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AGRICULTURAL

FIELD

EXPERIMENTS

VOL. 14 PART 1

WEST BENGAL

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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.	C.L.—Cart load.
Ammo. Phos.—Ammonium Phosphate.	C.M.—Cattle Manure.
A/N—Ammonium Nitrate.	C/N—Chilean Nitrate.
A/S—Ammonium Sulphate.	C/S—Copper Sulphate.
B.D.—Basal Dressing.	F.M.—Fish Meal or Fish Manure.
B.M.—Bone Meal.	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 reptition 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.	Wheat.	*Triticum Sativum* Lank *Triticum aestivum L.*	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gotha-mbu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Jowar.	*Andropogon sorghum* Brot ; *Sorghum vulgare* Pers.	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari ; Jondhla	Jowari ; Juar	Jowar ; Jaur	Jowar
4.	Maize.	*Zea mays L.*	Gom dhan	Bhutta	Macca	Mokka jonna	Makka cholam	Cholam	Musukina jola	Makka	Makkai	Makka	Makki ; Makayee
5.	Arhar.	*Cajanus cajan* Milsp. *Cajanus indicus* Sprengl.	Arhar	Arhar	Harad	Kandulu	Thuvarai	Thuvaran Payaru	Thogari	Tur	Tuver	Arhar	Harhar ; Arhar
6.	Gram.	*Cicer arietinum L.*	Butmah	Chola	Boot	Sanagalu	Kadalai ; Sundal Kadalai	Kadala	Kadale	Harbara	Chana	Chana	Chhole Chana
7.	Lentil	*Lens esculenta* Moench	Masurmah	Masuri	Masur	Chirus-enaga	Masur Paruppu	—	Masooru bele	Masur	Masur	Masur	Massar
8.	Potato.	*Solanum tuberosum L.*	Alooguti	Alu	Bilati Alu	Bangala-dumpa ; Urlagadda	Uruzhai kilangu	Urala kizangu	Alu gedde	Batata	Aloo ; Batata	Aaloo	Alu.
9.	Tomato	*Lycopersicum csculeutum* Mill.	Bilahi	Bilati begun	Bilati baigan	Tomato ; Rama mulaka	Thakkali	Thakkali	Tomato	Welwangi ; Tambati	Vilaiti wagan ; Tameta	Tamatter	Tamatar
10.	Sugarcane	*Saccharum officinarum L.*	Kuhiar	Akh	—	Cheruku	Karumbu	Karumbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
11.	Jute.	*Corchorus* spp.	Marapat	Shada pat Tosha pat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti Chhunchh	Jute	Patsan
12.	Roselle.	*Hibiscus sabdariffa L.*	Tenga Mora	Mesta	Khata Kaunria	Erragogu	Sivappu Kashamkai	—	Kempu-pundrike	Tambdi ambadi	Lal sheria	Patua	—
13.	Groundnut	*Arachis hypogaea Lt*	China badam	Cheena badam	China badam	Nelash-anga	Nilak-adalai	Nikka-adla	Kadale kayi	Bhui-mug	Magafali	Mung-phali	Mungfali
14.	Linseed	*Linum Usitatissimum L.*	Tisi	Tishi	Peshi	Avise	Alivithai	Cheruch-anavithu	Agase	Javas ; Alsi	Alsi	Alsi	Alsi
15.	Til	*Sesamum indicum L.*	Til	Til	Rasi	Navvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
16.	Banana	*Musa patadisiaca L.*	Kol	Paka-kala	Kadali	Arati	Vazhai pazam	Vazha	Bale	Kele	Kela	Kele	Kela

CONTENTS

WEST BENGAL STATE

1. GENERAL

The State of West Bengal is situated between 21° 31′ and 27°14′ north latitudes, 86°35′ and 89°53′ east longitudes. Along the north of the State stand the Himalayan ranges. The Bay of Bengal washes its southern boundary. In the east lie Bhutan, Assam and East Pakistan, in the north, Sikkim, in the west, Nepal and Bihar and in the south-west lies Orissa.

The State comprises of 15 districts which have been grouped into two Commissioners' Divisions for administrative purposes. The Burdwan Division consists of the districts of Burdwan, Birbhum, Bankura, Midnapur, Hoogly and Howrah ; all of which lie west of the Bhagirathi or Hooghly river. The Presidency Division consists of the districts of 24 Parganas (including the Sundarbans), Calcutta, Nadia, eastern half of Murshidabad all of which lie south of the river Ganges or Padma and east of the Bhagirathi or Hoogly, are the districts of Malda and West Dinajpur lying north of the Ganges, and farther north the districts of Cooch Bihar, Jalpaiguri and Darjeeling. The total area of the State is 34,214 sq. miles. The area under forests is 26,46,100 acres (reserve & protected forests only).

2. PHYSICAL FEATURES

In a land of so many rivers the greater part of the soil must be new alluvium. According to the directions of the flow of rivers, West Bengal can be divided into two clear, natural geographical divisions, the Great Plain of the Ganges and Himalayan West Bengal. The upper limit of the first tract is the northern limit of West Dinajpur. The elevation of this tract increases as one goes farther west. Bhagirathi acts as the great drain as well as boundary of this tract. To the east of this tract all rivers flow north to south with a south-easterly slant except Jalangi and Churni in Nadia which turn west ward into the Bhagirathi. The second natural division, Himalayan West Bengal is dominated by the mighty Himalayan range in the north, wherefrom all rivers take their rise and flow north to south with an easterly slant. This review of the river system serves as a back ground to the geological account of the State.

3. SOILS

The greater part of the plains of West Bengal is covered by alluvium. Laterite is noticed on the west and is traced in north from Orissa through Midnapur, Burdwan and Birbhum to the flanks of the Rajmahal hills where in places, it is as much as 200 feet thick. Thick gneiss of the well foliated type, frequently passing into mica schist, constitutes the greater portion of the Darjeeling Himalayas.

According to the soil types, the State can be divided into two main divisions described below :

Himalayan West Bengal Division :—The Himalayan region is made up of the Darjeeling, Jalpaiguri and Cooch Bihar districts. The soil is quite heavy and dark coloured, containing high percentage of organic matter and nitrogen. The soils of Darjeeling district appear to be highly weathered. The texture of the soil varies from clay to clay loam. The contents of lime, manganese, potash and phosphate are low perhaps due to heavy leaching. The content of alumina is much higher than ferric oxide. The humid and cold climate is evidently responsible for the accumulation of organic matter. The soils of Western Duars besides being highly deficient in lime, show lack of phosphate and are mechanically less weathered than the rest of the soils. The soils of Jalpaiguri are of sandy nature, the proportion of sand being considerably greater in proportion to clay. The soils have lost the major amount of lime and have become highly dificient in potash and phosphate but are quite high in nitrogen contents.

West Bengal Plain Division :—Portions of Murshidabad, Bankura, and entire Burdwan have the appearance of undulating plateau. It is composed mainly of the old alluvium and the area between the Damodar and the Bhagirathi is interspersed with some basaltic and granitic hills with laterite capping. The western part of this region is said to be occupied by lateritic soils. Probably the red soils are transported soils from the hills of Chhota Nagpur plateau. The soils of the Chhota Nagpur region divide themselves into two groups. To the first group belong the soils of Midnapur, Bankura, Burdwan and Birbhum. The soils of this group are almost similar in their chemical composition and physical properties. The second group of soils from Malda, Murshidabad, Howrah and Hoogly are mostly alluvial. Nadia soils contain calcium carbonate and are alkaline.

Besides the tracts mentioned above, rest of Bengal is composed of low levels. The soils of southern most coastal part of the province are impregnated with saline deposits. This region has mostly alluvial soils which vary in texture from sands to heavy clays. A peculiar feature of the alluvial region is the occurrence of 'bheels'. They are either old river beds or are formed by the gradual raising of river banks. The soils are dark-bluish and heavy textured. They however, do not always contain a high percentage of nitrogen.

4. CLIMATE & RAINFALL

An important feature of the climatic conditions of the State is the periodic winds that blow across it. The seasonal winds are known as the monsoons. Two-thirds of the rainfall takes place from middle of March to end of October. The climate is, briefly speaking, tropical, of high humidity and moderately high temperature, with alternate dry and wet seasons. During the other months, temperature is lower and humidity moderate. In the cold season months the average temperature is 64°F and during the hot season 83°F. The high rainfall in Darjeeling and Jalpaiguri is due to the proximity of the mountains. Cyclonic storms usually prevail over longer periods and affect larger areas. During very hot days the air often remains full of moisture. Thunder storms are not rare happenings in the State. During hot seasons they occur every year and bring much coveted showers after long sultry days.

The season-wise normal rainfall for regions of the State is shown in Table 1.

TABLE 1.

Season-wise rainfall in inches for different divisions of West Bengal.

Divisions	June to September	October to December	January to February	March to May	Total
Himalayan W.B.	106.4	6.9	0.4	17.2	130.9
W.B. Plain	43.6	4.5	0.5	6.9	55.5
State (simple average)	75.0	5.7	0.45	12.0	

5. IRRIGATION

The sources of irrigation in the State may be classified as government canals, Private canals, tanks, wells and other sources. Burdwan, Birbhum and Midnapore districts get most of the benefit of irrigation from government canals. Area irrigated from private canals is, however, increasing. Generally such projects are undertaken with partial government aids and the labour or contributions of the cultivators. Midnapore, Jalpaiguri, 24 Parganas, Hoogly and Burdwan districts cover some 75%of area irrigated by private canals. Area irrigated from tanks has not been progressive, but has remained almost steady for past several years. Murshidabad, Burdwan, Birbhum, Bankura and Midnapore depend much on tank irrigation. Well irrigation is often practised more widely in Burdwan, Bankura, Midnapore and Jalpaiguri than in other districts.

TABLE 2.

Distribution of irrigated area (source wise).

(Net area irrigated)

Source	1956-57 (Excluding transferred territories from Bihar) (000 acres)	1958-59 (Including transferred territories from Bihar) (000 acres)
Govt. Canals	178	966.0
Private Canals	721	955.8
Tanks	—	909.5
Wells	—	39.1
Other sources	634	468.0
Total	1,533	3338.4

6. AGRICULTURAL PRODUCTION AND NORMAL CROPPING PATTERN

In consideration of area covered by different crops, Paddy is by far the most important crop of the State; Aman Paddy being the major type. Paddy covers nearly 73%, Jute 4%, Gram 2.5%, Rape and Mustard 1.5%, Pulses (excluding gram) 7.9% and Tea 1.5% of the total cropped area of the State. Potato is the popular tuber crop grown in the State.

The area and production figures of the important crops grown in the State are given below [1956-57 and 1958-59 i.e. figures excluding & including transferred territories from Bihar].

TABLE 3.

Area and production of principal crops.

Crop	Area (000 acres)		Production (000 tons)	
	1956-57	1958-59.	1956-57	1958-59.
1. Rice	10,060	10533.4	4335	4057.3
2. Wheat	209	87.0	27	24.0
3. Potato	118	122.6	309	448.5
4. Pulses	1426	1829.9	267	367.6
5. Jute	720	875.3	1462 @	2596.1 @

@ In thousand bales of 400 lbs. each.

7. AGRICULTURAL RESEARCH AND EXPERIMENTAL STATIONS

During the period 1948-53 experiments were conducted at sixteen experimental stations. Experiments on paddy were conducted at eleven stations. Farms at Kadamkhali, Paliamath and Srinagar were exclusively devoted to experimentation on Sugarcane. Experimentation on fruit trees was done at the Krishnagar Horticulture Research Station, and Jute and other fibre crops like Mesta and Roselle at Jute Agricultural Research Institute, Barrackpore. The lagest number of experiments were conducted at Chinsura Research Farm. Next in order, according to the number of experiments, comes the Agricultural Research Farm, Berhampore.

8. EXPERIMENTS :

Paddy is by far the most important crop in the State. More than 50% of the experiments conducted during the period under review were on paddy.

Jute is the next important crop in the State. But the number of experiments devoted to this crop is nearly 5 % of the total. However the experiments conducted on all fibre crops *viz.* Jute, Roselle & Mesta is nearly 10% of the total.

Sugarcane and potato are other important crops grown in the State, the number of experiments conducted on them are 10% and 8% of the total respectively.

Among fruit crops, banana is the most popular, accounting for nearly 8% of the total number of experiments.

Very few experiments have been conducted on cereals like Jowar, Maize and Wheat and Vegetables.

Among oilseeds, Til and Groundnut are popular crops nearly, 5% of the total experiments were conducted on oilseeds.

TABLE 4

Distribution of experiments according to type and crop.

Crop/Type	M	MV	C	CM	CV	D	Total
Paddy	122	2	1	...	3	4	132
Wheat	3	...	...	...	...	...	3
Jowar	1	...	...	...	...	...	1
Maize	1	...	...	...	...	...	1
Pulses	...	...	5	...	...	1	6
Vegetables	7	...	1	1	...	16	25
Sugarcane	28	...	...	...	...	...	28
Jute	1	...	7	...	...	...	8
Roselle	...	...	3	...	...	...	3
Mesta	...	...	2	...	...	...	2
Oilseeds	...	...	11	...	...	...	11
Banana	3	...	13	...	4	...	20
Total	166	2	43	1	7	21	240

Experiments on cultivators' fields-Paddy M—19, MV—2=21 ; Jute M—4

Total 265

Table-4 gives the distribution of experiments according to type of treatments and crops. Out of total number of 265 experiments nearly 65% are manurial, 21%cultural and the remaining 14% comprise other types of experiments *viz.* manurial-cum-cultural, manurial-cum-varietal, culturalcum-varietal and on control of diseases and pests.

80% of the experiments conducted on paddy are manurial type ; all the experiments conducted on sugarcane belong to the manurial type.

The manures used are both organic and inorganic, separately and in combination. Generally Ammonium Sulphate is used as source of nitrogen. Organic manures like F.Y.M. Compost and Mustard Cake have also been widely used as Sources of nitrogen. The treatments commonly used are factorial combinations of levels of nitrogen and phosphate. Sometimes lime or potash is also used as a third factor. The levels of nitrogen and phosphate vary between 0 lb. to 60 lb. per acre. The amount of lime applied varied from 2 cwt. to 4 cwt. per acre.

The experiments mostly were laid out in randomised blocks. Factorial and split plot designs account respectively for about 20% and 15% of the total number of experiments. In split plot design, the number of main-plots vary from 2 to 4 and sub-plots from 2 to 6. The number of replications vary between 2 and 6. The net plot size ranges between 1/270th acre to 1/40th of an acre.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

Sl. No.	Name of the Experimental Station.	District in which located	Tract it represents	Year of establishments	Major crops	Soil Type	Normal Rainfall (in inches)		Irrigation facilities	No. of experiments	General description of the experimental area
1	2	3	4	5	6	7	8		9	10	11
1	State Agricultural Farm Bankura	3 miles from Bankura Rly. Stn.	Laterite tract	1922	Paddy	Soil Laterite gravel Chemical Analysis ; Mechanical Analysis N.A.	June	10.53	Tanks	Paddy— 8 Maize— 1 Jowar— 1 Total—10	High and terace from 3″ to 1′.6″
							July	12.98			
							Aug.	12.13			
							Sept.	7.37			
							Oct.	3.12			
							Nov.	0.65			
							Dec.	0.11			
							Jan.	0.58			
							Feb.	1.14			
							Mar.	1.09			
							April	1.25			
							May	4.07			
							Total	55.02			
2	Agri. Farm, Belurmath	N.A.	Alluvial soils	N.A.	Paddy	Soil—New alluvial Soil analysis N.A.	About 45″		N.A.	Paddy—1	N.A.
3	State Agricultural Farm Berhampore	Murshidabad 3 miles from Behrampore Rly. Stn.	Sandy loam	1921	Paddy	Sandy loam (*i*) *Chem. Anal.* pH 6.2—8.4 N 0.02—0.04 P_2O_5 0.04—0.28 Org. matter 0.32—0.58 (*ii*) *Mech. Anal.* N.A.	June	7.88	'Bhil'	Paddy 8 Potato 3 Pulses 5 Oil-seeds 11 Wheat 1 Total—28	Composed of high and low land surrounded by 'Bhil' on all sides.
							July	9.93			
							Aug.	12.34			
							Sept.	8.62			
							Oct.	5.89			
							Nov.	0.48			
							Dec.	0.04			
							Jan.	0.36			
							Feb.	0.59			
							March	0.88			
							April	2.73			
							May	4.13			
							Total	53.87			

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8		9	10	11
4	Experimental Station. Bhanjang	Darjeeling, 4 miles from Ghum Rly. Station.	Hilly	1957	Potato	Depth 3′ to 8′ Colour-Brown Strucure-Loamy *Chem. Analysis* N.A. *Mech. Analysis*—N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	21.07 39.16 24.66 6.39 1.50 — — 1.81 0.95 1.19 12.24 14.28 123.25	N.A.	Nil	Elevation ranges from 7200 to 6800 feet from sea level. Situated on the western back of a hillock.
5	State Seed Multiplication Farm Burdwan	Burdwan, 3 miles from Burdwan Rly. Station.	Laterite	1947—48	Paddy	Soils—N.A. *Chem onalysis*—N.A. *Mech analysis*—N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	7.75 14.74 11.75 4.69 1.79 — — 0.76 0.39 0.18 7.24 5.32 55.37	N.A.	Paddy —18 Sugarcane—5 Potato —5 28	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
6	Agricultural Farm, Canning	N.A.	Saline	N.A.	Paddy	Saline Soil analysis *Chem. analysis* N_2=0.097 P_2O_5=0.123 K_2O=0.932 pH=7.1 *Mech. analysis N.A.*	N.A.	Nil	Paddy—3 Total—3	N.A.
7.	Banana Research Station Chinsura	Hooghly 1 mile from Chinsurah Rly. Stn.	Ganga Riverine Zone.	1952-53	Banana	New Alluvium *Chem. analysis* Fe_2O_3 2.88—4.8 Al_2O_3 4.94—7.77 CaO 0.332—0.392 P_2O_5 0.045—0.049 K_2O 0.200—0.085 MgO_4 0.014—0.24 N 0.08—0.066 C 0.75—0.48 *Mech analysis* Clay 55.75 Silt 30.00 Fine sand 6.53 Course sand 0.29	June 9.42 July 10.39 Aug. 8.74 Sept. 9.21 Oct. 4.71 Nov. 1.46 Dec. 0.14 Jan. 0.36 Feb. 0.68 March 1.15 April 2.24 May 5.24 Total—53.44	Tube well and Tank	Banana—1	The area falls under low land paddy growing zone.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	3	6	7	8		9	10	11
8	State Agricultural Farm Chinsurah	Hoogly, 1 mile from Chinsurah Rly. Stn.	Gangetic old alluvial flat low land	1908	Paddy	Soil—Clayey ; Depth 0"—12". Colour—Blackish Brown Structure—Fine	June	10.56	N.A.	Paddy —56	Low lying area.
							July	11.28		Jute — 7	
							Aug.	11.64		Roselle — 3	
							Sept.	8.40		Mesta — 2	
						Chem. Analysis	Oct.	4.09			
						pH 6.80	Nov.	0.66		Total —68	
						N_2 0.08%	Dec.	0.19			
						P_2O_5 0.09%	Jan.	0.38			
						K_2O 0.86%	Feb.	1.20			
						Al_2O_3 13.68%	March	1.58			
						Carbon 0.76%	April	2.46			
						Sesqui Oxide 21.45%	May	5.85			
							Total	58.29			
						Mech. Analysis. (%)					
						Air dry moisture 7.43					
						Clay 55.75					
						Silt 30.00					
						Fine Sand 6.53					
						Coarse 0.29					

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8		9	10	11
9	State Agricultural Farm Cooch-Bihar	Cooch Bihar, by the side of Cooch Bihar Rly. Station.	Buxar—riverine	1937	Potato and Paddy	Soil-Sand loam. Depth—4'—6' Colour :— Grey Structure :— Loose *Chem. Analysis* N.A. *Mech. analysis* N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	30.38 19.85 33.28 11.79 7.97 0.38 0.33 1.25 0.40 0.96 4.29 23.97 134.85	Nil	Potato—3 Paddy—1 Total—4	The land of the farm is uneven, slope is East to West in the middle.
10	Agricultural Farm Haringhata	N.A.	N.A.	N.A.	Paddy	(i) Loam *Chem. analysis* :— N 0.12 % Total P_2O_5 0.009% Av. P_2O_5 0.0054% pH 7.0 *Mech. analysis* :— N.A.	N.A.		Nil.	Paddy—1	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8		9	10	11
11	State Agri-cultural Farm Kalimpong	Darjeeling 43 miles from Silguri Rly. Stn.	Eastern Himalayan tract.	1907	Maize Paddy vegetables.	Sandy, Clay loam. Depth 1'—4' Colour Red Clay loam *Chem. Analysis* PH 6.00 app. N 0.14% P 0.0065% K 0.0076% *Mech. Analysis* N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	19.96 27.43 19.50 13.16 2.17 0.31 0.09 0.60 0.23 1.20 2.97 4.13 91.75	N.A	Nil.	Gently sloping with terraces
12	Horticultural Research Station Krishangar	Nadia ; 2 miles from Krishna city Rly Stn.	New Alluvium	1934	Banana	Soil New Alluvium Depth : Medium, Colour : Light darlegrey. *Chem. Analysis%* Structure Granular PH 6.1 to 6.8 (lb./ac.) N 193.2—277.2 P 16.0—131.0 *Mech. Analysis* N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	9.09 12.20 10.54 9.60 4.86 0.46 0.02 0.57 1.25 1.27 2.09 5.04 56.99	Well (worked by power)	Banana —19 Tomato — 2 Paddy — 1 Total——22	Flat and Plain

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8		9	10	11
13	State Agricultural Farm Malda	Malda ; about 3 miles from Malda Rly. Stn.	Ganga riverine	1925—26	Paddy & Jute.	Loamy Depth N.A. Colour-Grey to Ash grey Structure-Granular *Chem. Analysis%* PH 6.3—7.6 (lb./ac.) N 159.6— 48.4 P 101.6—132.8 *Mech. Analysis* N.A	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	10.35 10.97 11.52 10.29 4.34 0.35 0.05 0.55 0.84 0.71 1.13 4.50 55.60	Tank	Wheat— 2 Paddy— 5 Mixtures-1 Jute — 1 Potato— 2 11	High land 6.41 ac. Medium highland 3.80 ac. Low land 2.01 ac. Medium low land 2.18 ac. Very low land 0.60 ac.
14	State Agricultural Farm (Maynaguri) Mayanaguri	Jalpaiguri. 2 miles from Mayanguri Road Rly. Station.	N.A.	1926	Paddy Jute	Sandy loam to clay loam *Chem. Analysis* Av. pH—5.6 Low in organic content, Phosphorous, potash and lime.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March April May Total	36.32 47.10 36·02 13·07 5·62 0.12 0.14 1.03 0.10 0·88 4·36 16.08 160.84	N.A.	Potato —6 Paddy —1 Total —7	In general the plots are gradually slopping towards both East and South.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
15.	Agricultural Farm Midnapore	Midnapore ; 3 miles from Midnapore Rly. Station.	Red lateritic zone.	1937	Paddy Potato	Red lateritic Depth-1" to 1½" Colour-Red Structure-Cruimle *Chem. Analysis* PH 6'1 slightly acidic Lesson 2.75% ignition Fe_2O_3 1.95% Al_2O_3 3.99% CaO 0.22% MgO 0.20% P_2O_5 0·05% K_2O 0·27% N 0·025% *Mech. Analysis* N.A.	June 11.88 July 11.60 Aug. 11.41 Sept. 8.78 Oct. 5.23 Nov. 1.07 Dec. 0.14 Jan. 0.33 Feb. 1.12 March 1.64 April 1.75 May 5.32 Total 60.27	N.A.	Paddy —4 Potato —4 Total —8	Rocky-morrum nominated-red-laterit c. High land.
16.	Paliamath Farm. Plassey,	Nadia	—	—	—	N.A.	—	—	S. Cane— 4	—
	Chandanpur Farm, Plassey	,,	—	—	—	—	—	—	S. Cane— 8 S. Cane— 8	—
	Kada makhali Farm. Plassey.	,,	—	—	—	—	—	—	Total —20	—
17	Agri. Farm, Srinagar	24-Paraganas	Sandy loam	N.A.	-	Sandy loam soil analysis N.A.	N.A.	Nil.	Sugarcane - 2	—

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
18	Agricultural Farm Sriniketan	Birbhum	Heavily demuded old Alluvial Tract.	1924	Paddy	Old alluvium Depth—3′ Colour Stran Structure Granular *Chem. Analysis* N_2 0.038 P_2O_5 0.0016 K_2O 0.0350 F_2O_5 2.925 Mn_3O_4 0.025 AlO_3 4.627 Ca 0.116 *Mech. Analysis* % Moisture 2.560 Sand 46.270 Fine Sand 21.850 Total Sand 59.910 Silt 10.00 Clay 12.750 PH 5.6	June 4.33 July 9.91 Aug. 10.62 Sept. 12.26 Oct. 3.97 Nov. 0.00 Dec. 0.00 Jan. 1.26 Feb. 0.00 March 0.25 April 1.10 May 3.76 Total 47.46	Tank	Paddy—10 Sugar-cane — 1 Total—11	N.A.
19	Research cum-Demonstration Farm Suri	Birbhum. 2 miles from Suri Rly. Stn,	Laterite	1932	Paddy	Laterite *Chem. Analysis* N.A. *Mech. Analysis* N.A.	N.A.	N.A.	Paddy—15	N.A.

Crop :- Paddy (Kharif). Ref :- W.B. 48(1)

Site :- State Agri Farm, Bankura. Type : 'M'.

Object :— To study the effect of different times of application of manures.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 30.6.48/12.8.48 (Medium). (iv) (a) 3 ploughings and 2 ladderings. (b) Transplanting. (c)— (d) 9″×9″ apart at a depth of 3″ - 4″. (e) 2—3. (v) Nil. (vi) Anjan. (vii) unirrigated. (viii) Weeding and hacing once. (ix) 40.91″. (x) 18.12.48.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 times of application of manure :

T_1=At puddling just before transplanting on 11.8.4[2].

T_2=At the time of weeding & hoeing 12.9.48.

T_3=At the time of Thorn formation (flowering).

(2) 2 manures :—

M_1=Mustard cake at 40 lb. N/ac.

M_2=A/S of 40 lb. N/ac.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 18.75′×14.33′. (b) 18′×13.5′. (v) Distance bet. plots 2′ and bet. blocks 2′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 5223 lb./ac.

(ii) 474 lb./ac.

(iii) Only main effect of T is highly significant.

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

	T_1	T_2	T_3	Mean
M_1	5267	5927	4894	5363
M_2	5259	5470	4522	5084
Mean	5263	5698	4708	5223

S.E. of body of table =193.4 lb./ac.

S.E. of marginal mean of M =111.7 lb./ac.

S.E. of marginal mean of T =136.8 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 49(1).

Site :- State Agri. Farm, Bankura. Type :- 'M'.

Object :— To study the effect of time of application of manures (residual effect).

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. 17.6.49/8.8.49. (iv) (a) 3—4 ploughings & 2 to 3 ladderings. (b) Transplanted. (c)—(d) 9″ between rows and 9″ within rows. (e) 2—3. (v) Nil. (vi) Anjan 246. (medium). (vii) Unirrigated. (viii) 1 weeding & 1 hoeing. (ix) 25.09″. (x) 28.11.49.

2. TREATMENTS :

All combinations (1) & (2)

(1) 3 times of application of manure :

T_1=At the time of puddling just before transplanting.

T_2=At the time of weeding and hoeing operation.

T_3=At the time of thorn formation (flowering).

(2) 2 manures :

M_1=Mustard cake at 40 lb./ac. of N.

M_2=A/S at 40 lb./ac. of N.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 18.75′×14.33′. (b) 18′×13 5′. (v) Distance between plots and blocks is 2′.1′ Border row around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3180 lb./ac.

(ii) 297.0 lb./ac.

(iii) None of the effects is significant.

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

	T_1	T_2	T_3	Mean.
M_1	3147	3162	3408	3239
M_2	3058	3124	3185	3122
Mean.	3102	3143	3296	3180

S.E. of body of table = 121.3 lb./ac.
S.E. of marginal mean of M = 70.0 lb./ac.
S.E. of marginal mean of T = 85.7 lb./ac.

Crop :- Paddy. **Ref :- W.B. 49(2).**

Site :- State Agri. Farm, Bankura. **Type : 'M'.**

Object :— To study the residual effect of time of application of manure.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 8.8.49. (iv) (a) 3—4 ploughings and 2—3 ladderings. (b) Transplanted. (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Anjan 246. (vii) Unirrigated. (viii) Weeding, (ix) 25.09″. (x) 28.11.49.

2. TREATMENTS :

All combinations (1) & (2) :

(1) 3 times of application of manure :

T_1=At the time of puddling.

T_2=At the time of weeding and hoeing.

T_3=At the time of thorn formation *ie.* about a fortnight before the emergence of inflorescence.

(2) 2 manures :—

M_1=Mustard cake at 40 lb./ac. of N.

M_2=A/S at 40 lb./ac. of N.

3. DESIGN ;

(i) 3×2 fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 18.75′×14.25′. (b) 18′×13.50′. (v) Distance between plots 2′ and blocks 3′. 1′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1946 to 1949. (b) Yes. (c) N.A. (v)(a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1546 lb./ac.

(ii) 144.5 lb./ac.

(iii) No effect is significant.

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

	T_1	T_2	T_3	Mean
M_1	1530	1537	1656	1574
M_2	1486	1519	1549	1518
Mean	1508	1528	1602	1546

S E. of marginal mean of M. =34.0 lb-/ac:
S.E. of marginal mean of T. =41.7 lb./ac.
S.E. of body of table. =59.0 lb./ac·

Crop :- Paddy. Ref :- W.B. 49(5).

Site :- State Agri. Farm, Bankura. Type :- 'M'.

Object :— To study the residual effect of different dose of oilcakes on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) Last week of May to 1st week of June/July to 1st week of August. (iv) (a) 3 ploughings and 3 ladderings. (b) Transplanted- (c)— (d) 9″×9″ (apart). (e) 2—3. (v) Nil. (vi) Bhashmanik (ch. 2, medium). (vii) Unirrigated. (viii) One weeding only after application of oilcakes. (ix) 25.09″. (x) December.

2. TREATMENTS :

All combinations of (1) & (2).
(1) 3 sources of N : S_1=Mustard cake, S_2=Coconut cake and S_3=G.N.C.
(2) 5 levels of N : N_0=0, N_1=20, N_2=40, N_3=60 and N_4=80 lb./ac.

3. DESIGN :

(i) 3×5 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/80th ac. (v) N.A. (vi) Yes.

4. GENERAL ;

(i) N.A. (ii) N.A. (iii) Yield of straw and grain. (iv) (a) 1942 to 1945. 4 years expt. and thereafter residual effect. (b) Yes. (c) N.A. (v) (a) Chinsurah, Sriniketan and Suri. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2111 lb./ac.

(ii) 231.3 lb./ac.

(iii) Main effect of sources of N is highly significant. Main effect of Doses of N significant while their interaction is not significant.

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

N_0 = 1710 lb./ac.

	S_1	S_2	S_3	Mean
N_1	2016	1973	1918	1969
N_2	2196	2173	2087	2152
N_3	2425	2278	2167	2290
N_4	2590	2416	2349	2452
Mean	2307	2210	2130	2216

S.E. of marginal mean of source of N. =47.2 lb./ac.
S.E. of marginal mean levels of N =54.5 lb./ac.
S.E. of body of table =94.4 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(42).**

Site :- State Agri. Farm, Bankura. **Type :- 'M'.**

Object :—To evaluate the efficacy of different methods of applying A/S.

1. BASAL CONDITIONS:

(i) (a) No (b) Aman paddy. (c) N.A. (ii) (a) Laterite soil. (b) Refer soil analysis, Bankura. (iii) 15th July to 15th August. (iv) (a) N.A. (b) Transplanted. (c) — (d) 9″×9″ (e) 3. (v) No. (vi) Novaram. (late). (vii) Unirrigated. (viii) 2 weeding : 1st weeding done 3 weeks after transplantation ; 2nd weeding done 6—7 weeks after transplantation. (ix) 39.74″. (x) 15th Dec. to 15th January.

2. TREATMENTS :

All possible combinations of (1) & (2)+ a Control (no N).
(1) 2 levels of N : N_1=40 and N_2=60 lb. N/ac.
(2) 2 methods of application : M_1=Layering and M_2=Top dressing.
N applied as A/S. It was used 4 weeks after transplan tation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4. (iv) (a) 27′—9″×18′. (b) 27′×17′—8″. (v) 9″ border on all sides. (vi) Yes.

4. GENERAL :

(i) Bad. (ii) Heavy incidence of yellow disease. (iii) Yield of grain. (iv) (a) 1952 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 301.5 lb./ac.
(ii) 77.35 lb./ac.
(iii) Only main effect of application is significant.
(iv) Av. yield of grain in lb./ac.

Control = 309.4 lb./ac.

	M_1	M_2	Mean
N_1	356.3	280.6	318.4
N_2	344.8	216.4	280.6
Mean.	350.5	248.5	299.5

S.E. of body of table = 38.68 lb./ac.
S.E. of marginal mean = 27.16 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(37).**

Site :- State Agri. Farm, Bankura. **Type :- 'M'.**

Object :— To evaluate the efficacy of different methods of application of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Lateritic soil. (b) Refer soil analysis, Bankura. (iii) 15th July to 15th August. (iv) (a) N.A. (b) Transplanted. (c) ——. (d) 9″×9″. (e) 3. (v) No. (vi) Novaram (late). (vii) Unirrigated. (viii) 2 weedings ; 1st weeding after 3 weeks of transplantation 2nd weeding after 6—7 weeks of transplantation. (ix) 46.20″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All possible combinations (1) & (2)+a Control (no N).
(1) 2 levels of N : N_1=40 and N_2=60 lb./ac.
(2) 2 methods of application : M_1=Layering and M_2=Top drossing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 27′—9″×18′. (b) 27′×17′—3″. (v) 9″ border on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No. (iii) Yield of grain, (iv) (a) 1952 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) & (vii) Nil.

5. RESULTS :

(i) 2249 lb./ac.
(ii) 216.4 lb./ac.
(iii) Control *vs.* fertilizers, main effect of methods of application are highly significant. N effect and intercation N × method of application are not significant.
(iv) Av. yield of grain in lb./ac.

Control = 1853 lb./ac.

	M_1	M_2	Mean
N_1	2613	2174	2393
N_2	2402	2204	2303
Mean	2507	2189	2348

S.E. of body of table = 108.2 lb./ac.
S.E. of marginal mean = 76.5 lb./ac.

Crop :- Paddy (Aman). **Ref : W.B. 52(41).**

Site :- State. Agri. Farm, Bankura. **Type :- 'M'.**

Object :—To evaluate the efficacy of different methods of applying A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Lateritic soil. (b) Refer soil analysis, Bankura. (iii) 15th July to 15th August. (iv) (a) N.A. (b) Transplanted. (c) ——. (d) 9″×9″. (e) 3. (v) No. (vi) Bhasamanik. (late) (vii) Unirrigated. (viii) 2 weedings ; 1st weeding done 3 weeks after transplantation 2nd weeding done 5—7 weeks after transplantation. (ix) 39.74″. (x) 15th Dec. to 15th January. (approx).

2. TREATMENTS :

All possible combinations of (1) & (2)+a Control (no N)
(1) 2 levels of N : N_1=40 and N_2=60 lb. N/ac.
(2) 2 methods of application : M_1=Layering and M_2=Top dressing.
N applied as A/S 4 weeks after transplantation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 27′—9″×18′ (b) 27′×17′—3″ (v) 9″ border on all sides. (vi) Yes.

4. GENERAL :

(i) Bad (ii) Heavy incidence of yellow disease. (iii) Yield of grain. (iv) (a) 1952 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 575.0 lb./ac.
(ii) 170.3 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 991.3 lb./ac.

	M_1	M_2	Mean
N_1	701.1	590.0	645.5
N_2	531.6	561.2	546.4
Mean	616.3	575.6	595.9

S.E. of body of table = 85.2 lb./ac.
S E. of marginal mean (N or M) = 60.2 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53(36).**

Site :-State Agri. Farm, Bankura. **Type :-'M'.**

Object :—To evaluate the efficacy of different methods of applying A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Laterite soil. (b) Refer soil analysis, Bankura. (iii) 15th July to 15th August (iv) (a) N.A. (b) Transplanted. (c)—(d) 9″×9″. (e) 3. (v) No. (vi) Bhasamanik. (late) (vii) Unirrigated. (viii) 2 weedings ; 1st weeding done 3 weeks after transplantation ; 2nd weeding done 6—7 weeks after transplantation. (ix) 46.20″. (x) 15th Dec. to 15th January).

2. TREATMENTS :

All possible combinations of (1) and (2)+a Control (no N).

(1) 2 levels of N : N_1=40 and N_2=60 lb./ac.

(2) 2 methods of application : M_1=layering and M_2=Top dressing.
A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 27′—9″×18′. (b) 27′×17′—3″. (v) 9″ border on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No. (iii) Grain yield. (iv) (a) 1952 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2983 lb./ac.

(ii) 316.8 lb./ac.

(iii) 'Control *vs.* others' effect is highly significant. 'M' effect is highly significant while others are not significant.

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

Control = 2496 lb./ac.

	M_1	M_2	Mean
N_1	3197	2754	2975
N_2	3496	2975	3235
Mean	3546	2864	3105

S.E. of the body of table = 158.4 lb./ac.

S.E. of marginal mean (N or M) = 111.9 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 52(44).**

Site :-Agri. Farm, Belurmath. **Type :-'M'.**

Object :—To assess the comparitive merits of bulky organic manures along with A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) No. (ii) (a) New alluvium. (b) Refer soil analysis, Belurmath. (iii) 15.7 52. (iv) (a) 4—5 ploughings and laddering after the preparation of land during the month of May and June. (b) Transplanting. (c)—(d) 9″×9″. (e) 2—4. (v) Nil. (vi) Patna—23 (Ch. 7, Medium). (vii) Unirrigated. (viii) 2 weedings were done. (ix) 41.56″. (x) 10.12.52.

2. TREATMENTS:

1. Control.
2. A/S at 40 lb.N/ac. (as top dressing)
3. A/S at 40 lb.N/ac. (applied during puddling)
4. T.C. at 40 lb.N/ac. (during puddling)
5. T.C. at 20 lb.N/ac.+A/S at 20 lb.N/ac. (T.C. during puddling ; A/S as top dressing).

Manures were broadcast at the time of puddling.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) N.A. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2318 lb./ac.

(ii) 238.6 lb./ac.

(iii) Control *vs.* fertilizers is highly significant but there is no significant variation among fertilizers in general.

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

Treatment	Av. yield
1.	1852
2.	2339
3.	2472
4.	2428
5.	2500
S.E./mean	= 119.3 lb./ac.

Crop :-Paddy (Aus). **Ref :-W.B. 49(12).**

Site :-State Agri. Farm, Berhampore. **Type :-'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Block 1 : Sugarcane ; Block 2 : Jowar (fodder) in Kharif and Potato in Rabi Block 3 and 4 : Maize (fodder). (c) Block 1: Cowdung at 38 md./ac.+G.N.C. at 3.6 md./ac.+B.M. at 1.9 md./ac.+A/P at 3.3 md./ac and nil in Rabi ; Block 2 : B.M. at 2.4 md./ac. and A/S at 1.5 md./ac. and in Rabi cowdung at 53 md./ac. Block 3 and 4 : G.N C. at 3 md./ac.+A/S at 1.5 md./ac. and in Rabi cowdung at 53 md./ac. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (iii) 31.5.49. (iv) (a) 4 ploughings and ladderings. (b) Seed broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) Dharial. (CH 27, medium). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 42.99″. (x) 13 to 28.9.49.

2. TREATMENTS :

Main-plot treatments :—

3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

All combinations of (1) and (2)

(1) 4 levels of N : N_0=0, N_1=30, N_2=60 and N_3=90 lb./ac.

(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.

B.M. was applied at the time of preparation of land, A/S after six weeks of sowing (14.7.49). Lime was applied in the 1st year of experimentation (15.5.49). and shall be applied after every 4 years

3. DESIGN :

(i) Split plot. (ii) (a) 3 main—plots/block and 12 sub-plots/main—plot. (b) N.A. (iii) 4. (iv) (a) 23.5′×20.5′ blocks (1 and 2) ; 23.5′×20.0′ for blocks (3 and 4). (b) 21.5×18.5. blocks (1 and 2) ; 21.5×18.0 blocks (3 and 4). (v) Distanee between plots 2′ and between blocks 3′. 1′ border alround as guard row. (vi) Yes.

4. GENERAL :

(i) Good. Plots with higher dose of N lodged. (ii) Nil. (iii) Tillering and height of tillers ; grain and straw yield. (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri, expt. Started in 1948—49 on Aman paddy and continued. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1618 lb./ac.

(ii) (a) 641.0 lb./ac.

(b) 431.1 lb./ac.

(iii) N effect is highly significant. Lime effect is significant while other effects are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1121	1138	1343	1201	1236	1332	1034
N_1	1596	1683	1644	1641	1845	1518	1560
N_2	1824	1758	1845	1809	1957	1885	1568
N_3	1836	1879	1751	1822	1822	1977	1658
Mean	1594	1615	1646	1618	1722	1678	1455
L_0	1734	1777	1655				
L_1	1615	1765	1654				
L_2	1434	1302	1628				

S.E. of marginal mean of N = 71.7 lb./ac.
S.E. of marginal mean of L = 62.3 lb./ac.
S.E. of body of N×L table = 124.5 lb./ac.

S.E. of difference of two

1. P marginal means = 130.9 lb./ac'
2. N means at the same level of P = 71.0 lb./ac.
3. P means at the same level of N = 201.6 lb./ac.
4. L means at the same level of P = 152.3 lb./ac.
5. P means at the same level of L = 180.3 lb./ac.

Crop :- Paddy (Aus). Ref : W.B. **50(13)**

Site :- State Agri. Farm, Berhampore. Type : 'M'.

Object :—To study the effect of continuous application of A/S, B.M. and Lime on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Fine sandy loam (b) Refer soil analysis, Berhampore. (iii) 10, 11.6.50· (iv) (a) 4 ploughings and laddering. (b) Seeds broadcast. (c) 1 md./ac. (d) N.A. (e)— (v) Nil. (vi) Dharial. (CH 27, (medium). (vii) Unirrigated. (viii) Several weedings to check the infestation of weeds. (ix) 44.61" (x) 1st week of Oct. 1950.

2. TREATMENTS :

Main-plot treatments :—

3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

All combinations of (1) & (2)
(1) 4 levels of N : N_0=0, N_1=30, N_2=60 and N_3=90 lb./ac.
(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.
B.M. was applied at the time of preparation of land on 7.6.50. A/S broadcast on 20.7.50.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/replication and 12 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) Rep. (1 & 2) 23.5'×20.5' ; Rep. (3&4) : 23.5.'×22.0.' (b) 21.5'×18.5', 21.5'×18'.0 (v) Distance between plots 2' and blocks 3' ; 1' border alround as guard row. (vi) Yes.

4. GE ERAL :

(i) Poor: (ii) Heavily infested by mother grass (*Cyprusrotundus*) at early stage of growth and shyama grass at later stage. Could not be controlled. Slight attack of helminthosporium. (iii) Tillering and height of tillers. Grain and straw yield (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) State Agri. Farm, Chinsurah and Suri (continued since 1948 on Aman). (b) N.A. (vi) Nil. (vii) Experimen's conducted during 1951 & 1952 failed due to severe and continuous drought and adverse conditions (disease) respectively.

5. RESULTS :

(i) 1149 lb./ac.
(ii) (a) 293.4 lb./ac.
(b) 143.4 lb./ac.
(iii) Only N effect is highly significant.
(4) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	827	846	803	825	818	802	855
N_1	1043	1052	1084	1060	1029	1077	1074
N_2	1388	1333	1392	1371	1369	1409	1335
N_3	1342	1342	1343	1342	1371	1320	1334
Mean.	1150	1143	1155	1149	1147	1152	1149
L_0	1134	1136	1170				
L_1	1167	1193	1096				
L_2	1148	1101	1198				

S.E. of marginal mean of P =42.3 lb./ac.
S.E. of marginal mean of N =23.9 lb./ac.
S.E. of marginal mean of L =20.7 lb./ac.
S.E. of body of N×L table =41.4 lb./ac.

S.E. of difference of two
1. N means at the same levels of P =58.5 lb./ac.
2. P means at the same level of N =78·5 lb./ac.
3. L means at the same level of P =50.7 lb./ac.
4. P means at the same level of L =72.8 lb./ac.

Crop :- Paddy (Aus). **Ref : W.B. 53(1)**

Site : State Agri. Farm, Berhampur. **Type : 'M'**

Object :—To study the continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Lentil or gram without manure—Paddy (b) Aus paddy. (c) N.A. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (ii) 15th May to 15th June. (iv) (a) to (e) N.A. (v) Nil. (vi) Dharial (coarse, late). (vii) Unirrigated. (viii) 3 weedings. (ix) 47.17". (x) 15th Sept. to 15th October.

2. TREATMENTS :

Main-plot treatments :—
3 levels of P_2O_5 : P_0=0, P_1=20 & P_2=40 lb./ac.

Sub-plot treatments :—
All combinations of (1) &(2)
(1) 4 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 lb./ac.
(2) 3 levels of lime : L_0=0, L_1=4 and L_2=8 cwt,/ac.
B.M. applied at the time of general preparation of land and A/S, 4 weeks after transplantation. Lime ploughed in 6 weeks before transplantation (once in four years).

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/replication ; 12 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) For blocks (1 & 2) 23.5'×20.5' ; for blocks (3 & 4) 23.5'×20.0'. (b) For blocks (1 & 2) 21.5'×18.5' for blocks (3 & 4) : 21.5'×18.0'. (v) 1' border around each sub-plot. (vi) Yes.

GENERAL :

(i) Not favourable. Increase of height and number of tillers of paddy plants was continuous with the application of A/S ; B.M. and lime did not show any vegetative growth of the plants. Crop was heavily attacked with helmin-thosporium disease. The plots were also very heavily infested with several types of weeds specially by Mutha and Shyama grass. Crop practically failed in control plots. (iii) Yield of grain. (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 586.2 lb./ac.

(ii) (a) 119.7 lb./ac.

(b) 233.7 lb./ac.

(iii) Only N effect is highly significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	121.5	139.6	152.0	137.7	125.6	138.2	149.3
N_1	436.7	478.7	384.3	433.2	453.7	426.3	419.7
N_2	759.5	757.3	821.0	779.3	802.6	799.3	736.0
N_3	940.3	1030.8	1013.0	994.7	872.8	1012.4	1098.0
Mean	564.5	601.6	592.6	586.2	563.7	594.1	601.0
L_0	579.4	579.6	532.0				
L_1	536.5	610.5	635.3				
L_2	577.7	614.7	610.6				

S.E. of marginal mean of P = 17.28 lb./ac.
S.E. of marginal mean of N = 38.95 lb./ac.
S.E. of marginal mean of L = 33.74 lb./ac.
S.E. of the body of N×L table = 67.48 lb./ac.

S.E. of difference of two

1. N means at the same level of P = 95.42 lb./ac.
2. P means at the same level of N = 86.18 lb./ac.
3. L means at the same level of P = 82.64 lb./ac.
4. P means at the same level of L = 71.77 lb./ac.

Crop :- Paddy (Aus). Ref :- W.B. 49(13)

Site :- State Agri. Farm, Berhampore. Type :- 'M'

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-fallow. (b) Sugarcane, (c) Cowdung at 38 md./ac.+G.N.C. at 3.6 md./ac-+B.M. at 1.9 md./ac.+A/S at 3.3 md./ac. in Kharif ; no manure in rabi. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (iii) 1.6.49. (iv) (a) 4 ploughings and laddering. (b) Seeds broadcast. (c) md./ac. (d) & (e)—(v) Nil. (vi) Dharial. (CH 27, (medium). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 42.99". (x) 13, 28.9.49.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 5 levels of N : No=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments:—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

B M. and F.Y.M. were applied at the time of general preparation of the land.

A/S was applied after 4 weeks of sowing.

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 37′×16′. (b) 35′×14′ (v) Distance between plots 2′ and blocks 3′ ; 1′ borde around as guard row. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tillering and height of tillers. Grain and straw yield. (iv) (a) 1949-50-continued. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri, (started in 1948-49 on Aman paddy and continued). (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1155 lb./ac.
(ii) (a) 417·8 lb./ac.
(b) 282·2 lb./ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	777	766	663	735	754	716
N_1	972	1452	1023	1151	1196	1105
N_2	1348	1028	1291	1222	1180	1264
N_3	1394	1463	1348	1402	1425	1379
N_4	1520	1154	1120	1265	1204	1326
Mean	1202	1173	1090	1155	1152	1158
F_0	1161	1148	1148			
F_1	1243	1193	1033			

S.E. of mariginal mean of N = 85.1 lb./ac.
S.E. of marginal mean of P = 66.1 lb./ac.
S.E. of marginal mean of F.Y.M. = 36.9 lb. ac.
S.E. of mean in the body of N×P table = 146·7 lb./ac.
S.E. of the difference of two
1. F means at the same level of N = 89.3 lb./ac.
2. N means at the same level of F = 112.7 lb./ac.
3. F means at the same level of P = 115.2 lb./ac.
4. P means at the same level of F = 145.6 lb./ac.

Crop :- Paddy (Aus). **Ref :- 50(14)/49(13)**
Site :- State Agri. Farm, Berhampore. **Type : 'M'**

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy. (b) Fallow. (c) Nil. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (iii) 8,9 6.50. (iv) (a) 4 ploughings and laddering. (b) Broadcast (c) 1 md./ac. (d) and (e) —(v) Nil. (vi) Dharial (CH 27, medium). (vii) Unirrigated. (viii) Several weedings were given to check heavy infestation of weeds. (ix) 44.61". (x) 1st week of October, 1950.

2. TREATMENTS :

Main-plot treatments :—
All combinations of (1) and (2)
(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2 =40 lb./ac.
Sub-plot treatments :—
2 levels of F.Y.M : F_0=0 and F_1=100 md./ac.
B.M. and F.Y.M. were applied at the time of general preparation of land
A/S was broadcast:

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 37′×16′. (b) 35′×14 (v) Distance between plots 2′ and between blocks 3′; 1′ border alround as guard row. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Heavily infested by Mothagross (*Cypersus rotunuds*) at the earlier stage of growth and shyama grass at later stage. Could not be controlled. Slight attack of helminthosporium. No control measure undertaken. (iii) Tillering and height of tillers. Grain and straw yield. (iv) (a) Yes. 1949-50. continued. (b) Yes. (c) N.A. (v) (a) State Agri. Farm, Chinsurah and Suri. (Started from 1948 and continued on Aman paddy). (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 943 lb./ac.

(ii) (a) 140.5 lb./ac.

(b) 157.3 lb. ac.

(iii) Only N effect is highly significant.

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

	P_0	P_1	P_3	Mean	F_0	F_1
N_0	691	646	689	675	683	668
N_1	858	828	830	839	846	831
N_2	1061	1073	1070	1068	1069	1067
N_3	1058	1083	1118	1086	1123	1050
N_4	972	1085	1084	1047	1005	1090
Mean	928	943	958	943	945	941
F_0	918	942	975			
F_1	937	944	942			

S.E. of the marginal mean of N = 28.68 lb./ac.
S.E. of the marginal mean of P = 22.23 lb./ac.
S.E. of the marginal mean of F = 20.31 lb./ac.
S.E. of the mean in the body of N×P table = 49.68 lb./ac.
S.E. of the difference of two
1. N means at the same level of F = 64.22 lb./ac.
2. F means at the same level of N = 60.88 lb./ac.
3. P means at the same level of P = 49.78 lb./ac.
4. P means at the same level of F = 47.16 lb./ac.

Crop :-Paddy (Aus). Ref : W.B. 51 (16)/50 (14)/49(13)

Site :-State Agri. Farm, Berhampore. Type : 'M'

Object :—To find out (i) whether continuous application of A./S. in the same paddy land year after year has any deleterious effect on crop yield and on soil condition and (ii) whether such effect can be counteracted by supplementing A/S with B. M. and F.Y.M.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aus paddy. (c) Manures of this year were used in the last year. (ii) (a) Fine sandy loam, (b) Refer soil analysis, Berhampore. (iii) 15th May to 15th June. (iv) (a) 4-5 ploughings & and laddering after the preparation of land during the month of May and June. (b) Broadcast. (c) 30 srs./ac. d) & (e)—(v) Nil. (vi) Dharial (eourse) late. (vii) Unirrigated. (viii) 3 weedings done. (ix) 32.31″. x) 15th Sept to 15th Oct.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) & (2)

(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F. Y. M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as B. M.

B.M. and F.Y.M. were applied at the time of general preparation of land. A/S 4 weeks after sowing.

3. DESIGN :

(i) Split plot design. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 37′ × 16′. (b) 35′ × 14′. (v) 1′ border around each sub plot. (vi) Yes.

4. GENERAL :

(i) Crops grew very poorly due to weather condition (ii) Plants were attacked with helminthosporium disease. The plots were also heavily infested with Motha grass which was weeded out. (iii) Height of the plants & counting the number of tillers were done periodically. (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) Crop badly affected due to severe and continuous drought (vii) Nil.

5. RESULTS :

(i) 1185 lb./ac.

(ii) (a) 77.6 lb./ac.
(b) 93.0 lb./ac.

(iii) Main effects of N and F.Y.M. are highly significant. Other effects are not significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	933	887	931	917	877	957
N_1	1076	1070	1083	1076	1013	1140
N_2	1293	1224	1266	1261	1201	1320
N_3	1445	1427	1338	1403	1363	1443
N_4	1261	1314	1226	1267	1218	1317
Mean	1209	1184	1169	1185	1135	1235
F_0	1155	1129	1120			
F_1	1243	1240	1217			

S.E. of marginal mean of N = 15.85 lb./ac.

S.E. of marginal mean of P = 12.28 ,,

S.E. of marginal mean of F = 12.02 ,,

S.E. of body of N×P table = 27.44 ,,

S.E. of difference of two

1. F means at the same level of N = 37.97 ,,
2. N means at the same levely of F = 35.02 ,,
3. F means at the same level of P = 29.41 ,,
4. P means at the same level of F = 27.12 ,,

Crop :-Paddy (Aus). Ref :-W.B. 52 (30)/51 (16)/50 (14)/49 (13)

Site :-State Agri. Farm, Berhampore. Type : 'M'

Object :—To find out (i) whether continuous application of A/S in the same paddy land year after year has any deleterious effect on crop yield and soil condition and (ii) whether such an effect can be counteracted by supplementing A/S with B.M. and F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Lentil or gram without giving any manure-Paddy. (b) Aus paddy. (c) Manures of this year were used in the last year. (iii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore (iii) 15th May to 15th June. (iv) (a), (b) N.A. (c) 30 srs./ac. (d) and (e) N.A. (v) Nil. (vi) Dharial (coarse) (late.) (vii) Unirrigated. (viii) 3 weedings done (ix) 52.75". (x) 15th Sept. to 15th Oct.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20, P_2=40 lb./ac.

Sub-plot treatments ;—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as B.M.

B.M. and F.Y.M. were applied at the time of general preparation of land; A/S 4 weeks after transplantation.

3. DESIGN :

(i) Split plot design. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4.(iv) (a) 37′ × 16′. (b) 35′ × 14′. (v) 1′ border around each plot. (vi) Yes.

GENERAL :

(i) Yield rates were abnormally low. Plants receiving doses higher than 60 lb./ac. of N were lodged. Due to drought at the sowing time the germination was not uniform as such plants which came out were very sickly. (ii) Infestation with weeds was very severe. The plants could not compete with weeds which could not be checked in spite of several weedings. (iii) No. (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 707.7 lb./ac.

(ii) (a) 31.85 lb./ac.

(b) 31.85 lb./ac.

(iii) Main effects of N, P and F are highly significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	628.7	569.0	623.1	606.2	581.8	632.0
N_1	680.5	650.9	704.4	678.6	637.2	720.0
N_2	732.7	711.9	765.3	736.6	709.6	763.6
N_3	808.1	841.8	803.1	817.7	789.2	846.2
N_4	711.0	705.2	679.7	698.6	682.2	715.1
Mean	712.2	695.8	715.1	707.7	680.0	735.4
F_0	687.9	674.0	678.1			
F_1	736.5	717.6	752.1			

S.E. of the marginal mean of N = 6.50 lb./ac.

S.E. of the marginal mean of P = 5.03 lb./ac.

S.E. of the marginal mean of F = 4.17 lb./ac.

S.E. of the mean in body of N×P table =11.27 lb./ac.

S.E. of difference of two :

1. F means at the same level of N =13.00 lb./ac.
2. N means at the same level of F =13.00 lb./ac.
3. F means at the same level of P =10.07 lb./ac.
4. P means at the same level of F =10.07 lb./ac.

Crop :- Paddy (Aus). Ref :- W.B. 53(2)/52(30)/ 51(16)/50(14)/49(13).

Site :- State Agri. Farm, Berhampore. Type :- 'M'.

Objec t:—To find out (i) whether continuous application of A/S in same paddy land year after year has any deleterious effect on crop yield and on soil condition (ii) whether such effect can be counteracted by supplementing A/S with B.M. and F.Y.M. and (iii) to find a suitable combination of manures for rice growing in different tracts of West Bengal.

1. BASAL CONDITIONS :

(i) (a) Lentil or gram without giving any manure-Paddy. (b) Aus-Paddy. (c) N.A. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (iii) 15th May to 15th June. (iv) (a), (b) N.A. (c) 30 srs./ac. (d) and (e) N.A. (v) Nil. (vi) Dharial (coarse) late. (vii) Unirrigated. (viii) 3 weedings. (ix) 47.17". (x) 15th Sept. to 15th October.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) & (2)

5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac

Sub-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as B.M.

B.M. and F.Y.M. were applied at the time of general preparation of land ; A/S 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot (b) N.A. (iii) 4 (iv) (a) 37'×16'. (b) 35'×14'. (v) 1' border around the sub-plots. (vi) Yes.

4. GENERAL :

(i) Not favourable. Increase of height and number of tillers of the paddy plants was continuous with the application of A/S. Plants receiving highest doses of 120 lb./ac. N lodged. B.M. and F.Y.M. did not show any vegetative gorwth of the plants. (ii) Crop was very heavily attacked with helminthosporium disease. The plots were also very heavily infested with several types of weeds specially by Mutha and Shyama grasses. Crop practicaly failed in control plots. (iii) N.A. (iv) (a) 1949—continued. (b) Yes. (c) N A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 778.8 lb./ac.

(ii) (a) 463.6 lb./ac.

(b) 242.2 lb./ac.

(iii) None of the effects is significant.

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

	P_0	P_2	P_3	Mean	F_0	F_1
N_0	265.0	394.6	274.0	311.2	274.3	348.0
N_1	762.8	651.7	385.1	599.9	561.8	638.0
N_2	999.8	668.8	1154.5	940.8	925.8	955.8
N_3	1175.2	1114.2	897.0	1062.1	981.1	1143.2
N_4	1017.1	1077.4	845.9	980.1	929.9	1030.3
Mean	844.0	781.2	711.3	778.8	734.6	823.1
F_0	817.4	710.1	676.4			
F_1	870.6	852.4	746.2			

S.E. of the marginal mean of N = 94.6 lb./ac.
S.E. of the marginal mean of P = 73.3 lb./ac.
S.E. of the marginal mean of F = 31.7 lb./ac.
S.E. of the mean in the body of the table = 163.9 lb./ac.
S.E. of the difference of two
1. F means at the same level of N = 98.9 lb./ac.
2. N means at the same level of F = 150.1 lb./ac.
3. F means at the same level of P = 54.2 lb./ac.
4 P means at the same level of F = 117.0 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(24).**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :—To find out the effect of G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 22.7.52 (iv) (a) Plouging 4 times. (b) N.A. (c) 12 srs./ac. (d) 9″×9″. (e) 3 to 4. (v) Nil. (vi) Patnai (Med). (vii) Irrigated. (viii) Weeding 2 times and spading one time. (ix) 42.54″. (x) 17.12.52.

2. TREATMENTS :
1. Control
2. Dhaincha at 12 srs./ac.
3. Dhaincha at 16 srs./ac.
4. Dhaincha at 20 srs./ac.
5. Sunnhemp at 16 srs./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4 (iv) (a) 27′×31′ (b) 25′×29′ (v) 1′ border around the plot. (vi) Yes.

GENERAL :

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

RESULTS :

(i) 1417 lb./ac.
(ii) 221.4 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1243
2.	1498
3.	1468
4.	1560
5.	1313
S.E./mean	= 110.7 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(15)/52(24).**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :—To find out the effect of G.M. on the yield of Paddy.

BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15th June to 1st week of July 15th July, to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c) ——. (d) 9″×9″. (e) 2. (v) Nil. (vi) Patnai (Med). (vii) Irrigated. (viii) N.A. (ix) 54.41″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

1. Control.
2. Dhaincha at 12 srs./ac.
3. Dhaincha at 16 srs./ac.
4. Dhaincha at 20 srs./ac.
5. Sunnhemp at 16 srs./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 27′×31′. (b) 25′×29′=1/60.08th lb./ac. (v) 1′ broder around the plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3536 lb./ac.
(ii) 541.5 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3503
2.	3762
3.	3016
4.	3747
5.	3654
S.E./mean	= 270.7 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 52(20)

Site :- State Agri. Farm, Burdwan. Type :- 'M'.

Object :— To study whether there is any deficiency of trace elements in the soils of Burdwan .

1. BASAL CONDITIONS :

(i) (a) No (b) Aman Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 21.7.52. (iv) (a) 4 ploughings. (b) Transplanted. (c)— (d) 9″×9″. (e) 3—4. (v) 100 mds./ac. of cowdung. (vi) Patani. (Med). (vii) Irrigated. (viii) Spading once and weeding once. (ix) 42.54″. (x) 15.12.52.

2. TREATMENTS :

All possible combinations of (1) & (2).

(1) 2 doses of A/S+P_2O_5 : M_0=0 and M_1=30 lb./ac. of P_2O_5+30 lb./ac. of N.

(2) 2 doses of trace element mixture : *viz.* E_0=0 and E_1=Trace element mixture.

Source of N was A/S, of P_2O_5 was Super and that of trace element was Zn. Sul ; Mn. Sul.+Copper Sulphate. A/S applied on 21.8.52 ; Trace element mixture top-dressed after 1½ month of preparation of land.

3. DESIGN :

(i) R.B.D. (Fact.) (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 47.5′×18′. (b) 45.5′×16′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Good (no lodging). (ii) Attack of root-rot disease. (iii) Yield of grain. (iv) 1952-continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1837 lb./ac.
(ii) 260.0 lb./ac.
(iii) Only the effect of M is significant.

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

	M_0	M_1	Mean.
E_0	1779	1717	1748
E_1	1963	2087	2025
Mean.	1871	1902	1887

S.E. of body of table =116.0 lb./ac.
S.E. of any marginal mean = 82.2 lb./ac.

Crop :- Paddy (Aman). **Ref :- 53(16)/52(20)**
Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :— To study whether there is any defficiency of trace elements in the soil of Burdwan.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Patnai (Med). (vii) Irrigated. (viii) N.A. (ix) 58.41″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All possible combinations of (1) & (2)
(1) 2 doses of $N+P_2O_5$: M_0=0 and M_1=30 lb./ac. of P_2O_5+30 lb./ac. of N.
(2) 2 trace element mixture doses : E_0= 0 and E_1=Trace element mixture.
Source of N was A/S, of P_2O_5 was Super, of trace elemcnt mixture was Zn. Sul+Mn. Sul. + Copper sulphate. A/S and Super applied during general preparation of land and trace elements top dressed after 1½ months.

3. DESIGN :

(i) R.B.D. (Fact.) (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 47.5′×18′. (b) 45.5′×16′. (v) 2′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Favourable. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 3797 lb./ac.
(ii) 614.6 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	Mean
E_0	3650	3455	3552
E_1	3785	4296	4041
Mean	3718	3875	3797

S.E. of the body of the table. =274.8 lb./ac.
S.E. of any marginal mean. =194.2 lb./ac.

Crop :- Paddy (Aman). Ref :- W B. 51(2).

Site :- State Agri. Farm, Burdwan. Type :- 'M'.

Object :—To assess the comparative crop yielding property of bulky organic manure with that of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) Nil. (ii) (a) Old alluvial loam of light brownish colour. (b) Refer soil analysis, Burdwan. (iii) 21/23.7.50. (iv) (a) N.A. (b) Transplanted in lines. (c)— (d) 9" on each side. (e) 3. (v) Local practice (N A.) (vi· Patani 3—2 (Ch 7, Med ;). (vii) Unirrigated. (viii) 2 weedings and intercultural operations. (ix) 29.6". (x) 5/10.12.51.

2. TREATMENTS :

All combinations of (1) & (2) +a Control (no manure).

(1) 5 sources of N : A/S, T.C., Village Compost, Water Byacinth and Sludge.

(2) 2 levels of N : N_1=40 and N_2=60 lb./ac.

All manures added singly at the time of puddling to the individual plots.

3. DESIGN :

(i) R B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) 48'×18'. (b) 46'×16'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No attack of pests or disease. (iii) Yield of grain. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2728 lb /ac.

(ii) 281.4 lb./ac.

(iii) Only "control *vs.* other treatments" is highly significant.

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

Control = 1786 lb./ac.

	Source					
N	A/S	T.C.	Vill. Comp.	Wat.Bya.	Sludge	Mean
N_1	2790	2839	2905	2839	2773	2829
N_2	2781	2864	2831	2880	2716	2814
Mean	2785	2851	2868	2859	2744	

S.E. of marginal mean of N = 56.3 lb./ac.

S.E. of marginal mean of source = 89.0 lb./ac.

S.E. of the body of the table = 125.9 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 52 (43)/51(2).

Site :-State Agri. Farm, Burdwan. Type :-'M'.

Object :—To assess the comparative crop yielding property of bulky organic manure with that of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) Nil. (ii) (a) Old alluvial loam of light brownish colour. (b) Refer soil analysis, Burdwan. (iii) 21, 23.7.52. (iv) (a) N.A. (b) Transplanted in lines. (c)—(d) 9" on each side. (e) 3. (v) Local practice (not known). (vi) Patani 23. (vii) Unirrigated. (viii) 2 weedings and intercultural operations. (ix) 25.1". (x) 5/10.12.52.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure)
(1) 5 sources of N : A/S, T.C , Village compost, Water Byacinth and Sludge.
(2) 2 levels of N : N_1=40 and N_2=60 lb./ac
All manures added singly at the time of puddling to the individual plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/60th ac. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No attack of pest & disease. (iii) Yield of grain. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1929 lb./ac.
(ii) 376.6 lb./ac.
(iii) None of the effects is significant. Only the "control *vs.* other treatments" is highly significant.
(iv) Av. yield of grain in lb./ac.

Control = 1317 lb./ac.

	A/S	T.C.	Vill. Comp.	Wat.Bye.	Sludge	Mean
N_1	1893	2024	1934	2098	1852	1960
N_2	2115	2115	1983	2065	1827	2021
Mean	2004	2069	1958	2081	1839	

S.E. of marginal mean of N = 75.3 lb./ac.
S.E. of marginal mean of source = 119.3 lb./ac.
S.E. of the body of the table = 168.7 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53(38)/52(43)/51(2).**

Site :-State Agri. Farm, Burdwan. **Type :-'M'.**

Object :—To assess the comparative crop yielding property of bulky organic manure with that of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) Nil. (ii) (a) New alluvial loam of light brownish colour. (b) Refer soil analysis, Burdwan. (iii) 15.7.52 & 17.7.53. (4 week old seedlings transplanted). (iv) (a) N.A. (b) Transplanted in lines. (c)—(d) 9″ on each side. (e) 3. (v) Local practice (not known). (vi) Patnai 23. (vii) Unirrigated. (viii) 2 weedings and interculture operations. (ix) 35.9″. (x) 5.12.53 & 10.12.53.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure)
(1) 5 sources of N : A/S, T.C., Village compost, Water Byacinth and Sludge.
(2) 2 levels of N : N_1=40 and N_2=60 lb./ac.
All manures added singly at the time of puddling to the individual plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/60th of an acre. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3389 lb./ac.
(ii) 245.2 lb./ac.
(iii) Only "control *vs* others" is highly significant. No other effect is significant.

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

Control = 2347 lb./ac.

	A/S	T.C.	Vill. Comp.	Wat.Byc.	Sludge	Mean
N_1	3672	3619	3538	3507	3479	3563
N_2	3438	3538	3385	3379	3382	3424
Mean	3550	3578	3461	3443	3430	

S.E. of marginal mean of N = 49.0 lb./ac.
S.E. of marginal mean of source = 77.6 lb./ac.
S.E. of the body of the table = 109.7 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(21)**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'**

Object :—To find out the effect of A/S with and without lime on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 18/19. 7.52. (iv) (a) 4 ploughings (b) Transplanted. (c) — (d) 9″×9″. (e) 3—4. (v) 100 mds./ac. of cowdung. (vi) Nagra (Medium). (vii) Irrigated. (viii) Weeding two times and spading once. (ix) 42.54″. (x) 5-12-52; 7.12.52.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.
Lime used 6 weeks before transplantation, it is used every fourth year.
Date of application of lime : 11.7.52.
Date of application of A/S : 23.8.52.

3. DESIGN :

(i) R.B.D. (Factorial). (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 62′×14′. (b) 60′×12′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; lodging. (ii) Root rot disease. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A, (v) (a) Chinsurah Farm. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2219 lb./ac.
(ii) 293 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean.
L_0	1965	2131	2318	2138
L_1	2188	2307	2152	2216
L_2	2406	2277	2230	2304
Mean.	2186	2238	2233	2219

S.E. of the marginal mean = 69.1 lb./ac.
S.E. of the body of the table =119.3 lb./ac.

Crop:- Paddy (Aman). **Ref:- W.B. 53(9)/52(21)**

Site :- State Agri. Farm, Burdwan. **Type:- 'M'.**

Object :—To find out the effect of A/S with and without lime on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) — (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Patnai. (vii) Irrigated. (viii) N.A. (ix) 54.41″. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of Lime : L_0=0. L_1=4 and L_2=8 cwt./ac,
Lime used before 4 weeks before transplanation, It is used every fourth year.

3. DESIGN :

(i) R.B.D. (Fact). (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 62′×14′. (b) 60′×12′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Favourable. (ii) Stem borer reported. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A. (v) (a) , (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3950 lb./ac.
(ii) 536.0 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
L_0	3706	4314	3755	3925
L_1	3884	4481	3710	4026
L_2	3843	3807	4045	3898
Mean	3811	4201	3837	3950

S.E. of marginal means =126.7 lb./ac.
S.E. of body of the table =218.9 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(22).**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :—To study the comparative effects of Super and Rock phosphate on Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 23/24-7-52. (iv) (a) No. of ploughings—4 (b) Transplanting. (c) — (d) 9″×9″. (e) 3-4. (v) 100 mds./ac. of cowdung. (vi) Nagra (Medium). (vii) Irrigated. (viii) Weeding 2 times and spading one time. (ix) 42.54″. (x) 9.12.52 ; 11.12.52.

2. TREATMENTS :

1. Control.
2. Super 30 lb./ac. of P_2O_5.
3. „ 60 „ „
4. Rock phosphate 30 lb./ac. of P_2O_5.
5. „ „ 60 „

Applied on surface after 4 weeks of transplantation.

6. Super 30 lb./ac. of P_2O_5 (at puddling) + Super 30 lb. P_2O_5/ac. (on surface after 4 weeks).
7. Rock Phos. 30 lb./ac of P_2O_5 (at puddling) + Rock Phos 30 lb./ac. of P_2O_5 (on surface after 4 weeks).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 62′×14′. (b) 60′×12′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good ; no lodging. (ii) Root rot disease, other details N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1873 lb./ac.
(ii) 236.2 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1773
2.	1831
3.	1929
4.	1898
5.	1888
6.	1929
7.	1861
S.E./mean	=96.45 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 52 (23).

Site :-Stat Agri. Farm, Burdwan. Type :-'M'.

Object :—To study the effect of the placement of A/S on Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 21.7.52. (iv) (a) No. of ploughings-4. (b) Transplanted. (c) —. (d) 9″ × 9″. (e) 3—4. (v) 100 mds./ac. of cowdung. (vi) Patnai (Medium). (vii) Irrigated. (viii) Weeding once and spading once. (ix) 42.54″. (x) 14.12.52.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 4 levels of N : N_1=20, N_2=40, N_3=60 and N_4=80 lb./ac.
(2) 2 methods of placing A/S : M_1=on Surface ; and M_2=Thrust into soil.
N as A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 47.5′×18′. (b) 45.5′ × 16′ (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; no lodging. (ii) Root rot disease, other details N.A. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A. (v) (a) Chinsura Farm. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2324 lb./ac.
(ii) 251.8 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	N_4	Mean.
M_1	2339	2320	2313	2345	2329
M_2	2407	2278	2271	2320	2319
Mean.	2373	2299	2292	2333	2324

S.E. of the body of the table =112.7 lb./ac.
S.E. of the marginal mean of N. = 79.8 lb./ac.
S.E. of the marginal mean of M = 56.31 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53 (7)/52 (23).**

Site :-State Agri. Farm, Burdwan. **Type :-'M'.**

Object :—To study the effect of placement of A/S on Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c)—. (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Patnai. (vii) Irrigated. (viii) N.A. (ix) 54.41″. (x) 15th December to 1st week of January.

2. TREATMENTS :

All possible combinations of (1) and (2).
(1) 4 levels of N : N_1=20, N_2=40, N_3=60 and N_4=80 lb./ac.
(2) 2 methods of placing A/S : M_1=on Surface and M_2=Thrust into soil.
N as A/S applied four weeks after transplantation.

3 DESIGN :

(i) R.B.D. (Fact.). (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 47.5′ × 18′. (b) 45.5′ × 16′. (v) 1′ border around the plot. (vi) Yes.

GENERAL :

(i) Favourable ; lodging reported. (ii) Stemborer attack. (iii) Yield of grain. (iv) (a) 1952-continued. (b) Yes. (c) N.A. (v) (a) Chinsura farm. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3431 lb./ac.
(ii) 449.0 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	N_4	Mean
M_1	3181	3359	3590	3553	3421
M_2	3396	3548	3831	2990	3441
Mean	3288	3454	3710	3271	3431

S.E. of marginal mean of N =142.4 lb./ac.
S.E. of marginal mean of M =100.4 lb./ac.
S.E. of the body of the table =200.8 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 50 (16).**

Site :- State Agri. Farm, Burdwan. **Type 'M'.**

Object :—To study the efficiency of different manures applied on acidic soil for the production of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Aman paddy. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) Middle of June/1st week of August, 1950. (iv) (a) 4—5 ploughings and laddering. (b) Transplanting. (c)—. (d) 9″×9″. (e) 2—3. (v) A basal dose of F.Y.M. at 5 ton./ac to each plot. (vi) Nagra (CH. 5, Medium). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) N.A. (x) 3rd week of December, 1950.

2. TREATMENTS :

1. Control.
2. Amm. Mag Phos. at 210 lb./ac.
3. Super at 60 lb./ac. of P_2O_5.
4. Rock Phosphate at 60 lb. P_2O_5/ac.
5. Mag. Sul. at 31.5 lb/ac. of MgO.
6. A/S at 11 lb./ac. of N +Super 48 lb./ac. of P_2O_5.
7. A/S at 11 lb./ac of N+Super at 60 lb./ac. of P_2O_5
8. A/S at 11 lb./ac of N+Super at 60 lb./ac. of P_2O_5+Mag. Sul. at 31.5 lb/ac. of MgO.
9. A/S at 11 lb./ac. of N+Rock Phosphate at 60 lb./ac. of P_2O_5
10. A/S at 11 lb./ac. of N
11. C/N at 11 lb./ac. of N

A/S and C/N applied 4 weeks after transplantation by broadcasting and the rest were applied at the time of preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) 18′ × 47.5′. (b) 16′ × 45.5′. (v) Distance between plots 2′ and blocks 3′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1804 lb./ac.
(ii) 416.6 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1505
2.	1820
3.	1858
4.	1661
5.	1679
6.	1953
7.	1851
8.	2098
9.	1932
10.	1781
11.	1710
S.E./mean	=186.3 lb./ac.

Crop .- Paddy (Aman). **Ref :- W.B. 51(3)/50(16).**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :— To study the efficiency of different treatments on the yields of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) Same expt. was in these plots last year. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 15th July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c)— (d) 9″×9″. (e) 2. (v) A basal dose of F.Y.M. at 5 ton/ac. in all plots. (vi) N.A. (vii) Irrigation. (viii) Intercultural operations were done three times. (ix) 29.6″. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control.
2. Amm. Mag. Phos. at 210 lb./ac.
3. Super at 60 lb./ac. of P_2O_5
4. Rock Phosphate at 60 lb./ac. of P_2O_5.
5. Mag. Sul. at 31.5 lb. of MgO/ac.
6. A/S at 11 lb./ac. of N+Super at 48 lb./ac. of P_2O_5
7. A/S at 11 lb./ac. of N+Super at 60 lb./ac. of P_2O_5
8. A/S at 11 lb./ac. of N+Super at 60 b./ac. of P_2O_5 +Mag. Sul. at 31.5 lb. of MgO/ac.
9. A/S al 11 lb./ac. of N+Rock Phos. at 60 lb./ac. of P_2O_5
10. A/S at 11 lb./ac. of N.
11. C/N at 11 lb./ac. of N.

A/S & C/N were applied 4 weeks after transplantation by broadcasting and the rest were applied during the general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) 18′×47′.5′. (b) 16′×45.5′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Very good. No lodging reported. (ii) Nil. (iii) Yield of grain. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2984 lb./ac.
(ii) 238.8 lb./ac.
(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	2108
2.	2925
3.	3030
4.	3061
5.	2981
6.	2956
7.	3049
8.	2962
9.	2030
10.	3079
11.	2944

S.E./mean =146.6 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 50(15).**

Site :- State Agri. Farm, Burdwan. **Type :- M.**

Object :- To study the effect of applying Lime, A/S, C/N and A/C and their different combinations on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow-Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) Middle of June/1st week of July. (iv) (a) 4—5 ploughings and laddering. (b) Transplanting. (c) — (d) 9"×9" apart. (e) 2—3. (v) A basal dose of F.Y.M. at 5 ton/ac. to each plot. (vi) Nagra (CH 5. Medium.) (vii) Unirrigated (viii) 2—3 weedings in common practice. (ix) N.A. (x) 3rd week of December.

2. TREATMENTS :

1. Control.
2. Lime at 200 lb./ac. applied 6 weeks before transplanting.
3. A/S at 20 lb N/ac.
4. A/S at 40 lb. N/ac.
5. A/C at 20 lb. N/ac.
6. A/C at 40 lb. N/ac.
7. C/N at 20 lb. N/ac.
8. C/N at 40 lb. N/ac.
9. Treat. 2+Treat 3.
10. Treat. 2+Treat. 4.
11. Treat. 2+Treat. 5.
12. Treat. 2+Treat. 6.
13. Treat. 2+Treat. 7.
14. Treat. 2+Treat. 8.
15. A/S at 20 lb. N/ac. applied just before flowering.
16. A/S at 40 lb. N/ac. applied just before flowering.
17. Treat. 2+Treat. 15.
18. Treat. 2+Treat. 16.

For treatments 3 to 14, N applied as broadcast 4 weeks after transplanting.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) (a) 18. (b) N.A. (iii) 6. (iv) (a) 62′×14′. (b) 60′×12′. (v) Distance between plots 2′ & blocks 3′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Negligible. (iii) Grain & straw yield (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS .

(i) 1912 lb./ac.
(ii) 367.4 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	1440	10.	2405
2.	1544	11.	1943
3.	2057	12.	2244
4.	2489	13.	1767
5.	2048	14.	1949
6.	2162	15.	1534
7.	1654	16.	1850
8.	1680	17.	1627
9.	2094	18.	1923

S.E./mean =150.0 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 51(4)/50(15).

Site :-State Agri. Farm, Burdwan. Type :-'M'.

Object :—To study the efficiency of different treatments on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 15th July to 1st week of July. (iv) (a) N.A. (b) Transplanted. (c)—(d) 9"×9". (e) 2. (v) Nil. (vi) Nagra (Medium). (vii) Irrigated. (viii) Interculture operations were done three times. (ix) 29.6". (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control.
2. Lime at 200 lb./ac. applied 6 weeks before transplanting.
3. A/S at 20 lb.N/ac.
4. A/S at 40 lb.N/ac.
5. A/C at 20 lb.N/ac.
6. A/C at 40 lb.N/ac.
7. C/N at 20 lb.N/ac.
8. C/N at 40 lb.N/ac.
9. Treat. 2+Treat. 3.
10. Treat. 2+Treat. 4.
11. Treat. 2+Treat. 5.
12. Treat. 2+Treat. 6.
13. Treat. 2+Treat. 7.
14. Treat. 2+Treat. 8.
15. A/S at 20 lb.N/ac. applied just before flowering.
16. A/S at 40 lb.N/ac. applied just before flowering.
17. Treat. 2+Treat. 15.
18. Treat. 2+Treat. 16.

For treatments 3 to 14, N applied as broadcast 4 weeks after transplanting.

3. DESIGN :

(i) R.B.D. (Fact.) (ii) (a) 18. (b) N.A. (iii) 6. (iv) (a) 62'×14'. (b) 60'×12'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2350 lb./ac.
(ii) 96.3 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	2037	10.	2545
2.	2237	11.	2368
3.	2269	12.	2436
4.	2479	13.	2265
5.	2300	14.	2340
6.	2405	15.	2289
7.	2219	16.	2451
8.	2292	17.	2422
9.	2381	18.	2561

S.E./mean = 39.5 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53(14).

Site :-State Agri. Farm, Burdwan. Type :-'M'.

Objec :—To find out the effect of Super on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c)—(d) 9"×9". (e) 2—3. (v) Dhaincha seeds sown at the rate of of 20 seers/ac. in all the plots. (vi) Patnai (Medium). (vii) Irrigated. (viii) N.A. (ix) 54.41". (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

1. No fertilizer.
2. Super at 30 lb. P_2O_5/ac.
3. Super at 30 lb. P_2O_5/ac.+Sodium Molybdate at 40 oz./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 62′×14′. (b) 60′×12′ (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Favourable. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—continued. (b) N.A. (c) N.A. (v) (a) No. (b) N.A. (vi and (vii) Nil.

5. RESULTS :

(i) 3166 lb./ac.

(ii) 665.7 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	3041
2.	3361
3.	3097
S.E./mean	= 332.9 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53(21).**

Site :-State Agri. Farm, Burdwan. **Type :-'M'.**

Obje t :—To find out the optimum requirement of A/S and Super on Aman Paddy under different soil and climatic conditions of W. Bengal.

1. BASAL CONDITIONS :

(i)(a) No. (b) Aman Paddy. (c) N.A. (ii)(a) Clay loam. (b) N.A. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv)(a) N.A. (b) Transplanting. (c)—(d) 9″×9″. (e) 3 seedlings per hole. (v) N.A. (vi) Nagra (Medium). (vii) Irrigated. (viii) N.A. (ix) 54.41″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All possible combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super ploughed in before transplanting and N as A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38′×22′. (b) 36′×20′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953 to 1955. (b) No. (v) Mayanaguri. Cooch-Behar. Chinsurah. Malda. Haringhata. Midnapore and Cultivator's fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2568 lb./ac.

(ii) 176.9 lb./ac.

(iii) N levels differ significantly. Other effects are not significant.

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

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	2447	2620	2293	2566	2437	2473
N_1	2566	2715	2587	2549	2709	2625
N_2	2591	2595	2654	2565	2651	2611
N_3	2624	2634	2472	2609	2530	257[illegible]
N_4	2715	2451	2674	2480	2475	2559
Mean	2589	2603	2536	2554	2560	2568

S.E. of any marginal mean = 79.0 lb./ac.
S.E. of body of the table = 35.5 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 49(11).

Site :- State Agri. Farm, Canning. Type : 'M'.

Object : To study the effect of A/S and B.M. on the yield of Paddy in saline soil.

1. BASAL CONDITIONS :
(i)(a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Saline soil (b) $N_2\%=0.097$; $P_2O_5\%=0.123$; $K_2O\%=0.932$; pH=7.1. (iii) August 1949. (iv) (a) The field was ploughed 3—4 times and puddling. (b) Transplanted. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Rupsail (Medium). (vii) Unirrigated. (viii) 2—3 weedings. (ix) N.A. (x) December 1949.

2. TREATMENTS :
All combinations of (1) & (2)
(1) 4 levels of N : $N_0=0$, $N_1=10$, $N_2=20$ and $N_3=30$ lb./ac.
(2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=20$ lb./ac.
Source of N is A/S and that of P_2O_5 is B.M.
B.M. was applied at the time of general preparation of land and A/S broadcast 4 weeks after transplantation.

3. DESIGN :
(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 35′×18′. (b) 33′×16′. (v) 1′ border around plot as guard row. (vi) Yes.

4. GENERAL :
(i) Good (no lodging). (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1949 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :
(i) 2143 lb./ac.
(ii) 426.5 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean
P_0	1849	2038	2130	2511	2132
P_1	2104	2070	2401	2044	2155
Mean	1976	2054	2265	2277	2143

S.E. of the marginal mean of N =134.9 lb./ac.
S.E. of the marginal mean of P =95.4 lb./ac.
S.E. of the body of table. =190.7 lb./ac.

Crop :- Paddy (Aman). Ref : W.B. 50(7)/49(11).

Site :- Agri. Farm, Canning. Type : 'M'

Object : To study the effect of A/S and B.M. on Paddy in saline soil.

1. BASAL CONDITIONS :
(i)(a) No (b) Aman paddy. (c) Under treatments. (ii) (a) Saline soil. (b) N_2%=0.097 P_2O_5%=0.123 ; K_2O%=0.932 ; pH=7.1 (iii) 15/16-8-52. (iv) (a) Three ploughings. (b) Transplanted. (c)—(d) 9″×9″. (e) 3. (v) Nil. (vi) Rupsail (early). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 26,27.8.50.

2. TREATMENTS :
All combinations of (1) & (2)
(1) 4 levels of N : N_0=0, N_1=10, N_2=20 and N_3=30 lb./ac.
(2) 2 levels of P_2O_5 : P_0=0 and P_1=20 lb./ac.
Source of N was A/S and of P_2O_5 was B.M.
Date of applying B.M. 28.7.50. A/S 13.9.50.

3. DESIGN :
(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 35′×18′. (b) 33′×16′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :
(i) No lodging. (ii) No. (iii) Yield of grain. (iv) (a) 1949 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

RESULTS :
(i) 2126 lb./ac.
(ii) 197.5 lb./ac.
(iii) Effect of N is highly significant. Interaction between N and P is highly significant while P effect is not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean
P_0	1596	2019	2223	2843	2170
P_1	1765	2011	2351	2198	2081
Mean	1680	2015	2287	2521	2126

S.E. of marginal mean of N =62.54 lb./ac.
S,E. of marginal mean of P =44.44 lb./ac.
S.E. of the body of the table =88.87 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 51(6)/50(7)/49(11).

Site :- State Agri. Farm, Canning. Type :- 'M'.

Object :—To study the effect of A/S and B.M. on Paddy in saline soil.

1. BASAL CONDITIONS :
(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Saline soil. (b) N%=0.097 ; P_2O_5% =0.123 ; K_2O%=0.932 ; pH=7.1. (iii) 15, 16.9.51. (iv) (a) 3 ploughings & 1 puddling. (b) Transplanting. (c) —. (d) 9″×9″. (e) 3. (v) Nil. (vi) Rupsail (Medium). (vii) Irrigated. (viii) 2 weedings (5, 6.10.51). (ix) N.A. (x) 3,4.12.51.

2. TREATMENTS :
All combination of (1) & (2)
(1) 4 levels of N : N_0=0, N_1=10, N_2=20 and N_3=30 lb./ac.
(2) 2 levels of P_2O_5 : P_0=0 and P_1=20 lb./ac.
Source of N was A/S and that of P_2O_5 was B.M.
B.M. thrust in at the time of general preparation of land and A/S broadcast 3 weeks after transplantation.

3. DESIGN

(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) N.A. (b) N.A. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1949 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 993 lb./ac.

(ii) 104.5 lb./ac.

(iii) Only N effect is highly significant.

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

	N_0	N_1	N_2	N_3	Mean
P_0	667	942	1122	1181	978
P_1	704	935	1195	1195	1007
Mean	685	939	1159	1188	993

S.E. of marginal mean of N = 32.92 lb./ac.

S.E. of marginal mean of P = 23.04 lb./ac.

S.E. of the body of the table = 46.91 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 48(2).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out effect of N and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis, Chinsurah. (iii) 6, 7-8-48. (iv) (a) The field was ploughed 3—4 times before transplanting. (b) Transplanting. (c) ——. (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH 3, Medium). (vii) Unirrigated. (viii) 2—3 weedings. (5 weeks &9 weeks after transplantation). (ix) 48.58″ approx. (May to Dec.). (x) 22/23.11.48.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=20, and N_2=40 lb./ac.

(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.

N as A/S broadcast on 15.9.48 and Lime applied once in every four years about 6 week before transplantation. This year Lime was applied on 29.6.48.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) Distance between plots 1.5′ bet. blocks 2′. 1′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) Yes ; 1945—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2411 lb./ac.

(ii) 413.3 lb./ac.

(iii) Effect of N alone is highly significant.

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

	N_0	N_1	N_2	Mean
L_0	1979	2661	2430	2357
L_1	1885	2564	2641	2363
L_2	1975	2708	2859	2514
Mean	1946	2644	2643	2411

S.E. of the marginal mean of L or N = 119.3 lb./ac.
S.E. of the body of table = 206.7 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 49(2).**
Site :- State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To find out effect of N and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey. (b) Refer soil analysis, Chinsurah. (iii) 15-17.7.49. (iv) (a) The field was ploughed 3—4 times before transplanting. (b) Transplanting (c) —. (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH 3, Medium). (vii) Unirrigated. (viii) 2—3 weedings. (ix) 69.56″. approx. (May to Dec.). (x) 18-21.12.49.

2. TREATMENTS :

All combinations of (1) & (2)
(1) 3 levels of N : N_0=0; N_1=20 and N_2=40 lb./ac.
(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.
A/S was applied 4 weeks after transplantation (21.8.49) and Lime was applied once every 4 years at least 6 weeks before transplantation.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) Distance between plots 1.5′ and between blocks 2′ ; 1′ guard row kept around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2309 lb./ac.
(ii) 216.2 lb./ac.
(iii) Effect of N alone is highly significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
L_0	1748	2397	2552	2232
L_1	1851	2397	2602	2283
L_2	2036	2407	2798	2414
Mean.	1878	2400	2650	2309

S.E. of the marginal mean of L or N = 62.42 lb./ac.
S.E. of the body of the table = 108.1 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 50(1).

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To find out the effect of N. and Lime. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy. (c) Same expt. was in these plots. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15th July to 1st week of August. (iv) (a) N,A. (b) Transplanting. (c) ——. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and one stirring 5 weeks after transplantation and second weeding 9 weeks after transplantation (before flowering). (ix) 51.67″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of Lime. : L_0=0, L_1=4 and L_2=8 cwt./ac.
N as A/S was broadcast four weeks after transplantation ; Lime applied once in 4 years 6 months before transplantation.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot (vi) Yes.

4. GENERAL :

(i) Satisfactory ; No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1945 to 1954. (b) Yes. (c) N A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2376 lb./ac.

(ii) 305.3 lb./ac.

(iii) Effect of N alone is highly significant.

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

	N_0	N_1	N_2	Mean
L_0	1790	2396	2684	2290
L_1	2051	2494	2618	2388
L_2	2247	2219	2888	2451
Mean	2029	2370	2730	2376

S.E. of any marginal mean = 88.1 lb./ac.

S.E. of the body of table = 107.6 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 51 (11).

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object —To find out the effect of N and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) Same expt. was in these plots. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. 1951. (iv) (a) N.A. (b) Transplanting. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and one stirring 5 weeks after transplantation and second weeding 9 weeks after transplantation (before flowering). (x) 32.97″. (x) Last week of December, 1950.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0. N_1=20 and N_2=40 lb./ac.

(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.

A/S broadcast 4 weeks after transplantation ; Lime applied once in 4 years 6 weeks before transplantation.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Poor. Weather condition was unfavourable due to drought. Rainfall was not timely. (ii) Slight attack of helminthosporium. (iii) Yield of grain. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1254 lb./ac.

(ii) 153.9 lb./ac.

(iii) Main effect of Lime and interaction. are N×L highly significant. Main effect of N is not significant.

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

	N_0	N_1	N_2	Mean.
L_0	834	972	1031	946
L_1	1150	1373	1337	1287
L_2	1739	1252	1597	1529
Mean.	1241	1199	1322	1254

S.E. of marginal mean (N or L) = 44.4 lb./ac.

S.E. of the body of the table = 76.9 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(19).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out the effect of N and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 21.7.52. (iv) (a) Pre-tillage :- 1 plough and 1 cross plough ; Preparation of land :- 1 plough and 1 cross plough ; 1 plough, at the the time of puddling. (b) Transplanting. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding one stirring 5 weeks after transplantation and second weeding 9 weeks after transplantation (before flowering). (ix) 40.23″. (x) 9.1.53—20.1.53.

TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.

(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.

N as A/S broadcast—4 weeks after transplantation ; Lime applied once in 4 years 6 weeks before transplantatation.

3. DESIGN :

(i) 3×3 Fact in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (iv)Yes.

4. GENERAL :

(i) No lodging. (ii) The crop was seriously affected by stemborer. Slight attack of yellowing disease. (iii) Grain yield. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) Burdwan farm. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1393 lb./ac.

(ii) 338.2 lb /ac.

(iii) Neither main effects nor interaction is significant.

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

	N_0	N_1	N_2	Mean
L_0	1215	1256	1524	1332
L_1	1322	1338	1457	1372
L_2	1317	1601	1503	1474
Mean	1285	1398	1495	1393

S.E. of the marginal mean (Nor L) = 97.6 lb./ac.

S.E. of the body of the table =169.1 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(10).

Site :- State Agri. Farm, Chinsurah. Type:- 'M'.

Object :—To find out the effect of N and Lime, alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July/15thJuly to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasmanik (Medium). (vii) Irrigated. (viii) 1st weeding done 3 to 6 weeks after transplantation and second weeding 9 weeks after transplantation. (ix) 45.19″. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.

(2) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt./ac.

N as A/S, broadcast 4 weeks after transplantation, Lime applied once in 4 years 6 weeks before transplantation.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) Burdwan. (b) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2708 lb./ac.

(ii) 201.6 lb./ac.

(iii) Main effect of N is highly significant. Main effect of L and interaction N×L are not significant.

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

	N_0	N_1	N_2	Mean
L_0	2710	2716	2989	2805
L_1	2409	2604	3040	2684
L_2	2381	2708	2820	2636
Mean	2500	2676	2950	2708

S.E. of marginal mean = 58.2 lb./ac.
S.E. of body of the table = 100.8 lb./ac.

Crop :- Paddy (Aman). **Ref : W.B. 48(1).**

Site : State Agri. Farm, Chinsurah. **Type : 'M'.**

Object : To find out the effect of N in the form of A/S and F.Y.M alone and in combination on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 6.8.48 (iv) (a) The field was ploughed 3—4 times before transplantation. (b) Transplanting. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH 3, Medium). (vii) Unirrigated. (viii) 2—3 weedings. (ix) 48.58″ approx. May to Dec. (x) 7,8.12.48.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

Sub-plot treatments :—

5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

N as A/S was broadcast 4 weeks after transplantation and F.Y.M. was applied during general preparation of land.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) Distance between plots 1.5′ and bet. blocks 2′ ; 1′ guard row around each plot. (vi) Yes.

4. GENERAL ;

(i) Normal ; plots with heavy doses of N lodged. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1945 to 1954. (b) yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2555 lb./ac.

(ii) (a) 378.6 lb./ac.
(b) 395.4 lb./ac.

(iii) Main effect of N is highly significant. Main effect of F.Y.M. and interaction N×F are not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
F_0	2268	3237	2808	2578	2492	2677
F_1	2509	3173	2854	2041	1592	2434
Mean	2388	3205	2831	2310	2042	2555

S.E. of difference of two

1. main-plot treatment means = 119.7 lb./ac.
2. sub-plot treatment means = 197.1 lb./ac.
3. main-plot treatment means at the same level of sub plot treatment = 270.6 lb./ac.
4. sub-plot treatment means at the same level of main-plot treatment = 277.3 lb./ac.

Crop : Paddy (Aman). Ref : W.B. 49(1).

Site :- State Agri. Farm, Chinsurah. Type : 'M'.

Object : To find out the effect of N in the form of A/S and F.Y.M. alone and in combination on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis, Chinsurah. (iii) 15 to 17.7.49/21.8.49. (iv) (a) The field was ploughed 3—4 times before transplantation. (b) Trans planting (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH—3, Medium). (vii) Unirrigated. (viii) 2—3 weedings. (ix) 69.56″ approx. (May to Dec.). (x) 18 to 21.12.49.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

Sub-plot treatments :—

5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

F.Y.M. was applied at the time of general preparation of land (4.7.49) and N as A/S after 4 weeks of transplantation (21.8.49).

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block, 5 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) Distance between plots 1.5′ and bet. blocks 1.5′ : 1′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2310 lb./ac.

(ii) (a) 153.4 lb./ac.

(b) 292.3 lb./ac.

(iii) Main effect of N is highly significant. Main effect of F.Y.M. is not significant, while interaction N×F. is significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
F_0	1923	2561	2623	2468	2211	2357
F_1	2458	2726	2262	2057	1810	2263
Mean	2190	2644	2442	2262	2010	2310

S.E of difference of two

1. main-plot treatment means = 48.5 lb./ac.
2. sub-plot treatment means = 146.1 lb./ac
3. sub-plot treatment means for the same level of main-plot treatment = 206.7 lb./ac.
4. main-plot treatment means for the same level of sub-plot treatment = 191.1 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 50(5).

Site :- State Agri. Farm Chinsurah. Type : 'M'.

Object :—To find the effect of N in the form of A/S and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 12.8.50. (iv) (a) 4—5 ploughings and laddering after preparation of land during May and June. (b) Transplanting. (c)— (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Rainfed. Irrigation was given as and when necessary. (viii) First weeding and one stirring 5 weeks after transplantation and second weeding 9 weeks after transplantation (before flowering). (ix) 51.67″. (x) 17 & 18-12-50.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

Sub-plot treatments :

5 levels of N : N_0=0; N_1=30 N_2=60, N_3=90 and N_4=120 lb./ac.

N as A/S was applied by broadcasting 4 weeks after transplantation. F.Y.M. was applied during general preparation of land. Date of application of F.Y.M. 28.6.50 and A/S 16.9.50.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block, 5 sub plots/main plot. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the sub-plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging took place in the plots where higher doses of N were applied. (ii) Nil. (iii) Yield of grain. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2286 lb./ac.

(ii) (a) 112.8 lb./ac.

(b) 174.4 lb./ac.

(iii) Main effect of N and interaction N×F are highly significant. Main effect of F.Y.M. is not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
F_0	1813	2227	2278	2530	2551	2280
F_1	2493	2776	1954	2131	2107	2298
Mean	2153	2502	2116	2330	2329	2286

S.E. of difference of two

1. main-plot treatment means = 35.7 lb./ac.
2. sub-plot treatment means = 87.2 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =123.3 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =115.9 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 51(10).

Site:- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :— To find out the effect of N in the form of A/S and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. 1951 (iv) (a) N.A. (b) Transplanting. (c)— (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation. (ix) 32.97″. (x) Last week of December, 1951.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md/ac.

Sub-plot trnatments :—

5 levels of N : No=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

N as A/S was applied by broadcasting 4 weeks after transplantation F.Y.M. was applied during general preparation of land.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the sub plot. (vi) Yes.

4. GENERAL :

(i) Not satisfactoy. Lodging took place in those plots where higher dose of N was applied. Weather was unfavourable due to drought. (ii) Attack of helminthosporium. (iii) Yield of grain. (iv) (a) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1261 lb./ac.

(ii) (a) 284.8 lb./ac.

(b) 154.4 lb./ac.

(iii) N effect and interaction N×F are highly significant. F.Y.M. effect is not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
F_0	806	956	1337	1607	1527	1247
F_1	1330	1072	1244	1376	1352	1275
Mean	1068	1014	1290	1491	1439	1261

S.E. of difference of two

1. main-plot treatment means = 89.6 lb./ac.
2. sub-plot treatment means = 77.3 lb./ac.
3. sub-plot treatment means for the same main plot treatment =108.6 lb./ac.
4. main-plot treatment means for the same sub-plot treatment =133.3 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 52 (18).

Site :-State Agri. Farm, Chinsurah. Type :-'M'.

Object :—To find out the effect of N in the form of A/S and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii)(a) Clayey in texture. (b) Refer soil analysis Chinsura. (iii) 22.7.52. (iv) (a) Pre-tillage—1 plough and 1 cross plough ; Preparation of land—1 plough and 1 cross plough ; At the time of puddling—1 plough. (b) Transplanting. (c)— (d) 9″ × 9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated (tank). (viii) First weeding and one stirring 5 weeks after transplantation and second weeding 9 weeks after transplantation (before flowering). (ix) 40.23″ (x) 9.1.53 and 20.1.53.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M.: F_0=0 and F_1=100 md./ac.

Sub-plot treatments —

5 levels N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

N as A/S was applied by broadcasting 4 weeks after transplatation. F.Y.M. was applied during general preparation of land.

Dates of manuring :—A/S on 20.8.52 and F.Y.M. on 8.7.52.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block. 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34′ × 19′. (b) 32′ × 17′. (v) 1′ border around the sub-plot. (vi) Yes.

4. GENERAL :

(i) Not good ; plants receiving doses higher than 60 lb./ac. of N lodged during the flowering stage. (ii) Slight attack of yellowing disease. (iii) Yield of grain. (iv) (a) 1945-1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1233 lb./ac.

(ii) (a) 67.5 lb./ac.

(b) 195.8 lb./ac.

(iii) Only main effect of N is highly significant.

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

F.Y.M.	N_0	N_1	N_2	N_3	N_4	Mean
F_0	1165	1440	1295	1237	1029	1233
F_1	1234	1587	1451	1093	802	1233
Mean	1199	1513	1373	1165	915	1233

S.E. of difference of two

1. main-plot treatment means = 15.1 lb./ac.
2. sub-plot treatment means = 69.2 lb./ac.
3. sub-plot treatment means at the same level of main—plot treament=138.5 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment=125.7 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53 (13).**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To find out the effect of N in the form of A/S and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsulah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transpeanting. (c)—. (d) 9″ × 9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 1st weeding done 5 weeks to 6 weeks after transplantion and second weeding done 9 weeks after transplantation. (ix) 45.19″ (x) N.A.

2. TREATMENTS :

Main-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

Sub-plot treatments :—

5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

N as A/S was applied by broadcasting 4 weeks after transplantation. F.Y.M. was applied during general preparation of land.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4 (iv) (a) 34′ × 18′. (b) 32′ × 17′.(v) 1′ border around the sub-plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) N.A. (iv) 1945 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULRS :

(i) 2660 lb./ac.

(ii) (a) 379.5 lb./ac.
(b) 342.6 lb./ac.

(iii) Levels of N differ significantly. Qudratic effect of N is highly significant. Interaction N × F is not significant and levels of F do not differ significantly.

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

	N_0	N_1	N_2	N_3	N_4	Mean
F_0	2590	3021	2897	2835	2377	2744
F_1	2869	3024	2697	2422	1875	2578
Mean	2730	3023	2797	2628	2126	2660

S.E. of difference of two

1. main-plot treatment means = 84.9 lb./ac.
2. sub-plot treatment means =121·9 lb./ac.
3. sub-plot treatment means at the same level of main-plot teratment=242.3 lb /ac.
4. main-plot treatment means at the same level of sub-plot treatment=247.7 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 48 (9).**

Site :-State Agri. Farm, Chinsurah. **Type :.'M'.**

Object :—To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis. (iii) 3.8.48. (iv) (a) Ploughing once with improved plough for furrowing and 2—3 times with country plough. (b) Transplanting. (c)—. (d) 9″ × 9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH—3, medium. (vii) Unirrigated. (viii) 2—3 weedings is usual practice. (ix) 48.58″ approx. (x) 18/19.11.48.

2. TREATMENTS :

1. 0 lb./ac. P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

B.M. was mixed with soil and broadcast at the time of general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′ × 15′. (b) 61′ × 12′. (v) Distance between plots 2′ and blocks 3′ ; 1.5′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1944 to 1954. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2429 lb./ac.

(ii) 199.4 ib./ac.

(iii) Treatments do not differ significantly.

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

Treatments	Av. yield
1.	2250
2.	2364
3.	2436
4.	2668
S.E./mean	=63.1 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 49(7).**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To find out effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallaw. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsnrah. (iii) 28.7.49. (iv) (a) The field was ploughed 3—4 times before transplanting. (b) Transplanting. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik CH—3. (vii) Unirrigated. (viii) 2—3 weedings. (ix) 69.56″ approx. (May to Dec.) (x) 11/12.12.49.

2. TREATMENTS :

1. 0 lb./ac. P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

B.M. applied on 24.7.49

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) Distance bet. plots 1.5′ and bet. blocks 2′ ; 1.5′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1944 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2472 lb./ac.

(ii) 218.4 lb./ac.

(iii) Treatments differ highly significantly.

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

Treatment	Av. yield
1.	2108
2.	2388
3.	2595
4.	2796
S.E./mean =	69.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 50(2).

Site :-State Agri. Farm, Chinsurah. Type :-'M'.

Object :—To find out the effect of B.M. on the yield of Aman paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c)—(d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering). (ix) 51.67″. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. 0 lb./ac.P_2O_5.
2. 20 „ „.
3. 40 „ „.
4. 60 „ „.

B.M. applied during the general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around each. (vi) Yes.

4. GENERAL :

(i) Satisfactory. No lodging. Weather condition was unfavourable at the time of flowering. (ii) Nil. (iii) Yield of grain. (iv) (a) 1944 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2900 lb./ac.

(ii) 194.8 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield
1.	2422
2.	2809
3.	3044
4.	3324
S.E./mean =	61.6 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 51(13).

Site :-State Agri. Farm, Chinsurah. Type :-'M'.

Object :—To find out the effect of B.M. on the yield of Aman paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. 1950. (iv) N.A. (b) Transplanting. (c)—(d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation. (ix) 32.97″. (x) Last week of Dec. 1950.

2. TREATMENTS :

1. 0 lb /ac.P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

B.M. applied during general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around each plot. (vi) Yes.

GENERAL :

(i) Due to drought, sowing and transplantation were done late. Rainfall was not timely. Growth of the crop was not satisfactory. (ii) N.A. (iii) Yield of grain. (iv) (a) 1944 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 934 lb./ac.
(ii) 127.6 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	697
2.	875
3.	1041
4.	1123

S.E./mean = 40.3 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 52(17).**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To find out the effect of B.M. on the yield of Paddy.

BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) Manures of this year were used in last year. (ii) (a) Clayey in texture. (b) Refer soil analysis. Chinsurah. (iii) 24.7.52. (iv) (a) Pre-tillage—1 plough and 1 cross plough. At the time of preparation of land :- 1 plough and 1 cross plough. At the time of puddling :—1 plough. (b) Transplanted. (c)—(d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (medium). (vii) Irrigated. (viii) First weeding and one stirring 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering). (ix) 40.23″. (x) 10.12.52—12.12.52.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

P_2O_5 as B M. applied on 29.6.52 broadcast. B.M. applied during general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. No lodging. (ii) Slight attack of yellowing disease. (iii) Yield of grain. (iv) (a) 1944 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1959 lb./ac.
(ii) 167.9 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1840
2.	1887
3.	2035
4.	2074

S.E./mean = 53.1 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(12)

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To find out the effect of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik. (vii) Irrigated. (viii) 1st weeding done 5 weeks to 6 weeks after transplantation and second weeding done 9 weeks after transplantation. (ix) 45.19″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

P_2O_5 as B.M. applied during general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) 64′×15′. (b) 61′×12′. (v) 1½′ border around the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1944 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) No. (v) and (vii) Nil.

5. RESULTS :

(i) 3325 lb./ac.
(ii) 182.7 lb./ac.
(iii) Treatments differ highly significanly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3121
2.	3169
3.	3418
4.	3591
S.E /mean	=57.8 lb./ac.

———

Crop :- Paddy (Aman). Ref :- W.B. 48(12)

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 29.7.48. (iv) (a) 3-4 ploughings and laddering. (b) Transplanting. (c) — (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Badkalamkati (Bankura 1, early). (vii) Unirrigated. (viii) 2-3 weedings is common practice. (ix) 44.28″. (x) 16,17-11-48.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

P_2O_5 as B.M. mixed with soil and broadcast on 25.7.48 at the time of general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) Distance between plots 2′ and between blocks 3′ ; 1.5′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) Nil. (vii) The plot wise d ata

5. RESULTS :

(i) 1690 lb./ac.

(ii) N.A.

(iii) N.A.

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

Treatment	Av. yield
1.	1499
2.	1763
3.	1742
4.	1755
S.E./mean	=N.A.

Crop :- Paddy (Aman). **Ref :- W.B. 49(8)**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object—To find out the response to B.M. on the yield of Paddy.

BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis Chinsurah. (iii) 26.6.49. (iv) (a) The field was ploughed 3-4 times before transplantation. (b) Transplanting. (c) — (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Badkalamkati 65 (Bankura-1, early). (vii) Unirrigated. (viii) 2-3 weedings. (ix) 69.56″. (May to Dec.). (x) 30.11.49.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5.
2. 20 „ „
3. 40 „ „
4. 60 „ „

P_2O_5 as B.M. applied on 24.7.49.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′ (b) 61′×12′. (v) Distance between plots 1.5′ and between blocks 2′; 1.5′ guard row around a plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1411 lb./ac.

(ii) 235.8 lb./ac.

(iii) Treatments differ highly significantly.

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

Treatment	Av. yield
1.	997
2.	1333
3.	1561
4.	1753
S.E./mean	=74.6 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 50(3).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out the effect of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15th July to 1st week of August. (iv) (a) 4-5 ploughings & laddering after the preparation of land during May & June. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Badkalamkati (early). (vii) Irrigated. (viii) First weeding and one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering). (ix) 51.67″. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 ,, ,,
3. 40 ,, ,,
4. 60 ,, ,,

P_2O_5 as B.M. applied during the preparation of land. Residual effect studied.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Moderate. No lodging, weather condition was unfavourable at the time of flowering. (ii) Nil. (iii) Yield of grain (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) Chinsurah farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1719 lb./ac.
(ii) 134.1 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1494
2.	1648
3.	1754
4.	1981
S.E./mean	= 42.4 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 51(12).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out the effect of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. 1950. (iv) (a) N.A. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2. (v) Nil. (vi) Badkalamkati (early). (vii) Irrigated. (viii) First weeding & stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation. (ix) 32.97″. (x) Last week of December, 1950.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 ,, ,,
3. 40 ,, ,,
4. 60 ,, ,,

P_2O_5 as B.M. applied during preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Due to drought, sowing and transplantation were done late. As a result the growth of the crop was not satisfactory. (ii) Slight attack of helminthosporium disease. (iii) Yield of grain. (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) Chinsurah farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1503 lb./ac.
(ii) 292.9 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1444
2,	1466
3.	1577
4.	1522
S.E./mean	= 92.6 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(16).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out the effect of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15.7.52. (iv) (a) Pre-tillage :— 1 plough and 1 cross plough. At the time of preparation of land :—1 plough and 1 cross plough. At the time of puddling :—1 plough. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2. (v) Nil. (vi) Badkalamkati (Bankura 1, early). (vii) Irrigated. (viii) First weeding and one stirring 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering). (ix) 40.23″. (x) 5.11.52 & 6.11.52.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 „ „
3. 40 „ „
4. 60 „ „

No manure applied in this year. Residual effect of the treatments applied last year.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Good. No lodging. (ii) Slight attack of yellowing disease. (iii) Yield of grain. (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) Chinsurah. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 819.4 lb./ac.
(ii) 101.2 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	804.8
2.	825.4
3.	832.8
4.	814.7
S.E./mean	= 32.0 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(11).**
Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :—To find out the effect of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clayey (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2. (v) Nil. (vi) Badkalamkati. (vii) Irrigated. (viii) N.A. (ix) 45.19″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5
2. 20 ,, ,,
3. 40 ,,
4. 60 ,, ,,

P_2O_5 as B.M. applied during general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64′×15′. (b) 61′×12′. (v) 1½′ border around the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1944 to 1953. (b) Yes. (c) N.A. (v) (a) Chinsurah farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2362 lb./ac.
(ii) 171.2 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2344
2.	2363
3.	2421
4.	2319
S.E./mean	= 54.1 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 48(5).**
Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow-Paddy. (b) Aman paddy. (Jhingasail, Raghusail & Nagra varieties). (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis, Chinsurah. (iii) 7-10.9.48. (iv) (a) & (b) The field was ploughed 3—4 times before transplantation. (c) N.A. (d) 9″×9″. (e) 2. (v) Nil. (vi) Jhingasail. (CH-27, medium). vii) Unirrigated (viii) 2—3 weedings. (ix) 48.58″ Approx. (May to Dec.) (x) 17.12.48. to 1.1.49.

2. TREATMENTS :

Treatments in one direction :

All combinations of (1) and (2)

(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.
(2) 3 levelg of Lime : L_0=0, L_1=4 and L_2=8 cwt/ac.

Treatments in orthogonal direction :

3 levels P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

N applied as A/S ; P_2O_5 applied as B.M. 4 weeks after transplantation. Lime applied once in 4 years.

3. DESIGN :

(i) Strip plot. (ii) (a) 15 strips in one direction and 3 in orthogonal direction. (iii) 6. (iv) (a) 19′×34′. (b) 17′×32′. (v) 1′ border alround the plot as guard row. Distance between plots 1.5′ & blocks 2′. (vi) Yes.

4. GENERAL :

(i) Plants grew rapidly after 2 weeks of transplanting and tillering started rapidly. Lodging took place in plots with the higher doses of N. (ii) Rice case worm (*Nymplunla depuctalis*) was observed 6 weeks after transplantation. Rope soaked in Kerosine oil drawn over affected plots and kerosine oil poured in some plots. Rice himson—affected plots treated with gammaxene. Helminthosporium-Slight attack. (iii) Tillering and height of plants observed every fortnight (10 seedling/plot selected at random); Grain and straw yield. (iv) (a) 1948-continued. (b) Yes. (c) N.A. (v) (a) Suri (1st year & continued). (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1943 lb./ac.

(ii) (a) 387.5 lb./ac.
(b) 245.3 lb./ac.
(c) 181.4 lb./ac.

(iii) Levels of N differ highly significantly. Other main effects & interaction are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1632	1659	1664	1652	1658	1650	1648
N_1	2028	2090	1919	2012	1935	1988	2113
N_2	2124	2058	2053	2078	2167	2066	2001
N_3	2079	2038	2092	2070	2241	2066	1902
N_4	1958	1958	1799	1905	1839	2009	1867
Mean	1964	1961	1905	1943			
L_0	1958	1971	1976	1968			
L_1	1973	1964	1930	1956			
L_2	1961	1948	1810	1906			

S.E. of the marginal mean of N =52.7 lb./ac.
S.E. of the marginal mean of L =40.8 lb./ac.
S.E. of body of (N×L) table =91.3 lb./ac.
S.E. of difference of two
1. P means at the same level of N =65.4 lb./ac.
2. N means at the same level of P =89.4 lb./ac.
3. P means at the same level of L =52.9 lb./ac.
4. L means at the same level of P =69.3 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 49(5)/48(5).**
Site : State Agri. Farm, Chinsurah **Tyye :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. & Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Chinsurah. (iii) 19 to 25.8.49. (iv) (a) & (b) The field was ploughed 3—4 times before transplantation. (c) 5—7 srs/ac. (d) 9″×9″. (e) 2. (v) Nil. (vi) Jhingasail (CH 27. Medium). (vii) Unirrigated. (viii) 2—3 weedings is general practice. (ix) 69.56″ approx (May to Dec.) (x) 2 to 16.1.50.

2. TREATMENTS

Treatments in one direction :

All combinations of (1) & (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of Lime *viz.* L_0=0, L_1=4 and L_2=8 cwt/ac.

Treatments in orthogonal direction :

3 levels of P *viz.* P_0=0, P_1=20 and P_2=40 lb./ac.

N applied as A/S ; P_2O_5 applied as B.M. 4 weeks after transplantation.

Lime applied once in 4 years.

3. DESIGN :

(i) Strip plot. (ii) (a) 15 strips along one direction and 3 in an orthogonal direction (b) N.A. (iii) 6. (iv) (a) 34′×19′. (b) 32′×17′ (v) Distance between plots 1.5′ & between blocks 2′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. Plots receiving heavy doses of N lodged at a later stage. (ii) Nil. (iii) Tillering and height of tillers. Grain and straw yield. (iv) (a) 1948—continued. (b) Yes. (c) N.A. (v) (a) Suri & Berhampore started in 1948—49 & 1949—50 respectively & continued. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1826 lb./ac.

(ii) (a) 196.0 lb./ac.

(b) 190.4 lb./ac.

(c) 150.1 lb/ac.

(iii) Main effects of N, P and interaction N×P differ highly significantly. Interaction (L×P) is significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1710	1849	2064	1874	1878	1845	1900
N_1	1936	1972	2127	2012	2003	2066	1967
N_2	1821	1824	1790	1812	1861	1783	1792
N_3	1765	1803	1751	1773	1755	1805	1758
N_4	1610	1696	1669	1658	1682	1654	1639
Mean	1768	1829	1883	1826			
L_0	1810	1795	1902	1836			
L_1	1759	1882	1851	1831			
L_2	1736	1810	1886	1811			

S.E. of the marginal mean of N =26.7 lb./ac.

S.E. of the marginal mean of L =20.7 lb./ac.

S.E. of body of (N×L) table =46.2 lb./ac.

S.E. of difference of two

1. P means at the same level of N =53.0 lb./ac.
2. N means at the same level of P =55.6 lb./ac.
3. P means at the same level of L =42.5 lb./ac.
4. L means at the same level of P =43.1 lb./ac.

Crop : Paddy (Aman) Ref :- W.B. 50(9)/49(5)/48(5)

Site : State Agri. Farm, Chinsurah Type :- 'M'.

Object :— To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy followed by Fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam in texture (alluvium). (b) Refer soil analysis, Chinsurah. (iii) 31st July to 4th August, 1950. (iv) (a) & (b) The field was ploughed 3—4 times before transplantation. (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Jhingasail (CH 27, Medium) (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 52.47″ approx. (May to Dec.) (x) 2nd to 15th Jan. 1951.

2. TREATMENTS :

Treatments in one direction :

All combinations of (1) & (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of Lime *viz.* L_0=0, L_1=4 and L_2=8 cwt/ac.

Treatments in orthogonal direction :

3 levels of P *viz.* P_0=0, P_1=20 and P_2=40 lb./ac.

P_2O_5 as B.M. 21/22.6. 0 applied at the time of preparation of land and N as A/S after 4 weeks of transplantation (4.6.50). Lime applied once in 4 years and was applied before preparation of land in the first year.

3. DESIGN :

(i) Strip plot. (ii) (a) 15 strips in one direction and 3 orthogonal to it. (b) N.A. (iii) 6. (iv) (a) 19′×34′. (b) 17′×32′. (v) 1′. border alround. (vi) Yes.

4. GENERAL :

(i) Good (in the beginning) ; heavy shower at the late stage of cultivation spoiled the expt. and all plots lodged in water for 15 days. Only reliable data for straw could be obtained. (ii) Nil. (iii) Tillering & height of tillers. Grain & straw yield. (iv) (a) 1948—continued. (b) Yes. (c) N.A. (v) (a) State Agri. Farm Suri (from 1948 onward) & Berhampore (form 1949 onward). (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 4375 lb./ac.

(ii) (a) 180.3 lb./ac.

(b) 259.8 lb./ac.

(c) 172.5 lb./ac.

(iii) Main effect of N is highly significant. Others are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	3734	3992	4003	3910	3916	3960	3853
N_1	4135	4277	4020	4144	4091	4217	4123
N_2	4388	4471	4380	4413	4302	4431	4507
N_3	4555	4631	4820	4669	4675	4564	4769
N_4	4618	4705	4900	4741	4818	4748	4657
Mean	4286	4415	4425	4375			
L_0	4324	4425	4331	4360			
L_1	4305	4358	4489	4384			
L_2	4229	4462	4454	4382			

1. S.E. of the marginal mean of N =24.5 lb./ac.
2. S.E. of marginal mean of L =19.0 lb./ac.
3. S.E. of body of (N×L) table =42.5 lb./ac.

S.E. of difference of two

4. P means at the same level of N =64.4 lb./ac.
5. N means at the same level of P =58.4 lb./ac.
6. P means at the same level of L =53.1 lb./ac.
7. L means at the same level of P =45.2 lb./ac.

Crop :- Paddy (Aman) Ref :- W.B. 51(9)/50(9)/49(5)/48(5)

Site :- State. Agri. Farm, Chinsurah. Type : 'M'.

Object :—To study the effect of continuous application of A/S, B.M. & Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy (c) As under treatments (ii) (a) Clayey in texture (b) Refer soil analysis, Chinsurah. (iii) Early Sept. (iv) (a) Pre-tillage—1 plough & 1 cross plough. Preparation of land—1 plough and 1 cross plough. 1 plough at the time of puddling (b) Nil. (c) 15 srs/ac (d) 9″×9″ (e) 2 (v) Nil. (vi) Jhingasail. (Medium) (vii) Irrigated (vii) First weeding & stirring applied 5 weeks after transplantation and second weeding applied 9 weeks after transplantation (before flowerering) (ix) 32.97″ (x) Last week of December.

2r TREATMENTS :

Treatments in one direction :—

All combinations of (1) & (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of Lime *viz.* L_0=0, L_1=4 and L_2=8 cwt./ac.

Treatments in orthogonal direction :—

3 levels of P *viz.* P_0=0, P_1=20 and P_2=40 lb./ac.

N applied as A/S ; P_2O_5 applied as B.M. 6 weeks after transplantation.

Lime applied once in 4 years.

3. DESIGN :

(i) Strip plot (ii) (a) 15 strips in one direction and 3 strips orthogonal to it. (b) N.A. (iii) 6 (iv) (a) 34′×19′ (b) 32′×17′ (v) 1′ border around the sub plots (vi) Yes.

4. GENERAL :

(i) Due to drought, sowing & transplantation were done late. As a result the crop grew very poorly (ii) Plants were attacked with helminthosporium (iii) Height of the plants, count of the number of tillers and yield of grain (iv) (a) 1948— continued (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1341 lb./ac.

(ii) (a) 133.72 lb./ac.

(b) 192.17 lb./ac.

(c) 125.71 lb./ac.

(iii) Main effects of P and N are highly significant. Other main effects & interactions are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1172	1308	1302	1261	1261	1264	1257
N_1	1412	1492	1486	1463	1500	1458	1432
N_2	1379	1443	1489	1437	1468	1407	1437
N_3	1239	1320	1364	1308	1311	1298	1314
N_4	1151	1308	1245	1235	1200	1298	1206
Mean	1271	1374	1377	1341			
L_0	1294	1385	1365	1348			
L_1	1261	1398	1376	1345			
L_2	1257	1340	1390	1329			

1. S.E. of marginal mean of N =18.2 lb./ac.
2. S.E. of marginal mean of L =14.1 lb./ac.
3. S.E of body of (N×L) table =31.5 lb./ac.
   S.E. of differencc of two
4. P means at the same level of N =47.2 lb./ac.
5. N means at the same level of P =42.8 lb./ac.
6. P means at the same level of L =39.0 lb./ac.
7. L means at the same level of P =33.2 lb./ac.

Crop : - Paddy (Aman) **Ref :- W.B. 52(27)/51(9)/50(9)/49(5)/48(5)**

Site :-State Agri. Farm, Chinsurah. Type : 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy (c) As under treatments (ii) (a) Clayey in texture (b) Refer soil analysis, Chinsurah. (iii) 9.8.52—15.8.52 (iv) (a) & (b) N.A. (c) 15 srs/ac. (d) 9″×9″ (e) 2 (v) Nil (vi) Jhingasail (medium) (vii) Irrigated. (viii) 2 weedings done ; First weeding and one stirring applied 5 weeks after transplantation and second weeding applied 9 weeks after transplantation. Pre-tillage —1 plough and 1 cross plough. Preparation—1 plough and 1 cross plough. 1-plough at the time of puddling (ix) 40.23″ (x) 17.12.52—5.1.53.

2. TREATMENTS :

Treatments in one direction :—

All combinations of (1) & (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of Lime *viz.* L_0=0, L_1=4 and L_2=8 cwt./ac.

Treatments in orthogonal direction :—

3 levels of P *viz* ; P_0=0, P_1=20 and P_2=40 lb./ac.

N applied as A/S ; P_2O_5 applied as B.M. 4 weeks after transplantation.

Lime applied once in 4 years.

3. DESIGN :

(i) Strip plot (ii) (a) 15 strips in one direction ; 3 in orthogonal direction. (b) N.A. (iii) 6 (iv) (a) 34′×19′ (b) 32′×17′ (v) 1′ border around plot (vi) Yes.

4. GENERAL :

(i) Plants in plots receiving doses higher than 60 lb N/ac. lodged during the flowering stage. (ii) Severe incidence of yellowing disease damaged the crop heavily. N.A. (iii) Yield of grain (iv) (a) 1948—continued (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1063 lb./ac.

(ii) (a) 169.4 lb./ac.

(b) 294.3 lb./ac.

(c) N.A.

(iii) Only N effect is highly significant but yield rate decreases with higher dose of N.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1105	1169	1125	1133	1152	1140	1108
N_1	1448	1410	1388	1415	1398	1415	1433
N_2	1129	983	1040	1051	1038	1058	1057
N_3	905	876	890	890	847	823	1000
N_4	881	770	824	825	811	827	838
Mean	1094	1042	1053	1063			
L_0	1075	1034	1039	1049			
L_1	1067	1056	1035	1053			
L_2	1140	1037	1085	1087			

1. S.E. of marginal mean of N =23.0 lb./ac.
2. S,E. of marginal mean of L =17.9 lb./ac.
3. S.E. of marginal mean of P =31.0 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53 (6)/52 (27)/51(9)/ 50 (9)/49 (5)/48 (5)

Site :-State Agri. Farm, Chinsurah. Type :-'M'

Object :—To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) Same manure as in this experiment used (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) N.A. (iv)(a) and (b) N.A. (c) 12 to 15 srs/ac. (d) 9″ × 9″ (e) 2 (v) Nil (vi) Jhinga-sail (vii) Irrigated (tank) (viii) 2 weedings—first weeding applied 5 weeks after transplantation and second weeding applied 9 weeks after transplantation. (ix) 45 .19″ (x) N.A.

2. TREATMENTS :

Treatments in one direction :

All combinations of (1) and (2)

(1) 5 levels of N viz. N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of Lime viz. L_0=0, L_1=4 and L_2=8 cwt./ac.

Treatments in orthogonal direction :

3 levels of P viz ; P_0=0, P_1=20 and P_2=40 lb./ac.

N applied as A/S ; P_2O_5 applied as B.M. 4 weeks after transplantation. Lime applied once in 5 years. Manures applied as broadcast.

3. DESIGN :

(i) Strip plot (ii) (a) 15 strips in one direction ; 3 in orthogonal direction. (iii) 6 (iv) (a) 34′ × 19′ (b) 32′ × 17′. (v) 1′ border around the plot (vi) Yes.

4. GENERAL :

(i) Favourable. Height and number of tillers of the paddy plants were increased by the application of A/S. Plants in plots receiving A/S lodged. Lime and B.M. did not show any vegetative growth of plants. (ii) No. (iii) Yield of grain. (iv) (a) 1948—continued. (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1662 lb./ac.

(ii) (a) 314.44 lb./ac.
(b) 335.65 lb./ac.
(c) N.A.

(iii) Only main effect of A/S is highly significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1860	1918	1797	1858	1821	1939	1814
N_1	1956	1826	1924	1902	1806	2080	1820
N_2	1619	1562	1595	1592	1588	1529	1659
N_3	1522	1518	1534	1525	1557	1521	1496
N_4	1391	1433	1482	1435	1431	1554	1321
Mean	1670	1651	1666	1662			
L_0	1680	1633	1607	1640			
L_1	1739	1697	1739	1725			
L_2	1590	1624	1653	1622			

1. S.E. of the marginal mean of N =42.8 lb./ac.
2. S.E. of the marginal mean of L =35.4 lb./ac.
3. S.E. of the body of (N×L) table =33.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 48 (4).

Site :-State Agri. Farm, Chinsurah. Type :-'M'

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Aman paddy (variety Jhingasail. Ranghusail and Nagra). (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis, Chinsurah. (iii) 23-26.8.48. (iv) (a) & (b) The land was ploughed 3—4 times before transplanting. (c) — (d) 9″ × 9″ (e) 2. (v) Nil. (vi) Jhingasail. (CH 27, Medium). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 48.58″ approx. (May to Dec.). (x) 17.12.48 to 1.1.49.

2. TREATMENTS :

Main plot treatmens :—

All combintions of (1) and (2)

(1) 5 levels of N viz. N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(3) 3 levels of P_2O_5 viz. P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. viz. F_0=0 and F_1=100 md./ac.

N applied as A/S and P_2O_5 as B.M.

B.M. (20.8.48) and F.Y.M. (18.8.48) were applied at the time of general preparation of land and A/S 4 weeks after transplantation (30.9.48 and 2.10.48).

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication. 2 sub-plots/main-plot. (b) N.A. (iii) 6 (iv) (a) 19′ × 34′. (b) 17′ × 32′. (v) 1′ border around as guard row. Distance between plots 1.5′ and between blocks 2′ (vi) Yes.

4. GENERAL :

(i) Plants grew rapidly after 2 weeks of transplanting and tillering started rapidly. With doses upto 60 lb./ac. N, the growth was remarkable but lodging took place in plots with higher doses of N. (ii) (a) Rice case worm (**Nymphulu depuctalis**) was observed 6 weeks after transplanting. Rope soaked in kerosine was drawn over affected plots and kerosine oil poured in affected plots. (b) Rice hispa-affected plots treated with gammaene. (c) Slight attack of helminthosporium. Tillering and height of plants observed every fortnight (1 seedling/plot selected at random). (iii) Grain and straw yield. (iv) (a) 1948-49 continued. (b) Yes. (c) N.A. (v) (a) Suri (1st year and continued). (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2080 lb./ac.

(ii) (a) 273.3 lb./ac.

(b) 213.9 lb./ac.

(iii) None of the main effects or interaction is significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	1995	1880	2055	1977	1970	1982
N_1	2141	2167	2062	2130	2109	2151
N_2	2113	2072	2144	2110	2121	2099
N_3	2002	2177	2177	2119	2128	2109
N_4	2098	2063	2029	2063	2057	2069
Mean	2070	2027	2097	2080	2077	2082
F_0	2074	2068	2091			
F_1	2065	2076	2104			

S.E. of marginal means of P =34.72 lb./ac.

S.E. of marginal means of N =45.92 lb./ac.

S.E. of body of (N×P) table =78.40 lb./ac.

S.E. of difference of two

1. F means at the same level of N =70.56 lb./ac.
2. N means at the same level of F =81.76 lb./ac.
3. F means at the same level of P =54.88 lb./ac.
4. P means at the same level of F =62.72 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 49 (4)/48 (4).**

Site -State Agr. Farm, Chinsurah. **Type :-'M'**

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Chinsurah (iii) 11 to 17.8.49. (iv) (a) and (b) The field was ploughed 3-4 times before transplanting. (c) 5-7 srs./ac. (d) 9" × 9" (e) 2 (v) Nil (vi) Jhingasail (CH-27 medium) (vii) Unirrigated. (viii) 2-3 weedings is general practice. (ix) 69.56" approx (May to Dec.) (x) 2 to 16.1.50.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 5 levels of N viz. N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 viz. P_0=0, P_1=20, and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. viz. F_0=0, and F_1=100 md./ac.

N applied as A/S and P_2O_5 as B.M.

B.M. (5.8.49) and F.Y.M. (12/13.8.49) was applied at the time of general preparation of land and A/S was applied after 4 weeks of transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication and 2 sub—plots/main-plot. (b) N.A. (iii) 6 (iv) (a) 19' ×34'. (b) 17' × 32'. (v) Distance between plots 1.5' and between blocks 2' ; 1' border around plot. (vi) Yes.

4. GENERAL :

(i) Good. Plots receiving heavy doses of N lodged at a later stage. (ii) Nil. (iii) Tillering and height of tillers ; grain and straw yield. (iv) (a) 1948-49 continued. (b) Yes. (c) N.A. (v) Suri and Berhampore (started in 1948-49 and 1949-50 respectively and continued). (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1783 lb./ac.

(ii) (a) 193.8 lb./ac.

(b) 219.5 lb./ac.

(iii) Main effects of N and P are highly significant. Main effect of F and interactions NP and NF are significant.

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

	P_0	P_1	P_2	Mean	F_1	F_2
N_0	1635	1851	2012	1833	1689	1977
N_1	2023	1851	2047	1974	1869	1990
N_2	17c3	1803	1841	1802	1772	1833
N_3	1662	1690	1752	1701	1693	1709
N_4	1501	1628	1680	1603	1621	1586
Mean	1717	1765	1866	1783	1749	1819
F_1	1692	1695	8859			
F_2	1748	1835	1874			

S.E. of marginal mean of N =32.48 lb.ac.

S.E. of marginal mean of P =24.64 lb./ac.

S.E. of body of (N×P) table =56.00 lb./ac.

S.E. of difference of two

1. F means at the same level of N =72.80 lb./ac.
2. N means at the same level of F =69.44 lb./ac.
3. F means at the same level P =57.12 lb./ac.
4. P means at the same level of F =53.76 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 50(10)/49(4)/48(4).**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :
(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam in texture. (b) Refer soil analysis, Chinsurah. (iii) 6 to 10.8. 50. (iv) (a) and (b) The field was ploughed 3 to 4 times before transplantation. (c) and (d) N.A. (e) 2—3. (v) Nil. (vi) Jhingasail (CH—27, medium). (vii) Unirrigated. (viii) 2 weedings is the general practice. (ix) 52.47" approx (May to Dec.) (x) 2 to 15.1.51.

2. TREATMENTS :
Main plot treatments :—
All combinations of (1) and (2)
(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb. ac.
(2) 3 levels of P_2O_5 *viz.* P_0=0, P_1=20, and P_2=40 lb /ac.
Sub-plot treaments :—
2 levels of F.Y.M. *viz.* F_0=0, and F_1=100 lb./ac.
N applied as A/S, P_2O_5 as B.M.
B.M. and F.Y.M. (25/26.6.50) were applied at the time of general preparation of land and A/S was applied after 4 weeks of transplantation (8.9.50).

3. DESIGN :
(i) Split plot. (ii) (a) 15 main plots/replication ; 2 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) 19'×34'. (b) 17'×32'. (v) 1' border around. (vi) Yes.

4. GENERAL :
(i) Good in the beginning. Heavy shower at a later stage of cultivation. Loss in each plot directly proportional to dose of N. (ii) Nil. (iii) Tillering and height of tillers. Grain and straw yield (grain yield was later omitted). (iv) (a) 1948—49—continued. (b) Yes. (c) N.A. (v) (a) State Agri. Farm, Suri (1948 onward) and Berhampore (1949 onward.) (b) N.A. (vi) and (vii) Nil.

5. RESULTS :
(i) 3596 lb./ac.
(ii) (a) 349.4 lb /ac.
(b) 296.3 lb./ac.
(iii) Main effect of N and interaction N×F are significant. Others are not significant.
(iv) Av. yield of straw in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	3190	3408	3567	3388	3228	3548
N_1	3690	3668	3678	3679	3663	3695
N_2	3607	3760	3600	3658	3581	3731
N_3	3749	3861	3916	3842	3898	3784
N_4	4013	3856	3872	3914	3891	3937
Mean	3650	3711	3726	3696	3652	3739
F_0	3638	3637	3683			
F_1	3662	3784	3769			

S.E. of marginal mean of N = 58.24 lb./ac.
S.E. of marginal mean of P = 44.80 lb./ac.
S.E. of the body of (N×P) table = 100.8 lb./ac.
S.E. of the difference of two
1. F means at the same level of N = 98.56 lb./ac.
2. N means at the same level of F = 107.5 lb./ac.
3. F means at the same level of P = 76.16 lb./ac.
4. P means at the same level of F = 84.00 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 52(28)/50(10)/49(4)/48(4)**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 17.8.52 ; 29.8.52. (iv) (a) Pre-tillage—1 plough and 1 cross plough ; preparation of land—1 plough and 1 cross plough. (b) Transplanted. (c) 15 sr./ac. (d) 9″×9″. (e) 2. (v) Nil. (vi) Jhingasail. (vii) Irrigated. (viii) 1st weeding and 1 stirring applied 5 weeks to 6 weeks after transplatation and second weeding applied 9 weeks after transplantation (before flowering). (ix) 40.23″. (x) 7.1.53—13.1.53.

2. TREATMENTS :

Main plot treatments :—

All combinations of (1) and (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 *viz.* P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. *viz.* F_0=0 and F_1=100 lb./ac.

N applied as A/S, P_2O_5 as B.M.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S applied 4 years after transplantation.

3. DESIGN :

(i) Split plot. (ii)(a) 15 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv)(a) 34′×19′. (b) 32′×17′. (v) 1′ border around each sub-plot. (vi) Yes.

GENERAL :

(i) Plants in plots receiving doses higher than 60 lb./ac. of N lodged during the flowering stage. (ii) Severe incidence of yellowing disease which damaged the crop heavily. (iii) Yield of grain. (iv) (a) 1948—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 915.0 lb./ac.

(ii) (a) 237.8 lb./ac.

(b) 206.2 lb./ac.

(iii) Main effect of N is highly significant. Other main effects and interactions are not significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	884	882	885	884	890	876
N_1	1153	1145	1083	1127	1085	1169
N_2	910	986	959	952	973	931
N_3	750	848	765	788	787	788
N_4	887	832	749	823	775	869
Mean	917	939	888	914		
F_0	872	926	908	902		
F_1	961	952	869	927		

S.E. of marginal mean of N = 40.0 lb./ac.

S.E. of marginal mean of P = 30.7 lb./ac.

S.E. of body of (N×P) table = 48.6 lb./ac.

S.E. of difference of two

1. F means at the same level of N = 68.7 lb./ac.
2. N means at the same level of F = 74.2 lb./ac.
3. F means at the same level of P = 53.2 lb./ac.
4. P means at the same level of F = 57.5 lb./ac.

———

Crop :- Paddy (Aman). Ref :- W.B. 53(5)/52(28)/50(10)/49(4)/48(4)

Site :- State Agri Farm, Chinsurah. Type :- 'M'.

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July. (iv) (a) and (b) N.A. (c) 12 to 15 sr./ac. (d) 9″×9″. (e) 2. (v) Nil. (vi) Jhingasail. (vii) Irrigated. (viii) 1st weeding applied 5 weeks to 6 weeks after transplantation and second weeding applied 9 weeks after transplantation. (ix) 45.19″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 5 levels of N *viz.* N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 levels of P_2O_5 *viz.* P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M, *viz.* F_0=0 and F_1=100 md./ac.

N applied as A/S, P_2O_5 applied as B.M.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the sub-plot. (vi) Yes.

4. GENERAL :

(i) Favourable. Height and number of tillers of paddy plants increased by the application of A/S. Plants in plots receiving A/S lodged ; F.Y.M and B.M. did not show any vegetative growth of plants. (ii) No. (iii) Yield of grain. (iv) (a) 1948—(crop failed due to drought in 1951) continued. (b) Yes. (c) — (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 1798 lb./ac.

(ii) (a) 266.6 lb./ac.

(b) 249.9 lb./ac.

(iii) Main effect of N is highly significant. Others are not significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	1955	1933	1933	1940	2016	1864
N_1	1980	2020	2076	2025	2006	2045
N_2	1941	1713	1866	1840	1900	1780
N_3	1619	1685	1757	1687	1724	1650
N_4	1517	1537	1444	1499	1526	1473
Mean	1802	1777	1815	1798	1834	1773
F_0	1826	1842	1835	1834		
F_1	1779	1713	1796	1763		

S.E. marginal mean of F =26.3 lb./ac.

S.E. of marginal mean of N =44.4 lb./ac.

S.E. of marginal mean of P =34.6 lb./ac.

S.E. of body of (N×P) table =77.0 lb./ac.

S.E. of difference of two :

1. F means at the same level of N =86.1 lb./ac.
2. N means at the same level of F =83.3 lb./ac.
3. F means at the same level of P =66.7 lb./ac.
4. P means at the same level of F =64.5 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 48(3).

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To study the response of Paddy to the application of ? along with manures like F.Y.M., T.C. and Artificial F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 30.8.48. (iv) (a) and (b) The field was ploughed 3-4 times before transplantation. (c) 5-7 sr./ac. (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Bhasamanik (CH—3 medium). (vii) Unirrigated. (viii) 2-3 weedings. (ix) 48.58″ approx (May to December). (x) 1.1.49.

2. TREATMENTS :

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

(1) 3 sources of organic matter *viz.* T.C., F.Y.M. and Artificial F.Y.M.

(2) 2 levels of N *viz.* N_1=40 and N_2=80 lb./ac.

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

+a Control (no manure)

+Extra-treatment : B.M. at 3 md./ac. only.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 34′×19′ (b) 32′×17′. (v) Distance between plots 1.5′ and between blocks 2′ ; 1′ guard row around the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1947—1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2919 lb./ac.

(ii) 202.7 lb./ac.

(iii) 'Control *vs.* N' and 'B.M. *vs.* organic manure' effects are highly significant. Organic manures differ significantly.

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

Control =2640 lb./ac.
B.M. alone=2674 lb./ac.
S.E./mean =101.4 lb./ac.

	N_1	N_2	Mean	B_0	B_1
T.C.	2724	3064	2894	2847	2941
F.Y.M.	2991	3169	3080	2928	3233
Art. F.Y.M.	2938	3054	2996	2826	3168
Mean	2884	3096	2990		
B_0	2762	2971	2867		
B_1	3007	3220	3114		

1. S.E. of marginal mean of N or B =41.5 lb./ac.
2. S.E. of marginal mean of source =50.8 lb./ac.
3. S.E. of body of N×B table =58.7 lb./ac.
4. S.E. of body of source×(N) or (B) table =71.8 lb./ac.

Crop :- Paddy (Aman). **Ref :-W.B. 49(3)/48(3)**

Site :- State Agri. Farm, Chinsurah. **Type : 'M'.**

Object :—To study the effect of P in increasing the efficiency of organic manures like F.Y.M., T.C. and Artificial F.Y.M. for producing more Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 30.7.49. (iv) (a) and (b) The field was ploughed 3-4 times before transplantation. (c) 5-7 srs./ac. (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Bhasmanik (CH—3, medium). (vii) Irrigated. (viii) 2-3 weedings. (ix) 69.56″ approx (May to Dec.). (x) 8,9.12.43.

2. TREATMENTS :

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

(1) 3 sources of organic matter *viz.* T.C., F.Y.M. and Artificial F.Y.M.
(2) 2 levels of N *viz.* N_1=40 and N_2=60 lb./ac.
(3) 2 levels of B.M. *viz.* B_0=0 and B_1=3 md./ac.
+a Control (no manure)
+Extra-treatment : B.M. at 3 md./ac. only.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) Distance between plots 1.5′ and between blocks 3.0′ ; 1′ guard row around a plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1947 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2201 lb./ac.

(ii) 265.6 lb./ac.

(iii) 'Control *vs* N' and interaction 'N×B' are highly significant. Effects of B.M. and organic manures are significant.

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

Control	=1327 lb./ac.
B.M. alone	=1975 lb./ac.
S.E./mean	=132.8 lb./ac.

	N_1	N_2	Mean	B_0	B_1
T.C.	2205	2365	2285	2263	2309
F.Y.M.	2386	2494	2440	2371	2510
Art. F.Y.M.	2118	2185	2152	2134	2170
Mean	2236	2348	2292		
B_0	2129	2382	2255		
B_1	2344	2314	2329		

1. S.E. of marginal mean of N or B =54.2 lb./ac.
2. S.E. of marginal mean of source =66.4 lb./ac.
3. S.E. of body of B×N table =76.9 lb./ac.
4. S.E. of source×(N) or (B) table =93.9 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 50(4)/49(3)/48(3).

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To study the effect of P in increasing the efficiency of organic manures like F.Y.M.,T.C. Artificial F.Y.M. for producing more Paddy yield.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15th July to 1st week of August. (iv) (a) 4—5 ploughings and laddering after the preparation of the land during May and June. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (medium). (vii) Irrigated. (viii) First weeding and one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering) (ix) 51.67″ (x) 15th December to 1st week of January.

2. TREATMENTS :

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

(1) 3 sources of organic matter *viz.* T.C., F.Y.M., and Artificial F.Y.M.

(2) 2 levels of N *viz.* N_1=40 and N_2=60 lb./ac.

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

+ a Control (no manure) + Extra treatment : B.M. at 3 md./ac. only

3. DESIGN :

(i) R.B.D. (ii) (a) 14 (b) N.A. (iii) 4 (iv) (a) 34′×19′ (b) 32′×17′. (v) 1′ border around each plot (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging took place in the plots where higher dose of N was applied. (ii) Slight attack of insects & pests. Normal control measures adopted. (iii) Yield of grain. (iv) (a) 1947 to 1951 (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1848 lb./ac.

(ii) 139.1 lb./ac.

(iii) Levels of N and B.M. differ highly significantly.

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

Control = 1378 lb./ac.
B.M. alone = 1684 lb./ac.
S.E./mean = 69.6 lb./ac.

	N_1	N_2	Mean	B_0	B_1
T.C.	1879	2032	1955	1911	2000
F.Y.M.	1911	1946	1929	1854	2004
Art. F.Y.M.	1831	1805	1818	1777	1859
Mean	1874	1928	1901		
B_0	1809	1886	1847		
B_1	1939	1970	1954		

1. S.E. of marginal mean of N or B = 28.4 lb./ac.
2. S.E. of marginal mean of source = 34.4 lb./ac.
3. S.E. of body of N×B table = 40.2 lb./ac.
4. S.E. of body of source×(N) or (B) table = 49.2 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 51(15)/50(4)/49(3)/48(3).

Site :- State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To study the effect of P in increasing the efficiency of organic manures like F.Y.M., T.C. Artificial F.Y.M. for producing more Paddy yield.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. (iv) (a) N.A. (b) Transplanting. (c) ——. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Unirrigated. (viii) First Weeding & one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering) (ix) N.A. (x) Last week of December.

2. TREATMENTS :

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

(1) 3 sources of organic mater *viz.* T.C., F.Y.M. and Artifical F.Y.M.

(2) 2 levels of N *viz.* N_1=40 and N_2=60 lb./ac.

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

+ a Control (no manure)+Extra treatment : B.M. at 3 md./ac. only.

All manures were applied during general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 14 (b) N.A. (iii) 4 (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. Weather condition was unfavourable. Rainfall was not timely. (ii) Nil (iii) Yield of grain. (iv) (a) 1947 to 1951 (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1878 lb./ac.

(ii) 250.2 lb./ac.

(iii) 'Control Vs N' and effects of N and B.M. are highly significant. Other effects and interactions are not significant.

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

Control = 1115 lb./ac.
B.M. alone = 1555 lb./ac.
S.E./mean = 125.1 lb./ac.

	N_0	N_1	Mean	B_0	B_1
T.C.	2035	2271	2153	2013	2293
F.Y.M.	1926	2089	2007	1962	2053
Art. F.Y.M.	1690	1802	1746	1686	1806
Mean	1884	2054	1969		
B_0	1757	2018	1887		
B_1	2011	2091	2051		

1. S.E. of marginal mean of N or B = 51.1 lb./ac.
2. S.E. of marginal mean of source = 62.5 lb./ac.
3. S.E. of body of N×B table = 72.3 lb./ac.
4. S.E. of body of source×(N) or (B) table = 88.5 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 48(6)**

Site :- State Agri. Farm, Chinsurah. **Type : 'M'.**

Object :— To determine the best time of application of A/N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 12.8.48. (iv) (a) & (b) The field was ploughed 3—4 times before transplanting. (c) 5—7 srs/ac. (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH—3, medium) (vii) Unirrigated. (viii) 2—3 weedings. (ix) 48.58″ approx (May to Dec.) (x) 17/18.12.48.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N as A/N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 times of application of A/N :T_1=Full dose at puddling (10.8.48), T_2=Full dose 4 weeks after transplantation (14.9.48) and T_3=½ dose at puddling+½ dose 4 weeks after transplantation.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′ (v) Distance between plots 1.5′ and between blocks 2′ ; 1′ around each plot. (vi) Yes.

4. GENERAL :

(i) Normal (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1947 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1468 lb./ac.

(ii) 272.0 lb./ac.

(iii) Only N effect is highly significant.

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

Control mean =1140 lb./ac.

	N_1	N_2	N_3	Mean
T_1	1496	1584	1790	1623
T_2	1430	1543	1779	1584
T_3	1234	1687	1655	1525
Mean	1387	1605	1741	

S.E. of marginal mean = 78.5 lb./ac.

S.E. of body of table =136.1 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 49(6)/48(6)**

Site :- State Agri. Farm, Chinsurah. **Type : 'M'.**

Object :— To find out the best time of application of A/N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 3.8.49 (iv) (a) & (b) The field was ploughed 3—4 times before transplantation. (c) 5—7 srs/ac. (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH—3, medium). (vii) Unirrigated. (viii) 2—3 weedings. (ix) 69.56″ approx (May to Dec). (x) 13/14.12.49.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N as A/N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 times of application of A/N : T_1=Full dose at puddling (1.8.49) ; T_2=Full dose 4 weeks after transplantation and T_3=½ dose at puddling+½ doze after 4 weeks of transplantation.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×I7′. (v) Distance between plots 1.5′ and between blocks 2′ ; 1′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1947 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b)— (vi) & (vii) Nil.

5. RESULTS :

(i) 2222 lb./ac.

(ii) 156.8 lb./ac.

(iii) Main effect of levels of N is highly significant while the effect of T and interaction N×T are not significant.

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

C_{ontrol} =1872 lb./ac.

	N_1	N_2	N_3	Mean
T_1	2242	2407	2500	2383
T_2	2098	2448	2396	2314
T_3	2272	2262	2427	2320
Mean	2204	2372	2441	

S.E. of marginal mean of N or T =49.2 lb./ac.

S.E. of body of table =85.2 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 50(6)/49(6)/48(6).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :— To find out the best time of application of A/N.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 15th July to 1st week of August. (iv) (a) 4—5 ploughings & laddering after the preparation of land during May & June. (b) Transplanting. (c)— (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (medium). (vii) Irrigated. (viii) First weeding and one stirring done 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering) (ix) 51.67″. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N as A/N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 Times of application of A/N :T_1=Full dose at puddling, T_2=Full dose 4 weeks after transplantation and T_3=½ dose at puddling +½ dose 4 weeks after transplantation.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; lodging took place in some plots where higher dose of N was given. (ii) Nil. (iii) Yield grain. (iv) (a) 1947 to 1951. (b) Yes. (c) N.A. (v) (a) No. (b)— (vi) & (vii) Nil.

5. RESULTS :

(i) 1950 lb./ac.

(ii) 202.3 lb./ac.

(iii) Only levels of N differ highly significantly.

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

Control =1537 lb./ac.

	N_1	N_2	N_3	Mean
T_1	1917	2160	2181	2086
T_2	1797	2181	2395	2124
T_3	1926	2080	2151	2052
Mean	1830	2140	2242	1950

S.E. of marginal mean of N or T = 58.4 lb./ac.

S.E. of body of table =101.1 lb./ac.

Crop :- Paddy (Aman) Ref :-W.B. 51(14)/50(6)/49(6)/48(6)

Site :-State Agri. Farm, Chinsurah. Type :- 'M'.

Object :—To find out the best time of application of A/N.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy. (c) As under treatments. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) Early Sept. (iv) (a) N.A. (b) Transplanting (c)—(d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasmanik (medium). (vii) Irrigated. (viii) First weeding & one stirring 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering) (ix) 32.97″ (x) Last week of December.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N as A/N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 times of application of A/N :

T_1=Full dose at puddling, T_2=Full dose 4 weeks after transplantation and T_3=½ dose at puddling +½ dose 4 weeks after transplantation.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 34′×19′ (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) satisfactory ; no lodging. Weather condition was unfavourable due to drought and the rain fall was not timely. (ii) No. (iii) Grain yield. (iv) (a) 1947 to 1951. (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 691.7 lb./ac.

(ii) 125.6 lb./ac.

(iii) Main effect of time of application of N and of levels of N are highly significant while their interaction is not significant.

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

Control =483 lb./ac.

	N_1	N_2	N_3	Mean
T_1	727	913	1008	883
T_2	640	848	759	749
T_3	542	679	733	651
Mean	637	814	833	

S.E. of body of table = 62.8 lb./ac.
S.E. of marginal mean of N or T = 36.3 lb./ac.

Crop :- Paddy (Aman) **Ref :- W.B. 48(10)**

Site :- State Agri. Farm, Chinsurah. **Type :- 'M'.**

Object :- To study the residual effect of N applied in the form of organic manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil.(ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August. (iv) (a) 2—3 ploughings and laddering at the time of transplanting (b) Transplanting (c)— (d) 9″×9″ (e) 2—3 (v) Nil. (vi) Bhasamanik (CH—3 Med ;) (vii) Unirrigated (viii) 2—3 weedings is common practice (ix) 44.28″ (x) 1st week of December, 1948. (Exact dates—N.A.)

2. TREATMENTS :

All combinations of (1) & (2)
(1) 4 levels of N : N_0=0, N_1=20, N_2=40, and N_3=60 lb./ac.
(2) 3 sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.
No manure applied during this year. 2 nd year of residual effect.

3. DESIGN :

(i) 4×3Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 6 (iv) (a) 44′×15′ (b) 42′×13′ (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good (ii) N.A. (iii) Grain & straw yield (iv) (a) 1942 to 1950. Residual effects from 1947 onwards (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2329 lb./ac.
(ii) 138.4 lb./ac.
(iii) Levels of N and Source of N differ highly significantly. Interaction is not significant.
(iv) Av. yield of grain in lb./ac.

N_0=2200 lb./ac.

	M.C.	C.C.	G.N.C.	Mean
N_1	2444	2346	2228	2339
N_2	2384	2404	2303	2364
N_3	2455	2448	2342	2415
Mean	2428	2399	2291	

S,E. of marginal mean of source or level =32.6 lb./ac.
S.E. of the body of table =56.5 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 49(15)/48(10).

Site :-State Agri. Farm, Chinsurah. Type :-'M'.

Object :—To study the residual effect of N applied in the form of organic manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August 49. (iv) (a) 1st ploughing after harvest of previous crop. Another after 1st rainfall (May—June) 2—3 ploughings and laddering at the time of transplanting. (b) Transplanting. (c) — (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamaink (CH—3, Med.) (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 69.55″. (x) 1st week of Dec. 1949.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 Sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.

No manure applied during the year. 3rd year of residual effect.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 44′×15′. (b) 42′×13′. (v) 1′ border alround each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1942 to 1950. Residual effects from 1947 onwards. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2838 lb./ac.

(ii) 193.8 lb./ac.

(iii) No effect is significant.

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

N_0 = 2781 lb./ac.

	M.C.	C.C.	G.N.C.	Mean
N_1	3040	2527	2701	2756
N_2	2869	3012	2860	2914
N_3	2897	2912	2892	2900
Mean	2935	2817	2818	

S.E. of marginal mean of Source or level = 45.7 lb./ac.

S.E. of body of table = 79.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 50(17)/49(15)/48/(10).

Site :-State Agri. Farm, Chinsurah. Type :-'M'.

Object :—To study the residual effect of N applied in the form of organic manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August 1950. (iv) (a) 2—3 ploughings and laddering at the time of transplanting. (b) Transplanting. (c) — (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (CH-3 Med.) (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 52.47″. (x) 1st week of December, 1950 (Exact dates N.A.)

2. TREATMENTS :

All combinations of (1) and (2)
(1) 4 levels of N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.
(2) 3 sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.
4th year of residual effect.

3. DESIGN :

(i) 4×3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 44′×15′. (b) 42′×13′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1942 to 1950. Residual effect from 1947 onwards. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2556 lb./ac.
(ii) 239.7 lb./ac.
(iii) No effect is significant.
(iv) Av. yie d of grain in lb./ac.

N_0 = 2504 lb./ac.

	M.C.	C.C.	G.N.C.	Mean
N_1	2714	2647	2428	2596
N_2	2551	2688	2434	2558
N_3	2560	2580	2558	2566
Mean	2608	2638	2473	

S.E. of marginal mean of Source or level = 56.5 lb./ac.
S.E. of body of table = 97.9 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 52(15).**
Site :- State Agri. Farm Chinsurah. **Type :- 'M'.**

Object :—To find out the suitable method of application of A/S for increasing the yield of Aman paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman Paddy. (c) N.A. (ii) (a) Clayey in texture. (b) Refer soil analysis, Chinsurah. (iii) 9.7.52 (iv) (a) Pretillage—1 plough and 1 cross plough. Preparation of land—1 plough and 1 cross plough. At the time of puddling—1 plough. (b) Transplanted. (c) ——. (d) 9″×9″. (e) 2 (v) 100 md. cowdung/ac. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) First weeding and stirring 5 weeks after transplantation and second weeding done 9 weeks after transplantation (before flowering). (ix) 40.23″ (x) 13.11.52—3.12.52.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 4 levels of N as A/S : N_1=20, N_2=40, N_3=60 and N_4=80 lb./ac.
(2) 2 methods of application of A/S : M_1=A/S broadcast on surface and M_2=Thrust into soil.
A/S was applied 4 weeks after transplantation.

3. DESIGN :

(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Slight attack of yellow disease. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A. (v) (a) Burdwan Farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2321 lb./ac.
(ii) 400.7 lb./ac.
(iii) Levels of N differ significantly. Other main effect and interaction are not significant.
(iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	N_4	Mean
M_1	2570	2428	2061	1851	2227
M_2	2625	2687	2227	2122	2415
Mean	2597	2557	2144	1986	2321

S.E. of the marginal mean (N) = 115.7 lb./ac.
S.E. of the marginal mean (M) = 81.8 lb./ac.
S.E. of body of table = 163.8 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(8)/52(15).
Site :- State Agri. Farm. Chinsurah. Type :- 'M'.

Object :—To find out the suitable method of application of A/S for increasing the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting (c) ——. (d) 9"×9" (e) 2. (v) Nil. (vi) Bhasamanik. (vii) Irrigated (viii) N.A. (ix) 45.19". (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) & (2)
(1) 4 levels of N as A/S : N_1=20, N_2=40, N_3=60 and N_4=80 lb./ac.
(2) 2 methods of application : M_1=On the surface and M_2=Thrust in the soil.
A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6 (iv) (a) 34'×19'. (b) 32'×17'. (v) 1' border around the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A. (v) (a) Burdwan Farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2577 lb./ac.
(ii) 201.6 lb./ac.
(iii) Levels of N differ highly significantly. Methods of application differ significantly. Interaction is not significant.
(iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	N_4	Mean
M_1	2649	2750	2597	2254	2562
M_2	2642	2849	2645	2233	2592
Mean	2645	2799	2621	2243	2577

S.E. of marginal mean of N = 58.2 lb./ac.
S.E. of marginal mean of M = 41.1 lb./ac.
S.E. of body of table = 82.3 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53 (18).**

Site :-State Agri. Farm, Chinsurah. **Type :-'M'**

Object :—To find out the optimum requirement of A/S and Super on Aman paddy under different soil-climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) —. (d) 9″ ×9″. (e) 3. (v) N.A. (vi) Patnai (Med.). (vii) Irrigated. (viii) N.A. (ix) 45.19″. (x) 15th Dec. to 1st week of Jan.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and. N_4=60 lb./ac.

N as A/S and P_2O_5 as super.

Super was ploughed in before transplanting and A/S was given as a top dressing 4 weeks after transplan tation.

3. DESIGN :

(i) 5×5 Fact in. R.B.D. (ii) (a) 25. (b) N.A. (iii) 5 (iv) (a) 38′ × 22′. (b) 36′ × 20′ (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) A/S and Super increased the vegetative growth of plants. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953 to 1955. (b) Different sites. (c) N.A. (v) (a) The experiment was conducted in seven State farms and in seven cultivators fields. The State farms were : Maynaguri, Cooch behar, Chinsurah, Malda, Burdwan, Haringhata and Midnapore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2428 lb./ac.

(ii) 383.5 lb./ac.

(iii) Levels of N and levels of P do not differ significantly. Interaction is not significant.

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

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	2158	2418	2607	2442	2554	2436
N_1	2390	2680	2363	2233	2421	2417
N_2	2682	2408	2397	2747	2336	2514
N_3	2479	2531	2498	2721	2376	2521
N_4	2484	2086	2374	2242	2061	2250
Mean	2439	2425	2448	2477	2350	2428

S.E. of marginal mean =76.7 lb./ac.

S.E. of body of table =171.2 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53 (22).**

Site :-State Agri. Farm, Cooch Behar. **Type :-'M'**

Object :—To find out the optimum requirement of A/S and Super on Aman Paddy under different soil-climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) N.A. (ii) (a) Silty and fine sandy loam. (b) Refer soil analysis Cooch-Behar. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transpalanted. (c) —. (d) 9″ × 9″. (e) 3. (v) N.A. (vi) Indrasali (vii) Unirrigated (viii) N.A. (ix) 95.77″ (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

N as A/S and P_2O_5 as Super.

Super was ploughed in before transplanting and A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN :

(i) 5×5 Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38′ × 22′. (b) 36′ × 20′. (v) 1′ border around the plot. (vi) Yes.

4 GENERAL :

(i N.A. (ii) Plants were attacked by stem borer. (iii) Grain yield (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) Maynaguri, Chinsurah, Malda; Burdwan, Haringhata and Midnapore and Cultivators' fields. (b) N.A. (vi) and (vii) Ni!.

5. RESULTS :

(i) 1956 lb./ac.

(ii) 262.5 lb./ac.

(iii) Main effects and interaction are not significant.

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

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	2116	1976	2064	2051	1936	2029
N_1	1772	1879	1887	1906	2037	1896
N_2	1937	1848	1938	1750	1999	1894
N_3	1906	1866	2108	1942	2000	1964
N_4	1889	2035	1990	1988	2088	1998
Mean	1924	1921	1997	1927	2012	1956

S.E. of marginal mean =52.5 lb./ac.

S.E. of body of table =117.4 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 53 (20)**

Site :-State Agri. Farm, Haringhata. **Type :-'M'.**

Object :—To find out the optimum requirement of A/S and Super on Aman paddy under different soil climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Haringhata. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c)—. (d) 9″ × 9″. (e) 3. (v) N A. (vi) Bhasamanik. (vii) Unirrigated. (viii) N.A. (ix) 127.70″(x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

N as A/S and P_2O_5 as Super.

Super was ploughed in before transplanting and A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(1) 5×5 Fact, in R.B.D. (ii) (a) 25 (b) N.A. (iii) 5 (iv) (a) 38′×22′. (b) 35.25′×18.75′. (v) Yes (vi) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) No (iii) Yield of grain. (iv) (a) 1953 to 1955. (b) No (c) N.A. (v) (a) Maynaguri, Cooch-Behar ; Chinsurah ; Malda ; Burdwan ; Midnapore and on Cultivators' fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2585 lb./ac.
(ii) 301.2 lb./ac.
(iii) Levels of N differ highly significantly. Levels of P do not differ significantly. Interaction is not significant.
(iv) Av. yield of grain in lb.ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	2363	2561	2287	2395	2344	2390
N_1	2621	2697	2393	2479	2655	2569
N_2	2478	2799	2625	2814	2812	2706
N_3	2609	2642	2763	2762	2683	2692
N_4	2618	2499	2573	2611	2550	2570
Mean	2538	2640	2528	2612	2609	2585

S E. of marginal mean = 60.1 lb./ac.
S.E. of body of table = 134.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53 (39).
Site :-State Hort. Farm, Krishnagar. Type :-'M'

Object :—To compare crop yielding property of bulky organic manures with A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) New Alluvium. (b) Refer soil analysis, Krishnagar (iii) 27.8.53. (iv) (a) N.A. (b) Transplanted. (c)—. (d) 9″ × 9″. (e) 3 (v) Nil. (vi) Dodkhani (Fine). (vii) Unirrigated. (viii) Two weedings and interculture operations done. (ix) 26.79″ (x) 5.1.54.

2. TREATMENTS :

1. Control
2. A/S. 40 lb./ac. of N.
3. T.C. 40 lb./ac. of N.
4. T.C. 20 lb./ac. of N+A/S. 20 lb./ac. of N.

All manures added singly at the time of puddling to the individual plots.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 1/60th ac. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS ;

(i) 1552 lb./ac.
(ii) 274.0 lb./ac.
(iii) Control *vs.* fertilizers is highly significant. The fertilizer do not differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1109
2.	1699
3.	1726
4.	1672
S.E./mean	±122.6 lb./ac.

Crop :-Paddy (Aus). **Ref :-W.B. 48(13).**

Site :-State Agri. Farm, Malda. **Type :-'M'.**

Object :—To find out a suitable combination of A/S and Super and to see whether Super is best utilized by spreading on the surface of soil or digging into the soil and also to see whether fertilizers applied to Aus paddy can increase the yield of following wheat.

1. BASAL CONDITIONS :

(i) (a) Aus paddy-Wheat. (b) N.A. (c) N.A. (ii) (a) Clayey loam (b) Refer soil analysis, Malda. (iii) 27.5.48. (iv) (a) 4—5 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e) — (v) Nil. (vi) Dharial. (vii) Unirrigated. (viii) 2—3 hand weedings. (ix) 54.12". (x) 13—14 and 19.9.48.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 methods of application of Super : M_1=Spread on and M_2=Dug in trenches.

N as A/S and P_2O_5 as Super.

A/S was broadcast on 2.4.48. In half the area, Super was spread on surface and in other half it was placed in furrows, laddered and ploughed.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 30'×21.5' (b) 28'×19.5'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1065 lb./ac.

(ii)(a) 480.5 lb /ac.

(b) 169.1 lb./ac.

(iii) Levels of N differ highly significantly. Other effects and interactions are not significant.

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

	P_0	P_1	P_2	Mean	M_1	M_2
N_0	662	764	952	793	790	796
N_1	1354	1098	1205	1219	1200	1239
N_2	1080	1299	1168	1182	1151	1214
Mean	1032	1054	1108	1065	1047	1083
M_1	1021	1033	1086	1047		
M_2	1043	1075	1131	1083		

S.E. of difference of two

1. means in the body of (N×P) table = 240.8 lb./ac.
2. N or P means = 138.7 lb./ac.
3. M means = 39.9 lb./ac.
4. M means at the same level of N or P = 69.9 lb./ac.
5. N or P means at the same level of M = 147.0 lb./ac.

Crop :-Paddy (Kharif). **Ref :-W.B. 49(16).**

Site :-State Agri. Farm, Malda. **Type :-'M'.**

Object :—To find out a suitable combination of A/S and Super and to see whether Super is best utilised by spreading on the surface of soil and also, to see whether fertilisers applied to Aus paddy can increase the yield of following wheat.

1. BASAL CONDITIONS :

(i) (a) Aus paddy-Wheat. (b) Wheat. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Malda. (iii) 17.5.49. (iv)(a) 4—5 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e)— (v) Nil. (vi) Dharial (late). (vii) Unirrigated. (viii) 2—3 hand weedings in July and August. (ix) 47.58". (x) 24/28.8.49.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 methods of application of Super : M_1=Spread on and M_2=Dug in trenches.

N as A/S and P_2O_5 as Super.

A/S was broadcast on 4.4.49. In half the area Super was spread on surface and in other half it was placed in furrows, laddered and then ploughed on 22.4.49.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4, (iv) (a) Sub-plot : 30'×21.5' ; Main plot : 190'×68.5'. (b) Sub-plot : 28'×19.5' ; Main plot : N.A. (v) Distance between plots : 2' ; 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 1473 lb./ac.

(ii) (a) 250.9 lb./ac.

(b) 236.3 lb./ac.

(iii) Levels of N differ highly significantly. Other effects and interactions are not significant.

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

	P_0	P_1	P_2	Mean	M_1	M_2
N_0	1037	876	950	954	1006	903
N_1	1528	1697	1684	1636	1581	1691
N_2	1776	1816	1892	1828	1848	1808
Mean	1447	1463	1509	1473	1478	1467
M_1	1401	1471	1563	1478		
M_2	1492	1456	1454	1467		

S.E. of difference of two

1. means in the body of N×P table = 125.4 lb./ac.
2. marginal means of N or P = 72.43 lb./ac.
3. marginal means of M = 55.7 lb./ac.
4. M means at the same level of N or P = 96.4 lb./ac.
5. N or P means at the same level of M = 99.5 lb./ac.

Crop :- Paddy (Aus). Ref :-W.B. 50(8)

Site :- State Agri. Farm, Malda. Type :- 'M'

Object .—To find out the optimum requirement of A/S and Super and to find out the best method of application of A/S to Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) Aus followed by wheat in order to study the residual effect. (b) Wheat. (c) No manure used. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 15th July to 1st week of August. (iv) (a) 4-5 ploughings and laddering after the preparation of land during May and June. (b) Broadcast. (c) 30 to 35 seers/ac. (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Dharial (late) Coarse variety. (vii) Unirrigated. (viii) 3 weedings and 2 rakings done. (ix) 52.57″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 methods of application of Super : M_1=Spread on and M_2=Dug in trenches.

N as A/S and P_2O_5 as Super.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replication ; 2 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) 30′×21.5′. (b) 28′×19.5′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) No lodging ; satisfactory. (ii) Slight attack of helminthosporium. (iii) Yield of grain. (iv) (a) 1948-1950. (b) Yes. (c) N.A (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1286 lb./ac.
(ii) (a) 172.6 lb./ac.
(b) 127.6 lb./ac.
(iii) Levels of N differ highly significantly. Methods of application differ significantly. All other effects are not significant.
(iv) Av. yield of grain in lb /ac.

	P_0	P_1	P_2	Mean	M_1	M_2
N_0	704	736	725	722	744	699
N_1	1430	1342	1445	1406	1341	1471
N_2	1754	1718	1718	1730	1752	1708
Mean	1296	1265	1296	1286	1279	1293
M_1	1282	1238	1317			
M_2	1310	1292	1275			

1. S.E. of body of N×P table =60.9 lb./ac.
2. S.E. of marginal mean of N or P =35.2 lb/.ac.
3. S.E. of marginal mean of M =21.2 lb./ac.

S E. of difference of two

4. M means at the same level of N or P =52.1 lb./ac.
5. N or P means at the same level of M =62.0 lb./ac.

Crop :. Paddy (Aman). Ref :- W.B. 53(23).

Site :- State Agri. Farm, Malda. Type :- 'M'.

Object :—To find out the optimum requirement of A/S and Super on Aman Paddy under different soil climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) and (b) N.A. (c) — (d) 9″×9″. (e) 3. (v) N.A. (vi) Dular (Medium). (vii) Irrigated. (viii) N.A. (ix) 64.38″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super was ploughed in before transplanting and N as A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN :

(i) 5×5 fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38′×16′. (b) 36′×16′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) A/S and Super increased the vegetative growth of the plants. (ii) N.A. (iii) Yield of grain, (iv) (a) 1953 to 1955. (b) No. (c) N.A. (v) (a) Mayanaguri, Cooch Behar Chinsurah Haringhata, Burdwan, Midnapore and Cultivators' fields. (b) N.A. (vi) Nil. (vii) Experiment conducted in year 1954 failed.

5. RESULTS

(i) 1014 lb./ac.
(ii) 395.8 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	945	974	1047	812	1342	1024
N_1	768	1160	1060	960	1192	1028
N_2	783	826	894	932	1215	930
N_3	1025	1070	926	1020	1054	1019
N_4	1139	1116	807	1207	1077	1069
Mean	932	1029	947	986	1176	1014

S.E. of marginal mean = 70.0 lb./ac.

S.E. of body of table =176.9 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(24)

Site :- State Agri. Farm, Maynaguri. Type :- 'M'.

Object :—To find out the Optimum requirement of A/S and Super on Aman Paddy under different soil climatic conditions of West Bengal.

1 BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) N.A, (ii) (a) Fine Sandy loam. (b) Refer soil analysis, Maynaguri (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c) — (d) 9″×9″. (e) 3. (v) N.A. (vi) Indrasail. (vii) Unirrigated. (viii) N.A. (ix) N A. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.
(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super and N as A/S.
Super was ploughed in before transplanting and A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN :

(i) 5×5 Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 32′×22′. (b) 30′×20′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) Incidence of helminthosporium disease had been reported. (iii) Yield of grain. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) Cooch-Behar, Chinsurah, Burdwan, Haringhata, Malda, Midnapore and Cultivators' fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1878 lb./ac.
(ii) 404.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	1934	1766	1882	1620	1816	1804
N_1	2031	1773	1826	2246	1741	1923
N_2	1747	1949	1822	1807	1550	1775
N_3	2237	1929	1885	1848	1936	1967
N_4	2057	1893	1934	1829	1897	1922
Mean	2001	1862	1870	1870	1788	1878

S E. of marginal mean = 81.0 lb./ac.
S.E. of body of table =181.0 lb./ac.

Crop :- Paddy (Aus). **Ref : W.B. 50(43)**
Site :- State Agri. Farm, Midnapore. **Type : 'M'**

Object : To study the effect of N and P_2O_5 on *Dular* variety of paddy.

1. BASAL CONDITIONS :

(i) (a) Dular (Kharif)—Kalai (Rabi) (b) Pulse (c) Nil (ii) (a) Red laterite (b) Refer soil analysis, Midnapore (iii) 2.7.50 (iv) (a) 4 ploughings and harrowings. (b) Transplanting. (c)—(d) 10″×10″. (e) 4—5 (v) Lime 6 md./ac. (vi) Dular. (vii) Irrigated. (viii) Weeding and hoeing once. (ix)—(x) 8.9.50.

2. TREATMENTS :

1. 25 lb/ac. of N
2. 25 lb/ac. of P_2O_5
3. 25 lb/ac. of N+25 lb/ac. of P_2O_5
4. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) 31′×28′. (b) 30′×27′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of paddy. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Plot wise yield data N.A. Results furnished as available.

5. RESULTS :

(i) 1053 lb./ac.
(ii) N.A.
(iii) N.A.
(iv) Av. yield of grain in lb./ac,

Treatment	Av. yield.
1.	1115
2.	912
3.	1171
4.	1013
S.E/mean	=N.A.

Crop :- Paddy (Aman) **Ref :- W.B.53(19)**

Site :- State Agri.Farm, Midnapore. **Type :- 'M'.**

Object :- To find-out the optimum requirement of A/S and Super on Aman Paddy under different soil climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Midnapore. (iii) 15th June to 1st week of July/15 July to 1st week of August. (iv) (a) N.A. (b) Transplanted. (c)—(d) 9″×9″ (e) 3 (v) N.A. (vi) Latisail (Medium). (vii) Irrigated. (viii) N.A. (ix) 54.09″ (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.
(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

N as A/S and P_2O_5 as Super.

Super was ploughed in before transplanting and A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(i) 5×5 Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5 (iv) (a) 38′×22′ (b) 36′×20′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) No (iii) Yield of grain. (iv) (a) 1953 to 1955 (b) Yes. (c) N.A. (v) (a) Mayanaguri, Cooch—Behar, Chinsurah, Malda, Burdwan, Haringhata and on Cultivators' fields (b) N.A. (vi) Nil (vii) Crop failed in the year 1954.

5. RESULTS :

(i) 2381 lb./ac-
(ii) 267.4 lb./ac.
(iii) Only levels of N differ highly significantly.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	1935	2128	2052	2133	2203	2090
N_1	2327	2547	2285	2556	2327	2408
N_2	2432	2563	2652	2645	2470	2552
N_3	2587	2605	2377	2608	2371	2510
N_4	2035	2371	2484	2539	2284	2343
Mean	2263	2443	2370	2496	2331	2381

S.E. of marginal mean = 53.5 lb./ac.
S.E. of body of table =119.6 lb./ac.

Crop :- Paddy (Aus) **Ref :- W.B. 48(14)**

Site :- Rural Reconstruction Institute, Sriniketan. **Type : 'M'**

Object :- To find-out the effect of different doses of organic manure on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow (c) Nil (ii) (a) Laterite (b) Refer soil analysis, Sriniketan (iii) 21.7.48 (iv) (a) 4—5 ploughings & harrowing. (b) Transplanting. (c)—(d) 9″×9″ (e) 1—2. (v) Nil. (vi) Ashkata. (vii) Unirrigated. (viii) 1—2 weedings & 1 hoeing was common practice. (ix) 58.18″ (x) 27.10.48.

2. TREATMENTS :

1. Control
2. 20 lb/ac. of N
3. 40 lb/ac. of N
4. 80 lb/ac. of N

N as Mustard Cake applied on 16.8.48

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18.75′×28.50′ (b) 18.00′×27.75′ (v) Distance between plots & blocks 2′, 1′ guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil (iii) Grain and straw yield (iv) (a) 1945 to 1951. (residual effect from 1949 to 1951). (b) Yes (c) N.A. (v) (a) Bankura, Suri & Chinsurah (Modified form). (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1706 lb./ac.
(ii) 144.4 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Mean
1.	1258
2.	1642
3.	1922
4.	2003
S.E./mean	=58.9 lb./ac.

Crop :- Paddy (Aus). **Ref :- W.B. 49(17)/48(14).**

Site : Rural Reconstruction Institute, Sriniketan. Type :- 'M'.

Object :— To study the residual effect of different levels of N in the form of mustard cake on the yield of Paddy (1st year).

1. BASAL CONDITIONS :

(i) (a) Aus paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan (iii) 3.6.49/ 15.7 49. (iv) (a) 3—4 ploughings & laddering. (b) Transplanting (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Ashkata (early) (vii) Unirrigated. (viii) 1—2 weeding is common practice. (ix) 40″ app. (x) 30.10.49.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 80 lb./ac. of N.

N as Mustard Cake. Manures applied to previous crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 28.50′×18.75′. (b) 27.75′×18′. (v) Distance between plots 2′ ;1′. guard row on two sides of plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain & straw yield. (iv)(a) 1945—46 to 1948—49. (residual effect from 1949 to 51) (b) Yes. (c) N.A. (v)(a) Bankura, Chinsurah and Suri (with modifications). (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 595.8 lb./ac,
(ii) 149.0 lb./ac.
(iii) Treatments differ significantly
(iv) Av. yield of grain in lb./ac.

Treatment	Mean
1.	479.4
2.	526.4
3.	636.2
4.	741.4
S.E./mean	= 60.8 lb./ac

Crop :- Paddy (Aus). **Ref :- W.B. 50(20)/49(17)/48(14).**

Site : Rural Reconstruction Institute, Sriniketan. Type : 'M'.

Object :— To study the residual effect of different doses of N in the form of mustard cake on the yield of Paddy (2nd year).

1. BASAL CONDITIONS :

(i) (a) Aus paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite, (b) Refer soil analysis, Sriniketan. (iii) 22.6/1.8.50. (iv) (a) 3—4 ploughings and laddering. (b) Transplanting. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Ashkata (early) . (vii) Unirrigated. (viii) 1—2 weedings is common practice. (ix) 46″. (x) 3.11.50.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 80 lb./ac. of N.

N as Mustard Cake. 2nd year of residual effect.

3. DESIGN :

(i) R.B.D. (ii)(a) 4. (b) N.A. (iii) 6. (iv) (a) 28.50′×18.75′. (b) 27.75′×18′. (v) Distance between plots 2′ ; 1′ guard row on two sides of plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1949 to 1951 (residual effect from 1949 to 1951) (b) Yes. (c) N.A. (v) (a) Bankura, Chinsurah & Suri. (b)N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 674.5 lb./ac
(ii) 85.12 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Mean
1.	595.8
2.	647.4
3.	683.2
4.	771.7
S.E./mean	= 34.8 lb./ac.

Crop :- Paddy (Aus) **Ref :- W.B. 51(25)/50(20)/49(17)/48(14)**

Site :- Rural Reconstruction Institute, Sriniketan. **Type :- 'M'.**

Object :— To study the residual effect of different doses of N in the form of mustard cake on the yield of Paddy (3rd year).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 23.6./25.7.51. (iv) (a) 3—4 ploughings & laddering (b) & (c) N.A. (d) 9″×9″. (e) 2—3, (v) Nil. (vi) Ashkata (early). (vii) Unirrigated. (viii) 1—2 weedings is common practice. (ix) 36″ Approx. (x) 3.11.51.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 80 lb./ac. of N.

N as Mustard Cake-3rd year of residual effect

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 28.50′×18.75′. (b) 27.00′×17.25′. (v) Distance between plots 2′ ; 1′ guard row around each plot. (vi) Yes.

4. GENERAL

(i) Poor. (ii) N.A. (iii) Grain & Straw yield. (iv) (a) 1945 to 1948 (residual effect from 1949 to 1951). (b) Yes. (c) N.A. (v) (a) Bankura, Chinsurah Suri (with modifications). (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 271.9 lb./ac.
(ii) 42.56 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	187.0
2.	257.6
3.	273.3
4.	369.6
S.E./mean	= 17.4 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 48(11).**

Site :- Rural Reconstruction Institute, Sriniketan. **Type :- 'M'.**

Object :—To study the effect of applying A/S, Super & F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) Mid. of June/3rd week of July. (iv) (a) 3-4 ploughings & harrowing. (b) Transplanting. (c) ——. (d) 9″×9″. (e) 2—3 (v) Nil (vi) Badkalamkati-65 (early). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 41.44″ (x) 4th week of November, 1948.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels ef P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super.

Super & F.Y.M. were applied at the time of general preparation of land & A/S was broadcast 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replication & 2 sub-plots/main-plot (b) N.A. (iii) 4 (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain & straw yield. (iv) (a) 1948 to 1955. (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1254 lb./ac.

(ii) (a) 347.8 lb./ac.

(b) 170.2 lb./ac.

(iii) Main effect of P alone is highly significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	906	1362	1341	1203	1219	1187
N_1	824	1411	1644	1299	1224	1362
N_2	656	1618	1524	1266	1197	1335
Mean	795	1464	1503	1254	1213	1295
F_0	787	1429	2425			
F_1	804	1499	1581			

S.E. of the difference of two

(1) N or P means = 100.4 lb./ac.

(2) F means = 40.1 lb./ac.

(3) means in the body of N×P table = 173.9 lb./ac.

(4) F means at the same level of N or P = 65.5 lb./ac.

(5) N or P means at the same level of F = 111.8 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 49(14)/48(11).**

Site :- Rural Reconstruction Institute, Sriniketan. Type :- 'M'.

Object :—To study the effect of applying A/S, Super and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) Middle of July, 1949. (iv) (a) 3—4 ploughings & laddering. (b) & (c) N.A. (d) 9′×9″. (e) 2—3. (v) Nil. (vi) Badkalamkati—65 (early). (vii) Unirrigated, (viii) 2—3 weedings is common practice. (ix) N.A. (x) Mid of Dec., 1949.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super.

3. DESIGN :

(i) Split plot (ii) (a) 9 main-plots/replication ; & 2 sub-plots/main-plot (b) N.A. (iii) 4 (iv) (a) 34′×19′. (b) 32′×17′ (v) 1′ around each plot (vi) Yes.

4. GENERAL :

(i) Good (ii) Negligible (iii) Grain & straw yield (iv) (a) 1948-1955 (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1837 lb./ac.

(ii) (a) 101.9 lb./ac.

(b) 94.1 lb./ac.

(iii) N, P_2O_5, and F.Y.M. effects and interaction N×P are highly significant.

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

	d_0	P_1	P_2	Mean	F_0	F_1
N_0	955	2090	2248	1764	1611	1917
N_1	1730	1499	2598	1942	1724	2160
N_2	1967	2116	1332	1805	1609	2001
Mean	1551	1902	2059	1837	1648	2026
F_0	1361	1716	1868			
F_1	1742	2087	2250			

S.E. of difference of two

(1) N or P marginal means = 29.4 lb./ac.

(2) F marginal means = 22.2 lb./ac.

(3) means in the body of N×P table = 51.0 lb./ac.

(4) F means at the same level of N or P = 38.4 lb./ac.

(5) N or P means at the same level of F = 40.1 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 50(18)/49(14)/48(11).
Site :- Rural Reconstruction Institute, Sriniketan. Type :- 'M'.

Object :—To study the effect of applying A/S, Super and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 16.6.50/23-28.7.50. (iv) (a) 3-4 ploughings and harrowing. (b) Transplanted. (c) — (d) 9″×9″. (e) 2-3. (v) Nil. (vi) Badkalamakati-65 (Early). (vii) Unirrigated. (viii) 2-3 weedings is common practice. (ix) 45.78″ approx. (x) 17-26.11.50.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N. N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levele of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super.

F.Y.M. and Super ploughed in. F.Y.M. was applied on 9.7.50 ; Super applied on 16.7.50 at the time of general preparation of land A/S applied on 23.8.50 and broadcast 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii)(a) 9 main-plots/replication ; and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′ (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1948 to 1955. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2214 lb./ac.

(ii) (a) 115.4 lb./ac.

(b) 121.1 lb./ac.

(iii) Main effects of N, P_2O_5 and F.YM. are highly significant. Interaction NP is significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	1617	2261	2425	2101	1897	2305
N_1	1922	2440	2583	2315	2173	2457
N_2	2005	2271	2398	2225	2089	2361
Mean	1848	2324	2469	2214	2053	2374
F_0	1702	2162	2295			
F_1	1994	2487	2642			

S.E. difference of two :

1. N or P marginal means =33.3 lb./ac.
2. F marginal means =28.5 lb./ac.
3. means in the body of N×P table =57.7 lb./ac.
4. F means at the same level of N or P =49.4 lb./ac.
5. N or P means at the same level of F =48.3 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 51(1)/50(18)/49(14)/48(11).**

Site - Rural Reconstruction Institute, Sriniketan. **Type :-'M'.**

Object :—To study manurial effects of A/S, Super and F.Y.M. alone and in combination on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy (Badkalmkati-65). (c) As under treatments. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 1st July to 15th July. (iv) (a) 4-5 ploughings and laddering after preparation of land during the month of May-June. (b) Transplanted. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Badkalamkati-65 (early). (vii) Unirrigated. (viii) One weeding four weeks after transplantation. (ix) 35.84″. (x) 15th December to Ist week of January.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0; N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P : P_0=0. P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super.

F.Y.M. and Super were applied at the time of general preparation of land and A/S was applied 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replication ; 2 sub-plots/main plot. (b) Nil. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

. GENERAL :

(i) Moderate. Plants lodged in those plots where 60 lb./ac. of N was given. (ii) N.A. (iii) Yield of grain (iv) (a) 1948 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1796 lb./ac.
(ii) (a) 306.4 lb./ac.
(b) 136.8 lb./ac.
(iii) Main effects of N, P_2O_5 and F.Y.M. are highly significant. Interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean.	F_0	F_1
N_0	1206	1815	1779	1600	1531	1669
N_1	1582	1837	2111	1843	1737	1949
N_2	1801	1991	2043	1945	1854	2037
Mean.	1530	1881	1978	1796	1707	1885
F_0	1453	1776	1893			
F_1	1606	1986	2062			

1. S.E. of N or P marginal means = 61.7 lb./ac.
2. S.E. of F marginal means = 22.8 lb./ac.
3. S.E. of mean in the body of N×P table =108.1 lb./ac.

S.E. of difference of two

4. F means at the same level of N or P = 96.9 lb./ac.
5. N or P means at the same level of F = 55.8 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 52(31)/51(1)/50(18)/49(14)/48(11).

Site :- Rural Reconstruction Institute, Sriniketan. Type :- 'M'.

Object :—To study manurial effects of A/S, Super and F.Y.M. alone and in combination on yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) Middle of June. (iv) (a) N.A. (b) Transplanted. (c) — (d) 9″×9″. (e) 2. (v) Nil. (vi) Badkalamkati (early). (vii) Unirrigated. (viii) One weeding four weeks after transplan- tation. (ix) N.A. (x) Middle of November.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 levels of F Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super.

F.Y.M. was ploughed in during general preparation of land and Super was applied before puddling. A/S was applied 4 weeks after transplantation.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plot/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each sub-plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory, Plants lodged in those plots where 60 lb./ac. of N was applied. (ii) No. (iii) Yield of grain. (iv) (a) 1948 to 1953 (residual effects studied for the years 1954 and 1955). (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2633 lb./ac.

(ii) (a) 293.0 lb./ac.

(b) 198.0 lb./ac.

(iii) Main effects of N and P_2O_5 are highly significant. Interaction F×N is significant while other effects are not significant.

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

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	1942	2583	2780	2435	2303	2567
N_1	2625	2730	3102	2819	2790	2848
N_2	2396	2697	2842	2646	2668	2623
Mean	2321	2670	2908	2633	2587	2679
F_0	2259	2660	2843			
F_1	2384	2681	2974			

1. S.E. of N or P marginal means = 59.8 lb./ac.
2. S.E. of F marginal means = 33.0 lb./ac.
3. S.E. of the body of N×P table =103.6 lb./ac.

S.E. of difference of two

4. F means at the same level of N or P = 80.8 lb./ac.
5. N or P means at the same level of F =102.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53(17)/52(31)/51(1)/50(18)/49 (14)/48 (11).

Site :-Rural Reconstruction Institute, Sriniketan. Type :-'M'

Object :—To study the manurial effects of A/S, Super and F.Y.M. alone and in combination on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (Badkalamkati-65) (c) N.A. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 19.6.53 ; date of transplantation :- 18.7.53 to 23.7.53. (iv) (a) N.A. (b) Transplanted. (c)—. (d) 9″ × 9″. (e) 2. (v) Nil. (vi) Badkalamati—65. (vii) Unirrigated. (viii) One weeding four weeks after transplantation. (ix) 49.87″. (x) 20.11.53 to 25.11.53.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

Sub-plot treatments :—

2 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as Super

Super and F.Y.M. applied on 8.6.1953, A/S applied on 20.8.1953.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/replicaction ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34′ × 19′. (b) 32′ × 17′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) 2 sub-plots in block III and 2 sub-plots in block IV were affected by Hispa and paddy smitt. Preventive measures were taken. (iii) Yield of grain. (iv) (a) 1948 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Conditions were normal upto the time of flowering. But at the time of flowering extreme drought was experienced. It was found necessary to irrigate the plots occasionally between flowering and formation of grain. (vii) Nil.

5. RESULTS :

(i) 2956 lb./ac.
(ii) (a) 416.7 lb./ac.
(b) 297.5 lb./ac.
(iii) Only main effect of F.Y.M. is highly significant.
(iv) Av. y eld of grain in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	2579	2883	2955	2806	2617	2995
N_1	4974	2940	3362	3092	3029	3156
N_2	3039	3022	2846	2969	2873	3066
Mean	2864	2948	3055	2956	2839	3072
F_0	2625	2880	3013			
F_1	3103	3016	3097			

(1) S.E. of N or P marginal means = 85.1 lb./ac.
(2) S.E. of F marginal means = 49.6 lb./ac.
(3) S.E. of body of N × P table =147.3 lb./ac.
S.E. of difference of two
(4) F means at the same level of N or P =121.5 lb /ac.
(5) N or P means at the same level of F =147.8 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 49(18).
Site :-State Agri. Farm, Suri. Type :-'M'.

Object :—To study the residual effect of different doses of organic manure on the yield of Paddy (1st year).

1. BASAL CONDITIONS :

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (c) Refer soil analysis, Suri. (iii) 18/20.6.49. (iv) (a) 3—4 ploughings and harrowing. (b) and (c) N.A. (d) 9″ × 9″. (e) 2—3. (v) Nil. (vi) Raghusail. (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 47.15″. (x) 14.12.49.

2. TREATMENTS :

All combinations of (1) and (2) :
(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.
(2) 3 sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.
Treatments were applied during last year. 1st year of residual effect studied.

3. DESIGN :

(i) 5×3 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 18.75′ × 21.0′. (b) 18′ × 20.25′. (v) Distance between plots 2′ ; 1′ guard row on two sides of a plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1945-46 to 1951 (resuidal effect for 3 years from 1939-50). (b) Yes. (c) N.A. (v) (a) Chinsura and Sriniketan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2114 lb./ac.

(ii) 231.8 lb./ac.

(iii) Levels of N differ highly significantly. Sources of N differ signicantly. Interaction is not significant.

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

N_0=1712 lb./ac

	M.C.	C.C.	G.N.C.	Mean.
N_1	2018	1976	1921	1972
N_2	2199	2175	2090	2155
N_3	2428	2231	2169	2276
N_4	2594	2420	2352	2455
Mean.	2310	2200	2133	——

S.E. of the marginal mean of N =54.6 lb./ac.

S.E. of the marginal mean of sources =47.3 lb./ac.

S.E. of the body of the table =94.6 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 50 (19)/49 (18).**

Site :-State Agri. Farm, Suri. **Type :-'M'.**

Object :—To study the residual effect of different doses of organic manures on the yield of Paddy. (2nd year).

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (Low land, heavy loam). (b) Refer soil analysis, Suri. (iii) 19.6.50/16, 19.7.50. (iv) (a) 3—4 ploughings and harrowing. (b) Transplanting. (c)—. (d) 9″ × 3″. (e) 2—3. (v) Nil. (vi) Raghusail. (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 42.59″. (x) 24-27.12.50.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.

(2) 3 sources of N : Mustand Cake (M.C.), Castor Cake and G.N.C.

No manure was applied for the 2nd year in succession.

3. DESIGN :

(i) 5×3 Fact. In R.B.D. (ii) (a) 15. (b) N-A. (iii) 6. (iv) (a) 18.75′ × 21.00′. (b) 18′ × 20.75′. (v) Distance between plots 2′ and blocks 3′ ; 1′ guard row on two sides of a plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1945 to 1950-51. (residual effect for 3 years from 1949-50). (b) Yes. (c) N.A. (v) (a) Chinsurah, Bankura and Sriniketan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2214 lb./ac.

(ii) 190.4 lb./ac.

(iii) Only levels of N differ highly significantly.

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

N_0=1855 lb./ac.

	M.C.	C.C.	G.N.C.	Mean
N_1	2175	2085	2110	2123
N_2	2244	2305	2185	2245
N_3	2439	2365	2360	2388
N_4	2455	2420	2505	2460
Mean	2328	2294	2290	

S.E. of the marginal mean of N =44.9 lb./ac.
S.E. of the marginal mean of source =38.9 lb./ac.
S.E. of the body of the table =77.7 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 51 (24)/50 (19)/49 (18).**

Site :-State Agri. Farm, Suri. **Type :-'M'**

Object :—To study the residual effect of different doses of organic manures on the yield of Paddy. (3rd year).

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow(c) Nil. (ii) (a) Laterite (low land, heavy loam). (b) Refer soil analysis, Suri. (iii) 20.6.51/30/7 and 1-2/8/51. (iv) (a) 3-4 ploughings and harrowing. (b) Transplanting. (c) —. (d)9" × 9". (e) 2—3. (v) Nil. (vi) Raghusail. (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 45.30". (x) 24-27.12.51.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N : N_0=0, N_1=30, N_2=60, N_3=90 and N_4=120 lb./ac.
(2) 3 sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.

No manure was applied for the 3rd year in succession.

3. DESIGN :

(i) 5×3 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 18.75' × 21.0'. (b) 17.25' × 19.50'. (v) Distance between plots 2' and blocks 3' ; 0.75' all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1945 to 1951 (residual effect for 3 years from 1949-50). (b) Yes. (c) N.A. (v) (a) Chinsurah, Bankura and Sriniketan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2372 lb./ac.
(ii) 243.0 lb./ac.
(iii) Levels of N differ highly significantly. Sources of N differ significantly. Levels × source of N inter action is not significant.
(iv) Av. yield of grain in lb./ac.

N_0=1910 lb./ac.

	M.C.	C.C.	G.N.C.	Mean.
N_1	2377	2210	2277	2288
N_2	2641	2499	2285	2475
N_3	2700	2573	2531	2601
N_4	2681	2598	2486	2588
Mean.	2600	2470	2395	

S.E. of the marginal mean of N =57.3 lb./ac.
S.E. of the marginal mean of source =49.6 lb./ac.
S.E. of body of table. =99.2 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 48 (7).

Site :- State Agri. Farm, Suri. Type 'M'.

Object :— To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow. Paddy (b) Blocks 1 & 4 had paddy ; blocks 5, 6, 7 & 9 had sugarcane & blocks 8, 10 & 12 had *Dhaincha* (c) Blocks 1 & 4 received G.M. ; 5, 6, 7 & 9 received T.C. at 50 md/ac.+F.Y.M. at 250 md/ac.+Cowdung at 65 md/ac.+B.M. at 6.5 md/ac.+Nicifos at 2 md/ac. Blocks 8,10, & 12 received G.M. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) Aug., 1948. (iv) (a) & (b) The field was ploughed 3 to 4 times before transplantation. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik CH—3 (Medium). (viii) 2—3 weedings is general practice. (ix) N.A. (x) December, 1948.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

(3) 2 levels of F.Y.M ; F_0=0 and F_1=100 md/ac.

B.M. and F.Y.M. applied at the time of general preparation of land and A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 19′×34′. (b) 17′×32′. (v) 1′ border around each plot as guard row. (vi Yes.

4. GENERAL :

(i) Very good in the beginning ; (plants grew rapidly after two weeks of transplanting and tillering started remarkably in plots with 60 lb N/ac.). Crop lodged in plots later especially in plots with heavy dose of A/S. (ii) (a) Rice-worm (*Nymphula deputalis*) observed 6 weeks after transplanting. Rope soaked in kerosene drawn over effected plots. Kerosene oil placed in affected plots treated with Gamaxene. Slight attack of helminthosporium. No control measure taken. (iii) Tillering & height of tillers after every fortnight (10 seedling/plot selected at random). Grain and straw yield. (iv) (a) 1948-49—continued (b) Yes. (c) N.A. (v) (a) State Agri. Farm, Chinsurah. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2282 lb./ac.

(ii) 391.2 lb./ac.

(iii) Only N effect highly significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	1978	2510	2531	2340	2467	2261	2291
F_1	1985	2267	2421	2224	2279	2157	2237
Mean	1981	2389	2476	2282	2373	2209	2264
P_0	2072	2379	2667				
P_1	1888	2493	2245				
P_2	1982	2294	2517				

S.E of the marginal mean of P or N = 79.9 lb./ac.

S.E. of the marginal mean of F.Y.M. = 65.2 lb./ac.

S.E. of body of N×F or P×F table = 112.9 lb./ac.

S.E. of body of N×P table. = 136.3 lb./ac.

Crop :- Paddy (Aman). Ref : W.B. 49(9).

Site :- State Agri. Farm, Suri. Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August. 1949. (iv) (a) 3—4 ploughings before transplantation. (b) Transplanting. (c)—(d) 9"×9". (e) 2—3. (v) Nil. (vi) Bhasamanik, CH—3 (Medium). (vii) Unirrigated. (viii) 2—3 weedidgs is general practice. (ix) N.A. (x) December, 1949.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

(3) 2 levels of F.Y.M. : F_0=0 and F_1=100 md/ac.

N asA/S & P_2O_5 as B.M.

B.M. & F.Y.M. were applied at the time of generai preparation of land and A/S was applied after 4 weeks of transplantation.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randamised Incomplete Blocks (ii) (a) 6 plots/block and 3 blocks/replication (b) N.A. (iii) 4. (iv) (a) 19'×34'. (b) 17'×32'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Good ; plants receiving higher doses of N slightly lodged. (ii) Nil. (iii) Tillering and height of tillers. Grain and straw yield (iv) (a) 1948-49—continued. (b) Yes. (b) N.A. (v) (a) Chinsurah & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2589 lb./ac.

(ii) 233.6 lb./ac.

(iii) Main effects of N, P_2O_5, F.Y.M. and interaction N×F.Y.M. are highly significant. Other effects are not significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	1901	2577	2977	2485	2313	2477	2664
F_1	2356	2839	2886	2694	2633	2726	2724
Mean	2128	2708	2932	2589	2473	2601	2694
P_0	1884	2704	2831				
P_1	2166	2692	2944				
P_2	2334	2729	3020				

S.E. of the marginal mean of N or P_2O_5 =47.7 lb./ac.

S.E. of the marginal mean of F.Y.M. =38.9 lb./ac.

S.E. of the mean in body of N×F or P×F table =67.4 lb.ac

S.E. of the mean in the body of N×P table =82.6 lb./ac.

Crop :- Paddy Aman. **Ref :- W.B. 50(11).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August 1950 . (iv) (a) 3—4 ploughings, harrowing and levelling. (b) N.A. (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik, CH3 (medium). (vii) Unirrigated. (viii) 2—3 weedings is general practice. (ix) 49.38″. (x) December, 1950.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

(3) 2 levels of F.Y.M. : F_0=0 and F_1=100 md/ac.

N as A/S and P_2O_5 as B.M.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block and 3 blocks replication. (b) N.A. (iii) 4. (in) (a) 19′×34′. (b) 17′×32′. (v) 1′ border alround. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tillering, height of tillers, grain & straw yield. (iv) (a) 1948—49—continued (b) Yes. (c) N.A. (v) (a) State Agri Farm ; Chinsurah & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2381 lb./ac.

(ii) 164.0 lb./ac.

(iii) Effects due to N, P_2O_5 and F.Y.M. and interaction N×F.Y.M. are highly significant while interaction N×P_2O_5 is significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	2292	2772	3027	2697	2563	2736	2792
F_1	2815	3176	3203	3065	2922	3058	3214
Mean	2553	2974	3115	2881	2742	2897	3003
P_0	2390	2876	2961				
P_1	2587	2997	3106				
P_2	2682	3048	3279				

S.E. of the marginal mean of N or P_2O_5 =33.5 lb./ac.

S.E. of the marginal mean o! F.Y.M. =27.3 lb./ac.

S.E. of mean in the body of the N×F or P×F table =47.3 lb /ac.

S.E. of mean in the body of the N×P table =58.0 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 51(7).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on yield of of Paddy.

BASAL CONDITIONS :

(i) (a) No. (b) Aman Paddy. (c) As under treatments. (ii) (a) Sandy loam (red soil). (b) Refer soil analysis, Suri. (iii) 15th June to 1st week of July/1st week of July to 1st week ofAugust. (iv) (a) 4—5 ploughings and laddering after the preparation of the land during the month of May and June. (b) N.A. (c)—(d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 2 weedings done ; first and second weedings were done about 5 weeks and week respectively after transplantation. (ix) 44.15″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb,/ac.

(3) 2 levels of F.Y.M. : F.Y.M. : F_0=0 and F_1=100 and lb./ac.

P_2O_5 as B.M and F.Y.M. were applied at the time of general preparation of land and N as A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/ replication. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 42′×17′. (v) 1′ border around the plot. (vi) Yes..

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Nil. (iii) Height of the plants and counting the members of plants were done periodically and grain yield. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

9. RESULTS :

(i) 3016 lb./ac.

(ii) 297.8 lb./ac.

(iii) Main effects of N and F.Y.M. and interaction N×F.Y.M. are highly significant. Interactian N×P is significant. Other effects are not significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	2446	3118	3157	2907	2874	2985	2863
F_1	3110	3148	3116	3125	3047	3080	3247
Mean	2778	3133	3136	3016	2960	3032	3055
P_0	2537	3196	3146				
P_1	2918	3068	3111				
P_2	2878	3134	3152				

S.E. of the marginal mean of N or P =57.1 lb./ac.

S.E. of the marginal mean of F.Y.M. =46.6 lb./ac.

S.E. of the body of the N×F or P×F table =80.8 lb./ac.

S.E. of the body of the N×P table =98.9 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 52(26).

Site :- State Agri. Farm, Suri. Type :- 'M'.

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Sandy loam-red soil. (b) Refer soil analysis, Suri. (iii) 15th June to 1st week of July/1st week of July to 1st week of Aug. (iv) (a) N.A. (b) Transplanted. (c) ——. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 2 weedings done; first and second weedings were done about 5 weeks and 9 weeks after transplantation respectively. (ix) 59.54″ (x) 15th Dec. to 1st week of Janunary.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.
(3) 3 levels of F.Y.M. : F_0=0 and F_1=100 md./ac.

P_2O_5 as B M. and N as A/S.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Plants receiving doses higher than 60 lb./ac. of N lodged. (ii) Slight attack of yellowing disease control measunes taken N.A. (iii) Yield of grain. (iv) (a) 1943—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2639 lb./ac.
(ii) 346.4 lb./ac.
(iii) Levels of N differ highly significantly. Levels of P differ significantly. Other main effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	2192	2706	2794	2564	2396	2571	2725
F_1	2508	2972	2662	2764	2624	2711	2808
Mean	2350	2839	2728	2639	2510	2641	2766
P_0	2159	2744	2628				
P_1	2477	2797	2648				
P_2	2414	2977	2908				

S.E. of the marginal mean of N or P = 70.7 lb./ac.
S.E. of the marginal mean of F = 57.7 lb./ac.
S.E. of body of N×F or P×F table = 100.0 lb./ac.
S.E. of body of N×P table = 122.5 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(3).

Sitc :- State Agri. Farm, Suri. Type :- 'M'.

Object :—To study the effect of continuous application of A/S, B,M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) N.A. (ii) (a) Sandy loam red soil. (b) Refer soil analysis, Suri. (iii) 15th June to 1st week of July/1st July to 1st week of August. (iv) (a) & (b) N.A. (c) ——. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 2 weedings. First and second weedings applied about 5 weeks and 8 weeks after transplantation respectively. (ix) 62.24″. (x) 15th December to 1st week of January.

TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 2 levels of F.Y.M. ; F_0=0 and F_1=100 md./ac.

N as A/S and P_2O_5 as B.M.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Both the height and number of the tillers of the paddy plants were increased by the application of A/S. The plant growth was found to be increased by the application of F.Y.M. and B.M. (ii) No. (iii) Yield of grain. (iv) (a) 1948—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2898 lb./ac.

(ii) 227.1 lb./ac.

(iii) Main effects N and F, interaction N×F are highly significant. Main effect of P and interaction N×P are significant. Other interactions are not significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	2426	2977	2990	2798	2651	2879	2863
F_1	3081	3040	2875	2999	2959	2951	3086
Mean	2753	3009	2933	2898	2805	2915	2975
P_0	2507	3019	2920				
P_1	2833	3001	3006				
P_2	2920	2911	2998				

S.E. of marginal mean of N or P	=	46.9 lb./ac.
S.E. of the marginal mean of F	=	37.9 lb./ac.
S.E. of body of the N×F or P×F table	=	63.4 lb./ac.
S.E. of body of N×P table	=	77.4 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 48(8).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Object :—To study the effect of continuous application of A/S., B.M. and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Blocks 1, 3 & 5 had paddy seed-bed & now followed by paddy. Blocks 2,4, & 6 had G.M. *Dhaincha* & now followed by paddy. (c) Blocks 1, 3 & 5 received cowdung 150 md./ac. Blocks 2, 4 & 6 received G.M. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August 1948. (iv) (a) The field was ploughed 3-4 times before transplantation. (c) —. (d) 9″×9″. (b) Transplanting. (c) 2—3. (v) Nil. (vi) Bhashmanik, CH 3 (Med.). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) N.A. (x) Dec. 1948.

2. TREATMENTS :

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

(1) 4 levels of N : N_0=0, N_1=30, N_2=60 and N_3=90 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=30 and P_2=60 lb./ac.

(3) 3 levels of Lime ; L_0=0, L_1=4, and L_2=8 cwt/ac.

N as A/S and P_2O_5 as B.M.

B.M. was applied at the time of preparation of land, A/S after 4 week of transplantation Lime applied only once in 4 years time and this year it was applied 3 weeks before preparation of land.

3. DESIGN :

(i) 4×3×3 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/blocks ; 3 blocks/ replication. (b) N.A. (iii) 2. (iv) (a) 34′×19′ (b) 32′×17′. (v) 1′ border alround the plot as guard row. (vi) Yes.

4. GENERAL :

(i) Very good in the initial stages. Plants grew rapidly after two weeks of transplantation and tillering started remarkably in plots with 60 lb./ac. N. Lodging took place in plots with heavy doses of A/S. (ii) Rice-worm (*Nymyhula deputalis*) observed 6 weeks after transplanting. Rope soaked in kerosene oil drawn over affected plots & kerosene oil poured in affected plots. Rice Hispa in affected plots treated with Gamaxane. Slight attack of helminthosporium. No measure taken. (iii) Tillering and height of plants after every fortnight (10 seedling per plot chosen at random). Grain and straw yield. (iv) (a) 1948-49 (1st year)-continued. (b) Yes. (c) N.A. (v) (a) State Agri. Farm, Chinsurah. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2193 lb./ac.
(ii) 440.0 lb./ac.
(iii) Only main effect of N is highly significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1712	2171	1857	1913	1961	2012	1767
N_1	2197	2182	2016	2132	1975	2304	2117
N_2	2324	2303	2226	2284	2465	2168	2220
N_3	2234	2485	2606	2442	2556	2309	2460
Mean	2117	2285	2176	2193	2239	2198	2141
L_0	2187	2122	2408				
L_1	2234	2341	2019				
L_2	1930	2391	2102				

S.E. of the marginal mean of N = 103.7 lb./ac.
S.E. of the marginal mean of P = 89.8 lb./ac.
S.E. of the mean in body of N×P or N×L = 179.6 lb./ac.
S.E. for the mean in body of P×L table = 155.6 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 49(10).
Site :- State Agri. Farm, Suri. Type :- 'M'.

Object :— To study the the effect of continuous application of A/S, B.M. and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August 1949. (iv) (a) 3—4 ploughings before transplantation. (b) Transplanting. (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik, CH 3 (Medium). (vii) Unirrigated. (viii) 2—3 weedings is general practice. (ix) N.A. (x) December, 1949.

2. TREATMENTS :

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

(1) 4 levels of N : N_0=0, N_1=30, N_2=60 and N_3=90 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 levels of Lime : L_0=0: L_1=4 and L_2=8 cwt/ac.
N as A/S and P_2O_5 as B.M.

B.M. was applied at the time of general preparation of land & A/S broadcast 4 weeks after transplantation Liming was done last year.

3. DESIGN :

(i) 4×3×3 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/block and 3 blocks/ replication. (b) N.A. (iii) 2. (iv) 34′×19′. (b) 32′×17′. (v) 1′ border alround a plot as guard row. (vi) Yes.

4. GENERAL :

(i) Good ; plants receiving higher doses of N slightly lodged. (ii) Nil. (iii) Tillering, height of tillers, grain & straw yield. (iv) (a) 1948—49-continued. (b) Yes. (c) N.A. (v) (a) Chinsurah & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2451 lb./ac.

(ii) 193.6 lb./ac.

(iii) Main effects of N and P and interaction Lime ×P are highly significant. Other effect and interactions are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1645	1889	2119	1884	1560	1958	2136
N_1	2345	2445	2530	2440	2382	2493	2445
N_2	2723	2705	2718	2715	2842	2616	2687
N_3	2633	2838	2821	2764	2750	2718	2825
Mean	2336	2469	2547	2451	2384	2446	2523
L_0	2199	2463	2484				
L_1	2306	2423	2610				
L_2	2504	2517	2548				

S.E. of the marginal mean of N =45.6 lb./ac.

S.E. of the marginal mean of P_2O_5 or Lime =39.5 lb./ac.

S.E. of the body of N×P or N×L table =79.0 lb./ae.

S.E. of body of P×L table =68.4 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 50(12).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. and Lime alone and in combination on the yield of Paddy.

2. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August 1950. (iv)(a) 3—4 ploughings before transplantation. (b) Transplanting (c)— (d) 9″×9″. (e) 2—3. (v) Nil. (vi) Bhasamanik, CH-3 Medium. (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 41.38″. (x) December, 1950.

2. TREATMENTS :

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

(1) 4 levels of N : N_0=0, N_1=30, N_2=60 and N_3=90 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

(3) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt/ac.

N as A/S and P_2O_5 as B.M.

3. DESIGN :

(i) 4×3×3 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border alround. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tillering, height of tillers, grain and yield straw yield. (iv) (a) 1948—49-continued. (b) Yes. (c) N.A. (v) (a) State Agri. Chinsurah & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2689 lb./ac.

(ii) 93.60 lb./ac.

(iii Main effects of N, P and L and interaction N×P are highly significant. Other interactions are not significant,

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1824	2222	2297	2114	1910	2146	2287
N_1	2561	2753	2897	2730	2663	2763	2763
N_2	2869	2918	2934	2007	2818	2944	2958
N_3	2921	2996	3096	3004	2886	3048	3079
Mean	2544	2727	2806	2689	2569	2725	2772
L_0	2394	2643	2671				
L_1	2569	2787	2820				
L_2	2669	2720	2927				

S.E. of the marginal mean of N =22.1 lb./ac.

S.E. of the marginal mean of P or L =19.1 lh./ac.

S.E. of the body of N×P or N×L table =38.2 lb./ac.

S.E. of body of P×L table =33.1 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 51 (8).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Obejcet :—To study the effect of continuous application of A/S, B.M. and Lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Sandy loam (red soil). (b) Refer soil analysis, Suri. (iii) 15th June to 1st week of July/1st July to 1st week of August. (iv) (a) 4—5 ploughings and laddering after the preparation of land during the month of May and June. (b) Transplanted. (c)—. (d) 9″×9″. (e)2—3 (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (vii) 2 weedings done ; first and second weeding done 5 weeks and 9 weeks respectively after transplantation. (ix) 44.15″. (x) 15th December to 1st week of January (approx).

2. TREATMENTS :

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

(1) 4 levels of N : $N_0=0$, $N_1=30$, $N_2=60$ and $N_3=90$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=20$ and $P_3=40$ lb./ac.

(3) 3 levels of Lime : $L_0=0$, $L_1=4$ and $L_2=8$ cwt/ac.

N as A/S top dressed 4 weeks after transplantation. P_2O_5 as B.M. ploughed in during general preparation of land. Lime ploughed in 6 weeks before transplantation.

3. DESIGN :

(i) 4×3×3 Fact. Partially Confd. in Randomised Incomplete Blocks (ii) (a) 12 plots/block ; 3 blocks/ replication. (b) N.A. (iii) 2. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around each plot. (vi) Yes.

4, GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height of the plants and counting the numbers of plants were done periodically (iv) (a) 1948-continued. (b) Yes. (c) N.A. (v) (a) No, (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2928 lb./ac.

(ii) 245.2 lb./ac.

(iii) N levels differ highly significantly. Other main effects and interactions are not significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	2379	2667	2773	2606	2468	2678	2673
N_1	3010	3027	3123	3053	2975	3202	2983
N_2	3024	2966	3117	3035	2996	3045	3065
N_3	3019	2979	3055	3018	2972	2965	3116
Mean	2858	2910	3017	2928	2852	2972	2959
L_0	2702	2827	3028				
L_1	2967	2953	2998				
L_2	2905	2949	3024				

S.E. of the marginal mean of N = 57.8 lb./ac.

S.E. of the marginal mean of P or L = 50.1 lb.ac.

S.E. of the body of the N×P or N×L table =100.1 lb./ac.

S.E. of body of P×L table = 86.7 lb./ac.

Crop :- Paddy (Aman). Ref :- W.B. 52(25).

Site :- State Agri. Farm, Suri. Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and Lime alone and in combination on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) As under treatments. (ii) (a) Sandy loam-red soil (b) Refer soil analysis, Suri. (iii) 15th June to 1st week of July/1st week of July to 1st week of Aug. (iv) (a) N.A. (b) Transplanted. (c)—. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 2 weedings done ; first and second weeding done about 5 weeks and 9 weeks after transplantation respectively. (ix) 59.54″. (x) 15th December to 1st week of January.

2. TREATMENTS :

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

(1) 4 levels of N : N_0=0, N_1=30 N_2=50 and N_3=90 lb./ac·

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

(3) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt/ac.

N as A/S top dressed 4 weeks after transplantation. P_2O_5 as B.M. ploughed in during general preparation of land. and Lime ploughed in 6 weeks before transplantation.

3. DESIGN:

(i) 4×3×3 Fact. Partially Confd.. in Randomised Incomplete Blocks. (ii) (a) 12 plots/block ; 3 blocks/ replication. (b) N.A. (iii) 2. (iv) (a) 34′×19′. (b) 32′×17′ (v) 1′ border around the plot. (vi) Yes.

4. GENERAL:

(i) Plants receiving doses higher than 60 lb/ac. of N lodged during the flowering stage. (ii) Slight attack of yellowing disease during early stage and the plants recouped later on. (iii) Yield of grain. (iv) (a) 1948-continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS:

(i) 2084 lb./ac.

(ii) 290.5 lb./ac.

(iii) Only main effect of N is significant.

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

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	1683	1721	1759	1721	1741	1676	1745
N_1	2342	2214	2390	2315	2485	2276	2184
N_2	2242	2345	2564	2384	2358	2325	2468
N_3	1817	1842	2088	1916	1855	1982	1910
Mean	2021	2031	2200	2084	2110	2065	2077
L_0	2008	2067	2255				
L_1	2024	2003	2168				
L_2	2031	2021	2178				

S.E. of the marginal mean of L or P = 59.3 lb/ac.

S.E. of the marginal mean of N = 68.5 lb/ac.

S.E of body of the N×L or N×P table =118.6 lb/ac.

S.E. of body of the P×L table =102.7 lb/ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(4).**

Site :- State Agri. Farm, Suri. **Type :- 'M'.**

Object : To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Aman paddy (c) N.A. (ii) (a) Sandy loam red soil (b) Refer soil analysis, Suri.—(iii) 15th June to 1st week of July/15th July to 1st week of August (iv) (a) & (b) N A. (c)—(d) 9″×9″ (e) 2. (v) Nil. (vi) Bhasamanik (Medium) (vii) Irrigated. (viii) 2 weeding First and second weedings applied about 5 weeks and 9 weeks after transplantation respectively (ix) 62.24″. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

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

(1) 4 levels of N ; N_0=0, N_1=30, N_2=60 and N_3=90 lb/ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb/ac.

(3) 3 levels of Lime : L_0=0, L_1=4 and L_2=8 cwt/ac.

N as A/S top dressed 4 weeks after transplantation. P_2O_5 as B.M. ploughed in during general preparation of land-Lime ploughed in 6 weeks before transplanted.

3. DESIGN :

(i) 4×3×3 Fact. Partially Confd. Randomised Incomplete Blocks. (ii) (a) 12 plots/block ; 3 blocks/ replication. (b) N.A. (iii) 2. (iv) (a) 34′×19′. (b) 32′×17′. (v) 1′ border around the plot. (vi) Yes.

4. GENERAL :

(i) Both the height and number of tillers of the paddy plants were increased by the application of A/S. No further increase was obtained beyond the doses of 60 lb/ac. N. The plant growth was found to increase by the apqlication of B.M. (ii) No incidence of pests and diseases reported. (iii) Yield of grain. (iv) (a) 1948 continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2584 lb/ac.
(ii) 283.9 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	L_0	L_1	L_2
N_0	2280	2475	2599	2451	2465	2420	2469
N_1	2630	2482	2849	2654	2671	2692	2599
N_2	2633	2743	2499	2625	2534	2475	2866
N_3	2726	2630	2469	2608	2671	2438	2716
Mean	2567	2582	2604	2584	2585	2506	2662
L_0	2574	2577	2605	2585			
L_1	2502	2487	2530	2506			
L_2	2626	2684	2677	2662			

S.E. of marginal mean of N or P = 66.9 lb/ac.
S.E. of marginal mean of Lime = 58.0 lb/ac.
S.E. body of N×P or N×L tables =115.9 lb/ac.
S.E. of body of P×L table =100.4 lb/ac.

Crop :- Paddy (Aman). Ref :- W.B. 53(53) (Expt. on Cultivators' fields).

Site :- Gosaipara ; Distt. Burdwan. Type :- 'M'.

Object —To find out the optimum requirement of A/S and Super on Aman paddy under different soil climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman Paddy. (c) N.A. (ii) (a) Loam. (b) N%=0.086 ; Total P_2O_5 % =0.071 ; Available P_2O_5 % =0.0064 ; exchangeable Ca (m.e.%),=5.00. (iii) N.A. (iv) Sarunagara (v) (a) N.A. (b) Transplanted. (c) — (d) 9″×9″. (e) 3. (vi) Sowing-15th June to first week of July. Transplanting-15th July to 1st week of August. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 15th Dec. to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=10 lb./ac,

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=4 5and N_4=60 lb./ac.

Super was ploughed in before transplanting. A/S was given as a top dressing 4weeks after transplantation.

3. DESIGN :

(i), (ii) Arbitary selection :- Cultivator's plos selected in the vicinity of agricultural farm with 4 replications. (iii) (a) 36′×20′. (b) 33′×17′. (iv) Yes.

4. GENERAL :

(i) A/S and Super increased the vegetative growth of the plants. (ii) No. (iii) Does not arise. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) N.A.

5. RESULTS :

(i) 3554 lb./ac.

(ii) 283.1 lb./ac.

(iii) Only N effect is highly significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	3496	3631	3584	3454	3420	3517
P_1	3199	3778	3444	3621	3499	3508
P_2	3225	3779	3566	3434	3523	3505
P_3	3129	3596	3649	3644	3579	3519
P_4	3479	3878	3854	3694	3708	3723
Mean	3306	3782	3619	3569	3545	3554

S.E. of marginal mean = 63.3 lb./ac.

S.E. of body of table =141.5 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53 (54) (Expt. on Cultirators' fields)

Site :-Bulbulchandi ; Distt. Malda. Type :-'M'

Object :—To find out the optimum requirement of A/S and Super on Aman Paddy under different soil-climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman Paddy. (c) N.A. (ii) (a) Loam. (b) N%=0.062 ; Total P_2O_5=0.035 ; Available P_2O_5= %0.001 ; exchangeable Ca. (m.e.%)=6.20 ; pH 6.0 (iii) N.A. (iv) Sahel Kalam. (v) (a) N.A. (b) Transplanted. (c)—. (d) 9″ × 9″. (e) 3. (vi) Transplanting 15th July to 1st week of August, 15th June to 1st week of July. (vii) Irrigated, (viii) N.A. (ix) N.A. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45, and N_4=60 lb./ac.

P_2O_5 as Super was ploughed in before transplanting, N as A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(i), (ii) Arbitrary selection :—Cultivators plot selected in the vicinity of agriculatural farm with 4 replications. (iii) (a) 38′ × 22′ (b) 36′ ×20′ (iv) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth of the plants. (ii) No (iii) Does not arise. (iv) (a) 1953 to 1955 (b) Yes. (c) N.A. (v) N.A.

5. RESULTS:

(i) 1937 lb.ac.

(ii) 338.2 lb./ac.

(iii) Only N effect is highly significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	1647	2016	1762	1929	2026	1876
P_1	1750	1886	2019	2147	1950	1950
P_2	1726	1816	2026	1923	2240	1946
P_3	1559	1894	2112	2149	2349	2013
P_4	1602	1913	2069	2034	1883	1900
Mean	1657	1905	1998	2036	2090	1937

S.E. of N and P marginal mean = 75.6 lb./ac.

S.E. of body of table = 169.1 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53 (55) (Expt. on Cultivators' fields)

Site :-Gazasimal ; Distt. Midnapore. Type :-'M'.

Object :To find out the optimum requirement of A/S and Super on Aman paddy under different soil climatic conditions.

1. BASAL CONDITIONS :

(l) (a) N.A. (b) Aman paddy (c) N.A. (ii) (a) Loamy. (b) N%=0.049 ; Total P_2O_5=0.028 ; Available P_2O_5%=0.0021; Exchangeable Ca. (me.%)=1.20; pH=5.4 (iii) N.A. (iv) Transplanting—15th July to 1st week of August ; 15th June to 1st week of July. (iv) Nonapanlai (Local) Aman paddy. (v) (a) N.A. (b) Transplanting. (c)—. (d) 9″ × 9″. (e) 3 (vi) Transplanting. 15th July to 1st week of August; 15th June to 1st week of July. (vii) Irrigated (Canal). (viii) N.A. (ix) N.A. (x) 15th December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ae.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45, and N_4=60 lb./ac.

Super was ploughed in before transplanting, A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(i), (ii) Arbitray selection :—Cultivator's plot selected in the vicinity of agricultural farm with 4 replications. (iii) (a) 38′ ×22′. (b) 36′ × 20′. (iv) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) Damage due to helminthosporium disease. (iii) N.A. (iv) (a) 1953-1955. (b) Yes. (c) N.A. (v) N.A.

5. RESULTS :

(i) 1529 lb./ac.

(ii) 233.7 lb./ac.

(iii) Levels of N and P differ significantly. Interaction N × P is not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	1256	1344	1449	1517	1289	1371
P_1	1501	1536	1614	1595	1761	1601
P_2	1540	1838	1633	1475	1471	1591
P_3	1430	1688	1655	1522	1615	1582
P_4	1461	1604	1466	1503	1470	1501
Mean	1438	1602	1562	1522	1521	1529

S.B. of marginal mean = 52.3 lb./ac.
S.E. of body of table = 116.8 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(56).**
Site :- Plassey ; Distt : Nadia. **Type :- 'M'.**

Object :—To find out the optimum requirement of A/S and Super on Aman paddy under different soil & climatic conditions of West Bengal.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman paddy. (c) N.A. (ii) (a) Loam (b) N%=0.083 ; total P_2O_5=0.067 ; available P_2O_5=0.0062 ; exchangeable Ca (m.e%)=10.92 ; pH=6.0 (iii) N.A. (iv) Jata (Local). (v) (a), (b) & (c) N.A. (d) 9″×9″. (e) 3. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 50.98″ (x) N.A.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super was ploughed in before transplanting, N as A/S was given as a top dressing 4 weeks after transplantation.

3. DESIGN :

(i), (ii) Arbitrary selection :—cultivators plot selected in the vicinity of agricultural farm with 4 replications. (iii) (a) 38′×22′ (b) 36′×20′ (iv) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) Plants were attacked with stemborer. Damage due to helminthosporium disease. (iii) N.A. (iv) (a) 1953 to 1955 (b) Yes (c) N.A. (v) N.A.

5. RESULTS :

(i) 1708 lb./ac.

(ii) 128.4 lb./ac.

(iii) N levels differ highly significantly. P levels differ significantly. Interaction N×P is not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	1579	1513	1672	1719	1773	1651
P_1	1540	1571	1672	1852	1820	1691
P_2	1571	1656	1680	1672	1883	1692
P_3	1696	1696	1820	1812	1836	1772
P_4	1626	1633	1782	1766	1875	1736
Mean	1602	1614	1725	1764	1837	1708

S.E. of marginal mean = 28.7 lb./ac.
S.E. of body of table = 64.2 lb./ac.

Crop :- Paddy (Aman). Ref :-W.B.53(57). (Expt. on Cultivators' fields)

Site :- Joypur ; Distt. Bankura. Type :- 'M'.

Object :—To find out the optimum requirement of A/S and Super on Aman Paddy under different soil climatic conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman paddy (c) N.A. (ii) (a) Loamy sand. (b) N%=0.035 ; total P_2O_5=0.030 ; available P_2O_5 %=0.0016 ; exchangeable Ca%=2.80 ; pH=6.1. (iii) N.A. (iv) Bhasamanik. (v) (a), (b) & (c) N.A. (d) 9″×9″. (e) 3. (vi) 15th July (approx). (vii) Irrigated. (viii) N.A. (ix) 45.25″. (x) 15th Dec. (approx.)

2. TREATMENTS :

All combinations of (1) & (2)

(1) 5 levels of P_2O_5 : P_0=0, P_1=20, P_2=40, P_3=60 and P_4=80 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super was ploughed in before transplanting. N as A/S was given as top dressing 4 weeks after transdlantation.

3. DESIGN :

(i), (ii) Arbitrary selection—cultivators' plot selected in the vicinity of agricultural farm with 4 replications (iii) (a) 36′×18′. (b) 34′×16′. (iv) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) Nil (iii) Does not arise. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) N.A.

5. RESULTS :

(i) 2507 lb./ac.

(ii) 450.1 lb./ac.

(iii) Only N levels differ highly significantly.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	2393	2203	2381	2486	2659	2424
P_1	2118	2579	2274	2653	2860	2497
P_2	2121	2262	2758	2782	2767	2538
P_3	2014	2658	2231	2504	3042	2490
P_4	2203	2367	2873	2689	2792	2585
Mean	2170	2414	2503	2623	2824	2507

S.E. of marginal mean = 100.6 lb./ac.

S.E. of body of table = 225.0 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 53 (58) (Expt. on Cltiv-altors' fields)

Site :-Lakshya; Distt : Midnapore. Type :-'M'.

Obect :—To find out the optimum requirement of A/S and Supder on Aman Paddy under different soil and climatic conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman paddy (c) N.A. (ii) Loam ; N%=0.077 ; total P_2O_5%=0.046 ; available P_2O_5%=0.0016 ; exchangeable Ca. (m.e.%)=6 09 ; pH=6.0 (iii) N.A. (iv) Patnai. (v) (a) N.A. (b) Transplanting. (c)—. (d) 9″ × 9″ (e) 3 (vi) Transplanting 15th July to 1st week of August ; 15th June to 1st week of July. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 15th. December to 1st week of January.

2. TREATMENTS :

All combinations of (1) and (2)

(i) 5 levels of P_2O_5 : P_0=0, P_1=20. P_2=40, P_3=60 and P_4=8 lb./ac.

(2) 5 levels of N : N_0=0, N_1=15, N_2=30, N_3=45 and N_4=60 lb./ac.

P_2O_5 as Super was ploughed in before transplanting. N as A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN :

(i), (ii) Arbitrary selection :—cultivators' plot selected in the vicinity of agricultural farm with 4 replications (iii) (a) 36′ × 20′. (b) 34′ × 18′. (iv) Yes.

4. GENERAL :

(i) A/S increased the vegetative growth. (ii) (i) Damage due to incidence of helminthosporium. (ii) Plants were attacked with stemborer disease. (iii) N.A. (tv) (a) 1953-1955. (b) Yes. (c) N.A. (v) N.A.

5. RESULTS :

(i) 1652 lb./ac.

(ii) 187.6 lb./ac.

(iii) N and P effects are highly significant. Interaction is not significant.

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

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	997	1272	1565	1672	1694	1440
P_1	1062	1279	1794	1812	1894	1568
P_2	1338	1533	1816	1917	2237	1768
P_3	1560	1505	1981	1911	2265	1844
P_4	1350	1457	1894	1455	2055	1642
Mean	1261	1409	1810	1753	2029	1652

S.E. of marginal mean =41.9 lb./ac.

S.E. of body of table =93.81 lb./ac.

Crop :- Paddy (1st Crop). Ref :-Complex experiments (T.C.M.) W.B. 1953.

Centre :- Burdwan. Type :-'M'.

Object :—I′ (a) To study the effect of types and levels of N and P on non-acid soils.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N A. (c) N.A. (ii) (a) Clayey (b) N.A. (iii) T.P. 13.8.53 (iv) N.A. (v) N.A. (vi) Kalma (vii) Irrigated (viii) N.A. (ix) N.A. (x) 16.12.53.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.

(2) 2 sources of N : A/S and Urea.

(3) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

P_2O_5 as Triple Super. Manuring on 11.8.53.

3. DESIGN :

(i) 3×2×3 Fact. in R.B.D. (ii) (a) 15 (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/60 th.ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (iii) Yield data. (iv) (a) 1953 to 1956. (b) No (c) N.A. (v) (a) Aduthurai, Karjat, Sahaspur, Mankhanda, Maruteru and Chalvai (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 3245 lb./ac.
(ii) 412.5 lb./ac.
(iii) Main effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	A/S	Urea	Mean
P_0	3303	3171	3214	3214	3175	3210	3193
P_1	3410	3481	3244	3372	3278	3447	3362
P_2	3112	3339	2987	3153	3244	3083	3163
Mean	3275	3330	3148	3246	3232	3247	3239
A/S	—	3293	3172				
Urea	—	3363	3125				
Mean	—	3330	3148				

For table N×P.

S.E. of mean in the body of table (N_0 col.)	=238.1	lb./ac.
S.E. of mean in the body of table (N_1 or N_2 col.)	=168.4	lb./ac.
S.E. of marginal mean (N_0 col.)	=134.2	lb./ac.
S.E. of marginal mean (N_1 or N_2 col.)	= 97.2	lb./ac.
S.E. of marginal row mean	=106.5	lb./ac.

For table source of N×P

S.E. of mean in the body of table	=168.4	lb./ac.
S.E. of marginal row means	=119.0	lb./ac.
S.E. of marginal column mean	= 97.2	lb./ac.

For table N×source of N

S E. of mean in the body of table	=134.2	lb./ac.
S.E. of marginal means	= 97.2	lb./ac.

Crop :-Paddy (1st crop). **Ref :-Complex experiments (T.C.M.)(W.B.) 1953.**

Centre :-Burdwan. **Type :-'M'**

Object :—III, To study the effect of minor elements and K.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clayey (b) N.A. (iii) T.P. 5.8.53 (iv) N.A. (v) Basal dressing of (20 lb /ac. N as A/S+20 lb./ac. P_2O_5 as Super given to all plots. Date of manuring 11.8.53. (vi) Kalma (vii) Irrigated (viii) N.A. (ix) N.A. (x) 13.12.53.

2. TREATMENTS :

A set of 32 out of 256 treatment combinations formed of 8 factors each at two levels.

The 8 factors are :

(A) Magnesium as Mg. Sul.	a_0=0 and a_1= 2 cwt./ac.
(B) Iron as Ferrous Sul.	b_0=0 and b_1=100 cwt./ac.
(C) Manganese as Mn. Sul.	c_0=0 and c_1= 20 cwt./ac.
(D) Zinc as Zinc. Sul.	d_0=0 and d_1= 20 lb./ac.
(E) Copper as C/S	e_0=0 and e_1= 20 lb./ac.
(F) Borax as granulated Borax	f_0=0 and f_1= 10 lb./ac.
(G) Molybdenm as Sodium Molybdate	g_0=0 and g_1= 2 oz./ac.
(K) Potash as Pot. Sul.	k_0=0 and k_1= 20 lb./ac.

3. DESIGN :

(i) Fractional replicate (1/8th of 2^6 Fact. set up) (ii) (a) 8 plots/block and 4 blocks. (b) N.A. (iii)—. (iv) (a) N.A. (b) 1/60 th /ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (iii) Yield data. (iv) (a) 1953 to 1956 (b) No (c) N.A. (v) (a) Mankhanda, and Chalvai (b) N.A. (vi) Nil. (vii) Nil.

5 RESULTS :

(i)

(ii)

(iii) Main effect of A alone is highly significant. Others are not signicant.

Factor	Mean response of grain in lb./ac.
(A)	—240.69
(B)	+ 55.54
(C)	— 70.36
(D)	—155.52
(E)	+135.77
(F)	— 90.10
(G)	— 55.54
(K)	+ 86.40

S.E./mean = 111.43 lb./ac.

Crop :- Paddy (1st crop) Ref :- Complex experiments (T.C.M.) (W.B) 1953.

Centre :- Burdwan. Type :- 'M'.

Object :— VI, To study the residual value of phosphatic manure. (1st year).

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) T.P. 13.8.53. (iv) N.A. (v) N.A. (vi) Kalma. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 8.12. 53.

2. TREATMENTS ;

5 treatments replicated as follows :

Treatment	No. of plots/block.
1. 0=Untreated	1
2. C=Control	6
3. $P_{\frac{1}{2}}$=½ unit dressing	1
4. P_1=Unit dressing	2
5. P_2=2 unit dressing	2

Unit dressing : 20 lb. P_2O_5/ac. ; 20 lb./ac. of N as A/S applied to all treatments except (1) ; date of manuring 11.8.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953 to 1956. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga, Sahaspur, Mankhanda, Maruteru and Chalvai. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 3482 lb./ac.

(ii) 368.0 lb./ac.

(iv) Treatment differences are not significant.

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

Treatment	Av. yield	S.E./mean.
1.	3641	184.0
2.	3491	75.0
3.	3436	184.4
4.	3473	139.0
5.	3407	130.0

—=—

Crop :- Paddy (1st (crop). **Ref : Complex experiments (T.C.M.), W.B. 1953.**

Centre :- Mankhanda. **Type :-'M'.**

Object :— I (a). To study the effect of types and levels of N and P on non-acid soils.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Deltaic and saline-Clayey in texture. (b) N.A. (iii) T.P. 13.8.53. (iv) N.A. (v) N.A. (vi) Kalma. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 4.12.53.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.

(2) 2 sources or N : A/S and Urea.

(3) 3 levels of P_2O_5 as Super or Triple Super :— P_0=0, P_1=20 and P_2=40 lb./ac.

Manuring on 13.8.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/60th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953—56. (b) No. (c) N.A. (v) (a) Aduthurai, Karjat, Sahaspur Burdwan, Marutêru and Chalvai. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2408 lb./ac.

(ii) 296.2 lb./ac.

(iii) Main effects of Sources of N and Levels of N are highly significant. Other main effects and interactions are not significant.

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

	N_0	N_1	N_2	Mean	A/S	Urea	Mean
P_0	1820	2260	2746	2366	2775	2232	2503
P_1	1923	2436	2643	2416	2706	2374	2540
P_2	1919	2367	2777	2441	2744	2401	2572
Mean	1887	2354	2722	2408	2741	2335	2538
A/S	—	2539	2943				
Urea	—	2170	2501				
Mane	—	2354	2722				

For table : $N \times P_1$

S.E. of mean in the body of table (N_0 col.)	=171.0 lb./ac.
S.E. of mean in the body of table (N_1 or N_2 col.)	=120.9 lb./ac.
S.E. of marginal mean (N_0 col)	= 98.6 lb./ac.
S.E. of marginal mean (N_1 or N_2 col.)	= 69.8 lb./ac.
S.E. of marginal row mean.	= 76.5 lb./ac.

For table : Sources of N×P

S.E. of mean in the body of table	=120.9 lb./ac.
S.E. of marginal col. mean	= 69.8 lb./ac.
S.E. of marginal row mean	= 85 5 lb./ac.

For table : N× Source of N

S.E. of mean in the body of table	= 98.7 lb./ac.
S.E. of marginal mean	= 69.8 lb./ac.

Crop :- Paddy (1st crop). **Ref :-Complex experiments (T.C.M.), W.B. 1953.**

Centre :- Mankhanda. **Type :- 'M'.**

Object :—III. To study the effect of minor elements and K on paddy.

1. BASAL CONDITIONS :

(i) (a) N A. (b) N.A. (c) N.A. (ii) (a) Deltaic and Saline—clayey in texture .(b) N.A. (iii) T.P. 17.8.53 (iv) N.A. (v) 20 lb /ac. N as A/S+20 lb./ac. P_2O_5 as Super. Date : 11.8.53. (vi) Malapati. (vii) Irrigated (viii) N.A. (ix) N.A. (x) 4.12.53.

2. TREATMENTS :

A set of 32 out of 256 treatments combinations formed of 8 the following factors each at 2 levels.

(A) Magnesium as Mg Sul.	a_0=0 and a_1= 2 cwt./ac.
(B) Iron as Ferrous Sul.	b_0=0 and b_1=100 cwt./ac.
(C) Manganese as Mn. Sul.	c_0=0 and c_1= 80 lb./ac.
(D) Zinc as Zn. Sul.	d_0=0 and d_1= 20 lb./ac.
(E) Copper as c/s	e_0=0 and e_1= 20 lb./ac.
(F) Boron as granulated Borax	f_0=0 and f_1= 10 lb./ac.
(G) Molybdeum as Sodium Molybdate	g_0=0 and g_1= 2 oz./ac.
(K) Potash as Pot. Sul.	k_0=0 and k_1= 20 lb./ac.

3. DESIGN :

(i) Fractional replicate (1/8th of 2^8 Fact. set up). (ii) (a) 8 plots/block and 4 blocks. (b) N.A. (iii) ——. (iv) (a) N.A. (b) 1/60th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953 to 1956. (b) No - (c) N.A. (v) (a) Burdwan and Chalvai (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) ...
(ii) ...
(iii) None of the effects is significant.

Factor	Mean response (grain yield in lb./ac.)
A.	+59.25
B.	+119 73
C.	—38.26
D.	+175.27
E.	+78.99
F.	+58.01
G.	+27.15
K.	+13.58
S.E./mean response	= 94.73 lb./ac.

Crop :- Paddy (1st crop). **Ref :- Complex experiments (T.C.M.) W.B. 1953.**

Centre :- Mankhanda. **Type :- 'M'.**

Object :—VI. To study the residual value of phosphatic manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Deltaic and Saline—Clayey in texture (b) N.A. (iii) T.P. 18.8.53. (iv) N.A. (v) N A. (vi) Kumragare (vii) Irrigated (viii) N.A. (ix) N.A. (x) 5 12.53.

2. TREATMENTS :

5 treatments replicated as follows :—

Treatment				No. of plots/block.
1.	O	=	Untreated	1
2.	C	=	Control	6
3.	$P_{\frac{1}{2}}$	=	½ unit dressing	1
4.	P_1	=	unit dressing	2
5.	P_2	=	Double dressing	2

Unit dressing : 20 lb./ac. P_2O_5. Manuring on 12.8.53.

A basal dressing of 20 lb./ac. N as A/S applied to all treatments except (1).

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 1/60 acre (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil. (iii) Yield data (iv) (a) 1953-56 (b) No (c) N.A. (v) (a) Aduthurai, Sahaspur, Burdwan, Maruteru and Chalvai (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1864 lb./ac.

(ii) 278.6 lb./ac.

(iii) Treatment differences are not significant.

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

Treatment	Av. yield.	S.E./mean
1.	1879	139.3 lb./ac.
2.	1819	56.9 lb./ac.
3.	2087	139.3 lb./ac.
4.	1823	98.5 lb./ac.
5.	1919	98.5 lb./ac.

Crop :- Paddy (Aman). **Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1951.**

Site :- Burdwan (West Bengal) **Type :- 'M'.**

Object :—To find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS :

(a) (i) N.A. (b) Aman paddy. (c) Cultivators' normal practice. (ii) Light and medium texture soil. (iii) Cultivators' normal practice. (iv) Local. (v) (a) to (e) Cultivators' normal practice. (vi) 15th June to 1st week of July. (vii) Unirrigated. (viii) N.A. (ix) 39.53". (ix) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 25 lb./ac. N as A/S over cultivators' normal practice.
3. 25 lb./ac. N+25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S applied as top dressing after 4 weeks of transplantation.

3. DESIGN :

(i), (ii) An experimental plot of size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random in each selected village. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6'—7" radius each located at random within each sub-plot. The dry weights of grain for two cuts were noted separate y. No. of villages (replication) 28 ; size of cut 1/319. 8th acre. (iii) $\frac{1}{3}$to $\frac{2}{3}$ of an ac. (iv) Yes.

4. GENERAL :

(i) Moderate. (ii) N.A. (iii) Grain yield. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) Dry weather in the year 1951. At places sowing and transplantation of paddy were very late. (vii) Nil.

5. RESULTS :

Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1939
2.	2197
3.	2291
G.M.	2142
S.E./mean	=72.46
No. of experiments	=28
Significance —Highly significant.	

Crop :- Paddy (Aman) **Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1952.**

Site :- Burdwan (West Bengal) **Type :- 'M'.**

Object :—To find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS ;

(i) (a) N.A. (b) Aman paddy. (c) Cultivators' normal practice. (ii) Alluvial light and medium texture soil. (iii) Cowdung (cultivators' normal practice). (iv) Local. (v) (a) to (e) Cultivators' normal practice. (vi) 15th June to 1st week of July. (vi) Unirrigated. (viii) N.A. (ix) 49.20". (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 25 lb./ac. N as A/S over cultivators' normal practice.
3. 25 lb./ac.N+25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S applied as top dressing 4 weeks after transplantation.

3. DESIGN :

(i) and (ii) In each village, two fields were chosen at random and a plot size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random from each field. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6'—7" radius each were located at random within each sub-plot. The plants falling inside the cut were harvested and the dry weights of grain for two cuts were noted. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an acre. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1928
2.	2219
3.	2395
G.M.	2181
S.E./mean	= 46.1
No. of experiments	=32.
Significance—Highly significant.	

Crop :- Paddy (Aman) Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1953.

Site :- Burdwan ,West Bengal) Type :-'M'.

Object To:— find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman paddy. (c) N.A. (ii) The soil in general show a range of pH varying from 5.1. to 6.7 except in one case where it is 8.4 (alluvial). (iii) Cowdung. (iv) Local. (v) (a) to (e) Cultivators' normal practice. (vi) 15th June to 1st week of July. (vii) N.A. (viii) N.A. (ix) N.A. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 25 lb./ac. N as A/S over cultivators' normal practice.
3. 25 lb /ac N+25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S applied as top dressing after 4 weeks of transplantation.

3. DESIGN :

(i), and (ii) In each selected village, two fields were chosen at random and a plot of size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random from each field. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6'—7" radius each were located at random within each sub-plot. The plants falling inside the cut were harvested and dry weights of grain for two cuts were noted. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an acre. (iv) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) N.A. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Av. yield of grain in lb /ac.

Treatment	Av. yield
1.	2688
2.	2936
3.	3106
G.M.	2910
S.E./mean	57.6
No. of experiments :	21
Significance—	Highly significant.

Crop :- Paddy (Aman). Ref :- Scheme for Manurial trials (Stewart's Scheme), 1951.

Site :- Hooghly (West Bengal). Type :- 'M'.

Object :—To find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS :

(i) a) Aman paddy (b) N.A. (c) Cultivators' normal practice (ii) Light and medium texture (iii) Cultivators' normal practice (iv) Local (v) (a) to (e) Cultivators' normal practice (vi) 15th June to 1st week of July (vii) Unirrigated (viii) N.A. (ix) 49.36" (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivator's normal practice).
2. 25 lb./ac. N as A/S over cultivators' normal practice.
3. 25 lb./ac. N + 25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S appliedas top dressing after 4 weeks of transplantation

DESIGN :

(i) and (ii) An experimental plot of size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random in each selected village. The plot was then sub divided into three sub-plots of equal size and three treatments were applied at random in the sub plots. Two centres of two circular cuts of 6′—7″ radius each were located at random within each sub plot. The dry weights of grain for two cuts were noted separately. Cut size net=1/319.8 th ac. No. of villages (replications) 18. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an ac. (iv) Yes.

4. GENERAL :

(i) Moderate. (ii) N.A. (iii) Grain yield in srs. per cut. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) Weather conditions for the year 1951 : Extreme draught, At places sowing and transplantation of paddy were very late. (vii) Nil.

5. RESULTS :

Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1388
2.	1625
3.	1783
G.M.	1599
S.E./mean	89.0 lb./ac.

No. of experiments : 18

Significance : Highly significant.

Crop :- Paddy (Aman). **Ref :- Scheme for Manurial trials (Stewart's Scheme), 1952.**

Site :- Hooghly (West Bengal). **Type :- 'M'.**

Object :—To find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman Paddy. (c) Cultivators' normal practice. (ii) Sandy clay loam. Light and medium texture soil. (iii) Cowdung (cultivators' normal practice). (iv) Local. (v) (a) to (e) Cultivators' normal practice. (vi) 15th June to 1st week of July. (vii) Unirrigated. (viii) N.A. (ix) 52.77″. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 25 lb./ac. N as A/S over cultivators' normal practice.
3. 25 lb./ac.N as A/S + 25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S applied as top dressing after 4 weeks of transplantation.

3. DESIGN :

(i), (ii) In each selected village two fields were chosen at random and a plot of size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random. The plot was then sub-divided into three sub plots of nearly equal size and three treatments were applied at radom in the sub plots. Two centres of two circular cuts of 6′—7″ radius each were located at random within each sub plot. The plants falling inside the cut were harvested and dry weights of grain were noted. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an acre. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A (iii) Grain yield. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) & & (vii) Nil.

5. RESULTS :

Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1821
2.	2237
3.	2373
G.M.	2144
S.E./mean	50.2

No. of experiments— 26

Significance —Highly significant.

Crop :- Paddy (Aman). **Ref :- Scheme for Manurial Trials (Stewart's Scheme) 1953.**

Site :- Hooghly (West Bengal). **Type :- 'M'.**

Object :—To find the effect of different doses of fertilizers on the yield of Paddy in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aman paddy. (c) N.A. (ii) The soils in general show range of pH varying from 5.2 to 7.4. Sandy clay loam. (iii) Cowdung. (iv) Local. (v) (a) to (e) Cultivators' normal practice. (vi) 15th June to 1st week of July. (vii) N.A. (viii) N.A. (ix) N.A. (x) 15th December to 1st week of January.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 25 lb./ac. of N as A/S over cultivators' normal practice.
3. 25 lb./ac. N as A/S +25 lb./ac. P_2O_5 as Super over cultivators' normal practice.

Super applied at the time of puddling. A/S applied as top dressing after 4 weeks of transplantation.

3. DESIGN :

(i), (ii) In each village, two fields were chosen at random and a plot of size varying from $\frac{1}{4}$rd to $\frac{1}{2}$rd of an acre was selected at random from each field. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub plots. Two centres of two circular cuts of 6′—7″ radius each were located at random within each sub plot. The plants falling inside the cut were harvested and dry weights of grain for two cuts were noted. (iii) $\frac{1}{8}$ to $\frac{1}{3}$ of an ac. (iv) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) N.A. (iv) (a) 1951 to 1953. (b) N.A. (c) N.A. (v) N.A. (vi) & (vii) Nil.

5. RESULTS :

Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2488
2.	2816
3.	2939
G.M.	2748
S.E./mean	60.9

No. of experiments : 16

Significance —Highly significant.

Crop :- Paddy (Aman). **Ref :- W.B. 48(16).**

Site :- State Agri. Farm,Midnapore. **Type : 'MV'.**

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

1. BASAL CONDITIONS :

(i) (a) Aman paddy followed by Aus paddy. (b) Aus paddy. (c) B.M. at 7.5 md/ac.+Lime at 13 md/ac.+ Cowdung at 765 md/ac. (ii) (a) Laterite (b) Refer soil analysis, Midnapore. (iii) 31.8.48 ; 4.9.48. (iv) (a) 4 to 5 ploughing & laddering. (b) Transplanting. (c)—.(d) 9″×9″. (e) 3—4. (v) Nil. (vi) As under treatments. (vii) Unirrigated. (viii) 2—3 weedings was usual practice. (ix) 63.82″. (x) 21, 26.12.48.

TREATMENTS :

Main-plot treatments :—

4 levels of manures : M_1=cowdung at 75 md/ac, M_2=M_1+15 lb/ac. N as A/S, M_3=M_2+B.M. at 1.5 md/ac. and M_4=M_1+B.M. at 3 md/ac.

Sub-plot treatments :—

5 varieties : V_1=Jhingasail (medium), V_2=Latisail (medium), V_3=Bhasamanik (medium), V_4=Bhasamanik (a) (medium) and V_5=Rupsail (local).

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots/block and 5 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) Sub-plot 19′×34′ ; Main-plot 103′×34′. (b) Sub-plot 17×32′. (v) Distance between plots 2′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (no lodging). (ii) N.A. (iii) Grain & straw yield. (iv) (a) 1948—1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1213 lb./ac.

(ii) (a) 446.9 lb./ac.

(b) 269.9 lb./ac.

(iii) Main effect of M and V and the interaction are not significant.

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

	V_1	V_2	V_3	V_4	V_5	Mean
M_1	946	973	772	1001	1139	966
M_2	1056	1387	1286	1261	1254	1249
M_3	1426	1296	1276	1193	1690	1375
M_4	1282	1156	1221	1382	1268	1262
Mean	1178	1203	1139	1209	1338	1213

S.E. of difference of two

1. main-plot treatment means =163.2 lb/ac.
2. sub-plot treatments means =110.2 lb/ac.
3. sub-plot treatment means at the same level of main-plot treatment =220.4 lb/ac.
4. main-plot treatment means at the same level of sub-plot treatment =255.9 lb/ac.

Crop :- Paddy (Aman). **Ref :- W. B. 48(15).**

Site :- State Agri. Farm, Midnapore. **Type : 'MV'.**

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

1. BASAL CONDITIONS ;

(i) (a) Aman paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Midnapore. (iii) 6.7.48. (iv) (a) 4—5 ploughings and laddering. (b) Transplanting : (c)—.(d) 9″×9″. (e) 3—4 (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) 2—3 weedings was usual practice. (ix) 63.82″. (x) 15 to 18.12.48.

2. TREATMENTS :

Main-plot treatments :—

4 levels of manures : M_1=Cowdung at 75 md/ac., M_2=M_1+15 lb/ac. N as A/S, M_3=M_2+B.M. at 1.5 md/ac. and M_4=M_1+B.M. at 3 md/ac.

Subplot treatments :—

5 Varieties: V_1=Jhingasail (medium), V_2=Latisail (medium), V_3=Bhasamanik (medium), V_4=Bhasamanik (a) (medium) and V_5=Rupsail (local)

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots/block and 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) Sub-plot 19′×34′ & Main plot 103′×34′. (b) 17′×32′. (v) Distance between plots 2′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. No lodging. (ii) N.A. (iii) Grain & straw yield. (iv) (a) 1948—1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1193 lb/ac.
(ii) (a) 333.8 lb/ac.
(b) 261.0 lb/ac.
(iii) Only main effect of M significant.
(iv) Av. yield of grain in lb/ac.

	V_1	V_2	V_3	V_4	V_5	Mean
M_1	1101	839	928	931	946	949
M_2	1178	1308	1345	1090	1393	1263
M_3	1394	1280	1191	1379	1435	1336
M_4	1208	1141	1232	1239	1312	1226
Mean	1220	1142	1174	1160	1271	1193

S.E. of difference of two

1. main-plot treatment means =105.5 lb/ac.
2. sub-plot treatment means = 92.3 lb/ac.
3. sub-plot treatment means at the same level of main-plot treatment =184.6 lb/ac.
4. main-plot treatment means at the same level of sub-plot treatment =189.6 lb/ac.

Crop :- Paddy (1st crop) Ref. :- Complex experiments (T.C.M.), 1953.
Centre :- Mankhanda (W.B.). Type :- 'M.V'.

Object :— VIII. To study the effect of N and P on different varities of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Deltaic and Saline—Clayey in texture. (b) N.A. (iii) Transplanting on 20.8.53. (iv) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 7.12.53.

2. TREATMENTS :

All combinations of (1), (2) and (3)
(1) 3 levels of N :— N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of P_2O_5 :— P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 varieties :— V_1=Jamaninadu, V_2=Kaumragere and V_3=Bhasamanik.
P_2O_5 applied as Super. Date of manuring 14.8.53.

3. DESIGN :

(i) 3^3 Fact. Confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/60th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of paddy. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Karjat, Ponnampet. Sahaspur, Burdwan, Maruteru and Chalvai (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2367 lb./ac.
(ii) 147.9 lb./ac.
(iii) Main effect of N is highly significant. Main effect of V is significant, main effect of P and all the interactions are not significant.

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

	N_0	N_1	N_2	Mean	V_1	V_2	V_3
P_0	1904	2355	2711	2323	2202	2506	2263
P_1	1949	2546	2746	2414	2340	2633	2267
P_2	2045	2212	2839	2365	2402	2395	2299
Mean	1966	2371	2765	2367			
V_1	1976	2340	2628	2315			
V_2	1999	2443	3091	2511			
V_3	1923	2330	2576	2276			

S.E. of marginal mean =49.3 lb./ac.
S.E. of body of table =85.4 lb./ac.

Crop :- Paddy (1st crop). **Ref : Complex experiments (T.C.M.), 1953.**
Centre :- Burdwan (W.B.). **Type :- 'MV'.**

Object :— VIII. To study the effect of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :
(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) Transplanting on 14.8.53. (iv) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 20.12.53.

2. TREATMENTS :
All combinations of (1), (2) and (3)
(1) 3 levels of N :— N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 varieties :— V_1= Kalma. V_2=Jhingasal and V_3=Nagra.
P_2O_5 applied as Super. Manures applied on 12.8.53.

3. DESIGN :
(i) 3^3 Fact. Confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

4. GENERAL :
(i) Normal. (ii) Nil. (iii) Yield of paddy. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Karjat, Ponnampet, Sahaspur, Mankhanda, Maruteru and Chalvai (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :
(i) 3395 lb./ac.
(ii) 432.3 lb./ac.
(iii) Main effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	V_1	V_2	V_3
P_0	3425	3524	3349	3433	3288	3456	3555
P_1	3162	3239	3364	3255	3417	3204	3144
P_2	3642	3442	3410	3498	3501	3750	3243
Mean	3410	3402	3374	3395			
V_1	3398	3573	3235	3402			
V_2	3611	3305	3494	3470			
V_3	3220	3326	3395	3314			

S.E. of marginal mean =144.1 lb./ac.
S.E. of body of table =249.6 lb./ac.

Crop :-Paddy. Ref :-W B. 52 (56).

Site :-State Agri, Farm Chinsurah. Type :-'C'

Object :—To find out the best spacing and time of transplanting for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Boro paddy. (c) Nil. (ii) (a) Clayey. (b) Refer soil analysis, Chinsurah. (iii) 15.10.52. (iv) (a) 3—4 ploughings and harrowing. (b) Transplanted. (c)—. (d) Between plants 9" and between rows as per treatments. (e) 3—4. (v) Nil. (vi) Orissa Kakuria (late). (vii) Unirrigated. (viii) 2—3 weedings. (ix) 10.57" approx. (x) 18-25.5.53.

2. TREATMENTS :

Main-plot treatments :—

6 dates of transplanting : D_1=1.12.52, D_2=16 12.52, D_3=31.12.52, D_4=15.1.53, D_5=30.1.53 and D_6=14.2.53

Sub-plot treatments :—

3 spacings (bet. rows) : S_1=4", S_2=6" and S_3=9".

3. DESIGN :

(i) Split plot. (ii) (a) 6 main-plot/block ; 3 sub-plots./main-plot. (b) N.A. (iii) 6 (iv) (a) 33' × 12' (b) 32.33' ×11.33' for 4" spacing. 32' × 11' for 6' spacing and 31.5' × 10.5' for 9" spacing. (v) Distance bet. plots 1.5' and blocks 2' ; 1row around the net plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 384.0 lb./ac.

(ii) (a) 216.4 lb./ac.

(b) 196.7 lb./ac.

(iii) Dates of translanting and spacing effects are highly significant. Interaction is not significant.

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

	S_1	S_2	S_3	Mean
D_1	317	371	104	264
D_2	356	515	439	437
D_3	634	474	406	505
D_4	594	444	384	474
D_5	436	382	297	371
D_6	397	186	176	253
Mean	456	395	301	384

S.E. of differance of two

1. main-plot treatment means = 72.1 lb./ac.
2. sub-plot treatment means = 46.4 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment —113.6 lb./ac.
4. main-plot treatment means at the same level sub-plot treatment =117.5 lb./ac.

Crop :-Paddy (Aman). Ref :-W.B. 51 (23).

Site :-State Agri. Farm Chinsurah. Type :-'CV'.

Object :—To study the effect of time of transplanting on the yield of different late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy (c) T.C. or Cowdung 50 md./ac. (ii) (a) Clay (Alluvial soil). (b) Refer soil analysis, Chinsurah. (iii) 21.7.51. (iv) (a) 3—4 ploughing and laddering. (b) N.A. (c)—(d) 6" × 6". (e) 3—4 (v) 20 lb./ac. N in the form of A/S, 40 lb./ac. P_2O_5 in the form of Super broadcast (vi) Late ripening varieties, as under treatments. (vii) Unirrigated. (viii) Weeding by hand once. (ix) 38.83". (x) Last week of December-2nd week of Jannuary.

2. TREATMENTS :

Main-plot treatments :—

5 varieties : V_1=Asra 108/1, V_2=Til k kachary, V_3=F.R. 43 B, V_4=F.R. 13 A and V_5=Kumargore

Sub-plot treatmets :—

4 dates of tranplanting :—D_1=28th August, 51, D_2= 8th Sept., 51, D_4=19th Sept., 51 and D_4=30th Sept., 51.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 10′ × 19′. (b) 9′ × 18′ (v) Distance between plots 1.5′ and blocks 2′ : ½′ round each plot. (vi) Yes.

4. GENERAL :

(i) Good, (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1951—continued in modified form (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 638 lb./ac.
(ii) (a) 435.3 lb./ac.
(b) 266.7 lb./ac.
(iii) Effects of variety and dates of transplanting are highly significant.
(iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	Mean
D_1	809	1174	829	621	1231	933
D_2	579	978	479	393	1084	703
D_3	560	939	520	276	1049	669
D_4	87	343	216	95	503	249
Mean	509	858	511	346	967	638

S.E. of differance of two

1. main-plot treatment means = 84.3 lb./ac.
2. sub-plot treatment means =123.1 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =194.7 lb./ac.
4. main-plot treatment mean at the same level of sub-plot treatment =168.8 lb./ac.

Crop :- Paddy (Aman) **Ref :- W.B. 52(55).**

Site :-State Agri. Farm, Chinsurah. **Type :- 'CV'.**

Object :— To study the effect of time of transplanting on the yield of different late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Alluvial clay soil. (b) Refer soil analysis. Chinsurah. (iii) As per treatments. (iv) (a) 3–4 ploughings & laddering. (b) Transplanted. (c)—. (d) 6″×6″. (e) 3—4. (v) 20 lb./ac. of N in form of A/S. & T.C. and 20 lb. P_2O_5/ac. in the form of Super applied by broadcast method. (vi) As per treatments (Late varieties). (vii) Unirrigated. (viii) Weeded by hands twice. (ix) 40.55″. (x) Last week of December to middle of January.

2. TREATMENTS :

Main-plot treatments :—

5 dates of transplanting :—
D_1=5th Aug. 52, D_2=15th Aug. 52, D_3=25th Aug. 52, D_4=4th Sept. 52, and D_5=14th Sept. 52.

Sub-plot treatments :—

3 varieties :— V_1=Tilak Kachary, V_2=Asra 108/1 and V_3=Kumargore.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/Replication and 3 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) 18′×9′. (b) 17′×8′. (v) Distance between plots 1.5′ and bet. replicates 2′,½′ row around each plot left as guard row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1952—(started in 1951). continued in modified form. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

RESULTS :

(i) 736 lb./ac.
(ii) (a) 217.3 lb,/ac.
(b) 279.7 lb./ac.
(iii) Varieties effect is significant. Main effect of dates of transplanting and interaction D×V are highly significant.
(iv) Av. yield of grain lb./ac.

	V_1	V_2	V_3	Mean
D_1	771	596	776	714
D_2	904	664	916	828
D_3	1152	343	1077	857
D_4	892	1156	566	871
D_5	585	211	430	408
Mean	861	594	753	736

S.E. of difference of two

1. main-plot treatment means =88.7 lb./ac.
2. sub-plot treatment means =88.5 lb./ae.
3. sub-plot trertment means at the same level of mainplot treatment =197.7 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment =184.2 lb./ac.

Crop :- Paddy (Aman). **Ref :- W.B. 53(35).**

Site :- State Agri. Farm Chinsurah. **Type : -'CV'.**

Object :— To study the effect of time of transplanting on the yield of different late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aman paddy. (c) Basic dose of 50 to 100 md. cowdung/ac. (ii) (a) Alluvial clay. (b) Refer soil analysis, Chinsurah. (iii) As per treatments. (iv) (a) N.A. (b) Transplanting. (c)—. (d) 6″×6″. (e) 3. (v) 50 to 100 md/ac. of sludge. (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding (hand) for each case. (ix) 45.19″. (x) December to January.

2. TREATMENTS :

Main-plot treatments :—

5 dates of transplanting :—
D_1=10th August, 1953, D_2=20thAugust, 1953, D_3=30th August, 1953, D_4=9th Sept. 1953 and D_5=19 thSept. 1953

Sub-plot treatments —

3 varieties :— V_1= Tilak Kachary. V_2=Asra 108/1. V_3=Kumargore.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/block, 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 19′ 6″ ×10′ 6″ (b) 18′ 6″×9′ 6″. (v) ½′ border around each sub plot. (vi) Yes.

4. GENERAL :

(i) Slight lodging. (ii) Incidence of Stemborer in few cases. (iii) Yield of grain. (iv) (a) 1953 to 1956. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1929 lb./ac.

(ii) (a) 407.7 lb./ac.

(b) 260.0 lb./ac.

(iii) Only dates of transplanting are significantly different.

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

	V_1	V_2	V_3	Mean
D_1	1523	1774	1525	1607
D_2	2093	1796	2167	2019
D_3	2409	1931	2340	2227
D_4	2166	2120	2126	2137
D_5	1639	1558	1762	1653
Mean	1966	1836	1984	1929

S.E. of difference of two

1. main-plot treatment means = 166.4 lb./ac.
2. sub-plot treatment means = 82.2 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 183.8 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 224.1 lb./ac.

Crop :-Paddy (Aman). **Ref :-W.B. 52(54).**

Site :-State Agri. Farm, Chinsurah. **Type :-'D'.**

Object :—To study the efficacy of different insecticides against Paddy stemborer *(Schoenobius incertellus. Wlk)*.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Aman paddy. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsnarah. (iii) 16th June/30th July. (iv) (a) 4—5 ploughings and laddering. (b) Transplanting. (c)—. (d) 9″×9″. (e) 2—3. (v) A/S at 40 lb.N/ac.+Super at 40 lb./ac. P_2O_5. (vi) Bhasamanik CH-3 ; (Medium). (vii) Irrigated. (viii) 2 weedings. (ix) 36.83″. (x) 20th Nov. 1952.

2. TREATMENTS :

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

(1) 2 insecticides : D.D.T. and B.H.C.

(2) 2 methods of application : M_1=5% dusted M_2=50% wettable, sprayed with 0.1% concentration.

Insecticides were applied 4 times at an interval of fortnight. Dates of application—15th Aug., 31st Aug., 16th Sept. and 2nd Oct. 52.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 12. (iv) (a) 16.50′×8.25′. (b) 16.50′×8.25′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of paddy stink bug, helminthosporium and *Sincertellus*. (iii) % damage done to earheads by the stem-borer under study at the time of harvest. (iv) (a) 1952 and 1953. (b) Yes. (c) N.A. (v) (a) No. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 1.5 percent.

(ii) 0.11 percent.

(iii) Contral *vs.* other treatments effect alone is highly significant.

(iv) Percent damaged earheads.

	Control = 6.5 percent D.D.T.	B.H.C.	Mean
M_1	1.0	0.9	0.95
M_2	1.1	1.0	1.05
Mean	1.05	0.95	1.00

S.E. of the marginal mean = 0.022%
S.E. of body of table = 0.032%

Crop :-Paddy (Aman). **Ref :-W.B. 53(71).**

Site :-State Agri. Farm, Chinsurah. **Type :-'D'.**

Object :—To study the efficacy of different insecticides against paddy stemborer (*S. Incertellus Wlk*).

1. BASAL CONDITIONS

(i) (a) Nil. (b) Aman paddy. (c) A/S 40 lb.N/ac. ; Super 40 lb./ac. P_2O_5. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 16th June/30th July. (iv) (a) 4—5 ploughings and laddering. (b) Transplanting. (c) —. (d) 9"×9". (e) 2. (v) A/S (20.6%) 40 lb.N/ac. ; Super (Single 16% P_2O_5) 40lb. N/ac. (vi) Bhasamanik (CH-3, Medium). (vii) Irrigated. (viii) 2 weedings. (ix) 42.24". (x) 20th November, 1954.

2. TREATMENTS :

All combinations of (1) and (2)+a Control
(1) 2 insecticides : D.D.T. and B.H.C.
(2) 2 methods of application : M_1=5% dusted M_2=50% wettable, sprayed with 0.1% concentation.
Insecticides were applied four times at an interval of fortnight. Dates of application—15 Aug., 31 Aug., 16th Sept., and 2nd Oct. 53.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 12. (iv)(a) 16.50'×8.25'. (b) 16.50'×8.25'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good (ii) Incidence of paddy stink bug, helminthosporium and *S. incertellus*. (iii) % damage due to earheads by the stemborer under study at the time of harvest. (iv) (a) 1952 and 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1.5%
(ii) 0.15%
(iii) Control *vs.* other treatments effect is highly significant.
(iv) Percent damaged earheads.

Control = 6.5%

	D.D.T.	B.H.C.	Mean
M_1	0.9	0.8	0.85
M_2	1.1	1.0	1.05
Mean	1.0	0.9	0.95

S.E. of maeginal mean = 0.031%
S.E. of body of table = 0.043%

— —

Crop :- Paddy (Aman). Ref :- W.B. 53 (75).

Site :- State Agri. Farm, Chinsurah. Type :- 'D'.

Object :—To study the effect of different insecticides against paddy stem borer (*S. Intercellus Wlk*).

1. BASAL CONDITIONS :

(i) (a) Aman paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 16.6./30.7.53. (iv) (a) 3—4 ploughings and harrowing. (b) Transplanting. (c) —. (d) 9″×9″. (e) 2. (v) Nil. (vi) Bhasmanik (CH—3, Medinm). (vii) Irrigated. (viii) 2 weedings and hoeing. (ix) 42.24″. (x) 20.11.53.

2. TREATMENTS :

Treatment applied 4 times each at an interval of 15 days beginning from 15th August, 1953.

1. Control.
2. D.D.T. (5% dust).
3. B H.C. (5% dust).
4. D.D.T. (50% wettable) spray with 0.1% concentration.
5. B.H C. (50% wettable) spray with 0.10% concentration.
6. Folidol-E 605 (5% dust).
7. Folidol E 605 spray with 0.4% concentration.
8. Toxaphane (5% dust).
9. Toxaphane (25% spray) with 0.1% concentration.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 12. (iv) (a) 16.5′×8.25′. (b) 16.5×8.25′. (v) Distance between plots 1.5′ and block 3′ no guard row left. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Under study. (iii) Percentage of tillers damaged by stem borer were taken at the time of harvest. (iv) (a) 1953 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 1.22%

(ii) 0.64%

(iii) Control *vs.* insecticides is highly significant and the insecticides among themselves differ highly significantly.

(iv) Av. percentage of tillers damaged by stem borers.

Treatment	Av.
1.	4.50
2.	0.64
3.	0.55
4.	0.55
5.	0.56
6.	1.02
7.	1.13
8.	1.03
9.	1.01
S.E /mean	=0.18%

Crop :- Paddy (Aus). **Ref :- W.B. 53(74).**

Site :- State Agri. Farm, Malda. **Type :- 'D'.**

Object :—To study the effect of seed treatment on growth infection and yield of broadcast Aus paddy.

1. BASAL CONDITIONS :

(i) (a) Gram followed by Aus paddy. (b) Gram. (c) Super placed at 0.55 md /ac. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 19.5.53. (iv) (a) 2-3 ploughings and laddering by tractor. (b) Broadcast. (c) 1 md./ac. (d) and (e) —. (v) Mustard cake 2.50 md./ac. ; G.N.C 2.50 md./ac. ; applied during general preparation of land on 18.5.53. (vi) Dharial (Late) Satika (early). As per treatments. (vii) Unirrigated. (viii) Mulching with weeding 3 times. 1st on 27.6.53 ; 2nd on 5.7.53 and 3rd on 25.7.53. (ix) 61.29" (Approx). (x) 5.6 and 11.12.53.

2. TREATMENTS :

Main-plot treatments :—

3 fungicides : Control, Agrosan G.N. and Yellow Coperocide.

Sub-plot treatments :—

2 varieties : Dharial and Satika.

The seeds were shaken for 10 minutes with chemicals in an earthen pitcher.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) Sub-plot 37'×27' ; Main-plot 76'×27'. (b) 34'×24'. (v) Distance between plots 2' and blocks 4', 1.5' border around each plot. (iv) Yes.

4. GENERAL :

(i) Dharial-Good ; Satika-Poor. (ii) Incidence of helminthosporium. No control measures taken. (iii) Grain and straw yield. (iv) (a) 1953 to 1957. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1438 lb./ac.

(ii) (a) 266.3 lb./ac.

(b) 302.2 lb./ac.

(iii) Varieties differ highly significantly. Main effects of fungicides and interaction are not significant.

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

	Dharial	Satika	Mean
Control	1872	1080	1476
Agrosan G.N.	1604	1161	1382
Coperocide	1711	1201	1456
Mean	1729	1147	1438

S.E. of difference of two

1. marginal means of fungicides =108.8 lb./ac.
2. marginal means of varieties =100.7 lb./ac.
3. variety means at the same level of fungicides =174.5 lb./ac.
4. fungicide means at the same level of variety =164.4 lb./ac.

Crop :- Wheat. **Ref :- W.B. 48(1).**

Site :- State Agri. Farm, Berhampur. **Type : 'M'.**

Object :—To find out the optimum requirement of N and P with two different methods of application of P.

1. BASAL CONDITIONS :

(i) (a) Nil. (b). Paddy (Aus). (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Berhampur. (iii) N.A. (iv) (a) 5-6 ploughings and laddering. (b) Seeds broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) Local. (vii) Partly irrigated. (viii) N.A. (ix) About 2" (approx). (x) N.A.

2. TREATMENTS :

Main-plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

(2) 3 levels of P_2O_5 :P_0=0, P_1=30 and P_2=60 lb./ac.

N applied as A/S ; P_2O_5 as Super.

Sub-plot treatments :—

2 methods of application of Super : M_1=Spread on and M_2=Dug in.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/block and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 30′×21.5′. (b) 28′×19.5′. (v) Distance between plots 2′ 1′ around each plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 779 lb./ac.

(ii) (a) 137.6 lb./ac.

(b) 133.5 lb./ac.

(iii) None of the effects is significant.

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

	N_0	N_1	N_2	Mean	M_1	M_2
P_0	722	778	813	771	722	821
P_1	746	811	813	790	801	779
P_2	763	681	880	775	778	772
Mean.	744	757	836	779		
M_1	733	757	811	767		
M_2	755	757	860	791		

1. S.E. of marginal mean of N or P =28.1 lb./ac.
2. S.E. of body of N×P table =48.7 lb./ac.

S.E. difference of two

3. 'Method of application means' =31.4 lb./ac.
4. 'Method' means at the same level of N or P =54.5 lb./ac.
5. N or P means at the same level of 'method' =55.4 lb./ac.

Crop :-Wheat. Ref :-W.B. 48 (19).

Site :-State Agri. Farm, Malda. Type :-'M'.

Object :—To find out the optimum requirement of N and P with two different methods of application of P.

1. BASAL CONDITIONS :

(i) (a) Aus paddy-Wheat. (b) Aus paddy. (c) As under treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 14.11.48. (iv) (a) 5—6 ploughings and laddering. (b) broadcast. (c) 1 md./ac. (d) and (e)—. (v) Nil. (vi) Gangajali (Local, late). (vii) Irrigated. (viii) N.A. (ix) 14.99″. (x) 23/25.3.49.

2. TREATMENTS :

Main plot treatments :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30, N_2=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=30, P_2=60 lb./ac.

Sub-plot treatments :—

2 methods of application of Super. : M_1=Spread on and M_2=Dug in.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/block and 2 sub-plots/Main-plot. (b) N.A. (iii) 4. (iv) (a) 30′ × 21.5′. (b) 28′ × 19.5′. (v) Distance between plots 2′ ; 1′ around each plot. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948-1950. (b) Yes. (c) N.A. (v) (a) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1439 lb./ac.
(ii) (a) 113.8 lb./ac.
(b) 71.6 lb./ac.
(iii) None of the effects and interaction is siginficant.
(iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	M_1	M_2
N_0	1447	1484	1440	1457	1463	1452
N_1	1389	1450	1415	1418	1414	1421
N_2	1393	1494	1442	1443	1426	1460
Mean	1410	1476	1432	1439		
M_1	1421	1452	1429	1434		
M_2	1399	1500	1434	1444		

1. S.E. of marginal mean of N or P = 23.2 lb./ac.
2. S.E. of the body of N×P table = 40.2 lb./ac.

S.E. of difference of two

3. M means = 16.8 lb./ac.
4. 'Method' means at the same level of N or P = 29.2 lb./ac.
5. N or P means at the same level of M = 38.8 lb./ac.

Crop :-Wheat (Rabi). **Ref :-W.B. 49 (19).**

Site :-State Agri. Farm, Malda. **Type :-'M'.**

Object :—To study the residual effect of applying different doses of N and P on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Aus paddy-Wheat. (b) Aus Paddy. (c) Treatments of previous crop. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 1.11.49. (iv) (a) 5—6 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e)—. (v) Nil. (vi) Gangajali (Local, late). (vii) Irrigated. (viii) Weeding once. (ix) 2.15″. (x) 18 and 25-27.3.50.

2. TREATMENTS :

Main-plot treatment :—

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=30, and P_2=60 lb./ac.

Sub-plot treatments :—

2 methods of application of Super : M_1=spread on and M_2=Thrusting in.
Manures were applied to the previous crop Aus paddy and residual effect is being studied.

3. DESIGN :

(i) Split plot. (ii) (a) 9 main-plots/block and 2 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) 30′ × 21.5′. (b) 28′ × 19.5′. (v) Distance between plots 2′, 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948-1950. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 1085 lb./ac.

(ii) (a) 202.7 lb./ac.

(b) 123.2 lb./ac.

(iii) Main effects and interactions are not significant.

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

	P_0	P_1	P_2	Mean	M_1	M_2
N_0	1034	1075	1168	1092	1080	1104
N_1	1081	1111	1034	1075	1056	1093
N_2	972	1111	1178	1087	1028	1145
Mean	1029	1099	1127	1085		
M_1	1025	1066	1073	1055		
M_2	1032	1131	1179	1114		

1. S.E. of marginal mean of N or P = 41.4 lb./ac.
2. S.E. of the body of N×P table = 71.7 lb./ac.

S.E. of difference of two

3. M means = 29.0 lb./ac.
4. M means at the same level of N or P = 50.3 lb./ac.
5. N or P means at the same level of M = 68.5 lb./ac.

Crop :-Wheat (Rabi). **Ref :-W.B. 49 (20).**

Site :-Muchia ; Distt. Malda. **Type :-'M'**

Object :—To study the effect of applying A/S and Super alone and in combination on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aus paddy. (c) N.A. (ii) Clay loam. (iii) Treatments (iv) Gangajali (Local). (v) (a) 4—5 ploughings and laddering. (b) Seed broadcast. (c) 1 md/ac. (d) and (e)—.(vi) November 1949. (v) Irrigated. (viii) N.A. (ix) About 2". (x) March, 1950.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N : N_0=0, N_1=20, N_2=40 and N_3=60 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.

P_2O_5 as Super was ploughed in at the time of general preparation of land and N as A/S applied by broadcast 4 weeks after sowing.

DESIGN :

(i), (ii) 4×3 Fact. in R.B.D. with 4 replications. (iii) (a) 45.25' × 18.50'. (b) 43.25' × 16.50'. 1' border around each plot. (iv) N.A.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b)—. (c)—.(v) N.A.

5. RESULTS :

(i) 939.4 lb./ac.

(ii) 87.36 lb./ac.

(iii) Main effect of N and interaction N × P_2O_5 are highly significant while P_2O_5 effect is significant.

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

	N_0	N_1	N_2	N_3	Mean
P_0	678.7	808.6	872.5	892.6	813.1
P_1	864.6	797.4	1080.8	1143.5	971.6
P_2	907.2	1029.0	1154.7	1042.7	1033.4
Mean	816.8	878.3	1036.0	1026.3	939.4

S.E. of the marginal mean of N =21.84 lb./ac.

S.E. of the marginal mean of P =25.22 lb./ac.

S.E. of body of table =43.68 lb./ac.

Crop :-Jowar. (fodder) Ref :-W.B. 48 (3).

Site :-State Agri. Farm, Bankura. Type :-'M'.

Object :—To study the manurial effect of Cowdung, B.M. and Lime.

1. BASAL CONDITIONS :

(i) (a), (b) and (c) N.A. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) N.A. (iv) (a) 3 ploughings and 2 ladderings. (b) to (e) N.A. (v) N.A. (vi) N.A. (vii) Unirrigated. (viii) N.A.. (ix) 40.91" (x) N.A.

2. TREATMENTS :

1. Control.
2. Cowdung 150 md./ac.
3. B.M. 3 md./ac.
4. Cowdung 150 md./ac.+Lime 3 md./ac.
5. B.M. 3 md./ac.+Lime 3 md./ac.
6. Cowdung 150 md./ac.+B.M. 3 md./ac.+Lime 3 md./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/40th acre. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 10866 lb./ac.
(ii) 4405 lb./ac.
(iii) Treatments do not differ significanlty.
(iv) Av. yield of fodder in lb./ac.

Treatment	Av. yield
1.	6478
2.	12935
3.	11021
4.	14911
5.	8300
6.	11553
S.E./mean	=1798 lb./ac.

Crop :-Maize fodder **Ref :-W.B. 49 (4).**

Site :-State Agri. Farm, Bankura. **Type :-'M'.**

Object :—To study the manurial effect of cowdung, B.M. and Lime.

1. BASAL CONDITIONS :

(i) (a). (b) and (c) N.A. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 30.7.49. (iv) (a) 3 ploughings and 2 ladderings. (b) to (e) N.A. (v) N.A. (vi) N.A. (vii) Unirrigated. (viii) N.A. (ix) 25.09" (x) 16 to 29.9.49.

2. TREATMENTS :

1. Control
2. Cowdung 150 md,/ac.
3. B.M. 3 md./ac.
4. Cowdung 150 md./ac.+Lime 3md./ac.
5. B.M. 3 md./ac.+Lime 3 md./ac.
6. Cowdung 150 md./ac +B.M. 3 md./ac.+Lime 3 md./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 33′ × 33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of maize fodder (iv) (a), (b), and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11097 lb./ac.
(ii) 1788 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of fodder in lb./ac.

Treatment	Av. yield
1.	5234
2.	11994
3.	10573
4.	13146
5.	11654
6.	13980
S.E./mean	= 730.1 lb./ac.

Crop :-Arhar. **Ref :- W.B. 51(21).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out the best time of sowing for Arhar.

1. BASAL CONDITIONS :

(i) (a) Nil (b) and (c) N.A. (ii) (a) Loamy (b) Refer soil analysis, Berhampore (iii) As under treatments ; (iv) (a) 3—4 ploughings and laddering. (b) Sowing is done in lines (c) N.A. (d) 3′ × 3′ (e) 4—5, later thinned to one healthy plant. (v) Nil. (vi) W.B. Type 7 (Med.) (vii) Unirrigated. (viii) 2 weedings and 2 earthing up after 1st weeding. After thinning, only one plant per hole was retained. (ix) 34.47″ (x) 1st and 2nd sowing on 19th Jan., 3rd and 4th sowing on 1st February.

2. TREATMENTS :

Time of sowing :—

1. 10.5.51
2. 25.5.51
3. 9.6.51
4. 24.6.51

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18′ × 12′ (b) 12′ × 6′ (v) Distance between plots 5′ and between blocks 6′ ; 1′ border row (3′) around each plot left as guard row (vi) Yes.

4. GENERAL :

(i) Good (ii) N.A. (iii) Height recorded after every fortnight. Yield of grain (iv) (a) 1951 to 1955 (b) No (c) N.A. (v) (a) No (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1894 lb./ac.

(ii) 611.5 lb./ac.

(iii) Treatments differ highly significantly.

Treatment	Av. yield.
1.	2271
2.	1985
3.	2257
4.	1062
S.E./mean	=249.6 lb./ac.

Crop :- Arhar. **Ref :- W.B. 52(52).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out the best time of sowing for Arhar.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Arhar (c) Nil (ii) (a) Loamy (b) Refer soil analysis, Berhampore. (iii) As under treatments. (iv) (a) 4—5 ploughings and laddering (b) Sown in lines (c) N.A. (d) 3′×3′. (e) 4—5 ; thinned later to one healthy plant. (v) Nil. (vi) W.B. Type 7 (Med ;) (vii) Unirrigated (viii) 2 weedings ; 2 earthing up & thinging after 1st weeding. After thinning only one plant/hole retained. (ix) 57.92″. (x) 1st and 2nd sowing on 19th Feb. and 3rd & 4th sowing on 23rd February, 1953.

2. TREATMENTS :

Time of sowing :—

1. 10.5.52.
2. 25.5.52.
3. 3.6.52.
4. 24.6.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18′×12′ (b) 12′×6′ (v) Distance between plots 5′ & between blocks 6′ ; 1′ border row. 3′ around each plot left as guard row. (vi) Yes.

4. GENERAL :

(i) Good (ii) N.A. (iii) Height recorded fortnightly. Grain yield (iv) (a) 1951 to 1955 (b) No (c) N.A. (vi) (a) No (b) N.A. (vi) & (vii) 'Nil.

5. RESULTS :

(i) 2383 lb./ac.
(ii) 580.2 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3372
2.	2359
3.	2116
4.	1687
S.E./mean	= 236.8 lb./ac.

Crop :- Arhar. Ref :- W.B. 53(47).

Site :- State Agri. Farm, Berhampore. Type :- 'C'.

Object :—To find out best time of sowing for Arhar.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Aus paddy and gram. (c) 100 md./ac. of cowdung & 20 lb./ac. of N as A/S (in paddy only) (ii) (a) Loamy (b) Refer soil analysis, Berhampore. (iii) As under treatments (iv) (a) N.A. (b) In lines (c) N.A. (d) 3′×3′ (e) 4 to 5 ; later thinned to one healty plant. (v) Nil. (vi) W.B. type 7 (Medium) (vii) Unirrigated. (vlii) 2 weedings & 2 earthings ; thinning after first weeding. (ix) 45.59." (x) For 1st sowing & 2nd sowing 19.1.54 ; For 3rd & 4th sowing 1.2.54.

TREATMENTS :

Times of sowing
1. 7.6.53.
2. 22.6.53.
3. 7.7.53.
4. 22.7.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18′×12′. (b) 12′×6′ (v) One row each way. (vi) Yes.

4. GENERAL :

(i) Good (ii) No (iii) Plant heights were recorded fortnightly. Yield of grain. (iv) (a) 1951 to 1955 (v) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

RESULTS :

(i) 1686 lb./ac.
(ii) 730.4 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2281
2.	1970
3.	1491
4.	1003
S.E./mean	= 298.1 lb./ac.

Crop :- Arhar. Ref :- W.B. 52(53).

Site :- State Agri. Farm, Berhampore. Type :- 'C'.

Object :—To study the effect of sowing in lines with different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil (b) & (c) N.A. (ii) (a) Loamy (b) Refer soil analysis, Berhampore. (iii) 8.6.52. (iv) (a) 3-4 ploughings and laddering (b) & (c) N.A. (d) As per treatments (e) 4 to 5 (v) Nil. (vi) W.B. Type 7 (medium) (vii) Unirrigated (viii) 2 weedings ; 2 earthing up & thinning after 1st weeding (ix) 57.92". (x) 15.2.53.

2. TREATMENTS :

Sowing with spacings :—

1. 2'×2'
2. 2'×3'
3. 2'×4'
4. 3'×3'
5. 3'×4'
6. 4'×4'
7. Broadcast

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a) 24'×12' (b) 24'×12' (v) Distance between plots 5' and between blocks 6'. No guard row etc. (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil (iii) Height and yield. (iv) (a) 1952 to 1955 (b) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2001 lb./ac.

(ii) 250.9 lb./ac.

(iii) Treatments differ highly significantly.

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

Treatment	Av. yield.
1.	2309
2.	2033
3.	1939
4.	2188
5.	1911
6.	1429
7.	2197

S.E./mean = 125.5 lb./ac.

———

Crop :- Arhr. Ref :- W.B. 53(48).

Site :- State Agri. Farm, Berhampore. Type :- 'C'.

Object :—To study the effect of sowing in lines with different spacings.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy & Gram (1952-53) (c) 100 md./ac. of cowdung and 20 lb./ac. N as A/S. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 15.6.53. (iv) (a), N.A. (b) In lines sowing and broadcasting. (c) N.A. (d) N.A. (e) 4 to 5 ; later only one healthy plant retained. (v) Nil. (vi) West Bengal type No. 7 (medium) (vii) Unirrigated (viii) 2 weedings in all plots & in line. 2 earthings in line sown crop. Thinning after 1st weeding in line sown crop. (ix) 45.59" (x) 29.1.54.

2. TREATMENTS :

Sowing with spacings :—

1. 2′×2′
2. 2′×3′
3. 2′×4′
4. 3′×3′
5. 3′×4′
6. 4′×4′
7. Broadcast.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a) & (b) 24′×12′ (v) No (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil (iii) Only final yield figures recorded (iv) (a) 1952—continued. (b) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2110 lb./ac.

(ii) 642.8 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	3161
2.	2068
3.	2796
4.	1796
5.	1485
6.	1190
7.	2277
S.E./mean	= 321.4 lb./ac.

Crop :- Gram and Lentil. **Ref :- W.B. 52(77)**

Site :- State Agri. Farm, Malda. **Type :- 'D'.**

Object : To study the effect of seed inoculation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Aus paddy (c) Cowdung at 150 md/ac.+A/S at 70 lb/ac. (ii) (a) Clay loam. (b) Refer soil analysis Malda. (iii) 9.11.52 (iv) (a) 3—4 ploughings and ladderings (b) to (e) N.A. (v) Super at 1.5 mds/ac. applied on 9.11.52 (vi) Lentil—5 (Medium). Gram S—4 (vii) Irrigated (viii) One weeding on 31.1.53 ; 1.2.53 & 2.2.53 (ix) N.A. (x) 10.3.53 for Lentil 28.3.53 for Gram.

2. TREATMENTS :

1. Lentil seeds inoculated
2. Lentil seeds not inoculated.
3. Gram seeds inoculated.
4. Gram seeds not inoculated.

3. DESIGN

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 12 (iv) (a) 34′×15′ (b) 28′×9′ (v) Distance between plots 3′ (vi) Yes.

4. GENERAL :

(i) Very good (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1949 to 1952 (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2116 lb/ac.

(ii) 253.6 lb/ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield
1.	1476
2.	1633
3.	2580
4.	2775
S.E/mean	= 73.2 lb/ac.

Crop :- Potato. **Ref :- W.B. 52(32)**

Site :- State Agri. Farm, Burdwan **Type :- 'M'.**

Object :—To study the effect of different balanced fertilizers containing different proportions of N, P_2O_5 and K_2O on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No (b) Jute (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Burdwan. (iii) 4.12.52 (iv) (a) N.A. (b) Sprouted whole tubers were used (c) 15—20 md/ac. (d) 2′ from row to row and 9″ from tuber to tuber (e) N A. (v) Nil (vi) Royal Kidney (Medium) (vii) Irrigated (viii) 2—3 times weeding operated ; earthing up done three times. (ix) 2.00″ (x) 20.3.53 to 22.3.53.

2. TREATMENTS :

1. Control
2. N_{40} P_{80} K_{20}
3. N_{60} P_{120} K_{30}
4. N_{80} P_{160} K_{40}
5. N_{120} P_{240} K_{60}

Here N_{40} P_{80} K_{20} is a combination of 40 lb./ac. of N ; 80 lb./ac. of P_2O_5 and 20 lb./ac. of K_2O and similarly other treatments.

N as A/S ; P_2O_5 as Super & K_{20} as Mur. of Pot. Half the quantity of manures applied in the trenches at the time of planting and half at the time of just earthing up after about one month.

3. DESIGN :

(i) R.B.D (ii) (a) 5. (b) N.A. (iii) 6. (iv) 33′×20′. (b) 1/100th ac. (v) Extreme two rows and extreme two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Negligible. Sprayed thrice during season with a mixture of 4 lb. of Perenox and 2 lb. of 50% water dispersible D.D.T. in 100 gallons of water. (iii) Yield of potato. (iv) (a) 1952 to 1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 8653 lb/ac.

(ii) 1619 lb/ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	7508
2.	8604
3.	9350
4.	8671
5.	9133
S.E./mean	= 661 lb/ac.

Crop :- Potato. **Ref :- W.B. 53(34)**

Site :- State Agri. Farm, Burdwan. **Type :- 'M'.**

Object :—To study the effect of different balanced fertilizers containing different proportions of N, P_2O_5 and K_2O on yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No (b) Aus paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 21/22.11.53. (i) (a) N.A. (b) Sprouted whole tuber were used. (c) 15 to 20 md/ac. (d) 2′ from row to row and 9″ from tuber to tuber. (e) N.A. (v) Nil. (vi) Royal Kidney (Medium). (vii) Irrigated. (viii) Weeding operated—3 times (app.). Earthing up done three times. (ix) 4.09″ (x) 16/17.3.54.

2. TREATMENTS :

1. Control
2. N_{40} P_{80} K_{20}
3. N_{60} P_{120} K_{30}
4. N_{80} P_{160} K_{40}
5. N_{120} P_{240} K_{60}

N_{40} P_{80} K_{20} is a combination of 40 lb./ac. of N, 80 lb./ac. of P_2O_5 & 20 lb./ac. of K_2O and similarly other treatments. N as A/S ; P_2O_5 as Super & K_{20} as Mur. of Pot. Half the quantity of manures applied in trenches at the time of first earthing up after about one month.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33′×20′. (b) 1/100th acre (v) Extreme two rows and extreme two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Negligible. (iii) Yield of potato. (iv) (a) 1952 to 1953 (b) Yes (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 15893 lb/ac.

(ii) 1731.0 lb/ac.

iii) Treatments differ highly significantly.

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

Treatment	Av. yield
1.	11481
2.	15173
3.	16284
4.	17053
5.	19474
S.E./mean	= 706.9 lb/ac.

Crop: Potato. **Ref: W. B. 53 (70)**

Site: State Agri Farm, Burdwan. **Type: 'M'**

Object :—To study the response to N, P_2O_5 & K_2O alone and in combinations of the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil (b) G.M. (c) Ploughed in at an early stage. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan (iii) 27.11. 53 (iv) (a) Ploughing six times by country plough followed by laddering. (b) & (c) N.A. (d) From tuber to tuber 9″ & row to row 2′ (e) 1 tuber/hole (v) Nil. (vi) R. K. (Medium) (vii) Irrigated (viii) Earthing up thrice followed by top dressing. (ix) 42. 12″ (x) 18 to 22.3.24.

2. TREATMENTS :

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

(1) 2 levels of N : N_0=0 and N_1=40 lb./ac.

(2) 2 levels of $P_2 O_5$: P_0=0 and P_1=40 lb./ac.

(3) 2 levels of $K_2 O$: K_0=0 and K_1=40 lb./ac.

N as A/S, $P_2 0_5$ as Super and $K_2 0$ as Pot. Sul.

3. DESIGN :

(i) 2^3 Confd. Partially Confd. confounding the interactions NP, NK & NPK in different replicates. (ii) (a) 4 plots/block 2 blocks/replication. (b) N. A. (iii) 4 (iv) (a) 42′ × 22′ (b) 39′×19′. (v) Distance between plots 2′ and blocks 6′ ; 1. 5′ border around each plot (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of potato. (iv) (a) 1953-continued. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi)&(vii) Nil.

5. RESULTS:

(i) 12716 lb/ac.

(ii) 1646 lb/ac.

(iii) Main effects of N and K are highly significant. Other effects are not significant.

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

	P_0	P_1	Mean	K_0	K_1
N_0	10844	10597	10721	10346	11096
N_1	15180	14244	14712	13386	16038
Mean	13012	12420	12716	11866	13567
K_0	11825	11907			
K_1	14199	12935			

S.E. of any marginal mean =412 lb/ac.

S.E. of body of table. =582 lb/ac.

Crop : Potato. **Ref : W. B. 52 (34)**

Site: State Agri. Farm, Malda. **Type :- 'M'**

Object :—To find out the most appropriate dosage of manure for Potato.

1. BASAL CONDITIONS :

(i) (a) No (b)&(c) N.A. (ii) (a) Loam (b) Refer soil analysis, Malda. (iii) 15.11.52 (iv) (a) (b) (c) N.A. (d) From row to rows 2′ and tuber to tuber 9″ (e) N.A. (v) Nil (vi) Darjeeling Red Round ; (Early). (vii) Irrigated. (viii) Weeding, earthing up done three times. (ix) 1. 28″ (x) 15.3.53.

2. TREATMENTS :

1. No manure.
2. N_{60} P_{120} K_{30}
3. 100 md/ac of T.C.+N_{60} P_{120} K_{30}
4. 200 md/ac of T.C.+N_{60} P_{120} K_{30}
5. 300 md/ac of T.C.+N_{60} P_{120} K_{30}

Half of the fertiliser mixture applied in trenches at the time of planting and half at the time of first earthing up. N_{60}=60 lb./ac. of N ; P_{120}=120 lb/ac. of $P_2 0_5$; K_{30}=30 lb./ac. of $K_2 O$.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33′×20′ (b) 1/100th acre. (v) Extreme two rows and extreme two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Slight incidence of virus; sprayed thrice during the season with a mixture of 4 lb. of Perenox and 2 lb. of 20% water dispersible D.D.T. in 100 gallons of water. (iii) Yield of potato. (iv) (a) 1950 to1952 (b) Yes (c) N.A. (v) (a) Nil (vi) Nil. (vii) Sprouted white tubers used.

5. RESULTS :

(i) 11929 lb/ac.
(ii) 2341 lb/ac.
(iii) Control *vs* others is not significant. Fertilisers differ significantly.
(iv) Av. yield of potato in lb/ac.

Treatment	Av. yield
1.	11778
2.	9995
3.	13835
4.	11263
5.	12772
S.E./mean	=956.6 lb/ac.

Crop : Potato **Ref:- W.B.49 (38)**

Site : State Agri. Farm, Midnapore. **Type : 'M'**

Object :—To study the effect of organic and inorganic manures on yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato-Aus paddy. (b) G.M.(15 Seer/ac.) Sunnemp. (c) Nil (G.M. turned in) (ii) (a) Red laterite soil. (b) Refer soil analysis Midnapore. (iii) 6.11. 49. (iv) (a) 5 ploughings and horrowings. (b) & (c) N.A. (d) 9″ between plants and 2′ between rows. (e) 1 tuber/hole. (v) Mustard oil cake at 10 md/ac. (vi) Darjeeling Red Round (early). (vii) Irrigated. (viii) Earthing up twice on 21.11.49 and 1.1.50 (ix) N.A. (x) 7.2.50.

2. TREATMENTS :

1. 100 md/ac. of Cowdung,
2. 1 cwt./ac. of Basic Slag
3. 2 cwt/ac. of Super
4. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A.(iii) 6. (ivv (a) 21′×21′. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) The crop was severely attacked with virus for want of water. (iii) Yield of potato tuber. (iv) (a) 1949-N.A. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi)&(vii) Nil

5. RESULTS :

(i) 4399 lb/ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb/ac.

Treatment	Av. yield.
1.	4496
2.	4516
3.	4177
4.	4408
S.E,/mean	= N.A.

Crop :- Potato. Ref :- W.B. 52(33).

Site :- State Agri. Farm. Burdwan. Type :- 'C'.

Object :— To find out the most appropriate spacing and size of seed tubers for Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) & (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 25.11.52. to 29.11.52. (iv) (a) N.A. (b) Whole tubers of three different sizes planted at different spacings in different plots as indicated in the layout. (c) 10 md/ac. (d) N.A. (e) N.A. (v) 100 md./ac. of cowdung (vi) Darjeeling Red Round (early). (vii) Irrigated. (viii) Weeding done ; sprayed thrice during the season with a mixture of 4 lb. of Perenox & 2 lb. of 50% water dispersible D.D.T. in 100 gallons of water. Earthing up done three times (ix) 2.00". (x) 23.3.53 to 30.3.53.

2. TREATMENTS :

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

(1) 3 tuber distances : D_1=6", D_2=9" and D_3=1'

(2) 3 tuber sizes : V_1=$\frac{3}{4}$", V_2=1" and V_3=1$\frac{1}{2}$"

(3) 3 row distances ; R_1=1.5', R_2=2' and R_3=2.5'

3. DESIGN :

(i) 3^3 Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 36'×18'. (b) 1/97th ac. (v) Extreme two rows and two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Incidence of slight virus and bacterial wilt. 5% of the total crop infected with different types of virus and incidence of bacterial wilt negligible. (iii) Yield of potato. (iv) (a) 1950 to 1952. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) N.A.

5. RESULTS :

(i) 7748 lb./ac.

(ii) 2789 lb./ac.

(iii) None of the effects is significant.

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

	D_1	D_2	D_3	Mean	R_1	R_2	R_3
V_1	7539	7427	7772	7579	7039	7814	7885
V_2	8148	6749	8008	7635	7764	7570	7572
V_3	9086	7835	7168	8030	8004	7914	8171
Mean	8258	7337	7649	7748	7602	7766	7876
R_1	7837	7538	7432				
R_2	8547	7277	7475				
R_3	8391	7196	8041				

S.E. of the body of the table =805.1 lb./ac.

S.E. of any marginal mean =464.8 lb./ac.

Crop :- Potato. Ref :- W.B. 53(32).

Site :- State Agri. Farm, Burdwan. Type :- 'CM'.

Object :— To study the effect of inter-row distances, inter-tuber distances, tuber sizes, manures and their combinations on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Aus Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 18.11.53, 20.11.53. (iv) (a) N.A. (b) Whole tuber of three different sizes planted at different spacings in different plots as indicated in the layout. (c) N.A. (d) As under treatments. (e) N.A. (v) 100 md of cowdung/ac. (v) Darjeeling Red Round (early). (vii) Irrigated. (viii) Weeding done ; earthing up three times. (ix) 4.09". (x) 12.3.54, 15.3.54.

2. TREATMENTS :

81 out of 243 combinations of (1), (2), (3) & (4).

1. 3 inter-row distances : $R_1=18''$, $R_2=24''$ and $R_3=30''$
2. 9 inter-tuber distances (P) : $P_1=6\frac{2}{3}''$, $P_2=13\frac{1}{3}''$, $P_3=20''$, $P_4=5''$, $P_5=10''$ $P_6=15''$, $P_7=4''$, $P_8=8''$ & $P_9=12''$.
3. 3 tuber sizes (T) : $T_1=\frac{3}{4}''$, $T_2=1''$ and $T_3=1\frac{1}{2}''$.
4. 4 manures : $M_1=N_{40}P_{80}K_{40}$, $M_2=N_{60}P_{120}K_{60}$ and $M_3=N_{80}P_{160}K_{80}$.

N in the form of A/S ; P_2O_5 in the form of Super and K_2O in the form of Mur. Pot. $\frac{2}{3}$ of fertiliser mixture applied at the time of planting in trenches and $\frac{1}{3}$rd at the time first earthing up. $N_3=40$ lb/ac. of N, $P_{80}=90$ lb/ac. of P_2O_5 and $K_{40}=40$ lb/ac. of K_2O etc.

3. DESIGN :

(i) 9×3^3 Fact. fractional Confd. (ii) (a) 9 plots/block. 9 blocks/replication. (b) N.A. (iii) ($\frac{1}{3}$rd replicate) (iv) (a) Does not arise. (b) $30'\times10'$. (v) No border area. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of virus reported ; spayed thrice during the season with a mixture of 4 lb. of Perenox and 2 lb. of 50% water dispersible D.D.T. in 100 gallons of water. (iii) Yield of potato. (iv) (a) 1953—54 to 1955—56. (v) Yes. (c) N.A. (v) (a) Nil. (v) N.A. (vi) Nil. (vii) Raw data and confounded effects N.A. The results available only in the fashion is given under.

5. RESULTS :

(i) 14492 lb./ac.

(ii) 2129.6 lb./ac.

(iii) Only main effect of tuber-size (T) is highly significant.

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

	M_1	M_2	M_3	Mean	R_1	R_2	R_3
T_1	13084	12572	12935	12864	12749	13217	12625
T_2	13634	14385	15212	14477	14563	15058	13818
T_3	15343	16094	16972	16137	16448	16149	15814
Mean	14020	14416	15039	14492	14587	14808	14082
R_1	13544	15076	15140				
R_2	14555	14680	15191				
R_3	13965	13495	14788				

S.E. marginal mean of M or T or R = 422.97 lb./ac.
S.E. of body of table = 733.20 lb./ac.

Av. of inter-tuber distances (P)

P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9
15339	14606	13815	15496	15799	13130	15086	13830	13331

S.E./mean (P) = 733.20 lb./ac.

Crop :- Potato. **Ref :- W.B. 50(4)**

Site :- State Agri. Farm, Berhampore. **Type :- 'D'.**

Object :—To study the effect of different fungicides on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Aus paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) 29th, 30th Oct and 6th, 7th November, 1950. (iv) (a) 3 to 4 ploughings and ladderings. (b) N.A. (c) N.A. (d) Between rows 2' and between tubers 9" placed 6" below. (e) N.A. (v) F.Y.M. and Mustard cake ; quantity N.A. (vi) Darjeeling Red Round (Medium). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 8th 9th and 16th to 22nd March, 1951.

2. TREATMENTS :

All combinations of (1) and (2)+a Control (no spraying).
(1) 3 fungicides : Perenox, Diathane, and Bordeaux, mixture 1%.

(2) 3 different no. of sprayings : 2, 3 and 4 sprayings.
Perenox at 4 lb./100 gallons of water ; Diathane Z-78 at 2 lb./100 gallons of watersprayed while Bordeaux mixture at 1 lb./100 gallons of water sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 10 (b) N.A. (iii) 4. (iv) (a) 40′×14.6′. (b) 35′×12.6′. (v) Ditance between plots 2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of potato. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 661 lb./ac.
(ii) 109.6 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of potato in lb./ac.

Control =667 lb./ac.

No. of spraying	Perenox	Diathane Z-78	Bordeaux Mixture 1%	Mean
2	750	689	629	683
3	606	667	641	638
4	689	714	578	660
Mean	675	690	616	661

S.E. of the body of table =54.8 lb./ac.
S.E. of any marginal mean =31.6 lb./ac.

Crop :- Potato. Ref :- W.B. 51(3)
Site :- State Agri. Farm, Berhampore. Type :- 'D'.

Object ;—To study the effect of different fungicides on Potato.

1. BASAL CONDITIONS :

(i) (a) Nii. (b) Aus paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) 22 to 24.11.51. (iv) (a) 3 to 4 ploughings and ladderings. (b), (c) N.A. (d) Between rows 2′ and between tubers 9″ placed 6″ below. (e) N.A. (v) F.Y.M. and Mustard cake. Quantity N.A. (vi) Darjeeling Red Round (Medium). (vii) Unirrigated. (vii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2) +a Control (no spraying).
(1) 3 fungicides : Perenox, Diathane Z-78 and Bordeaux mixture 1%.
(2) 3 different no. of sprayings :- 2, 3 and 4 sprayings.
Perenox at 4 lb./100 gallons of water, Diathane Z-78 at 2 lb./100 gallons of water while Bordeaux mixture at 1 lb./100 gallons of water sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 40′×14.6′. (b) 35′×12.6. (v) Distance between plots 2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. Yield of potato. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (iv) and (vii) Nil.

5. RESULTS :

(i) 479 lb./ac.
(ii) N.A.
(iii) N.A.
(iv) Av. yield of potato in lb./ac.

Control=459 lb./ac.

No. of spraying	Perenox	Diathane	Bordeaux	Mean
2	580	434	459	491
3	488	538	422	483
4	459	447	501	469
Mean	509	473	461	481

S.E.'s = N.A.

Crop :- Potato. Ref :- W.B. 52(5)

Site :- State Agri. Farm, Berhampore. Type :- 'D'.

Object :—To study the effect of different fungicides on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Aus paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) 22/24.11.52. (iv) (a) 3 to 4 ploughings and ladderings. (b), (c) N.A. (d) Between rows 2′ and between tubers 9″ placed 6″ below. (e) N.A. (v) F.Y.M. and Mustard cake quantity N.A. (vi) Darjeeling Red Round (medium). (vii) Unirrigated. (viii) N.A. (ix) — (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2) +Control (no spraying).

(1) 3 fungicides : Perenox, Diathane Z-78 and Bordeaux mixture 1%.

(3) 3 different no. of sprayings :- 2, 3 and 4 times spraying.

Perenox at 4 lb./100 gallons of water ; Diathane Z-78 at 2 lb./100 gallons of water while Bondeaux mixture at 1 lb./100 gallons of water sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 43.5′×20′. (b) 40′×14.6′. (v) Distance between plots 2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Under control. (iii) Yield of potato. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12101 lb./ac.
(ii) 1 645.6 lb./ac.
(iii) None of the effects is significant.

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

Control=12488

No. of spraying	Perenox	Diathane	Boxdeaux	Mean
2	11357	11663	11932	11651
3	12603	12086	11241	11977
4	11644	11472	14522	12546
Mean.	11868	11740	12565	12058

S.E. of body of table =822.8 lb./ac.
S.E. of any marginal mean =475.0 lb./ac.

Crop :- Potato **Ref : W.B. 51(1).**

Site :- State Agri. Farm, Cooch Behar. **Type :- 'D'.**

Object :—To study the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Paddy—Potato—Jute (b) Aus Paddy. (c) Cowdung at 100 md./ac. Super at 2.5 md./ac.+A/S at 2 md./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 3112.51 to 2.1.52 (iv) (a) 8-10 ploughings and harrowing. (b) 1 sprout placed in furrows 2" deep (c) N.A. (d) between lines :— 2' and between tubers :—9" (e) N.A. (v) Cowdung at 150 md./ac. Mustardcake at 15 md /ac. applied at the time of general preparation of land. A/S at 3 md./ac. at the time of earthing up ; (vi) Darjeeling Red Round (vii) Unirrigated (viii) Weeding, hoeing and earthing up twice (ix) 4.14" (x) March, 1952.

2. TREATMENTS :

All combinations of (1) and (2)+a Control (no spraying).

1. 7 fungicides :—
   (1) Perenox at 3 lb./100 gallons of water.
   (2) Perenox at 4 lb./100 gallons of water.
   (3) Perenox at 5 lb./100 gallons of water.
   (4) Diathane Z-78 at 1.5 lb./100 gallons of water.
   (5) Diathane at 2 lb./100 gallons of water.
   (6) Diathane at 2.5 lb./100 gallons of water.
   (7) Bordeaux mixture at 1.1% per 100 gallons of water.
2. 3 different no. of sprayings :—2, 3 and 4 times spraying.
   1st spraying from 4.2.52 to 6.2.52. 2nd spaying from 28.2.52 to 2.3.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 4 (iv) (a) 26'×16' (b) 22'×13' (v) Distance between plots 3' and between blocks 4' ; 1' border arouut each plot (vi) Yes.

4. GENERAL :

(i) Normal (ii) Cut worms attacked at the base of potato plants when the height was 4" to 7". D.D.T. mixed with water sprayed on plants. Attack of beetle over the plant leaf surface found all over the plot. (iii) Yield of potato (iv) 1951 to 1953. (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1507 lb./ac.
(ii) 771.6 lb./ac.
(iii) 'Type of fungicides' and 'Times of sprayings' effects are highly significant. Interaction (times of spraying×types of fungicides) is significant while control *vs.* 'other treatments' is not significant.

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

Control = 1811 lb./ac.

Type of Fungicide	No. of sprayings 2	3	4	Mean
1.	1185	4289	2076	**2517**
2.	930	1880	1077	**1296**
3.	1214	1841	1371	**1475**
4.	1254	1567	1165	**1329**
5.	1146	2213	999	**1453**
6.	1440	1195	862	**1166**
7.	1018	1538	1077	**1211**
Mean	1170	2075	1232	**1492**

S.E. of body of table = 385.8 lb./ac.
S.E. of fungicide mean = 222.7 lb /ac.
S.E. of time of spraying mean = 145.8 lb /ac.

Crop :- Potato. **Ref :- W.B. 52(1).**

Site :— State Agri. Farm, Kooch Behar. **Type :- 'D'.**

Object :—To see the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Aus—Potato—Jute. (b) Jute. (c) Cowdung at 200 md./ac.+A/S at 1 seer/ac.+Super at 10 seer/ac. (ii) (a) Sandy loam (b) Refer soil analysis, Cooch Behar. (iii) 26, 27. 11-52 (iv) (a) 8-10 ploughings and harrowings. (b) Sprouts placed in furrows 2″ deep. (c) N.A. (d) Between lines :—2′ and between tubers :—9″ (e) N.A. (v) Cowdung at 150 md./ac.+Mustard cake 30 md./ac. applied at the time of general preparation of land. Top dressing A/S 3 md./ac. applied at the time of earthing up between 27 and 29.12.52. (vi) Darjeeling Red Round (vii) Unirrigated (viii) Weeding, hoeing and earthingup twice 26, to 29.12.52. (ix) 1.49″ (x) 11 to 13.3.53.

2. TREATMENTS :

All combinations of (1) and (2)+a Control (no spraying).

1. 7 types of fungicide :—
   (1) Perenox 3 lb./100 gallons of water.
   (2) Perenox 4 lb./100 gallons of water.
   (3) Perenox 5 lb./100 gallons of water.
   (4) Diathane Z-78 1.5 lb./100 gallone of water.
   (5) Diathane 2 lb./100 gallons of water.
   (6) Diathane 2.5 lb./100 gallons of water.
   (7) Bordeaux mixture 1%/100 gallons of water.
2. 3 different no. of sprayings : 2, 3 and 4 times sprayings.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 4 (iv) (a) 26′×16′ (b) 25′×15′ (v) Distance between plots 3′ and blocks 4′ ; 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of potato. (iv) (a) 1951 to 1953 (b) Yes. (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 7170 lb./ac.
(ii) 3181.0 lb./ac.
(iii) None of the effects is significant.

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

Control = 5557 lb./ac.

Fungicides	No. of sprayings 2	3	4	Mean
1.	9900	7588	8231	8573
2.	6094	10396	7588	8026
3.	6961	6244	6572	6592
4.	8006	7140	6752	7299
5.	5228	7439	6274	6314
6.	6752	9635	6393	7593
7.	5945	6393	6662	6333
Mean	6985	7834	6925	7247

S.E. of body of table = 1590.0 lb./ac.
S.E. of fungicide mean = 918.2 lb./ac.
S.E. of no. of sprayings mean = 601.1 lb./ac.

Crop :- Potato. **Ref :- W.B.53 (23).**
Site :- State Agri. Farm, Cooch Behar. **Type :- 'D'.**

Object :—To see the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Aus-Potato-Jute. (b) Cowdung 200 md./ac.+B.M. at 5.5 md./ac.+A/S. 35 seer./ac. (ii) (a) Sandy loam (b) Refer soil analysis, Cooch Behar (iii) 12.11.53 to 13.1.54 (iv) (a) 8 to 10 ploughings and horrowings (b) N.A. (c) N.A. (d) Between rows :—2' and between tubers :—9" (e) 1 tuber/hole (v) Cowdng at 150 md./ac., at a depth of 2". Mustard oilcake 6 md./ac., F.M. 3 md./ac., Super 3 md./ac., at the time of general preparation of land.+Pot. Sulphate 3 md./ac. at the time of 1st earthing. (vi) Darjeeling Red Round (vii) Unirrigated (viii) Weeding, hoeing and earthing up twice (ix) 1.67" (x) 5. to 8.3.54.

2. TREATMENTS :

All combinations of (1) and (2)+a Control (no spraying)

1. 7 types of fungicide :—
   (1) Perenox at 3 lb./100 gallons of water.
   (2) Peronox at 4 lb./100 gallons of water.
   (3) Perenox at 5 lb./100 gallons of water.
   (4) Diathane Z.78 at 1.5 lb./100 gallons of water.
   (5) Diathane at 2 lb./100 gallons of water.
   (6) Diathane at 2.5 lb./100 gallons of water.
   (7) Bordeaux mixture at 1% /100 gallons of water.

Dates of spraying :—1st from 31.12. to 2.1.54 ; 2nd from 16.1 to 18.1.54, 3rd from 1.2 to 2.2.54 and 4th on 16.2.54.

2. 3 different no. of sprayings :—2, 3 and 4 times of spraying.

3. DESIGN :

(i) R.B D. (ii) (a) 22 (b) N A. (iii) 4 (iv) (a) 26' × 15' (b) 25.5' × 14' (v) Distance between plots 3' and between blocks 4' 1 guard row (vi) Yes.

4. GENERAL :

(i) Normal (ii) Cut worms attacked at the base of potato when its height was 3" to 5". 50% wettable D.D.T. sprayed on plants at 4 lb./ gallon on 21.12.53 (iii) Yield of potato (iv) (a) 1951 to 1953 (b) Yes (c) N A. (v) (a) No (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10026 lb./ac.

(ii) 5234 lb./ac.

(iii) None of the effects is significant.

Fungicide	No. of sprayings 2	3	4	Mean
1.	8253	11062	8410	9242
2.	9257	8724	10921	9634
3.	7233	8850	9006	8363
4	10168	13776	10387	11444
5.	10199	7971	6606	8258
6.	12333	8347	9289	9990
7.	14341	10858	12239	12479
Mean	10255	9941	9551	9916

S.E. of dody of table =2617 lb./ac.
S.E. of fungicide mean =1511 lb./ac.
S.E. of no. of spraying mean = 989 lb./ac.

Crop :- Potato **Ref :- W.B. 52 (35)**

Site :- State Agri. Farm, Malda. **Type :- 'D'.**

Object :—To study whether application of artificial hormones namely (1) Seradix A and (2) Hormone A to a soil can increase the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No (b) N.A. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Malda. (iii) 13.11.52 (iv) (a) N.A. (b) N.A. (c) 10 md./ac. (d) 2′ from row to row and 9″ from tuber to tuber (e) N.A. (v) 100 md./ac. of cowdung (vi) Darjeeling Red Round (early) (vii) Irrigated (viii) Weeding operated ; earthing up done three times (ix) 1.58″ (x) 10.3.53.

2. TREATMENTS :

1. Control
2. Hormone—A [(a) Sprouted tubers soaked in a solution of hormone of the strength of 2 cc. in a pint of water (b) Harmone applied on the base of the plants when sprouts came out of the soil surface. The strength of the solution was 2 fluid ounces in a gallon of water].
3. Seradix—A [(a) Sprouted tubers soaked in a solution of the hormone of the strength 50 drops (about 2½ cc.) in a pint of water (b) A second dose of hormone applied on the base of plants when sprouts came out of the soil surface. The strength of the solution was same as (a)].

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 4 (iv) (a) 33′ × 20′ (b) 1/100th ac. (v) Extreme two rows and two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Slight incidence of virus. Sprayed thrice during the season with a mixture of 4 lb./ac of Perenox and 2 lb./ of 50% water dispensible D.D.T. in 100 gallons of water. (iii) Yield of potato (iv) (a) 1950 to 1952 (b) Yes. (c) N.A. (v) (a) Midnapore (b) N.A. (vi) Nil. (vii) Sprouted white tubers used.

5. TRETMENTS :

(i) 11937 lb./ac.

(ii) 948.4 lb./ac.

(iii) Treatments do not differ signlficantly.

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

Treatment	Av. yield.
1.	11405
2.	11572
3.	12833
S.E./mean	=473.2 lb./ac.

Crop :- Potato. **Ref :- W.B. 48 (25).**

Site :- State Agri. Farm, Maynaguri. **Type :- 'D'.**

Object :—To study the efficacy of different fungicides on the yield of potato in controlling late blight of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil anslysis, Maynaguri (iii) 28.10.48 (iv) (a) Ploughing and laddering thrice. (b) 16 lines and 10 tubers/line. Tuber sown 1 ft. apart in lines. (c) N.A. (d) 2′ to 5′ (e) N.A. (v) N.A. (vi) Darjeeling Red Round (Medium) (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 4.2.49.

2. TREATMENTS :

1. Perenox at 4 lb./100 gallons of water.
2. Saltosan 6 lb./100 gallons of water.
3. DiathaneZ—78 1.5 lb./100 gallons of water.
4. Bordeaux mixture 1% in 100 gallons of water.
5. Control.

Dates of spraying :— 5. 12.48, 30.12.48 and 15.1.49

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 40′ × 10′ (b) 40′ × 10′ (v) Nil. (vi) Yes.

4. GENERAL :

(i) Uniform in all plots. (ii) N.A. (iii) Yield of potato. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a) No (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12816 lb./ac.
(ii) 1986 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	10128
2.	13937
3.	14116
4.	13040
5.	12861
S.E./mean	=888.2 lb./ac.

Crop :-Potato. **Ref :-W.B. 49 (26).**

Site :-State Agri. Farm, Maynaguri. **Type :-'D'.**

Obeject :—To study the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri (iii) 7.11.49 (iv) (a) Ploughing, and laddering 3 times each (b) 16 lines/plot, 10 tubers/line (c) N.A. (d) 1′ apart, between lines 2.5′ (e) N.A. (v) Cowdung and compost 200 md./ac. Mustard oilcake at 9 md./ac. (vi) Darjeeling Red Round (Medium) (vii) Unirrigated. (viii) Weeding, hoeing and earthing 3 times each (ix) N.A. (x) 19.3.50.

2. TREATMENTS :

1. Perenox at 1 gallon/plot
2. Soltosan
3. Diathane Z-78
4. Bordeaux mixture 1%
5. Control

3 sprayings when plants were 8" high and subsequently after an interval of 21 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 40′ × 10′ (b) 40′ × 10′ (v) Distance between blocks:- 2.5′ (vi) Yes.

4. GENERAL :

(i) Poor (Ii) Late blight under study. (iii) Yield of potato and disease percentage. (iv) (a) 1948 to 1952 (b) No (c) N.A. (v) (a) No (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4391 lb./ac.
(ii) 811.7 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	3550
2.	5597
3.	4530
4.	4029
5.	4247
S.E./mean	±363.0 lb./ac.

Crop :- Potato. **Ref :- W.B. 50(27).**

State :- State Agri. Farm, Maynaguri. **Type :- 'D'.**

Object :—To study the efficacy of fungicides in controlling blight of potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 22.11.50. (iv) (a) Ploughings, laddering and harrowing. 10 rows of 26′ each/plot. (b) N.A. (c) 13.5 md./ac. (d) Between rows 2′ and between tubers 1′. (e) N.A. (v) Cowdung at 150 md./ac.+Mustard cake at 30 md/ac. +A/S. at 3 md./ac.+Ammo. Phos at 1.5 md/ac. (vi) Darjeeling Red round. (vii) Irrigated (viii) Weeding, hoeing and earthing up 3 times each (from 19 to 28.12.50). (ix) N.A. (x) 11.3.51.

2. TREATMENTS :

1. Control.
2. Perenox—4 lb./100 gallons of water.
3. Soltosan—6 lb./100 gallons of water.
4. Diathane—Z—78—2 lb./100 gallons of water.
5. Bordeaux mixture—(10 lb. C/S+10 lb. lime)/100 gallons water.

DESIGN :

(i) R.B.D. (ii) 5 (b) N.A. (iii) 4. (iv) (a) 20′×26′. (b) 16′×23′. (v) Distance between plots 2′ and between blocks 4′. (vi) Yes.

GENERAL :

(i) Fair. (ii) Incidence of late blight under study. (iii) Yield of potato and incidence of disease percentage on the basis of 10 plants/plot. (iv) 1948 to 1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii Nil.

5. RESULTS :

(i) 18211 lb./ac.
(ii) 2738.4 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	17459
2.	18732
3.	19087
4.	18732
5.	17045
S.E./mean	= 1369.2 lb./ac.

Crop :- Potato. **Ref :- W.B. 51(28).**

Site :- State Agri. Farm, Maynaguri. **Type :- 'D'.**

Object :— To study the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 1.12.51. (iv) (a) Ploughing, harrowing. laddering thrice. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Cowdung 200 md/ac.+ Mustard cake at 6 md/ac.+A/S at 3.5 md/ac. (vi) Darjeeling Red Round (Medium). (vii) Irrigated. (viii) 2 weedings, 2 hoeings and 3 earthing up. (ix) 0.45". (x) 24.4.52.

2. TREATMENTS :

1. Control.
2. Perenox.
3. Diathane Z—78
4. Cupravit
5. Fermide
6. Copper sandoz
7. Bordeaux mixture.

Spraying on :—18-1.52, 3.2.52 and 19.2.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 26'×20'. (b) 23'×16'. (v) Distance between plots 3' and block 4'. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Incidence of late blight under study. (iii) Yield of potato and percentage of disease on the basis of 10 plants/plot. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 4023 lb./ac.
(ii) 1011.2 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	3151
2.	4232
3.	3638
4.	4110
5.	4140
6.	3638
7.	5251
S.E./mean	= 505.6 lb./ac.

Crop :- Potato. Ref :- W.B. 52(30).

Site :- State Agri. Farm, Maynaguri. Type :- 'D'.

Object :— To study the effect of fungicides on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 29.11.52. (iv) (a) Ploughing, laddering and harrowing 3 times each. (b) N.A. (c) 10 md/ac. (d) Between lines — 2'4" and between tubers —9". (e) N.A. (v) Mustard oilcake at 22 md/ac.+A/S at 5.0 md/ac. (vi) Darjeeling Red Round. (vii) Irrigated. (viii) Weeding, hoeing and earthing up two times each. (ix) N A. (x) 22 to 23.3.53.

2. TREATMENTS :

1. Control.
2. Perenox 4 lb in 100 gallons of water.
3. Diathane Z –78 at 2 lb in 100 gallons of water.
4. Bordeaux mixture 1%—(10 lb lime+10 lb C/S) in 100 gallons of water.
5. Cupravit—4 lb in 100 gallons of water.
6. Copper sandoz—4 lb in 100 gallons of water.
7. Cuprous oxide—4 lb in 100 gallons of water.
8. Colloidal copper—3 pints in 100 gallons of water.
9. Copperson–4 lb in 100 gallons of water.

3. DESIGN :

(i) R B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 23'×25'. (b) 23'×25'. (v) Distance between plots 4' and between block 3'. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Late blight of potato under study. (iii) Yield of potato and percentage of leaf area infected on the basis of 10 plants/plot. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS

(i) 2902 lb./ac.
(ii) 1144.6 lb./ac.
(iii) Treatment differences are not significant.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	3390
2.	2874
3.	2786
4.	3039
5.	2979
6	2036
7.	2572
8.	3371
9.	3069
S.E./mean	= 572.3 lb./ac.

Crop :- Potato. Ref :- W.B. 51(29).

Site :- State Agri. Farm, Maynaguri. Type :- 'D'.

Object :— To study the effect of D.D.T. on phytostimulation and the resultant yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 2.12.51. (iv) (a) Land prepared by ploughing & laddering 2 to 3 times. (b) N.A. (c) 13.5 md/ac. (d) Between rows 24" and between tubers 9". (e) One tuber/hole. (v) B.M. at 10 md./ac. Mustard cake at 13.5 md/ac. A/S. at 3.5 md/ac. (vi) Darjeeling Red round. (vii) Irrigated. (viii) Earthing, weeding and hoeing. (ix) N.A. (x) 1 to 4.4.52.

2. TREATMENTS :

1. Control.
2. 0.10% D.D.T. spray in water.
3. 0.15% „ „ „ „
4. 0.20% „ „ „ „
5. 0.25% „ „ „ „
6. 0.30% „ „ „ „

1st spraying on 21.1.52 ; 2nd spraying on 8.2.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 30′×19′. (b) 25′×17.3′. (v) One guard row. (vi) Yes.

4, GENERAL :

(i) Poor. (ii) Nil. (iii) Yield of potato. (iv) (a) No. (b) No. (c) No. (v) (a) Burdwan and Cooch Behar. (b) Nil. (vi) & (vii) Nil.

5. RESULTS :

(i) 3097 lb./ac.
(ii) 669.3 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of Potato lb./ac.

Treatment	Av. yield.
1.	2148
2.	3164
3.	3758
4.	3181
5.	3174
6.	3160
S.E./mean.	= 273.2 lb./ac.

Crop :- Potato. Ref :- W.B. 50(39).

Site :- State Agri. Farm, Midnapore. Type :- 'D'.

Object :—To study the effect of harmone therapy on Potato crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Napier grass (c) Cowdung at 75 md./ac. (ii) (a) Red laterite (b) Refer soil analysis, Midnapore (iii) 20.12.50 (iv) (a) 6 ploughings and harrowings. (b) N.A. (c) N.A. (d) Between tuber—9″ and between rows—2′ (e) one tuber/hole. (v) Lime at 2 md./ac.+Cowdung at 200 md./ac. B.M. at 3 md./ac. (vi) Darjeeling Red Round (early) (vii) Irrigated. (viii) N.A. (ix) ——. (x) 10.3.51.

2. TREATMENTS :

1. Hormone
2. Saradix
3. Control

3. DESIGN :

(i) R.B D. (ii) (a) 3 (b) N.A. (iii) N.A. (iv) (a) & (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N A. (ii) Perenox sprayed once at 1.5 lb./ac. on 28.1.51 (iii) Yield of potato tuber (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 5291 lb./ac.
(ii) N.A.
(iii) N A.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	5696
2.	5253
3.	4925
S.E./mean	=N.A.

Crop :- Potato. **Ref :- W.B. 52(36).**

Site :- State Agri. Farm, Midnapore. **Type :- 'D'.**

Object :--To study whether application of artificial harmones to the soil can increase the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No (b) Aus paddy (c) N.A. (ii) (a) Laterite (b) Refer soil analysis, Midnapore (iii) 11.11.52 (iv) (a) N.A. (b) Sprouted whole tubers were used. (c) 10 md./ac. (d) 2′ from row to row and 9″ from tuber to tuber (e) N.A. (v) 100 md./ac. cowdung. (vi) Darjeeling Red round (vii) Irrigated (viii) 2-3 times weeding done ; earthing up done three times (ix) 1.10″ (x) 8.3.53.

2. TREATMENTS :

1. Control
2. Hormone—A. [(a) Sprouted tubers soaked in a solution of harmone of the strength 2 cc. in a pint of water for 10 minutes just before planting (b) second dose of hormone applied on the base of the plants when sprouts came out of the soil surface. The strength of the solution was 2 fluid ounces per gallon of water].
3. Seradix—A. [(a) Sprouted tubers soaked in a solution of the harmone of the strength 50 drops (about 2½ cc.) in a pint of water (b) second dose of harmone applied on the base of plants when sprouts came out of the soil surface. The strength of the solution was same as (a)].

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 4 (iv) (a) 33′×20′ (b) 1/100th ac. (v) Extreme two rows & extreme two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Slight incidence of virus. Sprayed thrice during the season with a mixture of 4 lb. of Perenox and 2 lb. of 50% water dispersible D.D.T. in 100 gallons of water about 2% of the total crop (iii) Yield of potato (iv) (a) 1952-53—continued. (b) Yes (c) N.A. (v) (a) Malda farm. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 18273 lb./ac.
(ii) 3069.4 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb./ac.

Treatment	Av. yield.
1.	17834
2.	17954
3.	19030
S.E./mean	= 1534.7 lb./ac.

Crop :- Potato. **Ref :- W.B. 53(33).**

Site :- State Agri. Farm, Midnapore. **Type :- 'D'.**

Object :—To study whether application of artificial hormones to the soil can increase the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No (b) N.A. (c) N.A. (ii) (a) Laterite. (b) Refer soil analysis, Midnapore (iii) 6.11.53 (iv) (a) N.A. (b) Sprouted whole tubers were used (c) N.A. (d) 2′ from row to row and 9″ from tuber to tuber (e) N.A. (v) 10 md./ac. of cowdung. (vi) Darjeeling Red Round. (vii) Irrigated. (viii) 2 to 3 times weeding done. earthing up done three times. (ix) 1.50″ (x) 13.2.54 to 14.2.54.

2. TREATMENTS :

1. Control.
2. Harmone—A. [(a) Sprouted tubers soaked in a solution of harmone of the strength 2 cc. in a pint of water for 10 minutes just before planting (b) second dose of harmone applied on the base of potato when sprouts came out of the soil surface. The strength of the soultion was 2 fluid ounces in a gallon of water].

Seradix—A. [(a) Sprouted tubers soaked in a solution of the harmone of the strength 50 drops (about 2½ cc.) in a pint of water (b) Second dose of harmone applied on the base of plants when sprouts came out of the soils urface. The strength of the solution was same as (a)].

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 4 (iv) (a) 33′×20′. (b) 1/100th ac. (v) Extreme two rows and extreme two plants of each row. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Slight incidence of virus, sprayed thrice during the season with a mixture of 4 lb. of Perenox and 2 lb. of 50% water dispersible D.D.T. in 100 gallons of water. (iii) Yield of potato (iv) (a) 1952-53—continued (b) Yes (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 15142 lb./ac.

(ii) 2817.6 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	15666
2.	13732
3.	16029
S.E./mean	= 1408.8 lb./ac.

Crop :- Tomato. **Ref :- W.B. 52(50).**

Site :- Horti. Res. Stn. Krishnagar. **Type :- 'M'.**

Object :—To study the response to N, P_2O_5 and K_2O alone and in combinations on the yield of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) 7.10.52/22.10.52. (iv) (a) 3-4 ploughings and laddering. (Grass weeded out), (b) Transplanted. (c) — (d) 3′×3′. (e) 1. (v) Nil. (vi) S-20 (Krishnagar Local). (vii) Irrigated. (viii) Weeding and hoeing thrice. (ix) 9.83″ Approx. (x) 28.1.53—27.3.53.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

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

(3) 2 levels of K_2O : K_0=0 and K_1=60 lb./ac.

N as A/S ; P_2O_5 as Super and K_2O as Mur. Pot.

All the fertilisers mixed in proportion ; broadcast on 7.10.52 and levelled.

3. DESIGN :

(i) 3×2×2 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 33′×21′. (b) 30′×18′. (v) Distance between plots 3′ and between blocks 3′ ; 1 row (1.5′) around each plot left as border. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of fruit. (iv) (a) 1952 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12584 lb./ac.

(ii) 1925 lb./ac.

(iii) Only main effect of N and interaction NPK are significant.

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

	P_0	P_1	Mean	K_0	K_1
N_0	11131	11705	11418	10779	12057
N_1	12209	13433	12821	12606	13037
N_2	13695	13330	13512	14148	12882
Mean	12345	12823	12584	12509	12659
K_0	11988	13030			
K_1	12701	12616			

S.E. of marginal mean of N =555.7 lb./ac.
S.E. of marginal mean of K or P =453.6 lb./ac.
S.E. of body of N×P or N×K table =785.9 lb./ac.
S.E. of body of P×K table =641.8 lb./ac.

Crop :- Tomato. **Ref :- W.B. 53(68).**
Site :- Horti. Res. Stn. Krishnagar. **Type :- 'M'.**

Object :—To study the response to N, P_2O_5 and K_2O alone and in combination on the yield of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Krishnagar. (iii) 6.10.53 ; 29.10.53. (iv) (a) 3-4 ploughings and weeding. (b) N.A. (c) 5-6 oz./ac. (d) 3′×3′. (e) N.A. (v) Nil. (vi) S-20 (Krishnagar, Local). (vii) Irrigated. (viii) Weeding and hoeing 3-4 times. (ix) 2.48″. (x) 25.1—12-3.54.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=30 and N_2=60 lb./ac.

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

(3) 2 levels of K_2O : K_0=0 and K_1=60 lb./ac.

N as A/S ; P_2O_5 as Super and K_2O as Mur. Pot.

All fertilizers mixed in proportion, broadcast on 17.10.53 and land was levelled.

3. DESIGN :

(i) 3×2×2 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 33′×21′. (b) 30′×18′. (v) Distance between plots 3′ and between blocks 5′ ; 1.5′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of fruit. (iv) (a) 1952 to 1953. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) There was mortality of plants in control plots.

5. RESULTS :

(i) 9368 lb./ac.

(ii) 2840.0 lb./ac.

(iii) Only main effect of N and interaction NPK are significant.

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

	P_0	P_1	Mean	K_0	K_1
N_0	5053	6956	5004	4978	7031
N_1	12243	8835	10539	10952	10126
N_2	10959	12161	11560	11237	11883
Mean	9418	9317	9368	9056	9680
K_0	9355	8756			
K_1	9482	9878			

S.E. of the marginal mean of N = 819.8 lb./ac.
S.E of the marginal mean of K or P = 669.8 lb./ac.
S.E. of body of P×K or N×K table =1159.2 lb./ac.
S.E. of body of P×K table = 946.4 lb./ac.

Crop :- Sugarcane. Ref :- W.B. 51(5).

Site :- State. Agri. Farm, Burdwan. Type :- 'M'.

Object :—To find out the effect of N, P_2O_5 and placement of P_2O_5 on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Burdwan. (iii) 16.1.51/23.1.51. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) 3′. (e) NA. (v) Co-421 (Ratoon) (Medium). (vii) Irrigated. (viii) Weeding and earthing up 3 times. (ix) N.A. (x) 11.3.52—24.3.52.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=N0 P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast ; and P'_1=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and oil cake in 1 : 1 ratio and P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 44.5′×35′. (b) 41.5′×30′. (v) Distance between plots 3′ and blocks 4′. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Not recorded. (iii) Yield of cane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 66.75 ton/ac.

(ii) 8.89 ton/ac.

(iii) Main effects of N and P are highly significant ; interaction NP is not significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean.
P_0	45.25	69.53	63.08	59.29
P_1	68.14	72.36	73.89	71.46
P'_1	65.16	73.77	69.53	69.49
Mean.	59.52	71.89	68.83	66.75

S.E. of any marginal mean =2.095 ton/ac.
S.E. of body of table =3.630 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 52(5).

Site :- State Agri. Farm, Burdwan. Type :- 'M'.

Object :—To find out the effect of N, P_2O_5 and placement of P_2O_5 on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) 3′. (e) N.A. (v) Nil. (vi) Co-421 Nil. (Medium). (vii) Irrigated. (viii) Weeding done, earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : $N_0=0$, $N_1=60$ and $N_2=120$ lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. of P_2O_5 broadcast and P'_1=80 lb./ac. of P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and oil cake in 1 : 1 ratio and P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 44.5′×35′. (b) 41.5′×30′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Sight attack of red rot. (iii) Yield of cane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.16 ton/ac.

(ii) 3.76 ton/ac.

(iii) Main effects of N and P are highly significant. Interaction NP is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean.
P_0	13.91	21.11	25.06	20.03
P_1	20.90	21.00	23.88	21.93
P_1'	20.02	30.19	23.34	24.51
Mean.	18.28	24.10	24.09	22.16

S.E. of any marginal mean = 0.886 ton/ac.

S.E. of body of the table = 1.53 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 52(6)

Site :-State Agri. Farm, Burdwan. Type : 'M'

Object :—To find-out the effect of N, P_2O_5 and placement of P_2O_5 on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No (b) & (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Burdwan. (iii) 16.1.52/24.1.52 (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) 3′ (e) N.A. (v) Nil (vi) Co. 421 (Medium) (vii) Irrigated (viii) Weeding done ; earthing up 3 times (ix) N.A. (x) 28.2.53 to 10.3.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : $N_0=0$, $N_1=60$ and $N_2=120$ lb/ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb/ac. of P_2O_5 broadcast ; P_1'=80 lb/ac. of P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and oil Cake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 44.5′×35′ (b) 41.5′×30′ (v) Yes (vi) Yes.

4. GENERAL :

(i) Slight lodging reported (ii) Nil (iii) Yield of cane. (iv) (a) 1951 to 1953 (b) No (c) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 31.09 ton/ac.

(ii) 8.50 ton/ac.

(iii) Main effect of N alone is highly significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	20.92	31.52	32.21	28.22
P_1	26.10	34.52	38.47	33.03
P′	22.52	35.32	38.20	32.01
Mean	23.18	33.79	36.29	31.09

S.E. of any marginal mean =2.00 ton/ac.

S.E of body of table =3.47 ton/ac.

Crop :- Sugarcane Ref :- W.B. 53(31)

Site :-State Agri. Farm, Burdwan. Type :- 'M'.

Object :—To find out the effect of N, P_2O_5 and placement of P_2O_5 on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No (b) & (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Burdwan. (iii) 10.3.53 to 18.3.53. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep (c) N.A. (d) 4′ (e) N.A. (v) Nil (vi) CO—421 (Plant) (vii) Irrigated (viii) Earthing up twice ; interculture done (ix) N.A. (x) 19.2.54 to 6.3.54.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N :N_0=0, N_1=60 and N_2=120 lb/ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb/ac. of P_2O_5 broadcast and P_1'=80 lb/ac. of P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and oil cake in 1 : 1 ratio. P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii)(a) 9 (b) N.A. (iii) 6 (iv) (a) 44.5′×35′. (b) 41.5′×30′. (v) Yes (vi) Yes.

4. GENERAL :

(i) Lodging reported. Lodging in plots where heavy doses of N was applied (ii) Attack of red rot. Rooting out the affected plants (iii) Yield of cane (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) No (b) N.A. (vi) Some plots were heavily damaged by red-rot. (vii) Nil.

5. RESULTS :

(i) 32.27 ton/ac.

(ii) 5.27 ton/ac.

(iii) Main effects of N and P are highly significant. Interaction is not significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	24.95	28.36	33.16	28.82
P_1	28.09	33.62	38.15	33.29
P'_1	32.04	35.14	36.95	34.71
Mean	28.36	32.37	36.09	32.27

S.E. of any marginal mean =1.24 ton/ac.
S.E. of body of table =2.15 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 52(45)**
Site :-State Agri. Farm, Burdwan. **Type :-'M'.**

Object :—To find-out the efficacy of different fertilizer mixtures on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Burdwan (iii) Jan. 1952 (iv) (a) N A. (b) Cuttings placed horizontally in trenches 10″ deep (c) N.A. (d) Inter row 3′ (e) N.A. (v) Nil (vi) Co 527 (Plant) (Medium.) (vii) 3 replications irrigated and 3 unirrigated. (viii) Weeding and earthing up 3 times (ix) Annual rainfall 59.62″ (x) January to February 1953 (approximately).

3, TREATMENTS :

1. Control (no manure).
2. 60 lb/ac. of N (½ as oil cake+ ½ as A/S).
3. 120 lb/ac. of N (½ as oil cake+½ as A/S).
4. 60 lb/ac. of N (⅓ as sterameal+⅔ as inorganic mixture).
5. 120 lb/ac. of N (⅓ stearameal+⅔ as inorganic mixture).

Applied on irrigated and unirrigated plots (3 replications) under each.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 3 (iv) (a) 41′×33′ (b) 37′×29.5′ (v) Distance between plots 2′ and blocks 4′ (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 33.81 ton/ac.
(ii) 6.01 ton/ac.
(iii) Irrigation *vs.* no irrigation is significantly different. Control *vs.* others effect highly significant. Treatments are not significantly different among themselves.
(iv) Av. yield of cane in ton/ac.

Treatment	Irrigated	Unirrigated	Mean
1	25.87	15.91	20.89
2	50.38	22.65	36.51
3	48.53	29.55	39.04
4	43.08	26.95	35.01
5	45.06	30.12	37.59
Mean	42.58	25.04	33.81

S.E. of the treatment marginal means =2.46 ton/ac.
S.E. of irrigated or unirrigated marginal means =1.50 ton/ac.
S.E. of body of table =3.47 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 52(7)

Site :- Agri. Farm, Kadamkhali. Type :- 'M'.

Object :— To find out the effect of N,P and placement of P on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) & (c) N.A. (ii) (a) Sandy loam. (b) N—0.06% ; P_2O_5—0.05% ; pH—7.3. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row—4' (e) N.A. (v) Nil. (vi) Co 453 (Plant) ; late. (vii) Irrigated. (viii) Weeding done ; earthing up 3 times. (ix) N.A (x) N.A.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N :— N_0=0, N_1=60 & N_2=120 lb./ac.

(2 Application of P_2O_5 :—P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast.
and P_1'=80 lb./ac. P_2O_5 applied in furrows 4" deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63'×23'. (b) 60'×18'. (v) Yes. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii). Yield of cane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 31.63 ton/ac.
(ii) 3.81 ton/ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	27.55	31.96	35.24	31.58
P_1	29.21	31.51	33.58	31.43
P'_1	26.72	33.43	35.46	31.87
Mean	27.83	32.30	34.76	31.63

S.E. of any marginal mean =0.90 ton/ac.
S.E. of body of table =1.55 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 53(25).

Site :- Agri. Farm, Kadamkhali. Type :-'M'.

Object :— To find out the effect of N, P and placement of P on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) & (c) N.A. (ii) (a) Sandy loam. (b) N—0.06% ; P_2O_5=0.05% ; pH.—7.3. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep.(c) N.A. (d) Row to row—4'. (e) N.A (v) Nil. (vi) Co. 453 (plant) ; late. (vii) Irrigated. (viii) earthing up twice ; Interculture done. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N :—N_0=0, N_1=60 & N_2=120 lb./ac.

(2) Application of P_2O_5 :— P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast.
and P_1'=80 lb./ac. P_2O_5 applied in furrows 4" deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′ (b) 60′×18′. (v) Yes. (vi) Yes.

4. GENERAL :

(i) No lodging ; Growth satisfactory. (ii) Nil. (iii) Yield of cane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 31.53 ton/ac.

(ii) 4.44 ton/ac.

(iii) Only N effect is highly significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	27.25	34.11	33.98	31.78
P_1	28.45	32.79	32.55	31.26
P'_1	30.20	28.87	35.55	31.54
Mean	28.63	31.92	34.03	31.53

S.E. of any marginal mean =1.05 ton/ac.

S.E. of body of table =1.81 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 53(26)

Site :- Agri. Farm, Kadamkhali. Type :- 'M'.

Object :— To find out the effect of N, P and Placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N—0.06% P_2O_5—0.05% ; pH—7.3 (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row— 4′.(e) N.A. (v) Nil. (vi) Co. 313 (plant); (early) (vii) Irrigated. (viii) Earthing up twice, Interculture done. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N :— N_0=0, N_1=60 & N_2=120 lb./ac.

(2) Application of P_2O_5 :— P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast.
and P_1=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×2 3′. (b) 60′×18′(v) Yes. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of cane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 19.32 ton/ac.

(ii) 3.11 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	19.27	20.35	21.75	20.46
P_1	18.00	19.15	20.18	19.11
P'_1	17.90	18.27	18.96	18.38
Mean	18.39	19.26	20.30	19.32

S.E. of any marginal mean =0.73 ton/ac.
S E. of body of table =1.27 ton/ac.

Crop :- Sugarcane. **Ref. :- W.B. 51(27).**

Site :- State Chandanpur Farm, Plassey, Nadia. **Type :- 'M'.**

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane Ratoon-Sunhemp (b) Sunhemp (c) Nil (ii) (a) Sandy loam (b) Refer soil analysis, Nadia. (iii) November, 1951 (iv) (a) 2 tractor ploughings and 2 harrowings. (b) Setts placed horizontally end to end in trenches 10" deep. (c) —. (d) Distance between rows about 3'. (e) N.A. (v) Nil (vi) Co-453 (vii) Irrigated (viii) 3 weedings, 2 hoeings and 2 earthings. (ix) 55" approx. (x) Jan. 1953.

2. TREATMENTS :

All Combinations of (1) and (2)

(1) 3 levels of N :—N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 :—P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast before final ploughing : and P'_1=80 lb./ac. P_2O_5 applied in furrows 4" deep.

N as mixture of A/S and G.N.C. in 1 : 1 ratio ; P_2O_5 as Super. G.N.C. applied at planting while A/S applied half at planting, half during earthing up.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63' × 23' (b) 60'×18' (v) Distance between plots 2' and blocks 6' ; 1 guard row around each plot (vi) Yes.

4. GENERAL :

(i) Good (ii) Slight attack of borer (iii) Sucrose content and cane yield (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) Kadamkhali, Burdwan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.69 ton/ac.
(ii) 6.52 ton/ac.
(iii) None of the effects is significant.
(v) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	24.28	28.71	25.83	26.27
P_1	23.29	24.60	28.70	25.53
P'_1	17.96	26.72	22.16	22.28
Mean	21.84	26.68	25.56	24.69

S.E. of any marginal mean =1.54 ton./ac.
S.E. of body of table =2.66 ton./ac.

Crop :- Sugarcane. Ref :- W.B. 52 (3).

Site :-Chandanpur Farm, Plassey, Nadia. Type :- 'M'.

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No (b) and (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 4″ deep (c) N.A. (d) Row to row 4′ (e) N.A. (v) Nil (vi) Co-453 (plant), late. (vii) Irrigated (viii) Weeding done ; earthing up 3 times (ix) N.A. (x) N.A.

2. TREATMENTS :

All Combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast.
and P_1'=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63′ × 23′ (b) 60′ × 18′ (v) Yes (vi) Yes.

4. GENERAL :

(i) No lodging (ii) Nil (iii) Yield of cane (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) Kadamkhali, Burdwan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.16 ton./ac.
(ii) 3.37 ton./ac.
(iii) None of the effects is significant.
(iv) Av. yield of cane in ton./ac.

	N_0	N_1	N_2	Mean
P_0	29.84	30.42	27.05	29.10
P_1	28.17	29.75	30.06	29.33
P'_1	28.26	29.82	29.03	29.04
Mean	28.76	30.00	28.71	29.16

S.E. of any marginal mean =0.79 ton./ac.
S.E. of body of table =1.37 ton./ac.

Crop :-Sugarcane. Ref :-W.B. 52 (4).

Site :-Chandanpur Farm, Plassey, Nadia. Type :-'M'.

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cutting placed horizontally in trenches 10″ deep (c) N.A. (d) Row to row-4′ (e) N.A. (v) Nil (vi) Co-453 (Ratoon) late (vii) Irrigated (viii) Weeding done ; earthing up 3 times (ix) N.A. (x) N.A.

2. TREATMENTS :

All Combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast.
and P_1'=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63′ × 23′ (b) 60′ × 18′ (v) Yes (vi) Yes.

4. GENERAL :

(i) No lodgIng (ii) Nil (iii) Yield of Sugarcane (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) Kadamkhali, Burdwan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10.39 ton./ac.

(ii) 4.07 ton./ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton./ac.

	N_0	N_1	N_2	Mean
P_0	9.74	12.76	10.53	11.01
P_1	9.61	11.17	13.12	11.30
P'_1	6.84	10.01	9.76	8.87
Mean	8.73	11.31	11.14	10.39

S.E. of any marginal mean =0.96 ton./ac.

S.E. of body of table =1.66 ton./ac.

Crop :- Sugarcane. Ref :- W.B. 53(27).

Site :- Chandanpur Farm Plassey, Nadia. Type :- 'M'.

Object :—To find out the effect of N, P and placement of P on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil (b) & (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nadia. (iii) Date of harvesting of parent plant 14.2.53 (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep (c) N.A. (d) Row to row—4′ (e) N.A. (v) Nil (vi) Co 453 (late) (Ratoon) (vii) Unirrigated (viii) Earthing up twice ; interculture done. (ix) N.A. (x) 31.12.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast and P'_1=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 5 (iv) (a) 63′×23′ (b) 60′×18′ (v) Yes (vi) Yes.

4. GENERAL :

(i) Growth not favourable ; no lodging. (ii) Nil (iii) Yield of cane (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 9.52 ton./ac.

(ii) 3.31 ton./ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton./ac.

	N_0	N_1	N_2	Mean
P_0	11.23	8.93	10.42	10.19
P_1	7.41	10.67	10.86	9.65
P'_1	5.80	10.63	9.71	8.71
Mean	8.15	10.08	10.33	9.52

S.E. of any marginal mean = 0.78 ton./ac.
S.E. of body of table = 1.35 ton./ac.

Crop :- Sugarcane. **Ref :- W.B. 51(26).**

Site :- Chandanpur Farm, Plassey, Nadia. **Type :- 'M'.**

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ratoon—Sunhemp (b) Sunhemp (c) Nil (ii) (a) Sandy loam (b) Refer soil analysis, Nadia. (iii) Nov. 1951 (iv) (a) 2 tractor ploughings & 2 harrowings. (b) Setts placed horizontally end to end in trenchs 10″ deep. (c) N.A. (d) Between rows about 3′. (e) N.A. (v) Nil (vi) Co-313 (vii) Irrigated (viii) 3 weedings, 2 hoeing and 2 earthing up (ix) 55″ (x) Jan. 1953.

2. TREATMENTS

All combinations of (1) & (2)
(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.
(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. P_2O_5 broadcast and P'_1=80 lb./ac. P_2O_5 applied in furrows 4″ deep.

N as mixture of A/S and oilcake in 1 : 1 ratio ; P_2O_5 as Super. G.N.C. applied at planting while A/S applied half at planting, half during earthing up.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63′×23′ (b) 60′×18′ (v) Distance between plots 2′ and blocks 6′ ; 1 guard row around each plot (vi) Yes.

4. GENERAL :

(i) Good (ii) Slight attack of borer. No control measure taken (iii) Sucrose content and yield (iv) (a) 1951 to 1953 (b) No (c) N.A. (v) (a) Kadamkhali, Burdwan (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 12.26 ton./ac.
(ii) 2.61 ton./ac.
(iii) None of the effects is significant.
(iv) Av. yield of cane in ton./ac.

	N_0	N_1	N_2	Mean
P_0	12.55	11.33	12.31	12.06
P_1	13.01	12.39	10.95	12.12
P'_1	13.53	12.04	12.22	12.60
Mean	13.03	11.92	11.83	12.26

S.E. any marginal mean = 0.62 ton./ac.
S.E. of body of table = 1.07 ton./ac.

Crop :- Sugarcane. Ref :- W.B. 52(2).

Site :- Chandanpur Farm, Plassey, Nadia. Type :. 'M'.

Objeet :—To find out effect of N, P_2O_5 and placement of P_2O_5 on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row-4'. (e) N.A. (v) Nil. (vi) Co-313 (Plant) ; (early). (vii) Irrigated. (viii) Weeding done ; earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P_1'=80 lb./ac. applied in furrows 4" deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63'×23'. (b) 60'×18'. (v) 1½'×2½'. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of Sugarcane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Kadamkhali, Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.06 ton/ac.

(ii) 2.83 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	13.04	12.92	13.52	13.16
P_1	16.07	12.88	11.23	13.39
P_1'	12.30	13.75	11.81	12.62
Mean	13.80	13.18	12.19	13.06

S.E. of any marginal mean =0.67 ton/ac.
S.E. of body of table =1.15 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 52(1).

Site :- Chandanpur Farm, Plassey, Nadia. Type :- 'M'.

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row-4'. (e) N.A. (v) Nil. (vi) Co-313 (Ratoon) ; (early). (vii) Irrigated. (viii) Weeding done ; earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P_1'=80 lb./ac. applied in furrows 4" deep.

N as mixture of A/S and Oil cake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60′×18′. (v) 1½′×2½′ (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Cane yield. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Kadamkhali, Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 9.77 ton/ac.

(ii) 1.81 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	9.73	10.94	9.07	9.91
P_1	10.00	11.31	8.87	10.06
P_1'	9.04	9.79	9.14	9.32
Mean	9.59	10.68	9.03	9.77

S.E. of any marginal mean =0.43 ton/ac.

S.E. of body of table =0.74 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 53(28)**

Site :-Chandanpur Farm, Plassey, Nadia. **Type :- 'M'.**

Object :—To find-out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) & (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row—4′. (e) N.A. (v) Nil. (vi) Co-453 (Plant) ; late. (vii) Irrigated. (viii) Earthing up twice ; interculture done. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N :—N_0=0, N_1=60 and N_2=120 lb/ac.

(2) Application of P_2O_5 :— P_0=No P_2O_5, P_1=80 lb/ac. broadcast and P_1'=80 lb/ac. applied in furrows 4″ deep.

N as mixture of A/S and Oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60′×18′. (v) 1½′×2½′. (vi) Yes.

4. GENERAL :

(i) Growth—satisfactory ; No lodging. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Kadamkhali, Burdwan. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 28.28 ton/ac.

(ii) 2.28 ton/ac.

(iii) N effcct is highly significant. P effect is significant while interaction NP is not significant.

(iv) Av. yield of cane in ton/ac-

	N_0	N_1	N_2	Mean.
P_0	27.61	29.71	31.09	29.47
P_1	25.30	28.30	29.66	27.75
P'_1	26.94	28.41	27.47	27.61
Mean.	26.62	28.81	29.41	28.28

S.E. of any marginal mean =0.54 ton/ac.
S.E. of body of table =0.93 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 51(28).**

Site :-Kadamkhali Farm, Plassey, Nadia. **Type :- 'M'.**

Object :—To study the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ratoon—Sunhemp. (b) Sunhemp. (c) Nil. (ii) (a) Sandy loam. (b) N_2— 0.6% ; P_2O_5— .05% ; pH—7.3. (iii) Nov. 1951. (iv) (a) 2 tractor ploughings & 2 harrowings (b) Setts placed horizontally in trenches 10" deep. (c) N.A. (d) between rows 3' approx. (e) N.A, (v) Nil. (vi) Co-313. (vii) Irrigated. (viii) 3 weedings, 2 hoeings & 2 earthings. (ix) 55". (x) Jan. 1953.

2. TREATMENTS;

All combinations of (1) & (2)
(1) 3 levels of N :N_0=0, N_1=60 and N_2=120 lb/ac.
(2) Application of P_2O_5 :—. P_0=No P_2O_5, P_1=80 lb/ac. broadcast and P'_1=80 lb/ac. applied in furrows 4" deep.
N as mixture of A/S and G.N.C. in 1 : 1 ratio ; P_2O_5 as Super. G.N.C. applied at planting while A/S applied half at planting, half during earthing up.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63'×23'. (b) 60'×18'. (v) Distance between plots 2' blocks 6'. 1½'×2½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of borer. No control measures taken. (iii) Sucrose content & cane yield. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Burdwan, Chandanpur. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 30.28 ton/ac.
(ii) 2.09 ton/ac.
(iii) None of the effects is significant.
(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	27.82	31.82	30.49	30.04
P_1	30.26	29.92	30.53	30.24
P'_1	30.92	29.64	31.12	30.56
Mean	29.67	30.46	30.71	30.28

S.E. of any marginal mean=0.49 ton/ac.
S.E. of body of table =0.85 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 52(10).**

Site :- Kadamkhali Farm, Plassey, Nadia. **Type :- 'M'.**

Object :— To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N—0.06% ; P—0.05% PH—7.3. (iii) November—December. (iv) (a) N.A. (b) Cutting placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row—4′. (e) N.A. (v) Nil. (vi) Co. 313 (plant) (early). (vii) Irrigated. (viii) Weeding done ; earthing 3 times. (ix) N.A. (x) March.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N :— N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 :— P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P_1'=80 lb./ac. applied in furrows 4″ deep.

N as mixture of A/S and Oil cake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60′×18′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Burdwan, Chandanpur. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 25.47, ton/ac.

(ii) 3.63 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	26.64	26.37	27.53	26.85
P_1	26.35	24.71	25.21	25.42
P_1'	23.99	23.31	25.12	24.14
Mean	25.66	24.80	25.95	25.47

S.E. of any marginal mean =0. 86 ton/ac.
S.E of body of table =1. 48 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 52(8).**

Site :- Kadamkhali Farm, Plassey, Nadia. **Type :- 'M'.**

Object :— To find out the effect of N, P and placement of P on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N—0.06% ; P_2O_5—0.05% ; pH—7.3. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row—4′. (e) N.A. (v) Nil. (vi) CO-313 (Ratoon) ; (early). (vii) Irrigated. (viii) Weeding done ; earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS:

All combinations of (1) & (2)

(1) 3 levels of N :— N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 :— P_0=N_0 P_2O_5, P_1=80 lb./ac. broadcast and P_1'=80 lb./ac. applied in furrows 4″ deep.

N as mixture of A/S and Oil cake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60×18′. (v) 1½′×2½′ (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Burdwan, Chandanpur. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 12.29 ton/ac.

(ii) 2.09 ton/ac.

(iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	11.35	11.65	12.10	11.70
P_1	10.67	13.09	12.49	12.08
P'_1	11.73	12.50	15.00	13.08
Mean	11.25	12.41	13.20	12.29

S.E. of any marginal mean =0.49 ton/ac.
S.E. of body of table =0.85 ton/ac.

Crop :- Sugarcane. Ref :- W.B. 51 (29).

Site :- Kadamkhali Farm, Plassey, Nadia. Type :- 'M'.

Object :— To study the effect of N,P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ratoon—Sunhemp. (b) Sunhemp. (c) Nil. (ii) (a) Sandy loam. (b) N_s=.06% ; P_2O_5= .05% ; pH—7.3. (iii) November 1951. (iv) (a) 2 tractor ploughings & 2 harrowings. (b) Setts placed horizontally end to end in trenches 10″ deep. (c) N.A. (d) between rows 3′ approximately. (e) N.A. (v) Nil. (vi) CO-453. (vii) Irrigated. (viii) 3 weedings, 2 hoeings & 2 earthings. (ix) 55″. (x) Jan. 1953.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N :— N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 :— P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P'_1=80 lb/ac. applied in furrows 4″ deep.

N as mixture of A/S and oilcake in 1 :1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60′×18′. (v) Distance between plots 2′ & blocks 6′ ; 1½′×2½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of borer. No control measures taken. (iii) Sucrose content and Sugarcane yield. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a) Burdwan, Chandanpur. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 42.47 ton/ac.

(ii) 3.61 ton/ac.

(iii) N effect is highly significant. P effect is significant while interaction NP is not significant.

(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	39.17	40.84	48.27	42.76
P_1	37.22	41.54	42.84	40.53
P'_1	42.07	43.67	46.64	44.13
Mean	39.49	42.02	45.92	42.47

S.E. of any marginal mean =0.85 ton/ac.
S.E. of the body of table =1.47 ton/ac.

Crop :-Sugarcane. **Ref :-W.B. 52(9).**

Site :-Kadamkhali Farm, Plassey, Nadia. **Type :-'M'.**

Object :—To find out the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) Nil (ii) (a) Sandy loam. (b) N_2—0.06% ; P_2O_5—0.05% ; pH—7.3. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row—4′. (e) N.A. (v) Nil. (vi)Co-463 (Ratoon) ; late. (vii) Irrigated. (viii) Weeding done ; earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0 ; N_1=60 and N_2=120 lb./ac.
(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P'_1=80 lb./ac. applied in furrows 4″ deep.
N as mixture of A/S and Oil cake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63′×23′. (b) 60′×18′. (v) 2½′ along length and 1½′ along breadth. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1951 to 1953. (b) No.(c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.09 ton/ac.
(ii) 4.55 ton/ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of cane in ton/ac.

	N_0	N_1	N_2	Mean
P_0	19.66	23.63	29.92	24.40
P_1	20.07	24.53	26.66	23.75
P'	21.92	24.13	26.32	24.12
Mean	20.55	24.10	27.63	24.09

S.E. of any marginal mean = 1.07 ton/ac.
S.E. of body of table = 1.86 ton/ac.

Crop :-Sugarcane. Ref :-W.B. 52(12).

Site :-Palimath Farm, Plassey, Nadia. Type :-'M'.

Object :—To find out the effect of N in combination with P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row—4'. (e) N.A. (v) Nil. (vi) CO. 527 (plant, Medium). (vii) Irrigated. (viii) Weeding done. Earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. 123 lb./ac. of N+24 lb./ac. of P_2O_5.
3. 164 ,, ,, +32 ,, ,,
4. 205 ,, ,, +40 ,, ,,
5. 287 ,, ,, +56 ,, ,,
6. 369 ,, ,, +72 ,, ,,
7. 492 ,, ,, +96 ,, ,,

N applied as A/S : P_2O_5 applied as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 52'×42'. (b) 48'×38'. (v) 2' ring round the net plot. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of cane. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.95 ton/ac.

(ii) 2.96 ton/ac.

(iii) The treatments do not differ significantly.

(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	22.04
2.	21.07
3.	22.23
4.	23.65
5.	23.40
6.	23.80
7.	24.47
S.E./mean	= 1.21 ton/ac.

Crop :-Sugarcane. Ref :-W.B. 53(29).

Site :-Palimath Farm, Plassey, Nadia. Type :-'M'.

Object :—To find out the effect of N in combination with P on the yield of sugarcane (Mill zone).

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) 9.4.53. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row—4'. (e) N.A. (vi) Co-527 (Ratoon) Medium. (vii) Irrigated. (viii) Earthing up twice ; Interculture done. (ix) N.A. (x) 1.2.54.

2. TREATMENTS :

1. Control.
2. 123 lb./ac. of N+24 lb./ac. of P_2O_5.
3. 164 „ „ +32 „ „ „
4. 205 „ „ +40 „ „ „
5. 287 „ „ +56 „ „ „
6. 369 „ „ +72 „ „ „
7. 492 „ „ +96 „ „ „

N as oil cake and A/S ; P_2O_5 as Super.
Half the dose of N and P applied before planting and remaining half during earthing up (final).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 52′×42′. (b) 48′×38′. (v) 2′ ring round the net plot. (vi) Yes.

4. GENERAL :

(i) Growth not favourable. No lodging. (ii) Nil. (iii) Yield of cane. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) N. A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 8.26 ton/ac
(ii) 2.26 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	7.88
2.	8.21
3.	7.51
4.	10.35
5.	7.66
6.	8.30
7.	7.90

S.E./mean = 0.92 ton/ac.

Crop :-Sugarcane. **Ref :-W.B. 52(11).**

Site :-Palimath Farm, Plassey, Nadia. **Type :-'M'.**

Object :—To find out the effect of N in combination with P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10″ deep. (c) N.A. (d) Row to row—4′. (e) N.A. (v) Nil. (vi) CO 453 (plant). (vii) Nil. (viii) Weeding done ; earthing up 3 times. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. 123 lb./ac. of N+24 lb./ac. of P_2O_5.
3. 164 „ „ +32 „ „
4. 205 „ „ +40 „ „
5. 287 „ „ +56 „ „
6. 369 „ „ +72 „ „
7. 492 „ „ +96 „ „

N applied as A/S ; P_2O_5 as Super.

3. DESIGN :

(i) R B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 52′×42′. (b) 48′×38′. (v) 2′ ring round the net plot. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.33 ton/ac.
(ii) 2.42 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	22.88
2.	24.67
3.	23.18
4.	25.79
5.	24.05
6.	25.10
7.	21.67
S.E./mean	= 0.987 ton/ac.

Crop :-Sugarcane. **Ref :-W.B. 53(30).**

Site :--Palimath Farm, Plassey, Nadia. **Type :- 'M'.**

Object :—To find out the effect of N in combination with P on the yield of Sugarcane (Mill zone).

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nadia. (iii) 9.4.53. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) Row to row—4' (e) N.A. (v) Nil. (vi) Co-453 (Ratoon) (late). (vii) Irrigated. (viii) Earthing up thrice ; interculture done. (ix) N.A. (x) 1.2.54.

2. TREATMENTS :

1. Control.
2. 123 lb./ac. of N+24 lb./ac. of P_2O_5.
3. 164 „ „ „ +32 „ „
4. 205 „ „ „ +40 „ „
5. 287 „ „ „ +56 „ „
6. 369 „ „ „ +72 „ „
7. 492 „ „ „ +96 „ „

Source of N is oil cake and A/S and Source of P_2O_5 is Super.
Half dose of N and P applied before planting and remaining half at earthing up.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 52'×42'. (b) 48'×38'. (v) 2' ring round the net plot. (vi) Yes.

4. GENERAL :

(i) Growth not favourable. No lodging. (ii) Nil. (iii) Yield of Sugarcane. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.77 ton/ac.
(ii) 2.63 ton/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	14.00
2.	16.43
3.	18.52
4.	16.71
5.	15.39
6.	14.55
7.	14.80
S.E./mean	= 1.072 ton/ac.

Crop :-Sugarcane. **Ref :-W.B. 52(13).**

Site :-Agri. Farm, Srinagar. **Type :-'M'.**

Object :—To find out the effect of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) Mustard. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Srinagar. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 4" deep. (c) N.A. (d) 4'. (e) N.A. (v) No. (vi) Co. 527 (Plant) ; Late Medium. (vii) Unirrigated. (viii) 3 weedings. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. 120 lb./ac. of N
2. 80 lb./ac. of N
3. Control (no manure).

N as A/S & mustard cake in 1 : 1 ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 9. (iv) (a) 36'×40'. (b) 30'×36'. (v) 3'×2'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of cane. (iv) (a) 1952—1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Plantation had been heavily damaged due to draught. There had been practically no rain since the plantation had been completed. (vii) Nil.

5. RESULTS :

(i) 50.23 ton/ac.

(ii) 2.40 ton/ac.

(iii) Treatments differ highly significantly.

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

Treatment	Av. yield
1.	55.35
2.	51.43
3.	43.92

S.E./mean = 0.68 ton/ac.

Crop :-Sugarcane, **Ref :-W.B. 52(14).**

Site :-Agri. Farm, Srinagar. **Type :-'M'.**

Object :—To find out the effect of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) No. (b) Mustard. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Srinagar. (iii) N.A. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 4" deep. (c) N.A. (d) 4'. (e) N.A. (v) No. (vi) Co. 527 (Ratoon) ; Late Medium. (vii) Unirrigated. (viii) 3 weedings. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. 120 lb./ac. of N
2. 80 lb./ac. of N
3. Control (no manure)

N as A/S & mustard cake in 1 : 1 ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii). 9. (iv) (a) 36'×40'. (b) 30'×36'. (v) 3'×2'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) No. (iii) Yield of cane. (iv) (a) 1951 to 1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.65 ton/ac.
(ii) 1.38 ton/ac.
(iii) Treatments differ significantly.
(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	28.41
2.	28.08
3.	26.45

S.E./mean = 9.2 ton/ac.

Crop :- Sugarcane. **Ref :- W.B. 51(30).**

Site :- Rural Reconstruction Institute, Sriniketan. **Type :- 'M'.**

Object :—To study the effect of N, P and placement of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Aman paddy. (c) B.M. at 60 lb./ac. P_2O_5+Mustard cake at 30 lb./ac. N (ii) (a) Laterite (b) Refer soil analysis, Sriniketan. (iii) 27.2.51/2.3.51. (iv) (a) 4-5 cross ploughings, laddering & levelling of soil. (b) Setts placed in trenches 10" deep. (c) N.A. (d) between plants 9" & rows 3'. (e) N.A. (v) Nil. (vi) Co. 527. (vii) Irrigated. (viii) 4 spadings & 5 weedings. (ix) 35.62". (x) 26.1.52.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N : N_0=0, N_1=60 and N_2=120 lb./ac.

(2) Application of P_2O_5 : P_0=No P_2O_5, P_1=80 lb./ac. broadcast and P'_1=80 lb./ac. applied in furrows 4" deep.

N as mixture of A/S and oilcake in 1 : 1 ratio ; P_2O_5 as Super.

3. DESIGN :

(i) 3×3 Fact. R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 55'×26'. (b) 55'×26'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Affected by white and red rot. 0.25 Gamaxane added to soil thrice after a weekly interval. (iii) Yield of cane. (iv) (a) No. (b) No. (c) N.A. (v) (a) Kadamkhali, Chandanpur, Burdwan. (b) N.A. (vi) Due to poor rain and want of irrigation facilities there was very poor germination and results obtained can not be relied upon. The expt. was therefore abandoned (vii) Nil.

5. RESULTS :

(i) 9.43 ton /ac.
(ii) 5.14 ton./ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of cane in ton./ac.

	N_0	N_1	N_2	Mean
P_0	4.66	11.17	7.65	7.83
P_1	8.39	11.32	14.88	11.53
P'_1	6.06	8.73	12.03	8.94
Mean	6.37	10.41	11.52	9.43

S.E. of any marginal mean = 1.21 ton./ac.
S.E. of body of table = 2.10 ton./ac.

Crop :- Jute. Ref :- W.B. 53(73).

Site :- State Agri Farm, Malda. Type :- 'M'.

Object :—To compare the effect of two doses of A/S and C/N on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 18.5.53. (iv) (a) 4-5 ploughings & laddering. (b) Sowing in lines 1′ apart. (c) 3 Srs./ac. (d) & (e) N.A. (v) Compost at 4 ton./ac. (vi) Olitorious. (vii) Unirrigated (viii) 1st weeding on 28.6 and 2nd on 21.7 Extraction of fibre on 4,6.10.53 (ix) 59.03″. (x) 19.9.53.

2. TREATMENTS :

All combinations of (1) & (2)+a Control.

(1) 2 levels of N : N_1=33 and N_2=60 lb./ac.

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

A/S & C/N were mixed with 3 times its weight of dry earth and then top dressed on 1st July & 2nd July 1953 respectively.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5. (iv) (a) 20′×18′. (b) 18′×16′. (v) Distance between plots & blocks 2′, 1′ ring round each plot. (vi) Yes.

GENERAL :

(i) Good. (ii) When the crops were two months old Jute semi-loopers were found feeding on tender leaves. It was not serious pest and was controlled by hand picking. (iii) Green weight of plants & dry fibre (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) Krishnagar & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1616 lb./ac.

(ii) 239.0 lb./ac.

(iii) None of the effects is significant.

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

Control = 1524 lb./ac.

	N_1	N_2	Mean
A/S	1532	1789	1660
C/N	1563	1673	1618
Mean	1547	1731	1639

S.E. of any marginal mean = 75.5 lb./ac.
S.E. of body of table = 106.8 lb./ac.

Crop :- Jute. Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1952.

Site :- Burdwan (West Bengal.) Type :- 'M'.

Object :—To find the effect of different doses of fertilisers on the yield of Jute in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) Cultivators' normal practice. (ii) Alluvial, light & medium texture. (iii) Cultivators' normal practice. (iv) Capsularis (Local). (v) (a) to (e) Cultivator's normal practice. (vi) April—June. (vii) Unirrigated. (viii) N.A. (ix) Annaul rainfall—49.20″. (x) Sept. to Oct.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 30 lb./ac. of N as A/S over cultivators' normal practices.
3. 30 lb./ac. of N+25 lb./ac. K_2O as Mur. of Pot. The fertilisers were applied as top dressing when the plants were 4 weeks old in the plots.

3. DESIGN :

(i), (ii) An experimental plot of size varying from $\frac{1}{3}$rd to $\frac{1}{5}$rd of an acre was selected at random in each selected village. The plot was then sub divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6′—7″ radius each were located at random within each sub-plot. The weights of green plants for two cuts were noted seperately but for dry fibre combined weights for two cuts were noted. (iii) $\frac{1}{4}$ to $\frac{1}{5}$ of an ac. (iv) Yes.

4. GENERAL :

(i) Moderate (ii) N A. (iii) Dry fibre (iv) (a) 1952 to 1954 (b) N.A. (c) N.A. (v) N.A. (vi) & (vii) Nil.

5. RESULTS :

Av. yield of dry fibre in lb./ac.

Treatment	Av. yield.
1.	1087
2.	1356
3.	1474
G.M.	1306
S.E./mean	32.9
No. of experiments	21
Significance	Highly significant.

Crop :- Jute. Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1953.

Site :- Burdwan (West Bengal). Type :- 'M'.

Object :—To find the effect of different doses of fertilisers on the yield of Jute in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Alluvial, PH varied from 5.4 to 7.4 (iii) N.A. (iv) N.A. (v) N.A. (vi) N.A. (vii) N A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 30 lb./ac. of N as A/S over cultivators' normal practice.
3. 30 lb./ac. of N+25 lb./ac. K_2O as Mur. of Pot. Fertilisers were applied as top dressing when the plants were four weeks old.

3. DESIGN :

(i) & (ii) An experimental plot of size varying from $\frac{1}{3}$rd to $\frac{1}{5}$rd of an acre was selected at random in each selected village. The plot was then sub divided into three sub-plots nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6′—7″ radius each were located at random within each sub plot. The weights of green plants for two cuts were noted seperately but for dry fibre combined weights of the two cuts were noted. (iii) $\frac{1}{4}$ to $\frac{1}{5}$ of an ac. (iv) Yes.

4. GENERAL :

(N.) A. (ii) N.A. (iii) N.A. (iv) (a) 1952 to 1954 (b) N.A. (c) N.A. (v) N.A. (vi) & (vii) Nil.

5. RESULTS :

Av. yield of dry fibre in lb./ac.

Treatment	Av. yield.
1.	1207
2.	1547
3.	1703
G.M.	1485
S.E./mean	± 47.7
No. of experiments	14
Significance :	Highly significant.

Crop :- Jute. **Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1952.**

Site :- Hooghly (West Bengal). Type :- 'M'.

Object . To find the effect of different doses of fertilizers on the yield of Jute in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jute. (c) Cultivators' normal practice. (ii) Sandy loam ; light and medium texture soil. (iii) Cultivators' normal practice. (iv) Capsularis (Local). (v) (a) to. (e) Cultivators' normal practice. (vi) April-June. (vii) Unirrigated. (viii) N.A. (ix) 52.77". (x) Sept. to October.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 30 lb./ac. of N as A/S over cultivators' normal practice.
3. 30 lb./ac. of N+25 lb./ac. of K_2O as Mur. of Pot.

The fertilizers were applied as top dressing when the plants were 4 weeks old.

3. DESIGN :

(i), (ii) An experimental plot of size varying from $\frac{1}{4}$rd to $\frac{2}{3}$rd of an acre was selected at random in each selected village. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6'—7" radius each were located at random within each sub-plot. The weights of green plants for two cuts were noted seperately but for dry fibre combined weights of the two cuts were noted. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an ac. (iv) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Jute yield. (iv) (a) 1952 to 1954. (b) N.A. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Av. yield of dry fibre in lb./ac.

Treatment	Av. yield
1.	931
2.	1148
3.	1175
G.M.	1085
S.E./mean	26.3
No. of experiments	29
Significance	Highly significant

Crop : Jute. Ref :- Scheme for Manurial Trials (Stewart's Scheme) 1953.

Site :- Hooghly (West Bengal). Type 'M'.

Object :—To find the effect of different doses of fertilizers on the yield of Jute in different soil regions under survey.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Sandy clay loam pH varied from 5.2 to 7.1. (iii) N.A. (iv) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) N A. (x) N A.

2. TREATMENTS :

1. Control (cultivators' normal practice).
2. 30 lb./ac. of N as A/S over cultivators' normal practice.
3. 30 lb./ac. of N+25 lb/ac. of K_2O as Mur. of Pot.

Fertilizers were applied as top dressing when the plants were 4 weeks old.

3. DESIGN :

(i), (ii) An experimental plot of size varying from $\frac{1}{3}$rd to $\frac{2}{3}$rd of an acre was selected at random in each selected village. The plot was then sub-divided into three sub-plots of nearly equal size and three treatments were applied at random in the sub-plots. Two centres of two circular cuts of 6'-7" radius each were located at random within each sub-plot. The weights of green plants for two cuts were noted seperately but for dry fibre combined weights of the two cuts were noted. (iii) $\frac{1}{3}$ to $\frac{2}{3}$ of an ac. (iv) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Jute yield. (iv) (a) 1952 to 1954. (b) N.A. (c) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Av. yield of dry fibre in lb./ac.

Treatment	Av. yield
1.	1509
2.	1700
3.	1965
G.M.	1725
S.E./mean	46.1
No. of experiments	24
Significance :	Highly significant.

Crop :- Jute. Ref :- W.B. 48(17).

Site :- State Agri. Farm, Chinsurah. Type :- 'C'.

Object :—To find the effect of line sowing *vs.* broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 6.5.48. (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c) and (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. applied at the time of general preparation of land. (vi) D 154 (*capsularies*), Late. (vii) Unirrigated. (viii) Broadcasting :- 3 hand weedings, no thinning ; 3 or 4 wheel hoeings between lines. Spacings :- 1 weeding and thinning to requisite spacing by hand ; 3 or 4 wheel hoeings between lines. (ix) 42.98" approx. (x) 13.9.48.

2. TREATMENTS :

1. Broadcasting seed at 10 lb./ac.
2. No thinning within lines × 12".
3. 2" × 12".
4. 3" × 12".
5. 4" × 12".

Seed rate 6 lb./ac. for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 52′×12′. (b) 50′×10′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2236 lb./ac.
(ii) 216.7 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of jute fibre in lb./ac.

Treatment	Av. yield
1.	1829
2.	2416
3.	2373
4.	2260
5.	2300
S.E./mean	=88.5 lb./ac.

Crop :- Jute. **Ref :- W.B. 49(21).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'C'.**

Object :—To find the effect of line sowing *vs.* broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulses. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 12.4.49. (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c) and (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. broadcast at the time of general preparation of land. (vi) D 154 (*C. Capsularis*) Late. (vii) Unirrigated. (viii) Broadcasting :- 3 hand weedings ; no thinning ; 3-4 wheel hoeings. Spacings :- one hand weeding and thinning to requisite spacing ; 3-4 wheel hoeings between lines. (ix) 71.89″ approx. (x) 26.8.49.

2. TREATMENTS :

1. Broadcasting seed at 10 lb./ac.
2. No thinning within lines×12″.
3. 2″×12″.
4. 3″×12″.
5. 4″×12″.

Seedrate at 6 lb./ac. for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 52′×12′. (b) 50′×10′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1220 lb./ac.
(ii) 114.2 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of fibre in lb./ac.

Treatment	Av. yield
1.	1095
2.	1226
3.	1191
4.	1267
5.	1319
S.E./Mean	=46.6 lb./ac.

Crop :- Jute. Ref :- W.B. 50 (24).

Site :- State Agri. Farm, Chinsurah. Type :- 'C'.

Object :—To find the effect of line sowing *vs.* broadcasting.

BASAL CONDITIONS :

(i) (a) Nil. (b) Pulses. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 16.4.50 (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c) & (d) As per treatments. (e) N.A. (v) Compost at 3 ton./ac. applied at the time of general preparation of land. (vi) D 154 (*Capsularis*) Late. (vii) Unirrigated. (viii) Broadcasting : 3 hand weedings ; no thinning ; 3 or 4 wheel hoeings between lines. Spacings :—1st hand weeding and thinning to proper spacing ; 3—4 wheel hoeings between lines. (ix) 42.98″. (x) 31.8.50.

2. TREATMENTS :

1. Broadcasting at 10 lb./ac.
2. No thinning within lines × 12″
3. 2″ × 12″
4. 3″ × 12″
5. 4″ × 12″

Seedrate 6 lb./ac. for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 70′ × 12′. (b) 68′ × 10′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) No. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1727 lb./ac.
(ii) 85.79 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of jute fibre in lb./ac.

Treatment	Av. yield.
1.	1494
2.	1812
3.	1775
4.	1788
5.	1766
S.E./mean	=38.37 lb./ac.

———

Crop :- Jute. Ref :- W.B. 51 (32).

Site :- State Agri. Farm, Chinsurah. Type :- 'C'.

Object :—To find the effect of line sowing *vs.* broadcasting.

BASAL CONDITIONS :

(i) (a) Nil. (b) Pulses. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 5.6.51. (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c), (d) As per treatments. (e) N.A. (v) Compost at 3 ton./ac. broadcast at the time of general preparation of land. (vi) Chinsurah Green (*Capsularis*) (Medium.) (vii) Unirrigated. (viii) Broadcasting :—3 hand weedings ; no thinning ; 3 or 4 wheel hoeings between lines. Spacings :—1 weeding and thinning to requisite spacing by hand, 3—4 wheel hoeings between lines. (ix) 37.40″. (x) 13.10.51.

TREATMENTS :

1. Broadcasting seed at 10 lb./ac.
2. No thinning within lines × 12″
3. 2″ × 12″
4. 3″ × 12″
5. 4″ × 12″

Seedrate 6 lb./ac.for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 56′ × 10′. (b) 54′ × 12′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1540 lb./ac.

(ii) 51.37 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	1560
2.	1587
3.	1528
4.	1482
5.	1545
S.E./mean	= 25.68 lb./ac.

Crop :- Jute. **Ref :- W.B. 48 (18).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'C'**

Object : —To find the effect of line sowing *vs.* broadcasting on Jute.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 10.5.48. (iv) (a) 5 ploughing and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c) and (d) As per treaments. (e) N.A. (v) Compost at 3 ton./ac. broadcast at the time of general preparation of land. (vi) Chinsurah Green (*Olitorines*) *Med* (vii) Unirrigated. (viii) Broadcasting :—3 hand weedings ; no thinning ; 3 or 4 wheel hoeings between lines. Spacing :—1st weeding by hand and thinning to requisite spacing ; 3—4 wheel hoeings between lines. (ix) 42.98″ approximately. (x) 20.9.48.

2. TREATMENTS :

1. Broadcasting seed at 10 lb./ac.
2. No thinning within lines × 12″ between lines
3. 2″ × 12″
4. 3″ × 12″
5. 4″ × 12″

Seedrate 6 lb./ac. for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 52′ × 12′. (b) 50′ × 10′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1915 lb./ac.

(ii) 122.0 lb./ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of Jute fibre in lb./ac.

Treatment	Av. yield.
1.	1893
2.	1911
3.	1869
4.	1945
5.	1959
S.E./mean	=49.8 lb./ac.

Crop :- Jute. Ref :- W.B. 49(22).

Site :-State Agri. Farm, Chinsurah. Type :- 'C'.

Object :—To find the effect of line sowing *vs.* broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulses. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 5.5.49. (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c), (d) As per treatments (e) N.A. (v) Compost at 3 ton/ac. broadcast at the time of general preparation of land. (vi) Chinsurah Green (*Olitorins*) ; Medium. (vii) Unirrigated. (viii) Broadcasting :—3 hand weedings ; no thinning ; 3—4 wheel hoeings between lines. Spacing :—one hand weeding and thinning to required spacing ; 3—4 wheel hoeings between lines. (ix) 75.65″ approx. (x) 11/12.10.49.

2. TREATMENTS :

1. Broadcasting seed at 10 lb/ac.
2. No thinning within lines × 12″
3. 2″ × 12″
4. 3″ × 12″
5. 4″ × 12″

Seed rate at 6 lb/ac. for treatments 2 to 5.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 52′ × 12′. (b) 50′ × 10′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Stand, green weight and fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2665 lb/ac.
(ii) 285.4 lb/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of Jute fibre in lb/ac.

Treatment	Av. yield.
1.	2419
2.	2763
3.	2738
4.	2703
5.	2700
S.E./mean	= 116.5 lb/ac.

Crop :- Jute. Ref :- W.B. 50(25).

Site :-State Agri. Farm, Chinsurah. Type :- 'C'.

Object :—To find the effect of line sowing *vs.* broadcasting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulses. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Chinsurah. (iii) 19.5.50. (iv) (a) 5 ploughings and cross ploughing followed by laddering. (b) Line sowing and broadcasting. (c), (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. applied at the time of general preparation of land. (vi) Chinsurah Green (*Olitorins*) Medium (vii) Unirrigated. (viii) Broadcasting :—3 hand weedings ; no thinning ; 3—4 wheel hoeings between lines. Spacings :—1st hand weeding and thinning to proper spacing 3—4 wheel hoeings in lines. (ix) 49.34″ approx. (x) 4.10.50.

2. TREATMENTS :

1. Broadcasting at 10 lb/ac.
2. No thining with in lines × 12″.
3. 2″ × 12″
4. 3″ × 12″
5. 4″ × 12″

Seed rate 6 lb/ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 55′×9′. (b) 53′×7′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii)N.A. (iii) Stand, green weight & fibre weight. (iv) (a) 1948 to 1951. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1600 lb/ac.
(ii) 185.9 lb/ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of Jute fibre in lb/ac.

Treatment	Av. yield
1.	1651
2.	1623
3.	1570
4.	1592
5.	1564
S.E./mean	= 75.9 lb/ac.

Crop :- Roselle (Kharif). **Ref :- W.B. 49(23)**
Site :-State Agri. Farm, Chinsurah. **Type :- 'C'.**

Object :—To study the effect of spacings and stages of harvest on the yield of fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Aus paddy. (c) N.A. (ii) Clay. (b) Refer soil analysis, Chinsurah. (iii) 26.5.49. (iv) (a) 4 ploughings and ladderings. (b) broadcasting and line sowing. (c) 20 lb/ac. for broadcast sowing and for others according to spacing. (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. applied at the time of general preparation of land. (vi) R.T.I. (Med.). (vii) Unirrigated. (viii) 3 weedings for broadcast sowing. 3 weedings and thinning to requisite spacing for others. (ix) 75.65″ approx. (x) H_1 : 5.11.49 ; H_2 : 16.11.49 and H_3 : 22.11.49.

2. TREATMENTS ;

Main-plot treatments :—

5 spacings :— S_1=broadcasting, S_2=no thinning within lines×12″.
S_3=2″×12″, S_4=4″×12″ and S_5=6″×12″.

Sub-plot treatments :—

3 stages of harvest :— H_1=harvesting at bud stage, H_2=harvesting at flower stage and H_3=harvesting at the pod stage.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 6 (iv) (a) 19′×17′. (b) 17′×15′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stand, green weight and fibre yield. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a) Site was shifted to Barrackpore from 1952. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2139 lb/ac.
(ii) (a) 444.1 lb/ac.
(b) 117.5 lb/ac.
(iii) Only stages of harvest effect is highly significant.

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

	H_1	H_2	H_3	Mean
S_1	1990	2006	1822	1939
S_2	2069	2195	1897	2054
S_3	2233	2405	2187	2275
S_4	2279	2257	2082	2206
S_5	2168	2324	2178	2223
Mean	2148	2237	2033	2139

S.E. of difference of two

1. main-plot treatment means =148.0 lb/ac.
2. sub-plot treatment means = 30.4 lb/ac.
3. main-plot treatment means at a level of sub-plot treatment =158.0 lb/ac.
4. sub-plot treatment means at a level of main-plot treatment = 67.9 lb/ac.

Crop :- Roselle (Kharif). Ref :- W.B. 50(27).

Site :- State Agri. Farm, Chinsurah. Type :- 'C'.

Object :— To study the effect of spacings and stages of harvest on the yield of fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Roselle. (c) Compost at 3 ton/ac. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 26.5.50. (iv) (a) 4 ploughings and laddering. (b) As under treatment. (c) 20 lb./ac. for broadcast sowing and for others according to spacing. (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. applied at the time of general preparation of land. (vi) R.T.I. (Medium). (vii) Unirrigated. (viii) 3 weedings for broadcast sowing; 3 weedings and thinning to proper spacings for others. (ix) 54.94" approx. (x) H_1 :—8.11.50 ; H_2 :—23.11.50 ; H_3 :—11.12.50. (As per treatments).

2. TREATMENTS :

Main-plot treatment :—

5 spacings :— S_1=broadcasting, S_2=no thinning within lines ×12", S_3=2"×12", S_4=4"×12" and S_5=6"×12"

Sub-plot treatments :—

3 stages of harvest :— H_1=harvesting at bud stage, H_2=harvesting at flower stage and H_3=harvesting at pod stage.

3. DESIGN:

(i) Split plot. (ii) (a) 5 main-plots/replication & 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) (main plot) 53'×17' ; (sub-plot) N.A. (b) Main-plot 51'×15' ; sub-plot 17'×15'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stand count, green weight and fibre yield. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a) Site shifted to Barrackpore from 1952. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 587.0 lb./ac.
(ii) (a) 164.6 lb./ac.
(b) 63.5 lb./ac.
(iii) Only spacing and stages of harvest effects are significant.

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

	H_1	H_2	H_3	Mean
S_1	688	699	699	695
S_2	506	515	577	533
S_3	560	536	601	566
S_4	571	619	607	599
S_5	506	535	580	540
Mean	566	581	613	587

S.E. of difference of two

1. main-plot treatment mean =54.9 lb./ac.
2. sub-plot treatment means =16.4 lb./ac.
3. main-plot treatment means at a level of sub-plot treatment =62.5 lb./ac.
4. sub-plot treatment means at a level of main-plot treatment =36.6 lb./ac.

Crop :- Roselle (Kharif). **Ref :- W.B. 51(39).**

Site :- State Agri. Farm, Chinsurah. **Type :- 'C'.**

Object :— To study the effect of spacings and stages of harvest on the yield of fibre.

1. BASAL CONDITIONS :

(i) Nil. (b) Roselle. (c) Compost at 3 ton/ac. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 5.6.51. (iv) (a) 4 plougings and laddering. (b) As under treatments. (c) 20 lb./ac. for broadcast sowing and for others according to spacings. (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. applied at the time of general preparation of land. (vi) R.T.I. (Med.) (vii) Unirrigated. (viii) 3 weedings for broadcast sowing ; 3 weedings and thinning to proper spacings for others. (ix) 38.93″ approx. (x) H_1 :— 2.11.51, H_2 :— 20.11.51. and H_3 1.12.51.

2. TREATMENTS :

Main-plot treatments :—

5 spacings :— S_1=broadcasting, S_2=no thinning within lines×12″, S_3=2″×12″, S_4=4″×12″ and S_5=6″×12″.

Sub-plot treatments :—

3 stages of harvest :—H_1=harvesting at bud stage, H_2=harvesting at flower stage and H_3=harvesting at pod stage.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/replication & 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) Main-plot 53′×17′ : sub-plot : N.A. (b) Main-plot : 51′×15′ ; sub-plot : 17′×15′. (v) 1′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stand count, green weight and fibre yield. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a) Site shifted to Barrackpore from 1952. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1261 lb./ac.
(ii) (a) 203.3 lb./ac.
(b) 162.3 lb./ac.
(iii) Interaction spacing×stage of harvest is significant.

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

	H_1	H_2	H_3	Mean
S_1	1275	1318	1164	1252
S_2	1223	1184	1402	1270
S_3	1240	1033	1248	1174
S_4	1289	1122	1403	1271
S_5	1282	1399	1335	1339
Mean	1262	1211	1310	1261

S.E. of difference of two

1. main-plot treatment means = 67.8 lb./ac
2. sub-plot treatment means = 41.9 lb./ac.
3. main-plot treatment means at a level of sub-plot treatment = 102.2 lb./ac.
4. sub-plot treatment means at a level of main-plot treatment. = 93.7 lb./ac.

Crop :-Mesta (Kharif). **Ref :-W.B. 49 (24).**

Site :-State Agri. Farm, Chinsurah. **Type :.'C'.**

Object :—To study the effect of spacings and stages of harvest on the yield of fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 5.6.49. (iv) (a) 4 ploughings and ladderings. (b) As under treatments. (c) 25 lb./ac. for broadcast-sowing and for others according to spacing. (d) As under treatments. (e) N.A. (v) Compost at 3 ton/ac. at the time of general preparation of land. (vi) M.T. 15 (Medium). (vii) Unirrigated. (viii) 3 weedings for broadcast sowing ; 3 weedings and thinning to requisite spacing, for others. (ix) 70.10" approx. (x) H_1 :—19.9.49. H_2 :— 5.10.49 H_3 :— 14.10.49.

2. TREATMENTS :

Main-plot treatments :—

5 spacings : S_1=broadcasting, S_2= no thinning within lines×12", S_3=2"×12", S_4=4"×12" and S_5=6"×12".

Sub-plot treatments :—

3 stages of harvest : H_1=harvesting at bud stage, H_2=harvesting at flower stage and H_3=harvesting at pod stage.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/replication and 3 sub-plots/main-plot. (iii) 6. (iv) (a) main-plot : 53'×17' ; sub-plot : N.A. (b) Main-plot : 51'×15' ; sub-plot ; 17'×15'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stand count, green weight and fibre yield. (iv) (a) 1949 to 1951. (b) No. (c) N A. (v) (a) Site changed to Barrackpore from 1952. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 601.7 lb./ac.
(ii) (a) 323.9 lb./ac.
(b) 367.6 lb./ac.
(iii) None of the effects is significant.

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

	H_1	H_2	H_3	Mean
S_1	705.6	687.7	682.1	692.1
S_2	677.6	590.2	631.7	633.2
S_3	686.6	673.1	692.2	684.0
S_4	576.8	564.5	586.9	576.1
S_5	445.8	417.8	406.6	423.4
Mean	618.5	586.7	599.9	601.7

S.E. of difference of two

1. main-plot treatment means =108.0 lb./ac..
2. sub-plot treatment means = 94.9 lb./ac.
3. main-plot treatment means at a level of sub-plot treatment =204.1 lb./ac.
4. sub-plot treatment means at a level of main-plot treatment =212.2 lb./ac.

Crop :- Mesta (Kharif). **Ref :- W.B. 50(26).**
Site:- State Agri. Farm, Chinsurah. **Type :- 'C'.**

Object :—To study the effect of spacing and stages of harvest on the yield of fibre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mesta. (c) Compost at 3 tons/ac. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 18-19.5.50. (iv) (a) 5 ploughings and laddering. (b) As under treatments. (c) 25 lb./ac. for broadcast sowing and for others according to spacings. (d) As under treatments. (e) N.A. (v) 3 ton/ac. of compost applied at the time of general preparation of land. (vi) M.T. 15 (Medium). (vii) Unirrigated. (viii) 3 weedings for broadcast sowing ; 3 weedings and thinning to proper spacings, for others. (ix) 48.58". (x) H_1 :— 6.9.50 ; H_2 :—19.9.50 H_3 :— 27.9.50.

2. TREATMENTS :

Main-plot treatments :—

5 spacings : S_1=broadcasting, S_2=no thinning within lines×12", S_3=2"×12", S_4=4"×12" and S_5=6"×12".

Sub-plot treatments :—

3 stages of harvest : H_1=harvesting at bud stage, H_2=harvesting at flower stage and H_3=harvesting at pod stage.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) Main-plot : 52'×17' ; sub-plot N.A. (b) Main-plot : 51'×15' ; sub-plot : 17'×15'. (v) 1' border around each plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stand count, green weight and fibre yield. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a) Site shifted to Barrackpore from 1952. (b) N.A. (vi) Nil. (vii) Crop severely damaged by melignant disease during the year 1951. The expt. was vitiated in 1951.

5. RESULTS :

(i) 1361 lb./ac.
(ii) (a) 194.9 lb./ac.
(b) 124.3 lb./ac.
(iii) 'Spacing's and stages of harvest effects are highly significant. Interaction is significant.

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

	H_1	H_2	H_3	Mean
S_1	1299	1508	1681	1496
S_2	1308	1363	1383	1351
S_3	1416	1583	1531	1510
S_4	1391	1361	1353	1335
S_5	1045	1225	1066	1112
Mean	1272	1408	1403	1361

S.E. of difference of two

1. main-plot treatment means =64.7 lb./ac.
2. sub-plot treatment means =32.1 lb./ac.
3. main-plot treatment means at a level of sub-plot treatment =87.3 lb./ac.
4. sub-plot treatment means at a level of main-plot treatment =71.8 lb./ac.

Crop :- Groundnut. **Ref :- W.B. 52(38).**

Site :- State Agri. Farm, Berhampur. **Type :- 'C'.**

Object :—To find out the most suitable spacing for Groundnut of spreading type to get the maximum out-turn.

1. BASAL CONDITIONS :
(i) (a) No. (b) and (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampur. (iii) 26.6.52. (iv) (a) and (b) N.A. (c) Varies from 30 lb./ac. to 60 lb./ac. according to different spacings. (d) As per treatments. (e) —. (v) Cowdung 150 md./ac. (vi) Spanish peanut from Nagpur (Late). (vii) Unirrigated. (viii) 2 weedings and 2 mulchings. (ix) 39.72". (x) 10.12.52.

2. TREATMENTS :
Spacings :-
1. 24"×9".
2. 18"×12".
3. 24"×12".
4. 18"×6".
5. 12"×9".
6. 24"×6".
7. 18"×9".
8. 12"×12".

3. DESIGN :
(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) & (b) 17'×9'. (v) No border area kept. (vi) Yes.

4. GENERAL :
(i) Favourable. (ii) Slight attack of termite. (iii) Yield of groundnut Pod. (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) No. (b) N A. (vi) and (vii) Nil.

5. RESULTS :
(i) 1200 lb./ac.
(ii) 365.4 lb./ac.
(iii) The treatments do not differ significantly.
(iv) Av. yield of groundnut Pod. in lb./ac.

Treatments	Av. yield
1.	1441
2.	1353
3.	1271
4.	1238
5.	1183
6.	1101
7.	1037
8.	978
S.E /mean	=149 2 lb./ac.

Crop :- Groundnut. Ref :- W.B. 53(44).

Site -: State Agri. Farm, Berhampur. Type :- 'C'.

Object :—To find out the most suitable spacings for Groundnut of spreading type to get maximum out-turn.

1. BASAL CONDITIONS :

(i) (a) (b) and (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 20.6.53. (iv) (a) 4 ploughings and laddering. (b) Seeds were broadcast. (c) 30 lb./ac. to 60 lb./ac. (d) As under treatments. (e) —. (v) 150 md./ac. cowdung. at the time of general preparation of land in the months of May-June. (vi) Spanish peanut from Nagpur (Late). (vii) Unirrigated. (viii) 2 weedings and 2 mulchings. (ix) 37.22". (x) 26.11.53.

2. TREATMENTS:

Spacings :—

1. 24"×9".
2. 24"×12".
3. 24"×6".
4. 18"×12".
5. 18"×9".
6. 12"×12".
7. 12"×9".
8. 18"×6".

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) & (b) 17'×9'. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of groundnut pod. (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1824 lb./ac.
(ii) 304.4 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield
1.	2368
2.	2039
3.	1911
4.	1857
5.	1767
6.	1764
7.	1511
8.	1371
S.E./mean	±124.2 lb./ac.

Crop :- Groundnut. Ref :- W.B. 52(39).

Site :- State Agri. Farm, Berhampur. Type : 'C'.

Object :—To find out the best spacing for Groundnut of erect type to get maximum out-turn.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 30.6.52. (iv) (a) and (b) N.A. (c) 25 lb./ac. to 65 lb./ac. (d) As under treatments. (e) N.A. (v) Cowdung at 150 md/ac. (vi) K-3 (Kopargaon) (early). (vii) Unirrigated. (viii) 2 weedings, 2 mulchings and 2 earthings. (ix) 39.72". (x) 2.12.52.

2. TREATMENTS :

Spacings :—

1. 24″×6″.
2. 12″×9″.
3. 24″×12″.
4. 18″×6″.
5. 18″×12″.
6. 18″×9″.
7. 12″×12″.
8. 24″×9″.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) and (b) 17′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of groundnut pod. (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) Nil. (b) N A. (vi) and (vii) Nil.

4. RESULTS :

(i) 1319 lb./ac.
(ii) 287.2 lb./ac.
(iii) Treatments differ significantly.
(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield
1.	1658
2.	1453
3.	1453
4.	1418
5.	1418
6.	1318
7.	1172
8.	662
S.E./mean	= 165.8 lb./ac.

Crop :- Groundnut. **Ref :- W.B. 55(45).**

Site :-State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out the best spacing for Groundnut of erect type to get maximum out-turn.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) and (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 20.6.53. (iv) (a) 4 ploughings and laddering. (b) Seeds were broadcast by hand and then covered. (c) Seedrate varies from 25 lb./ac. to 65 lb./ac. (d) As per treatments. (e)—. (v) Cowdung at 150 md./ac. at the time of general preparation of land in the month of May-June. (vi) K-3 (Kopargaon) ; (early). (vii) Unirrigated. (viii) 2 weedings, 2 mulchings and 2 earthings. (ix) 37.22″. (x) 17.11.53.

2. TREATMENTS :

Spacings :—

1. 24″×6″.
2. 12″×9″.
3. 12″×12″.
4. 18″×9″.
5. 18″×12″.
6. 18″×6″.
7. 24″×9″.
8. 24″×12″.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 17′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Slight attack of termite. (iii) Yield of groundnut pod. (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 851.0 lb./ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield
1.	955.4
2.	938.9
3.	955.4
4.	903.5
5.	877.2
6.	785.0
7.	706.9
8.	685.5
S.E./mean	=N.A.

Crop :- Groundnut. **Ref :- W.B. 53 (43).**

Site :- State Agri. Farm, Berhampur. **Type :- 'C'.**

Object :—To find out the effect of intercultural operations on yield of Groundnut (spreading).

1. BASAL CONDITIONS :

(i) (a) Wheat (Rabi) Groundnut. (Kharif). (b) Wheat. (c) 250 md./ac. of T.C. (ii) (a) Loamy. (b) Refer soil analysis, Berhampur. (iii) 21.6.53. (iv) (a) 4 ploughings and laddering. (b) Seeds were broadcast by hand, hoed and then covered. (c) 60 lb./ac. (unshelled). (d) Line to line 2'; plant to plant 9". (e) N.A. (v) Cowdung 150 md./ac. at the time of general preparation of land in the months of May-June. (vi) Spreading type. (vii) Unirrigated. (viii) As under treatments. (ix) N.A. (x) 11.12.53.

2. TREATMENTS :

1. Control.
2. 1 weeding and 1 mulching.
3. 2 weedings and 2 mulchings.
4. 3 weedings and 3 mulchings.
5. 1 weeding, 1 mulching and 1 earthing.
6. 2 weedings, 2 mulchings and 2 earthings.

3. DESIGN :

(i) L. Sq. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 20' × 12'. (b) 1/242th ac. (v) 1' around a plot. Distance between plots 2' and between blocks 3' (vi) Yes.

4. GENERAL :

(i) Unfavourable. (ii) Incidence of termite reported. (iii) Yield of groundnut pod. (iv) (a) 1953 to 1955. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 601.0 lb./ac.
(ii) N.A.
(iii) N.A.
(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield.
1.	281.4
2.	571.1
3.	806.4
4.	747.2
5.	581.8
6.	618.0
S.E./mean	=N.A.

Crop :-Linseed. Ref :- W.B. 52.(37).

Site :- State Agri. Farm, Berhampore. Type :- 'C'.

Object :—To find out the optimum seed rate of Linseed by broadcast-sowing under West Bengal conditions.

1. BASAL CONDITIONS :
(i) (a) Til—Linseed. (b) N.A. (c) N.A (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 1st week of November. (iv) (a) N.A. (b) Seeds were broadcast. (c) As per treatments. (d) and (e)—. (v) Cowdung 150 md./ac. (vi) K-2 (Medium). (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 1st and 2nd week of March, 1953.

2. TREATMENTS :
Seed rates :—
1. 8 lb./ac.
2. 10 lb./ac.
3. 12 lb./ac.
4. 14 lb./ac.
5. 16 lb./ac.
6. 18 lb./ac.

3. DESIGN :
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 24′ × 17′. (b) 20′ × 15′. (v) A border of 2′ in one direction and that of 1′ in orthogonal direction. (vi) Yes.

4. GENERAL :
(i) Moderate. (ii) N.A. (iii) Yield of linseed. (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) & (b) Nil. (vi) Severe drought after sowing affected the yield of the crop. (vii) S.E. and raw data N.A.

5. RESULTS :
(i) 280.8 lb./ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of linseed in lb./ac.

Treatment	Av. yield.
1.	354.7
2.	288.0
3.	283.9
4.	265.0
5.	250.2
6.	242.8
S.E./mean	=N.A.

Crop :- Linseed. Ref :- W.B. 53 (40).

Site :- State Agri. Farm, Berhampore. Type :- 'C'.

Object :—To find out the optimum seedrate of Linseed by broadcast-sowing under West Bengal conditions.

1. BASAL CONDITIONS :
(i) (a) Til-Linseed. (b) N.A. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 1.11.53. (iv) (a) 4 ploughings and laddering. (b) Broadcast by hand, levelled and covered. (c) As per treatments. (d) and (e)—. (v) Cowdung at 150 md./ac. at the time of general preparation of land in the months of May-June. (vi) K-2 (Medium). (vii) Irrigated. (viii) 2 weedings and mulching. (ix) N.A. (x) 13.3.54.

2. TREATMENTS :
Seedrates :—
1. 8 lb./ac.
2. 10 lb./ac.
3. 12 lb./ac.
4. 14 lb./ac.
5. 16 lb./ac.
6. 18 lb./ac.

3. DESIGN :
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 20′ × 15′. (v) N.A. (vi) Yes.

4. GENERAL :
(i) Very good. (ii) Not recorded. (iii) Yield of linsead (iv) (a) 1952 to 1955. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Weather was favourable. (vii) Nil.

5. RESULTS :
(i) 1374 lb./ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of linseed in lb./ac.

Treatment	Av. yield.
1.	1497
2.	1461
3.	1378
4.	1352
5.	1314
6.	1244
S.E./mean	=N.A.

Crop :- Linseed. **Ref :- W.B. 5:(46).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out the optimum seed rate of Linseed (erect type) by broadcast—sowing under West Bengal conditions.

1. BASAL CONDITIONS :
(i) (a) Til—Linseed. (b) N.A. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 1st week of Nov. (iv) (a) 4 ploughings and laddering. (b) Seeds were broadcast and then covered (c) As per treatments. (d) & (e) —. (v) Cowdung 150 md./ac. applied at the time of general preparation of land in the months of May—June. (vi) K—2 ; Erect type from Kangra, Punjab ; (Medium). (vii) Irrigated. (viii) 2 weedings, 2 mulchings and 2 earthings. (ix) 1.31″ approx. (x) Mid week of March.

2. TREATMENTS :
Seedrate :—
1. 12 lb./ac.
2. 24 lb./ac.
3. 36 lb./ac.
4. 48 lb./ac.

3. DESIGN :
(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 9. (iv) (a) N.A. (b) 1/144th ac. (v) N.A. (vi) Yes.

4. GENERAL :
(i) Satisfactory. (ii) N.A. (iii) N.A. (iv) (a) 1953—continued. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Weather condition was favourable. (vii) Nil.

5. RESULTS :
(i) 732.4 lb./ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of linseed in lb./ac.

Treatment	Av. yield.
1.	650.1
2.	759.5
3.	767.8
4.	752.1
S.E./mean	=N.A.

Crop :- Til. **Ref :- W.B. 52(40).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object .—To find out optimum seedrate of Til so as to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Til. (b) Sugarcane. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 25.6.52. (iv) (a) N.A. (b) Seeds were sown by broadcast. (c) As per treatments. (d) & (e)—. (v) Cowdung 150 md./ac. (vi) W.B. No.—9 (Medium late). (vii) Unirrigated. (viii) 2 weedings done. (ix) N.A. (x) 13.9.52.

2. TREATMENTS :

Seedrate :—

1. 4 lb./ac.
2. 6 lb./ac.
3. 8 lb./ac.
4. 10 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 42′×15′. (b) 38′×13′. (v) A border of 2′ in one direction and that of 1′ in orthogonal direction. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of cerceous para-blight. (iii) Yield of til. (iv) (a) 1952—continued. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 126.5 lb./ac.
(ii) 24.69 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of til in lb./ac.

Treatment	Av. yield.
1.	129.2
2.	133.3
3.	118.5
4.	125.1
S.E./mean	= 10.08 lb./ac.

Crop :- Til. **Ref :- W.B. 53(42).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out optimum seedrate of Til so as to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Rahar—Til. (b) Rahar. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 11.6.53. (iv) (a) 4 ploughings and laddering. (b) Seeds were broadcast and then covered. (c) As per treatments. (d) & (e) ——. (v) Cowdung 250 md./ac. at the time of general preparation of land in the months of May-June. (vi) W.B. No.—9 (Medium, late). (vii) Unirrigated. (viii) One weeding, mulching & one earthing up. (ix) 33.95″. (x) 9.9.53.

2. TREATMENTS :

Seedrate :—

1. 4 lb./ac.
2. 5 lb./ac.
3. 6 lb./ac.
4. 7 lb./ac.
5. 8 lb./ac.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 24′×25′. (b) 20′×21′. (v) 2′ border around each plot. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Slight attack of Cercospora blight. (iii) Yield of til. (iv) (a) 1952—continued. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) It was decided to change the seed rate/ac. in view of previous year's yields.

5. RESULTS :

(i) 216.6 lb./ac.
(ii) N.A.
(iii) Treatments do not differ significantly.
(iv) Av. yield of til in lb./ac.

Treatment	Av. yield.
1.	220.9
2.	183.8
3.	246.5
4.	239.5
5.	192.1
S.E./mean	=N.A.

Crop :- Til. **Ref :- W.B. 53(41).**

Site :- State Agri. Farm, Berhampore. **Type :- 'C'.**

Object :—To find out the best period of sowing Til under West Bengal conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Berhampur. (iii) As per treatments. (iv) (a) 4 ploughings and laddering. (b) Seeds were brodcast by hand ; leveled and then covered. (c) 6 lb./ac. (d) & (e) —. (v) Cowdung 150 md./ac. at the time of general preparation of land in the months of May—June. (vi) West Bengal Selection. (vii) Unirrigated. (viii) 1 weeding and mulching & one earthing up. (ix) N.A. (x) 5. 9.53 ; 20.9.53 ; 30. 9.53 ; 7.10.53 ; 9.10.53 ; 16.10.53 for treatments 1, 2, 3, 4, 5 & 6 resp.

2. TREATMENTS :

Treatment	Date of sowing.
1.	9.6.53.
2.	23.6.53.
3.	7.7.53.
4.	21.7.53.
5.	4.8.53.
6.	19.8.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 24′×12′. (b) 20′×10.5′. (v) Distance between block 3′ and plots 2′ ; one row on either side. 2′ & 9″ respectively left as guard row. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Not recorded. (iii) Yield of til. (iv) (a) 1953—continued. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 370.8 lb./ac.
(ii) 128.0 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of til in lb./ac.

Treatment	Av. yield.
1.	745.8
2.	446.8
3.	364.6
4.	263.8
5.	248.1
6.	155.4
S.E./mean	= 52.2 lb./ac.

Crop :- Banana. **Ref :- W.B. 51 (36).**

Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'M'.**

Object :—To determine the optimum manurial combination of N obtaind from organic and inorganic sources and to ascertain the effect of addition of P_2O_5 and K on growth and yield.

BASAL CONDITIONS :

(i) N.A. (ii) (a) Bombay alluvial soil. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Martaman. (v) 14th July 1951. In pits 1.5′ deep and 1.5′ in diameter (10′ apart). (vi) 3—4 months. (vii) Nil. (viii) Usual cultural desuckering operations done every year. (ix) Nil. (x) Irrigated. (xi) 58.97″. (xii) N.A.

2 TRETAMENTS :

1. No manure.
2. 4 oz. of N from cowdung.
3. 4 oz. of N from cowdung+4 oz. of N from A/S.
4. 4 oz. of N from mustard cake+4 oz. of N from A/S.
5. 4 oz. of N from cowdung+4 oz. of N from mustard cake.
6. 4 oz. of N from cowdung+8 oz. of P_2O_5 from super.
7. 4 oz. of N from cowdung+8 oz. of K_2O from pot. sul.
8. 4 oz. of N from cowdung+8 oz. of P_2O_5 from super+8 oz. of K_2O from pot. sul.

Treatments applied on per plant basis.

3. DESIGN :

(i) R.B.D. (ii) 8. (iii) 4. (iv) Gross :- 5 rows of 5 plants each-Net :- 3 rows of 3 plants each. (v) 1 guard row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, girth and leaf count. (iv) (a) 1951 to 1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) Height 86.14 cm. Leaf count 9.28

(ii) Height 9.40 cm. Leaf count 0.88.

(iii) Variations in height and leaf count due to different treatments are significant.

(iv) Mean height and mean leaf count.

Treatments	Mean Height (cm.) (Nov. 51).	Mean leaf count (Nov. 51).
1.	52.62	6.01
2.	61.93	8.02
3.	123.56	10.88
4.	118.56	11.30
5.	103.75	11.58
6.	75.37	8.90
7.	76.31	8.64
8.	77.06	8.94
S.E./mean	=4.70 cm. ;	0.44

Crop :- Banana. **Ref :- W.B. 52 (64).**

Site :- State Horti. Res. Stn. Krishnagar. **Type 'M'.**

Object :—To determine the optimum manurial combination of N obtained from organic and inorganic sources and to ascertain the effect of addition of P_2O_5 and K on growth and yield.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Loamy alluvial soil. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Martaman. (v) In pits, 1.5′ deep, 1.5′ in diameter (10′ apart). (vi) 3—4 months. (vii) Nil. (viii) Usual cultural and desuckering operations were done. (ix) Nil. (x) Irrigated. (xi) 50.37″. (xii) July 1952—March 1953.

2. TREATMENTS :

1. No manure.
2. 4 oz. of N from cowdung.
3. 4 oz. of N from cowdung+4 oz. of N from A/S.
4. 4 oz. of N from mustard cake+4 oz. of N from A/S
5. 4 oz. of N from cowdung+4 oz. of N from mustard cake.
6. 4 oz. of N from cowdung+8 oz. of P_2O_5 as super.
7. 4 oz. of N from cowdung+8 oz. of K_2O from pot. sul.
8. 4 oz. of N from cowdung+8 oz. of P_2O_5 from super+8 oz. of K_2O from pot. sul.

Treatments applied on per plant basis.

3. DESIGN :

(i) R.B.D. (ii) 8. (iii) 4. (iv)(a), (b) Gross :- 5 rows of 5 plants each ; net :- 3 rows of 3 plants each (v) 1 guard row around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Affected by Panama disease (wilt). (iii) Height, girth, leaf count and yield. (iv) (a) 1951 to 1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 14.12 lb./plant.
(ii) 2.36 lb./plant.
(iii) Treatments differ significantly.
(iv) Av. yield of banana in lb./plant.

Treatments	Av. yield
1.	8.35
2.	12.82
3.	17.22
4.	17.95
5.	16.85
6.	13.02
7.	13.05
8.	13.67
S.E./mean	=1.18 lb./plant.

Crop :- Banana. **Ref :- W.B. 53 (83).**
Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'M'.**

Object :—To determine the optimum manuring combination of N obtained from organic and inorganic sources and to ascertain the effect of addition of P_2O_5 and K on growth and yield.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Loamy alluvial soil. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Martaman. (v) Date N.A. In pits, 1.5′ deep, 1.5′ diameter (10′ apart). (vi) 3—4 months. (vii) Nil. (viii) Usual cultural and desuckering operations were done. (ix) Nil. (x) Irrigated. (xi) 64.72". (xii) May 53-June 1954.

2. TREATMENTS :

1. No manure.
2. 4 oz. of N from cowdung.
3. 4 oz. of N from cowdung+4 oz of N from A/S.
4. 4 oz. of N from mustard cake+4 oz. of N from A/S.
5. 4 oz. of N from cowdung+4 oz. of N from mustrad cake.
6. 4 oz. of N from cowdung+8 oz. of P_2O_5 as super.
7. 4 oz. of N from cowdung+8 oz. of K_2O as pot. sul.
8. 4 oz. of N from cowdung+8 oz. of P_2O_5 as Super+8 oz. of K_2O as pot. sul.

Treatments applied on per plant basis.

3. DESIGN :

(i) R.B.D. (ii) 8. (iii) 4. (iv) (a), (b) Gross :- 5 rows of 5 plants each. Net :- 3 rows of 3 plants cach. (v) 1 guard row alround. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) Heavily infested by Panama disease. The experiment had be to abandoned. (iii) Height, girth and yield. (iv) (a) 1951 to 1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 23.98 lb./plant.
(ii) 2.44 lb./plant.
(iii) Treatments differ significantly.
(iv) Av. yield of banana in lb./plant.

Treatment	Av. yield
1.	13.20
2.	21.30
3.	30.25
4.	30.75
5.	29.47
6.	22.42
7.	21.62
8.	23.05
S.E./mean	=1.22 lb./plant.

Crop :- Banana. Ref :- W.B. 53 (77).

Site :- State Banana Res. Stn. Chinsurah. Type :- 'C'.

Object :—To determine optimum age of suckers and best season of planting.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) Martaman. (v) N.A. (vi) As under treatments (vii) 8 oz. N/plant (½ organic+½ inorganic). T.C. mixed with soil at the time of next monsoon and A/S divided into four equal parts, one part applied at the next monsoon and other 3 at an interval of one month. (viii) Spading, ploughing and laddering twice. (ix) Nil. (x) Unirrigated. (xi) 64.72". (xii) Nil.

2. TREATMENTS :

1. Peepers *i.e.* suckers just emerging out of ground.
2. Two month old suckers.
3. Three month old suckers.
4. Four month old suckers.

3. DESIGN :

(i) R.B.D. (ii) 4. (iii) 6. (iv) 6 in a single row. (v) A single border around whole area. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of D.D.T. (0.1% wettable) 4 times at an interval of fortnight to check incidence o beetle. (iii) Height, girth, leaf count and yield. (iv) (a) 1952 to 1954. (b) N.A. (v) Nil. (vi) Raw data N.A.

5. RESULTS :

Monsoon planting :

(i) 177.93 cm. (height) ;
57.10 cm. (girth).
(ii) N.A.
(iii) Variation in height and girth due to different treatments are not significant.
(iv) Mean height and mean girth.

Treatment	Mean height (cm.) Dec. 1953.	Mean girth (cm.) Dec. 1953.
1.	172.95	55.31
2.	177.36	58.03
3.	180.95	57.98
4.	180.45	57.06
S.E, mean	=N.A.	=N.A.

Autumn planting :

(i) 173.18 cm. (height) ;
56.65 cm. (girth).

(ii) N.A.

(iii) Variation in height and girth due to different treatments are not significant.

(iv)

Treatment	Mean height (cm.) Dec. 1953	Mean girth (cm.) Dec. 1953
1.	167.85	54.68
2.	182.35	57.96
3.	167.43	54.10
4.	175.11	55.86

Crop :- Banana. **Ref :- W.B. 51(37.)**

Site :-State Horti. Res. Stn. Krishnagar. **Type :- 'C'.**

Object :—To determine whether a rhizome in whole or in bits from fruited and non-fruited plants can provide a more suitable material for propagation.

1. BASAL CONDITIONS :

(i) Remained fallow for a year. Prior to it, rainfed vegetables were grown. (ii) (a) Loamy alluvial soil. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Belua Kanchkela. (v) 8th April, 51. Suckers placed in pits 1′ deep and 1′ in diameter. (vi) As under treatments. (vii) 15 Srs of compost+4 oz of N as A/S. applied to every plant. (viii) Interculturing by cultivator and ploughing in between plants (4—5 times during a year). (ix) Nil. (x) Unirrigated. (xi) 58.97″. (xii) N.A.

2. TREATMENTS :

1. Planting the full rhizome from a parent plant.
2. Planting full rhizome of the most well developed daughter sucker of the Clump.
3. Planting bits from a rhizome of the parent plant cut into two.
4. Planting bits from a rhizome of the daughter sucker cut into two.
5. Planting bits from a rhizome of the parent plant cut into four.
6. Planting bits from a rhizome of the daughter sucker cut into four.

3. DESIGN :

(i) R.B.D. (ii) 6. (iii) 4. (iv) Gross : 5 rows of 5 plants each. Net : 3 rows of 3 plants each. (v) 1′ border row alround. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Height, girth and leaf count. (iv) (a) 1951-1952. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) Height :- 41.92 cm. (Sept. 51) ; 229.89 cm. (May, 52). Leaf count :- 6.78 (Sept. 51) ; 9.77 (May, 52).

(ii) N.A.

(iii) Variation in mean height and Leaf count due to different treatments were significant in September 1951 but not in May, 1952.

(iv) Mean height and mean leaf count.

	Mean height in cm.		Mean leaf count	
Treatment	Sept. 51.	May 52	Sept. 51	May 52
1.	53.87	242.17	4.82	9.77
2.	51.56	224.80	5.35	9.62
3.	41.54	224.17	4.77	9.82
4.	35.62	229·75	4.80	9.27
5.	37.43	231.75	4.70	10.05
6.	31.50	227.17	4.25	10.07

Crop :- Banana. Ref :- W.B. 52(65).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'C'.

Object :—To determine whether a rhizome in whole or in bits from fruited and non-fruited plants can provide a more suitable material for propagation.

1. BASAL CONDITIONS :

(i) Remained fallow for a year. Prior to it, rainfed vegetables were grown. (ii) Loamy alluvial soil, (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Belua kanchkela. (v) 8th April, 51. Suckers placed in pits 1′ deep and of 1′ in diameter. (vi) As under treatments. (vii) 15 Srs. of compost+4 oz of N as A/S, applied to every nursery plant. (viii) Interculturing by cultivators and ploughing in between plants (4-5 times during a year). (ix) Nil. (x) Unirrigated. (xi) 58.97″. (xii) N.A.

2. TREATMENTS :

1. Planting the full rhizome from a parent plant.
2. Planting full rhizome of the most developed daughter sucker of the clump.
3. Planting bits from a rhizome of the parent plant cut into two.
4. Planting bits from a rhizome of the daughter sucker cut into two.
5. Planting bits from a rhizome of the parent plant cut into four.
6. Planting bits from a rhizome of the daughter sucker cut into four.

3. DESIGN :

(i) R.B.D. (ii) 6. (iii) 4. (iv) Gross : 5 rows of 5 plants each. Net : 3 rows of 3 plants each. (v) 1′ border row alround. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield per plant, hands and fingers per bunch and size of finger. (iv) (a) 1951—1952. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 20.44 lb/plant.
(ii) N.A.
(iii) Treatments are not significantly different.
(iv) Av. yield of banana in lb/plant.

Treatment	Av. yield.
1.	21.21
2.	19.53
3.	20.68
4.	21.12
5.	20.41
6.	19.66
S.E /Mean	N.A.

Crop :- Banana. Ref :- W.B. 51(34).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'C'.

Object :— To determine optimum age of suckers and best season of planting.

1. BASAL CONDITIONS :

(i) Fallow for a year. Prior to this rainfed vegetables were grown. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Kabali (dwarf). (v) Monsoon planting—19th June 51. Autumn planting—15th Oct.51 in pits of 1′ depth and 1′ diameter. (vi) As under treatments. (vii) 8 oz N/plant (½ organic+½ inorganic). T.C. applied with the onset of monsoon and A/S applied in 4 equal doses starting with the on set of monsoon and thereafter at an interval of one month. (viii) Spading twice. Interculture 4 times by means of bullocks. (ix) Nil. (x) Irrigated. (xi) 58.97″. (xii) Nil.

3. TREATMENTS :

1. Planting peepers *i.e.* sprouts just emerging out of the ground with rhizome of parent plant.
2. Planting two months old sword suckers.
3. Planting three months old sword suckers.
4. Planting four months old sword suckers.

3. DESIGN :

(i) L. Sq. (ii) 4. (iii) 4. (iv) Gross : 6 rows of 6 plant each. net : 4 rows of 4 plants each. (v) 1′ border row alround. (vi) Yes.

4 GENERAL :

(i) Good. (ii) Nil. (iii) Height, girth and leaf count. (iv) (a) 1951 to 1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS .

May-June Planting.

(i) 139.04 cm. (height) ; 11.90 (leaf count).
(ii) N.A. (for height) ; 0.33 (for leaf count).
(iii) Variations in height due to different treatments are not significant and variation in leaf count is significant.
(iv) Mean height and Mean Leaf count.

Treatment	Mean height (cm) May, 52	Mean leaf count May, 52
1.	137.82	11.57
2.	140.47	12.32
3.	136.67	12.12
4.	141·22	11.60
	S.E./mean	=0.17 (leaf count.)

September, October Planting

(i) 99.73 cm (for height) ; 10.92 (for leaf count).
(ii) N.A.
(iii) Variation in height and leaf count due to different treatments are not significant.
(iv) Mean height and Mean Leaf count.

Treatment	Mean height (cm.) May 52	Mean leaf count May 52
1.	94.92	10.77
2.	96.50	10.87
3.	102.17	11.02
4.	105.23	11.00

Crop :- Banana. **Ref :- W.B. 52(60).**

Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'C'.**

Object :— To determine optimum age of suckers and best season of planting.

1. BASAL CONDITIONS :

(i) Fallow for a year ; prior to this rainfed vegetables were grown. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Kabali (dwarf). (v) Monsoon planting 18th June 51 : Autum planting, 15th Oct, 51 ; in pits of 1′ depth and 1′ diameter. (vi) As under treatments. (vii) 8 oz N/plant (½ organic + ½ inorganic) ; T.C. applied at the time of onset of monsoon and A/S applied in 4 equal doses starting from onset of monsoon and thereafter at an interval of one month. (viii) Spading twice. Interculture by bullocks four times. (ix) Nil. (x) Irrigated. (x) 50.37″. (xii) 28.11 52-20.5.53 for monsoon planting ; 25.4.53-15.8.53 for autumn planting.

2. TREATMENTS :

1. Planting peepers *i e.* sprouts just emerging out of the ground with rhizome of parent plant.
2. Planting two months old sword suckers.
3. Planting three months old sword suckers.
4. Planting four months old sword suckers.

3. DESIGN :

(i) L. Sq. (ii) 4. (iii) 4. (iv) Gross : 6 rows of 6 plants each, Net : 4 rows of 4 plants each. (v) 1′ border row alround. (vi) Yes.

GENERAL :

(i) Good. (ii) Spraying of D.D.T. (0.1% wettable) 4 times at an interval of fortnight to avoid incidence of beetle on tender fruit. (iii) Height, girth, leaf count and yield. (iv) (a) 1951—1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

May-June planting.

(i) 28.89 lb./plant.

(ii) N.A.

(iii) Variation in yield due to different treatments is not significant.

(vi) Av. yield of banana in lb./plant.

Treatment	Av. yield
1.	29.71
2.	29.11
3.	29.75
4.	27.00

September—October planting

(i) 22.26 lb /plant.

(ii) 0.42 lb./plant.

(iii) Variation in yield due to different treatments is significant.

(iv) Av. yield of banana in lb./plant.

Treatment	Av. yield
1.	22.10
2.	21.75
3.	23.55
4.	21.65

Crop :- Banana. Ref :- W.B. 53(79).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'C'.

Object :— To determine optimum age of suckers and best season of planting.

1. BASAL CONDITIONS :

(i) Fallow for a year. Prior to this rainfed vegetables were grown. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Kabali (dwarf). (v) Monsoon planting 18th June 51. Autumn planting-15th Oct. 8 pits of depth 1′ and 1′ diameter. (vi) As under treatments. (vii) 8 oz of N/plant ($\frac{1}{2}$ organic+$\frac{1}{2}$ inorganic) ; T.C, applied at the time of onset of monsoon and A/S applied in 4 equal doses starting from onset of monsoon and thereafter at intervals of one month. (viii) Spading twice. (ix) Nil. (x) Irrigated (xi) 63.72″. (xii) N.A.

2. TREATMENTS :

1. Planting peepers *i.e.* sprouts just emerging out of the ground with rhizome of parent plant.
2. Planting two months old sword suckers.
3. Planting three months old sword suckers.
4. Planting four months old sword suckers.

3. DESIGN :

(i) L. Sq. (ii) 4 (iii) 4. (iv) Gross : 6 rows of 6 plants each. Net : 4 rows of 4 plants each. (v) 1′ border row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, girth, leaf count and yield (iv) (a) 1951—1953. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

May-June planting.

(i) 28.25 lb./plant.

(ii) N.A.

(iii) Variation in yield due to different treatments is not significant.

(iv) Av. yield of banana in lb./plant

Treatment	Av. yield
1.	28.47
2.	24.72
3.	29.00
4.	30.80

Sept.—October planting.

(i) 19.77 lb./plant.
(ii) N.A.
(iii) Variation in yield due to different treatments is not significant.
(iv) Av. yield of banana in lb./plant.

Treatment	Av. yield
1.	19.75
2.	19.77
3.	19.75
4.	19.82

Crop :- Banana. **Ref :- W.B. 51(20).**

Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'C'.**

Object :— To devise optimum desuckering practice for perennial plantation.

1. BASAL CONDITIONS :-

(i) N.A. (ii) (a) Sandy loam, alluvial. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa. (v) 18.7.51 ; Spacing 10′×10′ in pits 3′ deep and 3′ diameter. (vi) 3 months. (vii) A/S at 65 lb./ac. top dressed on 11.6.51. G.N.C. at 312 lb./ac. as basal dressing. (viii) Spading, ploughing and desuckering. (ix) Nil. (x) N.A. (xi) 58.97″. (July 51—June 52. (xii) 1.8.52 to 18.1.53 (No harvest in the 1st year).

2. TREATMENTS :

1. All suckers allowed to grow.
2. The first and third suckers allowed to grow.

3. DESIGN :

(i) Paired plot. (ii) 2 ; net plot size 30′×30′. (iii) 6. (iv) 25. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Height, girth, weight of bunch, no. of hands and fingers/bunch, yield of fruit. (iv) (a) 1951 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 9425 lb./ac.
(ii) 1122 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of banana in lb./ac.

Treatment	Av. yield.
1.	8855
2.	9995
S.E./mean	= 458 lb./ac.

Crop :-Banana. **Ref :-W.B. 52(51).**

Site :-State Horti. Res. Stn. Krishnagar. **Type :-'C'.**

Object :—To devise optimum desuckering practice for perennial plantation.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam-alluvial. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa. (v) 18.7.51; Spacing 10′×10′ in pits 3′ deep and 3′ diameter. (vi) 3 months. (vii) A/S at 65 lb./ac. as top dressing and G.N.C. at 312 lb./ac. as basal dressing. (viii) Spading, ploughing and desuckering. (ix) Nil. (x) N.A. (xi) 50.37″ (July 52—June 53). (xii) 1.8.52 to 18.1.53.

2. TREATMENTS :

1. All suckers allowed to grow.
2. The first and third suckers allowed to grow.

3. DESIGN :

(i) Paired plot. (ii) 2 ; net plot size 30′×30′. (iii) 6. (iv) 25. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Weight of bunch, no. of hands and fingers per bunch and yield. (iv) (a) 1951 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 11279 lb./ac.
(ii) 521.4 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of banana in lb./ac.

Treatment	Av. yield
1.	9474
2.	13084
S.E /mean =	212.8 lb./ac.

Crop :-Banana. Ref :-W.B. 53(69).

Site :-State Horti. Res. Stn. Krishnagar. Type :-'C'.

Object :—To devise optimum desuckering practice for perennial plantation.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam-alluvial. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa. (v) 18.7.51, spacing 10′×10′ in pits 3′ deep and 3′ diameter. (vi) 3 months. (vii) A/S top dressed at 65 lb./ac. on 30.9.53, A/S top dressed 130 lb./ac. on 7.12.53, A/S top dressed 130 lb./ac. on 16.5.54, T.C. 208 md./ac. applied on 7.12.53. (viii) Spading, ploughing and desuckering. (ix) Nil. (x) N.A. (xi) 64.72″ (July 53—June 54). (xii) 9.1.54 to 2.5.54.

2. TREATMENTS :

1. All suckers allowed to grow.
2. The first and third suckers allowed to grow.

3. DESIGN :

(i) Paired plot. (ii) 2 ; net plot size 30′×30′. (iii) 6. (iv) 25. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Weight of bunch, no. of hands and fingers per bunch. (iv) (a) 1953—54. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 10202 lb./ac.
(ii) 1355 lb./ac.
(iii) Treatments differ highly significantly.
(iv) Av. yield of banana in lb./ac.

Treatment	Av. yield
1.	7869
2.	12535
S.E./mean =	553 lb./ac.

Crop :-Banana. Ref :-W.B. 50(22).

Site :-State Horti. Res. Stn. Krishnagar. Type :-'C'.

Object :– To determine optimum spacing for dwarf variety.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Kabali. (v) 20th July 1950, suckers placed in pits of 1.5′ depth and 1.5′ diameter. (vi) 2 to 3 months. (vii) Nil. (viii) Ploughing and laddering twice. (ix) Nil. (x) Unirrigated. (xi) 50.51″. (xii) Plants are not in bearing stage.

2. TREATMENTS :

Spacing between plants.

1. 8′×8′.
2. 6′×6′.

3. DESIGN :

(i) Paired plot. (ii) 2. (iii) 6. (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line alround. (vi) Yes.

4. GENERAL :

(i) Below Normal. (ii) N.A. (iii) Height and leaf count. (iv) (a) 1950 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 66.05 cm. (height) ; 12.87 (leaf count).
(ii) N.A.
(iii) Treatments are not significantly different for height and leaf count.
(iv) Mean height and leaf count.

Treatment	Mean height (in cm.)	Mean leaf count
1.	62.30	12.91
2.	69.80	12.83

Crop :- Banana. **Ref :- W.B. 51(31).**

Site :- State Horti. Res Stn. Krishnagar. **Type :- 'C'.**

Object :—To determine optimum spacing for dwarf variety.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Krishnagar. (iii) By suckers (iv) Kabali (v) 20th July, 1950 ; suckers placed in pits of 1.5′ depth and 1.5′ diameter (vi) 2 to 3 months. (vii) 8 oz. N/plant (½ organic+½ inorganic) ; T.C. mixed with soil at the onset of monsoon and A/S divided into 4 parts ; one part applied at the onset of monsoon within the diameter of plant and other three at interval of one month. (viii) Spading twice (ix) Nil (x) Unirrigated (xi) 58.97″. (xii) N.A.

2. TREATMENTS :

Spacing between plants :—

1. 8′×8′.
2. 6′×6′.

3. DESIGN :

(i) Paried plot (ii) 2 (iii) 6 (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line alround (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil. Spraying of D.D.T. (0.1% wettable) four times at an interval of fortnight to avoid incidence of pests and diseases. (iii) Height, girth, leaf count, yield per plant and per plot, number of hands and fingers/bunch. (iv) (a) 1950 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 154.62 lb./plot.
(ii) 39.02 lb./plot.
(iii) Treatment difference is significant.
(iv) Av. yield of banana in lb./plot. (1st crop)

Treatment	Av. yield.
1.	119.10
2.	190.13
S.E./mean	= 15.93 lb./plot.

Crop :- Banana. Ref :- W.B. 52(57).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'C'.

Object :—To determine optimum spacing for dwarf variety.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Krishnagar. (iii) By suckers (iv) Kabali (v) 20th July, 1950 ; suckers placed in pits of 1.5′ depth and 1.5′ diameter (vi) 2 to 3 months. (vii) 8 oz. N/plant (½ organic+½ inorganic) ; organic manure (T.C.) applied soon after onset of monsoon and A/S applied in 4 doses starting from onset of monson and at interval of one month, there after mixed with soil and applied within the diameter of plant. (viii) Spading twice (ix) Nil (x) Irrigation (xi) 50.37″ (xii) N.A.

2. TREATMENTS :

Spacing between plants :—

1. 8′×8′.
2. 6′×6′.

3. DESIGN :

(i) Paired plot (ii) 2 (iii) 6 (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line alround. (vi) Yes

4. GENERAL :

(i) Good (ii) Nil, spraying of D.D.T. (0.1% wettable) at an interval of fortnight to avoid incidence of beetle. (iii) Height, girth and yield/plot. (iv) (a) 1950 to 1954 (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 333.14 lb./plot.
(ii) 28.98 lb./plot.
(iii) Treatments differ significantly.
(iv) Av. yield of banana in lb./plot.

Treatment	Av. yield.
1.	230.31
2.	435.97

S.E./mean = 11.83 lb./plot.

———

Crop :- Banana. Ref :- W.B. 53(76).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'C'.

Object :—To determine optimum spacing for dwarf variety.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers (iv) Kabali (v) 20th July, 1950 ; suckers placed in pits of 1.5′ depth and 1.5′ diameter. (vi) 2 to 3 months. (vii) 8 oz. N/plant (½ organic+½ inorganic) ; T.C. mixed with soil applied at the onset of monsoon. A/S mixed with soil and applied in 4 equal doses starting with the onset of monsoon and continuing thereafter at an interval of a month. (viii) Spading twice (ix) Nil (x) Irrigated (xi) 64.72″ (xii) N.A.

2. TREATMENTS :

Spacing between plants :—

1. 8′×8′.
2. 6′×6′.

3. DESIGN :

(i) Paired plot (ii) 2 (iii) 6 (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line alround. (vi) Yes.

4. GENERAL :

(i) Good (ii) Spraying D.D.T. (0.1% wettable) 4 times at an interval of fortnight to avoid incidence of beetle. (iii) Height, girth and yield/plot. (iv) (a) 1950 to 1954 (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 231.29 lb./plot.

(ii) 15.61 lb./plot.

(iii) Treatments are significantly different.

(iv) Av. yield of banana in lb./plot.

Treatment	Av. yield.
1.	164.25
2.	298.33
S.E./mean	= 6.37 lb./plot.

Crop :- Banana. **Ref :- W.B. 50(23).**

Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'CV'.**

Object :—To determine optimum spacing for tall variety.

1. BASAL CONDITIONS :

(i) Fallow for a year. Prior to this, there were rainfed vegetables. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa and Martaman. (v) 20th July 1950 ; in pits 1.5′ in diameter and 1.5′ in depth. (vi) 2.5 months old. (vii) 15 srs. of compost and 4 oz. of N as A/S per plant. Mixed with soil and applied 4-5 times in instalments within the diameter of the plant. (viii) Spading, ploughing, desuckering and weeding. (ix) Nil. (x) Irrigated. (xi) 50.51″. (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties *viz.* Martaman and Champa.

(2) 2 spacings *viz.* 12′×12′ and 9′×9′.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) 4. (iii) 4 (iv) Net area 36′×36′ ; 16 for 9′×9′ spacing and 9 for 12′×12′ spacing. (v) Single border row alround. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Height, girth and leaf count. (iv) (a) 1950 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 152.96 cm. (height) ; 10.24 (leaf count).

(ii) N.A.

(iii) Treatments are not significantly different.

(iv) Mean height and mean leaf count.

Mean Height (in cm.)

Variety	Spacing 12′×12′	9′×9′	Mean
Martaman	135.10	148.81	141.96
Champa	166.62	161.31	163.97
Mean	150.86	155.06	152.96

Mean leaf count

Variety	Spacing 12′×12′	9′×9′	Mean
Martaman	10.10	10.50	10.30
Champa	10.25	10.10	10.18
Mean	10.18	10.30	10.24

Crop :- Banana. Ref :- W.B. 51(33).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'CV'.

Object :—To determine optimum spacing for tall variety.

1. BASAL CONDITIONS .

(i) Fallow for a year. Prior to that, rainfed vegetables grown. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa and Martaman. (v) 20th July, 1950 ; in pits 1.5′ in depth and 1.5′ in diameter. (vi) 2.5 months old. (vii) 8 oz N/plant. ($\frac{1}{2}$ organic+$\frac{1}{2}$ inorganic). T.C. applied at the time of onset of monsoon and A/S applied in 4 equal doses starting from onset of monsoon and thereafter at monthly interval. (viii) 5.6 interculturings by a cultivator. (ix) Nil. (x) Irrigated. (xi) 58.97″. (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties *viz.* Martaman and Champa.

(2) 2 spacings *viz.* 12′×12′ and 9′×9′.

3. DESIGN :

(i) R.B.D. (Fact.) (ii) 4. (iii) 4. (iv) Net area 36′×36′ ; 16 for 9′×9′ spacing and 9 for 12′×12′ spacing. (v) Single border row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, girth, leaf count and yield (iv) (a) 1950 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 233.30 lb./plot.

(ii) 271. 4 lb./plot.

(iii) Main effects of spacing, variety and their interaction are significant.

(iv) Av. yield of banana in lb./plot.

Variety	Spacing 12′×12′	9′×9′	Mean
Martaman	175.75	355.20	265.48
Champa	145.87	256.37	201.12
Mean	160.81	305.79	233.30

S.E. of marginal mean of variety or spacing = 9.60 lb./plot.

S.E. of body of table =13.57 lb./plot.

Crop :- Banana. Ref :- W.B. 52(59).

Site :- State Horti. Res. Stn. Krishnagar. Type :- 'CV'.

Object :—To determine optimum spacing for tall variety.

1. BASAL CONDITIONS:

(i) Fallow for a year. Prior to this rainfed vegetables were grown. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) Champa and Martaman. (v) 20th July, 1950 in pits 1.5′ in depth and 1.5′ diameter. (vi) 2.5 months old. (vii) 8 oz N/plant. ($\frac{1}{2}$ organic+$\frac{1}{2}$ inorganic) ; T.C. applied at the onset of monsoon and A/S applied in 4 equal doses starting with the onset of monsoon and thereafter on monthly intervals. (viii) 5-6 intercultural operations by cultivator. (ix) Nil. (x) Irrigated. (xi) 50.37″. (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties *viz.* Martaman and Champa.

(2) 2 spacings *viz*- 12′×12′ and 9′×9′.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) 4. (iii) 4. (iv) Net area 36′×36′ ; 16 for 9′×9′ spacing and 9 for 12′×12′ spacing. (v) Single border row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying of D.D.T. (0.1% wettable) 4 times at an interval of fortnight to avoid incidence of beetle. (iii) Height, girth, leaf count and yield. (iv) (a) 1950 to 1954. (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 372.02 lb./plot.

(ii) 27.36 lb./plot.

(iii) Main effect of spacing is highly significant and main effect of variety is significant.

(iv) Av. yield of banana in lb./plot.

Variety	Spacing 12′×12′	9′×9′	Mean
Martaman	247.00	452.68	349.84
Champa	290.65	497.77	394.21
Mean	268.82	475.22	372.02

S.E. of marginal mean of variety or spacing = 9.67 lb./plot.

S.E. of body of table = 13.68 lb./plot.

Crop :- Banana. **Ref :- W.B. 53 (78).**

Site :- State Horti. Res. Stn. Krishnagar. **Type :- 'CV'.**

Object :—To determine optimum spacing for tall variety.

1. BASAL CONDITIONS :

(i) Fallow for a year. Prior to this rainfed vegatables were grown. (ii) (a) Sandy loam (b) Refer soil analysis, Krishnagar. (iii) By suckers (iv) Champa and Martaman (v) 20th July, 1950 in pits 1.5′ in depth and 1.5′ diameter. (vi) 2.5 months old. (vii) 8 oz. N/ plant ($\frac{1}{2}$ organic+$\frac{1}{2}$ inorganic) ; T.C. applied at the onset of monsoon and A/S applied in 4 equal doses starting with the onset of monsoon and thereafter on monthly interval. (viii) 5—6 intercultural operations by cultivator. (ix) Nil (x) Irrigated (xi) 64.72″ (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties viz. Martaman and Champa.

(2) 2 spacings viz. 12′ × 12′ and 9′ × 9′.

3. DESIGN :

(i) R.B.D. (Fact.). (ii) 4 (iii) 4 (iv) Net area 36′ × 36′ ; 16 for 9′ × 6′ spacing and 9 for 12′ × 12′ spacing. (v) Single border row alround. (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil (iii) Height, girth, leaf count and yield/plot (iv) (a) 1950 to 1954 (b) N.A. (v) Nil. (vi) Nil.

5. RESULTS :

(i) 306.09 lb./plot.

(ii) 34.02 lb./plot.

(iii) Main effect of spacing alone is highly significant.

(iv) Av. yield of banana in lb./plot.

Variety	Spacing 12′×12′	9′×9′	Mean
Martaman	242.50	398.25	320.37
Champa	226.50	357.12	291.81
Mean	234.50	377.68	306.09

S.E. of marginal mean of variety or spacing =12.03 lb./plot.

S.E. of body of table =17.01 lb./plot.