INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

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AGRICULTURAL

FIELD

EXPERIMENTS

VOL. 2 PART 1

ASSAM

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FOREWORD

It is a well recognized fact that the level of agricultural production in India is one of the lowest in the world and it is only by the exploitation of scientific methods of agriculture that we can hope to increase our agricultural production to the level necessary for providing a reasonable standard of living to the country's population. Properly planned and conducted field experiments provide a reliable basis for propagating improved agricultural techniques among farmers. A number of research institutes and other experimental centres are functioning under the Central Ministry of Agriculture, the Commodity Committees and the State Governments, in which research on agricultural problems is going on. The need for an integrated account of the researches done in these organisations and institutions in the country has been felt for a long time, particularly in the context of planning. The absence of such a unified account has often led to duplication of work and delay in the utilisation of the results for practical farming. The Institute of Agricultural Research Statistics of the Indian Council of Agricultural Research has, therefore, rendered a most timely service by preparing a compendium of all agricultural field experiments conducted in India upto 1953 and similar compendia are under preparation by the Institute for subsequent years.

The present compendium contains critical summaries of results of experiments bearing on important agronomic factors such as the responses 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. I am sure that these results will be fully utilised by agricultural institutions, research workers, planners and extension organisations. The chief merit of the present publication is that it brings together in one place the results of experimentation carried out under diverse soil, climatic and agricultural conditions obtaining in India. Workers in one State can thus supplement data for their own area by results from other regions where conditions may be similar and thereby re-inforce their own conclusions. For the same reason I hope that this publication will be of use to workers in other countries also.

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 whole hearted 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 publication 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.

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

NEW DELHI,
August 20, 1962.

PREFACE

A large number of agricultural field experiments on different problems is being conducted in the country by Central and State Governments, Research Institutes, Commodity Committees and other organisations engaged in agricultural research. In addition, a number of schemes involving field experimentation is sponsored by the Indian Council of Agricultural Research in different States. The absence of a unified record of the results of these various experiments has considerably handicapped planning of further research and development and has often led to duplication of efforts.

Vaidyanathan brought out in 1933 a useful catalogue of manurial experiments conducted in India till then. Considering that Vaidyanathan's work was confined to manurial experiments and the fact that an enormous increase has taken place in the number and scope of agronomic experiments in recent years in India, the Indian Council of Agricultural Research launched the scheme of National Index of Field Experiments in 1954. The object of the scheme was two-fold :

(i) the preparation of compendium of all the field experiments for the period 1935-53 and

(ii) the preparation of index cards for individual experiments from 1954 onwards.

Under the scheme, results of all agricultural field experiments other than purely varietal trials were to be consolidated. Subsequently at the time of the extension of the scheme in 1959 it was decided that the compendium would be prepared in the first instance for the period 1948-53 and a similar compendium would be prepared for the period 1954-59. The present series for the period 1948-53 has been prepared in pursuance of this decision.

The compendium 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 & Kashmir and Himachal Pradesh (12) Rajasthan (13) Uttar Pradesh (14) West Bengal and (15) all Central Institutes. In each volume back-ground information of the respective State regarding its physical features, soils, rainfall and climate, agricultural production and area under different crops is given. A map showing different regions of the State, soils and agricultural research farms is also included. The experiments reported in each volume have been arranged cropwise 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 fertilisers (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 given together (e.g., MV as Manurial-cum-Varietal). The results of an experiment are given along with other basic information such as rotation of crops followed, cultural practices adopted, etc.

For making maximum use of the experimental data all the important tables giving the average yields of various treatments along with the appropriate standard errors have been presented. No attempt has, however, been made to summarise the data of groups of experiments on any particular item and to draw any general conclusions. This will be done for the period 1948-59 while publishing the compendium for the period 1954-59.

This publication is the result of the co-operative endeavour of a large number of persons both at the Centre and in the States. I should particularly mention in this connection, guidance and help rendered in the formulation of the scheme by Dr. D.J. Finney F.R.S. of Aberdeen University, Scotland, during his stay at the Institute of Agricultural Research Statistics as an F.A.O. Statistical Expert in 1952-53.

At the Institute of Agricultural Research Statistics, the work under the scheme was carried out under the supervision and guidance of Shri T.P. Abraham, Assistant Statistical Adviser. Shri G.A. Kulkarni, Statistician, looked after the detailed working of the scheme. These officers have been largely responsible for the preparation of the manuscript of the compendium and it is a pleasure to thank them for the hard work they have put in for getting this compendium ready. Messrs O.P. Kathuria, B.V. Srikantiah, M.L. Sahni, B.P. Dyundi, S.D. Bal and P.K. Jain of the statistical staff of the Institute deserve special mention for their careful scrutiny of the data and preparation of the material for the compendium. Thanks are also due to Dr. Uttam Chand, Professor of Statistics, now with the Central Statistical Orgainsation, Shri K.S. Avadhany, Assistant Statistician, also now with the Central Statistical Organisation, and Shri K.C. Raut, Statistician in this office who were associated with the scheme in its initial stages.

The burden of collecting data from original records by visiting different research stations and the analysis of a large number of experiments, only the primary data for which had been recorded in the files, fell on the regional staff appointed by the Indian Council of Agricultural Research in different States. They deserve to be congratulated for the patient work they have put in. The State Departments of Agriculture, Central Institutes and Commodity Committees made data for the experiments conducted within their jurisdiction readily available. The Indian Council of Agricultural Research acknowledges this willing co-operation without which the consolidation of the results would not have been possible. Various State officers who helped the project by making the data accessible to the satistical staff of the project and worked as the regional supervisors for the scheme also deserve thanks by the Council for their active help. The list of names of the regional supervisors is given on the following page.

V.G. Panse

Statistical Adviser

Institute of Agricultural Research Statistics

(*I.C.A.R.*)

New Delhi,

August 16, 1962.

REGIONAL SUPERVISORS FOR THE NATIONAL INDEX OF FIELD EXPERIMENTS

Region and headquaters	Regional Supervisors :
1. ANDHRA PRADESH (HYDERABAD)	SHRI D.V.G. KRISHNAMOORTHY, Deputy Director of Food Production, Andhra Pradesh. SHRI JAGANNATH RAO, Joint Director of Agriculture (Research), Andhra Pradesh. DR. KHADRUDDIN KHAN, Joint Director of Agriculture (Research), Andhra Pradesh. DR. WAHIUDDIN, Headquarters Deputy Director of Agriculture (Research), Andhra Pradesh.
2. ASSAM, MANIPUR AND TRIPURA (SHILLONG)	SHRI L.K. HANDIQUE, Director of Agriculture, Assam. SHRI S. MAJID, Director of Agriculture, Assam. DR. S.R. BAROOHA, Director of Agriculture, Assam.
3. BIHAR (SABOUR)	DR. R. RICHARIA, Principal, Agriculture College, Sabour. SHRI R.S. ROY, Principal, Agriculture College, Sabour.
4. KERALA (TRIVANDRUM)	SHRI N. SHANKARA MENON, Director of Agriculture, Kerala. SHRI P.D. NAIR, Director of Agriculture, Kerala.
5. MADHYA PRADESH (GWALIOR)	DR. T.R. MEHTA, Principal, Agriculture College, Gwalior.
6. MADRAS (COIMBATORE)	SHRI C.R. SHESHADRI, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. SHRI P.A. VENKATESWARAN, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. LATE SHRI M. BHAVANI SANKARA RAO, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. SHRI T. NATARAJAN, Agronomist & Secretary, Research Council, Agriculture College, Coimbatore. SHRI A.H. SARMA, Extension Specialist & Secretary, Research Council, Agriculture College, Coimbatore.
7. MAHARASHTRA & GJUARAT (FORMER BOMBAY STATE) (POONA)	SHRI D.S. RANGA RAO, Statistician, Department of Agriculture, Poona.

Owing to transfers and other changes more than one Regional Supervisor have been shown against several states as these officers have acted as Regional Supervisors during different periods from 1955 to 1962.

8.	Mysore (Bangalore)	Shri A. Anant Padmanabha Rau, State Statistician, Mysore State.
9.	Orissa (Bhubaneshwar)	Dr. U.N. Mohanty, Dy. Director of Agriculture (H.Q.), Orissa.
10.	Punjab, Jammu & Kashmir and Himachal Pradesh (Chandigarh)	Shri P.S. Sahota, Satistician, Department of Agriculture, Punjab.
11.	Rajasthan (Jaipur)	Shri H.C. Kothari, Satistician, Department of Agriculture, Rajasthan.
12.	Uttar Pradesh (Lucknow)	Dr. K. Kishen, Chief Statistician to Govt. of U.P. Department of Agriculture, U.P.
13.	West Bengal (Calcutta)	Shri S.N. Mukherjee, Statistical Officer, Directorate of Agriculture, West Bengal. Dr. S. Basu, Statistical Officer, Directorate of Agriculture, West Bengal.

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

Crop :- In the top left coner 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 :-

A.P.	Andhra Pradesh	Mn.	Manipur
As.	Assam	Mh.	Maharashtra
Bh.	Bihar	Ms.	Mysore
Dl.	Delhi	M.P.	Madhya Pradesh
Gj.	Gujarat	Or.	Orissa
H.P.	Himachal Pradesh	Pb.	Punjab
J.K.	Jammu & Kashmir	Rj.	Rajasthan
K.	Kerala	Tr.	Tripura
M.	Madras	U.P.	Uttar Pradesh
		W.B.	West Bengal

Repetition of the experiment in other years is indicated in the same line against 'reference' by stating the year and serial number for each repetition side by side *e.g.* U.P. 53(19)/52(42)/51(20) etc.

Site :- Name of the Research Station is mentioned along with 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 Indian Agricultural Research Institute.

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.

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

(i) General mean. (ii) S.E. per plot. (iii) Result of test of significance. (iv) Summary table (s) with S.E. of comparison (s).

Abbreviations used in the text of the experiments :-

ac.—acre.
Ammo. Phos.—Ammonium Phosphate.
A/N—Ammonium Nitrate.
A/S—Ammonium Sulphate.
B.D.—Basal Dressing.
B.M.—Bone Meal.
C.L.—Cart load.
C.M.—Cattle Manure.
C/N—Chilean Nitrate.
C/S—Copper Sulphate.
F.M.—Fish Meal or Fish Manure.
F.W.C.—Farm Waste Compost.

F.Y.M.—Farm Yard Manure.	N.—Nitrogen.
G.M.—Green Manure.	Nitro phos—Nitro phosphate.
G.N.C.—Groundnut cake.	P.—Phosphate.
K —Potash.	Pot. Sul.—Potassium Sulphate.
lb.– Pounds.	Super—Super Phosphate.
M.C.—Municipal Compost.	T.C.—Town compost.
Mur. Pot.—Muriate of Potash.	Zn. Sul.—Zinc Sulphate.

BASAL CONDITIONS

Information under the above heading to be read against the following items :

A. For annual crops :

(i) (a) Crop rotation if any. (b) Previous crop. (c) Manuring of previous crops. (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 (State name of the season along with the month). (x) Date of harvest.

B. For 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 seedling 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 seedings per hole. (vi Period of sowing/planting per hold. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season. (x) Period of harvesting.

DESIGN

Information under this heading to be read against the following items :

A. For annual crops :

(i) Abbreviations for designs : 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 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

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

A. For 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. (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 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 along with reference. (vi) Abnormal occurrences, like heavy rains, frost, storm etc., if any. (vii) Any other important information.

GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1.	Paddy	*Oryza sativa* L.	Dhan	Dhan	Dhano	Vadlu, Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chaul ; Dhan
2.	*Matlkalai* (Black gram)	*Phaseolus mungo* L. Var. *radiatus* Linn.	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhunnu	Uddu	Udid	Adad ; Udad	Urd	Mash ; Urd
3.	*Mung* (Green gram)	*Phaseolus aureus* Roxb.	Magumah	Sonamug	Mung	Pacha-pesalu	Pachai-payru	Payaru ; Cerupayaru	Hesaru	Mug	Mag	Moong	Moong
4.	Potato	*Solanum tuberosum* L.	Alooguti	Alu	Bilati Alu	Bangla-dampa Urlagadda	Uruzhai kilangu	Urala kizangu	Alu gedde	Batata	Aloo, Batata	Aaloo	Alu
5.	Sugarcane	*Saccharum officinarum* L.	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganra ; Eakh
6.	Cotton	*Gossypium* spp.	Kapah	Karpas ; Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
7.	Mustard (Indian rape)	*Brasstca compestris var. toria* Duthie	Sariah	Tori Sarisha	—	Ava	Kadugu	—	—	Saras	Sarsav	Toria	Toria
8.	Jute	*Corchorus* spp	Marapat	Shada pat; Tosha pat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti Chhunchh	Jute	Patsan

CONTENTS

ASSAM

(1) GENERAL DESCRIPTION

The State of Assam is located in the far eastern side of India and has an area of about 47,089 square miles or 30,136,960 acres. But according to survey of India figures it is 32,896,640 acres and according to village papers (reporting area) it is 35,764,000 acres. On its west lies East Pakistan, on east Burma and on North the Himalayan ranges. The shape of State is triangular with the Himalayas as its base, the corner opposite to it being to the south of the base. The capital of the state is at Shillong. The state has been divided into seven districts *viz.* Goalpara (Dhubri), Kamrup (Gauhati), Darrang (Tezpur), Nowgong (Nowgong), Sibsagar (Jorhat), Lakhimpur (Dibrugarh), Cachar (Silchar); Garahills (Tura), United Khasi Jantia Hills (Shillong), United North Cachar and Mikir Hills (Diphur) and Mizo, previously called Lushai hills (Aijal).

The total area sown in 1957-58 was 6,300,116 acres and area sown more than once (estimated) was 902,220 acres. Area under food crops (estimated) was 5,023,497 acres and under cash crops (Tea, Jute, Cotton, Tobacco and Mesta—estimated) was 797,570 acres. The distribution of area according to the type of utilisation in 1953-54 is given below.

Type	Area '000 acres
(i) Forests.	15,797
(ii) Area not avilable for cultivation.	10,092
(iii) Other uncultivated land excluding fallow land.	3,658
(iv) Fallow lands.	1,136

(2) PHYSICAL FEATURES

Assam is divided into three natural divisions. (i) the Brahmaputra valley or Assam proper (ii) the Surma valley and (iii) the Assam range. The Aka, Abor, Mishmi and other neighbouring hills forming the eastern part of the Himalayas together with the Naga Hills, Manipur and Lushai hills surround the east and north-east Assam. The Brahmaputra valley is an alluvial plain 450 miles long and about 50 miles wide and is bound on all sides except in the west by hills. It is almost east and west towards the lower portions of it but at its upper end, it is inclined towards north-east. The Brahmaputra flows through the centre of this plain and receives in its course the drainage of the Himalayas on the north and the Assam range in the south. Surma Valley is a flat plain about 125 miles long and 60 miles wide, closed on three sides by hill ranges. The Surma river rises on the southern slope of the mountain ranges at the borders of the Naga Hills and flows south through Manipur. It represents a vast deltaic expanse, liable to deep flooding in the rainy season. Its mean elevation is 87 ft. at Silchar and 48 ft. in Sylhet. The rivers are, therefore, sluggish and deposit large amounts of silt raising their banks well above the level of the surrounding country. As a consequence, the village sites assume a swampy condition in the rains. Occasionally, there are low basins locally called *hoars* which retain water almost throughout the year. The surface of the valley is interspersed with small, isolated hillocks called *tillas*. The Assam range of mountains which separates Surma and Brahmaputra valley projects at right angles from the Burmese mountain range and lies almost due east and west. To the west a height of 4,600 ft. is attained at Nikrek. Towards the southern face the Shilong plateau has a very deep slope.

Actually the two divisions, the Brahmaputra valley and the Surma valley together form the Assam Hills division. The Assam range division is the same as Assam plains division. The two divisions belong to the Eastern Himalayan sub-region of the Himalayan region.

The districts in the above two divisions are shown below.

Division.	Districts.
(1) Assam Plains division.	Cachar, Goalpara, Kamrup, Darrang, Nowgong, Sibsagar and Lakhimpur.
(2) Assam Hills division.	United Khasi and Jantia Hills, Naga-Hills, Garo Hills, United Mikir and North Cachar Hills, Mizo Hills.

(3) SOILS

(i) Assam plains division :—The soils of the Brahmaputra alluvium are partly recent and partly old. The variation in mechanical composition is mainly a result of the river-borne material deposited at different times and under different conditions. On the average, the soils are of sandy loam type. The recent alluvium has high pH even greater than 7.0 whereas alluvial soils have very low pH. Most of the soils in Cachar district are fairly of heavy clay. The content of available potash is low but that of phosphate is fairly high. Nitrogen content is high. The soils of Goalpara vary from sandy to loam. The content of phosphate is fairly high in majority of soils, but that of potash is just sufficient. Nitrogen content is quite high, particularly in the surface soil. The soil reaction of sugarcane land is acidic. The soils of Kamrup district vary from sandy to clay loam. The available potash and phosphate contents vary and in some they are sufficient whereas in others they are deficient either in potash, or phosphate, or both. The nitrogen contents are low compared to the soils of other districts. The garden soil is alkaline. Soils of the Darrang district vary from sandy to clay loam. The content of available potash is low in some soils and moderate in others, but that of available phosphate is very high. Acidity values are quite low in most of the districts.

Soils of the Nowgong district vary from clay to sandy loam. They are deficient in phosphate, but nitrogen content is quite high, particularly in the clayey soils. Clayey soils have low soil reaction, whereas the acidity values for others are fairly low. In Sibsagar district, soils of the cultivated lands (paddy & sugarcane) vary considerably in texture. The soils are generally deficient in lime and are mostly acidic. Soils of very high acidity values are generally not fertile and require liming for proper growth of crops. The soils of Jorhat sub-division vary from sandy loam to sandy. There are also some clayey soils. Nitrogen contents are rather high. Soils of Lakhimpur vary from one another in both chemical and mechanical composition. The soils have a strong acidic reaction but the acid values are not so high owing perhaps to the soils being sandy.

(ii) Assam Hills Division :— The soils of the hill districts are high in organic matter and nitrogen. This may be a result of the comparatively virgin nature of the hill soils. The soils appear to be of a fine texture. In Khasi and Jantia Hills, a few soil samples from potato growing land in Upper Shillong are loamy, characteristically high in organic matter. The fruit garden soils are clayey, some of them being of fairly heavy clay. Soils from paddy lands are heavy loam and contain fairly larger amount of organic matter and are some what acidic. In Naga Hills, soils of some paddy lands, orchards and potato fields vary from loam to fairly heavy clay. The acidity of the soils vary a great deal. They are high in nitrogen and organic matter contents but deficient in potash and phosphate. In Garo Hills, soil is found to be of heavy clay.

(4) RAINFALL & CLIMATE

The climate of Assam is characterised by coolness and extreme humidity. The year is roughly divided into cold and the rainy seasons, the hot season being not so prominent. The maximum temperature varies between 80°F and 88°F and the diurnal variation of temperature ranges from 15° to 20° F throughout Assam. The relative humidity is high and varies form 87 to 94 percent.

The rainfall is abundant being well over 75" in the year over most of the area and never failing. Due to peculiar configuration of the hills in relation to rainbearing winds of the south-west monsoon the rainfall varies from place to place. Thus Cherrapunji in the Khasi and Jantia Hills receives a record rainfall of 425" per year while Lanka and Lumding in Nowgong district receive only 48" and 60" respectively. According to available data, it appears that the country with a mean annual rainfall of 400" is confined to the immediate vicinity of Cherrapunji. The higher portions of the plateau farther from the plains receive much less rain. Shillong, 15 miles farther north on the lee side of the range has a mean rainfall of 85".

TABLE—I

Season-wise Normal Rainfall in inches for divisions of Assam State.

Division.	June to September	October to December	January to March	April to May	Total.
1. Assam plains division.	58.89	6.18	0.87	22.61	88.55
2. Assam Hills division.	42.79	11.31	0.68	18.08	72.86
State (simple average)	50.84	8.74	0.77	20.34	80.69

(5) IRRIGATION

The net area irrigated in Assam State excluding NEFA was 1,538 thousand acres in 1955-56. The source-wise distribution of the net area irrigated is given in table 2 below.

TABLE—2

Source-wise distribution of net area irrigated in 1955-56.

Source	Area '000 acres.
Government canals.	178
Private canals.	721
Tanks.	—
Wells.	—
Other sources.	634
Total	1533

Nearly 14,33 thousand acres of gross irrigated area is utilised only for the rice crop in the State.

(6) AGRICULTURAL PRODUCTION AND NORMAL CROPPING PATTERN

The main food crops of the State are Rice, Rape, Mustard, Sugarcane, Potato, Pulses, Maize and Oranges. Main cash crops of the state are Tea, Jute, Cotton and Tobacco.

In the flooded area of the Brahmaputra river excellent crops of *ahu* or *summa* rice and *boa* or long stemmed paddy are grown. As the level of the country rises above the reach of the ordinary floods, *Sali* or transplanted winter rice, becomes the staple crop. This constitutes the land under permanent cultivation. Beyond this is the submontane tract. In the Surma valley the river banks are the highest and most fertile portions of the valley

The staple crop is *sali* and *aus* which correspond to *sali* and *ahu* of the Brahmaputra valley. The western portion of Sylhet becomes swampy in the rains and is fit only for *aman*. The *hoars* or large marshy basins are suitable for a variety of paddy known as *Selibura*. The yield of the variety is exceptionally high. Jute is also grown besides mustard, rape and pulses. Tea is grown in the Brahmaputra valley on the ridges or high banks lying between the hill ranges and the new alluvium. In the Surma valley, in Silchar and Sylhet only isolated hillocks or *tillas* are suitable for tea. Sugarcane is grown extensively in both the valleys, but the out turn in the Surma valley is poor. In the Khasi Hills rice is grown on terraced and irrigated areas and also in the valley, but potatoes and millets are raised on hill sides.

The area, production and average yield per acre of different principal crops of the State are given below.

TABLE—3.

Area and production of the principal crops of Assam for 1957-58

Crops	Area '000 acres.	Production '000 tons
1. Autumn Rice.	1072.9	376.5
2. Winter Rice.	3116.5	1244.5
3. Spring Rice.	21.3	11.4
4. Maize.	36.0	7.7
5. Wheat.	6.4	1.4
6. Other cereals and small millets.	9.2	2.0
7. Rape and mustard.	295.3	56.2
8. Sugarcane (gur).	65.4	86.1
9. Potato.	70.7	115.1
10. Pulses (rabi).	171.3	26.8
11. Tea.	384.1	367, 897*
12. Jute.	349.3	1,094,**
13. Cotton.	34.0	8,249***
14. Tobacco.	24.1	6.91

* (in '000 lb.)
** (in '000 bales of 400 each)
*** (in bales of 395 lb. each.

(7) AGRICULTURAL RESEARCH AND RESEARCH STATIONS

There were seven research farms which reported experiments for the period 1948 to 1953. Five farms out of these are situated in the Assam plains division and two are in the Assam Hills division. Out of the five stations in the Assam plains division four are situated in the district of Sibsagar, and one at Cachar. One research farm is in Garo hills and other in the Khasi and Jantia Hills district. The soils at the farms in the Assam plains division are sandy loam and clayey loam, but the farms in the Assam hills division have sandy loam soils.

The experimentation on paddy crop is concentrated at Karimganj, Jorhat and Titabar. The experiments on sugarcane crop are conducted by the sugarcane specialist at Jorhat. There were no experiments on cash crops like Tea and Jute.

(8) EXPERIMENTS

There were 95 experiments reported for the period 1948 to 1953. The distribution of these experiments according to crops and types of treatments tried is given below.

TABLE 4

Crop	M	MV	C	CV	CM	D	Total
Paddy	21	3	20	2	1	5	52
Mati kalai	5	—	3	—	—	—	8
Mung	—	—	2	—	—	—	2
Potato	2	—	—	—	—	—	2
Sugarcane	10	—	—	3	—	—	13
Cotton	—	—	—	—	—	1	1
Mustard	11	—	5	—	—	—	16
Rotational	—	—	—	—	—	—	1
Total	49	3	30	5	1	6	95

Maximum number of experiments was carried out on paddy which is the principal food crop of the State and covers nearly 4 million acres. Sugarcane was the next on which 13 experiments were conducted.

Out of 95 experiments there were 49 experiments with manurial treatments. On paddy nearly half the number were with manurial treatments. On other crops majority of the experiments belonged to manurial type. Besides this, a large number of experiments were also conducted on cultivators' fields, on Paddy and Jute, the results of which are included in the compendium in a consolidated form.

In manurial experiments on paddy the level of nitrogen varied from 20 lb./ac. of N to 40 lb./ac. of N. The sources usually were cowdung, oilcake and Ammonium Sulphate. Sometimes bonemeal was also introduced to study its effect alone and in combination with organic manures. In some experiments lime at 20 md./ac. was applied in one of the main plots. The experiments on paddy with manurial treatments were repeated on the pulse crop, *Matikalai*, and the oil seed crop, Mustard. On sugarcane crop the rate of application of nitrogen varied from 60 lb./ac. to 180 lb./ac. for unirrigated crop. In some experiments levels of nitrogen varied from 90 lb./ac. to 270 lb./ac. The sources usually were cowdung, oilcake and Ammonium Sulphate.

There were 63 experiments with randomised block design, 26 with split plot and 6 with latin square design. The number of plots per block in Randomised block designs varied from 2 to 7. In split plot designs the number of main plots per replication varied from 2 to 6 and number of sub-plots per main plot varied from 4 to 7. The split plot design was used for manurial experiments with lime and no lime in main plots and other manures like cowdung, oilcake and bonemeal in sub-plots. In a few cultural experiments the split-plot design used was with different cultural practices in both main plots and sub-plots or varieties in sub-plots. The net plot size usually varied from 1/50th of an acre to 1/20th of an acre although there were few experiments with 1/7th of an acre and 1/323rd of an acre. The number of replications was usually 4.

STATEMENT SHOWING DETAILS OF RESEARCH STATIONS.

1	2	3	4	5	6	7
Sr. No.	Name of the experimental station, location, year of expt., type of tract it represents and major crops.	Soil type and soil analysis, if available.	Normal rainfall in inches.	Irrigation facilities.	No. of experiments.	General description of the topography of the experimental area.
1.	**Garo Hills.** Research farm, Garo Hills ; 74 miles from Dhubri Rly. Stn. Major crops : Cotton.	(i) Soil type :—Red sandy clay soil.	130"	No information available.	1-Cotton.	No information available.
2.	**Jorhat.** Govt. Agri. Farm, dist. Sibsagar ; 2½ miles from Jorhat town. Year of est. 1923. Major crops : Cotton, Jute, Paddy, Tapioca, Linseed, Mustard, etc.	(i) Soil type :—Clay loam.	N.A.	No information available.	8—Paddy. 3—*Matikalai.* 3—Mustard. 14—total.	No information available.

STATEMENT SHOWING DETAILS OF RESEARCH STATIONS.

1	2	3	4	5	6	7
3.	**Jorhat** : Sugarcane Res. Stn., dist. Sibasagar; 3 miles from Jorhat. Year of est. 1906. Major crops : Sugarcane.	(1) *Soil type* : Reddish sandy loam of old alluvium. (2) *Depth* :—Shallow-hard sub-soil at a depth of a foot or so. (3) *Colour* : Yellowish grey. (4) *Structure* : Single grain (old alluvium). (5) *Soil analysis* : (i) *Chemical analysis* (%). N 0.114 — Total P_2O_5 0.025 — Avl. P_2O_5 0.008 Total K_2O 0.115 — Avl. K_2O 0.007 — Acidity (p.p.m.) 1350 *p*H : 5.4 (ii) *Mechanical Analysis* : (%) Coarse sand 7.2 — Fine sand 52.5 — Silt 22.6 — Fine silt 5.0 Clay. 6.6 — Moisture and loss on ignition 5.1.	June 1.80 July 16.69 Aug. 12.52 Sept. 5.26 Oct. 5.16 Nov. 1.21 Dec. 0.66 Jan. 0.81 Feb. 1.49 Mar. 3.10 April 6.79 May 15.29 Total 70.78	No irrigation facilities.	13—Sugarcane.	Plain level.

STATEMENT SHOWING DETAILS OF RESEARCH STATIONS.

1	2	3	4	5	6	7
4.	**Karimganj.** Rice Experimental Stn. distt. Cachar ; 5 miles from Karimganj. Year of est. 1913. It represents plains tract. Major crops : Paddy and Jute.	1. *Soil type* : Sandy and clay loam. 2. *Depth* : Good. 3. *Colour* : Blackish. 4. *Structure* : Fine (clay loam). 5. *Soil analysis* : Not available.	June 29.15 July 24.30 Aug. 19.62 Sept. 15.50 Oct. 10.12 Nov. 3.39 Dec. 0.13 Jan. 0.49 Feb. 1.61 March 5.26 April. 13.27 May 27.92 Total 150.78 Average of ten years 1949-50 to 1958-59.	Water is available in drains and in tanks, but not used due to the shortage of machinery. There is good drainage system.	28-Paddy.	The experimental area is divided into two types of land; one is slightly higher than the other. Hence the *Aus* crop and the seed beds for *Sali* and *Asra* generally taken on high land. This high land is uniformly levelled. There is no *tilla* or hilly land. There is bund around the fencing with a gate for inlet and outlet of water. To avoid the sloping, the experimental plots are in general divided into plots of 1/10th of acre.
5.	**Kokilamukh.** Kokilamukh seed farm, distt. Sibsagar ; 7½ miles from Jorhat town. Year of est. 1927. It represents Brahmaputra alluvial tract. **Major crops** : *Ahu* paddy, Mustard and Sannhemp.	1. *Soil type* : Sandy loam. 2. *Soil Analysis* : *	June 10.58 July 18.85 Aug. 14.30 Sept. 7.30 Oct. 6.92 Nov. 1.10 Dec. 0.80 Jan. 1.42 Feb. 1.85 March 3.31 April 8.72 May 18.42 Total. 93.57 Average of five years 1954-55 to 1958-59.	No irrigation facilities. There is proper drainage system.	3—Paddy (*Ahu*). 14—Mustard. 5—*Matikalai*. 2—Mung. 24—Total.	The area is flat.

*(i) *Chemical Analysis*: (%).

Depth	N	Avl. P_2O_5	Avl. K_2O	*p*H (Water extract)	*p*H (K_2O extract)	Acidity (p.p.m)
0″-9″	0.174	0.043	0.013	5.0	4.7	39.2
9″-18″	0.101	0.039	0.018	5.9	4.8	28.0

(ii) *Mechanical analysis* : (%)

Depth	Coarse sand	Fine sand	Silt	Clay	Moisture	Loss on ignition
0″- 9″	0.5	49.5	24.0	22.0	2.0	4.8
9″-18″	1.0	48.9	28.0	20.0	1.4	3.0

STATEMENT SHOWING DETAILS OF RESEARCH STATIONS.

1	2	3	4	5	6	7
6.	**Titabar :** Rice Expt. Stn., distt. Sibsagar; 3 miles from Titabar. Year of est. 1923. It represents old alluvium tract. Major crops : Paddy.	1. *Soil type* : Heavy clayey loam. 2. *Depth* : 6". 3. *Colour* : Grey. 4. *Structure* : Clayey loam 5. *Soil analysis* : Not available.	June 7.95 July 19.83 Aug. 12.45 Sept. 4.62 Oct. 4.00 Nov. 0.65 Dec. 0.94 Jan. 0.74 Feb. 0.90 March 2.47 April 4.49 May 13.37 Total. 72.41 Average of 3 years 1956-57 to 1958-59.	Nil. There is proper drainage system.	13—Paddy.	No information is available.
7.	**Upper Shillong.** High Altitude Paddy Res. Stn., distt. Khasi and Jantia Hills; 5 milles from Shillong Year of est. 1953. It represents specially the high altitude and cold area.	Information not available.	Information not available.	Nil	2—Potato.	No information is available.

Crop :- Paddy (*Ahu*). **Ref :- As. 48(18).**

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

Object :—To study the effect of different manures on *Ahu* Paddy in acidic soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) *Matikalai* (b) *Matikalai.* (c) Same treatments were applied to the previous *Matikalai* crop. (ii) (a) Old alluvial soil, sandy loam and acid soil. (b) Refer soil analysis, Jorhat. (iii) 12.4.1948. (iv) (a) Eight times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (v) Cowdung at 200 md./ac. and compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) Weeding once. (ix) N.A. (x) 19.6.1948.

2. TREATMENTS :

Main-plot treatments :—

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :—

7 levels of manures : M_0=Control, M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M. at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac.+cowdung at 100 md./ac. and M_6=B.M. at 6 md./ac.+cowdung at 100 md./ac.

All the treatments applied during preparation of land.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 7 sub-plots/main-plot. (b) 40′×304′. (iii) 3. (iv) (a) and (b) Main plot : 40′×152′. Sub-plot : 40′×32′. (v) No. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1946—1950. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 645 lb./ac.

(ii) (a) 185 lb./ac.

(b) 111 lb./ac.

(iii) Manure effect and interaction manure×lime are highly significant.

(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	446	1068	611	458	858	771	206	631
L_1	458	1118	788	384	635	710	528	660
Mean	452	1093	699	421	747	740	367	645

S.E. of difference of two

1. main-plot treatment means = 57.13 lb./ac.
2. sub-plot treatment means = 64.05 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 90.60 lb./ac.
4. main-plot treatment means at the same level of sub-plot trentment =101.40 lb./ac.

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Crop :- Paddy (*Ahu*). **Ref :- As. 49(14)/48(18).**

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

Object :—To study the effect of different manures on *Ahu* Paddy in acid soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) *Matikalai.* (b) *Matikalai.* (c) As per treatments. (ii) (a) Old alluvial soil, sandy loam and acid soil. (b) Refer soil analysis, Jorhat. (iii) 8.4.1949 and 9.4.1949. (iv) (a) Eight times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (v) Cowdung at 200 md./ac. and compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) Weeding once. (ix) 94.15″ (during the year). (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :

7 levels of manures : M_0=Control, M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M. at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac. + cowdung at 100 md./ac. and M_6=B.M. at 6 md./ac.+cowdung at 100 md./ac.

All the treatments were applied during preparation of land.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′ (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1946—1950. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 680 lb./ac.
(ii) (a) 293 lb./ac.
(b) 207 lb./ac.
(iii) Only manure effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	416	1118	487	400	512	722	1122	682
L_1	425	1019	615	437	491	866	891	678
Mean	421	1068	551	419	501	794	1007	680

S.E. of difference of two

1. main-plot treatment means = 91.9 lb./ac.
2. sub-plot treatment means =119.5 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =169.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =181.0 lb./ac.

Crop :-Paddy (*Ahu*). Ref :-As. **50 (10)/49(14)/48(18).**
Site :-Govt. Agri. Farm, Jorhat. Type :-'M'

Object :—To study the effect of different manures on *Ahu* Paddy in acid soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) *Matikalai.* (b) *Matikalai.* (c) As per treatments. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 29.3.1950 to 30.3.1950. (iv) (a) Eight ploughings followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (v) Cowding at 200 md./ac. Compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) Weeding once. (ix) 96.82″. (x) 24.7.1950.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M. at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac.+cowdung at 100 md./ac., M_6=B.M. at 6 md./ac.+cowdung at 100 md./ac.

All the treatments were applied during the time of preparation of land.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b)sub-plot : 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1946-1950. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 682 lb./ac.
(ii (a) 401 lb./ac.
(b) 143 lb./ac.
(iii) Only manure effect is highly significant.
(iv) Average yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	446	994	578	347	512	776	928	654
L_1	528	1002	780	367	536	875	887	711
Mean	487	998	679	357	524	825	908	682

S.E. of difference of two

1. main-plot treatment means = 123.7 lb./ac.
2. sub-plot treatment means = 82.6 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 117.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 164.3 lb./ac.

Crop :-Paddy (*Ahu*). Ref :-As. **51 (11)**.

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

Object :—To study the effect of different manures on *Ahu* Paddy in acid soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Matikalai*. (c) N.A. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 6.4.1951 to 7.4.1951. (iv) (a) Eight times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (v) Cowdung at 200 md./ac. and compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) Weeding once. (ix) N.A. (x) 9.7.1951 to 14.7 1951.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :

7 levels of manures : M_0=Control, M_1=Cowdung at 40 lb./ac. of N, M_2=Oilcake at 40 lb./ac. of N, M_3=A.S.N. at 40 lb./ac. of N, M_4=Sodium nitrate at 40 lb./ac. of N, M_5= Cowdung at 80 lb./ac. of N and M_6=Cowdung at 40 lb./ac. of N+Oilcake at 40 lb./ac. of N.

Manures were broadcast before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 910 lb./ac.

(ii) (a) 72.0 lb./ac.

(b) 128.0 lb./ac.

(iii) Effect of lime is highly significant, effect of manure is significant while their interaction is not significant

(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	330	1097	710	1163	734	965	974	853
L_1	470	1262	1015	1056	784	1139	1048	968
Mean	400	1180	862	1110	759	1052	1011	910

S.E. of difference of two

1. main-plot treatment means = 22.2 lb./ac.
2. sub-plot treatment means = 74.0 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 104.6 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 99.4 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 52(15).**

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

Object :—To study the effect of different manures on *Ahu* Paddy in acid soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 8.4.1952. to 9.4.1952. (iv) (a) Eight times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e)—. (v) Cowdung at 200 md./ac. + compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) Weeding once. (ix) N.A. (x) 7.7.1952 to 10.7.1952.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :

7 levels of manures : M_0=Control, M_1=Cowdung at 40 lb./ac. of N, M_2=Oilcake at 40 lb./ac. of N, M_3=A/S at 40 lb./ac. of N, M_4=C/N at 40 lb./ac. of N, M_5=Cowdung at 80 lb./ac. of N and M_6=Cowdung at 40 lb./ac. of N+oilcake at 40 lb./ac. of N. Manures broadcast before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) sub-plot : 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 559 lb./ac.

(ii) (a) 136.0 lb./ac.

(b) 92.0 lb./ac.

(iii) Effect of manure alone is highly significant.

(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	223	693	478	586	520	528	677	529
L_1	231	734	421	619	627	726	759	588
Mean	227	714	450	602	573	627	718	559

S.E. of difference of two

1. main-plot treatment means =42.0 lb./ac.
2. sub-plot treatment means =53.2 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =75.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =81.3 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 53(17).**

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

Object :—To study the effect of different manures on *Ahu* Paddy in acid soil under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 10.4.1953 and 11.4.1953. (iv) (a) Eight times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e)—. (v) Cowdung at 200 md./ac. and compost at 200 md./ac. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (vii) Weeding once. (ix) N.A. (x) 20.7.1953.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung at 40 lb./ac. of N, M_2=Oilcake at 40 lb./ac. of N, M_3=A/S at 40 lb./ac. of N, M_4=Sodium nitrate at 40 lb./ac. of N, M_5=Cowdung at 80 lb./ac. of N and M_6=Cowdung at 40 lb./ac. of N+Oilcake at 40 lb./ac. of N.

Manures broadcast before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 224 lb./ac.

(ii) (a) 37.6 lb./ac.

(b) 49.0 lb./ac.

(iii) Effects of lime and manure are highly significant, while their interaction is not significant.

(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	116	330	289	231	272	248	347	262
L_1	107	239	116	83	198	264	297	186
Mean	111	285	202	157	235	256	322	224

S.E. of difference of two

1. main-plot treatment means =11.6 lb./ac.
2. sub-plot treatment means =28.3 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =40.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =38.8 lb./ac.

Crop :- Paddy. Ref :- As. 51(7).

Site :- Rice Expt. Stn., Karimganj. Type :- 'M'.

Object :—To study the effect of manures applied to the first crop of Paddy (*Aus*) on the yield and its residual effect on the second crop (*Sali*) and subsequent two crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay-loam. (b) Refer soil analysis, Karimganj. (iii) *Aus.* 5.5.1951. *Sali* on 12.7.1951/24.8.1951 to 29.8.1951. (iv) (a) 8 ploughings followed by laddering and weeding. (b) *Aus.*-broadcast. (c) 100 lb./ac. (d) 6" both ways. (e) 3. (v) N.A. (vi) *Aus.* Paddy-M 142 *Koimurali* medium ; *Sali* paddy- S.C. 412-56 *Swarna sail* (medium.) (vii) Unirrigated. (viii) One weeding in both *Aus.* and *Sali*-paddy. (ix) 108.49" (March to December 1951). (x) *Aus* : 25.7.1951 to 28.7.1951 ; *Sali* : 18.12.1951 to 23.12.1951.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of oil cake : C_0=0 and C_1=9 md./ac.

(2) 2 levels of B.M. : B_0=0 and B_1=3 md./ac.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 66′×15′. (b) *Aus*—66′×15′ ; *Sali*—65-5′×14-5′. (v) In *Sali* one gaurd row was kept ; *Aus.* Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1951-52. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

Aus Crop

(i) 1762 lb./ac.

(ii) 155.6 lb./ac.

(iii) Effect of oil cake and interaction 'oil cake×B.M.' are significant B.M. effect is not significant.

(iv) Av. yield of grain in lb./ac.

	C_0	C_1	Mean
B_0	1537	1962	1750
B_1	1794	1753	1774
Mean	1666	1858	1762

S.E. of marginal mean. =55.0 lb./ac.

S.E. of body of table. =77.8 lb./ac.

Second crop (*Sali*)

(i) 2282 lb./ac.

(ii) 61.0 lb./ac.

(iii) B.M. effect is highly significant, oilcake effect is significant while their interaction is not significant.

(iv) Av. yield of grain in lb./ac.

	C_0	C_1	Mean
B_0	2281	2184	2233
B_1	2378	2286	2332
Mean	2330	2235	2282

S.E. of marginal means. =21.6 lb./ac.

S.E. of body of table. =30.5 lb./ac.

Crop :- Paddy. **Ref :- As. 52(8) 51(7).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'M'.**

Object :—To study the residual effect of manures applied to *Aus* crop of Paddy on the succeeding *Aus* and *Sali* crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) *Aus*. 24.4.1952 ; *Sali* in 3.7.1952/8.8.1952 to 13.8.1952. (iv) (a) 8 ploughings followed by laddering and weeding *Aus*. (b) For *Aus*-broadcasting, *sali*—transplanted. (c) *Aus*. 100 lb./ac. (d) 6" both ways. (e) 3. (v) N.A. (vi) *Aus*. paddy—M. 142 *Koimurali* (medium) ; *Sali* ; paddy— S.C. 412-56 *Swarnasail* (medium). (vii) Un-irrigated. (viii) One weeding in both *Aus*. and *Sali*. (ix) 113.12" (Feb. to Dec. 1952). (x) *Aus* : 8.7.1952 to 14.7.1952 ; *Sali* : 17.12.1952 to 18.12.1952.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of oil cake : $C_0=0$ and $C_1=9$ md./ac.

(2) 2 levels of B.M. : $B_0=0$ and $B_1=3$ md./ac.

Treatments applied to last year *Aus* paddy.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 66'×15'. (b) *Aus* : 66'×15' ; *Sali* : 65'×14.5'. (v) Nil for *Aus*. In *Sali*, one gaurd row is kept. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) General growth observations and yield of paddy. (iv) (a) 1951-52. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

Aus Crop

(i) 1905 lb./ac.
(ii) 152.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	C_0	C_1	Mean
B_0	1849	1929	1889
B_1	1904	1940	1922
Mean	1876	1935	1905

S E. of marginal means =53.7 lb./ac.
S.E. of body of table =76.0 lb./ac.

Second crop (*Sali* paddy)

(i) 2783 lb./ac.
(ii) 110.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	C_0	C_1	Mean
B_0	2954	2579	2767
B_1	2840	2759	2800
Mean	2897	2669	2783

S.E. of marginal means =39.1 lb./ac.
S.E. of body of table =55.3 lb./ac.

———

Crop.-Paddy. Ref :-As. 53 (9).

Site :-Rice Expt. Stn., Karimganj. Type :-'M'.

Object :—To investigate the possibility of increasing crop production by catalysing the release of plant nutrients.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 25.5.1953. (iv) (a) 8 ploughings (by country method) followed by laddering. (b) Broadcasting. (c) 100 lb./ac. (d) and (e) —. (v) 100 mds of cowdung broadcast during ploughing. (vi) *Aus* paddy, type—M 142 Koimarali (early *Aus*). (vii) Unirrigated. (viii) Weeding and hoeing 2 times. (ix) 147.03". (x) 26.8.1953 to 28.8.1953.

2. TREATMENTS :

1. Control
2. Pot. Perm. at 16 lb./ac.
3. Fe. Sul. at 28 lb./ac.

100 md./ac. of Cowdung applied as basal dressing

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 66'×10'. (b) 64'×8'. (v) 1' left as border. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of paddy. (iv) (a) 1953-54 to 1955-56. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1510 lb./ac.
(ii) 120.8 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	1457
2.	1589
3.	1485
S.E./mean	=49.0 lb./ac.

Crop :-Paddy. Ref :-As. 50 (9).

Site :-Rice Expt. Stn., Karimganj. Type :-'M'.

Object : To study the effect of cowdung, mustard cake and A/S when applied before planting and before flowering.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 3.7.1950/21,24.8.1950. (iv) (a) 8 ploughings followed by laddering and weeding. (b) Transplanted. (c) —. (d) 9" both ways. (e) 4. (v) N.A. (vi) *Sali* paddy : type— S.C. 412-56 *Swarna sail* (medium). (vii) Unirrigated. (viii) N.A. (ix) 82.64". (x) 20.12.1950 to 26.12.1950.

2. TREATMENTS :

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

(1) 3 levels of manures : M_1=Cowdung at 100 md./ac., M_2=A/S at 200 lb./ac. and N_3=Mustard cake at 10 md./ac.

(2) 2 times of application : T_1=Before planting and T_2=Before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 66'×8.25' (b) 65.25'×7.50'. (v) One row was kept as guard row. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Growth observation and yield of paddy. (iv) (a) 1950—1952. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2620 lb./ac.
(ii) 177.7 lb./ac.
(iii) Main effect of M and interaction M×T are highly significant while T is not significant.
(iv) Av. yield of grain in lb./ac.

Control =2207 lb./ac.

	M_1	M_2	M_3	Mean
T_1	2645	2758	2623	2675
T_2	2451	2728	2928	2702
Mean	2548	2743	2776	2689

S.E. of marginal mean of M =51.31 lb./ac.
S.E. of marginal mean of T =41.88 lb./ac.
S.E. of body of table =72.56 lb./ac.

Crop :- Paddy. **Ref :- As. 51(6)/50(9).**

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

Object :—To study the effect of cowdung, mustard cake and A/S when applied before planting and before flowering (first residual effect).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 27.6.1951/31.7.1951 to 5.8.1951. (iv) (a) 8 ploughings followed by laddering and weeding. (b) Transplanted. (c) —. (d) 9" both ways. (e) 4. (v) N.A. (vi) *Sali* paddy : type—S.C. 412-56 *Swarna-sail* (medium). (vii) Unirrigated. (viii) N.A. (ix) 64.19". (x) 5.12.51 to 23.12.1951.

2. TREATMENTS :

All combinations of (1) and (2) + a control.
(1) 3 levels of manures : M_1=Cowdung at 100 md./ac., M_2=A/S at 200 lb./ac. and M_3=Mustard cake at 10 md./ac.
(2) 2 times of application : T_1=Before planting and T_2=Before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 66'×8.25'. (b) 65.25'×7.50'. (v) One row kept as guard row. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) General growth observation and yield of paddy. (iv) (a) 1950—1952. (b) Yes. (c) N.A. (v) (a), (b) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2698 lb./ac.
(ii) 150.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=2761 lb./ac

	M_1	M_2	M_3	Mean
T_1	2752	2716	2632	2700
T_2	2655	2663	2706	2675
Mean	2704	2689	2669	2687

S.E. of marginal mean of M =43.30 lb./ac.
S.E. of marginal mean of T =36.53 lb./ac.
S.E. of body of table =61.23 lb./ac.

Crop :- Paddy. **Ref :-As. 52(9)/51(6)/50(9).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'M'.**

Object :—To study the effect of cowdung, mustard cake and A/S applied before planting and before flowering (2nd residual effect).

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) N.A. (iv) (a) 8 ploughings followed by laddering and weeding. (b) Transplanted. (c) —. (d) 9″ both ways. (e) 4. (v) N.A. (vi) *Sali* paddy : type S.C. 412-56 (*Swarna sail*). (vii) Unirrigated. (viii) N.A. (ix) 81.99″. (x) N.A.

2. TREATMENTS :

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

(1) 3 levels of manures : M_1=Cowdung at 100 md./ac., M_2=A/S at 200 lb./ac. and M_3=Mustard cake at 10 md./ac.

(2) 2 times of application : T_1=Before planting and T_2=Before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 66′×825′. (b) 65.25′×7.5′. (v) One row kept as guard row. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) General growth observations and yield of paddy. (iv) (a) 1950—1952. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3054 lb./ac.
(ii) 155.8 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=3002 lb./ac.

	M_1	M_2	M_3	Mean
T_1	3052	3094	3013	3053
T_2	3016	3107	3091	3071
Mean	3034	3101	3052	3062

S.E. of marginal means of manures = 45.00 lb./ac.
S.E. of marginal means of time of application = 36.74 lb./ac.
S.E. of body of table = 63.63 lb./ac.

Crop :- Paddy. **Ref :- As. 53(7).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 30.6.1953/7 to 11.8.1953. (iv) (a) 8 ploughings (country method) followed by laddering. (b) Transplanting in lines. (c) —. (d) 9″ both sides. (e) 4. (v) 100 md./ac. of cowdung. (vi) *Sali*-paddy-type S.C. 412-46 (*Swarna sail*) (medium.) (vii) Unirrigated. (viii) Simple weeding. (ix) 66.59″ (July to Dec. 1953). (x) 10.12.1953 to 13.12.1953.

2. TREATMENTS:

1. Control.
2. Fertiphos at 12 md./ac.

3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 66′×15′. (b) 65.25′×14.25′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of paddy. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vi) Nil.

5. RESULTS :

(i) 3158 lb./ac.
(ii) 194.6 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3224
2.	3091
S.E./mean	= 79.45 lb./ac.

Crop :- Paddy (*Ahu*). Ref :- As. **48(16)**.

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To study the effect of nitrogeneous and phosphatic fertilizers.

1. BASAL CONDITIONS .

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) 5 times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) & (e)—. (v) Nil. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md./ac.
3. Oilcake at 800 lb./ac.
4. Ammo. Phos. at 250 lb./ac.
5. Zeno phos at 500 lb./ac.
6. Zeno phos (special) at 350 lb./ac.
7. A/S at 200 lb./ac.

Manures broadcast at the time of preparation of land before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a), (b) 54′×20′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of paddy. (iv) (a) 1946—1949. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 713 lb /ac.
(ii) 134 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	689
2.	703
3.	726
4.	757
5.	687
6.	699
7.	732
S.E./mean	= 55 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 49(16).**

Site :- Res. Farm, Kokilamukh. **Type :- 'M'.**

Object :—To study the effect of nitrogeneous and phosphatic fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) 5 times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) & (e) N.A. (v) Nil. (vi) *Rangadaria Ahu* (medium). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md /ac.
3. Oilcake at 800 lb./ac.
4. Ammo. Phos. at 350 lb./ac.
5. Zeno phos at 500 lb./ac.
6. Zeno phos (special) at 350 lb./ac.
7. A/S at 200 lb./ac.

Manures broadcast at the time of preparation of land before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) and (b) 44′×20′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of paddy. (iv) (a) 1946 to 1949 (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 575 lb./ac.
(ii) 69.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	598
2.	571
3.	610
4.	584
5.	547
6.	536
7.	580
S.E./mean	= 28 lb /ac.

Crop :- Paddy (*Sali*). **Ref :- As. 50(4).**

Site :- Rice Expt. Stn., Titabar. **Type :- 'M'.**

Object :—To study the effect of A/S on Paddy when applied before flowering.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) No manuring. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 21.8.1950. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Transplanting. (c) 6 md./ac. (d) 9″ between lines and within lines. (e) 4. (v) Nil. (vi) *Prasadbhog* (N.A.). (vii) Unirrigated. (viii) Two hand weedings. (ix) N.A. (x) 2.12.1950 to 5.12.1950.

2. TREATMENTS :

1. Control.
2. A/S.

(Quantity not available).

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 2. (iv) (a) 32′×60′. (b) 30.5′×64.5′. (v) One row around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) and (c) —. (v) (a) Nil. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 2347 lb./ac.
(ii) 66.42 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2269
2.	2424
S.E./mean	= 46.95 lb./ac.

Crop :- Paddy (*Sali*). **Ref :- As. 48(1).**

Site :- Rice Expt. Stn., Titabar. **Type :- 'M'.**

Object :—To study the effect of manures and fertilizers on Paddy applied during the flowering stage.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) N.A. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of planting. (c) 6 md./ac. (d) 9" both sides. (e) 4. (v) Nil. (vi) *Prasadbhog*. (vii) Unirrigated. (viii) Two hand weedings. (ix) N.A. (x) 8.12.1948 to 9.12.1948.

2. TREATMENTS :

1. Cowdung at 100 md./ac.
2. A/S at 200 lb./ac.
3. Ammo. Phos. at 240 lb./ac. applied on 15.10.1948 just befor flowering.
4. Control.

Manures broadcast just before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 34'×16.5'. (b) 32.5'×15.0'. (v) One row alround. (vi) Yes

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1948—49 to 1949—50. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2108 lb./ac.
(ii) 167.2 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2156
2.	2232
3.	2315
4.	1731
S.E./mean	= 83.6 lb./ac.

Crop :- Paddy (*Sali*). Ref :- As. 49(1)/48(1).

Site :- Rice Expt. Stn., Titabar. Type :- 'M'.

Object :—To study the residual effect of manures and fertilizers on Paddy applied just before flowering on succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) As per treatments (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 24.8.1949. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method. (c) 6 md./ac. (d) 9" both sides. (e) 4. (v) Nil. (vi) *Prasadbhog*. (vii) Unirrigated. (viii) Two hand weedings after planting. (ix) N.A. (x) 8.12.1949.

2. TREATMENTS .

1. Cowdung at 100 md./ac.
2. A/S at 200 lb./ac.
3. Ammo. Phos. at 240 lb./ac.
4. Control.

Treatments applied last year.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 34'×16.5'. (b) 32.5'×15.0'. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1948-49 to 1949-50. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2035 lb./ac.
(ii) 254 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2144
2.	1759
3.	2312
4.	1927
S.E./mean	= 127.0 lb./ac.

Crop :-Paddy (*Sali*). Ref :-As. 49 (2).

Site :-Rice Expt. Stn., Titabar. Type :-'M'.

Object :—To study the effect of manures applied before planting and before flowering on the yield of *Sali* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 26.8.1949. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of planting. (c) 6 md./ac. (d) 9" both sides. (e) 4. (v) Nil. (vi) *Prasadbhog*. (vii) Unirrigated. (viii) Two weedings after planting. (ix) N.A. (x) 19.12.1949.

2. TREATMENTS :

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

(1) 3 manures : M_1=Cowdung at 100 md./ac., M_2=A/S at 200 lb./ac. and M_3=Ammo. Phos. at 240 lb./ac.

(2) 2 times of application : T_1=Before planting and T_2=Before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 66'×7.5'. (b) 65.25'×6.75'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1949-50 to 1950-51. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3006 lb./ac.
(ii) 189.4 lb./ac.
(iii) Effect of M and interaction M × T are highly significant.
(iv) Av. yield of grain in lb./ac.

Control =3190 lb./ac.

	M_1	M_2	M_3	Mean
T_1	3152	2856	2979	2996
T_2	3140	2992	2732	2955
Mean	3146	2924	2856	2976

S.E. of M marginal means = 54.6 lb./ac.
S.E. of T marginal means = 66.9 lb./ac.
S.E. of body of table = 94.7 lb./ac.

Crop :-Paddy (*Sali*). Ref. :-As. 50 (5)/49(2).
Site :-Rice Expt. Stn., Titabar. Type :-'M'.

Object :—To study the residual effect of manures and fertilizers applied before flowering and before planting on the next Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy (c) As under treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 1.7.1950/12.8.1950 to 14.8.1950. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of transplanting. (c) 2 md./ac. (d) 9" between and within lines. (e) 4. (v) Nil. (vi) *Prasadbhog*. (vii) Unirrigated. (viii) Two hand weedings. (ix) N.A. (x) 12.12.1950 to 13.12.1950.

2. TREATMENTS :

All combinations of (1) and (2)+ a control.
(1) 3 manures : M_1= Cowdung at 100 md./ac., M_2=A/S at 200 lb./ac. and M_3=Ammo. Phos. at 240 lb./ac.
(2) 2 times of application : T_1=Before planting and T_2=Before flowering.
Treatments applied during last year.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 66'×7.5'. (b) 65.25'×6.75'. (v) Yes. 4.5" around (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1949-50 to 1950-51. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2977 lb./ac.
(ii) 148.4 lb./ac.
(iii) Only "control *vs* treatments" effect is highly significant.

(iv) Av. yield of grain in lb./ac.

Control =3007 lb./ac.

	M_1	M_2	M_3	Mean
T_1	3016	2878	2937	2944
T_2	2848	3007	3155	3003
Mean	2932	2943	3046	2974

S.E. of T marginal means = 42.83 lb./ac.
S.E. of M marginal means = 52.45 lb./ac.
S.E. of body of table = 74.18 lb./ac.

Crop :- Paddy (*Sali*). **Ref :- As. 52(6).**

Site :- Rice Expt. Stn., Titabar. **Type :- 'M'.**

Object : —To study the effect of C/N against A/S and cowdung.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* Paddy. (c) No manuring. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 12.7.1952. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of transplanting. (c) 6 md./ac. (d) 9" both sides. (e) 4. (v) No. (vi) *Prasadbhog*. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 9.12.1952 to 12.12.1952.

2. TREATMENTS :

1. C/N at 40 lb./ac. of N.
2. A/S at 40 lb./ac. of N.
3. Cowdung at 40 lb./ac of N.
4. Control.

Manures were broadcast.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 66'×14.25'. (b) 64.5'×12.75'. (v) Yes ; 9" both sides. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) —. (c) —. (v) (a) Nil. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 2827 lb./ac.
(ii) 176.3 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2807
2.	2781
3.	2860
4.	2860
S.E./mean	=88.14 lb./ac.

Crop :- Paddy (1st crop). Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.
Centre :- Agartala (Tripura). Type :- 'M'.

Object :— I (a) (ii) To study the effect of different levels and sources of N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Alluvial (undifferentiated)—loam—*p*H. 5.5. (iii) Nil. (iv) N.A (v) N.A. (vi) June-July. (vii) Unirrigated. (viii) N.A. (ix) 99″. (x) November-December.

2. TREATMENTS :

O =Control.
N_1 =A/S at 20 lb./ac. of N.
N_2 =A/S at 40 lb./ac. of N.
N''_1=Urea at 20 lb./ac. of N.
N''_2=Urea at 40 lb./ac. of N.
All fertilizers applied two days before planting.

3. DESIGN

(i) and (ii) Eleven community project centres, representing the entire paddy growing tract, 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) Yield of paddy. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	1976
N_1	2336
N_2	2450
N_1''	2268
N_2''	2364
G.M.	2279
S.E./mean	50.19
No. of expts.	71

Crop :- Paddy (1st crop). Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.
Centre :- Agartala (Tripura). Type :- 'M'.

Object :—I (b) (ii) To study the effect of different levels and types of N and P.

1. BASAL CONDITIONS :

(i) (a) N A. (b) N.A. (c) N.A. (ii) Alluvial (undifferentiated) loam *p*.H. 5.5 (iii) Nil. (iv) N.A. (v) N.A. (vi) June-July. (vii) Unirrigated. (viii) N.A. (ix) 99″. (x) November-December.

2. TRERATMENTS :

O=Control.
P=20 lb./ac. of P_2O_5 as Super.
N_1P=A/S at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
N_2P=A/S at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
N''_1P=Urea at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
N''_2P=Urea at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
All fertilizers applied two days before planting.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire paddy growing tract 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) Yield of paddy. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	1990
P	2222
N_1P	2359
N_2P	2343
$N_1''P$	2301
$N_2''P$	2409
G.M.	2271
S.E./mean	45.25
No. of expts.	63

Crop :- Paddy (1st crop). Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.
Centre :- Agartala (Tripura). Type :- 'M'.

Object :—IV (ii) To study the effects of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Alluvial (undifferentiated) loam. *p*.H. 5.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) June-July. (vii) Unirrigated. (viii) N.A. (ix) 99". (x) November-December.

2. TREATMENTS :

O=Control.
N =A/S at 40 lb./ac. of N
NP_1 =A/S at 40 lb./ac. of N+Super at 20 lb./ac. of P_2O_5.
NP_2 =A/S at 40 lb./ac. of N+Super at 40 lb./ac. of P_2O_5.
NP''_1=A/S at 40 lb./ac. of N+Ammo. Phos at 20 lb./ac. of P_2O_5.
NP''_2=A/S at 40 lb./ac. of N+Ammo. Phos at 40 lb./ac. of P_2O_5.
All fertilizers applied two days before planting.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire paddy growing tract 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) Yield of paddy. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	2148
N	2584
NP_1	2617
NP_2	2733
NP''_1	2792
NP''_2	2731
G.M.	2601
S.E./mean	63.35
No. of expts.	47

Crop :- Paddy (*Sali*). Ref :- As. 51(3).

Site :- Rice Expt. Stn., Titabar. Type :- 'MV'.

Object :—To study the effect of types of varieties with or without manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sali paddy (*Prasadbhog*). (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) Date of sowing 21.6.51. ; date of planting 7.8.1951. to 10.8.1951. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method. (c) 6 md./ac. (d) 9" both sides. (e) 4. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings after planting. (ix) N.A. (x) 3.12.1951 to 25.12.1951.

2. TREATMENTS :

Main-plot treatments :

2 levels of manures : M_0=Control and M_1=Cowdung at 200 lb./ac.

Sub-plot treatments :

6 varieties : V_1=*Prasadbog*, V_2=*Landumra*, V_3=*Swarnsail* V_4=*Hathisali*, V_5=S. 747 and V_6= S.C. 406 (b)/93.1.

Manures and seeds broadcast and thoroughly mixed with soil during preparation of land.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9'×66'. (sub-plot size). (b) 7.5'×64.5'. (v) Yes. 9" alround. (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1951—1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2089 lb./ac.

(ii) (a) 563.8 lb./ac.

(b) 198.7 lb./ac.

(iii) Manures and varieties differ significantly while interaction is not significant.

(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
M_0	1767	1908	1953	1646	1708	1897	1813
M_1	2375	2296	2510	2203	2369	2544	2383
Mean	2071	2102	2232	1925	2039	2220	2098

S.E. of difference of two

1. M marginal means = 162.8 lb./ac.
2. V marginal means = 99.3 lb./ac.
3. V means at the same level of M = 140.5 lb./ac.
4. M means at the same level of V = 207.2 lb./ac.

— —

Crop :- Paddy (*Sali*). Ref :- As. 52(7)/51(3).

Site :- Rice Expt. Stn., Titabar. Type :- 'MV'.

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

1. BASAL CONDITIONS ;

(i) (a) Nil. (b) *Sali* Paddy. (c) Cowdung at 100 md./ac. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 28.6.52. Date of transplanting : 25.8.1952. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of transplanting. (c) 6 md /ac. (d) Between and within lines-9". (e) 4. (v) Nil. (vi) As per treatments. (vii) irrigated. viii) Two hand weedings. (ix) N.A. (x) 15.12.1952 to 23.12.1952.

2. TREATMENTS :

Main-plot treatments :

2 levels of manure : M_0=Control (no manure) and M_1=Cowdung at 100 md./ac.

Sub-plot treatments :

6 varieties : V_1=*Prasadbhog*, V_2=*Landumra*, V_3=*Swarnsail*, V_4=*Hathisali*, V_5=S. 747 and V_6=S.C. 406 (b)/93-1.

Manures and seeds broadcast and thoroughly mixed with soil during preparation of land.

3. DESIGN :

(i) Spilt-plot. (ii) (a) 2 main-plots/block; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9′×66′ (sub-plot size). (b) 7.5′×64.5′. (v) Yes : 9″ alround. (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1951-52 to 1953-54. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2819 lb./ac.

(ii) (a) 153.8 lb./ac.

(b) 225.8 lb./ac.

(iii) Manures and varieties differ highly significantly while interaction is significant.

(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
M_0	2656	2656	2792	2431	3454	2792	2630
M_1	3017	3129	3217	2701	2814	3174	3009
Mean	2837	2892	3005	2566	2634	2982	2819

S.E. of difference of two

1. M marginal means = 44.4 lb./ac.
2. V marginal means =112.9 lb./ac.
3. V means at the same level of M =159.7 lb./ac.
4. M means at the same level of V =152.4 lb./ac.

Crop :- Paddy (*Sali*). **Ref :- As. 53(5)/52(7)/51(3).**

Site :- Rice Expt. Stn., Titabar. **Type :- 'MV'.**

Object :—To study the effect of different varieties with or without manure (residual effect).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 26.7.1953. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method. (c) 5md./ac. (d) 9″ both sides (e) 4. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings after planting. (ix) 72.65″. (x) 1.1.1954 to 10.1.1954.

2. TREATMENTS

Main-plot treatments :

2 manures : M_0=Control and M_1=100 md./ac. of cowdung.

Sub-plot treatments :

6 varieties : V_1=*Prasadbhog*, V_2=*Landumra*, V_3= *Swarnasail* V_4=*Hathisali*, V_5=S. 747 and V_6=S.C. 406 (b)/93-1.

Manures applied last year.

3. DESIGN

(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9′×66′. (b) 7.5′×64.5′. (v) 9″ alround. (vi) Yes.

4. GENERAL :

(i) Fair (no lodging). (ii) Nil. (iii) Yield of grain. (iv) (a) 1951—1954. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3660 lb./ac.

(ii) (a) 1564.6 lb./ac.

(b) 517.2 lb./ac.

(iii) The effect of variety alone is significant.

(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
M_0	3172	3080	2837	3659	3103	3126	3163
M_1	4446	3983	3612	4446	4145	4307	4156
Mean	3809	3531	3224	4052	3624	3716	3660

S.E. of difference of two

1. M marginal means =451.6 lb./ac.
2. V marginal means =258.6 lb./ac.
3. V means at the same level of M =365.8 lb./ac.
4. M means at the same level of V =561.6 lb./ac.

Crop :- Paddy. **Ref :- As. 48(12).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To investigate whether continuous cropping reduces the fertility of the soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) As per treatments. (iv) (a) Ploughing followed by laddering and weeding. (b) *Aus* by broadcast and *Sali* by transplanting. (c) to (e) N.A. (v) N.A. (vi) *Aus* paddy ; type M 142 (*Koimurali*) medium (1st crop) ; *Sali* —S. 22 (*Lati Sali*)-medium (2nd crop). (vii) Unirrigated. (viii) N.A. (ix) 121.20" (Feb. to Aug. 1948). (x) *Aus* on 29.6.1948 ; 12.7.1948, 1.8.1948 and 21.8.8.1948. *Sali* from 28.11.1948 to 3.12.1948.

2. TREATMENTS :

Aus (1st crop)
Time of sowing.
T_1=24.3.1948.
T_2=13.4.1948.
T_3= 3.5.1948.
T_4=23.5.1948.

Sali 2nd crop (Sown on 4.6.1948)
Time of transplanting.
T_1=15.7.1948.
T_2=26.7.1948.
T_3=21.8.1948.
T_4= 9.9.1948.

Aus T_1 and T_2 were sown dry and T_3, T_4 were sown wet.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 63'×13.5' (b) 1/54.88 ac. (v) N.A. (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Few plots were slightly affected by caseworms. (iii) Grain yield (iv) (a) 1946—1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

1st Crop (*Aus* Paddy).

(i) 1148 lb./ac.

(ii) 190.3 lb./ac.

(iii) Treatments differ highly significantly.

2nd Crop (*Sali* Paddy).

(i) 1718 lb./ac.

(ii) 308.5 lb./ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	1487
T_2	1092
T_3	1037
T_4	977
S.E /mean	= 77.7 lb./ac.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	1487
T_2	1921
T_3	1826
T_4	1635
S.E./mean	= 125.9 lb./ac.

Crop :- Paddy. **Ref :- As. 49(5)/48(12).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To investigate whether continuous cropping reduces fertility of the soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) *Aus* Paddy sowing as per treatments. *Sali* Paddy sowing on 30.6.1949 and 24.7.1949 ; Planting as per treatments. (iv) (a) Ploughing followed by laddering and weeding. (b) *Aus*-broadcasted, *Sali*-transplanted. (c) 1st crop 100 lb./ac. for dry and 80 lb./ac. for wet. (d) 2nd crop : 9" both ways. (e) 4. (v) N.A. (vi) *Aus* M 142 (*Roimurali*) medium (wet crop) ; *Sali* S.22 (*Lati sali*) medium (2nd crop) (vii) Unirrigated. (viii) N.A. (ix) 105.79". (x) *Aus* paddy : 9.7.1949 ; 19.7.1949, 26.7.1949 and 20.8.1949. *Sali* paddy : 3.12.1949. to 15.12.1949.

2. TREATMENTS :

Aus Paddy (sowing)	*Sali* Paddy (time of planting.)
T_1=24.3.1949.	T_1=30.7.1949.
T_2=13.4.1949.	T_2= 5.8.1949.
T_3= 3.5.1949.	T_3=22.8.1949.
T_4=23.5.1949.	T_4= 2.9.1949.

For *Aus* paddy, T_1 and T_2 were sown dry and T_3, T_4 were sown wet.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 63'×13.5'. (b) 1/54.88 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) During *Sali* season only T_1 plots were affected with rice caseworms. No control measures taken. (iii) Grain yield. (iv) (a) 1946—1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

1st Crop (*Aus*)

(i) 1103 lb./ac.

(ii) 184.5 lb./ac.

(iii) Treatments differ significantly.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	1590
T_2	872
T_3	1043
T_4	907
S.E./mean	= 75.3. lb./ac.

2nd Crop (*Sali*)

(i) 2216 lb./ac.

(ii) 197.6 lb./ac.

(iii) Treatments differ significantly.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	2334
T_2	2382
T_3	2069
T_4	2080
S.E./mean	= 80.7 lb./ac.

Crop :- Paddy. Ref :- As. 48(7).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To ascertain the best seed rate for dry and wet sowing of *Asra* Paddy (2nd year).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Sown dry on 1.4.1948. and wet on 19.5.1948. (iv) (a) 8 ploughings followed by laddering and weeding. (b) Sown by broadcasting. (c) As under treatments. (d) and (e) N.A. (v) 100 md./ac. of cowdung. (vi) Ar. 1 *Sali bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 127.61" (May to December 1948). (x) 31.12.1948.

2. TREATMENTS :

Main-plot treatments :

2 methods of sowing : S_1=Dry sowing ; S_2=Wet sowing.

Sub-plot treatments :

4 seed rates : R_1=20 seer/ac. R_2=40 seer/ac. R_3=60 seer/ac. and R_4=80 seer/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) a) 17'×8'. (b) 17'×8'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1946—1950. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2730 lb./ac.

(ii) (a) 615.2 lb./ac.

(b) 678.7 lb./ac.

(iii) Main-plot and sub-plot treatment effects are not significant. Interaction is significant.

(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
S_1	3283	3403	2394	2418	2875
S_2	2082	2530	2819	2907	2584
Mean	2682	2967	2606	2662	2730

S.E. of difference of two

1. main-plot treatment means =217.5 lb./ac.
2. sub-plot treatment means =339.2 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =479.9 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =469.1 lb./ac.

Crop :- Paddy. Ref :- As. 49(9).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To ascertain the best seed rate for dry and wet sowing of *Asra* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Sown dry on 9.4.1949 and wet on 5.5.1949. (iv) (a) 8 ploughings followed by laddering and weeding. (b) and (c) As under treatments. (d) and (e) N.A. (v) 100 md./ac. of cowdung (vi) Ar. 1 *Sail bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 115.32" (May to December 1949). (x) 11.1.1950 to 15.1.1950.

2. TREATMENTS :

Main-plot treatments :

2 methods of sowing : S_1=Dry sowing, S_2=Wet sowing.

Sub-plot treatments :

4 seed rates : R_1=20 seer/ac., R_2=40 seer/ac., R_3=60 seer/ac. and R_4=80 seer/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 17′×8′. (b) 17′×8′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946 to 1950. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3 24 lb./ac.
(ii) (a) 1165.8 lb./ac.
(b) 312.7 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	3467	3539	3795	3651	3613
S_2	3211	3403	3435	3691	3435
Mean	3339	3471	3615	3671	3524

S.E. of difference of two

1. main-plot treatment means =412.0 lb./ac.
2. sub-plot treatment means =156.4 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =221.1 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =454.5 lb./ac.

Crop :- Paddy. **Ref :- As. 50(8).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To ascertain the best seed rate for dry and wet sowing of *Asra* Paddy (3rd year).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay-loam. (b) Refer soil analysis, Karimganj. (iii) Sown dry on 14.4.1950 and wet on 23.4.1950. (iv) (a) 8 ploughings followed by laddering and weeding. (b) and (c) As per treatments. (d) and (e) N.A. (v) 100 md./ac. of cowdung (vi) Ar. 1 *Sali bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 135.29″. (x) Dry on 2.1.1951 : Wet on 11.1.1951.

2. TREATMENTS :

Main-plot treatments :—

2 methods of sowing : S_1=Dry sowing ; S_2=Wet sowing.

Sub-plot treatments :—

4 seed rates : R_1=20 sr./ac., R_2=40 sr./ac. R_3=60 sr./ac. and R_4=80 sr./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 17′×8′. (b) 17′×8′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946 to 1950. (b) Yes. (c) N.A. (v) (a)a nd (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2758 lb./ac.
(ii) (a) 318.8 lb./ac.
(b) 415.1 lb./ac.
(iii) Main-plot treatment effect is highly significant, while other effects are not significant.
(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
S_1	2146	2266	2674	2338	2356
S_2	2995	3379	3147	3115	3159
Mean	2570	2823	2911	2726	2758

S.E. of difference of two
1. main-plot treatment means =112.7 lb./ac.
2. sub-plot treatment means =207.6 lb./ac.
3. sub-plot treatment means at the same level of main plot treatment =293.5 lb./ac.
4. main-plot treatment means at the same level of sub plot treatment =278.1 lb./ac.

Crop :- Paddy. **Ref :- As. 48 (9).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To find out best spacing and number of seedlings per hole for *Asra* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 5.5.1948 ; transplanting on 23, 24.6.1948. (iv) (a) Ploughing followed by laddering and weeding. No. of ploughings N.A. (b) Transplanting. (c)—. (d) and (e) As per treatments. (v) N.A. (vi) Ar.—1 (*Sali bodal*)—(medium). (vii) Unirrigated. (viii) N.A. (ix) 127.01" (May to Dec. 1948). (x) 30.12.1948.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 spacings :- S_1=6", S_2=9", and S_3=12" (both ways).
(2) No. of seedlings/hole :- R_1=2, R_2=4 and R_3=6.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 15'×9'. (b) 15'×9'. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2058 lb./ac.
(ii) 323.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
S_1	2065	1906	2389	2120
S_2	2259	1775	2178	2071
S_3	1752	2162	2033	1982
Mean	2025	1948	2200	2058

S.E. of marginal means = 93.4 lb./ac.
S.E. of body of table =161.9 lb./ac.

Crop :- Paddy. Ref :- As. 49 (7).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To find out best spacing and no. of seedlings per hole for *Asra* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 6.5.1949/ 17.6.1949. (iv) (a) Ploughing followed by laddering and weeding. No. of ploughings-N.A. (b) Transplanting. (c)—. (d) and (e) As per treatments. (v) N.A. (vi) Ar. 1 *Sali Bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 115.82″. (x) 18.1.1950.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings : S_1=6″, S_2=9″ and S_3=12″ (both ways).

(2) No. of seedlings/hole : R_1=2, R_2=4 and R_3=6.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 15′×9′. (b) 15′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. and (vii) Nil.

5. RESULTS :

(i) 1717 lb./ac.

(ii) 302.6 lb./ac.

(iii) None of the effects is significant.

(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
S_1	1906	1755	1775	1812
S_2	1730	1830	1714	1758
S_3	1669	1387	1689	1582
Mean	1768	1657	1726	1717

S.E. of marginal means = 87.3 lb./ac.

S.E. of body of table =151.3 lb./ac.

Crop :- Paddy. Ref :- As. 48(8).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To find out whether transplanting of *Asra* Paddy has any advantage over broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Karimganj. (iii) Broadcasted on 1.4.48., transplanted on 23.6.1948. (iv) (a) Ploughing followed by laddering and weeding. No. of ploughings—N.A. (b) As per treatments. (c) Broadcasting—40 seer/ac. (d) In transplanting—9″ both ways. (e) 3. (v) N.A. (vi) Ar. 1 *sali bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 127.01″. (May to Dec.). (x) 20.12.1948.

2. TREATMENTS :

1. Broadcasting.
2. Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 27.75′×6.75′. (b) 27.75′×6.75′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946-47 to 1949-50. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2205 lb./ac.
(ii) 234.3 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2411
2.	2000
S.E./mean	= 95.65 lb./ac.

Crop :- Paddy. **Ref :- As. 49(8).**
Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To find out whether transplanting of *Asra* Paddy has any advantage over broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Broadcasted on 9.4.1949 ; transplanted on 15.5.1949. (iv) (a) Ploughing followed by laddering and weeding. No. of ploughings is not available. (b) As per treatments. (c) Broadcasting-40 seer/ac. (d) In case of transplanting, spacing 9″ both ways. (e) 3. (v) N.A. (vi) Ar. 1 *Sali Bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 115.82″. (x) 16.1.1950.

2. TREATMENTS :

1. Broadcasting.
2. Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 27.75′×6.75′. (b) 27.75′×6.75′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) (vii) Nil.

5. RESULTS :

(i) 3010 lb./ac.
(ii) 420.2 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3298
2.	2721
S.E./mean	= 171.5 lb./ac.

Crop :-Paddy. Ref :-As. 48 (13).

Site :-Rice Expt. Stn., Karimganj. Type :-'C'.

Object :—To find out whether broadcasting of *Sali* Paddy has any advantage over transplanting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Broadcasted on 24.6.1948 ; Transplanted on 25.7.1948. (iv) (a) Ploughing followed by laddering and weeding. (b) Broadcasted and transplanted. (c) 100 lb./ac. (d) 9″ both ways. (e) 4. (v) N.A. (vi) S.C. 412. 56 *Swarnasail* (medium). (vii) Unirrigated. (viii) N.A. (ix) 65.65″. (July to December, 1948) (x) 7.2.1948 and 8.12.1948.

2. TREATMENTS :

1. Broadcasting.
2. Transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) and (b) 63′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1947 to 1948. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3260 lb./ac.
(ii) 144.9 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2534
2.	3986
S.E./mean	=59.2 lb./ac.

———

Crop :-Paddy. Ref :-As. 48 (6).

Site :-Rice Expt. Stn., Karimganj. Type :-'C'.

Object :—To find out the optimum seed rate for dry sowing by broadcasting of *Aus* Paddy (2nd year).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 26.3.1948. (iv) (a) N.A. (b) Broadcasting. (c) As under treatments. (d) and (e) N.A. (v) N.A. (vi) M 142 (med). (vii) Unirrigated. (viii) Nil. (ix) 99.08″ (February to July, 1948). (x) 3.7.1948 and 6.7.1948.

3. TREATMENTS :

Seed rates :

1. 60 lb./ac.
2. 80 lb./ac.
3. 100 lb./ac.
4. 120 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 30′×13.5′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (one plot damaged by cattle). (iii) Grain yield. (iv) (a) 1947—1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1389 lb./ac.
(ii) 194.0 lb /ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1239
2.	1420
3.	1457
4.	1441
S.E./mean	=97.0 lb./ac.

Crop :- Paddy. Ref :- As. 49 (10).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To find out optimum seed rate for dry sowing in broadcasted *Aus* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (iii) 26.3.1949. (iv) (a), (b) N.A. (c) As per treatments. (d) and (e) N.A. (v) N.A. (vi) M-142 *Koimurali* (medium). (vii) Unirrigated. (viii) Nil. (ix) 99.58". (x) 2.7.1949 to 3.7.1949.

2. TREATMENTS :

Seed rates :
1. 60 lb./ac.
2. 80 lb./ac.
3. 100 lb./ac.
4. 120 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 30'×13.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1287 lb./ac.
(ii) 144.2 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1286
2.	1262
3.	1254
4.	1345
S.E./mean	= 72.1 lb./ac.

Crop :- Paddy. Ref :- As. 48 (10).

Site :- Rice Expt. Stn., Karimganj. Type :- 'C'.

Object :—To ascertain the optimum age of seedlings for *Asra* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 2nd, 9th and 16th May, 1948/27.6.1948. (iv) (a) Ploughing followed by laddering and weeding. (b) Transplanting. (c)—. (d) 9" both ways. (e) 3. (v) N.A. (vi) Ar. 1 *sali Bodal* (medium). (vii) Unirrigated. (viii) N.A. (ix) 127.01". (x) 2.1.1949 and 3.1.1949.

2. TREATMENTS

Ages of seedlings.

1. 6 weeks.
2. 7 weeks.
3. 8 weeks.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) 30′×15′. (b) 1/104.5 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2104 lb./ac.
(ii) 77.84 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2215
2.	2017
3.	2080
S.E./mean	= 34.81 lb./ac.

Crop :- Paddy. **Ref :- As. 49(6).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To ascertain the optimum age of seedlings for *Asra* Paddy (3rd year).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Sown in seed bed 2nd, 9th, 16th May, 1949/27.6.49. (iv) (a) Ploughing followed by laddering and weeding. (c) N.A. (d) 9″ both ways. (e) 3. (v) N.A. (vi) Ar. 1 (*Sali bodal*). (vii) Unirrigated. (viii) N.A. (ix) 115.82″ (March to December 1949). (x) 7.1.1950 to 10.1.1950.

2. TREATMENTS :

Age of seedlings.

1. 6 weeks
2. 7 weeks
3. 8 weeks

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) 30′×15′. (b) 1/104.5 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2092 lb./ac.
(ii) 169.8 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2082
2.	2071
3.	1973
S.E./mean	=75.9 lb./ac.

Crop :- Paddy. **Ref :- As. 50(7).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To study the effect of growing *Aus* Paddy after Pulse, Oilseeds and Potato.

1. BASAL CONDITIONS :

(i) (a) As under object of the experiment. (b) Pulse, oilseeds, potato. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 4.4.1950. (iv) (a) Ploughing followed by laddering and weeding. (b) Broadcast. (c) 10 lb./ac. (d) and (e) —. (v) N.A. (vi) M 142 (*Koimurali*) medium. (vii) Unirrigated. (viii) N.A. (ix) 98.33" (Feb. to July, 1950). (x) 8.7.1950 to 10.7.1950.

2. TREATMENTS :

Previous crops sown in *Rabi* season :—

1. *Kalai*
2. *Mung*
3. Peas
4. Mustard
5. Potato
6. Fallow

Aus paddy broabcast in *Kharif* season.

3. DESIGN :

(i) L. Sq. (ii) (a) 6. (b) —. (iii) 6. (iv) (a) and (b) 16×11'. (v) Nil. (vi) Yes.

4 GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2151 lb./ac.
(ii) 203.8 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2120
2.	2112
3.	1926
4.	2240
5.	2359
6.	2149
S.E./mean	=83.2 lb./ac.

Crop :- Paddy. **Ref :- As. 53(8).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object :—To find out how far dibbling would be more advantageous and economic than broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 20.5.1953. (iv) (a) 8 ploughings followed by laddering. (b) and (c) Broadcasting at 30 seer/ac. ; dibbling at 10 seer/ac. (d) In dibbling—plant to plant 2" and line to line 6". (e) N.A. (v) 100 md./ac. of cowdung during ploughing. (vi) M 142 *Koimurali* (early *Aus*). (vii) Unirrigated. (viii) As per treatments. (ix) 147.03". (x) 19.8.1953 to 28.8.1953 and 24.8.1253 to 25.8.1953.

2. TREATMENTS :

1. Broadcasting and no weeding.
2. Broadcasting and one weeding.
3. Dibbling and no weeding.
4. Dibbling and one weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 66′×10′. (b) 64′×8′. (v) 2′ left from all sides as border rows. (vi) Yes

4. GENERAL :

(i) N.A. (ii) Nil. (iii) General growth and grain yield. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nii.

5. RESULTS :

(i) 2479 lb /ac.
(ii) 485.1 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of graln in lb./ac.

Treatment	Av. yield
1.	2535
2.	2879
3.	2311
4.	2191
S.E./mean	= 242.5 lb./ac.

———

Crop :- Paddy. **Ref :- As. 53(10).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'C'.**

Object —To study the Japanese method and Indigenous method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of cowdnng. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 29.6.1953 and 30.6.1953, transplanted from 12.8.1953 to 17.8.1953, (iv) (a) 8 ploughings (country ploughing) followed by laddering. (b) and (c) Seed rate in seed bed (1) 6. md./ac. (2) 5. md./ac. (d) (1) 9″ and (2) 10″ either way (e) 4. (v) For (1) 100 md./ac. of cowdung ; for (2) the seed bed was manured with cowdung at 1 md. per 25 sq. ft. and then with manure mixture, A/S and B.M. in the ratio 1 : 1 at 1 lb. per 25 sq. ft. The plots were manured with cowdung at 300 md./ac. Manure mixture (A/S and B.M. in the ratio 1 : 1) was applied at 200 lb./ac. at the time of puddling and one month after transplanting. (vi) S.C. 412-56 *Swarnasail* (medium). (vii) Unirrigated. (viii) (1) One weeding only (2) Two weeks (July after transplanting—one weeding. One month before flowering—One weeding and one mulching. (ix) 66.59″. to Dec. 1953). (x) 12.12.1953 to 15.12.1953.

2. TREATMENTS :

1. **Indigenous method :**
2. **Japanese method :**

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) —. (iii) 6. (iv) (a) 60′9″×15′9″ and 60′10″×15′10″. (b) 60′×15′ for both. One row kept on all sides. (vi) Yes

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3421 lb./ac.
(ii) 184.5 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac,

Treatment	Av. yield
1.	3408
2.	3433
S.E./mean	= 75.34 lb./ac.

Crop :- Paddy (*Ahu*). Ref :- As. 49(18).

Site :- Res. Farm, Kokilamukh. Type :- 'C'.

Object :—To determine the effect of time of sowing and seed rate on *Ahu* Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a) N.A. (b) Broadcasting. (c) As per treatments. (d) and (e)—. (v) N.A. (vi) *Rangadasia.* (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 31.5.1949, 21.6.1949, 12.7.1949 and 2.8.1949.

2. TREATMENTS :

Main-plot treatments :

4 times of sowing : T_1=15.2.1949, T_2=6.3.1949, T_3=26.3.1949 and T_4=15.4.1949.

Sub-plot treatments :

4 seed rates : R_1=20 sr./ac., R_2=30 sr./ac., R_3=40 sr./ac. and R_4=50 sr./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) 48′×168′. (iii) 4. (iv) (a) 42′×12′ (b) 40′×10′. (v) Yes, 1′ all round. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1949-N.A. (b) No. (c) No. (v) (a), (b) N.A (vi) and (vii) Nil.

5. RESULTS :

(i) 1201 lb./ac.
(ii) (a) 138.0 lb./ac.
(b) 78.0 lb./ac.
(iii) Main-plot treatments differ significantly. Sub-plot treatment effect and interaction are not significant.
(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
T_1	1361	1402	1429	1171	1341
T_2	1055	1157	1171	1293	1169
T_3	1344	1259	1280	1225	1277
T_4	953	1089	1035	994	1018
Mean	1178	1227	1229	1171	1201

S.E. of difference of two

1. main-plot treatment means =48.8 lb./ac.
2. sub-plot treatment means =27.6 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =55.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =68.0 lb./ac.

Crop :- Paddy (*Ahu* & *Sali*). Ref :- As. 48(4).

Site :- Rice Expt. Stn., Titabar. Type :- 'C'.

Object :—To study the deletrions effect of double cropping on soil.

BASAL CONDITIONS :

(i) (a) *Ahu* followed by *Sali*. (b) *Sali* paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) As per treatments, (iv) (a) One ploughing and laddering with the help of bullocks. (b) *Ahu* paddy was broadcasted ; *Sali* transplanted. (c) 80 lb /ac. for *Ahu*. (d) 9″ both sides for *Sali* paddy. (e) 4 for *Sali*. (v) Nil. (vi) *Ahu* 86-*Rangadasia* : *Sali* S.L. 834-1 *Prasadbhog*. (vii) *Sali* unirrigated, *Ahu* irrigated. (viii) Two weedings after planting. (ix) N.A. (x) As per treatments.

2. TREATMENTS :

Treatments are the four time factors as given below :
Sowing dates for *Ahu* : (T_1=15.3.1948 ; T_2=4.4.1948 ; T_3=24.4.1948 T_4=14.5.1948).
Sowing dates for *Sali* in seed bed : (T_1=24.5.1948 ; T_2=22.6.1948 ; T_3=6.8.1948 ; T_4=21 8.1948).
Transplanting dates for *Sali* paddy : (T_1=12.7.1948 ; T_2=23.7.1948 ; T_3=6.8.1948 ; T_4=21.8 1948).
Harvesting dates for *Ahu* : (T_1=28.6.1948 ; T_2=9.7.1948 ; T_3=22.7.1948 ; T_4=9.8.1948).
Harvesting dates for *Sali* (T_1=2.12.1948 ; T_2=3.12.1948 ; T_3=4.12.1948 ; T_4=5.12.1948).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 63′×13.5′. (b) 62.25′×12.75′. (v) 4.5′ on both sides. (vi) Yes.

4. GENERAL :

(i) Fair (no lodging). (ii) Nil. (iii) Yield of grain. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

For *Ahu* Paddy.

(i) 613.1 lb./ac.
(ii) 139.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	941.0
T_2	874.1
T_3	423.0
T_4	214.4
S.E./mean	= 56.7 lb./ac.

For *Sali* Paddy

(i) 2015 lb./ac.
(ii) 310.8 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	2475
T_2	2089
T_3	1698
T_4	1797
S.E./mean	= 126.9 lb./ac.

Crop :-Paddy (*Sali and Ahu*). **Ref :-As. 49 (3).**
Site :-Rice Expt. Stn., Titabar. **Type :-'C'**

Object :—To study the deletrions effect of double cropping on soil.

1. BASAL CONDITIONS :

(i) (a) *Ahu* followed by *Sali*. (b) *Sali* paddy. (c) No manuring. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) As per treatments. (iv) (a) One ploughing and laddering with the help of bullocks. (b) *Ahu* broadcasted ; *Sali* transplanted in line. (c) 80 lb./ac. for *Ahu*. (d) 9″ both sides for *Sali*. (e) 4 for *sali*. (v) Nil. (vi) *Ahu* As. 86 *Rangadasia* ; *Sali* S.L. 834-1 *Prasadbhog*. (vii) Unirrigated ; *Ahu* irrigated. (viii) Two weedings after planting. (ix) N.A. (x) As per treatments.

2. TREATMENTS

Treatments are the four time factors as given below :
Sowing dates for *Ahu* (T_1=15.3.1949 ; T_2=4.4.1949 ; T_3=24.4.1949 ; T_4=14.5.1949.)
Sowing dates for *Sali* (T_1=26.5.1949 ; T_2=20.6.1949 ; T_3=30.6.1949 ; T_4=12.7.1949.)
Dates of transplanting for *Sali* paddy (T_1=13.7.1949 ; T_2=27.7.1949 ; T_3=12.8.1949 ; T_5=24.8.1949.)
Dates of harvesting for *Ahu* (T_1=23.6.1949 ; T_2=5.7.1949 ; T_3=23.7.1949 ; T_4=8.8.1949.)
Dates of harvesting for *Sali* (T_1, T_2=6.12.1949 ; T_3, T_4=7.12.1949.)

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 63′×13.5′. (b) 62.25′×12.75′. (v) 4.5″ both sides. (vi) Yes.

4. GENERAL :

(i) Fair (no lodging). (ii) The *Ahu* paddy was badly damaged by stemborers, caseworms and rice hispa. Precautions were taken to save the crop from further damage. Rice bugs also appeared as usual in July and August and damaged the late *Ahu* and early *Sali* crop, but the damage was not appreciable due to control measures taken in time. (iii) Yield of grain. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

For *Ahu* Paddy :

(i) 582.9 lb./ac.
(ii) 175.8 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	682.5
T_2	750.0
T_3	310.4
T_4	588.8
S.E./mean	=71·7 lb./ac.

For *Sali* Paddy :

(i) 2089 lb./ac.
(ii) 183.3 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
T_1	2177
T_2	2277
T_3	2204
T_4	1697
S.E./mean	=73.7 lb./ac.

Crop :-Paddy (*Sali*). Ref :-As. 53 (4).

Site :-Rice Expt. Stn., Titabar. Type :-'CM'.

Object :—To observe the difference in yield between Japanese method of cultivation and country method of cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) No manuring. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 31.7.1953. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of planting. (c) 4 md./ac. for country method and 1.5 md./ac. for Japanese method. (d) 10″ both sides in Japanese method and 9″ both sides in country method. (e) 4 for country method and 1 for Japanese method. (v) F.Y.M. at 50 md./ac. to seed-bed. (vi) *Landumra*. (vii) Unirrigated. (viii) Two weedings. (ix) 72.65″. (x) 24.12.1953.

2. TREATMENTS :

1. **Japanese method :** Manuring at 200 md./ac. of cowdung before puddling. After final preparation of land, A/S at 100 lb./ac. and B.M. at 100 lb./ac. was applied.
2. **Country method :** No manuring.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 31.5′×16.5′. (b) 30′×15′. (v) 9″ both sides. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953 to 1955 (b) Yes. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6007 lb./ac.
(ii) 485.1 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	6173
2.	5841
S.E./mean	=198.0 lb./ac.

Crop :- Paddy. Ref :- As. 48(11).

Site :- Rice Expt. Stn., Karimganj. Type :- 'CV'.

Object :—To investigate the best time of transplanting the recommended strains of *Sali* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) Sown on 1.6.1948 ; 21.6.1948 ; 11.7.1948 ; 31.7.1948 and transplanted on 5th to 25th July, 14th Aug. 3rd and 23rd Sept. (iv) (a) Ploughing followed by laddering and weeding. (b) Transplanting. (c) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) N.A. (ix) 65.65" (July to December 1948). (x) 16,17,26, 28.12.1948.

2. TREATMENTS :

Main-plot treatments :

5 Time of planting : T_1=5th July, T_2=25th July, T_3=14th August, T_4=3rd September and T_5=23rd September.

Sub-plot treatments :

6 varieties : V_1=S.22, V_2=S.C. 94—47, V_3=5.155, V_4=5.156, V_5=S.C. 412-56 and V_6=Andrew *Sali*

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 9'×9'. (b) 1/640ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1945 to 1948. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 2232 lb./ac.
(ii) (a) 321.4 lb./ac.
(b) 282.6 lb./ac.
(iii) All the effects are highly significant.
(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
T_1	1990	2310	1310	1900	2120	2580	2035
T_2	2590	2610	1270	2320	2880	2590	2368
T_3	2670	2310	2010	2540	2700	2490	2453
T_4	2320	2430	2110	2410	2760	2660	2448
T_5	2090	1320	1470	1760	2120	2380	1857
	2332	2196	1634	2186	2516	2530	2232

S.E. of difference of two

1. main-plot treatment means =131.2 lb./ac.
2. sub-plot treatment means =126.4 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =119.8 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment.=204.7 lb./ac.

Crop :- Paddy (*Sali*). Ref :- As. 48(3).

Site :- Rice Expt. Stn., Titabar. Type :- 'CV'.

Object :—To ascertain the best variety of Paddy for late planting, along with spacings and different rate of seedlings per hole.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Titabar. (iii) 26.7.1948, 10.9.1948 to 15.9.1948. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of transplanting. (c) 6 md./ac. (d) and (e) As per treatments. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings. (ix) N.A. (x) 16.12.1948 to 19.12.1948.

2. TREATMENTS :

Main-plot treatments :

6 varieties: V_1=S.C. (308)—51 ; V_2=S.126 ; V_3=S.L. 70 (a), V_4=S.L. 834—1, V_5=S.L. 533 ; V_6 =S. 36 (*Hatisali*).

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 spacings : S_1=6″, S_2=9″ and S_3=12″.

(2) No. of seedlings/hole : R_1=4, R_2=6 and R_3=8.

3. DESIGN :

(i) Split-plot (ii) (a) 6 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 9′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1946-47 to 1948-49. (b) Yes. (c) N.A. (v) (a) Karimganj, Rice Exptl. Stn. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2550 lb./ae.

(ii) (a) 708.8 lb./ac.

(b) 482.9 lb./ac.

(iii) Main-plot treatment effect and interaction main×sub not significant, while sub-plot treatment effect is highly significant.

(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean	R_1	R_2	R_3
S_1	2768	2592	2634	2905	2754	3078	2789	2699	2863	2805
S_2	2728	2186	2451	2495	2613	2936	2568	2626	2535	2546
S_3	2354	2330	2243	2135	2157	2529	2291	2082	2222	2572
Mean	2617	2369	2443	2512	2508	2848	2550	2469	2540	2641
R_1	2609	2210	2394	2483	2403	2714	2469			
R_2	2608	2132	2549	2438	2609	2899	2540			
R_3	2634	2767	2385	2614	2512	2930	2641			

S.E. of difference of two

1. V marginal means =167.1 lb./ac.
2. S or R marginal means = 80.5 lb./ac.
3. S or R means at the same level of V =197.1 lb./ac.
4. V means at the same level of R or S =325.0 lb./ac.
5. S.E. of body of S×R table = 98.6 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 52 (3).**

Site :- Govt. Agri. Farm, Jorhat. **Type :- 'D'.**

Object :—To study the effect of seed treatments in Controlling helminthosporium disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Cowdung at 100 md./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Jorhat. (iii) 25.3.1952. (iv) (a) 6 ploughings, two harrowings. (d) to (e) N.A. (v) 100 md./ac. of cowdung at the time of preparation of land. (vi) *Rangadasia.* (vii) Unirrigated. (viii) One weeding. (ix) App. 50″. (x) 2.7.1952.

2. TREATMENTS :

1. Yellow cuprocide.
2. Agrosan G.N.
3. Control.

Seed treated with 10 tolas per 82 lb. of seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 32′×17′. (b) 30′×15′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) No lodging. Good growth. (ii) Helminthosporium disease noticed. No post sowing treatment given. Seeds treated before sowing. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1137 lb./ac.
(ii) 257.5 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1327
2.	1104
3.	979
S.E./mean	= 105.5 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 53 (20).**

Site :- Govt. Agri. Farm, Jorhat. **Type :- 'D'.**

Object :—To study the effect of different weedicide on the yield of *Ahu* Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Mustard. (c) 150 md. of cowdung/ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Jorhat. (iii) 9.4.1953. (iv) (a) 5 times ploughing, 2 times laddering and hoeing. (b) Broadcasting. (c) 100 lb./ac. (d)—. (e)—. (v) Nil. (vi) *Rangadasia* (med.). (vii) Unirrigated. (viii) N.A. (ix) 34.76″. (x) 16.7.1953.

2. TREATMENTS :

1. Spraying Dicoton at 2 gallons in 100 gallons of water.
2. Spraying Extra A, at 3 lb. in 40 gallons of water.
3. Control.

Hand spraying 3 times at an interval of 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 54′×23′. (iii) 4. (iv) (a) 23′×18′. (b) 20′×15′. (v) Yes : 1½′ around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1953 to 1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6911 lb./ac.
(ii) 255.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	8516
2.	6490
3.	5728
S.E./mean	= 128.0 lb./ac.

Croy :- Paddy (*Ahu*). Ref :- As. 52(4).

Site :- Rice Expt. Stn., Karimganj. Type :- 'D'.

Object :—To study the effect of seed treatments in controling helminthosporium disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Oilcake at 15 md./ac. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 1.4.1952. (iv) (a) 6 ploughings and two harrowings. (b) to (e) N.A. (v) 15 md./ac. of oilcake applied broadcast at the time of preparation of the land and ploughed under. (vi) *Kaimurali*. (vii) Unirrigated. (viii) One weeding. (ix) Approximately 60 inches. (x) 20.7.1952.

2. TREATMENTS :

1. Yellow cuprocide.
2. Agrosan G.N.
3. Control.

Seed treated with 10 totals per 82 lb. of seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 68′×35′. (b) 66′×33′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) No lodging, good growth. (ii) Helminthosporium disease observed. No post sowing treatment given. Seeds treated before sowing. (iii) Yield of grain. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Jorhat. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1878 lb./ac.
(ii) 226.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1857
2.	1926
3.	1850
S.E./mean	=92.40 lb./ac.

———

Crop :- Paddy (*Sali*). Ref :- As. 52(5).

Site :- Rice Expt. Stn., Karimganj. Type :- 'D'.

Object :—To study the effect of seed treatments in controling helminthosporium disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 150 md./ac. of oilcake (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 7.8.1952. (iv) (a) 6 ploughings, two harrowings. (b) to (e) N.A. (v) 15 md./ac. of oilcake, applied broadcast at the time of preparation of the land. (vi) *Swarnasail*. (vii) Unirrigated. (viii) Nil. (ix) Approx 70 to 80 inches. (x) 10.12.1952.

2. TREATMENTS :

1. Yellow cuprocide.
2. Perenox.
3. Control.

(1) and (2) dissolved in water, 4 ozs. in 10 gallons, seeds dipped for 30 minutes.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 68′×35′. (b) 66′×33′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Helminthosporium disease noticed. No control measures taken. (iii) Yield of paddy. (iv) (a) 1952 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2271 lb./ac.
(ii) 252.4 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2333
2.	2194
3.	2285
S.E./mean	=103.0 lb./ac.

Crop :- Paddy (*Ahu*). **Ref :- As. 53(3)/52(5).**

Site :- Rice Expt. Stn., Karimganj. **Type :- 'D'.**

Object :—To study the effect of seed treatments in controling helminthosporium disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 15 md./ac. of oilcake. (ii) (a) Clay loam. (b) Refer soil analysis, Karimganj. (iii) 7.3.1953. (iv) (a) 6 ploughings, two harrowings. (b) to (e) N.A. (v) 15 md./ac. of oilcake. At the time of preparation of the soil, broadcast. (vi) *Kaimurali*. (vii) Unirrigated. (viii) One weeding. (ix) Approx. 60". (x) 21.7.1953.

2. TREATMENTS :

1. Agrosan G.N.
2. Copper Carbonate.
3. Hot water.
4. Control.

(1) and (2) at 10 tolas per 82 lb. of seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) 32'×17'. (b) 30'×15'. (v) 1' alround. (vi) N.A.

4. GENERAL :

(i) Good, no lodging. (ii) Helminthosporium noticed. No steps taken to control as seed treatment was done. (iii) Yield data. (iv) (a) 1952 to 1953. (b) Yes. (c) N.A. (v) (a) Jorhat. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 501.6 lb./ac.
(ii) 47.47 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	522.9
2.	507.8
3.	442.7
4.	533.2
S.E /mean	=16.8 lb./ac.

Crop :- *Matikalai*. **Ref :- As. 48(19).**

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

Object :—To study the effect of different manures on *Matikalai* in acidic soil (under limed and unlimed condition).

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy—*Matikalai*. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvial soil, Sandy loam, Acidic. (b) Refer soil analysis, Jorhat. (iii) 25.9.1948. (iv) (a) Three times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e)—. (v) Cowdung at 100 md./ac. (vi) Lacal (medium). (vii) Unirrigated. (viii) Nil. (ix) 2.26". (x) 15.12.1948.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac.
Applied just before the sowing of previous *Ahu* crop.

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M. at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac.+Cowdung at 100 md./ac. and M_6=B.M. at 6 md./ac.+Cowdung at 100 md./ac.

Manures broadcasted before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield data. (iv) (a) 1945—1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 171 lb./ac.
(ii) (a) 55.0 lb./ac.
(b) 45.0 lb./ac.
(iii) Manure effect is highly significant, other effects are significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	74	268	107	12	95	210	29	114
L_1	169	462	239	50	227	252	198	228
Mean	122	365	173	31	161	231	113	171

S.E. of difference of two

1. main-plot treatment means =16.97 lb./ac.
2. sub-plot treatment means =24.89 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =35.10 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =36.70 lb./ac.

———

Crop :- *Matikalai.* Ref :- As. 49 (15).

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

Object :—To study the effect of different manures on *Matikalai* in acidic soil (under limed and unlimed condition).

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy-*Matikalai.* (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvaial soil, Sandy loam, Acidic. (b) Refer soil analysis, Jorhat. (iii) 19.9.1949 and 20.9.1949. (iv) (a) Three times ploughing followed by laddering. (b) Broadcasting. (c) N.A. (d) and (e)—. (v) Cowdung at 100 md./ac. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac. Applied just before the sowing of previous *Ahu* crop.

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M. at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac.+Cowdung at 100 md./ac. and M_6=B.M. at 6 md./ac.+Cowdung at 100 md./ac.

Manures broadcasted before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a), (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield data. (iv) (a) 1945 to 1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 123 lb./ac.
(ii) (a) 150.0 lb./ac.
(b) 46.0 lb./ac.
(iii) Only manure effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	50	153	54	29	37	78	95	71
L_1	161	243	182	116	128	190	206	175
Mean	105	198	118	72	83	134	151	123

S.E. of difference of two

1. main-plot treatment means =46.2 lb./ac.
2. sub-plot treatment means =26.6 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =37.5 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =58.0 lb./ac.

Crop :- *Matikalai.* Ref :- As. 50 (11)/49 (15)/48 (19).

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

Object :—To study the effect of different manures on *Matikalai* in Acidic soil (under limed and unlimed condition).

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy-*Matikalai.* (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvial soil, sandy loam, acidic. (b) Refer soil analysis, Jorhat. (iii) 15.9.1950 and 16.9.1950. (iv) (a) Three times ploughing, followed by laddering. (b) Broadcasting, (c) N.A. (d) and (e)—. (v) Cowdung at 100 md./ac. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slacked lime at 20 md./ac. applied just before the sowing of previous *Ahu* crop.

Sub-plot treatments :

7 levels of manures : M_0=Control, : M_1=Cowdung at 100 md./ac., M_2=Oilcake at 800 lb./ac., M_3=B.M.at 3 md./ac., M_4=B.M. at 6 md./ac., M_5=B.M. at 3 md./ac.+Cowdung at 100 md./ac. and M_6=B.M. 6 md./ac.+Cowdung at 100 md./ac.

Manures broadcasted before the date of sowing and mixed with the soil.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) Bad. (ii N.A. (iii) Yield data. (iv) (a) 1945—1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 57 lb./ac.
(ii) (a) 96.0 lb./ac.
(b) 39.0 lb./ac.
(iii) Only manures effect is highly significant, while others 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	Mean
L_0	12	66	25	12	29	41	50	34
L_1	29	140	62	21	37	107	165	80
Mean	21	103	43	17	33	74	107	57

S.E. of difference of two
1. main-plot treatment means =29.6 lb./ac.
2. sub-plot treatment means =22.5 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment. =31.8 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment. =41.8 lb./ac.

Crop :- *Matikalai* (*Rabi*). **Ref :-** As. **49(19).**

Site :- Res. Farm, Kokilamukh. **Type :-** 'M'.

Object :—To determine the effect of different nitrogenous manures on the yield of *Matikalai*.

1. BASAL CONDITIONS :

(i) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 3.10.1949. (iv) (a) N.A. (b) Broadcasting. (c) 8 sr./ac. (d) and (e) —. (v) N.A. (vi) MK-18. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 6.1.1950.

2. TREATMENTS :

1. Control.
2. Cowdung (40 lb./ac. of N).
3. Mustard oilcake (40 lb./ac. of N).
4. A/S (40 lb./ac. of N).

Treatments broadcasted 5 days before the date of sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 48′×42′. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) Yes. 1′ around. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1809 lb./ac.
(ii) 402.0 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of *matikalai* in lb./ac.

Treatment	Av. yield
1.	1489
2.	2207
3.	1864
4.	1675
S.E./mean	= 164.0 lb./ac.

Crop :- *Matikalai*. Ref :- As. 49(13).

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To find out the most suitable form of nitorgenous fertilizer for the *Matikalai* crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 3.10.1949. (iv) (a) to (e) N.A. (v) N.A. (vi) M.K-18. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung at 40 lb./ac. of N.
3. Mustard oilcake at 40 lb /ac. of N.
4. A/S at 40 lb./ac. of N.

Treatments broadcasted 5 days before the date of sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 176.3 lb./ac.
(ii) 31.94 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of *matikalai* in lb./ac.

Treatment	Av. yield
1.	145.4
2.	215.2
3.	181.7
4.	163.3
S.E./mean	= 15.97 lb./ac.

———

Crop :- *Matikalai* (*Rabi*). Ref :- As. 48(15).

Site :- Res. Farm, Kokilamukh. Type :- 'C'.

Object :—To determine the best time of sowing and optimum seed rate for *Matikalai*.

1. BASAL CONDITIONS :

(i) (a), (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a) N.A. (b) N.A. (c) As per treatments. (d) and (e) N.A. (v) N.A. (vi) MK—18. (vii) Unirrigated. (viii) N A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 times of sowing : T_1=22nd Aug., T_2=9th Sept., T_3=27th Sept. and T_4=15th October.

Sub-plot treatments :

4 seed rates : R_1=4 sr./ac. R_2=6 sr./ac. R_3=8 sr./ac. and R_4=10 sr./ac.

3. DESIGN :

(i) Split-plot ; (ii) (a 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42′×12′ (b) 40′×10′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) The incidence of leaf-spot disease was much greater in the last two sowings. (iii) Yield of *Matikalai*. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a) No. (b) —. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 307 lb./ac.

(ii) (a) 199.6 lb./ac.

(b) N.A.

(iii) Effect of time of sowing alone is significant.

(iv) Av. yield in lb./ac.

	R_1	R_2	R_3	R_4	Mean
T_1	663	503	442	503	528
T_2	537	534	364	398	458
T_3	201	160	190	211	190
T_4	31	60	73	48	53
Mean	358	314	267	290	307

S.E. of marginal means of time of sowing =49.91 lb./ac.

Other S.E.s—N.A.

Crop :- *Matikalai* (*Rabi*). Ref :- As. 48(20).

Site :- Res. Farm, Kokilamukh. Type :- 'C'.

Object :—To find out the optimum seedrate of *Matikalai*.

1. BASAL CONDITIONS :

(i) (a), (b), (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) N.A. (b) Broadcasting. (c) As per treatments. (d) and (e) —. (v) N.A. (vi) MK—18. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Seedrate— 4 sr./ac.
2. Seedrate— 6 sr./ac.
3. Seedrate— 8 sr./ac.
4. Seedrate—10 sr./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 42′×48′. (iii) 4. (iv) (a) 42′×12′. (b) 40′×10′. (v) Yes. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 528 lb./ac.

(ii) 74 lb./ac.

(iii) Treatments differ significantly.

(iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	664
2.	504
3.	442
4.	504
S.E./mean	=37 lb./ac.

Crop :- *Matikalai (Rabi).* Ref :- As. 49(12).

Site :- Res. Farm, Kokilamukh. Type :- 'C'.

Object :—To determine the best time of sowing and the optimum seedrate for *Matikalai.*

1. BASAL CONDITIONS :

(i) (a), (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a), (b) N.A. (c) As under treatments. (d) and (e) N.A. (v) N.A. (vi) Type No. 18. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 times of sowing : T_1=22nd August, T_2=9th September, T_3=27th September and T_4=15th October.

Sub-plot treatments :

4 seedrates : R_1=4 sr./ac., R_2=6 sr./ac., R_3=8 sr./ac. and R_4=10 sr./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42′×12′. (b) 40′×10′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of *Matikalai.* (iv) (a) 1947—1949. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 186.4 lb./ac.

(ii) (a) N.A.

(b) N.A.

(iii) Time of of sowing effect and interaction between time of sowing and seedrate are significant.

(iv) Av. yield in lb./ac.

	R_1	R_2	R_3	R_4	Mean
T_1	427.3	318.6	296.1	296.5	334.6
T_2	295.0	337.5	290.9	361.0	321.1
T_3	42.0	88.4	90.3	48.6	67.3
T_4	12.2	21.6	25.1	31.2	22.5
Mean	194.1	191.5	175.6	184.3	186.4

S.E.s—N.A.

Crop :- *Mung.* Ref :- As. 48(14).

Site :- Res. Farm, Kokilamukh. Type :- 'C'.

Object :—To determine the best time of sowing and the optimum seedrate for *Mung.*

1. BASAL CONDITIONS :

(i) (a), (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments (iv) (a), (b) N.A. (c) As per treatments. (d) and (e) N.A. (v) N.A. (vi) Type No. 51. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 times of sowing : T_1=22nd August, T_2=9th September, T_3=27th September and T_4= 15th October.

Sub-plot treatments :

4 seedrates : T_1=4 sr./ac., R_2=6 sr./ac., R_3=8 sr./ac. and R_4=10 sr./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42′×12′. (b) 40′×10′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of *Mung*. (iv) (a) 1947—1949. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 547 lb./ac.
(ii) (a) 350.0 lb./ac.
(b) 74.2 lb./ac.
(iii) All the effects are significant.
(iv) Av. yield in lb./ac.

	R_1	R_2	R_3	R_4	Mean
T_1	1200	1166	1153	1282	1200
T_2	677	779	881	923	815
T_3	99	170	194	211	169
T_4	1	1	2	2	2
Mean	494	529	558	605	547

S.E. of difference of two

1. main-plot treatment means = 123.80 lb./ac.
2. sub-plot treatment means = 26.24 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 52.48 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 131.82 lb./ac.

Crop :- *Mung* (*Rabi*). **Ref :- As. 48(21).**

Site :- Res. Farm, Kokilamukh. **Type :- 'C'.**

Object:—To find out the optimum seedrate for *Mung*.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) N.A. (b) Broadcasting. (c) As per treatments. (d) and (e) —. (v) N.A. (vi) N.A. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Seed rate :
1. 4 sr./ac.
2. 6. sr./ac.
3. 8 sr./ac.
4. 10 sr./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 48′×42′. (iii) 4. (iv) (a) 42′×12′. (b) 40′×10′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of *Mung*. (iv) (a) Not contd. (b) —. (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1201 lb./ac.
(ii) 109 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield in lb./ac.

Treatment.	Av. yield.
1.	1201
2.	1167
3.	1154
4.	1283
S.E./mean	=56.0 lb./ac.

Crop :- Potato. **Res :- As. 52(10).**

Site :- Paddy Res. Stn., Upper Shillong. **Type :- 'M'.**

Object :—To find out the response to different doses of C/N.

1. BASAL CONDITIONS :

(i) (a) 4 year rotation : Potato—Maize Soyabean—Millet—Fallows. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Upper Shillong. (iii) 7.4.1952. (iv) (a) Two ploughings with turnwrest plough followed by laddering and harrowing etc. (b) Planted in furrows. (c) N.A. (d) 2' apart with 1' from tuber to tuber. (e) N.A. (v) 100 md./ac. of F.Y.M. was applied in furrows at the time of planting. (vi) Local Khasi (medium variety). (vii) Unirrigated. (viii) One interculture was given to all plots. (ix) 117.37". (x) 25.11.52.

2. TREATMENTS :

1. Control.
2. C/N at 250 lb./ac.
3. C/N at 500 lb./ac.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 40'×22'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Affected by late blight during the growth period and only one spraying was given to all plots against the disease. (iii) Yield of potato. (iv) (a) No. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1456 lb./ac.
(ii) 500.7 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1	1304
2.	1385
3.	1680
S.E./mean	=268.6 lb./ac.

Crop :-Potato. Ref :-As. 53 (11).

Site :-Paddy Res. Stn., Upper Shillong. Type :-'M'.

Object :—To find out the effect of C/N and A/S on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) 4 year rotation -Potato—Maize—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Upper Shillong. (iii) 14 4.1953. (iv) (a) 2 ploughings with turnwrest plough followed by laddering, harrowing etc. (b) Planted in furrows. (c) N.A. (d) 2' between furrows and 1' between tubers. (e) N.A. (v) F.Y.M. at 100 md./ac was applied to all plots at the time of planting in the furrows. (vi) Local Khasi (medium). (vii) Unirrigated. (viii) Two intercultures were given. (ix) 82.11". (x) 8.12.1953.

2. TREATMENTS :

1. 200 lb./ac. of A/S.
2. 400 lb./ac. of A/S.
3. 250 lb./ac. of C/N.
4. 500 lb /ac. of C/N.
5. Control.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight. Two sprayings were given with perenox. (iii) Yield of potato. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4559 lb./ac.
(ii) 1238 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield
1.	5349
2.	5498
3.	3506
4.	3786
5.	4658
S.E./mean	=553.7 lb./ac.

Crop :-Sugarcane (2nd ratoon). Ref :-As. 50 (3).

Site :-Sugarcane Res. Stn., Jorhat. Type :-'M'.

Object :—To study the manurial requirements of 2nd ratoon Sugarcane.

1. BASAL CONDITIONS :

(i) a) Sugarcane plant—Sugarcane ratoon—Fallow. (b) Sugarcane 1st ratoon. (c) Nil. (ii) (a) Reddish sandy loam of the old alluvium lying on a hard greyish yellow sub soil. Shallow varying from 3" to 6" depth. (b) Refer soil analysis, Jorhat. (iii) 1.4.1950. (iv) (a) Burning trashes and breaking ridges. (b) to (e) N.A. (v) No. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing, 2nd earthing and striping. (ix) 90.23". (x) 7th to 8th March 1951.

2. TREATMENTS :

1. No manure.
2. 150 md./ac. of cowdung (60 lb./ac. of N)+600 lb./ac. of oilcake (30 lb./ac. of N).
3. 300 md./ac. of cowdung (120 lb /ac. of N)+1200 lb./ac. of oilcake (60 lb./ac. of N).
4. 450 md./ac. of cowdung (180 lb /ac. of N)+1800 lb./ac. of oilcake (90 lb./ac. of N).

Cowdung was applied on 2nd to 4th April 1950 and oilcake was applied in two equal doses on 17th to 20th June 1950 and 10th to 14th August 1950 in trenches.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Crop was very poor due to unfavourable seasonal conditions. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) Only one year. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10.13 ton/ac.
(ii) 1.07 ton/ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	6.31
2.	8.42
3.	12.31
4.	13.47
S.E./mean	=0.54 ton./ac.

Crop :- Sugarcane. **Ref :- As. 51(1).**

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

Object :—To study the effect of organic and inorganic manures and their combinations on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy loam of old alluvium, lying on a hard greyish yellow sub-soil. Shallow [varying from 3″ to 6″ depth. (b) Refer soil analysis, Jorhat. (iii) 3rd May to 10th May, 1951. (iv) (a) One ploughing with tractor, followed by two harrowing, trenching (b) planted in trenches. (c) to (e) N.A. (v) 100 md. cowdung (40 lb/ac. of N). on 29th Jan. 1951 to 30th Jan. 1951. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing, 2nd earthing, striping. (ix) 75.93″. (x) 21st Feb. to 29th Feb. 1952.

2. TREATMENTS :

Cowdung was applied in one dose on 29th to 30th Jan. 1951 and A/S in one dose on 16th to 18th June, 1951, in trenches.

1. No manure.
2. 150 md./ac. of cowdung (60 lb./ac. of N).
3. 300 md./ac. of cowdung (120 lb./ac. of N).
4. 300 lb./ac. of A/S (60 lb./ac. of N).
5. 600 lb./ac. of A/S (120 lb./ac. of N).
6. 75 md./ac of cowdung +150 lb./ac. of A/S (60 lb./ac. of N).
7. 150 md./ac. of cowdung +300 lb./ac. of A/S (120 lb./ac. of N).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Growth of crop was fair although it was planted late. (ii) N.A. (iii) Yield of cane. (iv) (a) 1951 to 1952. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Residual effect studied in expt. no. As. 52(2).

5. RESULTS :

(i) 22.88 ton/ac.
(ii) 2.46 ton/ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	16.52
2.	22.28
3.	24.57
4.	22.79
5.	22.72
6.	23.29
7.	27.97
S.E./mean	= 1.23 ton/ac.

Crop :- Sugarcane. Ref :- As. 52(1).

Site :- Sugarcane Res. Stn., Jorhat. Type :- 'M'.

Object :—To study the effect of organic and inorganic manures and their combinations on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow. (b) Fallow. (c) No. (ii) (a) Reddish sandy loam of old alluvium lying on a hard greyish yellow sub-soil ; shallow varying from 3" to 6" depth. (b) Refer soil analysis, Jorhat. (iii) 20 to 27th March 1952. (iv) (a) Ploughing, harrowing and weeding. (b) and (c) N.A. (d) Row to row 4'. (e) N.A. (v) 100 md./ac. of cowdung, (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing and 2nd earthing and striping. (ix) 105.19". (x) 8 to 10th April, 1953.

2. TREATMENTS :

1. No manure.
2. 150 md./ac. of cowdung (60 lb./ac. of N).
3. 300 lb./ac. of cowdung (120 lb./ac. of N).
4. 300 md./ac. of A/S (60 lb./ac. of N).
5. 6 0 md./ac. of A/S (120 lb./ac. of N).
6. 75 md./ac. of cowdung + 150 lb./ac. of A/S (60 lb./ac. of N).
7. 150 md /ac. of cowdung+300 lb./ac. of A/S (120 lb./ac. of N).

Cowdung was applied in one dose on 3rd to 9th January, 1952 and A/S in one dose on 14th to 23rd July 1952 in trenches.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 49'×32'. (b) 45'×24'. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) The growth of the crop under all the treatments was poor due to poor soil conditions. The response to manures was also not satisfactory. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1951 to 1952. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Residual effect studied in expt. no. As 53 (2).

5. RESULTS :

(i) 11.41 ton/ac.
(ii) 1.28 ton/ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	9.22
2.	10.47
3.	13.30
4.	12.06
5.	10.37
6.	11.85
7.	12.62
S.E./mean	=0.64 ton/ac.

Crop :- Sugarcane (Ratoon). Ref :- As. 52 (2).

Site :- Sugarcane Res. Stn., Jorhat. Type :- 'M'.

Object :—To study the residual effect of organic and inorganic manures applied to Sugarcane crop in the previous year.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow—Sannhemp. (b) Sugarcane (plant). (c) As per treatments. (ii) (a) Reddish sandy loam of old alluvium lying on a hard greyish yellow sub-soil ; shallow varying from 3" to 6" depth. (b) Refer soil analysis, Jorhat. (iii) Date of harvesting of sugarcane plant : 21st to 29th Feb. 1952. (iv) (a) Burning trashes and ridge breaking. (b) to (e) N.A. (v) 100 md./ac. of cowdung. (40 lb./ac. of N) applied on 30th June to 1st July, 1952. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st arthing, 2nd earthing and striping. (ix) 105.19". (x) 16th, 17th, 18th, 19th and 20th March, 1953.

2. TREATMENTS :

Residual effect of :

1. No manure.
2. 150 md./ac. of cowdung (60 lb./ac. of N).
3. 300 md./ac. of cowdung (120 lb /ac. of N).
4. 300 lb./ac of A/S (60 lb./ac. of N).
5. 600 lb./ac. of A/S (120 lb./ac. of N).
6. 75 md./ac. of cowdung+150 lb./ac. of A/S (60 lb./ac. of N).
7. 150 md /ac. of cowdung+300 lb /ac. of A/S (120 lb./ac. of N).

3. DESIGN :

(i) R.B D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL:

(i) The growth of the crop in all treatments appeared to be poor. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1952—53. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12 65 ton/ac.
(ii) 1.20 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	11.80
2.	13.35
3.	12.13
4.	11.47
5.	12.83
6.	13.78
7.	13.18
S.E./mean	= 0.60 ton/ac.

Crop :- Sugarcane (Ratoon). **Ref :- As. 53 (2).**

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

Object :—To study the residual effect of organic and inorganic manures applied to Sugarcane crop in the previous year.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow—Green manure. (b) Sugarcane plant. (c) As per treatments. (ii) (a) Reddish sandy loam of the old alluvium lying on a hard greyish yellow sub-soil, shallow varying from 3″ to 6″ depth. (b) Refer soil analysis, Jorhat. (iii) Date of harvesting of sugarcane plant 8 to 10th April, 1953. (iv) (a) Burning trashes and ridge breaking. (b) to (e) N.A. (v) 100 md. of cowdung (40 lb. of N) to all plots on 3rd, 4th, 5th and 6th June, 1953. (vi) CO.419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing, 2nd earthing and striping. (ix) 73.43″. (x) 23rd, 24th, 25th and 27th February, 1954.

2. TREATMENTS :

1. Control.
2. 150 md./ac. of cowdung (60 lb./ac. of N).
3. 300 md./ac. of cowdung (120 lb./ac. of N).
4. 300 md./ac. of A/S (60 lb./ac. of N).
5. 600 lb./ac. of A/S (120 lb./ac. of N).
6. 75 md./ac. of cowdung (30 lb./ac. of N)+150 lb./ac. of A/S (30 lb./ac. of N).
7. 150 md./ac. of cowdung (60 lb./ac. of N)+300 lb./ac. of A/S (60 lb./ac. of N).

Treatments applied last year.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) The growth of the crop was fair. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1952-53 to 1953-54. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.98 ton/ac.
(ii) 2.44 ton/ac.
(iii) Treatments differ significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	17.02
2.	18.97
3.	19.82
4.	20.98
5.	19.62
6.	19.82
7.	23.61
S.E./mean	= 1.22 ton./ac.

Crop :- Sugarcane. Ref :- As. **50(1)**.

Site :- Sugarcane Res. Stn., Jorhat. Type :- 'M'.

Object :—To study the manurial requirements of 1st ratoon Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant-Sugarcane ratoon-Fallow. (b) Sugarcane plant. (c) No. (ii) (a) Reddish sandy loam of old alluvium lying on a hard greyish yellow sub-soil, shallow varying from 3" to 6" depth. (b) Refer soil analysis, Jorhat. (iii) 26th to 30th January, 1950. (iv) (a) Hoeing, ploughing and trenching, (b) setts planted in trenches. (c) to (e) N.A. (v) No. (vi) CO.419 (late). (vii) Unirrigated. (viii) Weeding, 1st and 2nd earthing and striping. (ix) 90.23". (x) 29th to 30th March, 1951.

2. TREATMENTS:

1. No manure.
2. 150 md./ac. of cowdung+600 lb./ac. of oilcake (90 lb./ac. of N).
3. 300 md./ac. of cowdung+1200 lb./ac. of oilcake (180 lb./ac. of N).
4. 450 md /ac. of cowdung+1800 lb./ac. of oilcake (270 lb./ac. of N).

Manures applied to ratoon canes. No manure applied to cane plant.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 49'×32'. (b) 45'×24'. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) Crop was uniform but extremely poor due to unavoidable seasonal conditions. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1948 to 1950. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7.60 ton/ac.
(ii) 1.14 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	7.58
2.	7.59
3.	7.98
4.	7.72
S.E./mean	=0.57 ton/ac.

Crop :- Sugarcane (Ratoon). **Ref :- As. 50(2).**

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

Object :—To study the manurial requirements of ratoon Sugarcane.

1. BASAL CONDITIONS ;

(i) (a) Sugarcane plant—sugarcane ratoon—Fallow—Sannhemp. (b) Sugarcane plant. (c) No. (ii) (a) Reddish sandy loam of old alluvium lying on a hard greyish yellow sub-soil, shallow varing from 3″ to 6″ depth. (b) Refer soil analysis, Jorhat. (iii) 1.4.1950. (iv) (a) Burning trashes and breaking ridges. (b) to (e) N.A. (v) No. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing, 2nd earthing and striping. (ix) 90.23″. (x) 7th and 8th March 1951.

2. TREATMENTS :

1. Control.
2. 150 md./ac. of cowdung (60 lb./ac. of N)+ 600 lb./ac. of oilcake (30 lb./ac of N)
3. 300 md./ac. of cowdung (120 lb./ac. of N)+1200 lb./ac. of oilcake (60 lb./ac. of N).
4. 450 md./ac. of cowdung (180 lb./ac. of N)+1800 lb./ac. of oilcake (90 lb./ac. of N).

Cowdung was applied in one dose on 12th to 13th July, 1950, oilcake was applied in one dose on 3rd to 7th Aug. 1950. Both were applied in trenches.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) The growth of the crop was very poor due to unfavourable seasonal conditions. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1949—1951. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 8.86 ton/ac.
(ii) 3.12 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	6.73
2.	8.38
3.	11.33
4.	9.01
S.E./mean	=1.56 ton/ac.

Crop :- Sugarcane (Ratoon). **Ref :- As. 51(2).**

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

Object :—To study the manurial requirements of 1st ratoon crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow—Green manure. (b) Sugarcane plant. (c) No. (ii) (a) Reddish sandy loam of the old alluvium lying on a hard greyish yellow sub soil, shallow varying from 3″ to 6″ depth. (b) Refer soil analysis, Jorhat. (iii) 1.4.1951. (iv) (a) Burning trashes and breaking ridges. (b) to (e) N.A. (v) Nil. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing, 2nd earthing and striping. (ix) 75.93″. (x) 18th and 19th March, 1952.

2. TREATMENTS :

1. No manure.
2. 150 md./ac. of cowdung (60 lb./ac. of N)+600 lb./ac. of oilcake (30 lb./ac. of N).
3. 300 md./ac. of cowdung (120 lb./ac. of N)+1200 lb./ac. of oilcake (60 lb./ac. of N).
4. 450 md./ac. of cowdung (180 lb./ac. of N)+1800 lb./ac. of oilcake (90 lb./ac. of N).

Cowdung was applied in trenches in one dose on 20th to 23rd June, 1951 and oilcake in trenches in two equal doses on 21st to 23rd June, 1951 and 17th to 19th July, 1951.

3. DESIGN :

(i) L. Sq. (ii) (a) 4. (b) —. (iii) 4. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) The growth of crop in all the treatments appeared to be poor, particularly on the unmanured plots (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.25 ton/ac.

(ii) 2.91 ton/ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	10.59
2.	14 15
3.	15.36
4.	16.92
S.E./mean	=1.45 ton/ac.

Crop :- Sugarcane. **Ref :- As. 53(15).**

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

Object :—To find out the effect of organic and inoganric manures on variety CO. 419—1st year.

1. BASAL CONDITIONS :

(i) (a) Sugarcane plant—Sugarcane ratoon—Fallow. (b) Fallow. (c) N.A. (iii) (a) Reddish sandy loam of old alluvium. (b) Refer soil analysis, Jorhat. (iii) N.A. (iv) (a) One ploughing followed by two harrowings. (b) Setts are planted in trenches—9″ deep. (c) N.A. (d) between rows 4 ft. (e) N.A. (v) Cowdung at 100 md./ac. (vi) CO. 419 (late). (vii) Rainfed. (viii) Weeding twice and earthing twice (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 12 md./ac.

Sub-plot treatment :

7 levels of manures : M_0=control, M_1=60 lb./ac. of N as cowdung, M_2=120 lb./ac. of N as cowdung, M_3=60 lb /ac. of N as A/S, M_4=120 lb./ac of N as A/S, M_5=60 lb./ac. of N as A/S+30 lb./ac. of N as cowdung and M_6=60 lb./ac. of N as A/S+60 lb./ac. of N as cowdung.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) 98′×224. (iii) 3. (iv) (a) Sub-plot : 49′×32′ ; main-plot : 98′×224′. (b) Sub-plot : 4 ′×24′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of sugarcane. (iv) (a) 1953 to 1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 11.60 ton/ac.

(ii) (a) 2.13 ton/ac.

(b) 1.98 ton/ac.

(iii) N.A.

(iv) Av. yield of cane in ton/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	10.47	11.27	12.30	9.15	10.74	11.73	11.42	11.01
L_1	11.87	14.35	13.47	11.66	12.12	9.70	11.19	12.19
Mean	11.17	12.81	12.88	10.41	11.43	10.72	11.80	11.60

S.E. of difference of two

1. main-plot treatment means =0.65 ton/ac.
2. sub-plot treatment means =1.15 ton/ac.
3. sub-plot treatment means at the same level of main-plot treatment =1.62 ton/ac.
4. main-plot treatment means at the same level of sub-plot treatment =1.64 ton/ac.

Crop :-Sugarcane. **Ref :-As. 53 (1).**

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

Object :—To study organic and inorganic manures and their combinations on Sugarcane in presence and absence of lime.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Reddish sandy loam of the old alluvium lying on a hard greyish yellow sub soil varying from 3″ to 6″ depth. (b) Refer soil analysis, Jorhat. (iii) 23rd to 31st March 1953. (iv) (a) One ploughing by tractor, followed by two harrowings and trenching. (d) Setts planted in trenches 4′ apart. (c) 15,000 setts/ac. (d) and (e) N.A. (v) All plots received a basal application of 100 md./ac. of cowdung (40 lb./ac. of N) on the 13th, 14th, 17th, 21st, 23rd to 25th February 1953. Cowdung was applied in trenches. (vi) CO. 419 (late). (vii) Unirrigated. (viii) Weeding, 1st earthing and 2nd earthing and stripping. (ix) 73.43″. (x) 29th March, 3rd, 5th to 7th and 10th April, 1954.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No Lime and L_1=Lime. (amount of lime N.A.)

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=150 md./ac. of cowdung (60 lb./ac. of N.), M_2=300 md./ac. of cowdung (120 lb./ac. of N), M_3=300 lb./ac. of A/S (60 lb./ac. of N), M_4=600 lb./ac. of A/S (120 lb./ac. of N), M_5=75 md./ac. of cowdung+150 lb./ac. of A/S (60 lb./ac. of N) and M_6=150 md./ac. of cowdung+300 lb./ac. of A/S. (120 lb./ac. of N).

Cowdung was applied in one dose on 13th to 25th February 1953 and A/S was applied in two equal doses on 9th to 18th June 1953 and 5th to 29th August 1953 in trenches.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 49′×32′. (b) 45′×24′. (v) 2 rows. (vi) Yes.

4. GENERAL :

(i) The growth of the crop was fair. There was no lodging. (ii) N.A. (iii) Yield of cane. (iv) (a) 1953 to 1955. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.35 ton/ac.
(ii) (a) 5.96 ton/ac.
(b) 3.21 ton/ac.
(iii) Sub-plot treatments differ significantly. Main-plot treatments and interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	20.50	26.60	29.16	23.93	25.13	24.94	25.21	25.06
L_1	22.23	26.14	26.64	24.30	26.52	26.36	27.30	25.64
Mean	21.36	26.37	27.90	24.11	25.83	25.65	25.35	25.36

S.E of difference of two

1. main-plot treatment means = 1.84 ton/ac.
2. sub-plot treatment means = 1.85 ton/ac.
3. sub-plot treatment means at the same level of main-plot treatment = 2.62 ton/ac.
4. main-plot treatment means at the same level of sub-plot treatment = 3.04 ton/ac.

Crop :-Sugarcane. **Ref :-As. 48 (4).**

Site :-Sugarcane Res. Stn., Jorhat. **Type :-'CV'.**

Object :—To find out the optimum number of setts necessary for planting an acre of land.

1. BASAL CONDITIONS :

(i) (a) Sugarcane (plant)—Sugarcane ratoon—Fallow with sannhemp. (b) Fallow. (c) N.A. (ii) (a) Reddish sandy loam of old alluvium. (b) Refer soil analysis, Jorhat. (iii) 9.2.1948 to 10.2.1948. (iv) (a) One ploughing followed by two harrowings. (b) Setts were planted in trenches 9″ deep. (c) 5,800 to 14,000 setts/ac. (d) Between lines—4′. (e) —. (v) 300 md. /ac. of cowdung (120 lb./ac. of N) was applied on 19.1.1948. to 20.1.1948 and mustard cake at 1000 lb./ac. (50 lb./ac. of N) was applied in two equal doses on 2.2.1948 and 17.6.1948 (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix 74.78″. (v) 8.3.1949 to 10.3.1949.

2. TREATMENTS :

All combinations of (1) and (2) :

(1) 2 varieties: V_1=CO-419 and V_2=CO-421.

(2) 3 methods of planting setts : S_1=Setts planted end to end with 1′ gap between setts, S_2=Setts planted end to end without any gap at 10,000 setts/ac., and S_3=Setts planted eye to eye (overlapping) at 14,000 setts/ac.

3. DESIGN :

(i) R.B.D. Fact. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×32′. (v) 2′ on each side of length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1948-49 to 1950-51. (b) No. (c) N.A. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.26 ton/ac.
(ii) 1.67 ton/ac.
(iii) None of the effects is significant.
(iv) Av. yield of sugarcane in ton/ac.

	S_1	S_2	S_3	Mean
V_1	10.63	12.32	14.49	12.48
V_2	11.28	11.64	13.20	12.04
Mean	10.95	11.98	13.85	12.26

S.E. of marginal mean of V = 0.51 ton/ac.
S.E. of marginal mean of S = 0.62 ton/ac.
S.E. of body of table = 0.88 ton/ac.

Crop :- Sugarcane. Ref :- As. 49(4).

Site :- Sugarcane Res. Stn., Jorhat. Type :- 'CV'.

Object :—To find out the optimum number of setts necessary for planting an acre of land.

1. BASAL CONDITIONS :

(i) (a) Sugarcane (plant)—Sugarcane (ratoon)—G.M. with sannhemp. (b) Sannhemp. (c) Nil. (ii) (a) Reddish sandy loam of old alluvium. (b) Refer soil analysis, Jorhat. (iii) 9,10.2.1949. (iv) (a) One ploughing followed by two harrowings. (b) Setts were planted in trenches 9″ deep. (c) 5800 to 14000 setts/ac. (d) Between lines—4′. (e) N.A. (v) 300 md./ac. of cowdung was applied on 4.1.1949 to 8.1.1949 and 1000 lb./ac. of mustard cake was applied in two equal doses on 19.1.1949 to 20.1.1949 and 26.5.1949 to 28.5.1949. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 96.23″. (x) 26.4.1950 to 29.4.1950.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V_1=CO.419 and V_2=CO.421.

(2) 3 methods of planting setts : S_1=setts planted end to end with 1′ gap between each sett at 5,800 setts/ac.,
S_2=setts planted end to end without any gap at 10,000 setts/ac.,
and S_3=setts planted eye to eye (overlapping) at 14,000 setts/ac.

3. DESIGN :

(i) R.B.D. Fact.. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×32′. (v) 2′ on each side of the plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of Sugarcane. (iv) (a) 1948-49 to 1950-51. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.72 ton/ac.
(ii) 2.29 ton/ac.
(iii) None of the effects is significant.
(iv) Av. yield of sugarcane in ton/ac.

	S_1	S_2	S_3	Mean
V_1	23.51	23.35	26.05	24.30
V_2	23.69	23.32	22.37	23.13
Mean	23.60	23.34	24.21	23.72

S.E. of marginal mean of V =0.661 ton/ac.
S E. of marginal mean of S =0.809 ton/ac.
S.E. of body of table =1.145 ton/ac.

Crop :- Sugarcane. Ref :- As 50(6).

Site :- Sugarcane Res. Stn., Jorhat. Type :- 'CV'.

Object :—To find out the optimum number of setts necessary for planting an acre of land.

1. BASAL CONDITIONS :

(i) (a) Sugarcane (plant)—Sugarcane (ratoon)—Fallow. (b) Fallow. (c) N.A. (ii) (a) Reddish sandy loam of old alluvium. (b) Refer soil analysis, Jorhat. (iii) 13.2.1950 to 15.2.1950. (iv) (a) One ploughing followed by two harrowings. (b) Setts were planted in trenches 9″ deep. (c) 5800 to 14000 setts/ac. (d) Between lines—4′. (e) —. (v) 300 md./ac. of cowdung was applied on 5th to 10th Jan. 1950 and mustard cake at 1000 lb./ac. was applied in 2 equal doses on 24.1.1950 and 3.7.1950 to 5.7.1950. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 90.23″. (x) 31.3.1951 to 2.4.1951.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 2 varieties : V_1=CO.419 and V_2=CO.421.

(2) 3 methods of planting setts : S_1=Setts planted end to end with 1′ gap between each sett at 5,800 setts/ac, S_2=Setts planted end to end without any gap at 10,000 setts/ac, and S_3=Setts planted eye to eye (overlapping) at 14,000 setts/ac.

3. DESIGN:

(i) R.B.D. Fact. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 49′×32′. (b) 45′×32′. (v) 2′ on each side of length. (vi) Yes.

4. GENERAL:

(i) Poor. (ii) N.A. (iii) Yield of cane. (iv) (a) 1948-49 to 1950-51. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 4.30 ton/ac.

(ii) 0.83 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of sugarcane in ton/ac.

	S_1	S_2	S_3	Mean
V_1	4.11	4.39	4.81	4.44
V_2	3.60	4.49	4.37	4.15
Mean	3.86	4.44	4.59	4.30

S.E. of marginal mean of V =0.24 ton/ac.
S.E. of marginal mean of S =0.29 ton/ac.
S.E. of body of table =0.42 ton/ac.

Crop :- Cotton. **Ref :- As. 53(6).**

Site :- Res. Farm, Garo Hills. **Type :- 'D'.**

Object :—To test the efficiency of seed treatment with perenox solution on the yield of seed Cotton and control of black arm.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) Nil. (ii) (a) Red sandy clay soil. (b) Refer soil analysis, Res. Farm, Garo Hills. (iii) Apr. 1953. (iv) (a) Field was prepared by ploughing, laddering and weeding. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) *Arboreum ver. Cornum* ; coarse short staple cotton (medium). (vii) Unirrigated. (viii) Field was weeded during the growing period. (ix) N.A. (x) December 1953.

2. TREATMENTS:

1. Untreated.
2. Treated with perenox solution.

3. DESIGN:

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 10′×20′. (v) N.A (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Pink boll worms. Red bugs. Aphids and Wilt.—spraying was done with Gammaxene and Guserol. (iii) Yield of *kapas* (iv) (a) 1953—1955. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data—N.A.

5. RESULTS:

(i) 37.25 lb./ac.

(ii) 24.01 lb./ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	30.00
2.	44.50
S.E./mean	=9.80 lb./ac.

Crop :- Mustard. **Ref :- As. 51(12).**

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

Object :—To study the effect of manures and lime in acid soil.

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy—Mustard. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 14.11.1951 and 15.11.1951. (iv) (a) Ploughed 4 times followed by laddering. (b) Broadcasting. (c) 3 sr./ac. (d) and (e)—. (v) Nil. (vi) Local (medium). (vii) Unirrigated (viii) N.A. (ix) N.A. (x) 14.2.1952. and 16.2.1952.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac. applied just before previous crop (*Ahu* paddy).

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung (N at 40 lb./ac.), M_2=Oil cake (N at 40 lb./ac), M_3=A.S. N. (N at 40 lb./ac.), M_4=C/N (N at 40 lb./ac.), M_5=Cowdung (N at 80 lb./ac.) and M_6=Cowdung (N at 40 lb./ac.)+Oil cake (N at 40 lb./ac.)

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40'×22'. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 416 lb./ac.

(ii) (a) 149.0 lb./ac.

(b) 60.0 lb./ac.

(iii) Only manure effect is highly significant.

(iv) Av. yield of mustard in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	0	289	25	347	206	602	512	283
L_1	41	578	355	685	635	701	858	550
Mean	21	433	190	516	421	652	685	416

S.E. of difference of two

1. main-plot treatment means =46.0 lb./ac.
2. sub-plot treatment means =34.6 lb./ac.
8. sub-plot treatment means at the same level of main-plot treatment =49.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =64.6 lb./ac.

Crop :- Mustard. Ref :- As. 52 (16).

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

Object :—To study the effect of manures and lime in acid soil.

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy-Mustard. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 17.11.1952 and 18.11.1952. (iv) (a) Ploughing 4 times followed by laddering. (b) Broadcasting. (c) 3 sr./ac. (d) and (e)—. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 16th to 18.2.1953.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No. lime and L_1=Slaked lime at 20 md./ac. applied just beforet he previous crop (*Ahu* Paddy).

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung (N at 40 lb./ac.), M_2=Oilcake (N at 40 lb./ac), M_3=A.S.N. (N at 40 lb./ac.), M_4=C/N (N at 40 lb./ac.), M_5=Cowdung (N at 80 lb./ac.) and M_6=Cowdung (N at 40 lb./ac.)+Oilcake (N at 40 lb./ac.).

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 265 lb./ac.
(ii) (a) 156.0 lb./ac.
(b) 123.0 lb./ac.
(iii) Only manure effect is highly significant. Other effects are not significant.
(iv) Av. yield of mustard in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	17	223	239	107	91	404	355	205
L_1	33	215	396	380	289	396	578	326
Mean	25	219	318	243	190	400	466	265

S.E. of difference of two

1. main-plot treatment means = 48.1 lb./ac.
2. sub-plot treatment means = 71.0 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =100.4 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =104.7 lb./ac.

Crop :- Mustard. Ref :- As. 53 (18).

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

Object :—To study the effect of manures and lime in acid soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Old alluvial, sandy loam and acidic soil. (b) Refer soil analysis, Jorhat. (iii) 17.11.1953 and 18.11.1953. (iv) (a) Ploughing 4 times followed by laddering. (b) Broadcasting. (c) 3 sr./ac. (d) and (e)—. (v) Nil. (vi) Local (medium). (vii) Rainfed. (viii) N.A. (ix) 81.40″ (x) 12.2.1954 and 13.2.1954.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime and L_1=Slaked lime at 20 md./ac. applied just befor previous crop (*Ahu* paddy).

Sub-plot treatments :

7 levels of manure : M_0=Control, M_1=Cowdung (N at 40 lb./ac.), M_2=Oilcake (N at 40 lb./ac.), M_3=A.S.N. (N at 40 lb./ac.), M_4=C/N (N at 40 lb./ac), M_5=Cowdung (N at 80 lb./ac.) and M_6=Cowdung (N at 40 lb./ac.)+Oil cake (N at 40 lb /ac.).

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40′×22′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1951−1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Reasons for no yield for M_0 and M_3 plots under L_0 are N.A.

5. RESULTS :

(i) 153 lb./ac.
(ii) (a) 57.0 lb./ac.
(b) 55.0 lb./ac.
(iii) Only M effect is highly significant.
(iv) Av. yield of mustard in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
L_0	0	132	66	0	33	347	314	127
L_1	26	182	132	99	50	330	429	178
Mean	13	157	99	50	41	338	371	153

S.E. of difference of two

1. main-plot treatment means =18.38 lb./ac.
2. sub-plot treatment means =32.52 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =45.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =46.0 lb./ac.

Crop :- Mustard (*Rabi*). **Ref :- As. 48(17).**
Site :- Res. Farm, Kokilamukh. **Type :- 'M'.**

Object :—To study the effect of N and P_2O_5 on yield.

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy-Mustard. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) 5 times ploughing followed by laddering and weeding. (b) Broadcasting. (c) 3 sr./ac. (d) and (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) Weeding once. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md./ac.
3. Oilcake at 800 lb./ac.
4. Ammo. Phos. at 250 lb./ac.
5. Zeno Phos. at 500 lb./ac.
6. Zeno Phos. (special) at 350 lb./ac.
7. A/S at 200 lb./ac.

Manures broadcast at the time of preparation of land before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) and (b) 40'×22'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 642 lb./ac.

(ii) 43.0 lb./ac.

(iii) Treatments differ highly significantly.

(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	466
2.	495
3.	654
4.	856
5.	594
6.	588
7.	841
S.E./mean	= 17.6 lb./ac.

Crop :- Mustard (*Rabi*). Ref :- As. 49(17)/48(17).

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To study the effect of N and P_2O_5 on yield.

1. BASAL CONDITIONS :

(i) (a) *Ahu* Paddy-Mustard. (b) *Ahu* Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) N.A. (iv) (a) 5 times ploughing followed by laddering and weeding. (b) Broadcasting. (c) 3 sr./ac. (d) and (e)—. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md./ac.
3. Oilcake at 800 lb./ac.
4. Ammo. Phos. at 250 lb./ac.
5. Zeno. Phos. at 500 lb./ac.
6. Zeno Phos. (special) at 350 lb./ac.
7. A/S at 200 lb./ac.

Manures broadcast at the time of preparation of soil before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) and (b) 40'×22'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1034 lb./ac.

(ii) 69.00 lb./ac.

(iii) Treatments differ highly significantly.

(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	879
2.	909
3.	1151
4.	1186
5.	965
6.	914
7.	1206
S.E./mean	= 28.00 lb./ac.

Crop :- Mustard (*Rabi*). Ref :- As. **51(8)**.

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To ascertain the optimum dose of A/S for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulse. (c) Cowdung at 40 md./ac. and oilcake at 15 md./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 17.11.1951. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e) —. (v) Nil. (vi) M. 27 (*Sarson*) (early). (vii) Unirrigated. (viii) Weeding, thinning and earthing once. (ix) 19.17″. (x) 18.2.1952.

2. TREATMENTS:

1. A/S at 100 lb./ac.
2. A/S at 150 lb./ac.
3. A/S at 200 lb./ac.
4. A/S at 250 lb./ac.
5. A/S at 300 lb./ac.
6. Control.

A/S applied 5 days before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, number of tillers and yield. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 1049 lb./ac.
(ii) 101.4 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	1045
2.	1095
3.	1088
4.	1202
5.	1182
6.	682
S.E./mean	=41.4 lb./ac.

Crop :- Mustard (*Rabi*). Ref:- As. **52(11)/51(8)**.

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To ascertain the optimum dose of A/S for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 13.11.1952. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e) — (v) Nil. (vi) M—27 (*Sarson*) (early.) (vii) Unirrigated. (viii) Weeding, thinning and earthing once. (ix) 23. 4″. (x) 16.1.1953.

2. TREATMENTS :

1. A/S at 100 lb./ac.
2. A/S at 150 lb./ac.
3. A/S at 200 lb./ac.
4. A/S at 250 lb./ac.
5. A/S at 300 lb./ac.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Height, number of tillers and yield. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 747 lb./ac.

(ii) 141.4 lb./ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	769
2.	806
3.	841
4.	803
5.	807
6.	457
S.E./mean	=57.7 lb./ac.

Crop :- Mustard (*Rabi*). **Ref :- As. 53(13)/52(11)/51(8).**

Site :- Res. Farm, Kokilamukh. **Type :- 'M'.**

Object :—To ascertain the optimum dose of A/S for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 30.10.1953. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e) —. (v) Nil. (vi) M-27 (*Sarson*) (early). (vii) Unirrigated. (viii) Weeding, thinning and earthing once. (ix) 11.93″.(x) 3.2.1954.

2. TREATMENTS :

1. A/S at 100 lb./ac.
2. A/S at 150 lb./ac.
3. A/S at 200 lb./ac.
4. A/S at 250 lb./ac.
5. A/S at 300 lb./ac.
6. Control.

A/S broadcast 5 days before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Height, number of tillers and yield. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 551.8 lb /ac.

(ii) 88.03 lb./ac.

(iii) Treatments differ highly significantly.

(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	431.2
2.	512.9
3.	658.8
4.	704.6
5.	790.6
6.	212.4
S.E./mean	= 35.90 lb./ac.

Crop :- Mustard (*Rabi*). Ref :- As. 51(9).

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To find out a suitable manure for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Matikalai, Mug*. (c) Cowdung at 40 md./ac. Oilcake at 15 md./ac.. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 22.11.1951. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e) —. (v) Nil. (vi) M-27 (*Sarson*) (early). (vii) Unirrigated. (viii) Weeding, thinning and earthing once before flowering. (ix) 19.17". (x) 20.2.1952.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md./ac.
3. B.M. at 3 md./ac.
4. Oilcake at 800 lb./ac.
5. A/S at 200 lb./ac.
6. Compost at 100 md./ac.

All manures applied in single dose 5 days before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 37'×12' (b) 35'×10'. (v) 1' alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height of the plant, number of tillers and yield. (iv) (a) 1951 to 1953. (b) Yes (c) N.A. (v) (a) and (b) No. (vi) Nil. (vii) Raw data N.A.

5. RESULTS .

(i) 924.9 lb./ac.
(ii) 114.5 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	796.5
2.	865.0
3.	818.9
4.	1051.7
5.	1166.2
6.	851.3
S.E./mean	= 46.6 lb./ac.

Crop :- Mustard (*Rabi*). Ref :- As. 52(12)/51(9).

Site :- Res. Farm, Kokilamukh. Type :- 'M'.

Object :—To find out a suitable manure for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy Loam. (b) Refer soil analysis, Kokilamukh. (iii) 13.11.1952. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e)—. (v) Nil. (vi) M-27 (*Sarson*) (early). (vii) Unirrigated. (viii) Weeding, thinning and earthing once before flowering. (ix) 23.54". (x) 16.2.1953.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md/ac.
3. Oil cake at 800 lb./ac.
4. A/S at 200 lb./ac.
5. B.M. at 250 lb /ac.
6. Compost at 100 md/ac.

All manures applied 5 days before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 37′×12′. (b) 35′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, number of tillers, and yield. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 775 lb./ac.
(ii) 140.2 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	665
2.	666
3.	999
4.	1106
5.	637
6.	581
S.E./mean	= 57.3 lb./ac.

Crop :- Mustard (*Rabi*). **Ref :- 53(14)/52(12)/51(9).**

Site :- Res. Farm, Kokilamukh. **Type :- 'M'.**

Object :—To find out a suitable manure for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 24.10.1953. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 4 sr./ac. (d) and (e)—. (v) Nil. (vi) M-27 (*Sarson*) 'early). (vii) Unirrigated. (viii) Weeding, thinning and earthing once before flowering. (ix) 11.93". (x) 18.1.1954.

2. TREATMENTS :

1. Control.
2. Cowdung at 100 md./ac.
3. Oilcake at 800 lb./ac.
4. A/S at 200 lb./ac.
5. B M. at 250 lb./ac.
6. Compost at 100 md./ac.

All manures applied 5 days before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 37′×12′. (b) 35′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Not Good. (ii) Experiment was badly attacked by 'Sow fly' and controlled by picking and applying gammaxene D.025. (iii) Yield of mustard. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b)—. (vi) Nil. (vii) Data N.A.

5. RESULTS :

(i) 23.98 lb./ac.
(ii) 6.38 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	7.78
2.	18.13
3.	37.58
4.	45.36
5.	15.56
6.	19.45
S.E./mean	=2.60 lb./ac.

Crop :-Mustard (*Rabi*). Ref :- As. 51 (4).

Site :-Res. Farm, Kokilamukh. Type :-'C'.

Object :—To determine the best time of sowing of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Matikalai, Mung*. (c) Oilcake at 13 to 15 md./ac. and cowdung at 30 to 40 md./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a) One ploughing with the help of country plough, hoeing, laddering etc. (b) Mustard seeds were sown in lines. (c) 3 sr./ac. (d) Between and within lines-1' apart. (e) N.A. (v) A/S at 200 lb./ac. mixed with soil broadcasted 5 days before sowing of seed. (vi) M—27 (recommended variety). (vii) Unirrigated. (viii) Weeding and earthing was done two times with the help of *khurpi* and hoe. (ix) 21.28". (x) January and February 1952.

2. TREATMENTS :

Six dates of sowing :

1. 1st October, 1951.
2. 16th October, 1951.
3. 31st October, 1951.
4. 15th November, 1951.
5. 30th November, 1951.
6. 15th December, 1951.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 42'×12'. (b) 40'×10'. (v) 1' alround. (vi) Yes.

4. GENERAL :

(i) Generally plots 2 and 3 were found to have better growth than other plots. Germination and stand 70% to 90%. (ii) Affected by white rust disease in every year. Spraying of *coppu* fungicide at 2 *chhatacs* in two gallons of water was done to control the disease. (iii) Yield of mustard. (iv) (a) 1951 to 1952. (b) Yes. (c) N.A. (v) (a) Nil. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 580.4 lb./ac.
(ii) 202.7 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	309.3
2.	683.9
3.	996.4
4.	927.8
5	447.6
6.	117.6
S.E./mean	=82.76 lb./ac.

Crop :-Mustard (*Rabi*). Ref :-As. 52(18)/51(4).

Site :-Res. Farm, Kokilamukh. Type :-'C'.

Object :—To determine the best time of sowing of Mustard.

1. BASAL CONDITIONS :

(i) (a), (b), (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 8 lb./ac. (d) and (e) N.A. (v) A/S at 200 lb./ac. applied 5 days before sowing. (vi) M—27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 29.1.1953. and 9.2.1953 to 24.2.1953 and 3.3.1953.

2. TREATMENTS :

Sowing dates as follows :

1. 1.10.1952.
2. 16.10.1952.
3. 31.10.1952.
4. 15.11.1952.
5. 30.11.1952.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 60′×42′. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′. (v) 1′ alround (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1951—1952. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 426 lb./ac.
(ii) 94.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av yield in lb /ac.

Treatment	Av. yield
1.	41
2.	220
3.	940
4.	585
5.	343
S.E./mean	=38.0 lb./ac.

Crop :- Mustard. **Ref :- As. 53(12).**

Site :- Res. Farm, Kokilamukh. **Type :- 'C'.**

Object :—To find out the optimum sowing date and seed rate.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Arhar, Mung* and *Matikalai*. (c) Oilcake applied at 13 to 15 md./ac. and cowdung at 30 to 40 md./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) As per treatments. (iv) (a) Land was prepared by country method of ploughing, laddering, harrowing etc. (b) Seeds were sown in lines. (c) As per treatments. (d) Spacing of 1′ between lines. (e) Nil. (v) A/S applied at 200 lb./ac., 5 days before of sowing. (vi) M—27 (*Sarson*) (early). (vii) Unirrigated. (viii) Weeding and earthing were done with *khurpi* and hoeing 12 to 15 days after sowing. (ix) 17.40″. (x) 10.1.1954 to 12.3.1954.

2. TREATMENTS :

Main-plot treatments :

6 times of sowing : T_1=1st Oct., T_2=16th Oct., T_3=31st Oct., T_4=15th Nov., T_5=30th Nov. and T_6=15th Dec. 1953.

Sub-plot treatments :

4 seed rates : S_1=3 sr./ac., S_2=4 sr./ac., S_3=5 sr./ac., and S_4=6 sr./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 8′×12′. (b) 6′×10′. (v) 1′ alround the sub-plot. (vi) Yes.

4. GENERAL :

(i) Growth of the crop in T_1, T_3 and T_5 plots was satisfactory. (ii) During the season mustard saw-fly appeared. The attack was controled by dusting gammaxane. (iii) (1) Yield of mustard seed, Av. height of plants 85.0 Cm. and No. of tillers/plant—6 to 10. (iv) (a) 1953 to 1954. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Hail storm on 26th Dec. 1953 damaged the mustard crop of T_6 plots during the flowering time. (vii) Raw data N.A.

5. RESULTS :

(i) 201.7 lb./ac.
(ii) (a) N.A.
(b) 20.18 lb./ac.
(iii) None of the effects is significant.

(iv) Av. yield of mustard in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
S_1	101.2	297.9	209.9	304.5	94.6	0.0	201.6
S_2	72.4	254.3	311.9	239.5	101.2	0.0	195.9
S_3	65.0	297.9	268.3	297.9	65.0	0.0	198.8
S_4	108.6	297.9	300.4	280.6	65.0	0.0	210.5
Mean	86.8	287.0	272.6	280.6	81.5	0.0	201.7

S.E. of difference of two

1. main-plot treatment means =N.A.
2. sub-plot treatment means = 5.83 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =14.27 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =N.A.

Crop :- Mustard (*Rabi*). **Ref :- As. 52(17).**

Site :- Res. Farm., Kokilamukh. **Type :- 'C'.**

Object :—To determine the effect of rotational cultivation on the yield of Mustard.

BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 10.11.1952. (iv) (a) N.A. (b) Broadcasting. (c) 4 sr./ac. (d) —. (e) —. (v) A/S at 200 lb./ac. (vi) M—27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 3.2.1953.

2. TREATMENTS :

1. *Ahu* Paddy followed by Sannhemp followed by Mustard.
2. *Ahu* Paddy followed by Mustard.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 36′×40′. (iii) 6. (iv) (a) 40′×18′. (b) 36′×14′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1952 to 1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 402 lb./ac.
(ii) 99.0 lb /ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	402
2.	402
S.E./mean	=40.4 lb./ac.

Crop :- Mustard (*Rabi*). **Ref :- As. 53 (19).**

Site :- Res. Farm, Kokilamukh. **Type :- 'C'.**

Object :—To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 10.11.53. (iv) (a) N.A. (b) Broadcasting. (c) 4 sr./ac. (d)—. (e)— (v) A/S at 200 lb./ac. (vi) M-27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 22.2.1954.

2. TREATMENTS:

1. *Ahu* Paddy followed by Sanhemp followed by Mustard.
2. *Ahu* Paddy followed by Mustard.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 36′×40′. (iii) 6. (iv) (a) 40′×18′. (b) 36′×14′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N A. (ii) N.A. (iii) Yield of mustard. (iv) (a) 1952 to 1955. (b) Yes. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 289 lb./ac.
(ii) 23.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
1.	277
2.	301
S.E. mean	= 94.0 lb./ac.

Crop :- Mustard (*Rabi*). Ref :- As. **53 (21)**.

Site :- Res. Farm, Kokilamukh. Type :- 'R'.

Object :—To determine the effect of rotational cultivation on the yield of Mustard (1st year).

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kokilamukh. (iii) 12.11.1953. (iv) (a) N.A. (b) Line sowing. (c) 4 sr./ac. (d) Between lines-1′. (v) A/S at 200 lb./ac. broadcasted. (vi) M-27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 17.2.1954.

2. TREATMENTS :

Treatment	1953-54 Kh. R	1954-55 Kh. R	1955-56 Kh. R	1956-57 Kh. R	1957-58 Kh. R	1958-59 Kh. R
T_1	A M	A M	A M	A M	A M	A M
T_2	A F	G M	A F	G M	A F	G M
T_3	G M	A F	G M	A F	G M	A F
T_4	A M	G M	A K	A M	G M	A K
T_5	G M	A K	A M	G M	A K	A M
T_6	A K	A M	G M	A K	A M	G M

Kh.-*Kharif* ; R-*Rabi* ; A-*Ahu* Paddy ; M-Mustard ; F-Fallow ; G-Green manure ; K-*Matikalai*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 42′×72′. (iii) 6. (iv) (a) 42′×12′. (b) 40′×10′ or 1/108.9th of an ac. (v) 1′ each side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of mustard. (iv) (a) 1953 to 1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 364 lb./ac.
(ii) 91.0 lb./ac.
(iii) Treatment differences are not significant.
(iv) Av. yield of mustard in lb./ac.

Treatment	Av. yield
T_1	426
T_3	341
T_4	298
T_5	393
S.E./mean	= 37.0 lb./ac.

Crop :- Jute (*Kharif*). **Ref :- As. 52(22).**

Site :- Nowgong Distt. **Type :- 'M'.**

Object :- To study the effect of application of A/S and lime on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e)—. (vi) First week of Mav. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. A/S at 100 lb./ac.
3. Lime at 3 md./ac.+A/S at 100 lb./ac.
4. Lime at 6 md./ac.+A/S at 100 lb./ac.
5. Lime at 3 md./ac.
6. Lime at 6 md./ac.

3. DESIGN:

(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—2 ; replications—2. (iii) (a) 34′×134′. (b) 33′×132′ or 1/10th of an ac. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) 1952—continued. (b) and (c) N.A. (v) (a) Yes ; Kamrup, Cachar, Goalpara and Darrang. (b) As. 52 (14-A). (vi) and (vii) Nil.

. RESULTS :

(i) 2203 lb./ac.
(ii) 40.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1533
2.	2345
3.	2489
4.	2931
5.	1841
6.	2078
S.E./mean	= 28.0 lb./ac.

Crop :- Jute (*Kharif*). **Ref :- As. 52(21).**

Site :- Kamrup Distt. **Type :- 'M'.**

Object :—To study the effect of application of A/S and lime on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e)—. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :

1. Control.
2. A/S at 100 lb./ac.
3. Lime at 3 md./ac.+A/S at 100 lb./ac.
4. Lime at 6 md./ac.+A/S at 100 lb./ac.
5. Lime at 3 md./ac.
6. Lime at 6 md./ac.

3. DESIGN :

(i), (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—2; replications—2. (iii) (a) 34′×134′. (b) 33′×132′ or 1/10 ac. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued. (v) (a) Yes, Nowgong, Cachar, Goalpara and Darrang. (b) As. 52 (14-A). (vi) and (vii) Nil.

5. RESULTS :

(i) 1092 lb./ac.
(ii) 381.0 lb./ac.
(iii) Treatments are not significantly different.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1174
2.	1052
3.	973
4.	811
5.	1319
6.	1221
S.E /mean	= 279.0 lb./ac.

Crop :- Jute (*Kharif*). Ref :- As. **52(14)**.

Site :- Cachar Distt. Type :- 'M'.

Object :—To study the effect of application of A/S and lime on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 (capsularies improved). (v) (a) Well prepared soil (details N.A.) (b) Broadcasting. (c) 10 lb./ac. (d) and (e) N.A. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :

1. Control.
2. A/S at 100 lb./ac.
3. Lime at 3 md./ac.+A/S at 100 lb./ac.
4. Lime at 6 md./ac.+A/S at 100 lb./ac.
5. Lime at 3 md./ac.
6. Lime at 6 md./ac.

3. DESIGN :

(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields-2 ; replications-2. (iii) (a) 34′×134′. (b) 33′×132′ or 1/10th of an ac. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued. (b) and (c) N.A. (v) (a) Yes. Nowgong Darrang, Goalpara and Kamrup Distt. (b) As. 52(14—A). (vi) and (vii) Nil.

5. RESULTS :

(i) 872 lb./ac.
(ii) 179.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	606
2.	1008
3.	1008
4.	1039
5.	633
6.	936
S.E /mean	= 126.0 lb./ac.

Crop :- Jute. **Ref :- As. 52(19,20).**

Site :- Goalpara and Darrang. **Type :- 'M'.**

Object :—To study the effect of application of A/S and lime on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 capsularies (improved). (v) (a) Well prepared soil (details N.A.) (b) Broadcasting. (c) 10 lb./ac. (d) and (e) —. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :

1. Control.
2. A/S at 100 lb./ac.
3. A/S at 100 lb./ac.+Lime at 3 md./ac.
4. A/S at 100 lb./ac.+Lime at 6 md./ac.
5. Lime at 3 md./ac.
6. Lime at 6 md./ac.

3. DESIGN :

(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Localities—2 with 6 replications each. (iii) (a) 34′×134′. (b) 33′×132′ or 1/10 ac. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued. (b) and (c) N.A. (v) (a) Yes. Nowgong, Cachar, Kamrup and Goalpara. (b) As 52 (14—A). (vi) Nil. (vii) As there was one locality selected in each district, combined analysis for the two experiments conducted in Goalpara and Darrang districts has been done for the estimating error.

5. RESULTS :

(i) 1117 lb./ac.
(i) 137.5 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1206
2.	903
3.	936
4.	1188
5.	1219
6.	1250
S.E./mean	= 97.24 lb./ac.

———

Crop :- Jute. **Ref :-As. 52(14-A).**

Site :- Assam State. **Type :- 'M'.**

Object :—To study the effect of application of A/S and Lime on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e) N.A. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREAMENTS :

1. Control.
2. A/S at 100 lb./ac.
3. Lime at 3 md./ac.+A/S at 100 lb./ac.
4. Lime at 6 md./ac.+A/S at 100 lb./ac.
5. Lime at 3 md./ac.
6. Lime at 6 md./ac.

3. DESIGN :

(i), (ii) Plots of progressive cultivators were selected. In the whole of Assam State, 8 such localities were chosen. (iii) (a) 34′×134′. (b) 33′×132′. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued. (b) and (c) N.A. (v) (a) and (b) This experiment is combined analysis of experiment Nos. 52 (14, 19, 20, 21 and 22) (vi) and (vii) Nil.

5. RESULTS :

(i) 1316 lb./ac.
(ii) 329.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1126
2.	1322
3.	1147
4.	1487
5.	1249
6.	1365
S.E./mean	=116.0 lb./ac.

Crop :- Jute (*Kharif*). Ref :- As. 53(24).

Site :- Darrang Distt. Type :- 'M'.

Object :—To study the effect of application of A/S on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D-154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e) N.A. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of Sept.

2. TREATMENTS :

1. A/S at 100 lb /ac.
2. A/S at 200 lb./ac.
3. Control.

3. DESIGN :

(i), (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—2; replications—2. (iii) (a) 35′×134′. (b) 34′×132′. or 1/10th of an ac. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952-continued (modified). (b) and (c) N.A. (v) (a) Nowgong, Kamrup and Goalpara Distts. (b) As 53 (16-A). (vi) and (vii) Nil.

5. RESULTS :

(i) 1182 lb /ac.
(ii) 72.0 lb./ac.
(iii) Treatments are significantly different.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1312
2.	1507
3.	728
S E./mean	= 51.0 lb./ac.

Crop :-Jute (*Kharif*). Ref :-As. 53 (23).

Site :-Nowgong Distt. Type :-'M'.

Object :—To study the effect of application of A/S on the yield of Jute.

1. BASAL CONDITIONS :
(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D—154 capsularies (improved). (v) (a) Well prepared soil (details N.A.) (b) Broadcasting. (c) 10 lb./ac. (d) and (e) —. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :
1. A/S at 100 lb./ac.
2. A/S at 200 lb./ac.
3. Control.

3. DESIGN :
(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—4; replications—4. (iii) (a) 35′×134′. (b) 34′×132′ or 1/10 ac. (iv) Yes.

4. GENERAL :
(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—1953 (Contd.) (b) and (c) N.A. (v) (a) Darrang, Kamrup and Goalpara Distts. (b) As 53 (16—A). (vi) and (vii) Nil.

5. RESULTS :
(i) 862 lb./ac.
(ii) 121.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of jute in lb./ac.

Treatments	Av. yield.
1.	807
2.	1093
3.	685
S.E./mean	=60.0 lb./ac.

Crop :- Jute (*Kharif*). Ref :- As. 53(22).

Site :- Kamrup Distt. Type :- 'M'.

Object :—To study the effect of A/S on the yield of Jute.

BASAL CONDITIONS :
(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D—154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e)—. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

TREATMENTS :
1. A/S at 100 lb./ac.
2. A/S at 200 lb./ac.
3. Control.

DESIGN :
(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—6; replications—6. (iii) (a) 35′×134′. (b) 34′×132′ or 1/10th of an ac. (iv) Yes.

4. GENERAL :
(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued (modified). (b) and (c) N.A. (v) (a) Darrang, Nowgong and Goalpara Distts. (b) As 53 (16-A). (vi) and (vii) Nil.

5. RESULTS :
(i) 1695 lb./ac.
(ii) 236.0 lb./ac.
(iii) Treatments are significantly different.

(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	1545
2.	1695
3.	1291
S.E./mean	= 96.0 lb./ac.

Crop :- Jute (*Kharif*). Ref :- As. 53(16).

Site :- Goalpara Distt. Type :- 'M'.

Object :—To study the effect of application of A/S on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) Loam. (iii) Nil. (iv) D—154 capsularies (improved). (v) (a) Well prepared soil (details N.A.). (b) Broadcasting. (c) 10 lb./ac. (d) and (e) —. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :

1. A/S at 100 lb /ac.
2. A/S at 200 lb./ac.
3. Control.

3. DESIGN :

(i) and (ii) Typical and representative plots belonging to progressive cultivators were selected. Fields—2 ; replications—2. (iii) (a) 35′×134′. (b) 34′×132′ or 1/10th of an acre. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued (modified). (b) and (c) N.A. (v) (a) Darrang, Nowgong and Kamrup Distts. (b) As 53 (16—A). (vi) and (vii) Nil.

5. RESULTS :

(i) 762 lb./ac.
(ii) 22.0 lb./ac.
(iii) Treatments are significantly different.
(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	748
2.	902
3.	636
S.E./mean	=16.0 lb./ac.

Crop :- Jute. Ref :- As. 53(16—A).

Site :- Assam State. Type :- 'M'.

Object :—To study the effect of application of A/S on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) N.A. (ii) (a) Loam. (iii) Nil. (iv) D—154 capsularies (improved). (v) (a) Well prepared soil. (b) Broadcasting. (c) 10 lb./ac. (d) and (e) —. (vi) First week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.

2. TREATMENTS :

1. A/S at 100 lb./ac.
2. A/S at 200 lb./ac.
3. Control.

3. DESIGN :

(i) and (ii) Typical and representative plots of progressive farmers' were selected. In the whole of Assam, 14 such fields were selected. (iii) (a) 35′×134′. (b) 34′×132′. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Weight of dry fibre. (iv) (a) 1952—continued. (b) and (c) N.A. (v) (a) and (b) This experiment is based on the combined analysis of experiment Nos. 53 (16, 22, 23 and 24). (vi) and (vii) Nil.

5. RESULTS :

(i) 1171 lb./ac.

(ii) 184.0 lb./ac.

(iii) Treatments differ significantly.

(iv) Av. yield of jute in lb./ac.

Treatment	Av. yield
1.	944
2.	1187
3.	1383
S.E./mean	=49.0 lb./ac.