5000 lb./ac. of G.M. and 45 lb./ac. of P_2O_5 as Super added to G.M. (vi) CO—419 (*eksali*). (vii) Irrigated. (viii) Mulching, weeding and earthing. (ix) 31.70°. (x) 3rd week of Dec. 1958.

2. TREATMENTS :

Same as in expt. no. 55(45) on page 371.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(109) on page 371.

5. RESULTS :

(i) 14.63 tons/ac. (ii) 2.02 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃
Av. yield	12.63	15.29	16.30	14.31

S.E./mean = 1.01 tons/ac.

Crop :- Sugarcane.

Ref :- A.P. 58(142).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'D'.

Object :—To study the effect of different chemical compounds on germination and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Rudrur. (iii) Nov.—Dec. 1958. (iv) (a) 3 to 4 ploughings, levelling and formation of furrows and ridges. (b) Planting. (c) 10,000 setts/ac. (d) 3' between rows. (e) 3 buds/sett. (v) 5000 lb./ac. of G.M. and 45 lb./ac. of P_2O_5 as Super added to G.M. (vi) CO—419 (*eksali*). (vii) Mulching, weeding and earthing up. (viii) Irrigated. (ix) 55.75%. (x) Dec. 1959 to 1st week of Jan. 1960.

2. TREATMENTS :

Same as in expt. no. 55(45) on page 371.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(109) on page 371.

5. RESULTS :

(i) 22.27 tons/ac. (ii) 3.18 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of Sugarcane in tons/ac.

Treatment	C ₀	C ₁	C ₂	C ₃
Av. yield	22.72	23.68	22.50	20.16

S.E./mean = 1.59 lb./ac.

Crop :- Sugarcane.

Ref :- A.P. 56(63).

Site :- Agri. Res. Stn., Rudrur.

Type :- 'D'.

Object :- To find out a suitable insecticide to control the early shoot borer of cane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Loam. (b) Refer soil analysis, Rudrur. (iii) 5.1.1956. (iv) (a) Ploughings, clod breaking and ridging. (b) and (c) N.A. (d) 3' between rows. (e) N.A. (v) 160 lb./ac. of N as G:N:C. and A/S in 1 : 1 ratio. (vi) CO—419 (*eksali*). (vii) Irrigated. (viii) 2 weedings and 2 heavy earthings. (ix) 71.45%. (x) 9.2.1957.

2. TREATMENTS :

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

(1) 4 insecticides : C₁=D.D.T. at 0.5%, C₂=B.H.C. at 0.5%, C₃=Endrin at 3 lb./ac, and C₄=Foliodol at 1 in 1500.

(2) 2 levels of spraying : L₁=1 and L₂=2 sprayings.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 33'×33'. (b) 33'×21'. (v) 2 rows on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Early shoot borer noticed. Control measures as per treatments. (iii) Yield of Sugarcane. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.30 tons/ac. (ii) 2.55 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 21.65 tons/ac.

	C ₁	C ₂	C ₃	C ₄	Mean
L ₁	20.75	17.39	20.63	19.81	19.64
L ₂	19.05	18.70	17.79	17.95	18.37
Mean	19.90	18.04	19.21	18.88	19.00

S.E. of L marginal mean = 0.64 tons/ac.

S.E. of C marginal mean = 0.90 tons/ac.

S.E. of body of table or control mean = 1.27 tons/ac.

Crop :- Cotton.**Ref :- A.P. 56(6).****Site :- Plant Breeding Stn., Mudhol.****Type :- 'M'.**

Object :—To study the comparative effects of F.Y.M. and A/S alone and in combination on Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) Nil. (ii) (a) Medium black soil. (b) N.A. (iii) 29.6.1956. (iv) (a) One Summer ploughing and 3 bakharing. (b) Drilling. (c) 16 lb./ac. (d) 18" between rows. (e) N.A. (v) N.A. (vi) *Gaorani* 6. (vii) Unirrigated. (viii) 1 hand weeding and 2 hoeings. (ix) 49.77". (x) 11.11.1956, 26.11.1956, 11.12.1956 and 26.12.1956.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 2 levels of A/S : $N_0=0$ and $N_1=100$ lb./ac.(2) 2 levels of F.Y.M. : $F_0=0$ and $F_1=4$ tons/ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 127'×15'. (b) 121'×9'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and yield of *kapas*. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :(i) 259 lb./ac. (ii) 48.8 lb./ac. (iii) Main effect of N alone is significant. (iv) Av. yield of *kapas* in lb./ac.

	F_0	F_1	Mean
N_0	216	242	229
N_1	298	278	288
Mean	257	260	259

S.E. of any marginal mean = 15.4 lb./ac.

S.E. of body of table = 21.8 lb./ac.

Crop :- Cotton (Kharif).**Ref. :- A.P. 58(53).****Site :- Plant Breeding Stn., Mudhol.****Type :- 'M'.**

Object :—To study the optimum time of application of A/S to Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 29.6.1958. (iv) (a) to (e) N.A. (v) Nil. (vi) *Gaorani* (late). (vii) Irrigated. (viii) Two weedings and two bullock hoeings. (ix) 39.59". (x) November to December, 1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N as A/S : $N_1=20$ and $N_2=40$ lb./ac.

(2) 8 split applications of A/S : T_0 =Control (2 plots), T_1 =Full dose before sowing, T_2 =Full dose at sowing, T_3 =Full dose one month after sowing, T_4 = $\frac{1}{2}$ dose before sowing+ $\frac{1}{2}$ at sowing, T_5 = $\frac{1}{2}$ before sowing+ $\frac{1}{2}$ one month after sowing, T_6 = $\frac{1}{2}$ at sowing+ $\frac{1}{2}$ one month after sowing and T_7 = $\frac{1}{2}$ before sowing+ $\frac{1}{2}$ at sowing+ $\frac{1}{2}$ one month after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) 128'×96'. (iii) 3. (iv) (a) 64'×12'. (b) 60'×9'. (v) 2'×1.5'. (vi) Yes.

4. GENERAL :

(i) Healthy. (ii) Only normal Bollworm attack ; control measures taken N.A. (iii) Yield of *Kapas*. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 372 lb./ac. (ii) 48.7 lb./ac. (iii) Control vs. others, and main effects of N and T are highly significant.
 (iv) Av. yield of *Kapas* in lb./ac.

Control = 273 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
N ₁	368	328	323	383	391	336	370	357
N ₂	478	325	394	431	478	393	400	414
Mean	423	327	359	407	435	365	385	386

S.E. of N marginal mean = 10.6 lb./ac.

S.E. of T marginal mean = 19.9 lb./ac.

S.E. of body of table = 28.1 lb./ac.

S.E. of control mean = 19.9 lb./ac.

Crop :- Cotton (*Kharif*).

Ref. :- A.P. 59(41).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'M'.

Object :- To study the effect of N, P and K on the yield of Cotton.

1. BASAL CONDITIONS :

- (i) (a) Jowar—Cotton. (b) Jowar. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 29.6.1959. (iv) (a) to (e) N.A. (v) Nil. (vi) *Gaorani* 6—(early). (vii) Unirrigated. (viii) —. (ix) 57.37". (x) 20.11.1959, 21.12.1959 and 20.1.1960.

2. TREATMENTS :

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

- (1) 2 levels of N : N₀=0 and N₁=30 lb./ac.
 (2) 2 levels of P₂O₅ : P₀=0 and P₁=30 lb./ac.
 (3) 2 levels of K₂O : K₀=0 and K₁=30 lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 8. (b) 78'×59'. (iii) 4. (iv) (a) 28'×19.5'. (b) 26'×16.5'. (v) 1'×1.5'. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of *Kapas*. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

- (i) 30.91 lb./ac. (ii) 564.8 lb./ac. (iii) Interaction N×K alone is significant. (iv) Av. yield of *kapas* in lb./ac.

	N ₀	N ₁	Mean	K ₀	K ₁
P ₀	2856	3528	3192	2995	3389
P ₁	3046	2932	2989	2970	3008
Mean	2951	3230	3091	2983	3199
K ₀	3059	2906			
K ₁	2843	3554			

S.E. of any marginal mean = 141.2 lb./ac.

S.E. of body of any table = 199.6 lb./ac.

Crop :- Cotton.

Ref. :- A.P. 58(69).

Site :- Agri. Res. Stn., Nandyal.

Type :- 'M'.

Object :-To find out the effect of burning Jonna stubbles on yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) *Jonna*—Cotton. (b) *Jonna*. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 12.10.1958. (iv) (a) Working with *gorru* and *guntaka* twice. (b) to (e) N.A. (v) Nil. (vi) 122 Asiatic Cotton (late). (vii) Unirrigated. (viii) Interculturing with *metta guntaka* and hand weeding. (ix) 11.21*. (x) 12.3.1959 to 18.4.1959.

2. TREATMENTS :

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

- (1) 2 levels of rabbing : $R_1=5$ and $R_2=10$ tons/ac. of burnt *Jowar* stubbles.
 (2) 2 levels of ash : $A_1=5$ and $A_2=10$ tons/ac. of burnt *Jowar* stubbles ash.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 1/75.76 ac. (b) 1/111.11 ac. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of *kapas*. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 303 lb./ac. (ii) 50.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of *kapas* in lb./ac.

Control = 269 lb./ac.

	A ₁	A ₂	Mean
R ₁	339	337	338
R ₂	306	306	306
Mean	323	322	322

S.E. of any marginal mean = 17.7 lb./ac.
 S.E. of body of the table or control mean = 25.0 lb./ac.

Crop :- Cotton.

Ref. :- A.P 58(70).

Site :- Agri. Res. Stn., Nandyal.

Type :- 'M'.

Object :-To determine the intake of fertilizers by Cotton plant.

1. BASAL CONDITIONS :

(i) (a) *Jonna*—Cotton. (b) *Jonna*. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 6.9.1958. (iv) (a) Worked with *gorru* and *guntaka* twice. (b) to (e) N.A. (v) Nil. (vi) *Desi* (late). (vii) Unirrigated. (viii) Interculturing with *metta guntaka* and hand weeding. (ix) 11.21*. (x) 2.3.1959 and 16.4.1959.

2. TREATMENTS :

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

- (1) 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=30$ lb./ac.
 (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=20$ and $P_2=30$ lb./ac.
 (3) 3 levels of K_2O : $K_0=0$, $K_1=20$ and $K_2=30$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 1/95.2 ac. (b) 1/200 ac. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Grey mildew attack—Fungi copper was sprayed. (iii) Yield of *kapas*. (iv) (a) N.A. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 392 lb./ac. (ii) 74.0 lb./c. (iii) No effect is significant. (iv) Av. yield of *kapas* in lb./ac.

	N ₀	N ₁	N ₂	Mean	P ₀	P ₁	P ₂
K ₀	405	405	401	404	380	413	418
K ₁	351	413	372	379	359	368	409
K ₂	364	418	397	393	397	389	393
Mean	373	412	390	392	379	390	407
P ₀	368	388	380				
P ₁	368	409	393				
P ₂	385	438	397				

S.E. of any marginal mean = 12.3 lb./ac.
S.E. of body of any table = 21.4 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 57(85).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :- To investigate the stability of nitrogenous fertilizers in the soils of the Tungabhadra project area with reference to their availability to Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Hingari jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 27.8.1957. (iv) (a) Working *dantulu* and *guntaka* 4 times. (b) to (e) N.A. (v) Nil. (vi) *Laxmi* (late). (v.i) Irrigated. (viii) 3 weedings and 2 intercultivations with *guntaka*. (ix) 11.01%. (x) 5.1.1958, 13.1.1958, 10.2.1958 and 2.4.1958.

2. TREATMENTS :

7 manurial treatments : M₀=Control (no manure), M₁=40 lb./ac. of N as A/S applied 1 week before sowing, M₂=2 tons/ac. of straw applied 1 week before sowing, M₃=5 tons/ac. of cotton stubbles applied one month before sowing, M₄=M₁+M₂, M₅=M₁+M₃ and M₆=M₁+5000 lb./ac. of G.L. applied 1 month before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 1/48.08 ac. (b) 1/64.52 ac. (v) 1 row on either side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Jassid attack and boll worm—Endrine and Parathion sprayed. (iii) Yield of *kapas*. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 941 lb./ac. (ii) 103.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	638	1211	711	719	1110	999	1200

S.E./mean = 51.8 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 58(93).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :- To investigate the stability of nitrogenous fertilizers in the soils of Tungbhadra project with reference to their availability to Cotton.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Hingari jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 30.8.1958. (iv) (a) 2 ploughings and working with *guntaka* twice. (b) and (c) N.A. (d) Ridges 2'6" apart. (e) N.A. (v) As per treatments. (vi) *Laxmi* (late). (vii) Irrigated. (viii) Intercultivation with *guntaka* and line weeding 4 times. (ix) 7.16". (x) 22.1.1959, 9.2.1959, 6.3.1959 and 7.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(85) on page 377.

5. RESULTS :

(i) 607 lb./ac. (ii) 90.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	519	650	481	533	606	634	828

S.E./mean = 45.4 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 57(86).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :- To fix up a suitable manurial dose for *Laxmi* cotton.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Hingari Jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 20.9.1957. (iv) (a) to (e) N.A. (v) As per treatments. (vi) *Laxmi* (late). (vii) Irrigated. (viii) Three weedings and 2 interculturations, with *guntaka*. (ix) 3.69". (x) 11.2.1958. and 14.3.1958.

2. TREATMENTS :

4 manurial treatments : M₁=5 tons/ac. of F.Y.M., M₂=30 lb./ac. of P₂O₅+30 lb./ac. of N, M₃=30 lb./ac. of P₂O₅+45 lb./ac. of N and M₄=30 lb./ac. of P₂O₅+60 lb./ac. of N.
P₂O₅ applied as Super and N as A/S.

G.M. crop ploughed in site for M₂, M₃ and M₄.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 1/48.08. ac. (b) 1/64.52 ac. (v) 1 row on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Jassids attack and bollworms—Endrin and Parathion sprayed twice. (iii) Yield of *kapas*. (iv) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 615 lb./ac (ii) 100.9 lb./ac. (iii) The treatment differences are significant. (vi) Av. yield of *kapas* in lb./ac.

Treatment	M ₁	M ₂	M ₃	M ₄
Av. yield	489	652	645	674

S.E./mean = 41.2 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 58(92).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To fix up a suitable manurial dose for Laxmi Cotton.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Mungari Jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 3.9.1958. (iv) (a) to (e) N.A. (v) Nil. (vi) *Laxmi* (late). (vii) Irrigated. (viii) Intercultivation with *guntaka* and line weeding. (ix) 7.16". (x) 20.1.1959, 10.2.1959, 5.3.1959 and 7.4.1959.

2. TREATMENTS :

Same as in expt. no. 57(86) on page 378.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 1/58.82 ac. (b) 1/79.36 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Jassids and boll worms—spraying Parathion. (iii) Yield of *kapas*. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 496 lb./ac. (ii) 58.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* lb/ac.

Treatment	M ₁	M ₅	M ₃	M ₄
Av. yield	460	467	515	541

S.E./mean = 23.8 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 59(51).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'M'.

Object :—To fix up a suitable manurial dose for Laxmi Cotton.

1. BASAL CONDITIONS :

(i) (a) and (b) N.A. (c) 5 tons/ac. of F.Y.M. (ii) (a) Black. (b) Refer soil analysis, Yemmiganur. (iii) 3.9.1959. (iv) (a) to (e) N.A. (v) As per treatments. (vi) *Laxmi* (late). (vii) Irrigated. (viii) Intercultivations with *danthis* and *guntaka* and line weeding. (ix) 7.7". (x) 7.2.1960, 18.3.1960 and 25.4.1960.

2. TREATMENTS :

Same as in expt. no. 57(86) on page 378.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 45'×42'. (iii) 6. (iv) (a) 1/92.59 ac. (b) 1/163.93 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) —. (ii) Attack of boll worms and jassids—spraying with Parathion periodically. (iii) Yield data. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 388 lb./ac. (ii) 59.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	M ₁	M ₂	M ₃	M ₄
Av. yield	319	380	416	436

S.E./mean = 24.1 lb./ac.

Crop :- Cotton.**Ref :- A.P. 56(5).****Site :- Plant Breeding Stn., Mudhol.****Type :- 'CM'.**

Object :—To study the best time of application of A/S in relation to spacing.

1. BASAL CONDITIONS :

(i) *Jowar*—Cotton. (b) *Jowar*. (c) 10 to 15 C.L./ac. of F.Y.M. (ii) (a) Medium black soil. (b) N.A. (iii) 4.7.1956. (iv) (a) One summer ploughing and three bakharing. (b) Drilling. (c) 16 lb./ac. (d) As per treatments. (e) N.A. (v) Nil. (vi) *Gaorani 6*. (vii) Unirrigated. (viii) 1 weeding and 2 hoeings. (ix) 49.77°. (x) 19.11.1956, 4.12.1956 and 4.1.1957.

2. TREATMENTS :**Main-plot treatments :**3 row spacings : $S_1=12''$, $S_2=18''$ and $S_3=24''$.**Sub-plot treatments :**

8 split applications of A/S at 100 lb./ac. : T_0 =No A/S, T_1 =Full dose at sowing, T_2 =Full dose at 1st hoeing, T_3 =Full dose at 2nd hoeing, $T_4=\frac{1}{2}$ at sowing and $\frac{1}{2}$ at 1st hoeing, $T_5=\frac{1}{2}$ at sowing + $\frac{1}{2}$ at second hoeing, $T_6=\frac{1}{2}$ at 1st hoeing + $\frac{1}{2}$ at 2nd hoeing and $T_7=\frac{1}{2}$ at sowing + $\frac{1}{2}$ at 1st hoeing + $\frac{1}{2}$ at 2nd hoeing.

3. DESIGN :

(i) Split-plot. (i) (a) 3 main-plots/replication ; 8 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) $14' \times 33'$ for S_1 , $15' \times 33'$ for S_2 and $16' \times 33'$ for S_3 . (b) $12' \times 30'$. (v) One row on either side and $1\frac{1}{2}'$ at either end. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Periodical heights, no. of bolls and yield of *kapas*. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 204.5 lb./ac. (ii) (a) 115.0 lb./ac. (b) 37.5 lb./ac. (iii) Main effect of T alone is significant. (iv) Av. yield of *kapas* in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
S_1	201.2	297.9	230.6	209.6	235.2	211.8	207.2	276.8	233.8
S_2	196.6	231.4	230.6	213.3	206.5	227.6	187.5	178.5	209.0
S_3	117.2	204.9	155.8	142.2	195.9	186.0	183.7	186.8	171.6
Mean	171.8	244.9	205.7	188.3	212.4	208.5	192.8	214.1	204.5

S.E. of difference of two

1. S marginal means = 33.0 lb./ac.
2. T marginal means = 18.0 lb./ac.
3. T means at the same level of S = 31.0 lb./ac.
4. S means at the same level of T = 44.0 lb./ac.

Crop :- Cotton.**Ref :- A.P. 57(13).****Site :- Plant Breeding Stn., Mudhol.****Type :- 'CM'.**

Object :—To study the best time of application of A/S in relation to spacing.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Cotton. (b) *Jowar*. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 2.7.1957. (iv) (a) One deep ploughing and 3 bakharing. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) *Gaorani 6* (early). (vii) Unirrigated. (viii) 2 weedings and 2 bullock hoeings. (ix) 52.96°. (x) 16.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(5) above.

4. GENERAL :

(i) Due to continuous rains in July and August the growth was stunted. (ii) Nil. (iii) Yield of *kapas*, periodical heights and number of bolls on random plants. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS

(i) 375 lb./ac. (ii) (a) 99.3 lb./ac. (b) 51.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of *kapas* in lb./ac.

	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₀	334	417	407	408	432	406	364	446	402
S ₁	389	364	348	414	378	386	336	349	370
S ₂	322	364	367	353	321	389	334	369	352
Mean	348	382	374	392	377	394	345	388	375

S.E. of difference of two

- | | |
|-----------------------------------|----------------|
| 1. S marginal means | = 28.3 lb./ac. |
| 2. T marginal means | = 24.0 lb./ac. |
| 3. T means at the same level of S | = 41.6 lb./ac. |
| 4. S means at the same level of T | = 48.4 lb./ac. |

Crop :- Cotton (Kharif).

Ref :- A.P. 56(91).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'I'.

Object :—To find out the optimum interval of irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Korra*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed. (b) Refer soil analysis, Yemmiganur. (iii) 19.9.1956. (iv) (a) to (e) N.A. (v) Super at 188 lb./ac. A/S at 100 lb./ac. at sowing + A/S at 100 lb./ac. at flowering. (vi) *Laxmi* (late). (vii) As per treatments. (viii) Working *danti* and *guntaka* 4 times and 4 weedings. (ix) 7.93°. (x) 11.2.1957 to 8.3.1957.

2. TREATMENTS :

4 intervals of irrigation : I₁=15 days, I₂=20 days, I₃=25 days and I₄=30 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 1/92.59 ac. (b) 1/152.30 ac. (v) One row on either side and two plants at either end. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Jassids and boll worms. Endrin and Guesarol 550 sprayed. (iii) Yield of *kapas*. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 756 lb./ac. (ii) 124.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	839	731	780	673

S.E./mean = 50.6 lb./ac.

Crop :- Cotton (Kharif).

Ref :- A.P. 57(87).

Site :- Agri. Res. Farm, Yemmiganur.

Type :- 'I'.

Object :—To find the optimum interval of irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Hingari Jonna*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 4.2.1957. (iv) (a) to (e) N.A. (v) 5 tons/ac. of F.Y.M. (vi) *Laxmi* (late). (vii) Irrigated. (viii) 3 line weedings and 2 intercultivations with *guntaka*. (ix) 11.01". (x) 22.1.1958, 11.2.1958 and 4.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(91) on page 381.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 1/91.74 ac. (b) 1/161.29 ac. (v) One row on either side and 2 plots on either end. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Jassids and bollworm attack—Endrin and Parathion sprayed. (iii) Yield of *kapas*. (iv) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1000 lb./ac. (ii) 149.4 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	1085	1002	963	950

S.E./mean = 61.0 lb./ac.

Crop :- Cotton (*Kharif*).

Ref :- A.P. 58(91).

Site :- Agri. Res. Stn., Yemmiganur.

Type :- 'P'.

Object :—To find the optimum interval of irrigation.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Korra*. (c) 5 tons/ac. of F.Y.M. (ii) (a) Mixed soil. (b) Refer soil analysis, Yemmiganur. (iii) 18.8.1958. (iv) (a) to (e) N.A. (v) G.M. crop of indigo ploughed in *situ*+30 lb./ac. P₂O₅ as Super+40 lb/ac. of N as A/S as basal and 20 lb./ac. of N at flowering. (vi) *Laxmi* (late). (vii) As per treatments. (viii) Intercultivation with *guntaka* and line weeding. (ix) 11.71". (x) 20.1.1959, 7.2.1959, 5.3.1959 and 6.4.1959.

2. TREATMENTS :

Same as in expt. no. 56(91) on page 381.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 1/92.59 ac. (b) 1/142.86 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Jassids and boll worms—spraying of Parathion. (iii) Yield of *kapas*. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 811 lb./ac. (ii) 97.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	847	794	770	833

S.E./mean = 39.7 lb./ac.

Crop :- Cotton (Kharif).**Ref :- A.P. 59(52).****Site :- Agri. Res. Farm, Yemmiganur.****Type :- 'I'.**

Object :—To find out the optimum interval of irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*—G.M. crop. (c) 5 tons/ac. of F.Y.M. (ii) (a) Black soil. (b) Refer soil analysis, Yemmiganur. (iii) 8.8.1959. (iv) (a) to (e) N.A. (v) G.M. ploughed in *situ*, estimated green matter at 2000 lb./ac. + 30 lb./ac. of P_2O_5 as Super, 40 lb./ac. of N as A/S— $\frac{1}{2}$ as basal and $\frac{1}{2}$ at flowering. (vi) *Laxmi* (late). (vii) Irrigated. (viii) Line weeding. (ix) 11.2". (x) 3.2.1960, 17.3.1960 and 23.4.1960.

2. TREATMENTS :

Same as in expt. no. 56(91) on page 381.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 72' × 32'. (iii) 6. (iv) (a) 1/75.76 ac. (b) 1/109.89'. ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Jassid and boll worms—spraying with Parathion. (iii) Yield of *kapas*. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 733 lb./ac. (ii) 108 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	I ₁	I ₂	I ₃	I ₄
Av. yield	778	716	745	693

S.E./mean = 44.1 lb./ac.

Crop :- Virginia Tobacco (Rabi).**Ref :- A.P. 58(86).****Site :- Tobacco Res. Stn., Burgamphad.****Type :- 'M'.**

Object :—To find the optimum dose of fertilizers to the Virginia Tobacco.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Virginia Tobacco. (c) Nil. (ii) (a) Black (slightly alluvial type). (b) Refer soil analysis, Burgamphad. (iii) 6 to 8.11.1958. (iv) (a) Ploughing by tractor, 4 ploughings by country plough and 2 harrowings. (b) to (e) N.A. (v) 4 C.L./ac. of F.Y.M. as B.D. (vi) Harrison special. (vii) Unirrigated. (viii) 1 hand weeding, 2 interculturings with junior hoe and with blade harrow. (ix) 1.80". (x) 9.1.1959 to 15.3.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(2) 2 levels of N : $N_0=0$, and $N_1=20$ lb./ac.(2) 2 levels of P_2O_5 and K_2O : $M_0=0$ and $M_1=100$ lb./ac. of P_2O_5 + 50 lb./ac. of K_2O .**3. DESIGN :**

(i) Fact. in R.B.D. (ii) (a) 4. (b) 440' × 220'. (iii) 5. (iv) (a) 1/11.23 ac. (b) 1/13.70 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 257 lb./ac. (ii) 45.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tobacco in lb./ac.

	M ₀	M ₁	Mean
N ₀	245	275	260
N ₁	227	281	254
Mean	236	278	257

S.E. of marginal means of N or M = 14.4 lb./ac.
S.E. of body of table = 20.4 lb./ac.

Crop :- Tobacco (Rabi).

Ref :- A.P. 58(90).

Site :- Tobacco Res. Stn., Kazipet.

Type :- 'M'.

Object :- To find out the optimum manurial dose and best source of N for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black cotton. (b) N.A. (iii) 30.10.1958. (iv) (a) 3 ploughings and 3 harrowings. (b) to (e) N.A. (v) Nil. (vi) Guntur white ash. (vii) Unirrigated. (viii) Weeding, topping and desuckering. (ix) N.A. (x) 20.2.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 sources of 40 lb./ac. of N : S₁=G.N.C., S₂=A/S, S₃=G.N.C.+A/S in 1:1 ratio and S₄=F.Y.M.

(2) 2 manurial treatments : M₀=0 and M₁=20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O. as Pot. Sul.

Manures were applied before planting by ring manuring.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 61'4"×56'. (b) 56'×50'8". (v) 32"×32". (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tobacco yield. (iv) (a) 1958—N.A. (b) No. (c) Nil (v) to (vii) Nil.

5. RESULTS :

(i) 542 lb./ac. (ii) 79.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tobacco in lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
M ₀	512	601	501	539	538
M ₁	562	579	485	560	547
Mean	537	590	493	549	542

S.E. of marginal mean of S = 27.9 lb./ac.
S.E. of marginal mean of M = 19.8 lb./ac.
S.E. of body of table = 39.5 lb./ac.

Crop :- Tobacco (Rabi).

Ref :- A.P. 59(46).

Site :- Tobacco Res. Stn., Kazipet.

Type :- 'M'.

Object :- To find out the optimum manurial dose and best source of N for Tobacco crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Black cotton. (b) N.A. (iii) 29.10.1959 to 7.11.1959. (iv) (a) 3 ploughings and furrowing. (b) to (e) N.A. (v) Nil. (vi) Guntur white ash. (vii) Unirrigated. (viii) Weeding, topping and desuckering. (ix) 1.26°. (x) 11 to 25.2.1960.

2. TREATMENTS:

Same as in expt. no. 58(90) on page 384.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 44'×33'. (b) 41'3"×33'. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Attack of aphids—Basudin sprayed. (iii) Tobacco yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 918 lb./ac. (ii) 450.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tobacco in lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
M ₀	728	1088	1072	1040	982
M ₁	848	1056	552	960	854
Mean	789	1072	812	1000	918

S.E. of marginal mean of S = 159.3 lb./ac.

S.E. of marginal mean of M = 112.7 lb./ac.

S.E. of body of table = 225.4 lb./ac.

Crop :- Tobacco (*Rabi*).

Ref :- A.P. 59(45).

Site :- Tobacco Res. Stn., Kazipet.

Type :- 'M'.

Object :—To find out the optimum manurial dose and best source of N for Tobacco crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (ii) *Jowar*. (c) Nil. (ii) (a) Black cotton. (b) N.A. (iii) 29.10.1959 to 7.11.1959. (iv) (a) 3 ploughings and 3 harrowings. (b) to (e) N.A. (v) Nil. (vi) Guntur white ash. (vii) Unirrigated. (viii) Weeding, topping and desuckering. (ix) 1.26°. (x) 11 to 25.2.1960.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 4 sources of 20 lb./ac. of N : S₁=G.N.C., S₂=A/S, S₃=G.N.C.+A/S and S₄=F.Y.M.

(2) 2 levels of P and K as Super and Pot. Sul. : M₀=0, M₁=20 lb./ac. of P₂O₅+20 lb./ac. of K₂O.

N applied in equal doses in S₃. Manures were given two days after planting and method of application was ring manuring.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 77'×33'. (b) 74'3"×33'. (v) One row of 33". (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Attack by aphids—Basudin sprayed. (iii) Tobacco yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS:

(i) 1311 lb./ac. (ii) 489.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tobacco in lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
M ₀	1404	1622	978	1129	1283
M ₁	1360	1422	1280	1293	1339
Mean	1382	1522	1129	1211	1311

S.E. of marginal mean of S = 173.1 lb./ac.

S.E. of marginal mean of M = 122.4 lb./ac.

S.E. of body of table = 244.9 lb./ac.

Crop :- Tobacco (Rabi).

Ref :- A.P. 54(25).

Site :- Tobacco Res. Stn., Madira.

Type :- 'M'.

Object:—To find out the optimum manurial dose for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tobacco. (c) 3 C.L./ac. of F.Y.M. (ii) (a) Clay. (b) N.A. (iii) 10.11.1954. (iv) (a) 3 ploughings, harrowing and working with marker. (b) and (c) N.A. (d) 33"×33". (e) N.A. (v) Nil. (vi) Virginia Tobacco. (vii) Irrigated. (viii) Working blade harrow and weedings. (ix) N.A. (x) 16.2.1955 to 29.3.1955.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : N₀=0, and N₁=40 lb./ac.

(2) 2 levels of P as Super : P₀=0 and P₁=40 lb./ac.

(3) 2 levels of K as Pot. Sul. : K₀=0, and K₁=40 lb./ac.

Time and method of application N.A.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 50'×22'. (b) 44.5'×16.5'. (v) 33"×33". (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tobacco yield. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 903 lb./ac. (ii) 140.0 lb./ac. (iii) Only N×P×K interaction is significant. (iv) Av. yield of tobacco in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	849	907	878	853	904
N ₁	860	993	927	851	1002
Mean	855	950	903	852	953
K ₀	779	924			
K ₁	931	925			

S.E. of any marginal means = 35.0 lb./ac.

S.E. of body of any table = 49.5 lb./ac.

Crop :- Tobacco.**Ref :- A.P. 55(14).****Site :- Tobacco Res. Stn., Madira.****Type :- 'M'.**

Object :—To find out the optimum manurial dose for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Virginia Tobacco. (c) As per treatments. (ii) (a) Clay. (b) N.A. (iii) 24.10.1955. (iv) (a) 3 ploughings, harrowing and working with marker. (b) and (c) N.A. (d) 33"×33". (e) N.A. (v) Nil. (vi) Virginia Tobacco. (vii) Irrigated. (viii) Working harrow and weedings. (ix) 6.37". (x) 8.1.1956 to 5.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 54(25) on page 386.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tobacco yield. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 872 lb./ac. (ii) 125.8 lb./ac. (iii) Main effects of N and P and N×K interaction are significant. (iv) Av. yield of tobacco in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	760	890	825	861	790
N ₁	879	957	918	816	1020
Mean	820	924	872	839	905
K ₀	794	883			
K ₁	846	964			

S.E. of any marginal mean = 31.5 lb./ac.

S.E. of body of table = 44.5 lb./ac.

Crop :- Tobacco.**Ref :- A.P. 56(72).****Site :- Tobacco Res. Stn., Madira.****Type :- 'M'.**

Object :—To find out the optimum manurial dose for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 6 C.L./ac. of F.Y.M. (ii) (a) Black cotton. (b) N.A. (iii) 19.11.1956. (iv) (a) 5 ploughings and 2 *bakharings*. (b) to (e) N.A. (v) Nil. (vi) Guntur white ash. (vii) Unirrigated. (viii) Topping, weeding and interculturing. (ix) N.A. (x) 17.2.1957.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 386. Manuring done on 8.11.1956.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 22'×50'. (v) Nil. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Grass hopper attack—Gammexane mixed with sand sprinkled. (iii) Tobacco (green leaf) yield. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3657 lb./ac. (ii) 929.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tobacco (green leaf) yield in lb./ac.

	P ₀	P ₁	Mean	K ₁	
N ₀	3429	3239	3334	3259	3409
N ₁	3980	3980	3980	4031	3930
Mean	3704	3610	3657	3645	3669
K ₀	3619	3671			
K ₁	3790	3548			

S.E. of marginal means = 232.3 lb./ac.
S.E. of body of table = 328.6 lb./ac.

Crop :- Virginia Tobacco (Rabi).

Ref :- A.P. 58(85).

Site :- Tobacco Res. Stn., Burgamphad.

Type :- 'C'.

Object :—To see the effect of local vs. improved cultural practices on the yield of Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Virginia tobacco. (c) Nil. (ii) (a) Black (slightly alluvial). (b) Refer soil analysis, Burgamphad. (iii) 2 to 5.11.1958. (iv) (a) As per treatments. (b) to (e) N.A. (v) 4 C.L./ac. of F.Y.M.+ 10 lb./ac. of N as A/S as top dressing. (vi) Harrison special. (vii) Unirrigated. (viii) Hand weeding, interculturing and working in both directions with blade harrow. (ix) 1.80". (x) 9.1.1959 to 15.3.1959.

2. TREATMENTS :

C₁=Local practices—5 ploughings and 2 harrowings.
C₂=Improved practices—3 ploughings and 2 harrowings.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 176'×88'. (iii) 12. (iv) (a) 1/11.23 ac. (b) 1/13.70 ac. (v) One row on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 178 lb./ac. (ii) 46.2 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	C ₁	C ₂
Av. yield	168	187

S.E./mean = 13.3 lb./ac.

Crop :- Virginia Tobacco (Rabi).

Ref :- A.P. 59(72).

Site :- Tobacco Res. Stn., Burgamphad.

Type :- 'C'.

Object :—To see the effect of local vs. improved cultural practices on the yield of Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Virginia tobacco. (c) 3 C.L./ac. of F.Y.M.+112 lb./ac. of A/S. (ii) (a) Black soil. (b) Refer soil analysis, Burgamphad. (iii) 12 11.1959. (iv) (a) As per treatments. (b) to (e) N.A. (v) 20 lb./ac. of N+20 lb./ac. of P₂O₅+20 lb./ac. of K₂O in the form of A/S, Super and Pot. Sul. (vi) Harrison special. (vii) Unirrigated. (viii) Interculturing with junior hoe was done. (ix) 0.41". (x) 18.1.1960 to 10.3.1960.

2. TREATMENTS :

Same as in expt. no. 58(85) on page 388.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 93.5'×49.5'. (iii) 6. (iv) (a) 1/37.7 ac. (b) 1/45.0 ac. (v) One row on either side of the net plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco (cured leaves) yield. (iv) (a) 1958—1960. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 421 lb./ac. (ii) 105.9 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	C ₂	C ₂
Av. yield	431	411

S.E./mean = 43.2 lb./ac.

Crop :- Virginia Tobacco (Rabi).

Ref :- A.P. 58(87).

Site :- Tobacco Res. Stn., Burgamphad.

Type :- 'C'.

Object :—To find out the optimum spacing for Tobacco crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Virginia Tobacco. (c) Nil. (ii) (a) Black slightly alluvial type. (b) Refer soil analysis, Burgamphad. (iii) 29.10.1958 to 1.11.1958. (iv) (a) Tractor ploughing, 4 ploughings by country plough and 2 harrowings. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 4 C.L./ac. of F.Y.M.; 10 lb./ac. of N as A/S as top dressing. (vi) Virginia Tobacco (Chattam). (vii) Unirrigated. (viii) Interculturing with junior hoe and country ploughing. (ix) 1.80°. (x) 9.1.1959 to 1.3.1959.

2. TREATMENTS :

S₁=48" between rows and 24" between plants.

S₂=33" between rows and 33" between plants.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 176'×88'. (iii) 12. (iv) (a) 1/11.23 ac. (b) 1/13.70 ac. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 271 lb./ac. (ii) 41.3 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	S ₁	S ₂
Av. yield _r	269	273

S.E./mean = 11.9 lb./ac.

Crop :- Tobacco (Rabi).

Ref :- A.P. 58(89).

Site :- Tobacco Res. Stn., Kazipet.

Type :- 'C'.

Object :—To find out the effect of topping at different stages of the Tobacco crop after its full growth.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black cotton. (b) N.A. (iii) 15.11.1958. (iv) (a) 3 ploughings and 3 harrowings. (b) to (e) N.A. (v) 20 lb./ac. of N as A/S and 20 lb./ac. of P_2O_5 as Super. (vi) Guntur white ash. (vii) Unirrigated. (viii) Interculturing operations with weeding, topping and desuckering. (ix) N.A. (x) 28.2.1959 to 2.3. 1959.

2. TREATMENTS :

4 topping treatments : T_1 =Topping leaving 14 leaves, T_2 =Topping leaving 16 leaves, T_3 =Topping leaving 18 leaves and T_4 =Topping flower heads.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 58' 8"×48'. (b) 53'4"×42'8". (v) 32"×32", (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tobacco yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 637 lb./ac. (ii) 99.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	739	611	590	607

S.E./mean = 44.4 lb./ac.

Crop :- Tobacco (Rabi).

Ref :- A.P. 59(47).

Site :- Tobacco Res. Stn., Kazipet.

Type :- 'C'.

Object :—To find out the effect of topping at different stages of the Tobacco crop after its full growth.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Black cotton. (b) N.A. (iii) 18.11.1959. (iv) (a) 3 ploughings and barrowings. (b) to (e) N.A. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Pot. Sul. (vi) Guntur white ash. (vii) Unirrigated. (viii) Interculturing operation with regular weeding, topping and desuckering. (ix) 1.26". (x) 15.2.1960.

2. TREATMENTS :

Same as in expt. no. 58(89) on page 389.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 33'×33'. (b) 30'3"×33'. (v) One row of 33". (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack by aphids, Basudin sprayed. (iii) Tobacco yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 903 lb./ac. (ii) 446.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	820	724	934	1135

S.E./mean = 199.6 lb./ac.

Crop :- Tobacco.

Ref :- A.P. 54(26).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object :—To find out the effect of topping at different stages of the Tobacco crop after its full growth.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tobacco. (c) Nil. (ii) (a) Clay. (b) N.A. (iii) 2nd week of November, 1954. (iv) (a) 3 ploughings, harrowing and working with marker. (b) and (c) N.A. (d) 33"×33". (e) N.A. (v) 50 lb./ac. of A/S. (vi) *Natu* tobacco (Guntur white ash). (vii) Irrigated. (viii) Blade harrow and weeding. (ix) N.A. (x) 3rd week of March, 1955.

2. TREATMENTS :

T_1 =Topping leaving 12 leaves, T_2 =Topping leaving 14 leaves, T_3 =Topping leaving 16 leaves, T_4 =Topping leaving 18 leaves and T_5 =Only flower head removed.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 96'×18'. (b) 90'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco (cured leaves). (iv) (a) 1950—1954. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 696 lb./ac. (ii) 128 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tobacco in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	627	727	707	700	720

S.E./mean = 52.3 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(39).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'M'.

Object :- To find out the most suitable manure for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) No. (ii) (a) Red gravelly. (b) N.A. (iii) 4, 5.8.1955. (iv) (a) 2 ploughings with country plough and 1 ploughing with *guntaka*. (b) N.A. (c) 85 lb./ac. (d) 9"×9". (e) 1. (v) 2½ tons of F.Y.M.+3½ tons of tank silt/ac. Manure applied by broadcasting 20 days prior to sowing and then covered by ploughing and working *guntaka*. (vi) TMV—3 (late) spreading. (vii) Unirrigated. (viii) Thinning operations and weeding. (ix) 14.59". (x) 10.12.1955.

2. TREATMENTS :

12 manurial treatments : $M_0=0$, $M_1=C.M.$ at 5 tons/ac., $M_2=10$ lb./ac. of N, $M_3=20$ lb./ac. of N, $M_4=M_2+10$ lb./ac. of K, $M_5=M_2+20$ lb./ac. of K, $M_6=M_3+10$ lb./ac. of K, $M_7=M_3+20$ lb./ac. of K, $M_8=M_2+20$ lb./ac. of P, $M_9=M_3+20$ lb./ac. of P, $M_{10}=M_4+20$ lb./ac. of P and $M_{11}=M_7+20$ lb./ac. of P.

N applied as A/S, P as Super and K as Pot. Sul.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 57'×9'. (b) 54'×6'. (v) 2 guard rows around the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of red hairy caterpillar. Caterpillars hand picked. (iii) Groundnut yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 648 lb./ac. (ii) 79.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}
Av. yield	577	589	609	646	655	654	633	723	625	658	710	699

S.E./mean = 39.6 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 56(22).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'M'.**

Object :—To find out the most suitable manure for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons of C.M.+3½ tons of tank silt/ac. (ii) (a) Red sandy soil. (b) N.A. (iii) 20.7.1956. (iv) (a) 2 country ploughings, 1 *guntaka* and 1 *gorru*. (b) Hand drilling. (c) 85 lb./ac. (d) 9"×9". (e) N.A. (v) Nil. (vi) TMV—3 (late). (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 27.43". (x) 8.1.1957.

2. TREATMENTS :

Same as in expt. no. 55(39) on page 391.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 60'×12'. (b) 54'×6'. (v) Four rows around. (vi) Yes.

4. GENERAL :

(i) Stunted during initial stages. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Suffered prolonged droughts during initial stages. The crop recovered with the help of rains received during the middle of September. Flowering started during the end of September. (vi) Nil.

5. RESULTS :

(i) 1162 lb./ac. (ii) 126.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	953	1092	1098	1119	1208	1161	1180	1220	1283	1298	1082	1254

S.E./mean = 63.2 lb./ac.

Crop :- Groundnut (Kharif).**Ref :- A.P. 57(77).****Site :- Regional Oilseed Res. Stn., Anantapur.****Type :- 'M'.**

Object :—To find out the most suitable manure for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—castor in two year rotation). (b) Castor. (c) N.A. (ii) (a) Red soil. (b) N.A. (iii) 16, 17.8.1957. (iv) (a) 2 country ploughings and 1 *guntaka*. (b) to (e) N.A. (v) Nil. (vi) TMV—3 (late). (vii) Unirrigated. (viii) 2 hoeings and 2 weedings. (ix) 13.44". (x) 13 to 15.12.1957.

2. TREATMENTS :

Same as in expt. no. 55(39) on page 391.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 60'×12'. (b) 54'×6'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild incidence of *Tikka* leaf spot. (iii) Groundnut yield. (iv) (a) 1955—1957. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 298 lb./ac. (ii) 23.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	292	292	284	273	313	319	292	273	302	307	317	360

S.E./mean = 11.5 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 54(52).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the effect of P on the yield of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Horse gram. (c) Nil. (ii) (a) Sandy. (b) Refer soil analysis Bapatla. (iii) 17.7.1954. (iv) (a) 2 ploughings. (b) N.A. (c) 250 lb./ac. (d) 6"×6". (e) N.A. (v) F.Y.M. at 5 tons/ac. (vi) TMV—3. (vii) Unirrigated. (viii) 1 weeding. (ix) 16.2". (x) 3.12.1954.

2. TREATMENTS :2 levels of Super : $P_0=0$ and $P_1=448$ lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 34.98'×15.18'. (b) 33.00'×13.20'. (v) 0.99' around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of aphids—no control measures taken. (iii) Groundnut yield. (iv) (a) 1954—contd. (b) and (c) N.A. (v) and (vi) Nil. (vii) Experiment was conducted by Agronomy Section.

5. RESULTS :

(i) 174 lb./ac. (ii) 30 lb./ac. (iii) The treatment difference is highly significant. (iv) Av. yield of pod in lb./ac.

Treatment	P_0	P_1
Av. yield	108	240

S.E./mean = 8.7 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 55(18).****Site :- Agri. College Farm, Bapatla.****Type :- 'M'.**

Object :—To study the effect of P on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 7, 8.7.1955. (iv) (a) 3 ploughings. (b) Seeds dibbled in lines (furrows). (c) 250 lb./ac. (d) 6"×6". (e) N.A. (v) 5 tons/ac. of F.Y.M. (vi) TMV—3. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 25.11.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(52) above.

4. GENERAL :

(i) Satisfactory. (ii) Attack of aphids—B.H.C. 50% sprayed. (iii) Groundnut yield. (iv) (a) 1954—contd. (b) and (c) N.A. (v) and (vi) Nil. (vii) Experiment was conducted by Agronomy section.

5. RESULTS :

(i) 716 lb./ac. (ii) 152 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of groundnut in lb /ac.

Treatment	P_0	P_1
Av. yield	544	888

S.E./mean = 43.8 lb./ac.

Crop :- Groundnut (Kharif).**Ref :- A.P. 56(104).****Site :- Govt. Agri. Farm, Dindi.****Type :- 'M'.**

Object :—To find out the manurial requirements of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1956. (iv) (a) Ploughing. (b) Dibbling. (c) 60 lb./ac. (d) 1½' between rows. (e) N.A. (v) Nil. (vi) TMV—2. (vii) Unirrigated. (viii) Hand-weeding and harrowing. (ix) 33.73'. (x) 29.10.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S: $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P_2O_5 as Triple super: $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 33'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No. (iii) Groundnut yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) As manured levels were not maintained for the experiment conducted during 1954, 1955 the data were not analysed.

5. RESULTS ;

(i) 533 lb./ac. (ii) 130.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of groundnut in lb./ac.

	N_0	N_1	N_2	Mean
P_0	440	520	440	467
P_1	660	440	660	587
P_2	520	540	580	547
Mean	540	500	560	533

S.E. of any marginal mean = 53.2 lb./ac.

S.E. of the body of the table = 92.2 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 58(125).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :-To find out the manurial requirements of Groundnut crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Groundnut. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 3.7.1958. (iv) (a) Ploughing. (b) Dibbling. (c) 60 lb./ac. (d) 1½' between rows. (e) N.A. (v) Nil. (vi) TMV—2. (vii) Unirrigated. (viii) Hand weeding and harrowing. (ix) 18.19'. (x) 28.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(104) on page 393.

5. RESULTS :

(i) 1331 lb./ac. (ii) 221.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Groundnut in lb./ac.

	N_0	N_1	N_2	Mean
P_0	1160	1440	1340	1313
P_1	1420	1320	1460	1400
P_2	1120	1400	1320	1280
Mean	1233	1387	1373	1331

S.E. of any marginal mean = 90.4 lb./ac.

S.E. of body of the table = 156.5 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 59(15).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :-To find out the manurial requirements of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy soil. (b) N.A. (iii) 6.7.1959. (iv) (a) N.A. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) TMV—2. (vii) Unirrigated. (viii) 3 hand weedings and 3 buckerings. (ix) 22.43". (x) 22.10.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(104) on page 393.

5. RESULTS :

(i) 360 lb./ac. (ii) 103.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	414	341	396	384
P ₁	356	257	407	340
P ₂	282	443	347	357
Mean	351	347	383	360

S.E. of any marginal mean = 42.2 lb./ac.

S.E. of body of the table = 73.1 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 58(23).

Site :- Regional Oil seed Res. Stn., Kadiri.

Type :- 'M'.

Object :-To determine the optimum dose of artificial manures required for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Nil. (c) No. (ii) (a) Red sandy loam. (b) Refer soil analysis, Kadiri. (iii) 22.7.1958. (iv) (a) 2 country ploughings and *guntaka*. (b) By country seed/drill. (c) 60 lb./ac. (d) between rows 12". (e) N.A. (v) Nil. (vi) TMV—3 (spreading), (medium). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 27.94". (x) 28.12.1958 to 1.1.1959.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₀=0, N₁=15, and N₂=30 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=15, and P₂=30 lb./ac.

(3) 3 levels of K as Pot. Sul. : K₀=0, K₁=15, and K₂=30 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 2. (iv) (a) 63'×9'. (b) 60'×6'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Mild incidence of leaf minor. No control measures were taken. (iii) Growth measurements and pod counts of representative plants and pod yield. (iv) (a) 1958—1960. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1123 lb./ac. (ii) 187.1 lb./ac. (iii) Only N×P×K interaction is significant. (iv) Av. yield of pods in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	960	1087	1257	1101	1114	1129	1061
N ₁	1234	1033	1121	1129	1165	1062	1161
N ₂	1048	1199	1171	1139	1197	968	1253
Mean	1081	1106	1183	1123	1159	1053	1158
K ₀	1071	1203	1202				
K ₁	1096	902	1160				
K ₂	1075	1214	1186				

S.E. of any marginal mean = 44.1 lb./ac.
S.E. of body of any table = 76.4 lb./ac.

Crop :- Groundnut (*Khari*f).

Ref :- A.P. 59(112).

Site :- Regional Oilseed Res. Stn., Kadiri.

Type :- 'M'.

Object :—To determine the optimum dose of N, P and K required for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) 3 C.L./ac. of C.M. and 2½ C.L./ac. of shell Groundnut. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 7, 8.7.1959. (iv) (a) Two ploughings with country plough. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) TM—3, Spreading (*medium*). (vii) Unirrigated. (viii) Hoeing and weedings. (ix) 16.66°. (x) 25 to 28.12.1959.

2. TREATMENTS and DESIGN :

Same as in expt. no. 58(23) on page 395.

4. GENERAL :

(i) Normal. (ii) Leaf minor incidence—B.H.C. 10 % sprayed. (iii) Pod yield. (iv) (a) 1958–1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 768 lb./ac. (ii) 78.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	693	781	761	745	807	726	703
N ₁	770	806	777	785	800	768	787
N ₂	741	792	789	774	765	749	808
Mean	735	793	776	768	791	747	766
K ₀	741	826	805				
K ₁	737	745	760				
K ₂	726	809	762				

S.E. of any marginal mean = 32.0 lb./ac.
S.E. of body of any table = 18.5 lb./ac.

Crop :- Groundnut (Rabi).

Ref :- A.P. 59(4).

Site :- Groundnut Res. Stn., Kaikalur.

Type :- 'M.'

Object :- To determine the optimum dose of artificial manures required for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut—Paddy. (b) Paddy. (c) 10 C.L./ac. of C.M. (ii) (a) Sandy Loam. (b) N.A. (iii) 10, 11.1.1959. (iv) (a) 5 country ploughings and levelling. (b) N.A. (c) 80 lb./ac. of kernels. (d) 7½" between rows. (e) 1. (v) N.A. (vi) TMV—2 (Bunch variety—early). (vii) Irrigated (viii) 1 weeding. (ix) 1.23". (x) 13 to 19.4.1959.

2. TREATMENTS :

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

(1) 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

(3) 3 levels of K_2O : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN .

(i) Fact. in R.B.D. (ii) (a) 27. (b) 56'×324'. (iii) 2. (iv) (a) 56'×12'. (b) 56'×10'. (v) 2' border left between plots. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Mortality of plants occurred due to seepage of water resulting in poor pod development. (ii) Slight incidence of fungus—cupraman sprayed. (iii) Yield of pods. (iv) (a) No. (b), Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 539 lb./ac. (ii) 407.7 lb./ac. (iii) Only P × K interaction is significant. (iv) Av. yield of pods in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	641	447	590	559	596	473	609
N_1	538	544	285	456	207	544	616
N_2	583	616	603	601	784	603	415
Mean	587	536	493	539	529	540	547
K_0	518	505	564				
K_1	246	713	661				
K_2	998	389	253				

S.E. of any marginal mean = 96.1 lb./ac.

S.E. of body of any table = 166.4 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(7).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To find out the manurial requirements of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Warangal. (iii) 22.6.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Spanish peanut. (vii) Unirrigated. (viii) 2 intercultures with *danthis*. Intercultures with *desi* plough and 2 weedings. (ix) 38.72". (x) 18.10.1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 66' × 33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of pods. (iv) (a) 1955—N.A. (b) Yes. (c) Nil. (v) (a) Himayatnagar, Sangareddy, Raichur and Dindi. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1300 lb./ac. (ii) 126 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	P ₀	P ₁	P ₂	Mean
N ₀	1290	1320	1130	1247
N ₁	1335	1370	1190	1298
N ₂	1405	1305	1355	1355
Mean	1343	1332	1225	1300

S.E. of any marginal mean = 51.4 lb./ac.
S.E. of body of table = 89.1 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 56(111).

Site :- Govt. Main Farm, Warangal.

Type :- 'M.'

Object :—To find out the manurial requirements of Groundnut.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Groundnut. (b) *Jowar*. (c) Nil. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 23.6.1956. (iv) (a) 3 ploughings and levelling. (b) By drilling. (c) to (e) N.A. (v) Nil. (vi) *Spanish*. (vii) Unirrigated. (viii) 3 weedings. (ix) 29.64%. (x) 17.10.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N₀=0, N₁=15 and N₂=30 lb./ac.

(2) 3 levels of P as Triple Super : P₀=0 P₁=15 and P₂=30 lb./ac.

3. DESIGN :

(i) R B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) 65' × 33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Groundnut. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) Rajendranagar and Sangareddy. (vi) and (vii) Nil.

5. RESULTS :

(i) 629 lb./ac. (ii) 170.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	P ₀	P ₁	P ₂	Mean
N ₀	709	658	416	594
N ₁	448	636	755	613
N ₂	564	775	700	680
Mean	574	690	624	629

S.E. of any marginal mean = 69.7 lb./ac.
S.E. of body of table = 120.7 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 57(114).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To find out the manurial requirements of Groundnut.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Groundnut. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 29.6.1957. (iv) (a) 3 ploughings. (b) Behind the drill. (c) 70 lb./ac. of nuts have been sown. (d) 1' between rows. (e) —. (v) Nil. (vi) *Spanish peanut*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 20.10.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

Triple Super and A/S for plots receiving single fertilizers and Ammo. Phos. and A/S for plots receiving combinations of fertilizers.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) $66' \times 313'$. (iii) 2. (iv) (a) and (b) $66' \times 33'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of pods and kernels. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) N.A. (vii) There was draught which delayed harvest.

5. RESULTS :

(i) 622 lb./ac. (ii) 70.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of pods in lb./ac.

	N_0	N_1	N_2	Mean
P_0	590	600	550	580
P_1	520	750	780	683
P_2	610	630	570	603
Mean	573	660	633	622

S.E. of any marginal means = 28.8 lb./ac.

S.E. of body of table = 49.9 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 59(23).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To find out the manurial requirements of Groundnut.

1. BASAL CONDITIONS :

(i) (a) *Jowar*—Groundnut. (b) *Jowar*. (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Warangal. (iii) 6.6.1959. (iv) (a) 3 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 12". (e) N.A. (v) As per treatments. (vi) Sp.—9. (vii) Unirrigated. (ix) 37.17%. (x) 2.10.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as Urea : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) and (b) $66' \times 33'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1955—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2262 lb./ac. (ii) 130.20 lb./ac. (iii) N effect is highly significant. P and N×P effects are significant. (iv) Av. yield of groundnut in lb./ac.

	P ₀	P ₁	P ₂	Mean
N ₀	1940	2080	2260	2093
N ₁	2120	2380	2180	2227
N ₂	2180	2460	2760	2467
Mean	2080	2307	2400	2262

S.E. of any marginal mean = 53.15 lb./ac.

S.E. of body of table = 92.06 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 59(SFT).

Centre :- Chittoor (c.f.).

Type :- 'M'.

Object :—Type A - To study the response of Groundnut to levels of N, P and K, applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) May—July. (v) to (ix) N.A. (x) September to December.

2. TREATMENTS :

- o = Control (no manure).
 n = 20 lb./ac. of N as A/S.
 p = 30 lb./ac. of P₂O₅ as Super.
 np = 20 lb./ac. of N or A/S + 30 lb./ac. of P₂O₅ as Super.
 k = 30 lb./ac. of K₂O as Mur. Pot.
 nk = 20 lb./ac. of N or A/S + 30 lb./ac. of K₂O as Mur. Pot.
 pk = 30 lb./ac. of P₂O₅ as Super + 30 lb./ac. of K₂O as Mur. Pot.
 npk = 20 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super + 30 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	140	280	82	42.0	-49	-16	16	33	70.8

Control mean = 1366 lb./ac. and no. of trials = 4.

Crop :- Groundnut.**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Groundnut to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 400 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	82	91	82	38.7	33	66	99	-33	10.7

Control yield = 922 lb./ac. and no. of trials = 8.

Crop :- Groundnut.**Ref :- A.P. 59(SFT).****Centre :- Karimnagar (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Groundnut to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 400 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac	25	-25	99	57.6	16	-33	49	0	68.3

Control mean = 354 lb./ac. and no. of trials = 4.

Crop :- Groundnut.**Ref :- A.P. 59(SFT).****Centre :- Krishna (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Groundnut to levels of N, P and K, applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black soil. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 400 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	99	115	99	14.0	16	0	16	8	49.4

Control yield = 3152 lb./ac. and no. of trials = 4.

Crop :- Groundnut.**Ref :- A.P. 59(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :-Type A—To study the response of Groundnut to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black soil. (iii) Nil. (iv) May—June, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 400 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	115	140	16	14.0	—8	16	—8	99	60.1

Control yield = 823 lb./ac. and no. of trials = 4.

Crop :- Groundnut.

Ref. :- A.P. 59(SFT).

Centre :- Srikakulam (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Groundnut to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and coastal. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 400 conducted at Chittoor.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	263	148	49	31.3	16	—25	66	91	24.7

Control mean = 955 and no. of trials = 8.

Crop :- Groundnut.

Ref. :- 59(SFT).

Centre :- Chittoor (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS :

o = Control.

n₁ = 20 lb./ac. of N as A/S.

n₂ = 40 lb./ac. of N as A/S.

n₁' = 20 lb./ac. of N as Urea.

n₂' = 40 lb./ac. of N as Urea.

n₁'' = 20 lb./ac. of N as A/S/N.

n₂'' = 40 lb./ac. of N as A/S N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1374	1481	1531	1358	1761	1366	1580

G.M. = 1493 lb./ac. ; S.E. = 137.9 lb./ac. and no. trials = 4.

Crop :- Groundnut.

Centre :- Guntur (c.f.).

Ref. :- A.P. 59(SFT).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 402 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	897	1308	1654	1456	1835	1860	1736

G.M. = 1535 lb./ac. ; S.E. = 163.5 lb./ac. and no. of trials = 7.

Crop :- Groundnut.

Centre :- Karimnagar (c.f.).

Ref. :- A.P. 59(SFT).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and deep black soil. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 402 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	749	1020	1185	889	1103	946	1061

G.M. = 993 lb./ac. ; S.E. = 135.6 lb./ac. and no. of trials = 4.

Crop :- Groundnut.

Centre :- Nellore (c.f.).

Ref. :- A.P. 59(SFT).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black soil. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 402 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ "	n ₂ "
Av. yield	938	987	1218	1086	1382	1144	1284

G.M. = 1148 lb./ac.; S.E. = 41.3 lb./ac. and no. of trials = 4.

Crop :- Groundnut.

Ref :- A.P. 59(SFT).

Centre :- Srikakulam (c f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and coastal. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 402 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ "	n ₂ "
Av. yield	1029	1596	1596	1234	1547	1251	1481

G.M. = 1391 lb./ac.; S.E. = 24.4 lb./ac. and no. of trials = 8.

Crop :- Groundnut.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) May—July, 1959. (v) to (ix) N.A. (x) September—December, 1949.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 402 conducted at Chittoor.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ "	n ₂ "
Av. yield	1934	2395	2576	2107	2296	2148	2172

G.M. = 2233 lb./ac.; S.E. = 91.4 lb./ac. and no. of trials = 2.

Crop :- Groundnut.

Ref :- A.P. 54(16).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum spacing for bunch variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Red soil. (b) N.A. (iii) 25.7.1954. (iv) (a) Worked tractor with ploughs and with disc harrows and twice with *guntaka*. (b) Dibbled. (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) TMV—2. (*early*) (vii) Unirrigated. (viii) Thinning, mulching and weeding. (ix) 11.91. (x) 7.12.1954.

2. TREATMENTS :

8 spacings : S₁=6'×6' (control), S₂=9'×6', S₃=9'×9', S₄=12'×6', S₅=12'×9', S₆=12'×12', S₇=18'×6' and S₈=18'×9'.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 64'×18'. (b) 62'×12'. (v) Varies from treatment to treatment as the spacings differ. (vi) Yes.

4. GENERAL :

(i) Stunted. (ii) Very light attack of red hairy cater pillar—hand picked. (iii) Yield of pods. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) Nil. (vii) Suffered prolonged periods of drought.

5. RESULTS

(i) 518 lb./ac. (ii) 65.0 lb./ac. (iii) Treatment differences are not significant, (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	546	518	512	528	566	558	484	405

S.E./mean = 37.7 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(29).

Site :- Regional oilseeds Res Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum spacing for bunch variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) Nil. (ii) (a) Red gravelly. (b) N.A. (iii) 14, 15.8.1955. (iv) (a) 2 country ploughings and 1 *guntaka*. (b) dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 2½ tons of F.Y.M. + 1½ tons of tank silt/ac. Manure applied by broadcasting in the pods and then covered by ploughing up the field. Manure applied 20 days prior to sowing. (vi) TMV—2 bunch (*early*). (vii) Unirrigated. (viii) 2 weedings and hoeing. (ix) 14.59". (x) 18, 19.11.1955.

2. TREATMENTS :

Same as in expt. no. 56(16) on page 404.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60'×18'. (b) 54'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of red hairy caterpillar—caterpillar hand picked. (iii) Yields of pods. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 595 lb./ac. (ii) 62.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	810	662	614	681	553	476	544	423

S.E./mean = 31.3 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 56(19).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum spacing for bunch variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons/ac. of C.M. + 3½ tons/ac. of tank silt (ii) (a) Red sandy loam. (b) N.A. (iii) 20.7.1956. (iv) (a) 2 country ploughings. 1 *guntaka* and 1 *gorru*. (b) Dibbling by hand. (c) N.A. (d) As per treatments. (e) N.A. (v) 3½ tons/ac. of C.M. + 1½ tons/ac. of tank silt. Applied by broadcasting 20 days prior to sowing and covered up by working plough. (vi) TMV—2 bun (*early*). (vii) Unirrigated, (viii) Thinning, mulching and weeding. (ix) 27.43". (x) 11.11.1956.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 404.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60'×18'. (b) 54'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Stunted growth. (ii) Slight incidence of *surah*. (iii) Groundnut yield. (iv) (a) 1954 to 1956. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The crop suffered a set back due to prolonged drought conditions in initial stages.

5. RESULTS :

(i) 556 lb./ac. (ii) 67.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	742	684	582	550	525	468	455	442

S.E./mean = 33.9 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 54(10).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum spacing for spreading variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) No. (ii) (a) Red soil. (b) N.A. (iii) 21.7.1954 and 22.7.1954. (iv) (a) Worked tractor once with plough and once with disc harrow. Worked twice to level up the fields. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) TMV—3 (late—Improved Tindivanam spreading strain). (vii) Unirrigated. (viii) Weeding, mulching and thinning. (ix) 11.91". (x) 20.12.1954.

2. TREATMENTS :

8 spacings (between and within rows) : S₀=9"×9" (control), S₁=6"×6", S₂=9"×6", S₃=12"×9". S₄=12"×9", S₅=12"×12", S₆=18"×6" and S₇=18"×9".

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 64'×18'. (b) 62'×12'. (v) 1'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Incidence of red hairy cater pillar—hand picked. (iii) Yield of pods. (iv) (a) 1954 to 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 500 lb./ac. (ii) 423 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	501	395	501	483	509	554	545	509

S.E./mean = 21.2 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(30).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum spacing for spreading variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) Nil. (ii) (a) Red gravelly. (b) N.A. (iii) 13, 14.12.1955. (iv) (a) 2 ploughings with country plough and 1 *guntaka*. (b) Hand dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 2½ tons of F.Y.M. + 3½ tons/ac. of tank silt. Manure applied by broadcasting in the fields and then covered by ploughing up the fields. Manure applied 20 days prior to sowing. (vi) TMV—3 (late). (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 14.59%. (x) Last week of December, 1955.

2. TREATMENTS :

Same as in expt. no. 54(10) on page 406.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60'×18'. (b) 54'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight incidence of red hairy caterpillar—caterpillars hand picked. (iii) Yield of pods. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 774 lb./ac. (ii) 64.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	759	892	814	813	752	715	763	681

S.E./mean = 32.2 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 56(20).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object:—To find out the optimum spacing for spreading variety of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons of G.M. + 3½ tons/ac. of tank silt. (ii) (a) Red sandy loam. (b) N.A. (iii) 15.6.1956. (iv) (a) 2 ploughings with country plough, 1 *guntaka* for levelling and 1 *gorru*. (b) Dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 3½ tons/ac. of G.M. + 1½ tons/ac. of tank silt. Applied by broadcasting 20 days prior to sowing and then covered by ploughing. (vi) TMV—3 (late). (vii) Unirrigated. (viii) Thinning, weeding and mulching. (ix) 27.43%. (x) 17.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(10) on page 406.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60'×18'. (b) 54'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Stunted growth. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 949 lb./ac. (ii) 132.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	988	954	1036	869	921	947	959	920

S.E./mean = 66.2 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 57(22).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'C'.**

Object :—To find out the optimum spacing for spreading variety of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Castor. (c) C.M. at $3\frac{1}{2}$ tons/ac. and tank silt at $1\frac{1}{2}$ tons/ac. (ii) (a) Red sandy loam. (b) N.A. (iii) 20.8.1957. (iv) (a) 2 ploughings with country plough and 1 *guntaka*. (b) dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) C.M. at $4\frac{1}{2}$ tons/ac. and tank silt at 3 tons/ac. (vi) TMV—3 (*late*). (vii) Unirrigated. (viii) Hoing and weeding. (ix) 13.44". (x) 19 and 20.12.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings between rows : $R_1=9"$, $R_2=12"$ and $R_3=18"$.(2) 3 spacings between plants in row : $S_1=3"$, $S_2=6"$ and $S_3=9"$.**3. DESIGN :**(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) $60' \times 18'$. (b) $54' \times 12'$. (v) $3' \times 3'$. (vi) Yes.**4. GENERAL :**

(i) Growth poor. (ii) Mild attack of tikka disease. (iii) Groundnut yield. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 176 lb./ac. (ii) 41.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of groundnut in lb./ac.

	R_1	R_2	R_3	Mean
S_1	163	192	207	187.
S_2	194	184	162	180
S_3	184	164	135	161
Mean	180	180	168	176

S.E. of any marginal mean = 12.03 lb./ac.

S.E. of the body of table = 20.84 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 54(11).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'C'.**

Object :—To find out the optimum number of intercultures required for maximum yield of Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) No. (ii) (a) Red soil. (b) N.A. (iii) 25.7.1954. (iv) (a) Worked tractor with ploughs and with disc harrow once, 2 *guntaka* for levelling. (b) With *gorru*. (c) 70 lb./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) TMV—3. (*late*). (vii) Unirrigated. (viii) N.A. (ix) 11.91" (x) 20.12.1954.

2. TREATMENTS :3 levels of intercultures with *Metta guntaka* : $I_1=1$, $I_2=2$, and $I_3=3$ intercultures.**3. DESIGN :**(i) R.B.D. (a) 3. (b) N.A. (iii) 8. (iv) (a) $64' \times 24'$. (b) $62' \times 22'$. (v) $1' \times 1'$. (vi) Yes.**4. GENERAL :**

(i) Satisfactory. (ii) Light attack of red hair caterpillar. (iii) Groundnut yield. (iv) (a) 1954 to 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 452 lb./ac. (ii) 40.56 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	450	460	446

S.E./mean = 14.35 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(34).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :- To find out the optimum number of intercultures required for maximum yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) No. (ii) (a) Red gravelly. (b) N.A. (iii) 4.8.1955. (iv) (a) 2 ploughings with country plough and 1 *guntaka* to level up the fields. (b) Hand dibbling (c) 100 lb./ac. (d) 9" × 9". (e) N.A. (v) 2½ tons/ac. of F.Y.M. and 2½ tons/ac. of tank silt. Manure applied by broadcasting 20 days prior to sowing and covered by working a plough. (vi) TMV-3 (improved spreading, late). (vii) Unirrigated. (viii) Intercultures as per treatments. Weeding in between the plant by hand hoeing. (ix) 14.59". (x) 13.12.1955.

2. TREATMENTS :

3 levels of intercultures with *Metta guntaka* : I₁=1, I₂=2 and I₃=3 intercultures.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 63' × 15'. (b) 61½' × 13½'. (v) 9" × 9". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Red hairy cater-piller—hand picked. (iii) Groundnut yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 521 lb./ac. (ii) 47.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	499	579	485

S.E./mean = 16.7 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 56(21).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :- To find out the optimum number of intercultures required for maximum yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons/ac. of C.M. + 3½ tons/ac. of tank silt. (ii) (a) Red sandy loam. (b) N.A. (iii) 14.6.1956. (iv) (a) 2 ploughings with country plough, 1 *guntaka* for levelling and 1 *gorru*. (b) Hand dibbling. (c) 100 lb./ac. (d) 9" × 9". (e) N.A. (v) 3½ tons/ac. of C.M. + 1½ tons/ac. of tank silt applied by broadcasting, 20 days prior to sowing and covered by ploughing. (vi) TMV-3 (improved strain late). (vii) Unirrigated. (viii) Intercultures as per treatments. (ix) 27.43". (x) 1.1.1957.

2. TREATMENTS :

Same as in expt. no. 54(11) on page 408.

3. DESIGN :

Same as in expt. no. 55(34) above.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of *stomoptorya* at flowering pest was dusted. (iii) Groundnut yield. (iv) (a) 1954 to 1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Crop suffered due to drought during August and slight incidence of *stomoptorya*. (vii) Nil.

5. RESULTS :

(i) 1052 lb./ac. (ii) 152.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	1016	1023	1117

S.E./mean = 53.8 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 54(12).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum number of intercultures required for maximum yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) No. (ii) (a) Red soil. (b) N.A. (iii) 23.7.1954. (iv) (a) Worked tractor with ploughs and with disc harrows once, 2 *guntaka* for levelling. (b) With country *gorru*. (c) 80 lb./ac. (d) 6' × 6'. (e) N.A. (v) No. (vi) TMV—2 improved (early). Bunch type. (vii) Unirrigated. (viii) As per treatments. (ix) 11.91°. (x) 30.11.1954 and 1.12 1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(11) on page 408.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of red hairy cater pillar. Hand picked. (iii) Groundnut yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 422 lb./ac. (ii) 41.52 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	423	425	419

S.E./mean = 14.7 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(33).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :—To find out the optimum number of intercultures required for maximum yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) No. (ii) (a) Red gravelly. (b) N.A. (iii) 4.8.1955. (iv) (a) 2 ploughings with country plough and 1 *guntaka* for levelling. (b) Hand dibbling. (c) 135 lb./ac. (d) 6' × 6'. (e) N.A. (v) 2½ tons of F.Y.M. and 3½ tons/ac. of tank silt. Manure applied by broadcasting 20 days prior to sowing and covered by ploughing. (vi) TMV—2 (Improved Bunch type, early). (vii) Unirrigated. (viii) Intercultures as per treatments. Weeding by hand hoeing. (ix) 14.59°. (x) 15.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(11) on page 408.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 63' × 9'. (b) 62' × 8'. (v) 6' × 6'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of red hairy caterpillar—caterpillars hand picked. (iii) Groundnut yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 734 lb./ac. (ii) 73.75 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	741	751	709

S.E./mean = 26.07 lb./ac.

Crop :- Groundnut

Ref :- A.P. 56(18).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'C'.

Object :- To find out the optimum number of interculturalures required for maximum yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons of C.M. + 3½ tons/ac. of tank silt. (ii) (a) Red sandy soil. (b) N.A. (iii) 15 and 16.6.1966. (iv) (a) 2 ploughings with country plough and 1 *guntaka* for levelling, and 1 *gorru*. (b) Hand dibbling. (c) 135 lb./ac. (d) 6" × 6". (e) N.A. (v) 3½ tons/ac. of C.M. + 1½ tons/ac. of tank silt applied by broadcasting 20 days prior to sowing and covered by working plough. (vi) TMV-2 (improved, *early*). (vii) Unirrigated (viii) Interculturalures as per treatments. (ix) 27.43". (x) 5 to 8.11.1956.

2. TREATMENTS :

Same as in expt. no. 54(11) on page 408.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 63' × 10'. (b) 62' × 9'. (v) 6" × 6". (vi) Yes.

4. GENERAL :

(i) Highly drought conditions affected the stand of the crop. (ii) Mild attack of *gavin*—Gammaxene dusted. (iii) Groundnut yield. (iv) (a) 1954 to 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 888 lb./ac. (ii) 76.54 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	I ₁	I ₂	I ₃
Av. yield	894	869	899

S.E./mean = 27.06 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 58(15).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :- To find out the best combination of seedrates and spacings for the Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) N.A. (c) No. (ii) (a) Red sandy loam. (b) Refer soil analysis, Kadiri. (iii) 11 to 13.8.1958. (iv) (a) 2 ploughings with country plough and *guntaka*. (b) With local *Gorru*. (c) and (d) As per treatments. (e) N.A. (v) 3 C.L./ac. of C.M. and 2½ C.L./ac. of groundnut shell. (vi) TMV-3. (spreading, *medium*). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 27.94". (x) 6 to 9.1.1959.

2. TREATMENTS :

Main-plot treatments3 levels of seed rates : $R_1=50$, $R_2=70$ and $R_3=90$ lb./ac.**Sub-plot treatments**3 spacings between rows : $S_1=9''$, $S_2=13''$ and $S_3=15''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) Main-plot— $54' \times 51\frac{1}{2}'$, Sub-plot— $54' \times 17\frac{1}{2}'$. (b) Sub-plot— $54' \times 15'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Mild attack of leaf minor and *Tikka* leaf spot. (iii) Pod yield. (iv) (a) 1958 to 1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 687 lb./ac. (ii) (a) 63.9 lb./ac. (b) 86.8 lb./ac. (iii) Only $R \times S$ interaction is significant. (iv) Av. yield of pods in lb./ac.

	S_1	S_2	S_3	Mean
R_1	617	611	733	654
R_2	707	705	653	688
R_3	801	739	615	718
Mean	708	685	667	687

S E. of difference of two

1. R marginal means = 26.1 lb./ac.
2. S marginal means = 35.4 lb./ac.
3. S means at the same level of R = 61.4 lb./ac.
4. R means at the same level of S = 56.5 lb./ac.

Crop :- Groundnut (*Kharif*).**Ref :- A.P. 59(114).****Site :- Regional Oilseeds Res. Stn., Kadiri.****Type :- 'C'.**

Object :—To find out the combined effect of seed-rates and spacings on Groundnut.

1. BASAL CONDITIONS:

(i) (a) No. (b) Castor. (c) 3 C.L./ac. of C.M. (ii) (a) Red loam. (b) N.A. (iii) 27th and 28th July 1959. (iv) (a) 2 ploughings with country plough. (b) N.A. (c) and (d) As per treatments. (e) N.A. (v) 4 C.L./ac. of C.M. (vi) T.M.—3 (spreading, *medium*). (vii) Unirrigated. (viii) Two hoeings and weedings. (ix) 16.66°. (x) 27, 28.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(15) on page 412.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication. 3 sub-plots/main-plot. (b) $168' \times 54'$. (iii) 4. (iv) (a) Varies with different spacings. (b) $54' \times 15'$. (v) One row by the sides. (vi) Yes.⁸

4. GENERAL :

(i) Normal. (ii) Attack of leaf minor—B.H.C. 10% dusted. (iii) Pod yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 727 lb./ac. (ii) (a) 81.5 lb./ac. (b) 69.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	R ₁	R ₂	R ₃	Mean
S ₁	701	715	772	729
S ₂	757	680	728	722
S ₃	707	704	779	730
Mean	722	700	760	727

S.E. of difference of two

1. R marginal means = 33.3 lb./ac.
2. S marginal means = 28.2 lb./ac.
3. S means at the same level of R = 48.8 lb./ac.
4. R means at the same level of S = 51.9 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 58(16).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object:—To determine the optimum number of ploughings and interculturings required for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) N.A. (c) No. (ii) (a) Red sandy loam. (b) Refer soil analysis, Kadiri. (iii) 17.7.1958. (iv) (a) As per treatments. (b) and (c) N.A. (d) 6"×5". (e) N.A. (v) 3 C.L./ac. of Castor manure and 2½ C.L./ac. of Groundnut shell. (vi) TMV—3 (medium). (vii) Unirrigated. (viii) Hand weeding. (ix) 27.94". (x) 11.12.1958.

2. TREATMENTS :

Main-plot treatments :

4 levels of ploughings with country plough : C₁=1, C₂=2, C₃=3 and C₄=4 ploughings.

Sub-plot treatment :

2 levels of interculturings with *Metta guntaka* : I₁=1 and I₂=2.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block 2 sub-plots/main-plot. (b) 60'×68'. (iii) 4. (iv) (a) Main-plot 60'×17' ; Sub-plot, 60'×8½. (b) Sub-plot 59'×7¾. (v) 6"×4½". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of *leaf minor*. (iii) Groundnut yield, (iv) (a) 1958 to 1960. (b) No. 4 (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 493 lb./ac. (ii) (a) 149.0 lb./ac. (b) 138.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	C ₁	C ₂	C ₃	C ₄	Mean
I ₁	546	446	451	420	466
I ₂	583	499	530	467	520
Mean	564	472	491	444	493

S.E. of difference of two

1. C marginal means = 74.5 lb./ac.
2. I marginal means = 48.9 lb./ac.
3. I means at the same level of C = 97.8 lb./ac.
4. C means at the level of I = 101.6 lb./ac.

Crop :- Groundnut (Kharif).

Ref :- A.P. 59(111).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :-To determine the optimum number of ploughings and interculturings required for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Castor. (c) 3 C.L./ac. of C.M. + 2½ C.L./ac. of Groundnut shell. (ii) (a) Red loam. (b) N.A. (iii) 16.7.1959. (iv) (a) As per treatments. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) TM—3 spreading (medium). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 16.66°. (x) 19.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(16) on page 413.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60' × 7½'. (b) 58½' × 6'. (v) 9" × 9". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe attack of *leaf minor*—B.H.C. 10% dusted. (iii) Groundnut yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 801.9 lb./ac. (ii) (a) 112.8 lb./ac. (b) 61.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pods in lb./ac.

	C ₁	C ₂	C ₃	C ₄	Mean
I ₁	800	807	807	828	810
I ₂	780	828	752	814	794
Mean	790	817	780	821	802

S.E. of difference of two

- | | |
|-----------------------------------|----------------|
| 1. C marginal means | = 56.4 lb./ac. |
| 2. I marginal means | = 21.6 lb./ac. |
| 3. I means at the same level of C | = 43.3 lb./ac. |
| 4. C means at the same level of I | = 64.2 lb./ac. |

Crop :- Groundnut (Rabi).

Ref :- A.P. 59(3).

Site :- Groundnut Res. Stn., Kaikalur.

Type :- 'C'.

Object :-To determine the optimum seedrate for the Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut—Paddy. (b) Paddy. (c) 10 C.L./ac. of C.M. (ii) (a) Sandy loam. (b) N.A. (iii) 6 and 7.1.1959. (iv) (a) 5 ploughings with country plough, paddy stubbles removed and the field levelled. (b) Sowing behind country plough. (c) As per treatments. (d) N.A. (e) 1. (v) Nil. (vi) TMV—2 Bunch variety (early). (vii) Irrigated. (viii) 1 weeding. (ix) 1.23°. (x) 6.4.1959.

2. TREATMENTS :

3 levels of seedrates : S₁=72, S₂=96 and S₃=120 lb./ac. of kernels.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 115' × 31'. (iii) 2. (iv) (a) 115' × 27'. (b) 115' × 25'. (v) 2' border left between plots. (vi) Yes.

4. GENERAL :

(i) Growth generally satisfactory. Pod development poor due to seepage of water. (ii) Slight incidence of fungus—Cupraman sprayed. (iii) Yield of pods. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 702 lb./ac. (ii) 357 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₁	S ₂	S ₃
Av. yield	485	947	674

S.E./mean = 252.4 lb./ac.

Crop :- Groundnut (Rabi).

Ref :- A.P. 59(117).

Site :- Groundnut Res. Stn., Masulipatam.

Type :- 'C'.

Object :—To determine the optimum seedrate for Groundnut crop in rice fallows.

1. BASAL CONDITIONS :

(i) (a) Paddy—Groundnut. (b) Paddy. (c) 10 C.L./ac. of C.M. (ii) (a) Sandy loam. (b) Refer soil analysis, Masulipatam. (iii) 6, 7.1.1959. (iv) (a) 5 ploughings with country plough. Paddy stubbles removed and levelled. (b) Sowing behind plough. (c) As per treatments. (d) N.A. (e) 1. (v) Nil. (vi) TMV—2 Bunch (early). (vii) Irrigated. (viii) Weeding. (ix) 1.23". (x) 6.4 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 59(3) on page 414.

4. GENERAL :

(i) Satisfactory. (ii) Attack of *leaf minor*—Endrine sprayed. (iii) Pod yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) The yields are low due to the mortality of plants in the plots due to seepage of water.

5. RESULTS :

(i) 43.8 lb./ac. (ii) 29.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₁	S ₂	S ₃
Av. yield	50.6	38.6	42.1

S.E./mean = 20.5 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 54(21).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To find out suitable control measures against 'Tikka' (*cercospora leaf spots*) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bengalgram. (c) Nil. (ii) (a) Light black soil. (b) N.A. (iii) 5.7.1954. (iv) (a) 3 ploughings. (b) Dibbling. (c) 80 lb./ac. (d) Between rows 1'. (e) N.A. (v) 10 C.L./ac. of F.Y.M. before sowing and 35 lb./ac. of P₂O₅ after one month of sowing as surface application. (vi) Local (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 31.77". (x) 13.11.1954.

2. TREATMENTS :

6 chemicals : S₀=Control, S₁=Sulphur, S₂=Agrosan G.N., S₃=Landisan, S₄=Ceresan wet, S₅=Ceresan dry.

Chemicals were sprayed at intervals of about 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 40'×40'. (b) 20'×20'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of pod borer. (iii) Counts are taken one line in the centre from west to east and the other from South to North. Percentage of infection before each spraying was taken. Percentage of intensity was taken as per grades before harvesting. (iv) (a) 1952—1957. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment conducted by plant Pathologist.

5. RESULTS :

(i) 123.6 lb./ac. (ii) 144.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	994	1484	1388	1225	1185	1143

S.E./mean = 72.4 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 55(17).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To find out suitable control measures against 'Tikka' (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Castor. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.6.1955. (iv) (a) N.A. (b) Dibbling. (c) N.A. (d) 9' hill to hill and 1' row to row. (e) N.A. (v) 35 lb./ac. of P₂O₅ as Super. (vi) Local (medium). (vii) Unirrigated. (viii) 3 hand weedings. (ix) 23.27". (x) Last week of Oct. 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(21) on page 445.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Intensity of disease (percentage). (iv) (a) 1952—1957. (b) No. (c) Nil. (v) (a) Badnapur. (b) Nil. (vi) Nil. (vii) Experiment conducted by Plant Pathologist.

5. RESULTS :

(i) 1628 lb./ac. (ii) 252.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	1154	1633	1840	1612	1622	1905

S.E./mean = 126.3 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 56(49).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To find out suitable control measures against Tikka (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 15 C.L./ac. of F.Y.M. + 20 lb./ac. of N as A/S and 10 lb./ac. of P₂O₅ as Super. (ii) (a) Light black soil. (b) N.A. (iii) 1st week of July 1956. (iv) (a) 3 ploughings. (b) Dibbling. (c) 80 lb./ac. (d) 9' × 12". (e) N.A. (v) 10 C.L./ac. of F.Y.M. before sowing and 35 lb./ac. of P₂O₅ after one month of sowing as surface application. (vi) Local variety (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 35". (x) 2nd week of Nov.—1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(21) on page 415.

4. GENERAL :

(i) Normal. (ii) Attack of pod borer. (iii) Counts are taken one line in the middle from east to west and another from South to North. % infection before each spraying was taken. (iv) (a) 1952—1957. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment was conducted by Plant Pathologist.

5. RESULTS :

(i) 567 lb./ac. (ii) 233.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	413	425	951	550	463	599

S.E./mean = 116.5 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 57(33).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'D'.**

Object :—To find out suitable control measures against 'Tikka' (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :(i) (a) Nil. (b) and (c) N.A. (ii) (a) Light *chalka*. (b) N.A. (iii) 8.7.1957. (iv) (a) Ploughing by improved ploughs and buckerings. (b) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. broadcast before sowing + 30 lb./ac. of P₂O₅. (vi) Local variety (medium). (vii) Unirrigated. (viii) Hand weeding. (ix) 35". (x) 21, 22.10.1957.**2. TREATMENTS :**6 chemicals : S₀=Control, S₁=Sulphur at 5 ozs./ac., S₂=Agrosan at 5 ozs./ac., S₃=Landisan at 5 ozs./ac. S₄=Ceresan wet at 1 lb. in 100 gallons of water and S₅=Ceresan dry at 5 ozs./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 30' × 30'. (b) 20' × 20'. (v) N.A. (vi) Yes.

4. GENERAL :(i) Normal. No lodging. (ii) Attack of *Tikka* disease. (iii) Counts are taken one line in the middle from east to west and another from south to north. % infection before each spraying was taken. (iv) (a) 1952—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment conducted by Plant Pathologist.**3. RESULTS :**

(i) 200 lb./ac. (ii) 194.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅
Av. yield	82	381	259	197	136	143

S.E./mean = 97.0 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 54(22).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'D'.**

Object :—To find out suitable control measures against 'Tikka' (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Bengal gram. (c) Nil. (ii) (a) Light black soil. (b) N.A. (iii) 3.7.1954. (iv) (a) 3 ploughings. (b) Dibbling. (c) 80 lb./ac. (d) Row to row 1'. (e) N.A. (v) 10 C.L./ac. of F.Y.M. before sowing and 35 lb./ac. of P₂O₅ after one month of sowing as surface application. (vi) Local (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 31.77". (x) 11.11.1954.**2. TREATMENTS :**8 chemicals : S₀=Control, S₁=Bordeaux mixture, S₂=Wetcol, S₃=Perenox, S₄=Furnusal, S₅=Agricop, S₆=Diathane Z-78 and S₇=Sulphur dust.

The chemicals are sprayed at intervals of about 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 40' × 30'. (b) 20' × 20'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not good because of breach of canal. (ii) Considerable attack of pod borer. Control manures as per treatments. (iii) Counts are taken one line in the centre from west to east and the other from south to north. Percentage of infection before each spraying was taken. (iv) (a) 1952 to 1957. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment was conducted by Plant Pathologist.

5. RESULTS :

(i) 893 lb./ac. (ii) 301.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pods in lb./ac.

Crop :- Groundnut.**Ref :- A.P. 57(33).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'D'.**

Object :—To find out suitable control measures against 'Tikka' (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :(i) (a) Nil. (b) and (c) N.A. (ii) (a) Light *chalka*. (b) N.A. (iii) 8.7.1957. (iv) (a) Ploughing by improved ploughs and buckerings. (b) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. broadcast before sowing + 30 lb./ac. of P_2O_5 . (vi) Local variety (medium). (vii) Unirrigated. (viii) Hand weeding. (ix) 35". (x) 21, 22.10.1957.**2. TREATMENTS :**6 chemicals: S_0 =Control, S_1 =Sulphur at 5 ozs./ac., S_2 =Agrosan at 5 ozs./ac., S_3 =Landisan at 5 ozs./ac. S_4 =Ceresan wet at 1 lb. in 100 gallons of water and S_5 =Ceresan dry at 5 ozs./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 30' x 30'. (b) 20' x 20'. (v) N.A. (vi) Yes.

4. GENERAL :(i) Normal. No lodging. (ii) Attack of *Tikka* disease. (iii) Counts are taken one line in the middle from east to west and another from south to north. % infection before each spraying was taken. (iv) (a) 1952—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment conducted by Plant Pathologist.**3. RESULTS :**

(i) 200 lb./ac. (ii) 194.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	82	381	259	197	136	143

S.E./mean = 97.0 lb./ac.

Crop :- Groundnut.**Ref :- A.P. 54(22).****Site :- Agri. Res. Instt., Rajendranagar.****Type :- 'D'.**

Object :—To find out suitable control measures against 'Tikka' (cercospora leaf spots) of Groundnut.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Bengal gram. (c) Nil. (ii) (a) Light black soil. (b) N.A. (iii) 3.7.1954. (iv) (a) 3 ploughings. (b) Dibbling. (c) 80 lb./ac. (d) Row to row 1'. (e) N.A. (v) 10 C.L./ac. of F.Y.M. before sowing and 35 lb./ac. of P_2O_5 after one month of sowing as surface application. (vi) Local (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 31.77". (x) 11.11.1954.**2. TREATMENTS :**8 chemicals: S_0 =Control, S_1 =Bordeaux mixture, S_2 =Wetcol, S_3 =Perenox, S_4 =Furnusal, S_5 =Agricop, S_6 =Diathane Z-78 and S_7 =Sulphur dust.

The chemicals are sprayed at intervals of about 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 40' x 30'. (b) 20' x 20'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not good because of breach of canal. (ii) Considerable attack of pod borer. Control manures as per treatments. (iii) Counts are taken one line in the centre from west to east and the other from south to north. Percentage of infection before each spraying was taken. (iv) (a) 1952 to 1957. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment was conducted by Plant Pathologist.

5. RESULTS :

(i) 893 lb./ac. (ii) 301.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pods in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	953	926	871	776	1457	722	762	681

S.E./mean = 150.8 lb./ac.

Crop :- Groundnut.

Ref. :- A.P. 55(16)

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :- To find out suitable control measures against 'Tikka' (cercorpora leaf spots) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.6.1955. (iv) (a) N.A. (b) Dibbling. (c) N.A. (d) 9' from hill to hill and 1' row to row. (e) N.A. (v) 35 lb./ac. P₂O₅ as Super. (vi) Local (medium). (vii) Unirrigated. (viii) 3 hand weedings. (ix) 23 27'. (x) Last week of October, 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(22) on page 417.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Intensity of the disease and pod yield. (iv) (a) 1952 to 1957. (b) No. (c) Nil. (v) (a) Badnapur. (b) Nil. (vi) Nil. (vii) Experiment conducted by Plant Pathologist.

5. RESULTS :

(i) 1089 lb./ac. (ii) 374.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pod in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	1013	1600	849	1002	969	675	1176	1427

S.E./mean = 187.3 lb./ac.

Crop :- Groundnut.

Ref. :- A.P. 56(50).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object.—To find out suitable control measures against 'Tikka' (cercorpora leaf spots) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 15 C.L./ac. of F.Y.M.+20 lb./ac. of N and 10 lb./ac. of P₂O₅. (ii) 1st week of July, 1956. (iv) (a) N.A. (b) Dibbling. (c) 80 lb./ac. (d) 9'×12'. (e) N.A. (v) 10 C.L./ac. of F.Y.M. before sowing and 35 lb./ac. of P₂O₅ after one month of sowing as surface application. (vi) Local variety (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 35'. (x) 1st week of November, 1956.

2. TREATMENTS :

8 chemicals : S₀=Control, S₁=Bordeaux mixture 1%, S₂=Wetcol (1 oz. in gallon), S₃=Perencx 0.35%, S₄=Ferasul (1 oz. in 1 gallon), S₅=Agricop 4%, S₆=Diathane Z-78 at 1 lb. in 50 gallons and S₇=Sulphur dust at 20 lb./ac.

The chemicals are sprayed 3 to 4 times at an interval of 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 40'×40'. (b) 20'×20'. (v) N.A. (vi) No.

4. GENERAL :

(i) Normal. (ii) Considerable attack of pod borer. (iii) Counts are taken one line in the middle from east to West and an other from South to North. % infection was taken for each spray. (iv) (a) 1952—1958, (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment conducted by Plant Pathologist.

5. RESULTS :

(i) 589 lb./ac. (ii) 137.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of pod in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	635	698	632	616	399	472	526	735

S.E./mean = 68.6 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 57(34).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'D'.

Object :—To find out suitable control measures against 'Tikka' (cercorpora leaf spots) of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Light *chalka*. (b) N.A. (iii) 8.7.1957. (iv) (a) Dry cultivation, ploughing by imported ploughs, *buckering* etc. (b) to (e) N.A. (v) 10 C.L./ac. of F.Y.M. broadcast before sowing, and 35 lb./ac. of P₂O₅. (vi) Local variety (medium). (vii) Unirrigated. (viii) Hand weeding. (ix) 35". (x) 21,22.10.1957.

2. TREATMENTS :

8 chemicals : S₀=Control, S₁=Bordeaux Mixture (1%), S₂=Wetcol (1 oz. in one gallon) S₃=Perenox (0.35%), S₄=Feruasul (1 oz. in one gallon), S₅=Agri cop (4%) S₆=Diathane Z--78 (1 lb. in 50 gallons) and S₇=Sulphur dust (20 lb./ac.).

2 or 3 sprayings at fortnightly intervals.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 30'×30'. (b) 20'×20'. (v) 5'×5' (vi) Yes.

4. GENERAL :

(i) Normal. No lodging. (ii) Attack of *Tikka* disease. (iii) Recording of incidence of *Tikka* disease. (iv) (a) 1952—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Experiment was conducted by Plant Pathologist.

5. RESULTS :

(i) 401 lb./ac. (ii) 200.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pod in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇
Av. yield	299	415	395	463	259	504	368	504

S.E./mean = 100.2 lb./ac.

Crop :- Castor (*Kharif*).

Ref :- A.P. 56(25).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'M'.

Object :—To determine the optimum dose of manure required for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Groundnut. (c) 2½ ton/ac. of C.M.+3½ ton/ac. of tank silt. (ii) (a) Red sandy. (b) Refer soil analysis, Kadiri. (iii) 20.7.1956. (iv) (a) 2 country ploughings, 1 *guntaka* and 1 *gorru*. (b) Dibbled. (c) 8 lb./ac. (d) 3' between rows and 3' between plants. (e) N.A. (v) Nil. (vi) TMV—1 (late). (vii) Unirrigated. (viii) 3 *Guntaka* working and 3 weedings. (ix) 33.53". (x) 31.3.1957.

2. TREATMENTS :

M₀=Control, M₁=20 lb./ac. of N as A/S, M₂=M₁+20 lb./ac. of P₂O₅ as Super, M₃=M₂+20 lb./ac. of K₂O as Pot. Sul., M₄=40 lb./ac. of Castor cake. M₅=8 tons/ac. of tank silt, M₆=5 tons/ac. of F.Y.M., and M₇=M₆+10 lb./ac. of N+10 lb./ac. of P₂O₅+10 lb./ac. of K₂O.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60'×24'. (b) 54'×18'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Castor yield. (iv) 1956—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 512 lb./ac. (ii) 108.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of castor in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	346	557	503	608	633	416	483	553

S.E./mean = 54.2 lb./ac.

Crop :- Castor (*Kharif*).

Ref :- A.P. 57(26).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'M'.

Object :—To determine the optimum dose of manure required for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Groundnut. (c) 3½ tons/ac. of C.M.+1½ tons/ac. of tank silt. Red soil. (b) Refer soil analysis, Kadiri. (iii) 15.7.1957. (iv) (a) 2 ploughings with wooden plough and *guntaka*. (b) and (c) N.A. (d) 3' between rows and 3' between plants. (e) N.A. (v) Nil. (vi) TMV—1 (*early*). (vii) Unirrigated. (viii) Thinning, hoeing and weeding. (ix) 13.44°. (x) 19.11.1957 to 8.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(25) on page 419.

4. GENERAL :

(i) Good. (ii) Mild. attack of semi looper Control measures taken N.A. (iii) Castor yield. (iv) (a) 1956—1958. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(ii) 520 lb./ac. (ii) 108.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of castor in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇
Av. yield	527	555	543	581	538	478	461	479

S.E./mean = 54.0 lb./ac.

Crop :- Castor (*Kharif*).

Ref :- A.P. 58(17).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'M'.

Object :—To determine the optimum dose of N, P and K for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) N.A. (c) N.I. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 16.7.1958. (iv) (a) 2 ploughings with country plough and 1 *guntaka*. (b) to (e) N.A. (v) Nil. (vi) H.C.—6 (*medium*). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 27.94°. (x) 3.1.1959.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₀=0, N₁=20 and N₂=40 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₁=0, P₁=10 and P₂=20 lb./ac.

(3) 3 levels of K₂O as Pot Sul. : K₀=0, K₁=10 and K₂=20 lb./ac.

Fertilizers applied just before sowing in furrows 6' away from sowing line.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 2. (iv) (a) 60'×18'. (b) 54'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe attack of semi looper—Endrine sprayed. (iii) Castor yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 385 lb./ac. (ii) 181.4 lb./ac. (iii) Only main effect of N is highly significant (iv) Av. yield of castor in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	334	462	547	448	356	446	541
P ₁	245	395	470	370	334	409	368
P ₂	245	295	475	338	372	363	280
Mean	275	384	497	385	354	406	396
K ₀	291	273	499				
K ₁	200	498	519				
K ₂	333	381	474				

S.E. of marginal means of N, P or K = 42.8 lb./ac.
S.E. of body of any table = 74.1 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 59(110).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'M'.

Object :—To determine the optimum dose of N, P and K for Castor crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Groundnut. (c) 3 C.L./ac. of C.M. + 2½ C.L./ac. of groundnut shell. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 30.6.1959. (iv) (a) 2 ploughings with country plough. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) HC—6 (late). (vii) Unirrigated. (viii) Interculturing and hand weeding. (ix) 16.66%. (x) 7.11.1959 to 4.3.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(17) on page 420.

4. GENERAL :

(i) Satisfactory. (ii) Semi looper incidence—Endrine sprayed. (iii) Castor yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 805 lb./ac. (ii) 110.2 lb./ac. (iii) Only N and P effects are highly significant. (iv) Av. yield of pods in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	567	632	718	639	658	636	624
N ₁	757	828	963	849	802	853	893
N ₂	962	881	934	926	914	898	965
Mean	762	780	872	805	791	796	827
K ₀	772	731	871				
K ₁	709	793	885				
K ₂	806	816	860				

S.E. of any marginal mean = 26.0 lb./ac.
S.E. of body of any table = 45.0 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 59(62).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :—To determine the optimum dose of N, P and K for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) As per treatments. (ii) (a) *Chalka*. (b) N.A. (iii) 20.7.1959. (iv) (a) 3 ploughings and 2 harrowing. (b) to (e) N.A. (v) Nil. (vi) Castor HC—6 (late). (vii) Unirrigated. (viii) 2 harrowings and 2 hand weedings. (ix) 3.26". (x) 15.3.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(17) on page 420.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Castor yield. (iv) (a) 1958—N.A. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1968 lb./ac. (ii) 1166 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of castor in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	918	1422	2509	1616	2094	1770	986
P ₁	885	2486	2990	2120	1837	2531	1994
P ₂	1366	1579	3562	2169	2744	1792	1971
Mean	1056	1829	3020	1968	2224	2031	1650
K ₀	1019	2005	3651				
K ₁	1322	2128	2643				
K ₂	829	1355	2766				

S.E. of any marginal mean = 274.7 lb./ac.
S.E. of body of any table = 475.8 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 57(24).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :—To determine the best intercultural practice for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Groundnut. (c) 3½ tons/ac. of C.M. and 1½ tons/ac. of tank silt. (ii) (a) Red. (b) Refer soil analysis, Kadiri. (iii) 15.7.1957. (iv) (a) As per treatments. (b) to (e) N.A. (v) 4½ tons/ac. of C.M. and 3 tons/ac. of tank silt. (vi) TMV—1 (*early*). (vii) Unirrigated. (viii) Thinning and weeding. (ix) 13.44". (x) 26.11.1957 to 17.3.1958.

2. TREATMENTS :

5 cultural treatments of working *Guntaka* : T₁=Once during 1st and 2nd month, T₂=Twice during 1st and 3rd month, T₃=Once in 3rd month and ploughing after 15 days, T₄=Twice during 1st and 3rd month and ploughing once in 2nd month and T₅=Twice during 1st and 2nd month and ploughing in 3rd month.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 63'×18'. (b) 57'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of semilooper—removed by hand picking. (iii) Castor yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 319 lb./ac. (ii) 71.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of castor in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	319	368	270	312	324

S.E./mean = 29.0 lb./ac.

Crop :- Castor. (Kharif).

Ref :- A.P. 58(12).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :—To determine the best intercultural practice for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 9.7.1958. (iv) (a) As per treatments. (b) to (e) N.A. (v) 3 C.L./ac. of C.M.+2½ C.L./ac. of G.N. shell. (vi) TM—1 Castor (medium) (vii) Unirrigated. (viii) Hand weeding. (ix) 27.94%. (x) 13.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(24) on page 422.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 63'×90'. (iii) 4. (iv) (a) 63'×18'. (b) 57'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Severe attack of semi-looper. Endrine sprayed. (iii) Castor yield. (iv) (a) 1957—1959. (b) No. (c) Nil: (v) to (vii) Nil.

5. RESULTS :

(i) 167 lb./ac. (ii) 67.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of castor in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	132	112	249	160	186

S.E./mean = 33.9 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 59(107).

Site :- Regional Oilseed Res. Stn., Kadiri.

Type :- 'C'.

Object :—To determine the best intercultural practice for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 3 C.L./ac. of C.M.+2½ C.L./ac. of Groundnut shell. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 23.6.1959. (iv) (a) As per treatments. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) HC—6 (late). (vii) Unirrigated. (viii) As per treatments. (ix) 16.66%. (x) 2.1.1960 to 24.3.1960.

2. TREATMENTS :

Same as in expt. no. 57(24) on page 422.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 60'×90'. (iii) 4. (iv) (a) 60'×15'. (b) 54'×9'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Semi-looper incidence—Endrine sprayed. (iii) Castor yield. (iv) (a) 1957—1959, (b) No. (c) Nil. (v, a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 598 lb./ac. (ii) 182.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of castor in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	583	675	504	596	635

S.E. mean = 74.4 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 59(109).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :—To find the optimum spacing for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 3 C.L./ac. of C.M. + 2½ C.L./ac. of Groundnut shell. (ii) (a) Red loam. (b) Refer soil analysis, Kadiri. (iii) 23.6.1959. (iv) (a) 2 ploughings with country plough. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) 4½ C.L./ac. of C.M. (vi) TMV—1 (short duration). (vii) Unirrigated. (viii) Interculturing and weeding. (ix) 16.66°. (x) 9.11.1959 to 8.3.1960.

2. TREATMENTS :

All combinations of (1) and (2) + 2 extra treatments.

(1) 2 levels of spacing between rows : R₁=3' and R₂=4'.

(2) 3 levels of spacing between plants : P₁=1', P₂=2' and P₃=3'.

Extra treatments : T₁=2'×1' and T₂=2'×2'.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 60'×146'. (iii) 4. (iv) (a) Varies from 60'×16' to 60'×20'. (b) 60'×12' (v) One row around. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Semi-looper incidence—Endrine sprayed. (iii) Growth measurements and castor yield. (iv) (a) 1959—N.A. (b) N.A. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 769 lb./ac. (ii) 134.4 lb./ac. (iii) Only main effect of R and R×P interaction are highly significant. (iv) Av. yield of castor in lb./ac.

T₁ = 684 and T₂ = 821 lb./ac.

	P ₁	P ₂	P ₃	Mean
R ₁	618	707	696	674
R ₂	813	873	938	875
Mean	716	790	817	774

S.E. of marginal mean of P = 47.5 lb./ac.

S.E. of marginal mean of R = 38.8 lb./ac.

S.E. of body of table = 67.2 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 54(8).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :-To find out the optimum spacing for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Red soil. (b) Refer soil analysis, Kadiri. (iii) 27.7.1954. (iv) (a) 1 ploughing, 1 disc harrowing and 2 *guntaka*. (b) In furrows. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) TMV—(late). (vii) Unirrigated. (viii) Worked *guntaka* twice and weeded within rows. (ix) 11.91". (x) 21.2.1955.

2. TREATMENTS :

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

(1) 2 spacings between rows : $R_1=2'$ and $R_2=3'$.

(2) 2 spacings between plants : $P_1=1'$ and $P_2=2'$.

Control : 3' between rows and 3' between plants.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $63' \times 36'$. (b) $57' \times 24'$. (v) $3' \times 6'$. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Severe attack of semi-looper—Calcium arsenate sprayed. (iii) Castor yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 301 lb./ac. (ii) 71.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of castor in lb./ac.

Control = 341 lb./ac.

	P ₁	P ₂	Mean
R ₁	222	289	256
R ₂	287	365	326
Mean	254	327	291

S.E. of marginal means of R or P = 25.3 lb./ac.

S.E. of body of table = 35.8 lb./ac.

Crop :- Castor (Kharif).

Ref :- A.P. 55(42).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'C'.

Object :-To find out the optimum spacing for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Groundnut. (c) Nil. (ii) (a) Red soil. (b) Refer soil analysis, Kadiri. (iii) 10, 11.6.1955. (iv) (a) 2 country ploughings and 1 *guntaka*. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) $2\frac{1}{2}$ tons/ac. of F.Y.M. + $3\frac{1}{2}$ tons/ac. of tank silt. (vi) TMV—1 (early). (vii) Unirrigated. (viii) 3 *guntaka* and 1 thinning. (ix) 17.33". (x) 15.3.1956.

2. TREATMENTS :

Same as in expt. no. 54(8) above.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $60' \times 36'$. (b) $54' \times 30'$. (v) $3' \times 3'$. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of semi looper—Calcium arsenate sprayed. (iii) Castor yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 254 lb./ac. (ii) 62.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of castor in lb./ac.

Control = 294 lb./ac.

	P ₁	P ₂	Mean
R ₁	209	244	226
R ₂	239	285	262
Mean	224	264	244

S.E. of marginal means of R or P = 22.2 lb./ac.

S.E. of body of table = 31.5 lb./ac.

Crop :- Castor (Kharif).**Ref :- A.P. 56(24).****Site :- Regional Oilseeds Res. Stn., Kadiri.****Type :- 'C'.**

Object :—To find out the optimum spacing for Castor crop.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Groundnut. (c) 2½ tons/ac. of C.M.+3½ tons/ac. of tank siit. (ii) (a) Red sandy loam. (b) Refer soil analysis, Kadiri. (iii) 9.6.1956. (iv) (a) 2 country ploughings, 1 *Guntaka* and 1 *gorru*. (b) Dibbling. (c) 8 lb./ac. (d) As per treatments. (e) N.A. (v) 3½ tons/ac. of C.M.+1½ tons/ac. of tank silt. (vi) TMV—1 (*late*). (vii) Unirrigated. (viii) 3 weeding and hoeing. (ix) 33.33%. (x) 14.3.1957.

2. TREATMENTS :

Same as in expt. no. 54(8) on page 425.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 5. (b) N.A. (iii) 4, (iv) (a) 60'×36'. (b) 48'×24'. (v) 6'×6'. (vi) Yes.

4. GENERAL :

(i) Stunted growth. (ii) Attack of semi looper. Control measures taken N.A. (iii) Castor yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 672 lb./ac. (ii) 85.1 lb./ac. (iii) Only main effect of P and 'control vs. others' are highly significant. (iv) Av. yield of castor in lb./ac.

Control = 805 lb./ac.

	P ₁	P ₂	Mean
R ₁	554	723	638
R ₂	588	689	638
Mean	571	706	638

S.E. of marginal means of P or R = 30.1 lb./ac.

S.E. of body of table = 42.5 lb./ac.

Crop :- Castor (Kharif).**Ref :- A.P. 55(43).****Site :- Regional Oilseeds Res. Stn., Kadiri.****Type 'C'.**

Object :—To find out the optimum number of intercultures required for Castor crop.

1. BASAL CONDITIONS:

(i) (a) Groundnut—Castor. (b) Groundnut. (c) Nil. (ii) (a) Red gravelly. (b) Refer soil analysis, Kadiri. (iii) 12.6.1955. (iv) 2 country ploughing and 1 *guntaka*. (b) Dibbling (c) 8 lb./ac. (d) 3' between rows and 3' between plants. (e) 1. (v) 2½ tons/ac. of F.Y.M.+3½ tons/ac. of tank silt. (vi) TMV-1 (early). (vii) Unirrigated. (viii) *Guntaka* worked and thinning done. (ix) 17.33". (x) 16.3.1956.

2. TREATMENTS :

6 levels of intercultures : 1. 1st and 3rd month, 2. 2nd and 4th month, 3. 1st, 3rd and 5th month, 4. 2nd, 3rd and 4th month, 5. 2nd, 3rd, 4th, and 5th month and 6. 1st, 2nd, 3rd, 4th and 5th month.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) 63'×21'. (b) 57'×15'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of semi looper—Calcium arsenate sprayed and tricho grame released. (iii) Castor yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 211 lb./ac. (ii) 107.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of castor in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	203	188	193	294	235	154

S.E./mean = 53.7 lb./ac.

Crop :- Gingelly.

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :- Type A—To study the response of Gingelly to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and deep black soil. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n = 20 lb./ac. of N as A/S.

p = 20 lb./ac. of P₂O₅ as Super.

np = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

k = 20 lb./ac. of K₂O as Mur. Pot.

nk = 20 lb./ac. of N as A/S+20 lb./ac. of K₂O as Mur. Pot.

pk = 20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Mur. Pot.

npk = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	206	560	263	14.0	148	99	313	148	8.2

Control mean = 675 lb./ac. and no. of trials = 7.

Crop :- Gingelly.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Gingelly to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 427 conducted at Karimnagar.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	370	206	—453	29.6	—82	82	0	288	14.8

Control mean = 411 lb./ac. and no. of trials = 6.

Crop :- Gingelly.

Ref :- A.P. 59(SFT).

Centre :- Karimnagar (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and deep black soil. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n_1 = 20 lb./ac. of N as A/S.

n_2 = 40 lb./ac. of N as A/S.

n_1' = 20 lb./ac. of N as Urea.

n_2' = 40 lb./ac. of N as Urea.

n_1'' = 20 lb./ac. of N as A/S/N.

n_2'' = 40 lb./ac. of N as A/S/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *khari* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on a oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	123	123	173	132	156	132	165

G.M. = 143 lb./ac. ; S.E. = 12.2 lb./ac. and no. of trials = 8.

Crop :- Gingelly.

Ref :- A.P. 59(SFT).

Centre :- Srikakulam (c.f.).

Type :- 'M'.

Object :-Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 428 conducted at Karimnagar.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	189	255	288	214	214	239	239

G.M. = 234 lb./ac. ; S.E. = 15.7 lb./ac. and no. of trials = 2.

Crop :- Gingelly.

Ref :- A.P. 59(SFT).

Centre :- Visakhapatnam (c.f.).

Type :- 'M'.

Object :-Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 428 conducted at Karimnagar.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	436	527	518	510	502	502	535

G.M. = 504 lb./ac. ; S.E. = 20.9 lb./ac. and no. of trials = 5.

Crop :- Jute.

Ref :- A.P. 59(SFT).

Centre :- Srikakulam. (c.f.).

Type :- 'M'.

Object :-Type A—To study the response of Jute to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS :

- 0 =Control (no manure).
- n =40 lb./ac. of N as A/S.
- p =20 lb./ac. of P_2O_5 as Super.
- np =40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
- k =20 lb./ac. of K_2O as Mur. Pot.
- nk =40 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
- pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur Pot.
- npk =40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Fibre yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av response in lb./ac.	938	197	82	181.9	—140	16	115	280	121.0

Control mean = 52.33 lb./ac. and no. of trials = 8.

Crop :- Jute.

Centre :- Srikakulam (c.f.).

Ref :- A.P. 59(SFT).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (i) Nil. (iv) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n_1 = 20 lb. ac. of N as A/S.

n_2 = 40 lb. ac. of N as A/S.

n_1' = 20 lb. ac. of N as Urea.

n_2' = 40 lb. ac. of N as Urea.

n_1'' = 20 lb./ac. of N as A/S/N.

n_2'' = 40 lb./ac. of N as A/S/N.

3. DESIGN to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 429 conducted at Srikakulam.

5. RESULTS :

Effect	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	4888	5941	6303	5538	6213	5307	5735

G.M. = 5704 lb./ac. ; S.E. = 152.4 lb./ac. and no. of trials = 8.

Crop :- Mesta (Kharif).

Site :- Mesta Res. Stn., Amadalavalasa.

Ref :- A.P. 59(64).

Type :- 'M'.

Object :—To study the effect of N, P and K at varying levels on the yield and quality of Fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. as second crop. (c) N.A. (ii) (a) Alluvial. (b) N.A. (iii) 8.7.1959. (iv) (a) Three ploughings were given by country plough. (b) Broadcasting. (c) N.A. (d) and (e) —. (v) 100 lb./ac. of A/S was applied on the first receipt of rain. (vi) N.A. (vii) Unirrigated. (viii) Two weedings and hoeings. (ix) N.A. (x) 30.10 1959.

2. TREATMENTS :

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

1. 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
2. 2 levels of P_2O_5 : $P_0=0$, and $P_1=20$ lb./ac.
3. 2 levels of K_2O : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

(i) Partial confd. (ii) (a) 6 plots/block ; 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 1/80 ac. (b) 1/95.2 ac. (v) 1.5'×1'. (vi) Yes.

4. GENERAL :

(i) Due to poor rainfall after September, the crop has suffered. (ii) Nil. (iii) Yield data. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 478 lb./ac. (ii) 86.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1
P_0	387	521	458	455	444	466
P_1	513	537	450	500	488	513
Mean	450	529	454	478	466	490
K_0	419	545	434			
K_1	481	514	474			

S.E. of N marginal mean = 24.9 lb./ac.
 S.E. of P or K marginal mean = 20.4 lb./ac.
 S.E. of body of $N \times P$ or $N \times K$ table = 35.3 lb./ac.
 S.E. of body of $P \times K$ table = 28.8 lb./ac.

Crop :- Mesta (Kharif).**Ref :- A.P. 59(36).****Site :- Mesta Res. Stn., Amadalavalasa.****Type :- 'C'.**

Object :—To find out the effect of different spacings against the local method of broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram as second crop. (c) Nil. (ii) (a) Alluvial. (b) N.A. (iii) 6.7.1959. (iv) (a) 3 ploughings with country plough. (b) Dibbled. (c) N.A. (d) As per treatments. (e) N.A. (v) 100 lb./ac. of A/S was applied on the first receipt of rains. (vi) MT—166. (vii) Unirrigated. (viii) Two weedings. (ix) N.A. (x) 29.10.1959.

2. TREATMENTS :

All combination of (1) and (2)+one extra treatment (T=Broadcasting).

- (1) Spacing within lines : $S_1=2''$, $S_2=4''$ and $S_3=6''$.
- (2) Spacing between lines : $L_1=9''$, $L_2=12''$ and $L_3=15''$.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 64'×55'. (iii) 4. (iv) (a) N.A. (b) 30'×15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The crop has suffered from extreme water stress in the later days due to poor rainfall after September. (ii) N.A. (iii) Yield data. (iv) 1959—contd. (b) No. (c) Nil. (v) (a) and (b)—. (vi) and (vii) Nil.

5. RESULTS :

(i) 401 lb./ac. (ii) 982 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

T = 460 lb./ac.

	L ₁	L ₂	L ₃	Mean
S ₁	375	339	314	343
S ₂	448	496	375	440
S ₃	424	375	399	399
Mean	416	403	363	394

S.E. of L or S marginal mean = 28.3 lb./ac.

S.E. of body of table or T mean = 49.1 lb./ac.

Crop :- Mesta (Kharif).**Ref :- A.P. 59(35).****Site :- Mesta Res. Stn., Amadalavalasa.****Type :- 'C'.**

Object :- To determine the optimum seed rate.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. as second crop. (c) N.A. (ii) (a) Alluvial. (b) N.A. (iii) 3.7.1959. (a) 3 ploughings with country plough. (b) Broadcasting. Seeds were covered with bush harrowing. (c) As per treatments. (d) and (e) —. (v) 100 lb. of A/S was applied on first receipt of rain. (vi) MT—129. (vii) Unirrigated. (viii) Two weedings. (ix) N.A. (x) 2.11.1959.

2. TREATMENTS :8 seed rates : R₁=5, R₂=10, R₃=15, R₄=20, R₅=25, R₆=30, R₇=35 and R₈=40 lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 8. (b) 55' × 75'. (iii) 4. (iv) (a) N.A. (b) 26' × 17'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The crop has suffered from extreme water stress in the later days due to poor rainfall after September. (ii) Nil. (iii) Yield data. (iv) (a) 1959—contd. (b) No. (c) —. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 645 lb./ac. (ii) 170.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈
Av. yield	468	641	641	653	665	714	690	690

S.E./mean = 85.0 lb./ac.

Crop :- Roselle (Kharif).**Ref. :- A.P. 59(63).****Site :- Mesta Res. Stn., Amadalavalasa.****Type :- 'M'.**

Object :- To study the effect of N, P and K at varying levels on the yield and quality of Fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram as second crop. (c) N.A. (ii) (a) Alluvial. (b) N.A. (iii) 7.7.1959. (iv) (a) 3 ploughings with country plough. (b) Broadcasted. (c) N.A. (d) and (e) —. (v) 100 lb./ac. of A/S was applied at the first receipt of rain. (vi) R T 26. (vii) Unirrigated. (viii) Two weedings and harrowings. (ix) N.A. (x) 27.11.1959.

2. TREATMENTS :

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

(1) 3 levels of N : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.

(2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=40$ lb./ac.

(3) 2 levels of K_2O : $K_0=0$ and $K_1=40$ lb./ac.

3. DESIGN :

(i) Partial confd. (ii) (a) 6 plots/block; 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 25'×22'. (b) 23'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Due to poor rainfall after September the crop has suffered. (ii) Nil. (iii) Yield data. (iv) 1959—contd. (b) No. (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 726 lb./ac. (ii) 170.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1
P_0	782	741	726	750	829	671
P_1	727	741	639	702	681	723
Mean	754	741	683	726	755	697
K_0	805	734	726			
K_1	704	749	639			

S.E. of N marginal mean	= 49.2 lb./ac.
S.E. of P or K marginal mean	= 40.1 lb./ac.
S.E. of body of $N \times P$ or $N \times K$ table	= 69.5 lb./ac.
S.E. of body of $P \times K$ table	= 56.8 lb./ac.

Crop :- Roselle (Kharif).

Site :- Mesta Res. Sta., Amadalavalasa.

Ref. :- A.P. 59(33).

Type :- 'C'.

Object :- To find out the effect of different spacings against the usual method of broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. was second crop. (c) N.A. (ii) (a) Alluvial. (b) N.A. (iii) 2.7.1959. (iv) (a) 3 ploughings with country plough. (b) Dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 100 lb./ac. of A/S was applied after the first receipt of rain. (vi) RT-1 (Non-Bristle). (vii) Unirrigated (viii) Two weedings. (ix) N.A. (x) 6.11.1959.

2. TREATMENTS :

Same as in expt. no. 59(36) on page 431.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) 64'×85'. (iii) 4. (iv) (a) and (b) 30'×15'. (v) No. (vi) Yes.

4. GENERAL :

(i) Crop suffered due to poor rainfall. (ii) Nil. (iii) Yield data. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 663 lb./ac. (ii) 124.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

T = 750 lb./ac.

	L ₁	L ₂	L ₃	Mean
S ₁	508	605	689	601
S ₂	666	641	689	665
S ₃	762	726	593	694
Mean	645	656	657	653

S.E. of L or S marginal mean = 35.8 lb./ac.
 S.E. of body of table or T mean = 62.1 lb./ac.

Crop :- Roselle (Kharif).

Ref. :- A.P. 59(34).

Site :- Mesta Res. Stn., Amadalavalasa.

Type :- 'C'.

Object :—To determine the optimum seedrate.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram as second crop. (c) Nil. (ii) (a) Alluvial. (b) N.A. (iii) 3.7.1959. (iv) (a) 3 ploughings with country plough. (b) Broadcasting. Seeds were covered by harrowing. (c) As per treatments. (d) and (e) —. (v) 100 lb./ac. of A/S was applied after first receipt of rains. (vi) N.A. (vii) Un-irrigated. (viii) Two weedings and hoeings. (ix) N.A. (x) 27.11.1959.

2. TREATMENTS :

Same as in expt. no. 59(35) on page 432.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) 55'×75'. (iii) 4. (iv) (a) and (b) 26'×17'. (v) No. (vi) Yes.

4. GENERAL:

(i) The crop suffered due to poor rainfall. (ii) Nil. (iii) Yield data. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 631 lb./ac. (ii) 163.9 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈
Av. yield	517	665	653	641	665	776	530	604

S.E./mean = 82.0 lb./ac.

Crop :- Turmeric (Kharif).

Ref. :- A.P. 56(14).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'M'.

Object :—To assess the relative merits of F.Y.M. and G.M. as basal dressing and to find out the optimum level of N with and without P and K to the Turmeric crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara for G.M. (c) 112 lb./ac. of Super. (ii) (a) Stiff clayey soil. (b) Refer soil analysis, Peddapallem. (iii) 5, 6 8, 1956. (iv) (a) 8 ploughings. (b) Dibbling. (c) N.A. (d) 18" between rows. (e) 1 hole/ac. (v) Nil. (vi) Desavali (late). (vii) Irrigated. (viii) 9 hand weedings and 4 intercultivations by working country plough. (ix) 27.13". (x) 28, 29.3.1957.

2. TREATMENTS :

Main-plot treatments :

M_1 = Raising of Pillipesara as G.M. crop over a basal dressing of Super at 112 lb./ac. and ploughing in *Situ*.

M_2 = F.Y.M. to supply an equal quantity of N as contained in the G.M. incorporated in M_1 .

Sub-plot treatments :

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

(1) 3 levels of N as A/S and G.N.C. in 1 : 1 ratio : $N_1=60$, $N_2=100$ and $N_3=140$ lb./ac.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=60$ lb./ac.

(3) 2 levels of K_2O as Pot. Sul. : $K_0=0$ and $K_1=100$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 15' × 24' (b) 12' × 21'. (v) 1½' × 1½'. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Leaf spot disease, 2 sprayings with 1% Bordeaux mixture. Mite attack on the crop observed and the same was controlled by spraying Parathion. (iii) Main shoot height, no. of leaves/plant and yield of green rhizomes. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 7907 lb./ac. (ii) (a) 4350 lb./ac. (b) 1411 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of green rhizomes in lb./ac.

	M_1	M_2	P_0	P_1	K_0	K_1	Mean
N_1	6854	8243	7403	7694	7638	7459	7549
N_2	7381	8769	7996	8154	7862	8288	8075
N_3	7807	8389	8165	8030	7907	8288	8098
Mean	7347	8467	7855	7959	7802	8012	7907
K_0	7504	8100	7696	7909			
K_1	7190	8834	8014	8008			
P_0	7358	8355					
P_1	7336	8579					

S.E. of difference of two

1. M marginal means	= 887.9 lb./ac.
2. P or K marginal means	= 288.0 lb./ac.
3. N marginal means	= 352.8 lb./ac.
4. P or K means at the same level of M	= 407.3 lb./ac.
5. N means at the same level of M	= 498.9 lb./ac.
6. M means at the same level of P or K	= 933.5 lb./ac.
7. M means at the same level of N	= 976.9 lb./ac.
S.E. of body of N × P or N × K table	= 352.8 lb./ac.
S.E. of body of P × K table	= 288.0 lb./ac.

Crop :- Turmeric (*Kharif*).

Ref :- A.P. 57(43).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'M'.

Object :- To assess the relative merits of F.Y.M. and G.M. as basal dressing and to find out the optimum levels of N with and without P and K to the Turmeric crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara for G.M. (c) 112 lb./ac. of Super. (ii) (a) Stiff clayey. (b) Refer soil analysis, Peddapallem. (iii) 6.7.1957. (iv) (a) 6 ploughings. (b) and (c) N.A. (d) 18" between rows. (e) N.A. (v) Nil. (vi) *Desavali* (late). (vii) Irrigated. (viii) 9 hand weedings and 5 intercultivations. (ix) 33.96%. (x) 16/19.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(14) on page 434.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 12'×27' (b) 9'×24'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Spraying 1% Bordeaux mixture against leaf spot disease. (iii) Main shoot height, no. of tillers no. of leaves per plant and yield of green rhizomes. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9459 lb./ac. (ii) (a) 2369 lb./ac. (b) 1492 lb./ac. (iii) Main effect of K and interaction P×K are significant. Others are not significant. (iv) Av. yield of green rhizomes in lb./ac.

	M ₁	M ₂	P ₀	P ₁	K ₀	K ₁	Mean
N ₁	8466	10201	9232	9435	9117	5550	9334
N ₂	8812	10150	9474	9488	8913	10048	9480
N ₃	9079	10048	9091	10035	9042	10086	9564
Mean	8785	10133	9266	9652	9023	9895	9459
K ₀	8475	9571	8518	9528			
K ₁	9096	10694	10014	9776			
P ₀	8730	9801					
P ₁	8841	10454					

S.E. of difference of two

1. M marginal means	= 483.6 lb./ac.
2. P or K marginal means	= 304.6 lb./ac.
3. N marginal means	= 373.0 lb./ac.
4. P or K means at the same level of M	= 430.7 lb./ac.
5. N means at the same level of M	= 527.5 lb./ac.
6. M means at the same level of P or K	= 571.4 lb./ac.
7. M means at the same level of N	= 647.5 lb./ac.
S.E. of body of N×P or N×K table	= 373.0 lb./ac.
S.E. of body of P×K table	= 304.6 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 58(82).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'M'.

Object :—To assess the relative merits of F.Y.M. and G.M. as basal dressing and to find out the optimum level of N with and without P and K to the Turmeric crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara. (c) 112 lb./ac. of Super. (ii) (a) Stiff clayey soil. (b) Refer soil analysis, Peddapallem. (iii) 23.24.7.1958. (iv) (a) 4 ploughings. (b) Hand dibbling. (c) and (d) N.A. (e) 1. (v) Nil. (vi) Desavali (late). (vii) Irrigated. (viii) 10 hand weedings and 4 intercultivations. (ix) 24.1*. (x) 22 to 24.3.1959.

2. TREATMENTS:

Same as in expt. no. 56(14) on page 434.

3. DESIGN :

(i) Split-plot. (ii) (a) 24. (b) 72'×108'. (iii) 4. (iv) (a) 12'×27'. (b) 9'×24'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) The germination was adversely affected due to heavy rains soon after planting. (ii) Soil drenching with 0.3% chestnut compound against 'wilt' disease. Spraying with 1% Bordeaux mixture against leaf spot and sulphur dusting against mite attack. (iii) Yield of green rhizomes. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 7960 lb./ac. (ii) (a) 4413 lb./ac. (b) 1523 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of green rhizomes in lb./ac.

	M ₁	M ₂	P ₀	P ₁	K ₀	K ₁	Mean
N ₁	7683	8490	6810	9363	8042	8131	8087
N ₂	7325	9117	7907	8535	7840	8602	8221
N ₃	6832	8310	7930	7213	7370	7773	7571
Mean	7280	8639	7549	8370	7751	8169	7960
K ₀	6810	8691	7414	8086			
K ₁	7750	8587	7683	8654			
P ₀	6989	8109					
P ₁	7571	9169					

S.E. of difference of two

1. M marginal means	= 901 lb./ac.
2. P or K marginal means	= 311 lb./ac.
3. N marginal means	= 381 lb./ac.
4. P or K means at the same level of M	= 439 lb./ac.
5. N means at the same level of M	= 538 lb./ac.
6. M means at the same level of P or K	= 953 lb./ac.
7. M means at the same level of N	= 1002 lb./ac.
S.E. of body N×P or N×K table	= 381 lb./ac.
S.E. of body of P×K table	= 311 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 59(75).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'M'.

Object :- To assess the relative merits of F.Y.M. and G.M. as basal dressing and to find out the optimum level of N with and without P and K to the Turmeric crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pillipesara. (c) 112 lb./ac. of Super. (ii) (a) Stiff clayey soil. (b) Refer soil analysis, Peddapallem. (iii) 9.8.1959. (iv) (a) 10 ploughings. (b) Dibbling. (c) N.A. (d) 18" between rows. (e) N.A. (v) Nil. (vi) Desavali (late). (vii) Irrigated. (viii) 9 hand weedings and 2 intercultivations. (ix) 21.7". (x) 4.4.1960 to 6.4.1960.

2. TREATMENTS :

Same as in expt. no. 56(14) on page 434.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 12 sub-plots/main-plot. (b) 24'×162'. (iii) 4. (iv) (a) 12'×27'. (b) 9'×24'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) The germination badly affected due to heavy rains. Gap-filling brought considerable improvement. (ii) Minor attack of *colletotrichum* leaf-spot disease. Spraying of 1% Bordeaux mixture against it. Drenching with 0.3% chestnut compound was done against "wilt" disease. Spraying with Parathion was done against leaf-mite attack. (iii) Yield of green rhizomes. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9479 lb./ac. (ii) (a) 2374 lb./ac. (b) 2778 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of green rhizomes in lb./ac.

	M ₁	M ₂	P ₀	P ₁	K ₀	K ₁	Mean
N ₁	9946	8624	8758	5811	9341	9230	9285
N ₂	9498	9520	9541	9478	8826	10192	9509
N ₂	9229	10058	8803	10485	9385	9903	9644
Mean	9558	9401	9034	9925	9184	9775	9479
K ₀	9318	9050	8422	9946			
K ₁	9800	9750	9646	9904			
P ₀	9152	8915					
P ₁	9964	9887					

S.E. of difference of two

1. M marginal means	= 484.6 lb./ac.
2. P or K marginal means	= 567.0 lb./ac.
3. N marginal means	= 694.5 lb./ac.
4. P or K means at the same level of M	= 801.9 lb./ac.
5. N means at the same level of M	= 982.2 lb./ac.
6. M means at the same level of P or K	= 745.9 lb./ac.
7. M means at the same level of N	= 937.0 lb./ac.
S.E. of body of N×P or N×K table	= 694.5 lb./ac.
S.E. of body of P×K table	= 567.0 lb./ac.

Crop :- Turmeric.

Ref :- A.P. 59(SFT).

Centre :- Krishna Dist. (c.f.).

Type :- 'M'.

Object :- Type A—To study the response of Turmeric to levels of N, P and K, applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) July—August 1959. (v) to (ix) N.A. (x) January—February 1959.

2. TREATMENTS :

0	= Control (no manure).
n	= 50 lb./ac. of N as A/S.
p	= 25 lb./ac. of P ₂ O ₅ as Super.
np	= 50 lb. ac. of N as A/S + 25 lb./ac. of P ₂ O ₅ as Super.
k	= 50 lb./ac. of K ₂ O as Mur. of Pot.
nk	= 50 lb./ac. of N as A/S + 50 lb./ac. of K ₂ O as Mur. of Pot.
pk	= 25 lb./ac. of P ₂ O ₅ as Super + 50 lb./ac. of K ₂ O as Mur. of Pot.
npk	= 50 lb./ac. of N as A/S + 25 lb./ac. of P ₂ O ₅ as Super + 50 lb./ac. of K ₂ O as Mur. of Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of Type A and the other half of Type B on crops other than the legumes. The three trials on legumes are of Type C. Residual effects of phosphate application are studied on Type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the four zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Rhizomes yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) (a) No. (b) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2288	1168	1835	534.0	99	-354	214	41	485.4

Control mean = 13157 lb./ac. and no. of trials = 4.

Crop :- Turmeric.

Ref :- A.P. 59(SFT).

Centre :- Krishna Dist. (c.f.).

Type :- 'M'.

Object :- Type A—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) July—August, 1959. (v) to (ix) N.A. (x) January - February, 1959.

2. TREATMENTS :

0 = Control (no manure).
 n_1 = 50 lb./ac. of N as A/S.
 n_2 = 100 lb./ac. of N as A/S.
 n_1' = 50 lb./ac. of N as Urea.
 n_2' = 100 lb./ac. of N as Urea.
 n_1'' = 50 lb./ac. of N as A/S/N.
 n_2'' = 100 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 438 conducted at Krishna.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	14293	16293	17576	16564	17017	17173	19337

G.M. = 16893 lb./ac. ; S.E. = 190.3 lb./ac. and no. of trials = 3.

Crop :- Turmeric (Kharif).

Ref :- A.P. 55(25).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object :- To ascertain the comparative merits of planting different types of seed material viz. mother rhizomes as whole, cut mothers and primary fingers in relation to different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Turmeric. (c) N.A. (ii) (a) Stiff clayey soil. (b) Refer soil analysis, Peddapallem. (iii) 3, 4.8.1955. (iv) (a) 6 ploughings. (b) In furrows. (c) N.A. (d) As per treatments. (e) N.A. (v) G.M. crop of *pillipesara* was ploughed in and castor cake at 960 lb./ac. applied before planting. (vi) *Desavali* (late). (vii) Irrigated. (viii) 8 hand weedings. (ix) N.A. (x) 21.3.1956.

2. TREATMENTS :

Main-plot treatments :

Spacing between rows : $S_1=12''$, $S_2=18''$ and $S_3=24''$.

Sub-plot treatments :

All combinations of (1) and (2)

3 seed materials : M_1 =Fingers, M_2 =Mother rhizomes and M_3 =Mother rhizomes (longitude cut).

2 spacings within rows : $R_1=9''$ and $R_2=12''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 12'×36'. (b) 6×33'. (v) 3×15'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Rhizome rot disease and leaf spot disease affected the crop. Spraying and drenching with 1% Bordeaux mixture three times. (iii) Main shoot height, no. of tillers, number of leaves per plant and yield of green rhizomes. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4415 lb./ac. (ii) (a) 1904 lb./ac. (b) 1770 lb./ac. (iii) Only interaction M×S is significant. (iv) Av. yield of green rhizomes in lb./ac.

	S ₁	S ₂	S ₃	Mean	R ₁	R ₂
M ₁	3718	4144	5197	4353	4397	4309
M ₂	5802	5040	3226	4689	5103	4275
M ₃	4995	3181	4435	4204	4753	3653
Mean	4838	4122	4286	4415	4751	4079
R ₁	5219	4659	4376			
R ₂	4458	3584	4196			

S.E. of difference of two

1. S marginal means	= 549.6 lb./ac.
2. R marginal means	= 417.2 lb./ac.
3. M marginal means	= 510.9 lb./ac.
4. R means at the same level of S	= 722.6 lb./ac.
5. M means at the same level of S	= 885.0 lb./ac.
6. S means at the same level of R	= 750.4 lb./ac.
7. S means at the same level of M	= 907.9 lb./ac.
S.E. of body of R×M table	= 510.9 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 56(27).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object :— To ascertain the comparative merits of planting different types of seed material viz. mother rhizomes as whole, cut mothers and primary fingers in relation to different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sann hemp and *Jonna*. (c) Nil. (ii) (a) Stiff clayey soil. (b) Refer soil analysis, Peddapallem. (iii) 27, 28.7.1956. (iv) (a) 10 ploughings. (b) Planting in furrows. (c) N.A. (d) As per treatments. (e) —. (v) 6000 lb./ac. of *pillipesara* as G.M. + 960 lb./ac. of castor cake + 112 lb./ac. of Super. (vi) Local *desavali* (late). (vii) Irrigated. (viii) 9 hand weedings. (ix) 28.89". (x) 24.3 1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(25) on page 439.

5. RESULTS :

(i) 9313 lb./ac. (ii) (a) 2330 lb./ac. (b) 1971 lb./ac. (iii) Main effects of S and M are highly significant and main effect of R is significant. None of the interactions is significant. (iv) Av. yield of green rhizomes in lb./ac.

	S ₁	S ₂	S ₃	Mean	R ₁	R ₂
M ₁	11648	7280	6272	8400	8803	7997
M ₂	13216	9766	10528	11170	12400	9939
M ₃	10909	7616	6568	8370	8425	8314
Mean	11924	8221	7795	9313	9876	8750
R ₁	12693	9117	7818			
R ₂	11152	7325	7773			

S.E. of difference of two

1. S marginal means	= 673 lb./ac.
2. R marginal means	= 465 lb./ac.
3. M marginal means	= 569 lb./ac.
4. R means at the same level of S	= 805 lb./ac.
5. M means at the same level of S	= 985 lb./ac.
6. S means at the same level of R	= 881 lb./ac.
7. S means at the same level of M	= 1049 lb./ac.
S.E. of body of R × M table	= 169 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 57(44).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object:—To ascertain the comparative merits of planting different types of seed material viz. mother rhizomes as whole, cut mothers and primary fingers in relation to different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp for G.M. (c) Nil. (ii) (a) Stiff clayey. (b) Refer soil analysis, Peddapallem. (iii) 29, 30.6.1957. (iv) (a) Country ploughing. (b) Planted in furrows. (c) N.A. (d) As per treatments. (e) N.A. (v) 10,000 lb./ac. of sannhemp+4300 lb./ac. of F.Y.M.+960 lb./ac. of castor cake+112 lb./ac. of Super+480 lb./ac. of Expella cake+72 lb./ac. of A/S. (vi) Desavali (local). (vii) Irrigated. (viii) 12 handweeding and 4 intercultivations. (ix) 34.50°. (x) 12.3.1958 to 16.3.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(25) on page 439.

5. RESULTS :

(i) 10005 lb./ac. (ii) (a) 1256 lb./ac. (b) 1544 lb./ac. (iii) Main effects of R and M are significant. Interactions R × M and S × R are significant. (iv) Av. yield of green rhizomes in lb./ac.

	S ₁	S ₂	S ₃	Mean	R ₁	R ₂
M ₁	9505	8325	9168	8999	9806	8192
M ₂	11839	11446	12570	11952	11774	12130
M ₃	8662	9393	9140	9065	9918	8212
Mean	10002	9721	10293	10005	10499	9511
R ₁	11286	9262	10949			
R ₂	8718	10180	9636			

S.E. of difference of two

1. S marginal means	= 564 lb./ac.
2. R marginal means	= 363 lb./ac.
3. M marginal means	= 445 lb./ac.
4. R means at the same level of S	= 630 lb./ac.
5. M means at the same level of S	= 772 lb./ac.
6. S means at the same level of R	= 719 lb./ac.
7. S means at the same level of M	= 846 lb./ac.
S.E. of body of R × M table	= 445 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 58(81).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object :-To ascertain the comparative merits of planting different types of seed material viz. mother rhizomes as whole, cut mothers and primary fingers in relation to different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*. (c) Nil. (ii) (a) Stiff clay soil. (b) Refer soil analysis, Peddapallem. (iii) 16, 17.7.1958. (iv) (a) 4 ploughings and making beds. (b) Hand dibbling. (c) —. (d) As per treatments. (e) 1. (v) 13440 lb./ac. of F.Y.M. + 14,560 lb./ac. of compost + 296 lb./ac. of G.N.C. + 252 lb./ac. of A/S. (vi) *Desavali* (late). (vii) Irrigated. (viii) 12 hand weedings and 2 intercultivations. (ix) 25.6". (x) 19 to 21.3.1959.

2. TREATMENT :

Main-plot treatments :

M_1 = Broad ridges 4' wide with rows spaced 12" apart. and M_2 = Ridges and furrows 20" apart with rows spaced 20" apart.

Sub-plot treatments :

T_1 = Whole mother rhizomes planted 12" apart, T_2 = Whole mother rhizomes planted 8" apart, T_3 = Cut mother rhizomes planted 8" apart, T_4 = Cut mother rhizomes planted 4" apart, T_5 = Primary fingerlings planted 8" apart and T_6 = Primary fingerlings planted 4" apart.

3. DESIGN ;

(i) Split-plot. (ii) (a) 2 main-plots/replication and 6 sub-plots/main-plot. (b) 60' × 96'. (iii) 4. (iv) (a) 15 × 32' (b) 10' × 30'. (v) 2.5' × 1'. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Soil drenching with 0.3% chestnut compound done against 'wilt' disease. Spraying with 1% Bordeaux mix. 2 times against 'leaf spot' disease. Sulphur dusting against 'mite' attack. (iii) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS ;

(i) 18513 lb./ac. (ii) (a) 3158 lb./ac. (b) 2419 lb./ac. (iii) M effect is alone highly significant. (iv) Av. yield of turmeric in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
M_1	22646	21414	22870	21907	25603	24662	23184
M_2	14067	15366	14268	12835	13059	13462	13843
Mean	18356	18390	18569	17371	19331	19062	18513

S.E. of difference of two

1. M marginal means	= 912 lb./ac.
2. T marginal means	= 1209 lb./ac.
3. T means at the same level of M	= 1710 lb./ac.
4. M means at the same level of T	= 1808 lb./ac.

Crop :- Turmeric (Kharif).**Ref :- A.P. 59(76).****Site :- Turmeric Res. Stn., Peddapallem.****Type :- 'C'.**

Object :-To ascertain the comparative merits of planting different types of seed material viz. mother rhizomes as whole, cut mothers and primary fingers in relation to different spacing.

BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy+Red gram. (c) 76 lb./ac. of A/S. (ii) (a) Stiff clayey. (b) Refer soil analysis, Peddapallem. (iii) 30.7.1959 to 1.8.59. (iv) (a) 7 ploughing with country plough. (b) Planted in furrows. (c) N.A. (d) As per treatments. (e) N.A. (v) 8280 lb./ac. of F.Y.M.+compost 176 lb./ac. of Super, 104 lb./ac. of Pot. Sul. 593 lb./ac. of G.N.C. and 153 lb./ac. of A/S. (vi) Duggirala local—Desavali (late). (vii) Irrigated. (viii) 10 hand weedings and 3 intercultivations. (ix) 25.3". (x) 10.3.1960 to 13.3.1960.

2. TREATMENTS to 3. DESIGN :

Same as in expt. 58(81) on page 442.

4. GENERAL :

(i) Heavy and continuous rainfall at the time of planting resulted in rotting of rhizomes. Gap-filling was done. (ii) 'wilt' disease '*colletotrichum*' leaf-spot disease was very severe. 1% Bordeaux mixture sprayed against leaf spot disease 0.3% cheshnut compound was sprayed once against 'wilt' spraying B.H.C. 50% against 'lace wing bugs'. Spraying Parathion against 'leaf-mite'. (iii) Yield of grain. (iv) (a) 1955—contd. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9509 lb./ac. (ii) (a) 2040 lb./ac. (b) 278 lb./ac. (iii) M effect is highly significant. Interaction M×T is significant. (iv) Av. yield of turmeric in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	Mean
M ₁	10416	10685	15389	10349	17517	12925	12880
M ₂	6652	6720	5958	4771	7974	4749	6137
Mean	8534	8702	10674	7560	12746	8837	9509

S.E. of difference of two

1. M marginal means = 589 lb./ac.
2. T marginal means = 1139 lb./ac.
3. T means at the same level of M = 1611 lb./ac.
4. M means at the same level of T = 1584 lb./ac.

Crop :- Turmeric (Kharif).**Ref :- A.P. 56(13).****Site :- Turmeric Res. Stn., Peddapallem.****Type :- 'C'.**

Object :-To economise the seed material required for planting and to find out the effect on yield by planting detached sprouts of different lengths from germinating rounds.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Stiff clayey. (b) Refer soil analysis, Peddapallem. (iii) 16.7.1956. (iv) (a) 8 ploughings. (b) In furrows. (c) N.A. (d) 18" between rows and 9" between plants. (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) Local—Desavali (late). (vii) Irrigated. (viii) 8 hand weedings and 3 intercultivations. (ix) 33.35". (x) 20, 21.3.1957.

2. TREATMENTS :

Planting of detached sprouts of different lengths :

L₁=Rounds cut longitudinally (control), L₂=4", L₃=6", L₄=8", L₅=10" and L₆=12" length.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 18'×18'. (b) 15'×15'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Leaf spot disease caused by *colletotrichum Capsici* affected the crop and two sprayings were given with 1% Bordeaux mixture to check the disease. (iii) Main shoot height, no. of leaves per plant no. of tillers and turmeric yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5839 lb./ac. (ii) 1111 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of turmeric in lb./ac.

Treatment	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆
Av. yield	5085	6048	6205	5802	6765	5130

S.E./mean = 555.5 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 58(71).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object :—To economise the seed material required for planting and to find out the effect on yield by planting detached sprouts of different lengths from germinating rounds.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Palipesora and Ragi for fodder. (c) Nil. (ii) (a) Stiff clay. (b) Refer soil analysis, Peddapallem (iii) 19.7.1958. (v) (a) 2 ploughings and making ridges and furrows. (b) Planted in furrows. (c) N.A. (d) 9' between plants. (e) 1. (v) 13,440 lb./ac. of F.Y.M.+590 lb./ac. of G.N.C.+252 lb./ac. of A/S in 2 doses. (vi) Duggirala local—Desavali (late). (vii) Irrigated. (viii) 9 hand weedings and 3 interculturings. (ix) 25.3". (x) 18.3.1959.

2. TREATMENTS :

Same as in expt. no. 56(13) on page 443.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 18'×81'. (iii) 4. (iv) (a) 9'×27'. (b) 6'×24'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Soil drenching with 0.3% cheshnut compound against leaf 'Wilt' disease. Spraying with 1% Bordeaux mixture against 'leaf' spot disease. Sulphur dusting against 'Mite' attack. (iv) (a) Yield of green rhizomes. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9695 lb./ac. (ii) 1949 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of turmeric in lb./ac.

Treatment	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆
Av. yield	16240	9900	8086	8758	7549	7638

S.E./mean = 974.5 lb./ac.

Crop :- Turmeric (Kharif).

Ref :- A.P. 59(42).

Site :- Turmeric Res. Stn., Peddapallem.

Type :- 'C'.

Object :—To economise the seed material required for planting and to find out the effect on yield by planting detached sprouts of different lengths from germinating rounds.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy+Redgram. (c) 51 lb./ac. of A/S. (ii) (a) Stiff clayey. (b) Refer soil analysis, Peddapallem. (iii) 2, 3.8.1958. (iv) (a) 8 ploughings with country plough. (b) Dibbling. (c) to (e) N.A. (v) 2070 lb./ac. of F.Y.M.+compost+46.5 lb./ac. of Super+27.5 lb./ac. of Pot. Sul.+157 lb./ac. of G.N.C. 48.25 lb./ac. of A.S. (vi) Duggirala local (late). (vii) Irrigated. (viii) 9 hand weedings and 3 interculturings. (ix) 25.0". (x) 14.1960.

2. TREATMENTS :

Same as in expt. no. 56(13) on page 443.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 27'×54'. (iii) 4. (iv) (a) 9'×27'. (b) 6'×24'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Spraying with 1% Bordeaux mixture against "colletotrichum" leaf spot disease. Drenching with 0.3% cheshnut compound against wilt disease. (iii) Yield of turmeric. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4988 lb./ac. (ii) 1674 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of turmeric in lb./ac.

Treatment	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆
Av. yield	6182	4525	3987	4928	4995	5309

S.E./mean = 837 lb./ac.

Crop :- Chillies.

Ref :- A.P. 54(19).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :- To find out the manurial requirements of Chillies and to compare the effect of different fertilizers with and without G.L. as basal dressing.

1. BASAL CONDITIONS :

(i) (a) No. (b) Chillies. (c) G.L. at 5000 lb./ac. and 1 cwt. of A/S. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 8, 9.9.1954. (iv) (a) 6 ploughings with country plough. (b) and (c) N.A. (d) 22"×22". (e) N.A. (v) Nil. (vi) G—2. (early). (vii) Unirrigated. (viii) Intercultivation with country plough and 2 hand weedings. (ix) 16.35". (x) 12.1.1955 to 12.3.1955.

2. TREATMENTS :**Main-plot treatments :**

2 manurial treatments : $M_0=0$ and $M_1=5000$ lb./ac. of G.L. manure.

Sub-plot treatments :

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

(1) 3 levels of N : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.

(2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=30$ lb./ac.

(3) 2 levels of K_2O : $K_0=0$ and $K_1=50$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/45.04 ac. (b) 1/68.05 ac. (v) One row on either side ; 3.96' on either end. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Periodical growth measurements, plant and soil samples were taken. Yield of ripe chillies as well as dry chillies were recorded. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1522 lb./ac. (ii) (a) 934.3 lb./ac. (b) 327.7 lb./ac. (iii) Main effect of N is highly significant. No other effect is significant. (iv) Av. yield of chillies in lb./ac.

	M ₀	M ₁	K ₀	K ₁	P ₀	P ₁	Mean
N ₁	989	1196	1152	1032	1142	1043	1092
N ₁	1726	1576	1604	1698	1621	1682	1651
N ₂	1878	1768	1693	1953	1830	1816	1823
Mean	1531	1514	1483	1561	1496	1549	1522
P ₀	1515	1477	1463	1529			
P ₁	1547	1551	1504	1593			
K ₀	1521	1445					
K ₁	1541	1583					

S.E. of difference of two

1. M marginal means = 190.7 lb./ac. 6. M means at the same level of P or K = 202.1 lb./ac.
2. N marginal means = 81.9 lb./ac. 7. P or K means at the same level of M = 94.5 lb./ac.
3. P or K marginal means = 66.9 lb./ac. S.E. of body of N×P or N×K table = 81.5 lb./ac.
4. N means at the same level of M = 115.8 lb./ac. S.E. of body of K×P table = 66.9 lb./ac.
5. M means at the same level of N = 218.9 lb./ac.

Crop :- Chillies.

Ref :- A.P. 55(52).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :- To find out the manurial requirements of chillies and to compare the effect of different fertilizers with and without G.L. as basal dressing.

1. BASAL CONDITIONS :

(i) 'a' Chillies—Chillies. (b) Chillies. (c) G.L. manuring at 5000 lb./ac. and 1 cwt./ac. of A/S (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 7.9.1955. (iv) (a) 6 ploughings with country plough at different levels (b) and (c) N.A. (d) 22"×22". (e) 4—5. (v) Nil. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation with country plough and 2 hand weedings. (ix) 13.3". (x) 3.1.1956 to 19.3.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. 54(19) on page 445.

5. RESULTS ;

(i) 1064 lb./ac. (ii) (a) 29.48 lb./ac. (b) 186.26 lb./ac. (iii) M and N effects are significant, other effects are not significant. (iv) Av. yield of chillies in lb./ac.

	M ₀	M ₁	K ₀	K ₁	P ₀	P ₁	Mean
N ₀	318	565	432	450	403	480	441
N ₁	1125	1311	1203	1233	1117	1318	1218
N ₂	1430	1637	1530	1537	1388	1679	1533
Mean	958	1171	1075	1073	969	1159	1064
P ₀	854	1084	979	959			
P ₁	1061	1257	1131	1187			
K ₀	948	1161					
K ₁	967	1180					

S.E. of difference of two

1. M marginal means	= 6.0 lb./ac.
2. N marginal means	= 46.5 lb./ac.
3. P or K marginal means	= 38.0 lb./ac.
4. P or K means at the same level of M	= 53.8 lb./ac.
5. N means at the same level of M	= 65.8 lb./ac.
6. M means at the same level of N	= 54.1 lb./ac.
7. M means at the same level of P or K	= 38.2 lb./ac.
S.E. of body of N×P or N×K table	= 46.5 lb./ac.
S.E. of body of P×K table	= 38.0 lb./ac.

Crop :- Chillies (Kharif).**Ref :- A.P. 56(116).****Site :- Millet Res. Stn., Lam, Guntur.****Type :- 'M'.**

Object :—To study the effect of N, P and K fertilizers with and without G.L. manure on dry land Chillies.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 7.9.1956. (iv) (a) Five ploughings with country plough. (b) Transplanted. (c) N.A. (d) 22"×5½". (e) One. (v) Nil. (vi) G-2. (vii) Unirrigated. (viii) Intercultivation twice and hand weeding at periodical intervals. (ix) 13.67". (x) January to March 1957, (Three pickings).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(19) on page 445.

4. GENERAL :

(i) Normal. (ii) Thrips incidence was noticed—B.H.C. sprayed. (iii) Yield of ripe pods. (iv) (a) 1954—1956. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1703 lb./ac. (ii) (a) 404.0 lb./ac. (b) 204.0 lb./ac. (iii) Main effects of N, P, K and interaction N×K are highly significant. Interactions N×P and N×P×K are significant. (iv) Av. yield of chillies (ripe pod) in lb./ac.

	M ₀	M ₁	K ₀	K ₁	P ₀	P ₁	Mean
N ₀	1125	1321	1213	1233	1205	1241	1223
N ₁	1799	1923	1710	2012	1782	1940	1861
N ₂	1969	2081	2018	2032	1870	2180	2025
Mean	1631	1775	1647	1759	1619	1787	1703
P ₀	1531	1707	1577	1661			
P ₁	1731	1843	1717	1857			
K ₀	1599	1695					
K ₁	1663	1855					

S.E. of the difference of two

1. M marginal means	= 82.5 lb./ac.
2. N marginal means	= 51.0 lb./ac.
3. P or K marginal means	= 41.6 lb./ac.
4. P or K means at the same level of M	= 58.9 lb./ac.
5. N means at the same level of M	= 72.1 lb./ac.
6. M means at the same level of N	= 101.3 lb./ac.
7. M means at the same level of P or K	= 92.4 lb./ac.
S.E. of body of N×P or N×K table	= 51.0 lb./ac.
S.E. of body of P×K table	= 41.6 lb./ac.

Crop :- Chillies.**Ref. :- A.P. 55(46).****Site :- Millet Res. Stn., Lam, Guntur.****Type :- 'M'.**

Object :—To study the effect of different organic manures on Chillies.

1. BASAL CONDITIONS :

(i) (a) *Pyru Jonna*—Chillies. (b) *Pyru Jonna*. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 8.9.1955. (iv) (a) 5 ploughings. (b) and (c) N.A. (d) 22" × 22". (e) 4 to 5. (v) Nil. (vi) G—1 (late). (vii) Unirrigated. (viii) *Papatam* worked in 1 month old crop. (ix) 1.12". (x) 25.1.1956 to 25.2.1956.

2. TREATMENTS :

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

(1) 3 sources of N : S₁=Urban compost, S₂=F.Y.M. and S₃=G.L.(2) 3 levels of N : N₁=4, N₂=60 and N₃=80 lb./ac.

All manures were applied one month before sowing and incorporated into the soil.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 1/33.61 ac. (b) 1/50 ac. (v) 2 lines on either side. (vi) Yes.

4. GENERAL :

(i) Crop badly effected by heavy rains in initial stages. (ii) Nil. (iii) Measurement of growth at different intervals and weight of Chillies. (iv) (a) 1955—1957. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 301 lb./ac. (ii) 85.5 lb./ac. (iii) Effect of N is significant. Effects of S, interaction N × S and 'control vs others' are highly significant. (iv) Av. yield of chillies in lb./ac.

Control = 203 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	215	278	374	289
N ₂	200	256	396	284
N ₃	268	259	558	362
Mean	228	264	443	312

S.E. of N or S marginal mean = 24.7 lb./ac.

S.E. of body of table or control mean = 42.8 lb./ac.

Crop :- Chillies.**Ref. :- A.P. 56(38).****Site :- Millets Res. Stn., Lam, Guntur.****Type :- 'M'.**

Object :—To study the effect of organic manures on the yield of Chillies.

1. BASAL CONDITIONS :

(i) (a) *Pyru Jonna*—Chillies. (b) *Pyru Jonna*. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 9.9.1956. (iv) (a) 6 ploughings. (b) Transplanted. (c) —. (d) 1.32" between rows. (e) N.A. (v) Nil. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation with country plough both way in rows 1½ months after transplanting and 2 hand weedings. (ix) 13.3". (x) 30.11.1956, 11.1.1957, 13.2.1957 and 7.3.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(46) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Weights of wet and dry pods. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 696 lb./ac. (ii) 144 lb./ac. (iii) Effect of N is significant. Effects of S, interaction N×S and 'control vs. others' are highly significant. (iv) Av. yield of chillies in lb./ac.

Control = 493 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	645	693	719	686
N ₂	600	697	743	680
N ₃	645	729	988	787
Mean	630	706	817	718

S.E. of N or S marginal mean = 41.6 lb./ac.

S.E. of body of table or control mean = 72.0 lb./ac.

Crop :- Chillies.

Site :- Millet Res. Stn., Lam, Guntur.

Ref :- A.P. 57(37).

Type :- 'M'.

Object :—To study the effect of organic manures on the yield of Chillies.

1. BASAL CONDITIONS :

(i) (a) Chillies—*Jonna*. (b) *Jonna*. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 12.9.1957. (iv) (a) 5 ploughings. (b) to (e) N.A. (v) Nil. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation with *papatam* in one month crop. (ix) 2 77". (x) 31.3.1958, 29.1.1958 and 22.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(46) on page 448.

5. RESULTS :

(i) 2457 lb./ac. (ii) 354.0 lb./ac. (iii) Only the effect 'control vs. others' is highly significant. (iv) Av. yield of green chillies in lb./ac.

Control = 1720 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	2480	2275	2485	2413
N ₂	2425	2425	2655	2502
N ₃	2530	2655	2920	2702
Mean	2478	2452	2687	2539

S.E. of N or S marginal mean = 102.2 lb./ac.

S.E. of body of table = 177.0 lb./ac.

Crop :- Chillies (Kharif).

Site :- Millet Res. Stn., Lam, Guntur.

Ref :- A.P. 57(118).

Type :- 'M'.

Object :—To study the effect of sulphur on Chillies.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 2nd week of September, 1957. (iv) (a) 5 ploughings with country plough. (b) Transplanting. (c) N.A. (d) $22^{\circ} \times 5\frac{1}{2}^{\circ}$. (e) One. (v) 60 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Pot. Sul. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation twice and periodical hand weeding (ix) 4.77%. (x) January to March 1958 (three pickings).

2. TREATMENTS :

Main-plot treatments :

S_0 =No sulphur and S_1 =Sulphur applied.

Sub-plot treatments :

3 G.M. : G_0 =No G.M., G_1 =Pillipesara and G_2 =Medapeara.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 sub-plots/main-plot; 2 main-plots/replication. (b) N.A. (iii) 4. (iv) (a) 1/35.35 ac. (b) 1/51.95 ac. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Thrips incidence—sprayed B.H.C. (iii) Growth measurements and yield of ripe-pods. (iv) (a) 1957—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2593 lb./ac. (ii) (a) 1474.5 lb./ac. (b) 528.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of chillies in lb./ac.

	G_0	G_1	G_2	Mean
S_0	2526	2591	2522	2546
S_1	3110	2278	2530	2639
Mean	2818	2435	2526	2593

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 602.0 lb./ac. |
| 2. G marginal means | = 264.0 lb./ac. |
| 3. G means at the same level of S | = 373.4 lb./ac. |
| 4. S means at the same level of G | = 674.8 lb./ac. |

Crop :- Chillies (Kharif).

Ref :- A.P. 58(153).

Site :- Millet Res. Stn., Lam, Cuntur.

Type :- 'M'.

Object :—To study the effect of sulphur on Chillies.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) 60 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Pot. Sul. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 2nd week of September 1958. (iv) (a) Six ploughings with country plough. (b) Transplanting. (c) N.A. (d) $22^{\circ} \times 5\frac{1}{2}^{\circ}$. (e) One. (v) 60 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Pot. Sul. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation and weeding. (ix) 15.49%. (x) 2nd week of January to 1st week of March 1959. (Three pickings).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(118) on page 449.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of ripe pods per plots. (iv) (a) 1957—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1019 lb./ac. (ii) (a) 421.1 lb./ac. (b) 239.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of chillies (ripe pod) in lb./ac.

	G ₀	G ₁	G ₂	Mean
S ₀	1136	1003	923	1021
S ₁	1131	936	982	1016
Mean	1134	970	953	1019

S.E. of difference of two

1. S marginal means = 171.9 lb./ac.
2. G marginal means = 119.8 lb./ac.
3. G means at the same level of S = 169.4 lb./ac.
4. S means at the same level of G = 220.7 lb./ac.

Crop :- Chillies (Kharif).

Ref :- A.P. 59(143).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :- To study the effect of sulphur on Chillies

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) 60 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super+50 lb./ac. of K₂O as Pot. Sul. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 1.9.1959. (iv) (a) Six ploughings. (b) Transplanting. (c) N.A. (d) 22" × 5½". (e) One. (v) 60 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super+50 lb./ac. of K₂O as Pot. Sul. (vi) G-2. (vii) Unirrigated. (viii) Interculturing and weeding. (ix) 13.93%. (x) January to March 1960 (Three pickings).

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(118) on page 449.

5. RESULTS :

(i) 873 lb./ac. (ii) (a) 221.8 lb./ac. (b) 194.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Chillies (ripe-pods) in lb./ac.

	G ₀	G ₁	G ₂	Mean
S ₀	774	1010	938	907
S ₁	841	727	945	838
Mean	808	869	942	873

S.E. of difference of two

1. S marginal means = 90.5 lb./ac.
2. G marginal means = 97.0 lb./ac.
3. G means at the same level of S = 137.2 lb./ac.
4. S means at the same level of G = 144.0 lb./ac.

Crop :- Chillies (Kharif).

Ref :- A.P. 57(119).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :- To study the effect of different sources and split application of N.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) September 1957. (iv) (a) Five ploughings with country plough. (b) Transplanted. (c) N.A. (d) 22" × 5½". (e) One. (v) G.M. with 45 day old Pillipesara crop+30 lb./ac. of P₂O₅ as Super+50 lb./ac. of K₂O as Pot. Sul. (vi) G-2. (vii) Unirrigated. (viii) Intercultivation and periodic hand weeding. (ix) 4.77%. (x) January to March 1958 (three pickings).

2. TREATMENTS :

9 manurial treatments : T_0 =Control (no manure), $T_1=D_1$ as A/S at t_1 , $T_2=D_1$ as Urea at t_1 , $T_3=D_1$ as G.N.C. at t_1 , $T_4=D_2$ as A/S at t_1+D_2 as Urea as t_2 , $T_5=D_2$ as G.N.C. at t_1+D_2 as A/S as t_2 , $T_6=D_2$ as G.N.C. at t_1+D_2 as Urea at t_2 , $T_7=D_2$ as A/S at t_1+D_2 as A/S as t_2 and $T_8=D_2$ as Urea at t_1+D_2 as Urea as t_2 .

$D_1=60$ lb./ac. of N, $D_2=30$ lb./ac. of N, $t_1=1$ week before planting and $t_2=$ Top dressing.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/60.61 ac. (b) 1/90.91 ac. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Thrip incidence controlled by spraying B.H.C. (iii) Yield of ripe-pods. (iv) (a) 1957—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2837 lb./ac. (ii) 330.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of chillies (ripe-pods) in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	1964	2975	3107	3009	2684	2818	2729	2950	3300

S.E./mean = 165.5 lb./ac.

Crop :- Chillies (*Kharif*).

Ref :- A.P. 58(154).

site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :—To study the effect of different sources and split application of N.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) G.M.+30 lb./ac. of P_2O_5 +50 lb./ac. of K_2O +60 lb./ac. of N. (ii) (a) Black cotton soil (b) Refer soil analysis, Guntur. (iii) 2nd week of September, 1958. (iv) (a) Five ploughings. (b) Transplanting. (c) N.A. (d) $22'' \times 5\frac{1}{2}''$. (e) One. (v) G.M. with 45 day old pillipesara crop+30 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Pot. Sul. (vi) G-2. (vii) Unirrigated. (viii) Intercultivation twice and hand weeding at periodic intervals. (ix) 15.49%. (x) January to March 1959 (three pickings).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(119) on page 451.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of ripe-pods per plot. (iv) (a) 1957—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1414 lb./ac. (ii) 192.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of chillies (ripe-pods) in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	709	1609	1827	1568	1221	1277	1457	1605	1448

S.E./mean = 96.4 lb./ac.

Crop :- Chillies (*Kharif*).

Ref :- A.P. 59(144).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'M'.

Object :—To study the effect of different sources and split application of N.

1. BASAL CONDITIONS :

(i) (a) Chillies—Chillies. (b) Chillies. (c) G.M.+60 lb./ac. of N+30 lb./ac. of P_2O_5 +50 lb./ac. of K_2O .
 (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 2nd week of September, 1959. (iv) (a) Five ploughings with country plough. (b) Transplanting. (c) N.A. (d) $22'' \times 5\frac{1}{2}''$. (e) One. (v) G.M. with 45 days old pillipesara crop+30 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Pot. Sul. (vi) G—2. (vii) Unirrigated. (viii) Intercultivation and periodic hand weeding. (ix) 13.93". (x) 2nd week of January to March, 1960 (three pickings).

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(119) on page 451.

5. RESULTS :

(i) 669 lb./ac. (ii) 223.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of chillies ripe-pods in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈
Av. yield	166	1045	1098	445	705	535	495	845	686

S.E./mean = 111.8 lb./ac.

Crop :- Chillies.

Centre :- Guntur (c.f.).

Ref :- A.P. 58(SFT).

Type :- 'M'.

Object:—Type A—To study the response of Chillies to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).
 n =50 lb./ac. of N as A/S.
 p =25 lb./ac. of P_2O_5 as Super.
 np =50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super.
 k =50 lb./ac. of K_2O as Mur. Pot.
 nk =50 lb./ac. of N as A/S+50 lb./ac. of K_2O as Mur. Pot.
 pk =25 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot.
 npk =50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on a oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Chillies yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	379	132	230	66.7	58	66	41	148	46.9

Control yield = 691 lb./ac. and no. of trials = 14.

Crop :- Chillies.**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Chillies to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 453 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	nPK	S.E.
Av. response in lb./ac.	428	362	354	68.3	—99	—25	8	132	57.6

Control yield = 1572 lb./ac. and no. of trials = 15.

Crop :- Chillies.**Ref :- A.P. 58(SFT).****Centre :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Chillies to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 453 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	nPK	S.E.
Av. response in lb./ac.	428	222	91	50.2	8	41	82	0	23.0

Control yield = 5291 lb./ac. and no. of trials = 8.

Crop :- Chillies.**Ref :- A.P. 59(SFT).****Centre :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Chillies to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 453 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	nPK	S.E.
Av. response in lb./ac.	963	609	370	152.2	115	66	49	33	41.1

Control yield = 3217 lb./ac. and no. of trials = 7.

Crop :- Chillies.**Ref :- A.P. 58(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Chillies to levels of N, P and K applied individually and in combinations.,

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 453 conducted at Guntur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	1753	535	568	258.4	33	441	99	395	1547

Control yield = 3020 lb./ac. and no. of trials = 8.

Crop :- Chillies.**Ref :- A.P. 58(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black and red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS :

- 0 = Control (no manure).
 n_1 = 50 lb./ac. of N as A/S.
 n_2 = 100 lb./ac. of N as A/S.
 n_1' = 50 lb./ac. of N as Urea.
 n_2' = 100 lb./ac. of N as Urea.
 n_1'' = 50 lb./ac. of N as A/S/N.
 n_2'' = 100 lb./ac. of N as A/S/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *khari* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Chillies yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	938	1168	1193	1284	1489	1226	1339

G.M. = 1242 lb./ac. ; S.E. = 100.7 lb./ac. and no. of trials = 12.

Crop :- Chillies.**Ref :- A.P. 59(SFT).****Centre :- Guntur (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 455 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1662	2370	2304	2230	2115	2255	2222

G.M. = 2165 lb./ac. ; S.E. = 118.1 lb./ac. and no. of trials = 11.

Crop :- Chillies.**Ref :- A.P. 58(SFT).****Site :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Black and coastal. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 455 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2107	2403	2526	2534	2650	2296	2427

G.M. = 2420 lb./ac. ; S.E. = 32.6 lb./ac. and no. of trials = 7.

Crop :- Chillies.**Ref :- A.P. 59(SFT).****Centre :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 455 conducted at Guntur.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2098	2831	2913	2715	2773	2954	3217

G.M. = 2786 lb./ac. ; S.E. = 134.4 lb./ac. and no. of trials = 5.

Crop :- Chillies.**Ref :- A.P. 59(SFT).****Centre :- Krishna Dist. (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Coastal. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS:

0 = Control (no manure).
 n_1 = 50 lb./ac. of N as A/S.
 n_2 = 100 lb./ac. of N as A/S.
 n_1' = 50 lb./ac. of N as Urea.
 n_2' = 100 lb./ac. of N as Urea.
 n_1''' = 50 lb./ac. of N as C/A/N.
 n_2''' = 100 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 456 conducted at Guntur.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield	3209	3884	4608	3892	4929	3999	4912

G.M. = 4205 lb./ac. ; S.E. = 136.6 lb./ac. and no. of trials = 3.

Crop :- Chillies.

Ref :- A.P. 58(SFT).

Centre :- Nellore (c.f.).

Type :- 'M'.

Object :- Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 455 conducted at Guntur.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield	2938	4106	5365	3637	5275	4386	6130

G.M. = 4548 lb./ac. ; S.E. = 286.9 lb./ac. ; and no. of trials = 8.

Crop :- Chillies (Rabi).

Ref :- A.P. 58(115).

Site :- Fruit Res. Stn., Sangareddy.

Type :- 'CM'.

Object :- To find out suitable combination of fertilizers and spacing.

1. BASAL CONDITIONS :

(i) (a) Chillies—Fallow—Chillies. (b) Fallow. (c) —. (ii) (a) Black soil. (b) Refer soil analysis, Sangareddy. (iii) 18.9.1958. (iv) (a) Four ploughings, 2 harrowings and levelling with *patta*, (b) Transplanting. (c) N.A. (d) As per treatments. (e) One. (v) Nil. (vi) Sadasirpet. (vii) Unirrigated. (viii) 3 weedings and 3 interculturations. (ix) N.A. (x) 20.1.1959.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

- (1) 3 levels of N : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
- (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
- (3) 3 levels of K_2O : $K_0=0$, $K_1=25$ and $K_2=50$ lb./ac.
- (4) 3 spacings : $S_1=2' \times \frac{1}{2}'$, $S_2=2' \times 1'$ and $S_3=2' \times 1\frac{1}{2}'$.

3. DESIGN :

(i) 3⁴ confd. (ii) (a) 9 plots/block ; 9 blocks/replication. (b) 71'×34'. (iii) 1. (iv) (a) 24'×12'. (b) 8'×23' for S₁, 8'×22 for S₂ and 8'×21' for S₃. (v) Varying according to treatments. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 432 lb./ac. (ii) 276.5 lb./ac. (iii) Only the main effect of S is significant. (iv) Av. yield of dry chillies in lb./ac.

	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	S ₁	S ₂	S ₃	Mean
N₀	487	378	382	476	458	314	525	371	351	416
N₁	497	439	401	323	509	506	553	401	383	446
N₂	484	450	373	423	480	405	602	443	263	436
Mean	489	422	385	407	482	408	560	405	332	432
S₁	578	576	526	573	677	430				
S₂	449	404	362	371	445	399				
S₃	441	257	268	276	325	396				
K₀	510	415	296							
K₁	510	462	474							
K₂	447	390	385							

S.E. of any marginal mean = 53.2 lb./ac.
S.E. of body of any table = 92.2 lb./ac.

Crop :- Chillies.

Ref :- A.P. 59(94).

Site :- Fruit Res. Stn., Sangareddy.

Type :- 'CM'.

Object :-To find out suitable combination of fertilizers and spacing.

1. BASAL CONDITIONS :

(i) (a) Chillies - Fallow - Chillies. (b) Fallow. (c) —. (ii) (a) Black soil. (b) Refer soil analysis, Sangareddy. (iii) 28.7.1959/26.9.1959. (iv) (a) Four ploughings, 2 harrowings and levelling with *patta*. (b) Transplanting. (c) N.A. (d) As per treatments. (e) One. (v) Nil. (vi) Sadasivpet. (vii) Unirrigated. (viii) 3 weedings and 3 interculturings. (ix) N.A. (x) 30.1.1960.

2. TREATMENTS :

Same as in expt. 58(115) on page 457.

3. DESIGN :

(i) 3⁴ confd. (ii) (a) 9 plots/block ; 9 blocks/replication. (b) 71'×34'. (iii) 1. (iv) (a) 12'×36'. (b) 35'×8' for S₁, 34'×8' for S₂ and 33'×8' for S₃. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 461 lb./ac. (ii) 99.2 lb./ac. (iii) Main effects of N and S and interaction P×S are highly significant. Main effect of P and interaction N×P are significant. (iv) Av. yield in lb./ac.

	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	S ₁	S ₂	S ₃	Mean
N ₀	403	443	384	425	455	350	278	536	417	410
N ₁	453	468	543	658	455	351	405	493	566	488
N ₂	531	424	500	646	477	333	363	531	564	485
Mean	462	445	476	576	462	345	349	520	515	461
S ₁	327	359	360	418	399	229				
S ₂	556	473	531	662	500	398				
S ₃	504	504	536	648	488	408				
K ₀	567	604	557							
K ₁	451	419	518							
K ₂	369	313	353							

S.E. of any marginal mean = 19.1 lb./ac.
 S.E. of body of any table = 33.1 lb./ac.

Crop :- Chillies.

Ref :- A.P. 54(17).

Site :- Millet Res. Stn., Lam, Guntur.

Type :- 'D'.

Object :- To find out suitable remedial measures for the control of 'colletotrichum' diseases.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) 15,000 lb./ac. of G.M. and 1 cwt./ac. of A/S. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 11.9.1954. (iv) (a) 6 ploughings with country plough at different intervals. (b) to (c) N.A. (v) 15,000 lb./ac. of G.M. and 1 cwt. of A/S. (vi) G-2 (early). (vii) Unirrigated. (viii) Intercultivation with country plough and hand weeding twice. (ix) 16.35". (x) 17.1.1955 to 16.3.1955.

2. TREATMENTS :

6 spraying treatments : T₀=No spraying, T₁=Urea at 1½ oz. in one gallon of water, T₂=Perenox at 3¼ oz. per gallon of water, T₃=1% Bordeaux mixture, T₄=Urea+Perenox and T₅=Urea +Bordeaux.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/132.23 ac. (b) 1/312.5 ac. (v) One row on either side and 2 hills at both ends. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) The diseased plant counts were recorded and expressed as 1% of the total population (iv) (a) 1953-1954. (b) to (e) N.A. (v) and (vi) Nil. (vii) The first spraying of fungicide was given on 11.11.1954. 1½ months after plantation of chillies crop using 500 gallons of spray fluid per acre. To ensure the infestation of diseases fungal culture obtained from the Mycologist was inoculated on 16.11.1954. This process of spraying fungicides and inoculation was carried out subsequently at two different intervals (viz. 1.12.1954, 1.1.1955 and 12.12.1954, 8.1.1955 respectively).

5. RESULTS :

(i) 302 lb./ac. (ii) 46.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of chillies in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	365	336	253	292	272	297

S.E./mean = 23.1 lb./ac.

Crop :- Berseem and Pillipesara (Legumes) (Rabi).

Ref. :- A.P. 58(63).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :- To study the response of Berseem and Pillipesara to N and P.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Fodder—Jowar—Mung* and Pillipesara mixture cropping. (c) 30 lb./ac. of N as A/S and 15 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) N.A. (iii) 2.12.1958. (iv) (a) 4 to 5 ploughings with country plough and disc was worked once. (b) Broadcasting. (c) Berseem 15—20 lb./ac. and Pillipesara 25—30 lb./ac. (d) and (e) N.A. (v) N.A. (vi) Berseem and Pillipesara. (vii) Irrigated. (viii) Weeding etc. done as and when needed. (ix) Nil. (x) 1st cutting on 4.2.1959, 2nd on 2.3.1959, 3rd on 28.3.1959, and 4th on 25.4.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) 9. (b) 131'×111'. (iii) 3. (iv) (a) 32'×18'. (b) 30'×16'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Good for Berseem. So poor for Phillipisara that no cuts were taken. (ii) Nil. (iii) Yield of green matter. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The germination of Phillipisara was very poor and therefore failed.

5. RESULTS :

(i) 48726 lb./ac. (ii) 4410 lb./ac. (iii) Main effect of P alone is highly significant. (iv) Av. yield of grass in lb./ac.

	P_0	P_1	P_2	Mean
N_0	43288	52605	44558	46815
N_1	42804	54843	54116	50919
N_2	41624	51395	52302	48439
Mean	42570	52946	50657	48726

S.E. of N or P marginal mean = 1470 lb./ac.

S.E. of body of table = 2546 lb./ac.

Crop :- Common Legume (Kharif).

Ref. :- A.P. 58(59).

Site :- Agri. Res. Instt., Rajendranagar.

Type :- 'M'.

Object :- To find out the optimum quantity of manures required for different kinds of Legumes under rain-fed conditions to get maximum yields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 C.L./ac. of F.Y.M. (ii) (a) Clay loam. (b) Refer soil analysis, Rajendranagar. (iii) 26, 27.7.1958. (iv) (a) 4 ploughings with country plough. The disc was also worked. (b) Dibbling in rows. (c) 10—12 lb./ac. (d) 12'×6". (e) 2. (v) Nil. (vi) *Mung, Urad, Cowpea* and Pillipesara. (vii) Rainfed. (viii) Thinning was done two weeks after germination, cultural operations such as weeding etc., was done as and when needed (ix) 29.2". (x) *Mung* : 26.9.1958. *Urad* : 11.10.1958. *Cowpea* : 24.10.1958, and *Pillipesara* : 5.10.1958

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 legumes : $L_1=Mung$, $L_2=Urad$, $L_3=Cowpea$ and $L_4=Pillipesara$.

(2) 4 manurial treatments : $M_0=No$ manure, $M_1=10$ C.L./ac. of F.Y.M., $M_2=20$ lb./ac. of P_2O_5 and $M_3=40$ lb./ac. of P_2O_5 .

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) 122'×92'. (iii) 4. (iv) (a) 28'×20'. (b) 26'×18'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) The early growth of the crop was satisfactory. Due to heavy rains stunted growth was observed. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1957—1959. (b) No. (c) —. (v) to (vii) Nil.

5. RESULTS :

(i) 9986 lb./ac. (ii) 2969 lb./ac. (iii) L effect is highly significant, interaction M×L is significant. (iv) Av. yield of fodder in lb./ac.

	M ₀	M ₁	M ₂	M ₃	Mean
L ₁	3418	3046	3371	2953	3197
L ₂	8672	9649	9602	11252	9794
L ₃	13648	15391	17879	15391	15577
L ₄	10043	11065	11902	12483	11375
Mean	8945	9788	10689	10521	9986

S.E. of any marginal mean = 742 lb./ac.

S.E. of body of table = 1485 lb./ac.

Crop :- Green Manure Crops (Kharif).

Ref. :- A.P. 57(82).

Site :- Agri. Coconut Res. Stn., Ambajipeta.

Type :- 'M'.

Object :—To fix up the best G.M. crop for the Coconut gardens.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Black clayey soil. (b) Refer soil analysis Ambajipeta. (iii) 6.7.1957. (iv) (a) 2' ploughings before sowing. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Nil. (ix) 31.33". (x) Sannhemp: 1.10.1957; Pillipesara: 26.11.1957; Sesabania: 3.12.1957 and Calapoganium: 9.1.1958.

2. TREATMENTS :

6 G.M. crop: G₁=Sannhemp, G₂=Pillipesara, G₃=*Crotolaria striata*, G₄=*Sesabania speciosa*, G₅=*Calapoganium*, G₆=*Aschenomene americana*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32'×17'. (b) 30'×15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Fodder yield. (iv) (a) 1956—1960. (b) No. (c) Nil. (v) and (vi) Nil. (vii) *Crotolaria striata* and *Aschenomene americana* crop failed.

5. RESULTS :

(i) 8111 lb./ac. (ii) 2521.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fodder in lb./ac.

Treatment	G ₁	G ₂	G ₄	G ₅
Av. yield	10982	8960	10200	2300

S.E./mean = 1260.7 lb./ac.

Crop :- Green Manure Crops (Kharif).
Site :- Agri. Coconut Res. Stn., Ambajipeta.

Ref. :- A.P. 58(88).
Type :- 'M'.

Obj ct :—To fix up the best G.M. crop for the Coconut gardens.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (i) (a) Black clayey soil. (b) Refer soil analysis, Ambajipeta. (iii) 18.7.1958. (iv) (a) 2 ploughings before sowing. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Rainfed. (viii) Nil. (ix) 59.46°. (x) Sannhemp : 27.9.1958 ; Pillipesara : 19.11.1958 ; Aschenomene *americana* : 1.12.1958 ; Calapogonium : 1.12.1958 Sesbania : 7.1.1959 ; *Crotolaria striata* : 29.1.1959.

2. TREATMENTS :

Same as in expt. no. 57(82) on page 461.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34'×14.5'. (b) 33'×13.2'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Fodder yield. (iv) (a) 1956—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 6433 lb./ac. (ii) 1909 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fodder in lb./ac.

Treatment	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆
Av. yield	9325	7375	4025	8125	2400	7350

S.E./mean = 95.5 lb./ac.

Crop :- Green manure crops (Kharif).
Site :- Agri. Coconut Res. Stn., Ambajipeta.

Ref. :- A.P. 59(37).
Type :- 'M'.

Obj ct :—To fix up the best G.M. crop for Coconut gardens.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Black clayey. (b) Refer soil analysis, Ambajipeta. (iii) 10.6.1959. (iv) (a) 2 ploughings before sowing. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Nil. (ix) 48.3°. (x) Sannhemp : 17.9.1959 ; Sesbania : 27.11.1959 and *crotolaria* crop failed.

2. TREATMENTS :

3 G.M. crops : C₁=Sannhemp, C₂=*Sesbania speciosa*, and C₃=*Crotolaria*.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 1/33 ac. (iii) 8. (iv) (a) 34'×14.5'. (b) 33'×14.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Fodder yield. (iv) (a) 1956—1960. (b) No. (c) Nil (v) to (vi) Nil. (vii) There were three treatments i.e. Sannhemp, Sesbania, and *crotolaria*. But the crop of *crotolaria* failed completely and so there were no observations for the third treatment. Hence the expt. is analysed as a R.B D. with two treatments.

5. RESULTS :

(i) 7130 lb./ac. (ii) 1377 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of fodder in lb./ac.

Treatment	C ₁	C ₂
Av. yield	5817	8443

S.E./mean = 487 lb./ac.

Crop :- Pillipesara.**Ref :- A.P. 58(SFT).****Centre :- Nellore (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the response of Pillipesara to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Deep black soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).

P₁ = 30 lb./ac. of P₂O₅ as Super.P₂ = 60 lb./ac. of P₂O₅ as Super.P₁' = 30 lb./ac. of P₂O₅ as Dicalcium Phosphate.P₂' = 60 lb./ac. of P₂O₅ as Dicalcium Phosphate.**3. DESIGN :**

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

GENERAL :

(i) Normal. (ii) Nil. (iii) Fodder yield. (iv) (a) to (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	P ₁	P ₂	P ₁ '	P ₂ '
Av. yield	8443	13306	16013	12450	14252

G.M. = 12893 lb./ac. ; S.E. = 165.8 lb./ac. and no. of trials = 12.

Crop :- Setaria, Cotton and Groundnut (Kharif).**Ref :- A.P. 56(96).****Site :- Govt. Cotton 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*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Light red soil. (b) N.A. (iii) 1.7.1956. (iv) 2 ploughing with country plough during summer with the help of summer showers. After a month a heavy *guntaka* was worked to break up the clods. A fortnight before sowing light *guntaka* worked to level up the field. (b) to (e) N.A. (v) Nil. (vi) Cotton : As per treatments. Setaria : H—2 korra. Groundnut : Local bunch type. (vii) Unirrigated. (viii) *Dantulu* was worked thrice and three hand weedings. *Guntaka* was worked twice after the harvest of *Setaria* and Groundnut. (ix) 29.22". (x) Setaria : 16.10.1956 ; Groundnut : 23, 24.10.1956 ; Cotton : 17.12.1956 to 14.3.1956.

2. TREATMENTS :**Main-plot treatments :**

All combinations of (1) and (2)

(1) 2 crops to be mixed with Cotton : C₁=*Setaria* and C₂=Groundnut.(2) 3 ratios of Cotton and other crop : R₁=1 : 1, R₂=1 : 2 and R₃=1 : 5.**Sub-plot treatments :**6 Cotton varieties : V₁=K.28, V₂=4616 D.2, V₃=R.1, V₄=3930A, V₅=H.420 and V₆=Local mungari.**3. DESIGN :**

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Due to continuous and heavy rainfall, crop was stunted and the rainfall interfered with the interculturing operations. Picking of Cotton was delayed upto March. (ii) Groundnut was attacked by Aphids during July. It got controlled due to predatory lady bird butles multiplying after a month. (iii) Yield and monetary return. (iv) (a) 1955—contd. (b) No. (c) Nil (v) to (vii) Nil.

5. RESULTS :

(i) 168 Rs./ac. (ii) (a) 68.62 Rs./ac. (b) 29.41 Rs./ac. (iii) Main effect of C and V alone are highly significant. (iv) Av. value of produce in Rs /ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
R ₁	156	131	190	180	199	145	166	119	214
R ₂	164	119	171	178	185	192	168	121	215
R ₃	163	140	210	182	181	149	171	114	228
Mean	161	130	190	180	188	162	168	118	219
C ₁	103	88	143	129	147	98			
C ₂	219	172	236	232	229	227			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. C marginal means | = 11.43 Rs./ac. | 5. C means at the same level of V | = 15.81 Rs./ac. |
| 2. R marginal means | = 14.00 Rs./ac. | 6. V means at the same level of R | = 14.10 Rs./ac. |
| 3. V marginal means | = 8.49 Rs./ac. | 7. R means at the same level of V | = 19.41 Rs./ac. |
| 4. V means at the same level of C | = 12.00 Rs./ac. | S.E. of body of C × R table | = 14.00 Rs./ac. |

Crop :- Setaria, Cotton and Groundnut (Kharif).

Ref :- A.P. 57(88).

Site :- Govt. Cotton 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*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil light. (b) N.A. (iii) 25.6.1957. (iv) (r) 2 plough ngs, break ng up of clods with heavy *guntaka* and leveling with the help of light *guntaka*. (b) to (e) N.A. (v) 30 lb./ac. of P₂O₅ as Super 20 lb./ac. of N as A/S at the time of sowing. (vi) Cotton : As per treatments, Setaria : H—2 korra, Groundnut : TMV—2 (Bunch). (vii) Unirrigated. (viii) *Dantulu* was worked thrice and hand weeding was also done thrice. After the harvest of component crops *guntaka* was worked twice. (ix) 26.91%. (x) Setaria : 19.9.1957, Groundnut : 25.10.1957, Cotton : 26.10.1957 to 20.2.1958.

2. TREATMENTS :

Same as in expt. no. 56(96) on page 463.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block and 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/79 ac. (b) 1/98 ac. (v) 3' on either side. (vi) Yes.

GENERAL :

(i) Cotton yield was normal. For want of timely rains at the critical period, groundnut suffered badly. (ii) Stenosis disease on Cotton was seen. (iii) Yield and monetary return. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 205 Rs./ac. (ii) (a) 104.22 Rs./ac. (b) 42.67 Rs./ac. (iii) Main effects of C and V are highly significant. (iv) Av. money value in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
R ₁	215	176	195	207	218	186	199	229	170
R ₂	232	213	257	240	225	194	227	252	201
R ₃	169	146	238	203	218	164	190	240	139
Mean	205	178	230	217	220	181	205	240	170
C ₁	243	217	266	245	254	215			
C ₂	167	139	194	188	186	146			

S.E. of difference of two

1. C marginal means = 17.37 Rs./ac. 5. C means at the same level of V = 23.53 Rs./ac.
 2. R marginal means = 21.27 Rs./ac. 6. V means at the same level of R = 21.33 Rs./ac.
 3. V marginal means = 12.30 Rs./ac. 7. R means at the same level of V = 28.83 Rs./ac.
 4. V means at the same level of C = 17.42 Rs./ac. S.E. of body of C×R table = 21.27 Rs./ac.

Crop :- Setaria, Cotton and Groundnut (Kharif).

Ref :- A.P. 56(95).

Site :- Govt. Cotton 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*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Deep black soil. (b) N.A. (iii) 4.7.1956. (iv) (a) 2 ploughings with country plough Heavy *guntaka* to break up the clods after one month. And light *guntaka* to level up the field, 15 days before sowing. (b) to (e) N A. (v) 12 C.L./ac. of C.M. (vi) Cotton : As per treatments. Setaria : H—2. korra. Groundnut : Local bunch. (vii) Unirrigated. (viii) *Dantulu* was worked thrice and hand weeding was done thrice. After the harvest of *Setaria* and groundnut crop *guntaka* was worked twice. (ix) 29.22". (x) Setaria : 9.10.1956, Groundnut : 8.11.1956 and Cotton : 22.1.1957 to 8.3.1957.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

- (1) 2 crops to be mixed with Cotton : C₁=Setaria and C₂=Groundnut.
 (2) 3 ratios of Cotton : Other crop : R₁=1 : 1, R₂=1 : 2 and R₃=1 : 5.

Sub-plot treatments :

6 varieties of Cotton : V₁=K. 28, V₂=4616 D. 2, V₃=R. 1, V₄=3930 A, V₅=H. 420 and V₆=Westerns 1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Crop growth was stunted in early stages due to continuous and heavy rain fall that interfered with inter-cultural operations and weeding. Picking of Cotton was delayed upto March. (ii) Groundnut was attacked by aphids during July. It got controlled due to predatory lady bird beetle multiplying after a month. (iii) Yield data and monetary return. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 164 Rs./ac. (ii) (a) 76.47 Rs./ac. (b) 33.33 Rs./ac. (iii) Main effect of C and V alone are highly significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
R ₁	136	118	164	165	175	128	148	173	122
R ₂	184	113	178	250	203	144	179	209	148
R ₃	163	121	189	169	200	156	166	200	132
Mean	161	117	177	195	193	143	164	194	134
C ₁	184	135	205	240	226	175			
C ₂	137	99	149	149	159	111			

S.E. of difference of two

1. C marginal means = 12.74 Rs./ac. 5. C means at the same level of V = 17.75 Rs./ac.
 2. R marginal means = 15.60 Rs./ac. 6. V means at the same level of R = 16.67 Rs./ac.
 3. V marginal means = 9.62 Rs./ac. 7. R means at the same level of V = 21.75 Rs./ac.
 4. V means at the same level of C = 13.61 Rs./ac. S.E. of body of C×R table = 15.60 Rs./ac.

Crop :- Setaria, Cotton and Groundnut (Kharif).

Ref :- A.P. 57(90).

Site :- Govt. Cotton 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*- Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Deep black soil. (b) N.A. (iii) 26.6.1957. (iv) (a) 2 ploughings, breaking up of clods with heavy *guntaka* and levelling with the help of light *guntaka*. (b) to (e) N.A. (v) 30 lb /ac. of P₂O₅ as Super+20 lb./ac. of N as A/S at the time of sowing. (vi) Cotton : As per treatments, Setaria : H-2, *korra* and groundnut : TMV-2 (Bunch). (vii) Unirrigated. (viii) *Dantulu* was worked thrice and hand weeding was also done thrice. After the harvest of component crops *guntaka* was worked twice. (ix) 26.91". (x) Setaria: 26.9.1957; Groundnut : 25.10.1957 and Cotton: 31.10.1957 to 21.1.1958.

2. TREATMENTS :

Same as in expt. no. 56(95) on page 465.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/79 ac. (b) 1/98 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stenosis disease on Cotton was seen upto 10%. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 171 Rs./ac. (ii) (a) 76.32 Rs./ac. (b) 43.37 Rs./ac. (iii) Main effect of V is highly significant and effect of C is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
R ₁	163	173	175	189	191	124	169	156	182
R ₂	183	169	173	222	183	157	181	169	193
R ₃	195	149	163	159	179	134	163	144	183
Mean	180	164	170	190	184	138	171	156	186
C ₁	154	159	151	169	179	124			
C ₂	206	169	189	211	189	152			

S.E. of difference of two

1. C marginal means	= 12.71 Rs./ac.	5. C means at the same level of V	= 20.57 Rs./ac.
2. R marginal means	= 15.57 Rs./ac.	6. V means at the same level of R	= 21.69 Rs./ac.
3. V marginal means	= 12.52 Rs./ac.	7. R means at the same level of V	= 25.19 Rs./ac.
4. V means at the same level of C	= 17.70 Rs./ac.	S.E. of body of C×R table	= 15.57 Rs./ac.

Crop :- Setaria, Cotton and Groundnut (Kharif).**Ref :- A.P. 56(93).****Site :- Govt. Cotton Farm, Adoni.****Type :- 'X'.**

Object:—To decide the best strain of Cotton for mixed cropping and best time for raising mixtures.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Light red soil. (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings with country plough. After a month a heavy *guntaka* was worked to break up the clods. A fortnight before sowing a light *guntaka* was worked to level up the field. (b) to (e) N.A. (v) Nil. (vi) Cotton : As per treatments. Setaria : H—2 *Korra* and Groundnut : Local Bunch. (vii) Unirrigated. (viii) *Dantulu* was worked thrice and three hand weedings were done. After the harvest of setaria and groundnut crop, *guntaka* was worked twice. (ix) 19.47" to 28.22". (x) Setaria : 16.10.1956 for D₁, 5.11.1956 for D₂, and 15.11.1956 for D₃; Groundnut : 25.10.1956 for D₁, 12.11.1956 for D₂ and 22.11.1956 for D₃; Cotton : 17.11.1956 to 21.3.1957 for D₁, 29.12.1956 to 21.3.1957 for D₂ and 29.12.1952 to 21.3.1957 for D₃.

2. TREATMENTS :**Main-plot treatments :**

All combinations of (1) and (2).

(1) 2 crops to be mixed with cotton : C₁=Setaria and C₂=Groundnut.(2) 3 dates of sowing : D₁=2.7.1956, D₂=5.8.1956 and D₃=25.8.1956.**Sub-plot treatments :**6 cotton varieties : V₁=K. 28, V₂=4616 D. 2, V₃=R. 1, R₄=3930 A, R₅=H. 420 and V₆=Local Mungari.**3. DESIGN :**

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Crop growth was shunted in early stages due to continuous and heavy rain that interfered with intercultural operations and weeding. Picking of cotton was delayed upto March. (ii) Groundnut was attacked by Aphids during July. It got controlled due to predatory lady bird beetles multiplying after a month. (iii) Yield data and money value. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 207 Rs./ac. (ii) (a) 68.63 Rs./ac. (b) 9.80 Rs./ac. (iii) Effect of C, D and V are highly significant. Interactions are not significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
D ₁	244	199	284	283	298	227	256	198	313
D ₂	183	170	188	211	188	175	186	122	250
D ₃	161	160	218	197	192	160	181	150	212
Mean	196	176	230	230	226	187	207	157	258
C ₁	141	121	162	185	193	142			
C ₂	251	231	299	276	259	232			

S.E. of difference of two

1. C marginal means	= 11.43 Rs./ac.	5. C means at the same level of V	= 12.01 Rs./ac.
2. D marginal means	= 14.00 Rs./ac.	6. V means at the same level of D	= 4.90 Rs./ac.
3. V marginal means	= 2.83 Rs./ac.	7. D means at the same level of V	= 14.67 Rs./ac.
4. V means at the same level of C	= 4.00 Rs./ac.	S.E. of body of C×D table	= 14.00 Rs./ac.

Crop :- Setaria, Cotton and Groundnut.

Ref A.P. 57(89).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :- To decide the best strain of cotton for mixed cropping and best time for raising mixtures.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) Light red soil. (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings. After a month heavy *guntaka* was worked to break up the clods. A light *guntaka* or leveling is worked fifteen days before sowing. (b) to (e) N.A. (v) 30 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as A/s at the time of sowing. (vi) Cotton : As per treatments. Setaria : H—2 *Korra*, Groundnut : TMV—2 (Bunch). (vii) Unirrigated. (viii) *Dantulu* was worked thrice and hand weeding was also done thrice. After the harvest of component crops *guntaka* was worked twice. (ix) 6 42" to 17.92". (x) Setaria : 24.9.1957. for D_1 Groundnut : 27.10.1959 for D_1 and Cotton : 29.10.1957 to 11.3.1958 for D_1 , 22.11.1957 to 12.3.1958. for D_2 and 8.12.1957 to 12.3.1958 for D_3 .

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 crops to be mixed with cotton : C_1 =Setaria and C_2 =Groundnut.

(2) 3 dates of sowing : D_1 =25.6.1957, D_2 =17.7.1957 and D_3 =24.8.1957.

Sub-plot treatments :

6 cotton varieties : V_1 =K.28, V_2 =4616 D.2, V_3 =R.1, V_4 =3930 A, V_5 =H.420 and V_6 =Local Mungari. Cotton : Other crop mixed in 1 : 2 ratio.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block and 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/79 ac. (b) 1/98 ac (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Cotton crop was satisfactory. But for want of timely rain at the critical period groundnut and setaria failed. (ii) Stenosis disease on cotton was seen. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The low monetary value in D_2 and D_3 are due to the failure of groundnut and Setaria crop for the treatments. Monetary values indicate that of *Kapas* only.

5. RESULTS :

(i) 106 Rs./ac. (ii) (a) 80.57 Rs./ac. (b) 34.25 Rs./ac. (iii) Main effects of D and V are highly significant. Interaction C×D is significant. (iv) Av. value of produce in Rs./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	C_1	C_2
D_1	197	167	189	211	187	167	186	215	157
D_2	64	47	89	71	43	38	59	38	79
D_3	67	55	82	104	77	57	74	79	68
Mean	109	90	120	129	102	87	106	111	101
C_1	109	106	115	133	110	95			
C_2	109	74	125	125	94	79			

S.E. of difference of two

1. C marginal means	= 13.42 Rs./ac.	5. C means at the same level of V	= 18.52 Rs./ac.
2. D marginal means	= 16.45 Rs./ac.	6. V means at the same level of D	= 17.12 Rs./ac.
3. V marginal means	= 9.89 Rs./ac.	7. D means at the same level of V	= 22.63 Rs./ac.
4. V means at the same level of C	= 13.98 Rs./ac.	S.E. of body of C×D table	= 16.45 Rs./ac.

Crop :- Setaria, Cotton and Groundnut. (Kharif).

Ref :- A.P. 56(94).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'

Object :—To decide the best strain of cotton for mixed cropping and best time for raising mixtures.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Dry black soil. (b) N.A. (iii) As per treatment. (iv) (a) 2 ploughings with country plough. After a month a heavy *guntaka* was worked to break up the clods. A fortnight before sowing a light *guntaka* was worked to level the field. (b) to (e) N.A. (v) C.M. was applied at 12 C L./ac. (vi) Cotton: As per treatments. Setaria : H—2, *Korra* : Groundnut ; Local Bunch. (vii) Unirrigated. (viii) *Dantulu* was worked thrice and 3 hand weedings were given. After the harvest of Groundnut and Setaria *guntaka* was worked twice. (ix) 19.47" to 28.22". (x) Setaria 20.10.1956. for D₁, 5.11.1956 for D₂, 29.11.1956 for D₃. Groundnut : 31.10.1956 for D₁, 12.11.1956 for D₂, 23.11.1956 for D₃ and Cotton : 18.11.1956 to 26.3.1957 for D₁, 1.1.1957 to 26.3.1957 for D₂, 1.1.1957 to 26.3.1957 for D₃.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

- (1) 2 crops to be mixed with cotton : C₁=Setaria and C₂=Groundnut.
(2) 3 dates of sowing : D₁=2.7.56, D₂=5.8.1956 and D₃=25.8.1956.

Sub-plot treatments :

6 varieties of cotton : V₁=K.28, V₂=4616 D.2, V₃=R.1, V₄=3930A, V₅=H.420 and V₆=Western, 1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Crop growth was stunted in early stages due to continuous and heavy rainfall that interfered with intercultural operations and weeding. Picking of cotton was delayed upto March. (ii) Groundnut was attacked by Aphids during July. It got controlled due to predatory lady bird beetles multiplying after a month. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 119 Rs./ac. (ii) (a) 143.14 Rs./ac. (b) 23.53 Rs./ac. (iii) Effect of V is highly significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	C ₁	C ₂
D ₁	150	102	165	153	181	138	148	134	162
D ₂	125	69	130	104	130	91	108	105	111
D ₃	103	86	114	121	99	83	101	82	120
Mean	126	86	136	126	137	104	119	107	131
C ₁	98	73	126	109	140	96			
C ₂	154	98	146	142	134	111			

S.E. of difference of two

1. C marginal means = 23.84 Rs./ac. 5. C means at the same level as V = 25.41 Rs./ac.
2. D marginal means = 29.22 Rs./ac. 6. V means at the same level of D = 11.77 Rs./ac.
3. V marginal means = 6.79 Rs./ac. 7. D means at the same level of V = 31.12 Rs./ac.
4. V means at the same level of C = 9.60 Rs./ac. S.E. of body of C×D table = 29.22 Rs./ac.

Crop :- Setaria, Cotton and Groundnut (Kharif).

Ref :- A.P. 57(91).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :—To decide the best strain of Cotton for mixed cropping and best time of raising mixtures.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Deep black soil. (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings. After a month heavy *guntaka* was worked to break up the clods. A light *guntaka* for levelling is worked fifteen days before sowing. (b) to (e) N.A. (v) 30 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as A/S at the time of sowing. (vi) Cotton : as per treatments and *Setaria* : H—2 *Korra*, Groundnut : TMV—2 (Bunch). (vii) Irrigated. (viii) 3 weedings with *dantulu* and 3 weedings by hand. After the harvest of component crop *guntaka* was worked twice. (ix) 6.42' to 17.92'. (x) *Setaria* : 27.9.1957 for D_1 , 15.10.1957 for D_2 and failed in D_3 ; Groundnut : 26.10.1957 for D_1 , 1.11.1957 for D_2 and 28.11.1957 for D_3 and Cotton : 5.11.1957 to 23.1.1958 for D_1 , 7.12.1957 to 9.1.1958 for D_2 and 17.1.1958 to 3.2.1958 for D_3 .

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

- (1) 2 crops to be mixed with cotton : C_1 = *Setaria* and C_2 = Groundnut.
 (2) 3 dates of sowing : D_1 = 26.6.1957, D_2 = 17.7.1957 and D_3 = 31.8.1957.

Sub-plot treatments :

6 varieties of cotton : V_1 = 3930. A, V_2 = K. 28, V_3 = 4616 D. 2, V_4 = R. 1, V_5 = H. 420 and V_6 = Western 1.

Cotton : Other crop mixed in 1 : 2 ratio .

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/79 ac. (b) 1/98 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stenosis disease was seen upto 10% on cotton. (iii) Yield data and monetary values. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 144 Rs./ac. (ii) (a) 52.29 Rs./ac. (b) 37.09 Rs./ac. (iii) None of the effects is significant. (iv) Av. value of produce in Rs./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	C_1	C_2
D_1	132	120	192	126	157	132	143	143	144
D_2	149	147	155	197	146	160	159	171	146
D_3	124	129	139	136	123	130	130	123	137
Mean	135	132	162	153	142	141	144	146	142
C_1	134	148	171	141	144	135			
C_2	136	115	152	165	140	146			

S.E. of difference of two

1. C marginal means = 8.71 Rs./ac. 5. C means at the same level of V = 16.35 Rs./ac.
 2. D marginal means = 10.66 Rs./ac. 6. V means at the same level of D = 18.55 Rs./ac.
 3. V marginal means = 10.71 Rs./ac. 7. D means at the same level of V = 20.02 Rs./ac.
 4. V means at the same level of C = 15.14 Rs./ac. S.E. of body of C×D table = 10.66 Rs./ac.

Crop :- *Setaria*, Cotton and Groundnut.

Ref :- A.P. 58(148).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :- To study the effect of mixed cropping of different varieties of Cotton with *Setaria* and Groundnut sown at different times.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) 8, 9.7.1958 ; intersowing in the 3rd week of August 1958. (iv) (a) 2 ploughings, heavy *guntaka* was worked to break up the clods and light *guntaka* for levelling. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed-drill a fortnight before sowing. (vi) *Setaria* : H—2 *Korra*, Groundnut : TMV—2 and Cotton as per treatments. (vii) Unirrigated. (viii) *Dantalu* was worked thrice and hand weeding was done. After the harvest of *Setaria* and groundnut crops *guntaka* was worked. (ix) 22.16". (x) *Setaria* : 13.10.1958, Groundnut : 28.10.1958 and Cotton : 9.1.1959 to 23.3.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) Intersowing of cotton in : M_1 =*Setaria*, M_2 =Groundnut and M_3 =Cotton.

(2) 2 timings of intersowing : T_1 =Early sowing and T_2 =Late sowing.

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 Mangari.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 4' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Cotton had an early set back due to red-hairy-caterpillar attack but pulled up later. (iii) Yield data and monetary value. (iv) (a) 1958—contd. (b) and (c) No. (v) No. (vi) Nil. (vii) No.

5. RESULTS :

(i) 224 Rs./ac. (ii) (a) 67.04 Rs./ac. (b) 43.98 Rs./ac. (iii) Main effect of M is highly significant and effect of T is significant. (iv) Av. value of produce in Rs./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	T_1	T_2
M_1	257	221	254	242	232	294	250	237	263
M_2	251	306	278	284	261	293	279	274	284
M_3	131	143	159	141	138	154	144	145	143
Mean	213	223	230	222	210	247	224	218	230
T_1	221	225	215	228	194	229			
T_2	205	222	245	217	226	265			

S.E. of difference of two

- T marginal means = 11.17 Rs./ac. 5. M means at the same level of V = 24.28 Rs./ac.
- M marginal means = 13.68 Rs./ac. 6. V means at the same level of T = 17.95 Rs./ac.
- V marginal means = 12.70 Rs./ac. 7. T means at the same level of V = 19.80 Rs./ac.
- V means at the same level of M = 21.99 Rs./ac. S.E. of body of $M \times T$ table = 13.68 Rs./ac.

Crop :- *Setaria*, Cotton and Groundnut (*Kharif*).

Ref :- A.P. 59(137).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :—To study the effect of mixed cropping of different varieties of cotton with *Setaria* and Groundnut sown at different times.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) 4.6.1959 and intersowing 9.8.1959 (iv) (a) 2 ploughings, heavy *guntaka* was worked to break up the clods and light *guntaka* for levelling. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed drill a fortnight before sowing. (vi) *Setaria* : H—2 *Korra*, Groundnut : TMV—2. Cotton : As per treatment. (vii) Unirrigated. (viii) *Dantalu* was worked twice and hand weeding was done. After the harvest of *setaria* and Groundnut *guntaka* was worked. (ix) 30.56". (x) *Setaria* : 29.9.1959, Groundnut : 24.9.1959, and Cotton : 19.10.1959 to 3.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(148) on page 470.

4. GENERAL :

(i) Cotton yield showed a decline due to the failure of monsoon showers. (ii) There was mild attack of caterpillar. (iii) Yield data and monetary value of produce (iv) (a) 1959—contd. (b) and (c) No. (v, No. (vi) Nil. (vii) No.

5. RESULTS :

(i) 436 Rs./ac. (ii) (a) 259.27 Rs./ac. (b) 62.65 Rs./ac. (iii) Main effects of T and M are significant. Interactions $M \times V$ and $M \times T \times V$ are highly significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	T ₁	T ₂
M ₁	395	423	452	421	503	401	433	535	331
M ₂	548	543	537	556	506	617	551	603	499
M ₃	330	340	318	350	314	299	325	429	221
Mean	424	435	436	442	441	439	436	522	350
T ₁	515	521	546	525	525	500			
T ₂	332	350	326	360	356	378			

S.E. of difference of two

1. T marginal means = 43.21 Rs./ac. 5. M means at the same level V = 60.16 Rs./ac.
2. M marginal means = 52.92 Rs./ac. 6. V means at the same level of T = 25.57 Rs./ac.
3. V marginal means = 18.09 Rs./ac. 7. T means at the same level of V = 49.10 Rs./ac.
4. V means at the same level of M = 31.32 Rs./ac. S.E. of body of $M \times T$ table = 52.92 Rs./ac.

Crop :- Setaria, Cotton and Groundnut (Kharif).

Ref :- A.P. 58(149).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :—To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut sown at different times.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) 11.7.1958 ; intersowing in the 3rd week of August 1958. (iv) (a) 2 ploughings with country plough, heavy *guntaka* used to break up the clods fortnight before sowing. Light *guntaka* was used to level the field. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed drill a fortnight before sowing. (vi) Setaria H-2 Korra. Groundnut : TMV-2. Cotton : As per treatments. (vii) Unirrigated. (viii) *Dantal* was worked and hand weeding was done. After the harvest of Setaria and groundnut crop *guntaka* was worked. (ix) 22.16". (x) Setaria 11.10.1958., Groundnut 1.11.1958, Cotton 6.1.1959 to 11.3.1959.

9. TREATMENTS :

All combinations of (1) and (2)

Main-plot treatments :

(1) 2 times of sowing : T₁=Early and T₂=Late.

(2) Intersowing of cotton in : M₁=Cotton, M₂=Setaria, and M₃=Groundnut.

Sub-plot treatments :

6 varieties of cotton : V₁=3930—A, V₂=3943—B, V₃=K—28, V₄=4616—D 2, V₅=R.1 and V₆=Western —1 (control).

3. DESIGN :

(i) Split-plot (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/161 ac. (b) 1/196 ac. (v) 4' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Severe attack of *Stenosis* due to which cotton yield was low. (iii) Yield data^a and monetary value. (iv) (a) 1958—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 157 Rs./ac. (ii) (a) 41.73 Rs./ac. (b) 24.88 Rs./ac. (iii) Main effect of T is highly significant and effect of M is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	T ₁	T ₂
M ₁	109	93	114	102	109	90	103	64	142
M ₂	173	167	199	194	186	166	181	173	190
M ₃	186	196	184	172	187	191	186	154	218
Mean	156	152	166	156	161	149	157	130	183
T ₁	138	124	130	136	131	121			
T ₂	174	180	202	177	190	177			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 6.96 Rs./ac. | 5. M means at the same level of V | = 14.14 Rs./ac. |
| 2. M marginal means | = 8.51 Rs./ac. | 6. V means at the same level of T | = 10.16 Rs./ac. |
| 3. V marginal means | = 7.18 Rs./ac. | 7. T means at the same level of V | = 11.60 Rs./ac. |
| 4. V means at the same level of M | = 12.44 Rs./ac. | S.E. of body of T×M table | = 8.51 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 59(138).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :—To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut sown at different times.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton (b) *Sorghum*. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) 29.6.1959 to 10.8.1959. (iv) (a) 2 ploughings with country plough, heavy *guntaka* used to break up the clods a fortnight before sowing, light *guntaka* was used to level the field. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with the seed drill a fortnight before sowing. (vi) *Setaria* : H—2 *korra* Groundnut TMV—2 ; Cotton—as per treatments. (vii) Unirrigated. (viii) *Dantulu* was worked and weeding was done. After the harvest of *Setaria* and groundnut crop *guntaka* was worked. (ix) 30.56". (x) *Setaria* : 9.10.1959, Groundnut 23.10.1959 and Cotton 17.11.1959 to 24.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(148) on page 470.

4. GENERAL :

(i) Cotton yield showed decline due to the failure of monsoon. (ii) There was mild *stenosis* attack in early sown plots. (iii) Yield data and monetary value. (iv) (a) 1958—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 405 Rs./ac. (ii) (a) 118.73 Rs./ac. (b) 76.18 Rs./ac. (iii) Main effect of M is highly significant and interaction T×M is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	T ₁	T ₂
M ₁	334	359	300	345	338	287	327	288	367
M ₂	321	357	349	327	339	305	333	343	323
M ₃	549	555	568	571	535	548	554	530	579
Mean	401	424	405	414	404	380	405	387	423
T ₁	391	416	387	398	370	359			
T ₂	412	431	422	431	438	401			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. T marginal means | = 19.93 Rs./ac. | 5. M means at the same level of V | = 42.37 Rs./ac. |
| 2. M marginal means | = 24.23 Rs./ac. | 6. V means at the same level of T | = 31.10 Rs./ac. |
| 3. V marginal means | = 21.99 Rs./ac. | 7. T means at the same level of V | = 34.57 Rs./ac. |
| 4. V means at the same level of M | = 38.09 Rs./ac. | S.E. of body of T × M table | = 24.23 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 58(146).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :-To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut mixed in different ratios.

1. BASAL CONDITIONS :

(i) (a) Sorghum—Cotton. (b) Sorghum. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) 11.7.1958 (for all crops). (iv) (a) Two ploughings, breaking up of clods and levelling. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed drill a fortnight before sowing. (vi) Setaria : H—2. Korra. Groundnut : TMV—2, and Cotton—as per treatments. (vii) Unirrigated. (viii) Small blade harrow was worked and hand weeding was done. After harvest of Setaria and groundnut, blade harrow was worked. (ix) 22.16". (x) Setaria : 11.10.1958, Groundnut : 1.11.1958 and Cotton : 6.1.1959 to 11.3.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) Inter sowing Cotton in : M₁=Setaria and M₂=Groundnut.

(2) 3 ratios of Cotton to component crops : R₁=1 : 1, R₂=1 : 2 and R₃=1 : 5.

Sub-plot treatments :

6 Cotton varieties : V₁=3930-A, V₂=3943-B, V₃=K-28, V₄=4616 D-2, V₅=R-1 and V₆=Westerns-1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/81 ac. (b) 1.98 ac. (v) 4' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Severe attack of stenosis to cotton. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 93 Rs./ac. (ii) (a) 28.81 Rs./ac. (b) 12.64 Rs./ac. (iii) Main effects of M and R are significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	M ₁	M ₂
R ₁	73	73	74	75	77	67	73	71	75
R ₂	97	94	112	96	99	90	98	96	101
R ₃	112	113	105	110	108	93	107	95	120
Mean	94	93	97	94	95	83	93	87	99
M ₁	88	91	90	89	89	75			
M ₂	100	95	105	98	100	92			

S.E. of difference of two

1. M marginal means = 4.80 Rs./ac. 5. M means at the same level of V = 6.86 Rs./ac.
2. R marginal means = 5.87 Rs./ac. 6. V means at the same level of R = 6.32 Rs./ac.
3. V marginal means = 3.65 Rs./ac. 7. R means at the same level of V = 8.23 Rs./ac.
4. V means at the same level of M = 5.16 Rs./ac. S.E. of body of M×R table = 5.87 Rs./ac.

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref. :- A.P. 59(139).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :- To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut mixed in different ratios.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) 25.6.1959 (iv) (a) 2 ploughings were given with country plough, a heavy *guntaka* was used to break up clods and light *guntaka* to level the grounds. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seeddrill before sowing. (vi) *Setaria* : H—2 *Korra*. Cotton : As per treatments. and Groundnut : TMV—2. (vii) Unirrigated. (viii) *Dantulu* was worked and hand weeding was done. After the harvest of component crops, *guntaka* was worked. (ix) 30.56%. (x) *Setaria* : 9.10.1959 ; Groundnut : 23.10.1959, and Cotton : 6.11.1959 to 24.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(146) on page 474.

4. GENERAL :

(i) Cotton yield poor due to the failure of monsoon. (ii) Attack of *stenosis*. (iii) Yield data of Groundnut, *Setaria*, *kapas* and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 365 Rs./ac. (ii) (a) 105.96 Rs./ac. (b) 60.82 Rs./ac. (iii) Main effect of V and interaction V×M are highly significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	M ₁	M ₂
R ₁	337	355	336	326	334	305	332	269	395
R ₂	375	426	369	441	350	362	387	254	520
R ₃	369	392	304	444	398	351	376	227	525
Mean	360	391	336	404	361	339	365	250	480
M ₁	225	265	253	260	265	234			
M ₂	495	517	419	548	457	444			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. M marginal means | = 17.66 Rs./ac. | 5. M means at the same level of V | = 28.73 Rs./ac. |
| 2. R marginal means | = 21.62 Rs./ac. | 6. V means at the same level of R | = 30.41 Rs./ac. |
| 3. V marginal means | = 17.55 Rs./ac. | 7. R means at the same level of V | = 35.19 Rs./ac. |
| 4. V means at the same level of M | = 24.83 Rs./ac. | S.E. of body of M×R table | = 21.62 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (Kharif).**Ref :- A.P. 58(147).****Site :- Govt. Cotton Farm, Adoni.****Type :- 'X'.**

Object :—To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut mixed in different ratios.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) 8 and 9.7.1958. (iv) (a) 2 ploughings with country plough, heavy *guntaka* to break up the clods, a light blade harrow worked to level the fields. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed-drill a fortnight before sowing. (vi) Setaria : H—2. *Korra*, Cotton—As per treatments and Groundnut : TMV—2. (vii) Unirrigated. (viii) *Dantulu* were worked and hand weeding done. After harvest of Setaria and Groundnut *guntaka* was worked. (ix) 22.16". (x) Setaria : 13.10.1958 ; Groundnut : 28.10.1958 ; and Cotton 9.1.1959 to 23.3.1959.

2. TREATMENTS :**Main-plot treatments :**

All combinations of (1) and (2) :

- (1) Intersowing Cotton in : M_1 = Setaria and M_2 = Groundnut.
 (2) 3 ratios of Cotton to component crop : R_1 = 1 : 1, R_2 = 1 : 2 and R_3 = 1 : 5.

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 = (*Mungari*) local.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1.81 ac. (b) 1/96 ac. (v) 4' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of *kapas*, groundnut pods and *haulms*, *korra* grain and straw and monetary value. (iv, (a) 1956—ccntd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 245 Rs./ac. (ii) (a) 85.30 Rs./ac. (b) 36.53 Rs./ac. (iii) Main effect of M alone is highly significant. (iv) Av. value of produce in Rs./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	M_1	M_2
R_1	227	240	226	268	231	245	239	193	285
R_2	284	242	262	248	248	256	257	203	310
R_3	253	235	241	225	236	238	238	176	300
Mean	255	239	243	247	238	246	245	191	293
M_1	208	196	182	191	177	189			
M_2	301	282	303	303	299	303			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. M marginal means | = 14.22 Rs./ac. | 5. M means as the same level of V | = 19.68 Rs./ac. |
| 2. R marginal means | = 17.44 Rs./ac. | 6. V means at the same level of R | = 18.27 Rs./ac. |
| 3. V marginal means | = 10.55 Rs./ac. | 7. R means at the same level of V | = 24.12 Rs./ac. |
| 4. V means at the same level of M | = 14.91 Rs./ac. | S.E. of body of M×R table | = 17.44 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 59(140).

Site Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :-To study the effect of mixed cropping of different varieties of Cotton with Setaria and Groundnut mixed in different ratios.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) 4.6 1959. (iv) (a) 2 ploughings with country plough, heavy *guntaka* used to break the clods. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed-drill before sowing. (vi) *Setaria* : H—2 *korra*, Groundnut : TMV—2 and Cotton—As per treatments. (vii) Unirrigated. (viii) After the harvest of *Setaria* and Groundnut *dantulu* was worked and hand-weeding was done. (ix) 30.56%. (x) *Setaria* : 7.9.1959, Groundnut : 23.9.1959 and Cotton : 19.10.1959 to 4.2.1960.

2. TREATMENTS :

Same as in expt. no. 58(147) on page 476.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plot/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/81 ac. (b) 1/98 ac. (v) 4' on either side. (vi) Yes.

4. GENERAL :

(i) The Cotton yield was not good due to failure of monsoon showers. (ii) Mild attack of red-hairy caterpillars. (iii) Yields of groundnut pods and haulms, *Setaria* grain and sprouted *kapas* yields and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 590 Rs./ac. (ii) (a) 278.92 Rs./ac. (b) 78.15 Rs./ac. (iii) Main effect of V alone is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	M ₁	M ₂
R ₁	554	567	643	646	657	609	613	616	610
R ₂	648	636	621	597	602	576	613	511	715
R ₃	527	527	561	593	575	474	543	498	588
Mean	576	577	608	612	611	553	590	542	638
M ₁	541	529	559	565	548	508			
M ₂	611	625	657	659	674	598			

S.E. of difference of two

1. M marginal means = 46.48 Rs./ac. 5. M means at the same level of V = 54.86 Rs./ac.
 2. R marginal means = 56.93 Rs./ac. 6. V means at the same level of R = 39.08 Rs./ac.
 3. V marginal means = 22.56 Rs./ac. 7. R means at the same level of V = 67.20 Rs./ac.
 4. V means at the same level of M = 31.90 Rs./ac. S.E. of body of M×R table = 56.93 Rs./ac.

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 58(150).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :-To decide the best strain of Cotton for mixed cropping and best time of raising mixture.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) As per treatments. (iv) (a) Two ploughing, breaking up the clods and levelling. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N was applied with seed drill a fortnight before sowing. (vi) *Setaria* : H—2 *korra*, Groundnut : TMV—2 and Cotton—as per treatments. (vii) Unirrigated. (viii) Small blade harrow was worked and hand weeding was done. After harvest of *Setaria* and Groundnut harrow was worked. (ix) 22.16%. (x) *Setaria* : 10.10.1958 and 1, 15.11.1958 ; Groundnut : 1, 6, 15.11.1958 and Cotton : 3.1.1959 to 11.3.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 crops mixed with Cotton : M_1 =Setaria and M_2 =Groundnut.(2) 3 times of sowing : T_1 =11.7.1958, T_2 =31.7.1958 and T_3 =19.8.1958.

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-I and V_6 =Western-1.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/182 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Severe attack of *stenosis*, due to which Cotton yield was low. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 177 Rs./ac. (ii) (a) 47.35 Rs./ac. (b) 22.10 Rs./ac. (iii) Main effects of M and T alone are significant. (iv) Av. vaule of produce in Rs./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	M_1	M_2
T_1	190	187	190	190	184	170	185	185	185
T_2	181	173	204	192	184	170	184	159	210
T_3	147	148	163	158	166	187	161	165	158
Mean	173	169	186	180	178	176	177	170	184
M_1	164	165	173	173	174	169			
M_2	181	174	198	188	182	183			

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------------|
| 1. M marginal means | = 7.89 Rs./ac. | 5. M means at the same level of V | = 11.43 Rs./ac. |
| 2. T marginal means | = 9.66 Rs./ac. | 6. V means at the same level of T | = 11.05 Rs./ac. |
| 3. V marginal means | = 6.38 Rs./ac. | 7. T means at the same level of V | = 14.00 Rs./ac. |
| 4. V means at the same level of M | = 9.10 Rs./ac. | S.E. of body of M×T table | = 9.66 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (*Kharif*).

Ref :- A.P. 59(141).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :- To decide the best strain of Cotton for mixed cropping and best time for raising of mixture.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) As per treatments. (iv) a) 2 ploughings with country plough, heavy *guntaka* was worked to break up the clods a fortnight before sowing and light *guntaka* was used to level the field. (b) to (e) N.A. v) A/S at 20 lb./ac. of N was applied by seed-drill a fortnight before sowing. (vi) Cotton : as per treatments and *Setaria* : H—2 *Korra* and Groundnut : TMV—2. (vii) Unirrigated. (viii) *Dantulu* was worked and hand weeding was done after the harvest of the component crops, *guntaka* was worked. (ix) 30.56". (x) *Setaria* : 10.10.1959, 20.11.1959 ; Groundnut : 24.10.1959, 20.11.1959 and Cotton : 7.11.1959 to 25.2.1960.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2).

(1) Mixed cropping of Cotton with : M_1 =Setaria and M_2 =Groundnut.(2) 2 dates of sowing : T_1 =7.7.1959 and T_2 =10.8.1959.

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 =R₁ and V_6 =Westerns—1.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/182 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) The yield of Cotton suffered due to the failure of monsoon. (ii) Stenosis attack on all early sown plots. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 405 Rs./ac. (ii) (a) 103.12 Rs./ac. (b) 90.16 Rs./ac. (iii) None of the effects is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	T ₁	T ₂
M ₁	382	375	431	407	439	385	403	419	387
M ₂	427	421	420	409	387	381	407	401	414
Mean	405	398	426	408	413	383	405	410	401
T ₁	445	379	407	431	430	368			
T ₂	364	416	445	385	396	398			

S.E. of difference of two

- | | |
|--|-----------------|
| 1. M or T marginal means | = 21.05 Rs./ac. |
| 2. V marginal means | = 31.88 Rs./ac. |
| 3. V means at the same level of M or T | = 45.08 Rs./ac. |
| 4. M or T means at the same level of V | = 46.23 Rs./ac. |
| S.E. of body of M×T table | = 21.05 Rs./ac. |

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 58(151).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :- To decide the best strain of Cotton for mixed cropping and best time for raising mixture.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) As per treatments. (iv) (a) Two ploughings with country plough, heavy *guntaka* to break the clods and leveling. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N applied with seed-drill a fortnight before sowing. (vi) Setaria : H—2—*Korra*, Groundnut : TMV—2 and Cotton : as per treatments. (vii) Unirrigated. (viii) *Dantulu* was worked and hand weeding was done. After the harvest of *Setaria* and Groundnut *guntaka* was worked. (ix) 22.16". (x) *Setaria* : 13.10.1958 and 1, 14.11.1958 ; Groundnut : 31.10.1958, and 13, 14.11.1958 and Cotton : 10.1.1959 to 10.3.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) Mixed cropping of Cotton with : M₁=*Setaria* and M₂=Groundnut.

(2) 3 times of sowing : T₁=10.7.1958, T₂=31.7.1958 and T₃=16.8.1958.

Sub-plot treatments :

6 varieties of Cotton : V₁=3930—A, V₂=3943—B, V₃=K—28, V₄=4616—D. 2, V₅=R₁ and V₆=Local.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/182 ac. (b) 1/196 ac. (v) 3' on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Cotton had an early set-back due to red hairy caterpillar attack but pulled up later. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 197 Rs./ac. (ii) (a) 96.33 Rs./ac. (b) 30.88 Rs./ac. (iii) Main effect of M is highly significant and effect of T is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	M ₁	M ₂
T ₁	238	220	206	223	254	250	232	178	286
T ₂	208	209	207	192	200	194	202	145	258
T ₃	132	166	162	157	156	173	158	128	187
Mean	193	198	192	191	203	206	197	150	244
M ₁	142	148	150	138	163	160			
M ₂	243	248	233	243	244	251			

S.E. of difference of two

1. M marginal means = 16.05 Rs./ac.
2. T marginal means = 19.66 Rs./ac.
3. V marginal means = 8.91 Rs./ac.
4. V means at the same level of M = 12.61 Rs./ac.
5. M means at the same level of V = 19.71 Rs./ac.
6. V means at the same level of T = 15.44 Rs./ac.
7. T means at the same level of V = 24.16 Rs./ac.
- S.E. of body of M×T table = 19.66 Rs./ac.

Crop :- Cotton, Setaria and Groundnut (Kharif).

Ref :- A.P. 59(142).

Site :- Govt. Cotton Farm, Adoni.

Type :- 'X'.

Object :—To decide the best strain of Cotton for mixed cropping and best time for raising of mixtures.

1. BASAL CONDITIONS :

(i) (a) *Sorghum*—Cotton. (b) *Sorghum*. (c) Nil. (ii) (a) Red soil. (b) N.A. (iii) As per treatments (iv) (a) 2 ploughings with country plough, heavy *guntaka* was used to break the clods and light *guntaka* worked a fortnight before sowing to level the field. (b) to (e) N.A. (v) A/S at 20 lb./ac. of N was applied a fortnight before sowing by seed drill. (vi) Cotton : As per treatments, *Setaria* : H—2 *Korra*, Groundnut : TMV—2 (vii) Unirrigated. (viii) *Dantulu* was worked and hand-weeding was done. After the harvest of *Setaria* and Groundnut *guntaka* was worked. (ix) 30.56". (x) *Setaria* 8.9.1959 ; 12.10.1959 ; Groundnut 24.9.1959, 12.10.1959 and Cotton 20.10.1959 to 19.2.1960.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

- (1) Mixed cropping of Cotton with : M₁=*Setaria* and M₂=Groundnut.
- (2) 2 times of sowing : T₁=5.6.1959 and T₂=6.7.1959.

Sub-plot treatments :

6 varieties of Cotton : V₁=3930—A, V₂=3943—B, V₃=K—28, V₄=4616.D—2, V₅=R₁ and V₆= (Mungari) local.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (v) (a) 1/182 ac. (b) 1/196 ac. (vi) 3' on either side. (vii) Yes.

4. GENERAL :

(i) Cotton yield suffered due to the failure of monsoon showers. (ii) Mild attack of red-hairy caterpillar. (iii) Yield data and monetary value. (iv) (a) 1956—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 467 Rs./ac. (ii) (a) 309.84 Rs./ac. (b) 76.41 Rs./ac. (iii) Main effect of T alone is highly significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean	T ₁	T ₂
M ₁	337	440	411	410	437	390	413	624	202
M ₂	561	532	566	441	545	489	522	738	306
Mean	474	486	489	425	491	439	467	681	254
T ₁	697	690	723	622	698	657			
T ₂	251	282	255	229	284	222			

S.E. of difference of two

1. M or T marginal means = 63.24 Rs./ac.
 2. V marginal means = 27.01 Rs./ac.
 3. V means at the same level of M or T = 38.20 Rs./ac.
 4. M or T means at the same level of V = 72.21 Rs./ac.
- S.E. of body of M×T table = 63.24 Rs./ac.

Crop :- Groundnut and Redgram.

Ref :- A.P. 54(6).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'X'.

Object :- To find out the optimum ratio of mixing Redgram to Groundnut.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Red soil (b) N.A. (iii) 20.7.1954 and 22.7.1954. (iv) (a) Worked tractor once with ploughs and once with disc harrow. Worked *gnntaka* twice to level up the fields. (b) Sown with *gorru*. (c) As per treatments. (d) 9" apart. (e) N.A. (v) Nil. (vi) TMV-3 groundnut (Improved and Redgram 37-late). (vii) Unirrigated. (viii) Worked metta *guntaka* twice weeded within rows. (xi) 11 91". (x) 22.12.1954 and 23.12.1954.

2. TREATMENTS :

5 ratios of number of lines of Redgram and groundnut : R₁=1 : 3, R₂=1 : 7, R₃=1 : 11, R₄=1 : 15 and R₅=Pure groundnut.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 66'×32'. (b) 64'×22'. (v) One row on either side breadthwise. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Very light attack of red-hairy caterpillar. (iii) Yield and money value of the produce. (iv) (a) 1954-1956. (b) No. (c) -. (v) (a) and (b) No. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 55 Rs./ac. (ii) 10.39 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	45	60	61	53	56.

S.E./mean = 5.19 Rs./ac.

Grop :- Groundnut and Redgram.

Ref :- A.P. 55(41).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'X'.

Object :- To determine the optimum ratio of mixing Groundnut to Redgram.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) No. (ii) (a) Red gravelly. (b) N.A. (iii) 5.8.1955. (iv) (a) Two ploughings with country plough, *guntaka* once to level up the fields. (b) Hand dibbling. (d) lines 9" apart. (c) Groundnut 88 lb./ac. (e) One. (v) 2½ tons of F.Y.M.+3½ tons/ac. of tank silt. Manure applied by broadcasting 20 days prior to sowing and covered by working plough and *guntaka*. (vi) Groundnut TMV-3, (late), Red gram no.—37. (vii) Unirrigated. (viii) Metta *guntaka* twice. (ix) 14.59". (x) 19.12.1955.

2. TREATMENTS :

Same as in expt. 54(6) no page 481.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 63'×36'. (b) 61½'×36'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Growth of red gram not satisfactory while the stand of the crop was good. (ii) Leaf roller attack to redgram in a mild form. Gammeyane dusted. (iii) Yield and monetary value. (iv) (a) 1954—1956. (b) No. (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 66 Rs./ac. (ii) 10.0 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	60	68	71	72	60

S.E./mean = 5.0 Rs./ac.

Crop :- Groundnut and Redgram.

Ref :- A.P. 56(23).

Site :-Regional Oilseeds Res. Stn., Anantapur.

Type :- 'X'.

Object :—To find out the optimum ratio of mixing Redgram to Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) 2½ tons/ac. of C.M.+3½ tons/ac. of tank silt. (ii) Red sandy soil. (b) N.A. (iii) 26.7.1956. (iv) (a) Ploughed twice with country plough, worked *guntaka* for levelling, worked *gorru* once. (b) Sown by drilling in *gorru* worked furrows. (c) 88 lb./ac. (d) 9" apart. (v) 3½ tons/ac. of C.M.+1½ tons/ac. of tank silt. Applied by broadcasting 20 days prior to sowing and covered by ploughing Mortiely. (vi) Groundnut TMV-3. (late) Redgram No. 37 (late). (vii) Unirrigated. (vii) Worked *metta guntaka* once and weeding twice. (ix) 27.43". (x) 6.1.1957.

2. TREATMENTS :

Same as in expt. no. 54(6) on page 481.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) 57'×36'. (b) 55½'×36'. (iv) One row on either side breadthwise. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of *Surul* was noticed in the month of August September. Gammexane was dusted to prevent further spread of the pest. (iii) Yield and money value of produce. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Suffered a set back due to prolonged drought in initial stage.

5. RESULTS :

(i) 162 Rs./ac. (ii) 26 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	134	146	168	178	185

S.E./mean = 13 Rs./ac.

Crop :- Groundnut and Cotton.**Ref :- A.P. 54(7).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'X'.**

Object :- To find out the optimum ratio of Cotton to Groundnut for growing mixed crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Red soil. (b) N.A. (iii) 22.7.1954. (iv) (a) Worked tractor once with ploughs and once with disc harrows. Worked *guntaka* twice to level up the fields. (b) Sown with *gorru*. (c) N.A. (d) 9" apart. (e) N.A. (v) No. (vi) Groundnut TMV-3 (late) and Cotton H-420. (vii) Unirrigated. (viii) Thinnings, working *metta guntaka* twice and weeding within the rows. (ix) 11.91". (x) 22.7.1954.

5. TREATMENTS :

5 ratios of number of lines of Cotton to Groundnut : $R_1=1:3$, $R_2=1:7$, $R_3=1:11$, $R_4=1:15$ and $R_5=$ Pure groundnut.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 66' x 32'. (b) 64' x 32'. (v) One row each on width side of the plots. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Very light incidence of red-hairy caterpillar. (iii) Money value. (iv) (a) 1954-1956. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 53 Rs./ac. (ii) 8.86 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	52	53	54	54	53

S.E./mean = 4.43 Rs./ac.

Crop :- Groundnut and Cotton.**Ref :- A.P. 55(40).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'X'.**

Object :- To determine the optimum ratio of growing Groundnut with Cotton.

1. BASAL CONDITIONS :

(i) (a) Groundnut-Castor. (b) Castor. (c) No. (ii) (a) Red gravelly. (b) N.A. (iii) 19.8.1955. (iv) (a) 2 ploughings with country plough and *guntaka* once to level up the fields. (b) Seeds hand dibbled. (c) Groundnut 90 lb./ac. (d) 9" apart. (e) 1. (v) 2½ tons/ac. of F.Y.M. + 3½ tons/ac. of tank silt. The manure applied by broad casting 20 days prior to sowing and covered by working plough and *guntaka*. (vi) Groundnut : TMV-3, Spreading (late) ; H-420 Cotton (early). (vii) Unirrigated. (viii) Thinning leaving one plant per hole *metta guntaka* twice. (ix) 14.59". (x) 16.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(7) above

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 63' x 36'. (b) 61½' x 36'. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Growth of Cotton stunted and yield was low. (ii) Bollworm attack on mild scale on Cotton. (iii) Yield and money value. (iv) (a) 1954-1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 80 Rs./ac. (ii) 16.74 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	71	84	79	80	86

S.E./mean = 8.37 Rs./ac.

Crop :- Groundnut and Cotton.**Ref :- A.P. 56(26).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'X'.**

Object :—To find out the optimum ratio of Cotton to Groundnut for growing mixed crop.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Castor. (b) Castor. (c) $2\frac{1}{2}$ tons/ac. of C.M. + $3\frac{1}{2}$ tons/ac. of tank silt. (ii) (a) Red sandy loam. (b) N.A. (iii) 26 and 27.7.1956. (iv) (a) Ploughing with country plough twice, working *guntaka* for levelling and working *gorru* once. (t) Dibbling. (c) Groundnut : 90 lb./ac. (d) 9" apart. (e) N.A. (v) $3\frac{1}{2}$ tons/ac. of C.M. + $1\frac{1}{2}$ tons/ac. of tank silt applied by broadcasting. 20 days prior to sowing and covered up by ploughing. (vi) Groundnut : TMV—3 (late). Cotton (local). (vii) Unirrigated. (viii) Working *metta guntaka* once weeding and hoeing twice. Thinning cotton plants once. (ix) 27.43". (x) 3 and 4 1.1957.

2. TREATMENTS :

Same as in expt. no. 54(7) on page 483.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $57' \times 36'$. (b) $55\frac{1}{2}' \times 36'$. (v) One row on either side breadthwise of the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield and money value. (iv) (a) 1954—1956. (b) No (c) Nil. (v) and (vi) Nil. (vii) Crop suffered prolonged droughts.

5. RESULTS :

(i) 268 Rs./ac. (ii) 46.2 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. value	297	270	239	272	260

S.E./mean = 23.1 Rs./ac.

Crop :- Groundnut.**Ref :- A.P. 57(23).****Site :- Regional Oilseeds Res. Stn., Anantapur.****Type :- 'X'.**

Object :—To determine the most suitable crops that can be grown mixed with Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut follows castor in a two year rotation. (b) Castor. (c) C.M. at $3\frac{1}{2}$ tons/ac. and tank silt at $1\frac{1}{2}$ tons/ac. (ii) (a) Red soil. (b) N.A. (iii) 16.8.1957. (iv) (a) Ploughing thrice with wooden plough and working *guntaka* once. (b) to (e) N.A. (v) $4\frac{1}{2}$ tons/ac. of C.M. and 3 tons/ac. of tank silt. (vi) Groundnut : TMV—3 (spreading, Castor and *Korra*, Cotton and Redgram (local). (vii) Unirrigated. (viii) Thinning the plants, hoeing and weeding. (ix) 13.44". (x) 14.12.1957.

2. TREATMENTS :

1. Groundnut pure (control).
2. Groundnut + Castor.
3. Groundnut + Redgram.
4. Groundnut + *Korra*.
5. Groundnut + Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $49\frac{1}{2}' \times 12'$. (b) $46\frac{1}{2}' \times 12'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The growth of all the component crops was satisfactory excepting Cotton. (ii) Mild attack of *Tikka* on Groundnut. (iii) Yield and money value. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 52 Rs./ac. (ii) 8.0 Rs./ac. (iii) Treatment differences are significant. (iv) Av. value of produce in Rs./ac.

Treatment	1	2	3	4	5
Av. value	57	55	57	53	38

S.E./mean = 4.0 Rs./ac.

Crop :- Castor.

Ref :- A.P. 56(57).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'X'.

Object :—To determine the suitable component crops that can be grown mixed with Castor.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Groundnut. (c) $2\frac{1}{2}$ tons/ac. of C.M. + $3\frac{1}{2}$ tons/ac. of tank silt. (ii) (a) Red sandy soil. (b) N.A. (iii) 14.7.1956. (iv) (a) Ploughed with country plough, worked *guntaka* once for leveling and worked *gorru* once. (b) Dibbled. (c) N.A. (d) Castor spacing 3' either other crops. 3 rows in between castor rows. (e) N.A. (v) $3\frac{1}{2}$ tons/ac. of C.M. + $1\frac{1}{2}$ tons/ac. of tank silt applied before planting and then puddled and ploughed. (vi) Castor : TMT-1 ; Redgram no. 37 ; *Jonna* : N₁ and other crops of local variety. (vii) Unirrigated. (viii) Thinning twice, weeding and hoeing thrice. (ix) 33.53". (x) Castor : 28.3.1957, Redgram : 16.1.1957, Cowpea : 2.10.1956, Groundnut : 5.12.1956, Greengram : 12.11.1956 and Cumbu : 26.10.1956.

2. TREATMENTS :

8 mixed crops : C₁ = Castor + Groundnut, C₂ = Castor + *Cumbu*, C₃ = Castor + *Jonna*, C₄ = Castor + Redgram, C₅ = Castor + *Korra*, C₆ = Castor + Greengram, C₇ = Castor + Cowpea and C₈ = Castor pure (control).

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 45' × 15'. (b) 39' × 9'. (v) One row of castor around left as guard row (vi) Yes.

4. GENERAL :

(i) The growth of Redgram, Greengram and Cowpea was satisfactory and the castor crop was smothered by the quick growing crops. (ii) *Jonna* suffered a severe set back due to the incidence of *satiga* and moulded. (iii) Yield and money value of the produce. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Crop suffered prolonged droughts.

5. RESULTS :

(i) 84 Rs./ac. (ii) 64.0 Rs./ac. (iii) Treatment differences are significant. (iv) Av. money value of produce in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈
Av. value	186	53	47	85	42	56	111	93

S.E./mean = 32.0 Rs./ac.

Crop :- Castor.

Ref :- A.P. 57(25).

Site :- Regional Oilseeds Res. Stn., Anantapur.

Type :- 'X'.

Object :—To determine the suitable component crops that can be sown mixed with Castor.

1. BASAL CONDITIONS :

(i) (a) Castor—Groundnut. (b) Groundnut. (c) C.M. at $3\frac{1}{2}$ tons/ac. + tank silt at $1\frac{1}{2}$ tons/ac.. (ii) (a) Red soil. (b) N.A. (iii) 15.7.1957. (iv) (a) Ploughing twice with wooden plough and working *guntaka* once. (b) and (c) N.A. (d) Castor : 3' × 3'. Component crops are raised in the inter space between the Castor rows. (e) N.A. (v) C.M. at $4\frac{1}{2}$ tons/ac. and tank silt at 3 tons/ac. (vi) Castor : TMV-1. (main crops) and groundnut : TM-3. and other crops of local variety. (vii) Unirrigated. (viii) Thinning, weeding and hoeing. (ix) 13.44". (x) 21.1.1958 to 8.3.1958 (castor crop 3 periodical picking). *Jonna* : 24.10.1957, Cumbu : 26.10.1957, *Korra* : 26.10.1957, Cowpea : 9.11.1957, 22.11.1957 and 11.12.1957, Green gram : 23.11.1957 and 10.12.1957 Groundnut : 1.12.1957 and Red gram : 18.12.1957.

2. TREATMENTS :

Same as in expt. no. 56(57) on page 485.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 63'×18'. (b) 57'×12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) The growth of Castor was smothered in plots grown mixed with Redgram and Cowpea. (ii) Semilooper attack in a mild form was noticed and this was brought under complete check by resorting to hand picking. (iii) Yield data and money value of the produce. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 75 Rs./ac. (ii) 22.0 Rs./ac. (iii) Treatment differences are significant. (iv) Av. money value in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈
Av. value	91	86	84	79	73	68	62	55

S.E./mean = 11.0 Rs /ac.

Crop :- Groundnut and Cotton.

Ref. :- A.P. 54(18).

Site :- Agri. Res. Stn., Lam, Guntur.

Type :- 'X'.

Object :- To determine the optimum time of sowing Cotton in Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jonna*. (c) 5 C L./ac. of F.Y.M. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) Cotton : 2.7.1954, 17.7.1954 and 2.8.1954. Groundnut : 2.7.1954. (iv) (a) Working of *guntaka* and *papatam* twice. (b) to (e) N.A. (v) Nil. (vi) Groundnut : TMV—2 Bunch (early) and Cotton : H—420 (early). (vii) Unirrigated. (viii) Weeding was given twice. (ix) 23.3" to 315". (x) Cotton : 8.10.1954 to 10.3.1955 and Groundnut : 19.10.1954.

2. TREATMENTS :

1. Groundnut pure sown in June—July.
2. Groundnut in June—July+Cotton dibbled on the same day.
3. Groundnut in June—July+Cotton dibbled 15 days after.
4. Groundnut in June—July+Cotton dibbled 1 month later.
5. Pure Cotton sown along with treatment 1.
6. Pure Cotton sown along with treatment 4.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 38'×11'. (b) 33'×7'. (v) One row either side for cotton, 2 rows on either side for groundnut and 3' on either end for both the crops. (vi) Yes.

4. GENERAL :

(i) Groundnut crop was good. Late sown cotton was poor in vigour as it was covered by the early groundnut crop. (ii) Nil. (iii) Yield of groundnut pods and Cotton. (iv) (a) 1950—1955. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Money value N.A.

5. RESULTS :

(i) to (iv) Results in lb./ac.

Treatment	1	2	3	4	5	6	G.M.	S.E.	Significant
Groundnut	1094	636	758	1022	—	—	878	190.7	Significant
Cotton	—	202	106	55	326	125	163	138.3	Significant

Crop :- Groundnut and Cotton.

Ref. :- A.P. 55(48).

Site :- Agri. Res. Stn., Lam, Guntur.

Type :- 'X'.

Object :—To determine the optimum time of sowing Cotton as mixture in the Groundnut.

1. BASAL CONDITION :

(i) (a) No. (b) *Jonna*. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) Cotton : 19.7.1955, 6.8.1955 and 19.8.1955. Groundnut : 19.7.1955. (iv) (a) 6 ploughings with country plough. (b) Cotton dibbled. (c) N.A. (d) H. 420—Cotton was dibbled in between the alternate rows of groundnut thus providing a space of 22" between two rows of cotton while the spacing of groundnut being 11" between rows. (e) N.A. (v) *Glyricidia* at 3000 lb./ac. applied as basal dressing and ploughed in '*situ*'. (vi) Cotton : H. 420—(early). Groundnut : T.M.V. 2—(Bunch Var) early. (vii) Unirrigated. (viii) Twice weeding. (ix) 36.07". (x) Cotton : 28.11.1955 to 5.2.1955. Groundnut : 31.10.1955.

2. TREATMENTS :

Same as in expt. no. 54(18) on page 486.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 23'×11'. (b) 20'×7'. (v) One row on either side for cotton and 2 rows on either side for groundnut. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of groundnut pod and cotton. (iv) (a) 1953—1956. (b) No. (c) Nil. (v) (a) and (b) No. (vi) Nil. (vii) Money value N.A.

5. RESULTS :

(i) to (iv) Results in lb./ac.

Treatment	1	2	3	4	5	6	G.M.	S.E.	Significant
Groundnut	150	81	107	146	—	—	121	18.6	Significant
Cotton	—	194	144	111	220	116	157	23.5	Significant

Crop :- Groundnut and Cotton.

Ref :- A.P. 56(36).

Site :- Agri. Res. Stn., Lam, Guntur.

Type :- 'X'.

Object :—To determine the optimum time of sowing Cotton as a mixture with Groundnut.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Jonna*. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) Cotton : 9.7.1956, 23.7.1956 and 8.8.1956. Groundnut : 9.7.1956. (iv) (a) Working of *guntaka* and *papatam* twice. (b) and (c) N.A. (d) Cotton was dibbled in between the alternate rows of groundnut this providing a space of 22" between two rows of cotton while the spacing of groundnut being 11" between rows. (e) N.A. (v) 5 C.L./ac. of F.Y.M.+2 bags of groundnut cake+1 cwt of A/S was drilled during the period of preparatory cultivation. (vi) Bunch groundnut : TMV—2 (early) Cotton H—420 (early). (vii) Unirrigated. (viii) Weeding was given twice. (ix) 16.6" to 26.4". (x) Cotton : 29.11.1956 to 11.2.1957, and Groundnut : 22.10.1956.

2. TREATMENTS :

Same as in expt. no. 54(18) on page 486.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 23'×11'. (b) 20'×7'. (v) One row on either side for cotton. Two rows on either side for groundnut. (vi) Yes.

4. GENERAL :

(i) Groundnut crop was good, late sown cotton crop was poor in vigor as it was covered by the early groundnut crop. (ii) No. (iii) Only yield. (iv) (a) 1953—1956. (b) No. (c) Nil. (v) (a) and (b) No. (vi) Nil. (vii) Money value—N.A.

5. RESULTS :

(i) to (iv) Results in lb./ac.

Treatment	1	2	3	4	5	6	G.M.	S.E.	Significance
Groundnut	140	75	88	116	—	—	105	5.3	Not significant
Cotton	—	234	115	25	224	46	129	18.6	Significant.

Crop :- Chillies and Cotton.

Ref :- A.P. 55(59).

Site :- Agri. Res. Stn., Lam, Guntur.

Type :- 'X'.

Object :—To fix up the suitable type of Cotton that can be profitably grown as a mixture with Chillies.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Jonna*. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) Cotton and chillies 19.9.1955. (iv) (a) 6 ploughings with country plough at different intervals. (b) Cotton dibbled, Chillies transplanted. (c) N.A. (d) As per treatments. (e) N.A. (v) N.A. (vi) Cotton (early) as per treatments; chillies : G₂. (vii) Unirrigated. (viii) Intercultivation with country plough 1½ month after transplantation. Hand weeding twice. (ix) 19.14". (x) Cotton : 4.4.1956 to 9.5.1956; Chillies : 21.1.1956 to 16.2.1956.

2. TREATMENTS :

Main-plot treatments :

2 spacings between Cotton plants : C₁=12" and C₂=6".

Sub-plot treatments :

6 varieties of Cotton to be sown along with Chillies : G-2 : V₁=Lakshmi, V₂=34/4, V₃=C-520/2, V₄=197-3, V₅=CO-2 and V₆=Chillies alone.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 1/31.4 ac. (b) 1/36.6 ac. (v) 2 rows on either side for chillies and 1 row on either side for cotton. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield and money value. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 95.92 Rs./ac. (ii) (a) 38.61 Rs./ac. (b) 9.22 Rs./ac. (iii) Main effect of V alone is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean
C ₁	115.19	100.13	65.00	73.31	131.44	70.00	92.51
C ₂	118.25	109.94	82.63	84.13	137.00	64.00	99.33
Mean	116.72	105.03	73.82	78.72	134.22	67.00	95.92

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. C marginal means | = 11.14 Rs./ac. |
| 2. V marginal means | = 4.61 Rs./ac. |
| 3. V means at the same level of C | = 6.52 Rs./ac. |
| 4. C means at the same level of V | = 12.63 Rs./ac. |

Crop :- Chillies and Cotton.

Ref :- A.P. 55(58).

Site :- Agri. Res. Stn., Lam, Guntur.

Type :- 'X'.

Object :—To fix up the suitable type of Cotton that can be profitably grown as a mixture with Chillies.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Jonna*. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) Cotton : 3.9.1955 and Chillies : 19.9.1955. (iv) (a) 6 ploughing with country plough with different interval. (b) Cotton dibbled. Chillies transplanted (c) N.A. (d) As per treatments. (e) N.A. (v) N.A. (vi) Cotton(early) as per treatments Chillies: G-2. (vii) Unirrigated (viii) Intercultivation with country plough 1½ months after transplanting, hand weeding twice. (ix) 19.14". (x) Cotton : 21.1.1956 to 2.5.1956 and Chillies : 21.1.1956 to 17.2.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(59) on page 488.

5. RESULTS :

(i) 84.62 Rs./ac. (ii) (a) 23.79 Rs./ac. (b) 10.61 Rs./ac. (ii) Main effect of V is significant. (iv) Av. value of produce in Rs./ac.

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	Mean
C ₁	99.88	93.44	81.81	77.50	118.25	53.50	87.40
C ₂	104.63	85.63	76.50	61.44	106.88	55.94	81.84
Mean	102.25	89.54	79.16	64.47	112.57	54.72	84.62

S.E. of difference of two

1. C marginal means = 6.86 Rs./ac.
2. V marginal means = 5.30 Rs./ac.
3. V means at the same level of C = 7.50 Rs./ac.
4. C means at the same level of V = 9.69 Rs./ac.

Crop :- Groundnut and Other Crops.

Ref :- A.P. 58(13).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'X'.

Object :—To determine the suitable component crop that can be sown mixed with Groundnut to realise maximum monetary value.

1. BASAL CONDITIONS :

(i) (a) and (b) N.A. (c) Nil. (ii) Red sandy loam. (b) Refer soil analysis, Kadiri. (iii) 17, 18.7.1958. (iv) (a) 2 ploughings with country plough and *guntaka*. (b) to (e) N.A. (v) Castor manure at 3 C.L./ac. + groundnut shell 2½ C.L./ac. (vi) Groundnut : TMV-3 (medium), castor : TMV-1, Redgram : R-G and *Korra* Local. (viii) Unirrigated. (viii) Hoeing and weeding. (ix) 27.94". (x) 22.10.1958.

2. TREATMENTS :

4 crop mixtures : C₁=Groundnut alone (control), C₂=Groundnut+Castor, C₃=Groundnut+*Korra* and C₄=Groundnut+Redgram.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 60'×72'. (iii) 4. (iv) (a) 60'×18'. (b) 57'×15'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Leaf minor incidence on groundnut crop and semilooper on castor—Endrine sprayed. (iii) Yield and money value. (iv) (a) 1957-1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 178 Rs. ac. (ii) 38 Rs./ac. (iii) Treatment differences are not significant. (sv) Av. value of produce in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄
Av. value	167	208	184	155

S.E./mean = 19.0 Rs./ac.

Crop :- Castor and Other Crops.**Ref :- A.P. 58(14).****Site :- Regional Oilseeds Res. Stn., Kadiri.****Type :- 'X'.**

Object :—To determine the suitable component crop that can be sown mixed with Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Red loam soil. (b) Refer soil analysis, Kadiri. (iii) 9.7.1958. (iv) (a) 2 ploughings with country plough and *guntaka* once. (b) to (e) N.A. (v) C.M. at 3 C.L./ac. + groundnut shell at 2½ C.L./ac. (vi) Castor : TMV—1 (medium), Groundnut : TMV—3 (medium), Redgram : RC—37 and local varieties of *korra*, cowpea and Greengram. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 27 94". (x) 1.2.1959 (main crop castor).

2. TREATMENTS :

6 mixed crops : C₁=Castor and Groundnut, C₂=Castor and Redgram, C₃=Castor and Cowpea, C₄=Castor and Greengram, C₅=Castor and *Korra* and C₆=Castor Pure.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60'×72'. (iii) 4. (iv) (a) 60'×18'. (b) 57'×15'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

(i) Growth of the main crop (castor) is satisfactory. (ii) There was semilooper incidence on castor and the pest was controlled by spraying Endrine. (iii) Yield data and monetary value. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 88 Rs./ac. (ii) 21.05 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. value of produce in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆
Av. value	128	116	100	71	71	42

S.E./mean = 10.52 Rs./ac.

Crop :- Groundnut and Other Crops.**Ref :- A.P. 59(113).****Site :- Regional Oilseeds Res. Stn., Kadiri.****Type :- 'X'.**

Object :—To determine the suitable component crops that can be grown with Groundnut.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Castor. (c) 3 C.L./ac. of C.M.+2½ C.L./ac. of Groundnut shell. (ii) (a) Red loam soil. (b) Refer soil analysis, Kadiri. (iii) 14.7.1959. (iv) (a) 2 ploughings with country plough. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) TM—3 spreading (medium) and local varieties of component crops. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 16.7". (x) Groundnut : 30.12.1959, Component crops : 12.11.1959 to 30.12.1959.

2. TREATMENTS :

6 crop mixtures : C₁=Groundnut+*Korra*, C₂=Groundnut+*Jonna*, C₃=Groundnut+*Sajja*, C₄=Groundnut+Redgram, C₅=Groundnut+Castor and C₆=Groundnut alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 48'×18'. (b) 46½'×16½'. (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Normal and satisfactory. (ii) Leaf minor of groundnut was controlled by dusting B.H.C. 10%. (iii) Yield and money value. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 160.30 Rs./ac. (ii) 11.81 Rs./ac. (iii) Treatment differences are not significant. (iv) Av. value of produce in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆
Av. value	172.12	149.14	162.90	160.21	150.27	167.16

S.E./mean = 5.91 Rs./ac.

Crop :- Castor and other crops (Kharif).

Ref :- A.P. 59(108).

Site :- Regional Oilseeds Res. Stn., Kadiri.

Type :- 'X'.

Object :—To determine the suitable remunerative component crop to be grown with Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 3 C.L./ac. of C.M.+2½ C.L./ac. of groundnut shell. (ii) (a) Red loam soil. (b) Refer soil analysis, Kadiri. (iii) 25.6.1959. (iv) (a) 2 ploughings with country plough. (b) to (e) N.A. (v) 4 C.L./ac. of C.M. (vi) Castor : TM-1 (medium) ; other crops local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 16.7". (x) Castor periodically from 9.11.1959 to 2.3.1960. Component crops in October and November, 1959.

2. TREATMENTS :

7 crop mixtures : C₁=Castor+Groundnut, C₂=Castor+Sajja, C₃=Castor+Jonna, C₄=Castor+Korra, C₅=Castor+Greengram, C₆=Castor+Cowpea and C₇=Castor alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 60'×68'. (iii) 4. (iv) (a) 60'×24'. (b) 54'×16'. (v) One row allround. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) There was a semilooper incidence on castor—controlled by spraying Endrine. (iii) Yield and monetary value. (iv) (a) 1959—1961. (b) and (c) No. (v) (a) and (b) Nil. (vi) and (vii) No.

5. RESULTS :

(i) 81.62 Rs./ac. (ii) 17.14 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of produce in Rs./ac.

Treatment	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇
Av. value	155.35	62.17	26.86	67.46	62.29	112.48	84.74

S.E./mean = 8.57 Rs./ac.

Crop :- Acid Lime.

Ref :- A.P. 54(75).

Site :- Govt. Fruit Res. Stn., Anantharajupeta.

Type :- 'C'.

Object :—To determine the most suitable rootstock for Acid Lime.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anantharajupeta. (iii) N.A. (iv) Acid lime. (v) 20.10.1938. (vi) Nearly 3 years. (vii) 200 lb./ac of compost+8 lb./ac. of G.N.C.+8 lb./ac. of Urea per tree applied in August. (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) Thorough out the year.

2. TREATMENTS :

Acid lime budded on the following stock.

1. Acid lime on Acid lime.
2. Acid lime on Jemberi.
3. Acid lime on Gajanimma.
4. Acid lime seedling.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) 3. (v) Guard row was left alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of the fruits. (iv) (a) and (b) 1938—contd. (v) Due to casualties and unequal no. of trees in each treatment statistical interpretation of the data is not possible. Hence the mean values have been furnished in the results. (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
1.	4798	453.6
2.	4996	463.9
3.	5056	445.5
4.	4772	447.2
G.M.	4906	452.5

Crop :- Acid Lime.**Ref :- A P. 55(70).****Site :- Govt. Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable rootstock for Acid lime.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anantharajupet. (iii) N.A. (iv) Acid lime. (v) 20.10.1938. (vi) Nearly 3 years. (vii) N at 5 lb./tree applied in the month of September (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 36.45°. (xii) Throughout the year.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(75) on page 491.

5. RESULTS :

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
1.	6830	637.2
2.	7107	686.5
3.	6943	654.4
4.	7117	661.3
G.M.	6999	659.9

Crop :- Acid Lime.**Ref :- A.P. 56(86).****Site :- Govt. Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable rootstock for Acid lime.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anantharajupet. (iii) N.A. (iv) Acid lime. (v) 20.10.1938. (vi) Nearly 3 years. (vii) 200 lb. of compost+8 lb. of G.N.C.+8 lb. of Urea/tree applied in August. (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 60.60°. (xii) Throughout the year.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(75) on page 491.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
1.	4843	399.1
2.	5669	475.0
3.	5068	417.1
4.	5687	464.9
G.M.	5317	439.0

Crop :- Acid Lime.**Ref :- A.P. 57(80).****Site :- Govt. Friut. Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Acid lime.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anantharajupeta. (iii) N.A. (iv) Acid lime. (v) 20.10.1938. (vi) Nearly 3 years. (vii) N in the form of compost, Urea and G.N.C. (viii) Digging and weeding. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) Throughout the year.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(75) on page 491.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
1.	3225	245.8
2.	3703	281.9
3.	3066	216.9
4.	3516	263.9
G.M.	3378	252.1

Crop :- Acid Lime.**Ref :- A.P. 58(80).****Site :- Govt. Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Acid lime.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anantharajupeta. (iii) N.A. (iv) Acid lime. (v) 20.10.1938. (vi) Nearly 3 years. (vii) 200 lb. of compost+8 lb. of G.N.C. + 8 lb. of Urea per tree applied in August. (viii) Weeding and hoeing. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) Throughout the year.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no 54(75) on page 491.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree.	Av. wt. of fruits in lb./tree.
1.	2474	168.9
2.	3045	205.0
3.	2481	188.3
4.	2651	181.0
G.M.	2663	185.8

Crop :- Acid Lime.**Ref :- A.P. 54(58).****Site :- Citrus Root stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Acid lime.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Acid lime. (v) 22 to 24.7.1951, 28'×28'. (vi) 19½ months old budding. (vii) G.M. raised in 1949 ploughed in *situ*. (viii) Weed control. (ix) Horsegram. (x) Irrigated. (xi) 55.25". (xii) Throughout the year, but mainly in March, July and December.

2. TREATMENTS :

T₁=Acid lime on Tamberi.T₂=Acid lime on Gajanimma.T₃=Acid lime on Acid lime.

3. DESIGN :

(i) R.B.D. (ii) (a) and (b) 3. (iii) 6. (iv) 6. (v) One guard row around the six blocks. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth data recorded in February 1955 and analysed for the characters stretch girth, scion girth etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Scion circumference in cms.	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	39.6	117	10.6
T ₂	34.4	165	17.4
T ₃	35.0	134	12.3
G M.	36.3	139	13.4
S.E./mean	0.8	22.9	2.3
Significance	Significant	N.S.	N.S.

Crop :- Acid Lime.**Ref :- A.P. 55(27).****Site :- Citrus Root stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Acid lime.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Acid lime. (v) 22 to 24.7.1951, 28'×28'. (vi) 19½ months old budding. (vii) G.M. raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Horse gram. (x) Irrigated. (xi) 43.77. (xii) Throughout the year, mainly in March, July and December.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(58) on page 493.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Stock girth, scion girth, tree height, tree spread etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Scion circumference in cms.	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	52.7	893	92.0
T ₂	45.4	1188	121.7
T ₃	48.0	881	86.4
G.M.	48.7	987	100.0
S.E./mean	0.9	28.8	6.4
Significance	Significant	Significant	Significant

Crop :- Acid Lime.**Ref :- A.P. 56(16).****Site :- Citrus Root stock Trial Stn., Kodur.****Type :- 'C'.**

Object :- To find out the best root stock for Acid lime.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Acid lime. (v) 22 to 24.7.1951, 28' x 28'. (vi) 19½ months old budding. (vii) G.M. crop raised during 1949 and ploughed under in *Situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 46.45". (xii) Throughout the year, mainly in March, July and December.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(58) on page 493.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Scion circumference, stock circumference, tree height etc. (iv) (a) 1951. (b) Still in progress. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Scion circumference in cms.	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree.
T ₁	61.2	2514	245.8
T ₂	50.4	2873	274.0
T ₃	56.8	2663	247.6
G.M.	56.1	2683	255.8
S.E./mean	1.4	146.8	10.7
Significance	Significant	N.S.	N.S.

Crop :- Acid Lime.**Ref :- A.P. 57(40).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :- To find out the best root stock for Acid lime.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Acid lime. (v) 22 to 24.7.1951, 28' x 28'. (vi) 19½ months old budding. (vii) G.M. crop raised during 1949 and ploughed under in *situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 31.24". (xii) Throughout the year (Mainly in March, July and December).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(58) on page 493.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Tree growth, Fruits yield, Fruits quality and disease resistance. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	3718	328.0
T ₂	3624	326.8
T ₃	3289	292.7
G.M.	3544	315.8
S.E./mean	53.4	6.2
Significance	N.S.	N.S.

Crop :- Acid Lime.**Ref :- A.P. 58(110).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Acid lime.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Acid lime. (v) 22 to 24.7.1951, 28' x 28'. (vi) 19½ months old. (vii) One G.M. crop raised during 1949 and ploughed *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 48 79°. (xii) Throughout the year.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(58) on page 493.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Fruit yield. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	4485	373
T ₂	4242	368
T ₃	3499	285
G.M.	4075	342.3
S.E./mean	58.6	5.2
Significance	Significant	Significant

Crop :- Lemon.**Ref :- A.P. 54(60).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Lemon Nepali Oblong.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Lemon—Nepali Oblong. (v) 26 to 28.7.1951, 22' x 22'. (vi) 20 months old budding. (vii) One G.M. crop of horsegram was raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 55.25°. (xii) Throughout the year but mainly in March, June and November.

2. TREATMENTS :T₁ = Lemon on Jamberi root stock.T₂ = Lemon on Gajanimma root stock.T₃ = Lemon on Acid lime root stock.**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) 6. (v) One guard row around the six blocks. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth data recorded in February 1955 and analysed for the characters stock girth, scion girth, tree height and tree spread etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) Fruits yield.

Treatment	Scion circumference in cms.	Av. yield of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	43.9	369	139.5
T ₂	40.2	328	126.8
T ₃	45.3	304	118.5
G.M.	43.2	334	128.3
S.E./mean	0.6	6.4	5.7
Significance	Significant	Significant	Significant

Crop :- Lemon.**Ref :- A.P. 55(26).****Site :- Citrus Root stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Lemon Nepali Oblong.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Lemon—Nepali Oblong. (v) 26 to 28.7.1951, 22'×22'. (vi) 20 months old budding. (vii) G.M. crop of horsegram was raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 43.77%. (xii) Throughout the year (mainly in March, June and November).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(60) on page 496.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Stock girth, Scion girth, tree height, etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Scion circumference in cm.	Av. yield of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	52.5	630	265.1
T ₂	48.2	632	274.0
T ₃	55.9	610	267.2
G.M.	52.2	624	268.8
S.E./mean	1.0	32.7	12.9
Significant	Significant	N.S.	N.S.

Crop :- Lemon.**Ref :- A.P. 56(17).****Site :- Citrus Root stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Lemon Nepali Oblong.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Lemon Nepali Oblong. (v) 26 to 28.7.1951, 22'×22'. (vi) 20 months old budding. (vii) One G.M. crop of horsegram was raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 46.45%. (xii) Throughout the year (Mainly March, June and November).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 54(60) on page 496.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Scion circumference, stock circumference, and tree height etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	Scion circumference in cm.	Av. yield of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	60.4	1020	421.4
T ₂	54.4	1008	429.1
T ₃	62.1	1002	414.5
G.M.	59.0	1011	421.7
S.E./mean	1.2	53.8	13.0
Significance	Significant	Not significant	Not significant

Crop :- Lemon.**Ref :- A.P. 57(41).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Lemon Nepali Oblong.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Lemon Nepali Oblong. (v) 26 to 28.7.1951, 22'×22'. (vi) 20 months old budding. (vii) One G.M. crop of horsegram was raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 31.24%. (xii) Throughout the year mainly in March, June and November.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(60) on page 496.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tree growth, fruit yield, fruit qualities and disease resistance. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree.
T ₁	1178	398.7
T ₂	1352	471.3
T ₃	1066	391.6
G.M.	1199	420.5
S.E./mean	34.7	13.8
Significance	Not significant	Not significant

Crop :- Lemon.**Ref :- A.P. 58(111).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Lemon Nepali Oblong.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Nepali Oblong. (v) 26 to 28.7.1951, 22'×22'. (vi) 20 months old budding. (vii) One G.M. crop of horsegram was raised during 1949 and ploughed *in situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 48.79%. (xii) Throughout the year mainly in March, June and November.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(60) on page 496.

4. GENERAL :

(i) Satisfactory. (ii) Occurrence of dry root rot. Treated with medicated sand. (iii) Fruit yield. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	794	267.27
T ₂	815	289.13
T ₃	754	262.73
G.M.	788	273.04
S.E./mean	21.1	11.1
Significance	Not significant	Not significant

Crop :- Citrus.**Ref :- A.P. 54(76).****Site :- Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Mostly waste land. (ii) (a) Light red loam. (b) Refer soil analysis, Anantharajupeta. (iii) Shield method of budding. (iv) Sathugudi. (v) Planted on 13.10.1938. (vi) Nearly 3 years. (vii) N applied in December. (viii) Digging and weeding. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) September to November and April to July.

2. TREATMENTS :

Sathugudi budded on following stocks :

- | | |
|--------------------------------|--|
| 1. Sathugudi on Acidlime. | 6. Sathugudi on Ceabbechesies. |
| 2. Sathugudi on Kichili. | 7. Sathugudi on Jamberi. |
| 3. Sathugudi on Billi Kichili. | 8. Sathugudi on Herali. |
| 4. Sathugudi on Gajanamma. | 9. Sathugudi on Sathugudi seedling (unworked). |
| 5. Sathugudi on Pummalo. | 10. Sathugudi on Sathugudi. |

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) 3. (v) and (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of fruits. (iv) (a) and (b) 1938—contd. (v) Due to several casualties in the same treatment and unequal number of trees in each treatment the statistical interpretation has not been possible. Hence only mean values have been furnished. (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	1	2	3	4	5	6	7	8	9	10	G.M.
Av. no. of fruits/trees	414	454	409	489	284	427	431	331	196	437	390
Av. wt. of fruits in lb./ac.	187.5	210.0	188.7	246.0	111.0	192.8	200.8	145.2	87.3	209.3	180.0

Crop :- Citrus.**Ref :- A.P. 55(71).****Site :- Govt. Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Mostly waste land. (ii) (a) Light red loam soil. (b) Refer soil analysis, Anantharajupeta. (iii) Shield method of budding. (iv) Sathugudi. (v) Planted on 13.10.1938. (vi) Nearly 3 years. (vii) 200 lb./ac. of compost+3 lb./ac. and 10 oz./ac. of neem-cake+2 lb. of A/S+4 lb./ac. and 8 oz./ac. of urea applied in December and January. (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 36.45". (xii) September to November and April to July.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(76) above.

4. GENERAL :

(i) Fair. (ii) Dry root rot and deficiency disease. Composite nutrients' spray given to all trees. (iii) Yield of fruits. (iv) (a) and (b) 1938—contd. (v) Due to several casualties in the same treatment and unequal number of trees in each treatment, statistical interpretation has not been possible. Hence only mean are furnished. (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	1	2	3	4	5	6	7	8	9	10	G.M.
Av. no. of fruits/tree.	316	464	243	507	285	537	325	401	42	298	342
Av. wt. of fruit in lb./ac.	141.5	200.2	111.1	239.1	101.8	205.6	151.7	187.6	19.0	126.6	148.4

Crop :- Citrus.**Ref :- A.P. 56(87).****Site :- Govt. Fruit. Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Mostly waste land. (ii) (a) Light red loam soli. (b) Refer soil analysis, Anantharajupeta. (iii) Shield method of budding. (iv) Sathugudi. (v) Planted on 13.10.1938. (vi) Nearly 3 years. (vii) 200 lb. of compost+3 lb. 10 ozs of neem cake+2 lb. of A/S+4 lb. 8 ozs. of urea applied in December and January. (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 60.06'. (xii) Sept. to Nov. and April to July.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(76) on page 499.

4. GENERAL :

(i) Fair. (ii) Dry root and deficiency disease—compost nutrients' spray given to all trees. (iii) Yield of fruit. (iv) (a) and (b) 1938—contd. (v) Due to several casualties in the same treatment and unequal no. of trees in each treatment statistical investigation is not possible. Hence only means are furnished. (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	1	2	3	4	5	6	7	8	9	10	G.M.
Av. no. of fruits/tree	253	347	321	322	203	389	237	138	126	396	273
Av. wt. of fruits in lb./tree	108.1	140.5	138.1	137.7	82.7	160.8	99.2	61.0	58.2	159.2	114.6

Crop :- Citrus.**Ref :- A.P. 57(81).****Site :- Govt. Fruit Res. Stn., Anantharajupeta.****Type :- 'C'.**

Object :—To determine the most suitable root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Mostly waste land. (ii) (a) Light Red loam soil. (b) Refer soil analysis, Anantharajupeta. (ii) Shield method of budding. (iv) Sathugudi. (v) Planted on 13.10.1938. (vi) Nearly 3 years. (vii) 200 lb. compost+3 lb. 10 oz. of neem cake+2 lb. of A/S+4 lb. 8 ozs. of urea applied in Dec. Jan. (viii) Digging, hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) Sept. to Nov. and April to July.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(76) on page 499.

4. GENERAL :

(i) Fair. (ii) Dry root and deficiency disease—compost nutrients' spray given to all trees. (iii) Yield of fruit. (iv) (a) and (b) 1930—contd. (v) Due to severe casualties in the same treatment and unequal no. of trees in one treatment, statistical analysis is not possible. Hence only means are furnished. (vi) Nil.

5. RESULTS :

(i) to (iv)

Treatment	1	2	3	4	5	6	7	8	9	10	G.M.
Av. no. of fruits/tree	401	331	294	345	166	279	245	513	68	281	292
Av. weight of fruits in lb./tree	149.1	115.6	117.0	149.1	61.1	109.5	97.3	203.0	25.6	103.3	113.1

Crop :- Citrus.**Ref :- A.P. 54(59).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Sathugudi. (v) 4, 5.8.1951, 28'×28'. (vi) 20 months old budding. (vii) One G.M. crop of horse gram was raised during 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Horse gram. (x) Irrigated. (xi) 55.25%. (xii) No yield.

2. TREATMENTS :T₁ = Sathugudi on Jamberi root stock.T₂ = Sathugudi on Acidlime root stock.T₃ = Sathugudi on Sathugudi root stock.T₄ = Sathugudi on Kichili root stock.**3. DESIGN :**

(i) R.B.D. (ii) (a) and (b) N.A. (iii) 6. (iv) 6. (v) One guard row around the six blocks. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth data was recorded in February 1955 and analysed for the characters like stock girth, and scion girth etc. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) scion girth

Treatment	T ₁	T ₂	T ₃	T ₄
Scion circumference in cms.	39.1	33.1	38.0	32.6

G.M. = 37.6 cms S.E./mean = 1.0 cms. Treatments are significantly different.

Crop :- Citrus.**Ref :- A.P. 55(28).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Sathugudi.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Sathugudi. (v) 4, 5.8.1951, 28'×28'. (vi) 20 months old budding. (vii) Horse gram was raised in 1949 and ploughed under *in situ*. (viii) Weed control. (ix) Raised cowpea and ploughed under *in situ* as G.M. during monsoon period. (x) Irrigated. (xi) 43.77%. (xii) Nil.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(59) above.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Stock girth, scion girth, tree height and tree spread. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) scion girth

Treatment	T ₁	T ₂	T ₃	T ₄
Scion circumference in cms.	42.98	36.26	38.72	40.03

G.M. = 39.50 cms/tree ; S.E /mean = 0.99 cms. Treatments are significantly different.

Crop :- Citrus.**Ref :- A.P. 56(15).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :- To find out the best root stock for Sathugudi Orange.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis Kodur. (iii) Shield budding. (iv) Sathugudi orange. (v) 4, 5.8.1951, 28'×28'. (vi) 20 months old budding. (vii) One G.M. crop of horse gram was raised during 1949 and ploughed under in *situ*. (viii) Weed control. (ix) Raised cowpea and plough under in *situ* as G.M. during the monsoon period. (x) Irrigated. (ix) 46.45°. (xii) Dates not available (March, June and October).

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(59) on page 501.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Scion circumference, stock circumference and tree height and yield of fruits. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	Scion circumference in cms	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	53.3	135	49.6
T ₂	45.6	172	65.3
T ₃	46.9	126	43.2
T ₄	47.3	82	27.9
G.M.	48.3	129	46.5
S.E./mean	1.2	19.8	7.8
Significance	Significant	Significant	Significant

Crop :- Citrus.**Ref :- A.P. 57(39).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :- To find out the best root stock for Sathugudi Orange.

1. BASAL CONDITIONS :

(i) Agricultural crops grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Sweet orange. (v) 4, 5.8.1951, 28'×28'. (vi) 20 months old budding. (vii) Horse gram was raised during 1949 and ploughed under in *situ*. (viii) Weed control. (ix) Nil. (x) Irrigated. (xi) 31.24°. (xii) March, June and October.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(59) on page 501.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tree growth, fruit yield, fruit quality and disease resistance. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree
T ₁	138	57.7
T ₂	200	73.6
T ₃	152	56.6
T ₄	119	44.4
G.M.	152	58.1
S.E./mean	26.0	34.8
Significance	Not significant	Significant

Crop :- Citrus.**Ref :- A.P. 58(109).****Site :- Citrus Root Stock Trial Stn., Kodur.****Type :- 'C'.**

Object :—To find out the best root stock for Sathugudi Orange.

1. BASAL CONDITIONS :

(i) Agricultural crops were grown under rainfed conditions. (ii) (a) Red loamy soil. (b) Refer soil analysis, Kodur. (iii) Shield budding. (iv) Sathugudi Orange. (v) 4, 5.8.1951, 28'×28'. (vi) 20 months old buddings. (vii) One G.M. crop was raised during 1949 and ploughed in *situ*. (viii) Hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 48.79". (xii) March, June and October.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(59) on page 50!

4. GENERAL :

(i) Satisfactory. (ii) Occurrence of root rot. Treated with medicated sand etc.—Zinc bordeaux mixture against deficiencies. (iii) Fruit yield. (iv) (a) and (b) 1951—contd. (v) and (vi) Nil.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	Av. no. of fruits/tree	Av. wt. of fruits in lb./tree.
T ₁	159	49.3
T ₂	270	86.8
T ₃	123	48.5
T ₄	168	60.7
G.M.	180	61.3
S.E./mean	22.2	6.3
Significance	Significant	Significant

Crop :- Mango.**Ref :- A.P. 54(74).****Site :- Govt. Fruit Res. Stn., Anantharajupet.****Type :- 'C'.**

Object :—To determine the relative performance of Mango raised by different propagation methods.

1. BASAL CONDITIONS :

(i) Waste land under occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting. (iv) *Neelum* and *Banglora*. (v) 2.2.1939 with 40'×40' spacing. (vi) One year. (vii) Nil. (viii) One ploughing with early rains. (ix) N.A. (x) Nil. (xi) N.A. (xii) July, 1954.

2. TREATMENTS :T₁=*Neelum* Inarched.T₂=*Neelum* Root graft.T₃=*Neelum* Double graft (*Neelum*/*Banglora*/seedling).T₄=*Banglora* Inarched.T₅=*Banglora* root graft.T₆=*Banglora* Double graft (*Banglora*/*Neelum*/seedling).**3. DESIGN :**

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) 3. (v) Two guard rows were provided. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fruits in numbers and weight. (iv) (a) and (b) 1939—contd. (v) Nil. (vi) Due to heavy casualties in the same treatment and unequal no. of trees in one treatment, statistical analysis is not possible. Hence only means are furnished.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	G.M.
Av. no. of fruits/tree	109	93	88	294	103	272	160
Av. wt. of fruits in lb./tree.	43.4	37.8	30.1	277.8	75.7	210.3	112.5

Crop :- Mango.**Ref :- A.P. 56(85).****Site :- Govt. Fruit. Res. Stn., Anantharajupet.****Type :- 'C'.**

Object :—To determine the relative performance of Mango raised by different propagation methods.

1. BASAL CONDITIONS :

(i) Waste land under occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting. (iv) *Neelum* and *Banglora*. (v) 2.2 1939 with 40'×40' spacing. (vi) One year. (vii) Nil. (viii) One ploughing with early rains. (ix) N.A. (x) Nil. (x) 60.06%. (xii) July 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (74) on page 503.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fruit in numbers and weight. (iv) (a) and (b) 1939—contd. (v) Nil. (vi) Due to severe casualties in the same treatment and unequal no. of trees in one treatment, statistical analysis is not possible. Hence only means are supplied. Less than 5% of trees bore fruits and that too to a negligible extent during the year 1955, 1956.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	G.M.
Av. no. of fruits/tree	46	16	23	39	35	24	31
Av. wt. of fruits in lb./tree	14.5	4.8	7.1	21.4	21.9	13.2	13.8

Crop :- Mango.**Ref :- A.P. 57(79).****Site :- Govt. Fruit. Res. Stn., Anantharajupet.****Type :- 'C'.**

Object :—To determine the relative performance of Mango raised by different propagation methods.

1. BASAL CONDITIONS :

(i) Waste land under occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting. (iv) *Neelum* and *Banglora*. (v) 2.2.1936 with 40'×40' spacing. (vi) One year (vii) Nil. (vii) One ploughing with early rains. (ix) and (x) Nil. (xi) N.A. (xii) June, July 1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(74) on page 503.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	G.M.
Av. no. of fruits/tree	31	63	54	24	14	97	48
Av. wt. of fruits in lb./tree	11.6	17.7	20.2	11.9	5.6	54.6	20.3

Crop :- Mango.**Ref :- A.P. 58(79).****Site :- Govt. Fruit Res. Stn., Anantharajupet.****Type :- 'C'.**

Object :—To determine the relative performance of Mango raised by different propagation methods.

1. BASAL CONDITIONS :

(i) Waste land under occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting. (iv) *Neelum* and *Banglora*. (v) 2.2.1939 with 40'×40' spacing. (vi) One year. (vii) Nil. (viii) One ploughing with early rains. (ix) N.A. (x) Nil. (xi) N.A. (xii) July 1958.

2. TREATMENTS :

- T₁=Neelum inarched.
 T₂=Neelum root graft.
 T₃=Neelum double graft (Neelum/Banglora/seedling).
 T₄=Banglora inarched
 T₅=Banglora root graft.
 T₆=Banglora double graft (Banglora/Neelum/Seedling).

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) 3. (v) Two guard rows were provided. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Nil. (iii) Yield in number and weight. (iv) (a) and (b) 1939—contd. (v) Nil. (vi) Due to heavy casualties in the same treatments and unequal no. of trees in one treatment, statistical analysis is not possible. Hence only means are furnished.

5. RESULTS :

- (i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	G.M.
Av. no. of fruits/tree	1031	815	855	489	368	407	661
Av. wt. of fruits in lb./tree	301.4	263.7	271.5	394.3	310.0	324.9	310.9

Crop :- Mango.

Ref :- A.P. 54(73).

Site :- Govt. Fruit Res. Stn., Anantharajupet.

Type :- CM.

Object :- To study the effect of manuring and other cultural practices on growth, yield etc. of Neelum Mango.

1. BASAL CONDITIONS :

- (i) Mostly a waste land with occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting by inarching. (iv) Neelum mango. (v) 13.12.1938 to 1.1.1939, N.A. (vi) One year and six months. (vii) Nil. (viii) As per treatments. (ix) Nil. (x) Unirrigated. (xi) N.A. (xii) July 1954.

2. TREATMENTS :

T₁=Control—no culture.

T₂=Annual application of manure to supply 3 lb./ac. of N in the form of both organic and inorganic manures and incorporating the manure in to the soil with early rains i.e. during July and August. Second ploughing is to be given again in Oct. and Nov.

T₃=Ploughing alone without any manure in July—Aug. and again in Oct.-Nov.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) 3. (v) No. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Mango hoppers controlled by D.D.T. spray. (iii) Yield data in no. and weight. (iv) (a) and (b) 1938—contd. (v) Nil. (vi) Due to several casualties in the same treatment and unequal no. of trees in the same treatment, statistical analysis is not possible. Hence only means are furnished.

5. RESULTS :

- (i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	G.M.
Av. no. of fruits/tree	247	160	230	212
Av. wt. of fruits in lb./tree	97.7	66.5	108.4	90.9

Crop :- Mango.**Ref :- A.P. 55(68).****Site :- Govt. Fruit Res. Stn., Anantharajupet.****Type :- 'CM'.**

Object :—To study the effect of manuring and other cultural practices on the growth yield etc. of Neelum Mango.

1. BASAL CONDITIONS :

(i) Mostly a waste land with occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting by inarching. (iv) Neelum mango. (v) 13.12.1938 to 1.1.1939, N.A. (vi) One year and six months. (vii) Nil. (viii) As per treatments. (ix) Nil. (x) Unirrigated. (xi) 36.45°. (xii) July 1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(73) on page 505.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	G.M.
Av. no. of fruits/tree	13	35	17	22
Av. wt. of fruits in lb./tree	7.67	17.11	8.83	11.20

Crop :- Mango.**Ref :- A.P. 56(84).****Site :- Govt. Fruit Res. Stn., Anantharajupet.****Type :- 'CM'.**

Object :—To study the effect of manuring and other cultural practices on growth, yield etc. of Neelum Mango.

1. BASAL CONDITIONS :

(i) Mostly a waste land with occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting by inarching. (iv) Neelum mango. (v) 13.12.1938 to 1.1.1939, N.A. (vi) One year and six months. (vii) Nil. (viii) As per treatments. (ix) Nil. (x) Unirrigated. (xi) 60.06°. (xii) June, July 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(73) on page 505.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield data in no. and weight. (iv) (a) and (b) 1938—contd. (v) Nil. (vi) Due to several casualties in the same treatment and unequal no. of trees in the same treatment, statistical analysis is not possible. Hence only means are furnished.

5. RESULTS :

Treatment	T ₁	T ₂	T ₃	G.M.
Av. no. of fruits/tree	76	40	77	64
Av. wt. of fruits in lb./tree	29.8	15.3	28.1	24.4

Crop :- Mango**Ref :- A.P. 57(78).****Site :- Govt. Fruit Res. Stn., Anantharajupet.****Type :- 'CM'.**

Object :—To study the effect of manuring and other cultural practices on growth, yield etc. of Neelum Mango.

1. BASAL CONDITIONS :

(i) Mostly a waste land with occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting by inarching. (iv) Neelum Mango. (v) 13.12.1938 to 1.1.1939, spacing N.A. (vi) One year and six months. (vii) Nil. (viii) As per treatments. (ix) Nil. (x) Unirrigated. (xi) N.A. (xii) June, July 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 54(73) on page 505.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield data in no. and weight. (iv) (a) and (b) 1938—contd. (v) Nil. (vi) Due to severe casualties in the same treatment and unequal no. of trees in one treatment, the statistical analysis is not possible. Hence only means are furnished.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	G.M.
Av. no. of fruits/tree	181	154	150	162
Av. wt. of fruits in lb./tree	79.1	59.4	60.6	66.4

Crop :- Mango.

Ref :- A.P. 58(78).

Site :- Govt. Fruit Res. Stn., Anantharajupet.

Type :- 'CM'.

Object :-To study the effect of manuring and other cultural practices on the growth, yield etc. of Neelum Mango.

1. BASAL CONDITIONS :

(i) Mostly a waste land with occasional cropping with rainfed crops. (ii) (a) Sandy loam soil. (b) Refer soil analysis, Anantharajupet. (iii) Grafting by inarching. (iv) Neelum Mango. (v) 13.12.1958 to 1.1.1939 N.A. (vi) One year and six months. (vii) Nil. (viii) As per treatments. (ix) Nil. (x) Unirrigated. (xi) N.A. (xii) July 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(73) on page 505.

5. RESULTS :

(i) to (iv) Fruit yield.

Treatment	T ₁	T ₂	T ₃	G.M.
Av. no. of fruits/tree	959	1026	972	986
Av. wt. of fruits in lb./tree	367.7	434.3	404.7	402.2

Crop :- Banana.

Ref :- A.P. 59(121).

Site :- Banana. Res. Stn., Tanaku.

Type :- 'M'.

Object :-To study the individual and combined effect of N, P and K on growth, yield, fruit quality etc., of Banana with a view to evolve a suitable manurial scheme.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Black clay loam soil. (b) Refer soil analysis, Tanaku. (iii) By planting sword sucker in pits of 1½ cube. (iv) *Karpura chakkarakeli*. (v) 3.8.1959, by planting in a line at 8' distance. (vi) 2, 3 months old suckers. (vii) N.A. (viii) Propping, weeding and desuckering. (ix) No. (x) Irrigated. (xi) 56.2". (xii) 20.7.1960 to 15.8.1960.

2. TREATMENTS :

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

(1) 3 levels of A/S : $N_0=0$, $N_1=3$ and $N_2=6$ oz./plant.

(2) 3 levels of Super : $P_0=0$, $P_1=2$ and $P_2=4$ oz./plant.

(3) 3 levels of Pot. Sul : $K_0=0$, $K_1=2$ and $K_2=4$ oz./plant.

Fertilizers were applied at the 3rd and 6th months in equal doses.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) and (b) 9 plots/block, 3 blocks/replication. (iii) 2. (iv) 9. (v) A single guard row between two treatments. (vi) Yes.

4. GENERAL :

(i) On the whole the season was favourable. (ii) Nil. (iii) Height, girth and no. of leaves etc. and fruit yield. (iv) (a) and (b) 1959—contd. (v) and (vi) Nil.

5. RESULTS :

(i) 24.1 lb./plant. (ii) 2.14 lb./plant. (iii) Main effects of N and P are significant. (iv) Av. yield of bananas in lb./plant.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	18.7	19.5	21.9	20.0	19.1	19.7	21.3
N_1	23.1	22.8	23.3	23.1	23.5	22.0	23.7
N_2	29.4	27.9	30.5	29.2	27.9	30.1	29.8
Mean	23.7	23.4	25.2	24.1	23.5	23.9	24.9
K_0	22.2	23.9	24.4				
K_1	24.4	22.5	25.0				
K_2	24.6	23.9	26.3				

S.E. of any marginal mean = 0.51 lb./plant.

S.E. of body of table = 0.86 lb./plant.

Crop :- Banana.

Ref :- A.P. 58(133).

Site :- Banana Res. Stn., Tanaku.

Type :- 'C'.

Object :—To determine the optimum spacing for the common commercial variety Karpura Chakkrakeli.⁴

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Black clay loam. (b) Refer soil analysis, Tanaku. (iii) By planting the suckers in pits of 1½' cube. (iv) *Karpura Chakkrakeli*. (v) 27.7.1958, planting the suckers at a distance as per treatment. (vi) 2 to 3 desuckers. (vii) 6 ozs of N/plant as A/S. applied after 6 months of planting. (viii) Weeding, desuckering, irrigations and manuring as per local practice. (ix) No. (x) Irrigated. (xi) 56.2°. (xii) 30.7.1959.

2. TREATMENTS :

2 spacings : $S_1=6' \times 6'$ and $S_2=8' \times 8'$.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) For S_1 16 plants and for S_2 9 plants. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, girth and yield in pounds. (iv) (a) Yes. (b) 1958 to 1961. (v) and (vi) Nil.

5. RESULTS :

(i) 22813 lb./ac. (ii) 1728.1 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of bananas in lb./ac.

Treatment	S ₁	S ₂
Mean yield	28926	16700

S.E./mean = 705.5 lb./ac.

Crop :- Banana.

Ref :- A.P. 59(120).

Site :- Banana Res. Stn., Tanaku.

Type :- 'CM'.

Object :—To evolve a suitable combination of dose and time of application of nitrogenous manures (A/S) together with optimum spacing.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Black clay loam soil. (b) Refer soil analysis, Tanaku. (iii) By planting sword suckers in pits of 1½' cube. (iv) Bartha (culinary). (v) 12.8.1959, by planting sword suckers in lines at different spacings as per treatments. (vi) 2 to 3 months old sword suckers. (vii) N.A. (viii) Weeding, desuckering, propping, irrigating and manuring. (ix) No. (x) Irrigated. (xi) 56.2". (xii) 20.7.1960 to 2.8.1960.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : L₁=10 and L₂=20 oz./plot.

(2) 3 spacings : S₁=4'×4', S₂=6'×6' and S₃=8'×8'.

(3) 3 times of application of manures in single dose : T₁=2, T₂=4 and T₃=6 months after planting.

3. DESIGN

(i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 3. (iv) For S₁=72, S₂=32 and S₃=18 plants/plot. (v) A single guard row. (vi) Yes.

4. GENERAL

(i) Good. (ii) Nil. (iii) Yield in lb./ac. (iv) (a) and (b) 1959—1962. (v) and (vi) Nil.

5. RESULTS:

(i) 18277 lb./ac. (ii) 5348.8 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of fruits in lb./ac.

	S ₁	S ₂	S ₃	Mean	L ₁	L ₂
T ₁	21249	23537	15851	20212	20370	20055
T ₂	16216	22213	13771	17400	18853	15947
T ₃	14377	22705	14578	17220	17380	17060
Mean	17281	22818	14733	18277	18868	17687
L ₁	19345	22831	14427			
L ₂	15216	22806	15040			

S.E. of L marginal mean	= 1029.3 lb./ac.
S.E. of S or T marginal mean	= 1260.2 lb./ac.
S.E. of body of T×L or S×L table	= 1782.9 lb./ac.
S.E. of body of T×S table	= 2183.6 lb./ac.

Crop :- Banana.

Ref :- A.P. 58(131).

Site :- Banana Res. Stn., Tanaku.

Type :- 'D'.

Object :—To study the effect of treating of Rhizome for invigorating plant growth in the yield.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Black clay loam soil. (b) Refer soil analysis, Tanaku. (iii) By planting rhizomes in pits of $1\frac{1}{2}$ ' cube. (iv) *Karpura chakkarakeli*. (v) 20.8.1958, planted in lines at a distance 8' from plant to plant. (vi) 2 to 3 months old suckers. (vii) About 6 ozs./plant of N as A/S was applied after 6 months of planting. (viii) Weeding and desuckering. (ix) No. (x) Irrigated. (xi) 56.2". (xii) 20.7.1959 to 7.8.1959.

2. TREATMENTS :

T₁=Rhizomes treated with cow-dung solution before planting.

T₂=Rhizomes untreated.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 10. (iv) 12. (v) A single guard row between two treatments. (vi) Yes.

4. GENERAL :

(i) Stormy weather affected the plants. (ii) Nil. (iii) Yield data in lbs. (iv) (a) and (b) 1959-1960. (v) and (vi) Nil.

5. RESULTS :

(i) 25.1 lb./plant. (ii) 2.94 lb./plant. (iii) Treatment difference is not significant. (iv) Av. yield of bananas in lb./plant.

Treatment	T ₁	T ₂
Av. yield	23.7	26.5

S.E./mean = 0.93 lb./plant.