INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

NATIONAL INDEX
OF
AGRICULTURAL
FIELD
EXPERIMENTS

VOL. 14 PART 1

WEST BENGAL

1948—53

PUBLISHED BY
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI
Price: Rs. 7.75
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 up to 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 reinforce 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.
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 1962-53.
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 Organisation, 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 statistical 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

NEW DELHI,
August 16, 1962.

(II)
# REGIONAL SUPERVISORS FOR THE NATIONAL INDEX OF FIELD EXPERIMENTS

<table>
<thead>
<tr>
<th>Region and headquarters</th>
<th>Regional Supervisors:</th>
</tr>
</thead>
</table>
| 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. KHABRUDIN KHAN, 
Joint Director of Agriculture (Research), Andhra Pradesh. 
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. BAROONIA, 
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, 
Principal, Agriculture College, Kerala. |
| 5. Madhya Pradesh (Gwalior) | DR. T.R. MEHTA, 
Principal, Agriculture College, Gwalior. |
| 6. Madras (Coimbatore) | SHRI C.R. SESHADRI, 
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. Maharastrah & Gujarat (Former Bombay Statistician, Department of Agriculture, State) (Poona) | SHRI D.S. RANGA RAO, 
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.*
<table>
<thead>
<tr>
<th></th>
<th>State/Region</th>
<th>Name</th>
<th>Position and Details</th>
</tr>
</thead>
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<tr>
<td>8</td>
<td>MYSORE (Bangalore)</td>
<td>Shri A. Anant Padmanabha Rau</td>
<td>State Statistician, Mysore State.</td>
</tr>
<tr>
<td>9</td>
<td>ORISSA (Bhubaneshwar)</td>
<td>Dr. U.N. Mohanty</td>
<td>Dy. Director of Agriculture (H.Q.), Orissa.</td>
</tr>
<tr>
<td>10</td>
<td>PUNJAB, JAMMU &amp; KASHMIR AND HIMACHAL PRADSH (CHANDIGARH)</td>
<td>Shri P.S. Sahota</td>
<td>Statistician, Department of Agriculture, Punjab.</td>
</tr>
<tr>
<td>11</td>
<td>RAJASTHAN (Jaipur)</td>
<td>Shri H.C. Kothari</td>
<td>Statistician, Department of Agriculture, Rajasthan.</td>
</tr>
<tr>
<td>12</td>
<td>UTTAR PRADESH (LUCKNOW)</td>
<td>Dr. K. Kishen</td>
<td>Chief Statistician to Govt. of U.P. Department of Agriculture, U.P.</td>
</tr>
<tr>
<td>13</td>
<td>WEST BENGAL (CALCUTTA)</td>
<td>Shri S.N. Mukherjee</td>
<td>Statistical Officer, Directorate of Agriculture, West Bengal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr. S. Basu</td>
<td>Scientific Officer, Directorate of Agriculture, West Bengal.</td>
</tr>
</tbody>
</table>
ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS’ FIELDS

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

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

Abbreviations adopted for States are as follows :-

| A.P. | Andhra Pradesh | Mn. | Manipur |
| As. | Assam | Mh. | Maharashtra |
| Bh. | Bihar | Ms. | Mysore |
| Di. | 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—Rotationa; 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 :-

<p>| ac. | acre. |
| acme. | acre. |
| A/N | Ammonium Nitrate. |
| A/S | Ammonium Sulphate. |
| B.D. | Basal Dressing. |
| B.M. | Bone Meal. |
| C.L. | Cart load. |
| C.M. | Cattle Manure. |
| C/N | Chilean Nitrate. |
| C/S | Copper Sulphate. |
| F.M. | Fish Meal or Fish Manure. |
| F.W.C. | Farm Waste Compost. |</p>
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.Y.M.</td>
<td>Farm Yard Manure</td>
</tr>
<tr>
<td>G.M.</td>
<td>Green Manure</td>
</tr>
<tr>
<td>G.N.C.</td>
<td>Groundnut cake</td>
</tr>
<tr>
<td>K.</td>
<td>Potash</td>
</tr>
<tr>
<td>lb.</td>
<td>Pounds</td>
</tr>
<tr>
<td>M.C.</td>
<td>Municipal Compost</td>
</tr>
<tr>
<td>Mur. Pot.</td>
<td>Muriate of Potash</td>
</tr>
<tr>
<td>N.</td>
<td>Nitrogen</td>
</tr>
<tr>
<td>Nitro phos</td>
<td>Nitro phosphate</td>
</tr>
<tr>
<td>P.</td>
<td>Phosphate</td>
</tr>
<tr>
<td>Pot. Sul.</td>
<td>Potassium Sulphate</td>
</tr>
<tr>
<td>Super</td>
<td>Super Phosphate</td>
</tr>
<tr>
<td>T.C.</td>
<td>Town compost</td>
</tr>
<tr>
<td>Zn. Sul.</td>
<td>Zinc Sulphate</td>
</tr>
</tbody>
</table>

**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 seedlings 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; Conf.d.—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; Conf.d.—Confounded. (other designs and modifications of the above indicated in full).
   (ii) (a) No. of plots per block. (b) Block dimensions (iii) No. of replications. (iv) No. of trees/plot. (v) Border or guard rows kept. (vi) Are treatments randomised.

C. For experiments on cultivators' fields:
   (i) Method of selection of experimental sites. (ii) No. and distribution of experiments. (iii) Plot size. (a) Gross. (b) Net. (iv) Whether treatments are randomised.
GENERAL

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

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

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

C. For experiments on cultivators' fields:
   (i) Crop condition during growth. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places, names of places along with reference. (vi) Abnormal occurrences, like heavy rains; frost; storm etc., if any. (vii) Any other important information.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of Crop</th>
<th>Botanical name</th>
<th>Assamese</th>
<th>Bengali</th>
<th>Oriya</th>
<th>Telugu</th>
<th>Tamil</th>
<th>Malayalam</th>
<th>Kannada</th>
<th>Marathi</th>
<th>Gujarati</th>
<th>Hindi</th>
<th>Punjab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paddy</td>
<td>Oryza sativa L.</td>
<td>Dhan</td>
<td>Dhan</td>
<td>Dhano</td>
<td>Vadalu, Boysamu</td>
<td>Nel</td>
<td>Nellu</td>
<td>Bhatta</td>
<td>Bhat</td>
<td>Danger</td>
<td>Dhan</td>
<td>Chaul</td>
</tr>
<tr>
<td>2.</td>
<td>Wheat</td>
<td>Triticum Sativum</td>
<td>Gaum; Ghehu</td>
<td>Gam</td>
<td>Gaham</td>
<td>Godumalu</td>
<td>Kohthumai</td>
<td>Godhu</td>
<td>Gahu</td>
<td>Gahu</td>
<td>Gehon</td>
<td>Kanak</td>
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<tr>
<td>4.</td>
<td>Maize</td>
<td>Zea Mays L.</td>
<td>Gom dhan</td>
<td>Bhutta</td>
<td>Mucua</td>
<td>Mokka jonna</td>
<td>Cholam</td>
<td>Cholam</td>
<td>Mnsukina jola</td>
<td>Makkai</td>
<td>Makka</td>
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<tr>
<td>5.</td>
<td>Arhar</td>
<td>Cajanus cajan</td>
<td>Arhar</td>
<td>Arhar</td>
<td>Harad</td>
<td>Kanulu</td>
<td>Thuvaram Payaru</td>
<td>Thogari</td>
<td>Tur</td>
<td>—</td>
<td>Arhar</td>
<td>Harhar</td>
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<tr>
<td>6.</td>
<td>Gram</td>
<td>Cicer Arietum L.</td>
<td>Butmah</td>
<td>Chola</td>
<td>Boot</td>
<td>Sanagalu</td>
<td>Kadalai</td>
<td>Kadalai</td>
<td>Kadalae</td>
<td>Harbaras</td>
<td>Chana</td>
<td>Chana</td>
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<tr>
<td>7.</td>
<td>Lentil</td>
<td>Lens Esculentia Moench</td>
<td>Masurmah</td>
<td>Masuri</td>
<td>Masur</td>
<td>Chirasenaga</td>
<td>Masur</td>
<td>Masur Paruppu</td>
<td>—</td>
<td>Masooru bele</td>
<td>Masur</td>
<td>Masur</td>
<td>Massar</td>
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<tr>
<td>8.</td>
<td>Potato</td>
<td>Solanum Tuberosum</td>
<td>Alogubiti</td>
<td>Alog</td>
<td>Bilati</td>
<td>Bangala dumphu; Uragudda</td>
<td>Urala kizangu</td>
<td>Alu gedde</td>
<td>—</td>
<td>Batata</td>
<td>Aloo</td>
<td>Batata</td>
<td>Alu</td>
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<tr>
<td>9.</td>
<td>Tomato</td>
<td>Lycopersicum Esculentum Mill.</td>
<td>Bilahi</td>
<td>Bilati</td>
<td>Bilati</td>
<td>Tomato; Rama mulaka</td>
<td>Thakkali</td>
<td>Thakkali</td>
<td>Tomato</td>
<td>Welwangi; Tambuti</td>
<td>Vilti; wagin; Tama kari</td>
<td>Tama tar</td>
<td>Tama tar</td>
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<td>10.</td>
<td>Sugarcane</td>
<td>Saccharum officinarum L.</td>
<td>Kuhiair</td>
<td>Akh</td>
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<td>12.</td>
<td>Roselle</td>
<td>Hibiscus Sabdariffa L.</td>
<td>Tenga Mora</td>
<td>Khata</td>
<td>Kaunria</td>
<td>Erragogi</td>
<td>Sivappu Kashmakai</td>
<td>—</td>
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<tr>
<td>13.</td>
<td>Groundnut</td>
<td>Arachis Hypogaea Lt</td>
<td>Chena</td>
<td>Chee</td>
<td>China</td>
<td>Nelas-hangka</td>
<td>Nikka-ada</td>
<td>Kadei kayi</td>
<td>Bhuimug</td>
<td>Magafali</td>
<td>Mungphali</td>
<td>Als</td>
<td>—</td>
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<td>14.</td>
<td>Linseed</td>
<td>Linum usitellosum L.</td>
<td>Til</td>
<td>Til</td>
<td>Til</td>
<td>Navvulu</td>
<td>Ellu</td>
<td>Yellu</td>
<td>—</td>
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<tr>
<td>15.</td>
<td>Til</td>
<td>Sesamum indicum L.</td>
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</tr>
<tr>
<td>16.</td>
<td>Banana</td>
<td>Musa Pusadisticha L.</td>
<td>Kol</td>
<td>Paka-kala</td>
<td>Kadalai</td>
<td>Arati</td>
<td>Vazhai pazam</td>
<td>Vazha</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
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WEST BENGAL STATE

1. GENERAL

The State of West Bengal is situated between 21°31' and 27°14' north latitudes, 86°35' and 90°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 Maida 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 westward into the Bhagirathi. The second natural division, Himalayan West Bengal is dominated by the mighty Himalayan range in the north, from which all rivers take their rise and flow north to south with an easterly slant. This review of the river system serves as a background 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 deficient 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 'heels'. 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>
<thead>
<tr>
<th>Divisions</th>
<th>June to September</th>
<th>October to December</th>
<th>January to February</th>
<th>March to May</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Himalayan W.B.</td>
<td>106.4</td>
<td>6.9</td>
<td>0.4</td>
<td>17.2</td>
<td>130.9</td>
</tr>
<tr>
<td>W.B. Plain</td>
<td>43.6</td>
<td>4.5</td>
<td>0.5</td>
<td>6.9</td>
<td>55.5</td>
</tr>
<tr>
<td>State (simple average)</td>
<td>75.0</td>
<td>5.7</td>
<td>0.45</td>
<td>12.0</td>
<td></td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Source</th>
<th>1956-57 (Excluding transferred territories from Bihar)</th>
<th>1958-59 (Including transferred territories from Bihar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Canals</td>
<td>178 (000 acres)</td>
<td>966.0 (000 acres)</td>
</tr>
<tr>
<td>Private Canals</td>
<td>721</td>
<td>955.8</td>
</tr>
<tr>
<td>Tanks</td>
<td>—</td>
<td>909.5</td>
</tr>
<tr>
<td>Wells</td>
<td>—</td>
<td>39.1</td>
</tr>
<tr>
<td>Other sources</td>
<td>634</td>
<td>468.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,533</td>
<td>3,338.4</td>
</tr>
</tbody>
</table>

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 1.0%, 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.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area (000 acres)</th>
<th>Production (000 tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rice</td>
<td>10,060</td>
<td>10,551.4</td>
</tr>
<tr>
<td>2. Wheat</td>
<td>209</td>
<td>87.0</td>
</tr>
<tr>
<td>3. Potato</td>
<td>118</td>
<td>122.6</td>
</tr>
<tr>
<td>4. Pulses</td>
<td>1426</td>
<td>1829.9</td>
</tr>
<tr>
<td>5. Jute</td>
<td>720</td>
<td>875.3</td>
</tr>
</tbody>
</table>

@ 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 largest 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>
<thead>
<tr>
<th>Crop/Type</th>
<th>M</th>
<th>MV</th>
<th>C</th>
<th>CM</th>
<th>CV</th>
<th>D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>122</td>
<td>2</td>
<td>1</td>
<td>...</td>
<td>3</td>
<td>4</td>
<td>132</td>
</tr>
<tr>
<td>Wheat</td>
<td>3</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>3</td>
</tr>
<tr>
<td>Jowar</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Maize</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Pulses</td>
<td>...</td>
<td>5</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>16</td>
</tr>
<tr>
<td>Vegetables</td>
<td>7</td>
<td>...</td>
<td>1</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>16</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>28</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>28</td>
</tr>
<tr>
<td>Jute</td>
<td>1</td>
<td>...</td>
<td>7</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>8</td>
</tr>
<tr>
<td>Roselle</td>
<td>...</td>
<td>3</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>3</td>
</tr>
<tr>
<td>Mesta</td>
<td>...</td>
<td>2</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>...</td>
<td>11</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>11</td>
</tr>
<tr>
<td>Banana</td>
<td>3</td>
<td>...</td>
<td>13</td>
<td>...</td>
<td>4</td>
<td>...</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>2</td>
<td>43</td>
<td>1</td>
<td>7</td>
<td>21</td>
<td>240</td>
</tr>
</tbody>
</table>

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, cultural-cum-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.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Experimental Station</th>
<th>District in which it is located</th>
<th>Year of establishment</th>
<th>Major crops</th>
<th>Soil Type</th>
<th>Normal Rainfall (in inches)</th>
<th>Irrigation facilities</th>
<th>No. of experiments</th>
<th>General description of the experimental station</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State Agricultural Farm, Bankura</td>
<td>3 miles from Bankura Rly. Stn.</td>
<td>1922</td>
<td>Paddy</td>
<td>Laterite</td>
<td>June 10.53</td>
<td>Tanks</td>
<td>Paddy—8</td>
<td>High and terrace from 3” to 1.6”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gravel</td>
<td>July 12.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chemical Analysis</td>
<td>Aug. 12.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mechanical Analysis</td>
<td>Sept. 7.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jonathan N.A.</td>
<td>Oct. 3.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>November N.A.</td>
<td>Dec. 0.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>January N.A.</td>
<td>Jan. 0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>February N.A.</td>
<td>Feb. 1.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>March N.A.</td>
<td>Mar. 1.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>April N.A.</td>
<td>April 1.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>May N.A.</td>
<td>May 4.07</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total N.A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Agri. Farm, Belurmath</td>
<td>N.A.</td>
<td></td>
<td>Paddy</td>
<td>New alluvial soils N.A.</td>
<td>About 45”</td>
<td>N.A.</td>
<td>Paddy—1</td>
<td>N.A.</td>
</tr>
<tr>
<td>3</td>
<td>State Agricultural Farm, Berhampore</td>
<td>Murshidabad 3 miles from Berhampore Rly. Stn.</td>
<td>1921</td>
<td>Paddy</td>
<td>Sandy loam</td>
<td>Sandy loam</td>
<td>7.88</td>
<td>‘Bhil’</td>
<td>Paddy—8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(i) Chem. Anal.</td>
<td>June 7.88</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pH 6.2—8.4</td>
<td>July 9.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N 0.02—0.04</td>
<td>Aug. 12.34</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P₂O₅ 0.04—0.28</td>
<td>Sept. 8.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Org. matter</td>
<td>November N.A.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.32—0.58</td>
<td>December N.A.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paddy 8</td>
<td>Total—28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Experimental Station, Bhanjang</td>
<td>Darjeeling, 4 miles from Ghum Rly. Station</td>
<td>Hilly</td>
<td>1957</td>
<td>Potato</td>
<td>Depth 3' to 8'</td>
<td>June</td>
<td>21.07</td>
<td>N.A.</td>
<td>Nil</td>
<td>Elevation ranges from 7200 to 6800 feet from sea level. Situated on the western back of a hillock.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>State Seed Multiplication Farm, Burdwan</td>
<td>Burdwan, 3 miles from Burdwan Rly. Station</td>
<td>Laterite</td>
<td>1947—48</td>
<td>Paddy</td>
<td>Soils—N.A.</td>
<td>June</td>
<td>7.75</td>
<td>N.A.</td>
<td>Paddy</td>
<td>—18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td>6</td>
<td>Agricultural Farm, Canning</td>
<td>N.A.</td>
<td>Saline</td>
<td>N.A.</td>
<td>Paddy</td>
<td>Saline</td>
<td>N.A.</td>
<td>Nil</td>
<td>Paddy—3</td>
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<td>7</td>
<td>Banana Research Station</td>
<td>Hooghly Riverine Zone.</td>
<td>1952-53</td>
<td>Banana</td>
<td>New Alluvium</td>
<td>June</td>
<td>9.42</td>
<td>Tube well and Tank</td>
<td>Banana—1</td>
<td>The area falls under low land paddy growing zone.</td>
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### Soil analysis
- **Chem. analysis**
  - \( N_2 = 0.097 \)
  - \( P_2O_5 = 0.123 \)
  - \( K_2O = 0.932 \)
  - \( pH = 7.1 \)
- **Mech. analysis N.A.**

### Chemical analysis

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<tr>
<th>Month</th>
<th>Fe_{2}O_{3}</th>
<th>Al_{2}O_{3}</th>
<th>CaO</th>
<th>MgO</th>
<th>P_{2}O_{5}</th>
<th>K_{2}O</th>
<th>C</th>
<th>N</th>
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<tbody>
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<td>June</td>
<td>2.88—4.8</td>
<td>4.94—7.77</td>
<td>0.332—0.392</td>
<td>0.014—0.24</td>
<td>0.045—0.049</td>
<td>0.200—0.085</td>
<td>0.75—0.48</td>
<td>0.08—0.066</td>
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<tr>
<td>July</td>
<td>10.39</td>
<td>9.21</td>
<td>4.71</td>
<td>1.15</td>
<td>1.46</td>
<td>0.14</td>
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<td>Aug.</td>
<td>8.74</td>
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<td>8.71</td>
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### Physical analysis

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<th>Clay</th>
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<th>Course sand</th>
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<td>55.75</td>
<td>6.53</td>
<td>0.29</td>
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<td>Aug.</td>
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<tr>
<td>Dec.</td>
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Total: 53.44
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<tr>
<th>State Agricultural Farm</th>
<th>Hoogly, Gangetic old alluvial flat</th>
<th>1908</th>
<th>Paddy</th>
<th>Soil—Clayey;</th>
<th>June</th>
<th>10.56</th>
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<th>—56</th>
<th>Low lying area.</th>
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<td>Depth 0&quot;—12&quot;.</td>
<td>July</td>
<td>11.28</td>
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<td>Chinsurah Rly. Stn.</td>
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<td>Colour—Blackish</td>
<td>Aug.</td>
<td>11.64</td>
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<td>Roselle — 3</td>
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<td>Chem. Analysis</td>
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<td>pH 6.80</td>
<td>Nov.</td>
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<td>Total —68</td>
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<td>N(_2) 0.08%</td>
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<td>P(_2)O(_5) 0.09%</td>
<td>Jan.</td>
<td>0.38</td>
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<td>K(_2)O 0.86%</td>
<td>Feb.</td>
<td>1.20</td>
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<td>Al(_2)O(_3) 13.68%</td>
<td>March</td>
<td>1.58</td>
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<td>Carbon 0.76%</td>
<td>April</td>
<td>2.46</td>
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<td>Sesqui 21.45%</td>
<td>May</td>
<td>5.85</td>
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<td>58.29</td>
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### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

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<tbody>
<tr>
<td>9</td>
<td>State Agricultural Farm</td>
<td>Cooch Bihar, by the side of Cooch Bihar Rly. Station.</td>
<td>Buxar—riverine</td>
<td>1937</td>
<td>Potato and Paddy</td>
<td>Soil-Sand loam.</td>
<td>June</td>
<td>30.38</td>
<td>Nil</td>
<td>Potato—3</td>
<td>The land of the farm is uneven, slope is East to West in the middle.</td>
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<td>Agricultural Farm</td>
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<td>N.A.</td>
<td>N.A.</td>
<td>Paddy</td>
<td>(i) Loam</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>Paddy—1</td>
<td>N.A.</td>
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- **Soil-Sand loam.**
  - Depth: 4'-6'
  - Colour: Grey
  - Structure: Loose
  - Analysis: N.A.
  - Mech. analysis: N.A.

- **Chem. analysis:**
  - N: 0.12%
  - Total P₂O₅: 0.0039%
  - Av. P₂O₅: 0.0054%
  - pH: 7.0

- **Mech. analysis:** N.A.
### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

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<td>State Agri-cultural Farm Kalimpong</td>
<td>Darjeeling</td>
<td>Eastern</td>
<td>Sandy, Clay loam</td>
<td>1907</td>
<td>Maize</td>
<td>June</td>
<td>19.95</td>
<td>N.A</td>
<td>Nil</td>
<td>Gently sloping with terraces</td>
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<td></td>
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<td>43 miles</td>
<td>Himalayan tract</td>
<td>Paddy vegetables</td>
<td>July</td>
<td>Sandy, Clay loam</td>
<td>July</td>
<td>27.43</td>
<td>Aug</td>
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<td>Depth 1'-4'</td>
<td>Aug</td>
<td>Paddy vegetables</td>
<td>Aug</td>
<td>19.50</td>
<td>Sept</td>
<td>13.16</td>
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<td>13.16</td>
<td>Oct</td>
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<td>March</td>
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<td>1934</td>
<td>Banana</td>
<td>June</td>
<td>9.09</td>
<td>Well (worked by power)</td>
<td>Banana—19</td>
<td>Flat and Plain</td>
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<td>April</td>
<td>Sandy, Clay loam</td>
<td>April</td>
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<td>May</td>
<td>5.04</td>
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<td>Total</td>
<td>Sandy, Clay loam</td>
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### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

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<tr>
<th>No.</th>
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<th>Location</th>
<th>Year</th>
<th>Crops</th>
<th>Depth</th>
<th>Colour</th>
<th>Structure</th>
<th>pH</th>
<th>Mechan. Analysis</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
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<tbody>
<tr>
<td>13</td>
<td>State Agricultural Farm Malda</td>
<td>Malda; about 3 miles from Malda Rly. Stn.</td>
<td>1925-26</td>
<td>Paddy &amp; Jute</td>
<td>Loamy Depth N.A.</td>
<td>Colour-Grey to Ash grey</td>
<td>Structure-Granular</td>
<td>N.A.</td>
<td>N.A.</td>
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<td>4.34</td>
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<td>14</td>
<td>State Agricultural Farm (Mayanaguri)</td>
<td>Mayanaguri Road Rly. Station.</td>
<td>1926</td>
<td>Paddy &amp; Jute</td>
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<td>Lo in organic content,</td>
<td>Av. pH-5.6</td>
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<td></td>
<td>Phosphorous, potash and lime.</td>
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<td>36.32</td>
<td>47.10</td>
<td>36.02</td>
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<td>5.62</td>
<td>0.12</td>
<td>0.14</td>
<td>1.03</td>
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<td>0.88</td>
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In general the plots are gradually sloping towards both East and South.
### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

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<th>2</th>
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<tr>
<td></td>
<td></td>
<td>3 miles from zone.</td>
<td></td>
<td>Potato</td>
<td>Colour-Red Structure-Cruime</td>
<td>July 11.60</td>
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<td>Potato —4</td>
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<td>Midnapore</td>
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<td></td>
<td></td>
<td>Chem. Analysis</td>
<td>Aug. 11.41</td>
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<td>Rly. Station.</td>
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<td>PH 6.1 slightly acidic</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Lesson 2.75% ignition</td>
<td>Oct. 5.23</td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>Fe₂O₃ 1.95%</td>
<td>Nov. 1.07</td>
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<td></td>
<td>Al₂O₃ 3.99%</td>
<td>Dec. 0.14</td>
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<td>CaO 0.22%</td>
<td>Jan. 0.33</td>
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<td>MgO 0.20%</td>
<td>Feb. 1.12</td>
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<td>P₂O₅ 0.05%</td>
<td>March 1.64</td>
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<td>K₂O 0.27%</td>
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<td>N 0.025%</td>
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<td>S. Cane— 8</td>
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<td>Chandanpur Farm, Plassey</td>
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<td>S. Cane— 8</td>
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<td>——</td>
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<td>Agri. Farm, Srinagar 24-Paragana Sandy loam N.A.</td>
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<td>—</td>
<td>——</td>
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<td>——</td>
<td>——</td>
<td>N.A. Nil. Sugarcane- 2</td>
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### STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

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<th>No.</th>
<th>State</th>
<th>Name</th>
<th>Location</th>
<th>Year</th>
<th>Type</th>
<th>Type</th>
<th>Depth</th>
<th>Colour Stran</th>
<th>Structure</th>
<th>Granular</th>
<th>Chem. Analysis</th>
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<tr>
<td>18</td>
<td></td>
<td>Agricultural Farm</td>
<td>Sriniketan Birbhum, Heavily demud</td>
<td>1924</td>
<td>Paddy</td>
<td>Old alluvium</td>
<td>3'</td>
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<td></td>
<td></td>
<td></td>
<td>ed Alluvial Tract.</td>
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<td>19</td>
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<td>Research cum-Demonstr</td>
<td>Birbhum, 2 miles from Suri Rly. Sui</td>
<td>1932</td>
<td>Paddy</td>
<td>Laterite</td>
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Crop : Paddy (Kharif).
Site : State Agri Farm, Bankura.
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) 30.5.48/12.8.48 (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 hoeing 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 11.8.48.
      $T_2$—At the time of weeding & hoeing 12.9.48.
      $T_3$—At the time of Tiller 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 1919. (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.

<table>
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<tr>
<th></th>
<th>$T_1$</th>
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<td>$M_1$</td>
<td>5267</td>
<td>5927</td>
<td>4894</td>
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<td>$M_2$</td>
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<td>5470</td>
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<tr>
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<td>5263</td>
<td>5698</td>
<td>4708</td>
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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).
Site : State Agri Farm, Bankura.
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 245. (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:
  T1 = At the time of puddling just before transplanting.
  T2 = At the time of weeding and hoeing operation.
  T3 = At the time of thorn formation (flowering).
(2) 2 manures:
  M1 = Mustard cake at 40 lb./ac. of N.
  M2 = A/S at 40 lb./ac. of N.

3. DESIGN:
(i) 3 x 2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 18.75' x 14.33'. (b) 18' x 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.

<table>
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<tr>
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<th>T3</th>
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<td>M1</td>
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<td>3161</td>
<td>3408</td>
<td>3239</td>
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<td>M2</td>
<td>3058</td>
<td>3124</td>
<td>3185</td>
<td>3122</td>
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<td>Mean</td>
<td>3102</td>
<td>3143</td>
<td>3296</td>
<td>3180</td>
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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
Site :- State Agri. Farm, Bankura
Ref :- W.B. 49(2)
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' x 9'. (e) 2—3.

2. TREATMENTS:
All combinations (1) & (2)
(1) 3 times of application of manure:
  T1 = At the time of puddling.
  T2 = At the time of weeding and hoeing.
  T3 = At the time of thorn formation ie. about a fortnight before the emergence of inflorescence.
(2) 2 manures:
  M1 = Mustard cake at 40 lb./ac. of N.
  M2 = A/S at 40 lb./ac. of N.

3. DESIGN:
(i) 3 x 2 fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 18.75' x 14.25'. (b) 18' x 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.

<table>
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<tr>
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<td>1528</td>
<td>1602</td>
<td>1546</td>
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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.
Site :- State Agri. Farm, Bankura.

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"x9" (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: S₁ = Mustard cake, S₂ = Coconut cake and S₃ = G.N.C.
(2) 5 levels of N: N₀ = 0, N₁ = 2, N₂ = 40, N₃ = 60 and N₄ = 80 lb./ac.

3. DESIGN:
(i) 3 x 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 expl. 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.

\[ N₀ = 1710 \text{ lb./ac.} \]

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<td>2349</td>
<td>2452</td>
</tr>
<tr>
<td>Mean</td>
<td>2307</td>
<td>2210</td>
<td>2130</td>
<td>2216</td>
</tr>
</tbody>
</table>

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).
Site :- State Agri. Farm, Bankura.
Ref :- W.B. 5(42).
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 transplantation.

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.

<table>
<thead>
<tr>
<th></th>
<th>M_1</th>
<th>M_2</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_1</td>
<td>356.3</td>
<td>280.6</td>
<td>318.4</td>
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<tr>
<td>N_2</td>
<td>344.8</td>
<td>216.4</td>
<td>280.6</td>
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<tr>
<td>Mean</td>
<td>350.5</td>
<td>248.5</td>
<td>299.5</td>
</tr>
</tbody>
</table>

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

Crop :- Paddy (Aman).
Site :- State Agri. Farm, Bankura.
Ref :- W.B. 53(37).
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) 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 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 dressing.

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) 2164.6 lb./ac.
   (iii) Control vs. fertilizers, main effect of methods of application are highly significant. N effect and interaction NXmethod of application are not significant.
   (iv) Av. yield of grain in lb./ac.

\[
\begin{array}{ccc}
   & M_1 & M_2 \\
N_1 & 2613 & 2174 \\
N_2 & 2402 & 2204 \\
\text{Mean} & 2507 & 2189 \\
\end{array}
\]

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

---

Crop :- Paddy (Aman).
Site :- State Agri. Farm, Bankura.
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''x9''. (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 : N1=40 and N2=63 lb. N/ac.
   (2) 2 methods of application : M1=Layering and M2=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''x18'' (b) 27''x17''—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.

\[
\begin{array}{ccc}
   & M_1 & M_2 \\
N_1 & 701.1 & 590.0 \\
N_2 & 531.6 & 561.2 \\
\text{Mean} & 616.3 & 575.6 \\
\end{array}
\]

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).
Site :- State Agri. Farm, Bankura.

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) No. (b) Transplanted. (c) (d) 9"x9". (e) 3. (v) No. (vi) Bhasamanik. (late) (vii) Unirrigated. (viii) 2 weeding; 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: N₁ = 40 and N₂ = 60 lb/ac.
   (2) 2 methods of application: M₁ = layering and M₂ = 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"x18". (b) 27"x17"-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.

<table>
<thead>
<tr>
<th></th>
<th>M₁</th>
<th>M₂</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁</td>
<td>3197</td>
<td>2754</td>
<td>2975</td>
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<tr>
<td>N₂</td>
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<td>2975</td>
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<tr>
<td>Mean</td>
<td>3546</td>
<td>2864</td>
<td>3105</td>
</tr>
</tbody>
</table>

   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).
Site :- Agri. Farm, Belurmath.

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

1. B.SAL 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"x9". (e) 2-4. (v) Nil. (vi) Fatan=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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1852</td>
</tr>
<tr>
<td>2.</td>
<td>2339</td>
</tr>
<tr>
<td>3.</td>
<td>2472</td>
</tr>
<tr>
<td>4.</td>
<td>2428</td>
</tr>
<tr>
<td>5.</td>
<td>2500</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>119.3 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :-Paddy (Aus).
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 laderings. (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 29.9.49.

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' x 20.5' blocks (1 and 2) ; 23.5' x 20.0' for blocks (3 and 4). (b) 21.5' x 18.5'. blocks (1 and 2) ; 21.5' x 18.0 blocks (3 and 4). (v) Distance between plots 2' and between blocks 3'. 1' border around as guard row. (vi) Yes.

4. GENERAL:
(i) Good. Plots with higher dose of \(N\) lodged. (ii) Nil. (iii) Tilling and height of tillers ; grain and straw yield. (iv) (a) 1949—continued. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri, expl. Started in 1943—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.

Ref :-W.B. 49(12).
(iv) Av. yield of yield in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P&lt;sub&gt;0&lt;/sub&gt;</th>
<th>P&lt;sub&gt;1&lt;/sub&gt;</th>
<th>P&lt;sub&gt;2&lt;/sub&gt;</th>
<th>Mean</th>
<th>L&lt;sub&gt;0&lt;/sub&gt;</th>
<th>L&lt;sub&gt;1&lt;/sub&gt;</th>
<th>L&lt;sub&gt;2&lt;/sub&gt;</th>
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<tbody>
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<td>1201</td>
<td>1236</td>
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<td>1683</td>
<td>1644</td>
<td>1641</td>
<td>1845</td>
<td>1518</td>
<td>1560</td>
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<td>1758</td>
<td>1845</td>
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<td>1885</td>
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<td>1845^1</td>
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<td></td>
<td>1618</td>
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<td>1302</td>
<td>1628</td>
<td></td>
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</tr>
</tbody>
</table>

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 x 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 = 190.3 lb./ac.

Crop: Paddy (Aus).
Site: State Agri. Farm, Berhampore.

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, 11.65. (iv) (a) 4 ploughings and laddering. (b) Seeds broadcast. (c) 1 md./ac. (d) N.A. (e) Nil.
   (v) Nil. (vi) Dhariai. (CH 27, medium). (vii) Unirrigated. (viii) Several weedings to check the infestation of weeds. (ix) 44.61 n (x) 1st week of Oct. 1950.

2. TREATMENTS:
   Main-plot treatments:
   3 levels of P<sub>2</sub>O<sub>5</sub>: P<sub>0</sub>=0, P<sub>1</sub>=20 and P<sub>2</sub>=40 lb./ac.
   Sub-plot treatments:
   All combinations of (1) & (2)
   (1) 4 levels of N: N<sub>0</sub>=0, N<sub>1</sub>=30, N<sub>2</sub>=60 and N<sub>3</sub>=90 lb./ac.
   (2) 3 levels of Lime: L<sub>0</sub>=0, L<sub>1</sub>=4 and L<sub>2</sub>=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' x 20.5'; Rep. (3 & 4) 23.5' x 22.0'. (b) 21.5' x 18.5'; 21.5' x 18.0'. (v) Distance between plots 2' and blocks 3'; 1' border around as guard row. (vi) Yes.

4. GENERAL:
   (i) Poor: (ii) Heavily infested by mother grass (Cyperus rotundus) at early stage of growth and shyama grass at later stage. Could not be controlled. Slight attack of helminthosporium. (iii) Tilling 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) Experiments 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.

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

<table>
<thead>
<tr>
<th></th>
<th>P_0</th>
<th>P_1</th>
<th>P_2</th>
<th>Mean</th>
<th>L_0</th>
<th>L_1</th>
<th>L_2</th>
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<td>818</td>
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<td>1342</td>
<td>1371</td>
<td>1320</td>
<td>1334</td>
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</tbody>
</table>

Mean: 1150 1143 1155

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 \times L table = 41.4 lb./ac.

S.E. of difference of two:
1. N means at the same level 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).
Site: State Agri. Farm, Berhampur.
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' x 20.5'; for blocks (3 & 4) 23.5' x 20.0'. (b) For blocks (1 & 2) 21.5' x 18.5' for blocks (3 & 4): 21.5' x 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 helminthosporium 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. (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.

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S.E. of the body of N x L table

Crop: Paddy (Aus).
Site: State Agri. Farm, Berhampore.
Ref: W.B. 49(13)
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) Fir-e 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: N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.
(2) 3 levels of P₂O₅: P₀=0, P₁=20 and P₂=40 lb./ac.
Sub-plot treatments:
2 levels of F.Y.M.: F₀=0 and F₁=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) 35'\times 16'. (b) 35'\times 14' (v) Distance between plots 2' and blocks 3'; 1' border 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.

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S.E. of marginal 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\times 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). Site: State Agri. Farm, Berhampore. Ref: 50(14)/49(13) 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) Nil.
   (vi) Dharial (CH 27, medium). (vii) Unirrigated. (viii) Several weedings were given to check heavy infestation of weeds. (ix) 45.61. (x) 1st week of October, 1950.

2. TREATMENTS:
   Main-plot treatments: All combinations of (1) and (2)
   (1) 5 levels of N: N0=0, N1=30, N2=60, N3=90 and N4=120 lb./ac.
   (2) 3 levels of P2O5: P0=0, P1=20 and P2=40 lb./ac.
   Sub-plot treatments:
   2 levels of F.Y.M: F0=0 and F1=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' x 16'. (b) 35' x 14' (v) Distance between plots 2' and between blocks 3'; 1' border around as guard row. (vi) Yes.

4. GENERAL:
(i) Poor. (ii) Heavily infested by Mothagross (Cypersus rotundus) 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) Tilling and height of tillers. Grain and straw yield. (iv) (a) Yes. 1949-50. cont. (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.

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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 x P table = 49.68 lb./ac.
S.E. of the difference of two
1. N means at the same level of F = 64.23 lb./ac.
2. P 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. F means at the same level of F = 47.16 lb./ac.

Crop: Paddy (Aus).
Site: State Agri. Farm, Berhampore.
Ref: W.B. 51 (16)/50 (14)/49(13)
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) 3) srs/ac. j) & (e)—(v) Nil. (vi) Dharial (course) late. (vii) Unirrigated. (viii) 3 weedings done. (ix) 32.31°.
(x) 15th Sept to 15th Oct.
26

4. TREATMENTS:

Main-plot treatments:—

All combinations of (1) & (2)
(1) 5 levels of N: N₀ = 0, N₁ = 30, N₂ = 60, N₃ = 90 and N₄ = 120 lb./ac.
(2) 3 levels of P₂ O₃: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.

Sub-plot treatments:—

2 levels of F. Y. M.: F₀ = 0 and F₁ = 100 md./ac.
N as A/S and P₂ ₀ 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 conditions. (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 a 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.

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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 bocy of N×P tabl = 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 level 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).

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: N₀ = 0, N₁ = 30, N₂ = 60, N₃ = 90 and N₄ = 120 lb./ac.
   (2) 3 levels of P₂O₅ : P₀ = 0, P₁ = 20, P₂ = 40 lb./ac.

   Sub-plot treatments :--
   2 levels of F.Y.M. : F₀ = 0 and F₁ = 100 md./ac.
   N as A/S and P₂O₅ 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' x 16'. (b) 35' x 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,

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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 P = 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. P means at the same level of P = 10.07 lb./ac.
4. P means at the same level of P = 10.07 lb./ac.
Crop :- Paddy (Aus).

Site :- State Agri. Farm, Berhampore.

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

Type :- 'M'.

Object :-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: N0 =0, N1 =30, N2 =60, N3 =90 and N4 =120 lb./ac.
   3 levels of P2O5 : P0 =0, P1 =20 and P2 =40 lb./ac
   Sub-plot treatments :-
   2 levels of F.Y.M. : F0 =0 and F1 =100 md./ac.

N as A/S and P2O5 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'x16', (b) 35'x14'. (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 growth 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 practically 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.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
<th>P1</th>
<th>P2</th>
<th>Mean</th>
<th>F0</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>N0</td>
<td>265.0</td>
<td>394.6</td>
<td>274.0</td>
<td>311.2</td>
<td>274.3</td>
<td>348.0</td>
</tr>
<tr>
<td>N1</td>
<td>762.8</td>
<td>651.7</td>
<td>385.1</td>
<td>599.9</td>
<td>561.8</td>
<td>638.0</td>
</tr>
<tr>
<td>N2</td>
<td>999.8</td>
<td>668.8</td>
<td>1154.5</td>
<td>943.8</td>
<td>925.8</td>
<td>955.8</td>
</tr>
<tr>
<td>N3</td>
<td>1175.2</td>
<td>1114.2</td>
<td>597.0</td>
<td>1062.1</td>
<td>981.1</td>
<td>1142.2</td>
</tr>
<tr>
<td>N4</td>
<td>1017.1</td>
<td>1077.4</td>
<td>845.9</td>
<td>980.1</td>
<td>929.9</td>
<td>1030.3</td>
</tr>
<tr>
<td>Mean</td>
<td>844.0</td>
<td>781.2</td>
<td>711.3</td>
<td>778.8</td>
<td>734.6</td>
<td>823.1</td>
</tr>
</tbody>
</table>

F0  817.4 | 710.1 | 676.4
F1  870.6 | 852.4 | 746.2
Crop :- Paddy (Aman).

Site :- State Agri. Farm, Burdwan.

Ref :- W.B. 52(24).

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) Ploughing 4 times. (b) N.A. (c) 12 srs./ac. (d) 9'x9'. (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'x31' (b) 25'x29' (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).

Site :- State Agri. Farm, Burdwan.

Ref :- W.B. 53(15)/52(24).

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'x9'. (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) N.A. (iii) 4. (iv) (a) 21'×31'. (b) 21'×29'=1/60.08th lb./ac. (v) 1' border 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. (vi) No. (b) N.A. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3503</td>
</tr>
<tr>
<td>2.</td>
<td>3762</td>
</tr>
<tr>
<td>3.</td>
<td>3016</td>
</tr>
<tr>
<td>4.</td>
<td>3747</td>
</tr>
<tr>
<td>5.</td>
<td>3654</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 270.7 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Paddy (Aman). Site: State Agri. Farm, Burdwan. Ref: W.B. 52(20) 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) 9’×9’. (d) 3–4. (e) 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:
   A 1 possible combinations of (1) & (2).
   (1) 2 doses of A/S+P₂O₅: M₅₀=0 and M₈₀=30 lb./ac. of P₂O₅+30 lb./ac. of N.
   (2) 2 doses of trace element mixture: viz. E₂₀=E₂=Trace element mixture.
   Source of N was A/S, of P₂O₅ 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) 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.
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' x 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+P2O5: M0 = 0 and M1 = 30 lb./ac. of P2O5 + 30 lb./ac. of N. 
(2) 2 trace element mixture doses: E0 = 0 and E1 = Trace element mixture. 
Source of N was A/S, of P2O5 was Super, of trace element 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' x 18'. (b) 45.5' x 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. 

<table>
<thead>
<tr>
<th></th>
<th>M0</th>
<th>M1</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0</td>
<td>3650</td>
<td>3455</td>
<td>3552</td>
</tr>
<tr>
<td>E1</td>
<td>3785</td>
<td>4296</td>
<td>4041</td>
</tr>
<tr>
<td>Mean</td>
<td>3718</td>
<td>3875</td>
<td>3797</td>
</tr>
</tbody>
</table>

S.E. of the body of the table = 274.8 lb./ac. 
S.E. of any marginal mean = 194.2 lb./ac.
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 : N₁= 40 and N₂ = 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' x 18'. (b) 46' x 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 1933. (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.

<table>
<thead>
<tr>
<th>Source</th>
<th>A/S</th>
<th>T.C.</th>
<th>Vill. Comp.</th>
<th>Wat. Bya.</th>
<th>Sludge</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁</td>
<td>2790</td>
<td>2839</td>
<td>2905</td>
<td>2839</td>
<td>2773</td>
<td>2829</td>
</tr>
<tr>
<td>N₂</td>
<td>2781</td>
<td>2864</td>
<td>2831</td>
<td>2880</td>
<td>2716</td>
<td>2814</td>
</tr>
<tr>
<td>Mean</td>
<td>2785</td>
<td>2851</td>
<td>2868</td>
<td>2859</td>
<td>2744</td>
<td></td>
</tr>
</tbody>
</table>

   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.
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) 129 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.

<table>
<thead>
<tr>
<th>Source</th>
<th>A/S</th>
<th>T.C.</th>
<th>Vill. Comp.</th>
<th>Wat. By.</th>
<th>Sludge</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>( N_1 )</td>
<td>189</td>
<td>2024</td>
<td>1934</td>
<td>2098</td>
<td>1852</td>
<td>1960</td>
</tr>
<tr>
<td>( N_2 )</td>
<td>2115</td>
<td>2115</td>
<td>1983</td>
<td>2065</td>
<td>1827</td>
<td>2021</td>
</tr>
<tr>
<td>Mean</td>
<td>2004</td>
<td>2069</td>
<td>1958</td>
<td>2081</td>
<td>1839</td>
<td></td>
</tr>
</tbody>
</table>

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).

Site: State Agri. Farm, Burdwan.

Ref: W.B. 53(38)/52(43)/51(2).

Type: 'M'.
(iv) Av. yield of grain in lb./ac.

\[
\begin{array}{cccccc}
\text{Control} & = & 2347 \text{ lb./ac.} \\
\hline
& \text{A/S} & \text{T.C.} & \text{Vill. Corp.} & \text{Wat. Byc.} & \text{Sludge} & \text{Mean} \\
N_1 & 3672 & 3619 & 3538 & 3507 & 3479 & 3563 \\
N_2 & 3438 & 3538 & 3385 & 3379 & 3382 & 3424 \\
\hline
\text{Mean} & 3550 & 3578 & 3461 & 3443 & 3430 &
\end{array}
\]

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).
Site:—State Agri. Farm, Burdwan.

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’x9’. (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: N₀=0, N₁=20 and N₂=40 lb./ac.
   (2) 3 levels of Lime: L₀=0, L₁=4 and L₂=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’x14’. (b) 60’x12’. (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.

\[
\begin{array}{cccc}
& N_0 & N_1 & N_2 & \text{Mean} \\
L_0 & 1965 & 2131 & 2118 & 2138 \\
L_1 & 2188 & 2307 & 2152 & 2216 \\
L_2 & 2406 & 2277 & 2230 & 2304 \\
\hline
\text{Mean.} & 2186 & 2238 & 2233 & 2219
\end{array}
\]

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).
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) 15th December to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) — (d) 9' x 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:
   (1) Favourable. (ii) Stem borer reported. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A.

5. RESULTS:
   (i) 3950 lb./ac. (ii) 536.0 lb./ac.

    | N0  | N1  | N2  | Mean  |
    |-----|-----|-----|-------|
    | L0  | 3706| 4314| 3755  |
    | L1  | 3884| 4481| 4110  |
    | L2  | 3843| 3807| 3871  |
    | Mean| 3811| 4201| 3837  |

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

Crop: Paddy (Aman).
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' x 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:
   (1) Favourable. (ii) Stem borer reported. (iii) Yield of grain. (iv) (a) 1952—continued. (b) Yes. (c) N.A.

5. RESULTS:
   (i) 3950 lb./ac. (ii) 536.0 lb./ac.

    | N0  | N1  | N2  | Mean  |
    |-----|-----|-----|-------|
    | L0  | 3706| 4314| 3755  |
    | L1  | 3884| 4481| 4110  |
    | L2  | 3843| 3807| 3871  |
    | Mean| 3811| 4201| 3837  |

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

Ref: W.B. 53(9)/52(21)
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1773</td>
</tr>
<tr>
<td>2.</td>
<td>1831</td>
</tr>
<tr>
<td>3.</td>
<td>1929</td>
</tr>
<tr>
<td>4.</td>
<td>1898</td>
</tr>
<tr>
<td>5.</td>
<td>1888</td>
</tr>
<tr>
<td>6.</td>
<td>1929</td>
</tr>
<tr>
<td>7.</td>
<td>1861</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 96.45 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Paddy (Aman).
Site: Stat Agri. Farm, Burdwan.

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: \( M_1 = \text{on surface} \) and \( M_2 = \text{thrust into soil.} \)
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.

<table>
<thead>
<tr>
<th></th>
<th>( N_1 )</th>
<th>( N_2 )</th>
<th>( N_3 )</th>
<th>( N_4 )</th>
<th>Mean.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( M_1 )</td>
<td>2339</td>
<td>2320</td>
<td>2313</td>
<td>2345</td>
<td>2329</td>
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<tr>
<td>( M_2 )</td>
<td>2407</td>
<td>2278</td>
<td>2271</td>
<td>2320</td>
<td>2319</td>
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<tr>
<td>Mean.</td>
<td>2373</td>
<td>2299</td>
<td>2292</td>
<td>2333</td>
<td>2324</td>
</tr>
</tbody>
</table>

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.
Ref: W.B. 53 (7)/52 (23). 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 Augest. (iv) (a) N.A. (b) Transplanted. (c) -. (d) 9" x 9". (e) 2-3. (v) Nil. (vi) Patnai. (vii) Irrigated. (viii) N.A. (ix) Paddy crop (CH, 5, Medium). (x) 15th December to 1st week of January.

2. TREATMENTS:
   All possible combinations of (1) and (2).
   (1) 4 levels of N: N1 = 20, N2 = 40, N3 = 60 and N4 = 80 lb./ac.
   (2) 2 methods of placing A/S: M1 = on Surface and M2 = Thrown into soil.

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

GENERAL:
   (i) Favourable; lodging reported. (ii) Stem borer 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.

```
<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
<th>Mean</th>
</tr>
</thead>
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<td>M1</td>
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<td>3359</td>
<td>3590</td>
<td>3553</td>
<td>3421</td>
</tr>
<tr>
<td>M2</td>
<td>3396</td>
<td>3548</td>
<td>3831</td>
<td>2990</td>
<td>3441</td>
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<tr>
<td>Mean</td>
<td>3288</td>
<td>3454</td>
<td>3710</td>
<td>3271</td>
<td>3431</td>
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</tbody>
</table>
```

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.

Ref: W.B. 50 (16). 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" x 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 weedicings 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 P2O5.
   5. Mag. Sul. at 31.5 lb./ac. of MgO.
   6. A/S at 11 lb./ac. of N + Super at 45 lb./ac. of P2O5.
   7. A/S at 11 lb./ac. of N + Super at 60 lb./ac. of P2O5.
   8. A/S at 11 lb./ac. of N + Super at 60 lb./ac. of P2O5 + 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 P2O5.
   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) $18' \times 47.5'$. (b) $16' \times 45.5'$. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1505</td>
</tr>
<tr>
<td>2.</td>
<td>1820</td>
</tr>
<tr>
<td>3.</td>
<td>1858</td>
</tr>
<tr>
<td>4.</td>
<td>1661</td>
</tr>
<tr>
<td>5.</td>
<td>1879</td>
</tr>
<tr>
<td>6.</td>
<td>1953</td>
</tr>
<tr>
<td>7.</td>
<td>1831</td>
</tr>
<tr>
<td>8.</td>
<td>2098</td>
</tr>
<tr>
<td>9.</td>
<td>1932</td>
</tr>
<tr>
<td>10.</td>
<td>1781</td>
</tr>
<tr>
<td>11.</td>
<td>1710</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>$\pm$186.3 lb./ac.</td>
</tr>
</tbody>
</table>

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 exp. 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) $9' \times 9'$. (e) 2. (v) A basal dose of F.Y.M. at 5 ton/ha. 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$_2$O$_5$
4. Rock Phosphate at 60 lb./ac. of P$_2$O$_5$.
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$_2$O$_5$
7. A/S at 11 lb./ac. of N+Super at 60 lb./ac. of P$_2$O$_5$ + Mag. Sul. at 31.5 lb. of MgO/ac.
8. A/S at 11 lb./ac. of N+Super at 60 lb./ac. of P$_2$O$_5$
9. A/S at 11 lb./ac. of N+Rock Phos. at 60 lb./ac. of P$_2$O$_5$
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) $18' \times 47.5'$. (b) $16' \times 45.5'$. (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.
**BASAL RESULTS**

Object:

1. **Fallow-Paddy.**
   - (a) Study the effect of applying Lime, A/S, C/N and A/C and their different combinations on the yield of paddy.
   - (ii) (b) Refer soil analysis, Burdwan.

2. **CONDITIONS:**
   - Middle of June/1st week of July. (iv) (a) 4 to 5 ploughings and laddering. (b) Transplanting: 6" × 9" apart.
   - (c) 2 - 3. (d) A basal dose of P.Y.M. at 5 ton/ac. to each plot. (v) Nagra (CH 5. Medium. (vi) Unirrigated
   - (vii) 2 - 3 weedicides in common practice. (ix) N.A. (x) 3rd week of December.

3. **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. broadcast 2 weeks after flowering.
   - 8. C/N at 40 lb N/ac.
   - 9. Treat. 2 + Treat. 4.
   - 10. Treat. 2 + Treat. 6.
   - 11. Treat. 2 + Treat. 8.
   - 12. Treat. 2 + Treat. 7.
   - 13. Treat. 2 + Treat. 3.
   - 14. Treat. 2 + Treat. 12.
   - 15. A/S at 20 lb N/ac. applied just before flowering.
   - 16. A/S at 40 lb N/ac. applied just before flowering.

For treatments 1 to 14, N applied as broadcast 4 weeks after transplanting.

4. **DESIGN:**
   - (i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 6. (iv) (a) 62' × 14'. (b) 62' × 12'. (v) Distance between plots 2' & blocks 3'; border around each plot. (vi) Yes.

5. **RESULTS:**
   - (i) 1912 lb/ac.
   - (ii) 367.4 lb/ac.
   - (iii) Treatments differ highly significantly.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb/ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1440</td>
</tr>
<tr>
<td>2.</td>
<td>1544</td>
</tr>
<tr>
<td>3.</td>
<td>2057</td>
</tr>
<tr>
<td>4.</td>
<td>2489</td>
</tr>
<tr>
<td>5.</td>
<td>2048</td>
</tr>
<tr>
<td>6.</td>
<td>2094</td>
</tr>
</tbody>
</table>

**S.E./mean = 100.0 lb/ac.**

**Crop:** Paddy (Aman)

**Site:** State Agr. Farm, Burdwan.
Crop :- Paddy (Aman).
Site :- State Agri. Farm, Burdwan.

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) Sandy loam. (b) Refer soil analysis, Burdwan.
   (iii) 15th July to 1st week of July. (iv) (a) N.A. (b) Transplanted. (c) 9" x 9". (e) 2. (v) Nila. (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. Treat. 2 + Treat. 9.
   16. A/S at 20 lb N/ac. applied just before flowering.
   For treatments 3 to 14, N applied as broadcast 4 weeks after transplanting.

3. DESIGN :
   (i) R.B.D. (Fact.) (ii) 18. (b) N.A. (iii) 6. (iv) (a) 62' x 14'. (b) 60' x 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.         | 2057      | 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).
Site :- State Agri. Farm, Burdwan.

Object :- 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) 9" x 9". (e) 2—3. (v) Dhaincha seeds sown at the rate of of 20 sees/ac. in all the plots.
2. TREATMENTS:
   1. No fertilizer.
   3. Super at 30 lb. P₂O₅/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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3041</td>
</tr>
<tr>
<td>2.</td>
<td>3361</td>
</tr>
<tr>
<td>3.</td>
<td>3097</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>332.9 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Paddy (Aman).
Site : State Agri. Farm, Burdwan.

Ref : W.B. 53(21).
Type : 'M'.

Object :—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 P₂O₅ : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.
   (2) 5 levels of N : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.
   P₂O₅ 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:

5. RESULTS:
   (i) 2568 lb./ac.
   (ii) 176.9 lb./ac.
   (iii) N levels differ significantly. Other effects are not significant.
(v) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
<th>P₄</th>
<th>Mean</th>
</tr>
</thead>
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<td>2293</td>
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<td>2530</td>
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<tr>
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<td>2451</td>
<td>2674</td>
<td>2480</td>
<td>2475</td>
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</table>

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).
Site: State Agri. Farm, Canning.

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) N₀ % = 0.097; P₀ % = 0.123; K₀ % = 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: N₀ = 0, N₁ = 10, N₂ = 20 and N₃ = 30 lb./ac.
   (2) 2 levels of P₀₂: P₀ = 0 and P₁ = 20 lb./ac.
   Source of N is A/S and that of P₀₂ 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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>Mean</th>
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</thead>
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<td>2038</td>
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<td>2511</td>
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<td>2401</td>
<td>2044</td>
<td>2155</td>
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</tbody>
</table>

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)/48(11).

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) $N_0=0.097$; $P_2O_5=0.123$; $K_2O=0.932$; pH=7.1. (iii) 15/16-8-52. (iv) (a) Three ploughings. (b) Transplanted. (c)-(d) 9" x 9". (e) Nil. (v) Rupsail (early). (vi) Irrigated. (vii) 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 that of $P_2O_5$ was B.M.

3. DESIGN:
(i) 4 x 2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5, 1. (iv) (a) 35" x 18", (b) 33" x 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. (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.

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<tr>
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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)/48(11).

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) $N_0=0.097$; $P_2O_5=0.123$; $K_2O=0.932$; pH=7.1. (iii) 15, 16.9.51. (iv) (a) 3 ploughings & 1 puddling. (b) Transplanting. (c) No. (d) 9" x 9". (e) Nil. (v) Rupsail (Medium). (vii) Irrigated. (viii) 2 weedings. (x) 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 x 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) A x yield of grain in lb./ac.

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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).
Site :- State Agri. Farm, Chinsurah.
Ref :- W.B. 48(2).
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" x 9". (e) 2—3. (v) Nil. (vi) Bhasamanik (CH 3, Medium). (vii) Unirrigated. (viii) 2—3 weedings.
(x) 48.58 approx. (May to Dec.). (x) 22/23.11.48.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 3 levels of N : N₀=0, N₁=20, and N₂=40 lb./ac.
(2) 3 levels of Lime : L₀=0, L₁=4 and L₂=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 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34'x19'. (b) 32'x17'. (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.

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<tr>
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</table>

Mean = 2411

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

Crop: Paddy (Aman).

Site: State Agri. Farm, Chinsurah.

Ref: W.B. 49(2).

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" x 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 transplanting (21.8.49) and Lime was applied once every 4 years at least 6 weeks before transplanting.

3. DESIGN:
   (i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 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.

<table>
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Mean = 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.
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" x 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: N₀ = 0, N₁ = 20 and N₂ = 40 lb./ac.
   (2) 3 levels of Lime: L₀ = 0, L₁ = 4 and L₂ = 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 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 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) 301.3 lb./ac.
   (iii) Effect of N alone is highly significant.
   (iv) Av. yield of grain lb./ac.

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   S.E. of any marginal mean = 88.1 lb./ac.
   S.E. of the body of table = 107.6 lb./ac.
2. TREATMENTS:

All combinations of (i) and (2) and (i) 3 levels of N : N₀=0, N₁=20 and N₂=40 lb./ac.
(2) 3 levels of Lime : L₀=0, L₁=4 and L₂=8 cwt./ac.
A/S broadcast 4 weeks after transplantation ; Lime applied once in 4 years 6 weeks before transplantation.

3. DESIGN:

(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 17'. (v) 1' border around the 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) 1944 to 1954. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

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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).
Site :- State Agric. 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 paddo. (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 time of puddling. (b) Transplanting. (c) — (d) 9' x 9'. (e) 2. (v) Nil. (vi) Bhasamak (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 : N₀=0, N₁=20 and N₂=40 lb./ac.
(2) 3 levels of Lime : L₀=0, L₁=4 and L₂=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 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 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.

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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).
Site: State Agri. Farm, Chinsurah.
Ref: W.B. 53(10).
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/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. — (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: N₀=0, N₁=20 and N₂=40 lb./ac.
(2) 3 levels of Lime: L₀=0, L₁=4 and L₂=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.
49

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

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</table>

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).

Site: State Agri. Farm, Chinsurah.

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"x9", (e) 2–3, (v) Nil. (vi) Bhasamanik (CH 3, Medium). (vii) Unirrigated. (viii) 2–3 weedicings. (ix) 48.58" approx. May to Dec. (x) 7,8,12,4.

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"x19". (b) 32"x17". (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 NxF are not significant.
   (iv) Av. yield of grain in lb./ac.

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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).  
Site: State Agrt. Farm, Chinsurah.  
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) Transplanting. (c—d) 9" x 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.: F₀ = 0 and F₁ = 100 md./ac.
   Sub-plot treatments:—
   5 levels of N: N₀ = 0, N₁ = 30, N₂ = 60, N₃ = 90 and N₄ = 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' x 19'. (b) 32' x 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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>N₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>1923</td>
<td>2561</td>
<td>2623</td>
<td>2468</td>
<td>2211</td>
<td>2357</td>
</tr>
<tr>
<td>F₁</td>
<td>2458</td>
<td>2726</td>
<td>2262</td>
<td>2057</td>
<td>1810</td>
<td>2263</td>
</tr>
<tr>
<td>Mean</td>
<td>2190</td>
<td>2644</td>
<td>2442</td>
<td>2262</td>
<td>2010</td>
<td>2310</td>
</tr>
</tbody>
</table>

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).

Site :- State Agri. Farm Chinsurah.

Ref :- W.B. 50(S).

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'x9'. (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'x19'. (b) 32'x17'. (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 NxF are highly significant. Main effect of F.Y.M. is not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>N_0</th>
<th>N_1</th>
<th>N_2</th>
<th>N_3</th>
<th>N_4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_0</td>
<td>1813</td>
<td>2227</td>
<td>2278</td>
<td>2530</td>
<td>2551</td>
</tr>
<tr>
<td>F_1</td>
<td>2493</td>
<td>2776</td>
<td>1954</td>
<td>2131</td>
<td>2107</td>
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<tr>
<td>Mean</td>
<td>2153</td>
<td>2502</td>
<td>2116</td>
<td>2330</td>
<td>2329</td>
</tr>
</tbody>
</table>

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).
Site:— State Agri. Farm, Chinsurah.

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' x 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) 32.9°. (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 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. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 17'. (v) 1' border around the sub plot. (vi) Yes.

4. GENERAL:
   (i) Not satisfactory. 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 x F are highly significant. F.Y.M. effect is not significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>N_0</th>
<th>N_1</th>
<th>N_2</th>
<th>N_3</th>
<th>N_4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>806</td>
<td>956</td>
<td>1337</td>
<td>1607</td>
<td>1527</td>
<td>1247</td>
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<td>1330</td>
<td>1072</td>
<td>1244</td>
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<tr>
<td>Mean</td>
<td>1068</td>
<td>1014</td>
<td>1290</td>
<td>1491</td>
<td>1439</td>
</tr>
</tbody>
</table>

   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.
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.

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

3. DESIGN:

(i) Split plot. (ii) 2 main-plots/block, 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) $34' \times 19'$. (b) $32' \times 17'$. (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) Yes. (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 grain in lb./ac.

<table>
<thead>
<tr>
<th>F.Y.M.</th>
<th>$N_0$</th>
<th>$N_1$</th>
<th>$N_2$</th>
<th>$N_3$</th>
<th>$N_4$</th>
<th>Mean</th>
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<tbody>
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<td>$F_0$</td>
<td>1165</td>
<td>1440</td>
<td>1295</td>
<td>1237</td>
<td>1029</td>
<td>1233</td>
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<tr>
<td>$F_1$</td>
<td>1234</td>
<td>1587</td>
<td>1451</td>
<td>1093</td>
<td>802</td>
<td>1233</td>
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<tr>
<td>Mean</td>
<td>1199</td>
<td>1513</td>
<td>1373</td>
<td>1165</td>
<td>915</td>
<td>1233</td>
</tr>
</tbody>
</table>

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 treatment $= 138.5$ lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment $= 125.7$ lb./ac.

Cröp: Paddy (Aman).

Site: State Agri. Farm, Chinsurah.

Ref: W.B. 53(13).

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, Chinsurah. (iii) 15th June to 1st week of July/15th July to 1st week of August. (iv) (a) N.A. (b) Transplanting. (c) —. (d) $9' \times 9'$. (e) 2. (v) Nil. (vi) Bhassanik (Medium). (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) 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' x 18'. (b) 32' x 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. RESULTS:
(i) 2660 lb/ac. 
(ii) (a) 379.5 lb/ac. 
(b) 342.6 lb/ac. 
(iii) Levels of N differ significantly. Quadratic effect of N is highly significant. Interaction N x F is not significant and levels of F do not differ significantly. 
(iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>N0</th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0</td>
<td>2590</td>
<td>3021</td>
<td>2897</td>
<td>2835</td>
<td>2377</td>
</tr>
<tr>
<td>F1</td>
<td>2869</td>
<td>3024</td>
<td>2697</td>
<td>2422</td>
<td>1875</td>
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<tr>
<td>Mean</td>
<td>2730</td>
<td>3023</td>
<td>2797</td>
<td>2628</td>
<td>2126</td>
</tr>
</tbody>
</table>

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 treatment = 242.3 lb/ac. 
4. main-plot treatment means at the same level of sub-plot treatment = 247.7 lb/ac.

Crop :—Paddy (Aman). 
Site :—State Agri. Farm, Chinsurah. 
Ref :—W.B. 48 (9). 
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' x 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. P2O5 
2. 20 
3. 40 
4. 63 

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' x 15'. (b) 61' x 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 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2250</td>
</tr>
<tr>
<td>2.</td>
<td>2365</td>
</tr>
<tr>
<td>3.</td>
<td>2436</td>
</tr>
<tr>
<td>4.</td>
<td>2668</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>=63.1 lb./ac.</td>
</tr>
</tbody>
</table>

---

**Crop**: Paddy (Aman)  
**Site**: State Agri. Farm, Chinsurah.  
**Ref**: W.B. 49(7).  
**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) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (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) Bhessamanik CH–3. (vii) Unirrigated. (viii) 2–3 weedings. (ix) 69.56° approx. (May to Dec.) (x) 11/12.49.

2. **TREATMENTS**:

   1. 0 lb./ac. P₂O₅  
   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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2108</td>
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<tr>
<td>2.</td>
<td>2388</td>
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<tr>
<td>3.</td>
<td>2595</td>
</tr>
<tr>
<td>4.</td>
<td>2796</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 69.1 lb./ac.</td>
</tr>
</tbody>
</table>
Crop :- Paddy (Aman). Site :- State Agri. Farm, Chinsurah.

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" x 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) 32.97". (x) 15th December to 1st week of January.

2. TREATMENTS:
   1. 0 lb./ac. P205.
   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' x 15'. (b) 61' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2422</td>
<td>61.6 lb./ac.</td>
</tr>
<tr>
<td>2.</td>
<td>2809</td>
<td>61.6 lb./ac.</td>
</tr>
<tr>
<td>3.</td>
<td>3044</td>
<td>61.6 lb./ac.</td>
</tr>
<tr>
<td>4.</td>
<td>3324</td>
<td>61.6 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Paddy (Aman). Site :- State Agri. Farm, Chinsurah.

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" x 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. P2O5.
   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' x 15'. (b) 61' x 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.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>697</td>
</tr>
<tr>
<td>2.</td>
<td>875</td>
</tr>
<tr>
<td>3.</td>
<td>1041</td>
</tr>
<tr>
<td>4.</td>
<td>1123</td>
</tr>
</tbody>
</table>
S.E./mean = 40.3 lb./ac.

Crop: Paddy (Aman).
Site: State Agri. Farm, Chinsurah.

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

BASEL 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. (f) 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 P₂O₅
2. 20
3. 40
4. 60
P₂O₅ i.e 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) 1\' 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.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1840</td>
</tr>
<tr>
<td>2.</td>
<td>1887</td>
</tr>
<tr>
<td>3.</td>
<td>2035</td>
</tr>
<tr>
<td>4.</td>
<td>2074</td>
</tr>
</tbody>
</table>
S.E./mean = 53.1 lb./ac.
Crop :- Paddy (Aman).
Site :- State Agri. Farm, Chinsurah.

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'x9'.
   (e) 2. (v) Nil. (vi) Bhasamanik. (vii) Irrigated. (viii) Ist 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 P₂O₅
   2. 20 " "
   3. 40 " "
   4. 60 " "

   P₂O₅ as B.M. applied during general preparation of land.

3. DESIGN :

   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) 6'x15'. (b) 61'x12'. (v) 1' 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) 3115 lb/ac.
   (ii) 182.7 lb/ac.
   (iii) Treatments differ highly significantly.
   (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).
Site :- State Agri. Farm, Chinsurah.

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'x9'. (e) 2-3. (v) Nil. (vi) Badkalamkati (Bankura I, 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 P₂O₅
   2. 20 " "
   3. 40 " "
   4. 60 " "

   P₂O₅ 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'x15'. (b) 61'x12'. (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 data

5. RESULTS:
(i) 1690 lb./ac.
(ii) N.A.
(iii) N.A.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1499</td>
</tr>
<tr>
<td>2.</td>
<td>1763</td>
</tr>
<tr>
<td>3.</td>
<td>1742</td>
</tr>
<tr>
<td>4.</td>
<td>1755</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= N.A.</td>
</tr>
</tbody>
</table>

Crop: Paddy (Aman).
Site: State Agri. Farm, Chinsurah.
Ref: W.B. 49(8)
Type: 'M'.

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

BASEL 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" x 9". (e) 2-3. (v) Nil. (vi) Badalamkati 65 (Bankura-1, early). (vii) Unirrigated. (viii) 2-3 weed-
ings. (ix) 69.56". (May to Dec.). (x) 30.11.49.

2. TREATMENTS:
1. 0 lb./ac. of P₂O₅.
2. 20    ”   ”   ”
3. 40    ”   ”   ”
4. 60    ”   ”   ”
P₂O₅ 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' x 15' (b) 61' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>997</td>
</tr>
<tr>
<td>2.</td>
<td>1333</td>
</tr>
<tr>
<td>3.</td>
<td>1561</td>
</tr>
<tr>
<td>4.</td>
<td>1753</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 74.6 lb./ac.</td>
</tr>
</tbody>
</table>
Crop : Paddy (Aman).  
Site : State Agri. Farm, Chinsurah.  
Object : To find out the effect of B.M. on the yield of Paddy.

Ref. : W.B. 50(3).  
Type : 'M'.

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" x 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' x 15'. (b) 61' x 12'. (v) 1' 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1494</td>
</tr>
<tr>
<td>2.</td>
<td>1648</td>
</tr>
<tr>
<td>3.</td>
<td>1754</td>
</tr>
<tr>
<td>4.</td>
<td>1981</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>42.4 lb./ac.</td>
</tr>
</tbody>
</table>

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Crop : Paddy (Aman).  
Site : State Agri. Farm, Chinsurah.  
Object : To find out the effect of B.M. on the yield of Paddy.

Ref. : W.B. 51(12).  
Type : 'M'.

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" x 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) $64'\times 15'$. (b) $61'\times 12'$. (v) $\frac{1}{2}$ 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.  

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 0 lb./ac. of $P_2O_5$</td>
<td>1444</td>
</tr>
<tr>
<td>2. 20</td>
<td>1466</td>
</tr>
<tr>
<td>3. 40</td>
<td>1577</td>
</tr>
<tr>
<td>4. 60</td>
<td>1522</td>
</tr>
<tr>
<td>S.E./mean = 92.6 lb./ac.</td>
<td></td>
</tr>
</tbody>
</table>

Crop: Paddy (Aman).  
Site: State Agri. Farm, Chinsurah.  
Ref: W.B. 52(16).  
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) $9'\times 3'$. (e) 2. (f) Nil. (vi) Badakalamkati (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) $64'\times 15'$. (b) $61'\times 12'$. (v) $\frac{1}{2}$ 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.  

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 804.8</td>
<td></td>
</tr>
<tr>
<td>2. 825.4</td>
<td></td>
</tr>
<tr>
<td>3. 832.8</td>
<td></td>
</tr>
<tr>
<td>4. 814.7</td>
<td></td>
</tr>
<tr>
<td>S.E./mean = 32.0 lb./ac.</td>
<td></td>
</tr>
</tbody>
</table>
Crop: Paddy (Aman).
Site: State Agri. Farm, Chinsurah.

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. (d) Clayey. (e) 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. (f) Nil. (vi) Badkalamkat. (vii) Irrigated. (viii) N.A. (ix) 45.19". (x) 15th Dec. to 1st week of January.

2. TREATMENTS:
   1. 0 lb./ac. of P₂O₅
   2. 20
   3. 40
   4. 60

P₂O₅ 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).
Site: State Agri. Farm, Chinsurah.

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, Raghousail & 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. (f) 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: N₀ = 0, N₁ = 30, N₂ = 60, N₃ = 90 and N₄ = 120 lb./ac.
   (2) 3 levels of Lime: L₀ = 0, L₁ = 4 and L₂ = 8 cwt/ac.

   Treatments in orthogonal direction:
   3 levels P₂O₅: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.

   N applied as A/S; P₂O₅ 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" x 34", (b) 17" x 32". (v) 1" border around 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 (Nymplula decipitalis) was observed 6 weeks after transplantation. Rope soaked in kerosene oil drawn over affected plots and kerosene oil poured in some plots. Rice himson-affected plots treated with gammaxene. (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.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
</tr>
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<tbody>
<tr>
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<td>1632</td>
<td>1659</td>
<td>1664</td>
<td>1652</td>
<td>1658</td>
<td>1650</td>
<td>1648</td>
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<td>N₁</td>
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<td>2012</td>
<td>1935</td>
<td>1988</td>
<td>2113</td>
</tr>
<tr>
<td>N₂</td>
<td>2124</td>
<td>2058</td>
<td>2053</td>
<td>2078</td>
<td>2167</td>
<td>2066</td>
<td>2001</td>
</tr>
<tr>
<td>N₃</td>
<td>2079</td>
<td>2038</td>
<td>2092</td>
<td>2070</td>
<td>2241</td>
<td>2066</td>
<td>1902</td>
</tr>
<tr>
<td>N₄</td>
<td>1958</td>
<td>1958</td>
<td>1799</td>
<td>1905</td>
<td>1839</td>
<td>2009</td>
<td>1867</td>
</tr>
<tr>
<td>Mean</td>
<td>1964</td>
<td>1961</td>
<td>1905</td>
<td>1943</td>
<td></td>
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</tr>
<tr>
<td>L₁</td>
<td>1973</td>
<td>1964</td>
<td>1930</td>
<td>1956</td>
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<td>L₂</td>
<td>1961</td>
<td>1948</td>
<td>1810</td>
<td>1906</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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 x 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).
Site: State Agri. Farm, Chinsurah
Type: 'M'.

Ref.: W.B. 49(5)/48(5).

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" x 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_0 P_2 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' x 19'. (b) 32' x 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 x P differ highly significantly. Interaction (L x P) is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
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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 x 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) Site: State Agri. Farm, Chinsurah Ref.: W.B. 59(9)/49(5)/48(5)

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).
(ii) 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’ x 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. N0 = 0, N1 = 30, N2 = 60, N3 = 90 and N4 = 120 lb./ac.
(2) 3 levels of Lime viz. L0 = 0, L1 = 4 and L2 = 8 cwt/ac.
Treatments in orthogonal direction:
3 levels of P viz. P0 = 0, P1 = 20 and P2 = 40 lb./ac.
P2O5 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’ x 34’.
(b) 17’ x 32’ .(v) 1’. border alround. (vi) Yes.

4. GENERAL:
(i) Good (in the beginning); heavy showers 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.

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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 x L) table = 42.5 lb./ac.
4. S.E. of difference of two 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(3)/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 hrs/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 flowering) (ix) 32.97' (x) Last week of December.

2. TREATMENTS:
   Treatments in one direction :—
   (1) 5 levels of N viz. N₀ =0, N₁ =30, N₂ =60, N₃ =90 and N₄ =120 lb./ac.
   (2) 3 levels of Lime viz. L₀ =0, L₁ =4 and L₂ =8 cwt./ac.
   Treatments in orthogonal direction :—
   3 levels of P viz. P₀ =0, P₁ =20 and P₂ =40 lb./ac.
   N applied as A/S; P₂₀ 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' x 19' (b) 32' x 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.

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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 x L) table = -31.5 lb./ac.
4. S.E. of difference of two
5. P means at the same level of N = 47.2 lb./ac.
6. N means at the same level of P = 42.8 lb./ac.
7. L means at the same level of P = 33.2 lb./ac.
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 yrs./ac. (d) 9’X9’ (e) 2 Nil (vi) Jhingasail (medium) (vii) Irrigated. (viii) 2 weedicides done; First weeding and one stirring applied 5 weeks after transplantation and second weeding applied 9 weeks after transplantation. Pre-tillage — I 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. N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.
   (2) 3 levels of Lime viz. L₀=0, L₁=4 and L₂=8 cwt./ac.
   Treatments in orthogonal direction:—
   3 levels of P viz ; P₀=0, P₁=20 and P₂=40 lb./ac.
   N applied as A/S ; P₂O₅ 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’X19’ (b) 32’X17’ (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) 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.

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S.E. of marginal mean of N = 23.0 lb./ac.
S.E. of marginal mean of L = 17.9 lb./ac.
S.E. of marginal mean of P = 31.0 lb./ac.
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" x 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. N₀ = 0, N₁ = 30, N₂ = 60, N₃ = 90 and N₄ = 120 lb./ac.
   (2) 3 levels of Lime viz. L₀ = 0, L₁ = 4 and L₂ = 8 cwt./ac.
   Treatments in orthogonal direction:
   3 levels of P viz.; P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.
   N applied as A/S; P₀O₂ 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' x 19' (b)
   32' x 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.

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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 x L) table = 33.1 lb./ac.
Crop :- Paddy (Aman).
Site :- State Agri. Farm, Chinsurah.

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 weedications is common practice. (ix) 48.58" approx. (May to Dec.). (x) 17.12.48 to 1.1.49.

2. TREATMENTS :
   Main plot treatments :-
   All combinations of (1) and (2)
   (1) 5 levels of N viz. N0 =0, N1=60, N2=90 and N4=120 lb./ac.
   (2) 3 levels of P2O5 viz. P0 =0, P1=20 and P2=40 lb./ac.
   Sub-plot treatments :-
   2 levels of F.Y.M. viz. F0 =0 and F1 =100 md./ac.
   N applied as A/S and P2O5 as B.M.
   B.M. (23.8.48) 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 (Nymphula 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.

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S.E. of marginal means of P =34.72 lb./ac.
S.E. of marginal means of N =49.92 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).
Site :- State Agr. Farm, Chinsurah.
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’ x 9’ (e) 2 (v) Nil (vi) Jhingail (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. N0 =0, N1 =30, N2 =60, N3 =90 and N4 =120 lb./ac.
(2) 3 levels of P2O5 viz. P0 =0, P1 =20, and P2 =40 lb./ac.

Sub-plot treatments :-
2 levels of F.Y.M. viz. F0 =0, and F1 =100 md./ac.
N applied as A/S and P2O5 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’ x 34’. (b) 17’ x 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.

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Mean 1717 1765 1866 1783 1749 1819

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 x 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.

Ref :- W.B. 50(10)/49(4)/48(4). 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. BASA "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) Jhingail (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. N0 = 0, N1 = 30, N2 = 60, N3 = 90 and N4 = 120 lb. ac.
   (2) 3 levels of P2O5 viz. P0 = 0, P1 = 20, and P2 = 40 lb. /ac.
   Sub-plot treatments :-
   2 levels of F.Y.M. viz. F0 = 0, and F1 = 100 lb. /ac.

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 Berhamore (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.

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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 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).
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"x9". (e) 2. (v) Nil. (vi) Jhingasail. (vii) Irrigated. (viii) 1st weeding and 1 stirring applied 5 weeks to 6 weeks after transplantation 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. N₀ =0, N₁ =30, N₂ =60, N₃ =90 and N₄ =120 lb./ac.
   (2) 3 levels of P₂O₅ viz. P₀ =0, P₁ =20 and P₂ =40 lb./ac.
   Sub-plot treatments:—
   2 levels of F.Y.M. viz. F₀ =0 and F₁ =100 lb./ac.
   N applied as A/S, P₂O₅ 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’ x 19’. (b) 32’x 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. (vii) 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,

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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 x 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" x 9".  
   (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. N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.  
   (2) 3 levels of P₂O₅ viz. P₀=0, P₁=20 and P₂=40 lb./ac.
   Sub-plot treatments:
   2 levels of F.Y.M. viz. F₀=0 and F₁=100 md./ac.
   N applied as A/S. P₂O₅ 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' x 19'.  
   (b) 32' x 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.

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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 = 24.6 lb./ac.  
S.E. of body of (N x 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).
Site: State Agri. Farm, Chinsurah.
Ref: W.B. 48(3).
Type: ‘M’.

Object: To study the response of Paddy to the application of N 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’x9’.
   (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 \( N_2 = 0 \) 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’x19’ (b) 32’x17’. (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.

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<td>2762</td>
<td>2971</td>
<td>2867</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( B_1 )</td>
<td>3007</td>
<td>3220</td>
<td>3114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 \( N \times B \) table = 58.7 lb./ac.
4. S.E. of body of source \( \times (N) \) or \( (B) \) table = 71.8 lb./ac.
Crop :- Paddy (Aman).
Site :- State Agri. Farm, Chinsurah.

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"x9". (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. N₁ =40 and N₂ =60 lb./ac.
(3) 2 levels of B.M. viz. B₀ =0 and B₁ =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) 266.6 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.

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
<th>B₀</th>
<th>B₁</th>
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<tr>
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<td>2205</td>
<td>2365</td>
<td>2285</td>
<td>2263</td>
<td>2309</td>
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<tr>
<td>F.Y.M.</td>
<td>2386</td>
<td>2494</td>
<td>2440</td>
<td>2371</td>
<td>2510</td>
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<tr>
<td>Art. F.Y.M.</td>
<td>2118</td>
<td>2185</td>
<td>2152</td>
<td>2134</td>
<td>2170</td>
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<tr>
<td>Mean</td>
<td>2236</td>
<td>2348</td>
<td>2292</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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).  
Site :- State Agri. Farm, Chinsurah.  
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" x 9". (e) 2. (v) Nil. (vi) Bhasmanik (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. N₁ = 43 and N₂ = 60 lb./ac.
   (3) 2 levels of B.M. viz. B₀ = 0 and B₁ = 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' x 19' (b) 32' x 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) 129.1 lb./ac.
   (iii) Levels of N and B.M. differ highly significantly.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
<th>B₀</th>
<th>B₁</th>
</tr>
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<td>2032</td>
<td>1955</td>
<td>1911</td>
<td>2000</td>
</tr>
<tr>
<td>F.Y.M.</td>
<td>1911</td>
<td>1946</td>
<td>1929</td>
<td>1854</td>
<td>2004</td>
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<tr>
<td>Art. F.Y.M.</td>
<td>1831</td>
<td>1805</td>
<td>1818</td>
<td>1777</td>
<td>1859</td>
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<tr>
<td>Mean</td>
<td>1874</td>
<td>1928</td>
<td>1901</td>
<td></td>
<td></td>
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<tr>
<td>B₀</td>
<td>1809</td>
<td>1886</td>
<td>1847</td>
<td></td>
<td></td>
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<tr>
<td>B₁</td>
<td>1939</td>
<td>1970</td>
<td>1954</td>
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</tbody>
</table>

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 x B table = 40.2 lb./ac.
4. S.E. of body of source x (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 matter viz. T.C., F.Y.M. and Artificial F.Y.M.
   (2) 2 levels of N viz. N₁ =40 and N₂ =60 lb./ac.
   (3) 2 levels of B.M. viz. B₀ =0 and B₁ =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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>Mean</th>
<th>B₀</th>
<th>B₁</th>
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<td>2271</td>
<td>2153</td>
<td>2013</td>
<td>2293</td>
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<tr>
<td>F.Y.M.</td>
<td>1926</td>
<td>2089</td>
<td>2007</td>
<td>1962</td>
<td>2053</td>
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<td>1746</td>
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<td>1806</td>
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<td>Mean</td>
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<td>2354</td>
<td>1969</td>
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<td>B₀</td>
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<td>2018</td>
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<td>B₁</td>
<td>2011</td>
<td>2091</td>
<td>2051</td>
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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 yrs/ac. (d) 9" x 9", (e) 2—3.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N as A/N : N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.

(2) 3 times of application of A/N : T₁=Full dose at puddling (10.8.48), T₂=Full dose 4 weeks after transplantation (14.9.48) and T₃=½ dose at puddling+½ dose 4 weeks after transplantation.

3. DESIGN :

(i) 4 x 3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 32' x 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.

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>Mean</th>
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<tr>
<td>T₂</td>
<td>1430</td>
<td>1543</td>
<td>1779</td>
<td>1584</td>
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<tr>
<td>T₃</td>
<td>1234</td>
<td>1687</td>
<td>1655</td>
<td>1525</td>
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</table>

Mean 1387 1605 1741

S.E. of marginal mean = 78.5 lb./ac.

S.E. of body of table =136.1 lb./ac.
2. TREATMENTS:
All combinations of (1) & (2)
(1) 4 levels of N as A/N: N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.
(2) 3 times of application of A/N : T₁=Full dose at puddling (1.8.49) ; T₂=Full dose 4 weeks after transplantation and T₃=dose at puddling+dose 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’×17’. (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.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
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<td>Control =1872 lb./ac.</td>
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<td>N₂</td>
<td>N₃</td>
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<tr>
<td>T₁</td>
<td>2242</td>
<td>2407</td>
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<td>2427</td>
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<tr>
<td>Mean</td>
<td>2204</td>
<td>2372</td>
<td>2441</td>
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</tbody>
</table>

S.E. of marginal mean of N or T =49.2 lb./ac.
S.E. of body of table =85.2 lb./ac.

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) 17th July to 1st week of August. (iv) (a) 4—5 ploughings & lifting after the preparation of land during May & June. (b) Transplanting. (c) — (d) 9”x9”. (e) 2. (v) Nil. (vi) Bhadramukh (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: N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.
(2) 3 Times of application of A/N: T₁=Full dose at puddling, T₂=Full dose 4 weeks after transplantation and T₃=dose at puddling+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’×19’. (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.

<table>
<thead>
<tr>
<th>Control</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
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<tr>
<td></td>
<td>1850</td>
<td>2140</td>
<td>2242</td>
<td>1930</td>
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</table>

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)  
Site: State Agri. Farm, Chinsurah.

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) 9" X 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 : N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.
(2) 3 times of application of A/N :
T₁=Full dose at puddling, T₂=Full dose 4 weeks after transplantation and T₃=½ dose at puddling + ½ dose 4 weeks after transplantation.

3. DESIGN:
(i) 4 X 3 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 34' X 19' (b) 32' X 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.
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 : N0=0, N1=20, N2=40, and N3=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. 2nd 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 & 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.

<table>
<thead>
<tr>
<th>Source of N</th>
<th>M.C.</th>
<th>C.C.</th>
<th>G.N.C.</th>
<th>Mean</th>
</tr>
</thead>
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<td>2346</td>
<td>2228</td>
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<tr>
<td>N1</td>
<td>2384</td>
<td>2404</td>
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<td>N2</td>
<td>2455</td>
<td>2448</td>
<td>2342</td>
<td>2415</td>
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</tbody>
</table>

S.E. of marginal mean of source or level = 32.6 lb./ac.
S.E. of the body of table = 56.5 lb./ac.
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) Bhansamik (CH—3, Med.) (vii) Unirrigated. (viii) 2—3 weedings is common practice. (ix) 60.55°. (x) 1st week of Dec. 1949.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 4 levels of N: N₀ =0, N₁ =20, N₂ =40 and N₃ =60 lb./ac.
   (2) 3 Sources of N: Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.

3. DESIGN:
   (i) 4X3 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 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.

\[
\begin{array}{|c|c|c|c|}
\hline
 & M.C. & C.C. & G.N.C. \\
\hline
N₀ & 2781 & 2817 & 2818 \\
N₁ & 3040 & 2527 & 2701 & 2756 \\
N₂ & 2869 & 3012 & 2860 & 2914 \\
N₃ & 2897 & 2912 & 2892 & 2900 \\
\hline
\text{Mean} & 2935 & 2817 & 2818 \\
\hline
\end{array}
\]

S.E. of marginal mean of Source or level = 45.7 lb./ac.
S.E. of body of table = 79.1 lb./ac.
2. TREATMENTS:
All combinations of (1) and (2)
(1) 4 levels of N : N0=0, N1=20, N2=40 and N3=60 lb./ac.
(2) 3 sources of N : Mustard Cake (M.C.), Castor Cake (C.C.) and G.N.C.

3. DESIGN:
(i) 4x3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 44'x15'. (b) 42'x13'. (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. (vii) Nil

5. RESULTS:
(i) 2556 lb./ac.
(ii) 239.7 lb./ac.
(iii) No effect is significant.
(iv) Av. yield of grain in lb./ac.

\[ N_0 = 2504 \text{ lb./ac.} \]

<table>
<thead>
<tr>
<th>Source</th>
<th>M.C.</th>
<th>C.C.</th>
<th>G.N.C.</th>
<th>Mean</th>
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<td>2596</td>
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<td>N3</td>
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<td>2566</td>
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</table>

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).
Site :- State Agri. Farm Chinsurah.
Ref :- W.B. 52(15).
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"x9". (e) 2 (v) 100 md. cowdung/ac. (vi) Bhasamanik (Medium). (vii) Irrigated. (vii) 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 : N1=20, N2=40, N3=60 and N4=80 lb./ac.
(2) 2 methods of application of A/S : M1=A/S broadcast on surface and M2=Thrust into soil. A/S was applied 4 weeks after transplantation.

3. DESIGN:
(i) 4x2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 34'x19'. (b) 32'x17'. (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.

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>N₄</th>
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<td>2597</td>
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</table>

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).
Site: State Agri. Farm, Chinsurah.
Ref: W.B. 53(8)/52(15).
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" x 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: N₁=20, N₂=40, N₃=60 and N₄=80 lb./ac.
(2) 2 methods of application: M₁=On the surface and M₂=Thrust in the soil.
A/S applied 4 weeks after transplantation.

3. DESIGN:
(i) 4 x 2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6 (iv) (a) 34' x 19'. (b) 32' x 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.

<table>
<thead>
<tr>
<th></th>
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<th>N₃</th>
<th>N₄</th>
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<td>2645</td>
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<td>Mean</td>
<td>2645</td>
<td>2799</td>
<td>2621</td>
<td>2243</td>
<td>2577</td>
</tr>
</tbody>
</table>

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).
Site :- State Agri. Farm, Chinsurah.

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" x 9". (e) 3. (f) 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 P0. Po=0, P1=20, P2=40, P3=60 and P4=80 lb./ac.
   (2) 5 levels of N : N0=0, N1=15, N2=30, N3=45 and. N4=60 lb./ac.

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

3. DESIGN:
   (i) 5 x 5 Fact in. R.B.D. (ii) (a) 25. (b) N.A. (iii) 5 (iv) (a) 38' x 22'. (b) 36' x 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/S and P2 as super. (vi) 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.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
<th>P1</th>
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<td>2425</td>
<td>2448</td>
<td>2477</td>
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<td>2428</td>
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</table>

S.E. of marginal mean = 76.7 lb./ac.
S.E. of body of table = 171.2 lb./ac.

Crop :- Paddy (Aman).
Site :- State Agri. Farm, Cooch Behar.

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) "Transplanted. (c) —. (d) 9" x 9". (e) 3. (f) N.A. (vi) Irrigated. (vii) 41.19°. (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 $P_2 O_5$: $P_2=0$, $P_1=20$, $P_2=40$, $P_3=60$ 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.

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

3. DESIGN:

(i) 5 x 5 Fact. in R.B.D. 
(ii) (a) 25. 
(b) N.A.
(iii) 5.
(iv) (a) 38' x 22'. (b) 36' x 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, Berdwan, Haringhata and Midnapore and Cultivators' fields.
(b) N.A.
(vi) and (vii) Nil.

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.

<table>
<thead>
<tr>
<th></th>
<th>$P_0$</th>
<th>$P_1$</th>
<th>$P_2$</th>
<th>$P_3$</th>
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<td>2037</td>
<td>1896</td>
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<td>1894</td>
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<td>1866</td>
<td>2108</td>
<td>1942</td>
<td>2000</td>
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<td>1924</td>
<td>1921</td>
<td>1997</td>
<td>1927</td>
<td>2012</td>
<td>1956</td>
</tr>
</tbody>
</table>

S.E. of marginal mean = 52.5 lb./ac.
S.E. of body of table = 117.4 lb./ac.

Crop :-Paddy (Aman).
Site :-State Agri. Farm, Haringhata.
Object :-To find out the optimum requirement of A/S and Super on Aman paddy under different soil climatic conditions of West Bengal.

Ref :-W.B. 53 (20)
Type :-'M'.

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) 9' x 9'. 
(d) 9' x 9'. 
(e) 3. 
(v) N.A. 
(vi) Bhasamanik. 
(vii) Unirrigated. 
(viii) N.A. 
(ix) 12.70°(x) 15th December to 1st week of January.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 5 levels of $P_2 O_5$: $P_2=0$, $P_1=20$, $P_2=40$, $P_3=60$ 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 $P_2 O_5$ as Super.
Super was ploughed in before transplanting and A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN:

(i) 5 x 5 Fact. in R.B.D. 
(ii) (a) 25. 
(b) N.A. 
(iii) 5.
(iv) (a) 38' x 22'. 
(b) 35.25' x 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) Mayanaguri, 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.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
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</tbody>
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S E. of marginal mean = 60.1 lb./ac.
S E. of body of table = 134.1 lb./ac.

Crop :-Paddy (Aman).
Site :-State Hort. Farm, Krishnagar.

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. (d) New Alluvium. (e) Refer soil analysis, Krishnagar
(ii) 27.8.53. (iii) (a) N.A. (b) Transplanted. (c) 9" × 9". (d) 3 (v) Nil. (vi) Dodkhani (Pine).
(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.

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.

<table>
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<tr>
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<th>Av. yield</th>
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<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
<td>1672</td>
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</table>
S.E./mean = 122.6 lb./ac.
Crop :- Paddy (Aus).
Site :- State Agri. Farm, Malda.

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 : N₀=0, N₁=30 and N₂=60 lb./ac.
   (2) 3 levels of P₂O₅ : P₀=0, P₁=30 and P₂=60 lb./ac.
   Sub-plot treatments :-
   2 methods of application of Super : M₁=Spread on and M₂=Dug in trenches.
   N as A/S and P₂O₅ 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'x21.5' (b) 28'x19.5'. (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.

<table>
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</table>

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).
Site :- State Agri. Farm, Malda.

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 ladder. (b) Broadcast. (c) 1 md./ac. (d) and (e) — (v) Nil. (vi) Dhari. (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:-
   (1) 3 levels of N : N0 =0, N1 =30 and N2 =60 lb./ac.
   (2) 3 levels of P205 : P0 =0, P1 =30 and P2 =60 lb./ac.
   
   Sub-plot treatments:
   2 methods of application of Super: M1 = Spread on and M2 = Dug in trenches.
   N as A/S and P205 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, ladder 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’x21.5’ ; Main plot : 190’x68.5’. (b) Sub-plot : 28’x19.5’ ; 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) 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.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
<th>P1</th>
<th>P2</th>
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<td>N2</td>
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</table>

M1 = 1401  M2 = 1492

S.E. of difference of two
   1. means in the body of NX 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).
Site :- State Agri. Farm, Malda.

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, Maida. (iii) 15th July to 1st week of August. (iv) (a) 4-5 ploughings and ladderings after the preparation of land during May and June. (b) Broadcast. (c) 30 to 35 seers/ac. (d) 9" x 9". (e) 2-3. (f) 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 : N0=0, N1=30 and N2=60 lb./ac.
   (2) 3 levels of P2O5 : P0=0, P1=30 and P2=60 lb./ac.

   Sub-plot treatments :
   2 methods of application of Super : M1=Spread on and M2=Dug in trenches.
   N as A/S and P2O5 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′ x 21.5′. (b) 28′ x 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) N.o. (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.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
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<th>P2</th>
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<th>M2</th>
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</table>

1. S.E. of body of N x 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.
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).  
Site: State Agri. Farm, Malda.  
Ref: W.B. 53(23).  
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.  
   (v) N.A.  
   (vi) Dular (Medium).  
   (vii) Irrigated.  

2. TREATMENTS:
   (1) 5 levels of P₂O₅: P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb/ac.  
   (2) 5 levels of N: N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb/ac.  

3. DESIGN:
   (i) 5 x 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, Burdwao, Midnapore and Cultivators' fields. (b) N.A.  
   (vi) Nil.  

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.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
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S.E. of marginal mean = 70.0 lb/ac.  
S.E. of body of table = 176.9 lb/ac.

Crop: Paddy (Aman).  
Site: State Agri. Farm, Maynaguri.  
Ref: W.B. 53(24).  
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'.  
   (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 \( P_{2}O_{5} \): \( P_{2}=0, P_{1}=23, P_{3}=40, P_{4}=60 \) and \( P_{5}=80 \) 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.

\( P_{2}O_{5} \) 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) \( 5 \times 5 \) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) \( 32' \times 22' \). (b) \( 30' \times 20' \). (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.

<table>
<thead>
<tr>
<th>( P_{0} )</th>
<th>( P_{1} )</th>
<th>( P_{2} )</th>
<th>( P_{3} )</th>
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<td>1741</td>
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<td>( N_{2} )</td>
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<td>1949</td>
<td>1822</td>
<td>1807</td>
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<tr>
<td>( N_{3} )</td>
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<td>1885</td>
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<td>1936</td>
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S.E. of marginal mean = 81.0 lb./ac.
S.E. of body of table = 181.0 lb./ac.

---

Crop: Paddy (Aus).
Site: State Agri. Farm, Midnapore.
Object: To study the effect of \( N \) and \( P_{2}O_{5} \) on Dular variety of paddy.

Ref: W.B. 50(43)
Type: 'M'

### 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) \( 10' \times 10' \). (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 \( P_{2}O_{5} \)
3. 25 lb./ac. of \( N+25 \) lb./ac. of \( P_{2}O_{5} \)
4. Control.

3. DESIGN:

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) \( 31' \times 28' \). (b) \( 30' \times 27' \). (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,

<table>
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<th>Treatment</th>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
<td>1171</td>
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<tr>
<td>4.</td>
<td>1013</td>
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S.E./mean = N.A.

Crop: Paddy (Aman)

Site: State Agri. Farm, Midnapore.

Ref: W.B.53(19)

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) Sandy loam. (d) 9" x 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 P₂O₅: P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.
(2) 5 levels of N: N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.

N as A/S and P₂O₅ as Super.

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

3. DESIGN:

(i) 5 x 5 Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5 (iv) (a) 38' x 22' (b) 36' x 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.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
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</table>

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)  
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)  
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 weedings 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>479.4</td>
</tr>
<tr>
<td>2.</td>
<td>526.4</td>
</tr>
<tr>
<td>3.</td>
<td>636.2</td>
</tr>
<tr>
<td>4.</td>
<td>741.4</td>
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<tr>
<td>S.E./mean</td>
<td>= 60.8 lb./ac</td>
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</table>

---

**Crop :-** Paddy (Aus).

**Ref :-** W.B. 50(20)/48(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) 22.6/1.850. (iv) (a) 3—4 ploughings and laddering. (b) Transplanting. (c)—(d) 9"x9". (e) 2—3. (v) Nil. (vi) Ashkata (early). (vii) Unirrigated. (viii) 1—2 weedings is common practice. (ix) 45°. (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'x18.75'. (b) 27.75'x 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) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>595.8</td>
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<tr>
<td>2.</td>
<td>647.4</td>
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<tr>
<td>3.</td>
<td>683.2</td>
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<tr>
<td>4.</td>
<td>771.7</td>
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<tr>
<td>S.E./mean</td>
<td>= 34.8 lb./ac</td>
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</table>
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"x9". (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'x18.75'. (b) 27.00'x17.25'. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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</tr>
<tr>
<td>2.</td>
<td>217.6</td>
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<td>3.</td>
<td>273.3</td>
</tr>
<tr>
<td>4.</td>
<td>369.6</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>17.4 lb./ac.</td>
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</table>

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"x9". (e) 2—3. (v) Nil. (vi) Badkalamkti-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 : N0 =0, N1 =30 and N2 =60 lb./ac.
   (2) 3 levels of P2O5 : P0 =0, P1 =20 and P2 =40 lb./ac.

Sub-plot treatments:—
   2 levels of F.Y.M. : F0 =0 and F1 =100 md./ac.
N as A/S and P2O5 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'x19'. (b) 32'x17'. (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.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
<th>P1</th>
<th>P2</th>
<th>Mean</th>
<th>F0</th>
<th>F1</th>
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<td>1411</td>
<td>1644</td>
<td>1299</td>
<td>1224</td>
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<td>1503</td>
<td>1254</td>
<td>1213</td>
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<td>787</td>
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<td>2425</td>
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<tr>
<td>F1</td>
<td>804</td>
<td>1499</td>
<td>1581</td>
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<td></td>
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</table>

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 NxP table = 175.9 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'x9'. (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: N0=0, N1=30 and N2=60 lb./ac.
  (2) 3 levels of P2O5: P0=0, P1=20 and P2=40 lb./ac.
Sub-plot treatments:—
- 2 levels of F.Y.M.: F0=0 and F1=100 md./ac.
N as A/S and P2O5 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'x19'. (b) 32'x17'. (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, P2O5, and F.Y.M. effects and interaction N×P are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>d0</th>
<th>F1</th>
<th>P2</th>
<th>Mean</th>
<th>F0</th>
<th>F1</th>
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<td>1805</td>
<td>1609</td>
<td>2001</td>
</tr>
<tr>
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<td>1902</td>
<td>2059</td>
<td>1837</td>
<td>1648</td>
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<tr>
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<td>2087</td>
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<td></td>
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</tbody>
</table>

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 \( N \times P \) 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) Badakalamakati-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 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.
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) N.A. (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, P₂O₅ and F.Y.M. are highly significant. Interaction NP is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>F₀</th>
<th>F₁</th>
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<td>2271</td>
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<td>2469</td>
<td>2214</td>
<td>2053</td>
<td>2374</td>
</tr>
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</table>

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 x F 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” x 9”. (e) 2. (v) Nil. (vi) Badkalmkati-65 (early). (vii) Unirrigated. (viii) One weeding four weeks after transplantation. (ix) 35.84”. (x) 15th December to 1st week of January.

2. TREATMENTS:
Main-plot treatments:
All combinations of (1) and (2)
(1) 3 levels of N : N₀ = 0; N₁ = 30 and N₂ = 60 lb./ac.
(2) 3 levels of P : P₀ = 0. P₁ = 30 and P₂ = 60 lb./ac.
Sub-plot treatments:
2 levels of F.Y.M. : F₀ = 0 and F₁ = 100 md./ac.
N as A/S and P₂O₅ 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’ x 19’. (b) 32’ x 17’. (v) 1’ border around each plot. (vi) Yes.
5. RESULTS:

(i) 1796 lb./ac.
(ii) (a) 306.4 lb./ac.
(b) 136.8 lb./ac.
(iii) Main effects of N, P₂O₅ and F.Y.M. are highly significant. Interactions are not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean.</th>
<th>F₀</th>
<th>F₁</th>
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<td>2043</td>
<td>1945</td>
<td>1854</td>
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<td></td>
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</tbody>
</table>

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.
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" x 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 : N₀=0, N₁=30 and N₂=60 lb./ac.
(2) 3 levels of P₂O₅ : P₀=0, P₁=30 and P₂=60 lb./ac.

Sub-plot treatments :-

2 levels of F.Y.M. : F₀=0 and F₁=100 md./ac.
N as A/S and P₂O₅ 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' x 19'.  (b) 32' x 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$_2$O$_5$ are highly significant. Interaction F X N is significant while other effects are not significant.

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

<table>
<thead>
<tr>
<th></th>
<th>P$_0$</th>
<th>P$_1$</th>
<th>P$_2$</th>
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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 X 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° x 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$_2$O$_5$ : 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$_2$O$_5$ 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' x 19'. (b) 32' x 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 up to 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. yield of grain in lb./ac.

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(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 x 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). Type :-'M'.
Site :-State Agri. Farm, Suri.

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' x 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 : N0=0, N1=30, N2=60, N3=90 and N4=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 x 3 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 18.75' x 21.0'. (b) 18' x 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 (residual 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 significantly. Interaction is not significant.
(iv) Av. yield of grain in lb./ac.

\[ \text{Mean} = \frac{N_0 \times 1712 + N_1 \times 2018 + N_2 \times 2199 + N_3 \times 2428 + N_4 \times 2594}{5} \]

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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).
Site: State Agri. Farm, Suri.
Ref: W.B. 50 (19)/49 (18).
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) Nil. (d) 9' × 3'. (e) 2–3. (v) Nil. (vi) Raghusail. (vii) Unirrigated. (viii) 2–3 weedings is common practice. (ix) 42.5'. (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) 1904 lb./ac.
(iii) Only levels of N differ highly significantly.
(iv) Av. yield of grain in lb./ac.

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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).
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) $9^\circ \times 9^\circ$. (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 X 3 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 18.75' X 21.0'. (b) 17.25' X 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 $\times$ source of $N$ interaction is not significant.
(iv) Av. yield of grain in lb./ac.

<table>
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<tr>
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Mean | 2500 | 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).
Site: State Agri. Farm, Suri.

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 Dhanica (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 60 md/ac. + B.M. at 6.5 md/ac. + Nicofos 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). (vii) 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: N₀ = 0, N₁ = 30 and N₂ = 60 lb./ac.
   (2) 3 levels of P₂O₅: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.
   (3) 2 levels of F.Y.M.; F₀ = 0 and F₁ = 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 Confid. 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.

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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 × P or P × table = 112.9 lb./ac.
S.E. of body of N × F table = 136.3 lb./ac.
Crop : Paddy (Aman).
Site : State Agri. Farm, Suri.
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 1919. (iv) (a) 1—1 ploughings before transplantation. (b) Transplanting. (c)—(d) 9"×9". (e) 2—3. (v) Nil. (vi) Bhasanakini, 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) 3 levels of N : N₀=0, N₁=30 and N₂=60 lb./ac.
(2) 3 levels of P₂O₅ : P₀=0, P₁=20 and P₂=40 lb./ac.
(3) 2 levels of F.Y.M. : F₀=0 and F₁=100 md/ac.
N as A/S & P₂O₅ as B.M.
B.M. & F.Y.M. were applied at the time of general preparation of land and A/S was applied after 4 weeks of transplantation.

3. DESIGN:
(i) 3×3×2 Fact. Partially Confld. in Randomised Incomplete Blocks (ii) (a) 6 plots/block and 3 blocks/replcation (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) 1918-49—continued. (b) Yes. (b) N.A. (v) (a) Chinjurah & Berhampore. (b) N.A. (vi) & (vii) Nil.

5. RESULTS:
(i) 2589 lb./ac.
(ii) 233.6 lb./ac.
(iii) Main effects of N, P₂O₅, 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.

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S.E. of the marginal mean of N or P₂O₅ =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.
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.

3. DESIGN:
   (i) 3×3×2=Fact. Partially Conf.d. 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 around. (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) 2881 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.

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S.E. of the marginal mean of N or P_2O_5 =33.5 lb./ac.
S.E. of the marginal mean of 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×F table =58.0 lb./ac.
2. TREATMENTS:
All combinations of (1), (2) & (3)
(1) 3 levels of N: \( N_0 = 0, N_1 = 10 \) and \( N_2 = 60 \) lb./ac.
(2) 3 levels of \( P_{205} \): \( P_0 = 0, P_1 = 20 \) and \( P_2 = 40 \) lb./ac.
(3) 2 levels of F.Y.M.: \( F_0 = 0 \) and \( F_1 = 100 \) lb./ac.

\( P_{205} \) 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 x 3 x 2 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 34' x 19'. (b) 42' x 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 NxF.Y.M. are highly significant. Interaction N x P is significant. Other effects are not significant.
(iv) Av. yield of grain in lb./ac.

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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 NxF or PxF table = 80.8 lb./ac.
S.E. of the body of the N x P table = 98.9 lb./ac.

Crop: Paddy (Aman).
Site: State Agri. Farm, Suri.
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' x 9'. (e) 2. (f) Nil. (f) Bhasamanik (Medium). (f) Irrigated. (vii) 2 weedings done; first and second weedings were done about 5 weeks and 9 weeks after transplantation respectively. (ix) 59.34' (x) 15th Dec. to 1st week of January.
2. TREATMENTS:

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

(1) 3 levels of N: N₀=0, N₁=30 and N₂=60 lb./ac.
(2) 3 levels of P₂O₅: P₀=0, P₁=20 and P₂=40 lb./ac.
(3) 3 levels of F.Y.M.: F₀=0 and P₁=100 md./ac.

P₂O₅ 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 x 3 x 2 Fact. Partially Conf'd. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block; 3 blocks/repetition. (b) N.A. (iii) 4. (iv) (a) 34' x 19', (b) 32' x 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 measures taken N.A. (iii) Yield of grain. (iv) (a) 1943—continued. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (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.

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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 x F or P x F table = 100.0 lb./ac.
S.E. of body of N x P table = 122.5 lb./ac.

Crop: Paddy (Aman).
Site: State Agri. Farm, Suri.

Ref: W.B. 53(3).
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 to 1st week of August. (iv) (a) & (b) N.A. (c) ——. (d) 9° x 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: N₀=0, N₁=30 and N₂=60 lb./ac.
(2) 3 levels of P₂O₅: P₀=0, P₁=20 and P₂=40 lb./ac.
(3) 3 levels of F.Y.M.: F₀=0 and P₁=100 md./ac.

N as A/S and P₂O₅ 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) $3 \times 3 \times 2$ Fact. Partially Confid. in Randomised Incomplete Blocks. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) $34' \times 19'$. (b) $32' \times 17'$. (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 NxF are highly significant. Main effect of P and interaction NxP are significant. Other interactions are not significant.
(iv) Av. yield of grain in lb./ac.

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<th>N₂</th>
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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 NxF or PxF table = 63.4 lb./ac.
S.E. of body of NxP table = 77.4 lb./ac.

Crop : Paddy (Aman).
Site : State Agri. Farm, Suri.

Ref : W.B. 48(8).
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. Dhanicha & 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'x9'. (b) Transplanting. (c) 2—3. (v) Nil.
(ii) Bhashmanik, CH 3 (Med.). (vii) Unirrigated. (viii) 2—3 weedings is common practice. (x) N.A.
(x) Dec. 1948.

2. TREATMENTS:
All combinations of (1), (2) and (3)
(1) 4 levels of N : N₀ = 0, N₁ = 30, N₂ = 60 and N₃ = 90 lb./ac.
(2) 3 le. els of P₂O₅ : P₀ = 0, P₁ = 30 and P₂ = 60 lb./ac.
(3) 3 levels of Lime ; L₀ = 0, L₁ = 4, and L₃ = 8 cwt./ac.
N as A/S and P₂O₅ at 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) $4 \times 3$ Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/blocks; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) $34' \times 19'$ (b) $32' \times 17'$. (v) 1' border along 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 (Nymphula deputalis) observed 6 weeks after transplanting. Rope soaked in kerosene oil drawn over affected plots & kerosene oil pumped 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.

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S.E. of the marginal mean of N = 101.7 lb/ac.
S.E. of the marginal mean of P = 89.8 lb/ac.
S.E. of the mean in body of $N \times P$ or $N \times L$ = 179.6 lb/ac.
S.E. for the mean in body of $P \times L$ 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"x9". (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 x 3 x 3 Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) 12 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) 34' x 19'. (b) 32' x 17'. (v) 1' border around a plot as guard row. (vi) Yes.

4. GENERAL:
(i) Good; plants receiving higher doses of N slightly lodged. (ii) Nil. (iii) Tiller ing, 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 x P are highly significant. Other effect and interactions are not significant.
(iv) Av. yield of grain in lb/ac.

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S.E. of the marginal mean of N = 45.6 lb/ac.
S.E. of the marginal mean of P₂O₅ or Lime = 39.5 lb/ac.
S.E. of the body of N x P or N x L table = 79.0 lb/ac.
S.E. of body of P x L table = 68.4 lb/ac.

Crop := Paddy (Aman).
Site := State Agri. Farm, Suri.
Ref := W.B. 50(12).
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" x 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: N₀=0, N₁=30, N₂=60 and N₃=90 lb/ac.
(2) 3 levels of P₂O₅: P₀=0, P₁=20 and P₂=40 lb/ac.
(3) 3 levels of Lime: L₀=0, L₁=4 and L₂=8 cwt/ac.
N as A/S and P₂O₅ as B.M.
3. DESIGN:
(i) $4 \times 3 \times 3$ Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/block and 3 blocks/repetition. (b) N.A. (iii) 2. (iv) (a) $34' \times 19'$. (b) $32' \times 17'$. (v) 1' border around. (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 x P are highly significant. Other interactions are not significant. (vi) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>P0</th>
<th>P1</th>
<th>P2</th>
<th>Mean</th>
<th>L0</th>
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S.E. of the marginal mean of N = 22.1 lb./ac.
S.E. of the marginal mean of P or L = 19.1 lb./ac.
S.E. of the body of N x P or N x L table = 38.2 lb./ac.
S.E. of body of P x L table = 33.1 lb./ac.

Crop: Paddy (Aman).
Site: State Agri. Farm, Suri.

Ref: W.B. 51(8).
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) 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 till 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' x 9'. (e)–. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 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$_2$O$_5$: $P_0 = 0$, $P_1 = 20$ 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$_2$O$_5$ as B.M. ploughed in during general preparation of land. Lime ploughed in 6 weeks before transplantation.
3. DESIGN:
   (i) 4x3x3 Fact. Partially Confd. in Randomised Incomplete Blocks (ii) (a) 12 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 34'x19'. (b) 32'x17'. (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.

<table>
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<tr>
<th></th>
<th>P0</th>
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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 x P or N x L table = 100.1 lb./ac.
S.E. of body of P x L table = 86.7 lb./ac.

Crop :- Paddy (Aman).
Site :- State Agri. Farm, Suri.
Ref :- W.B. 52(25).
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"x9". (e) 2. (v) Nil. (vi) Bhasamanik (Medium). (vii) Irrigated. (viii) 2 weedings done; first and second weedings done about 5 weeks and 9 weeks after transplantation respectively. (ix) 59.54w. (x) 15th December to 1st week of January.

2. TREATMENTS:
   All combinations of (1), (2) & (3)
   (1) 4 levels of N : N0 = 0, N1 = 30, N2 = 50 and N3 = 90 lb./ac.
   (2) 3 levels of P2O5 : P0 = 0, P1 = 20 and P2 = 40 lb./ac.
   (3) 3 levels of Lime : L0 = 0, L1 = 4 and L2 = 8 cwt/ac.

N as A/S top dressed 4 weeks after transplantation. P2O5 as B.M. ploughed in during general preparation of land, and Lime ploughed in 6 weeks before transplantation.
3. DESIGN:
(i) $4 \times 3 \times 3$ Fact. Partially Confd. in Randomised Incomplete Blocks. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 2, (iv) (a) 34'x19'. (b) 32'x17' (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) 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. yld of grain in lb/ac.

<table>
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<th>$\text{P}_2$</th>
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<td>2110</td>
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S.E. of the marginal mean of L or $\text{P}$ = 59.3 lb/ac.
S.E. of the marginal mean of N = 68.5 lb/ac.
S.E. of body of the $\text{N} \times \text{L}$ or $\text{N} \times \text{P}$ table = 118.6 lb/ac.
S.E. of body of the $\text{P} \times \text{L}$ table = 102.7 lb/ac.

Crop: Paddy (Aman).
Site: State Agri. Farm, Suri.
Object: To study the effect of continuous application of A/S, B.M. and Lime on the yield of Paddy.

Ref: W.B. 53(4).
Type: ‘M’.

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'x9' (e) 2. (v) Nil. (vi) Bhassamanik (Medium) (vii) Irrigated. (viii) 2 weeding First and second weeding 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 $\text{N}$: $\text{N}_0=0$, $\text{N}_1=30$, $\text{N}_2=60$ and $\text{N}_3=90$ lb/ac.
(2) 3 levels of $\text{P}_2\text{O}_5$: $\text{P}_0=0$, $\text{P}_1=20$ and $\text{P}_2=40$ lb/ac.
(3) 3 levels of Lime: $\text{L}_0=0$, $\text{L}_1=4$ and $\text{L}_2=8$ cwt/ac.
N as A/S top dressed 4 weeks after transplantation. $\text{P}_2\text{O}_5$ 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 Conf. 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 application 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.

<table>
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<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
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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. of body of N × P or N × L tables = 115.9 lb/ac.
S.E. of body of P × L table = 100.4 lb/ac.

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 P₂O₅ %=0.071; Available P₂O₅ %=0.0064; exchangeable Ca (m.e.%),=5.08. (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 P₂O₅ : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=10 lb/ac.
(2) 5 levels of N : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=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) Arbitary selection :- Cultivator's plot 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.

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<tr>
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<th>( N_0 )</th>
<th>( N_1 )</th>
<th>( N_2 )</th>
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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 Cultivator's fields)
Site :- Bulbulchandi; Dist. 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\(_2\)O\(_5\)=0.035; Available P\(_2\)O\(_5\)=0.001; exchangeable Ca. (m.e.)\%=6.20; pH 6.0. (iii) N.A. (iv) Sahel Kalam. (v) (a) N.A. (b) Transplanted. (c) Transplanting 15th July to 1st week of August, 15th June to 1st week of July. (vi) Irrigated. (vii) 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 \( P_2 \)O\(_5\) : \( P_0 \)=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.

\( P_2 \)O\(_5\) 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 :- 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 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.

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<th>N₂</th>
<th>N₃</th>
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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 (58) (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:

(I) (a) N.A. (b) Aman paddy (c) N.A. (ii) (a) Loamy. (b) N%=0.049; Total P₂O₅=0.028; Available P₂O₅%=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) Nonapanalai (Local) Aman paddy. (v) (a) N.A. (b) Transplanting. (c) 9' × 9'. (d) 3 (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 P₂O₅ : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.
(2) 5 levels of N : N₀=0, N₁=15, N₂=30, N₃=45, and N₄=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 helmithosporium 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.
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% = 0.08; total P₂O₅ = 0.067; available P₂O₅ = 0.062; exchangeable Ca (me%) = 10.92; pH = 6.0 (iii) N.A. (iv) Jata (Local). (v) (a), (b) & (c) N.A. (d) 9" x 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 P₂O₅: P₀ = 0, P₁ = 20, P₂ = 40, P₃ = 60 and P₄ = 80 lb./ac.
   (2) 5 levels of N: N₀ = 0, N₁ = 15, N₂ = 30, N₃ = 45 and N₄ = 60 lb./ac.
P₂O₅ 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' x 22'
   (b) 36' x 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 x P is not significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>N₄</th>
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<tr>
<td>P₄</td>
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</table>

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: 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$_{2}$O$_{5}$ = 0.030; available P$_{2}$O$_{5}$ % = 0.0016; exchangeable Ca% = 2.80; pH = 6.1.  (iii) N.A.  (iv) Bhasamanik.  (v) (a), (b) & (c) N.A.  (d) 9' x 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$_{2}$O$_{5}$: 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$_{2}$O$_{5}$ 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' x 18'. (b) 34' x 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.

<table>
<thead>
<tr>
<th></th>
<th>N$_{0}$</th>
<th>N$_{1}$</th>
<th>N$_{2}$</th>
<th>N$_{3}$</th>
<th>N$_{4}$</th>
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<td>2367</td>
<td>2873</td>
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<td>2792</td>
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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 Clayey soils' fields)

Site: Lakshya; Distt: Midnapore. Type: 'M'.

Object: To find out the optimum requirement of A/S and Super 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_O_5_%=0.046; available P_O_5_%=0.0016; exchangeable Ca. (m.e.%)=6.0; pH=6.0 (iii) N.A. (iv) Patnai. (v) (a) N.A. (b) Transplanting. (c) (d) 9" x 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_O_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_O_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' x 20'. (b) 34' x 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. (iv) 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.

<table>
<thead>
<tr>
<th>N_0</th>
<th>N_1</th>
<th>N_2</th>
<th>N_3</th>
<th>N_4</th>
<th>Mean</th>
</tr>
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<tr>
<td>Mean</td>
<td>1261</td>
<td>1409</td>
<td>1810</td>
<td>1753</td>
<td>2029</td>
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S.E. of marginal mean =41.9 lb./ac.
S.E. of body of table =93.8 lb./ac.

Crop: Paddy (1st Crop). Ref: Complex experiments (T.C.M.) W.B. 1953.
Centre: Burdwan. Type: 'M'.

Object: (a) To study the effect of types and levels of N and P on non-acid soils.

1. BASAL CONDITIONS:

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_O_5: P_0 =0, P_1 =20 and P_2 =40 lb./ac.
   P_O_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) 324.5 lb./ac.
(ii) 412.5 lb./ac.
(iii) Main effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
<th>A/S</th>
<th>Urea</th>
<th>Mean</th>
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<td>3330</td>
<td>3148</td>
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<td>3232</td>
<td>3247</td>
<td>3239</td>
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<td>3172</td>
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<tr>
<td>Urea</td>
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<tr>
<td>Mean</td>
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<td>3330</td>
<td>3148</td>
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<td></td>
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</tbody>
</table>

For table N × P.
S.E. of mean in the body of table (N₀ col.) = 238.1 lb./ac.
S.E. of mean in the body of table (N₁ or N₂ col.) = 168.4 lb./ac.
S.E. of marginal mean (N₀ col.) = 134.2 lb./ac.
S.E. of marginal mean (N₁ or N₂ 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:

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.
(B) Iron as Ferrous Sul.
(C) Manganese as Mn. Sul.
(D) Zinc as Zinc Sul.
(E) Copper as C/S
(F) Borax as granulated Borax
(G) Molybdenum as Sodium Molybdate
(K) Potash as Pot. Sul.

\[ a₀ = 0 \quad a₁ = 2 \text{ cwt./ac.} \]
\[ b₀ = 0 \quad b₁ = 100 \text{ cwt./ac.} \]
\[ c₀ = 0 \quad c₁ = 20 \text{ cwt./ac.} \]
\[ d₀ = 0 \quad d₁ = 20 \text{ lb./ac.} \]
\[ e₀ = 0 \quad e₁ = 20 \text{ lb./ac.} \]
\[ f₀ = 0 \quad f₁ = 10 \text{ lb./ac.} \]
\[ g₀ = 0 \quad g₁ = 2 \text{ oz./ac.} \]
\[ k₀ = 0 \quad k₁ = 20 \text{ lb./ac.} \]
3. DESIGN:
(i) Fractional replicate (1/8th of 2^8 Factor set up) (ii) 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 significant.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean response of grain in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A)</td>
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<tr>
<td>(B)</td>
<td>55.54</td>
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<td>(C)</td>
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<td>(F)</td>
<td>90.10</td>
</tr>
<tr>
<td>(G)</td>
<td>55.54</td>
</tr>
<tr>
<td>(K)</td>
<td>86.40</td>
</tr>
</tbody>
</table>

S.E./mean = 11.43 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:

2. TREATMENTS:
5 treatments replicated as follows:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>No. of plots/block.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 0—Untreated</td>
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<tr>
<td>2. C=Control</td>
<td>6</td>
</tr>
<tr>
<td>3. P_1=1 unit dressing</td>
<td>1</td>
</tr>
<tr>
<td>4. P_1= 2 unit dressing</td>
<td>2</td>
</tr>
<tr>
<td>5. P_2= 2 unit dressing</td>
<td>2</td>
</tr>
</tbody>
</table>

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.
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 :

2. TREATMENTS :
   All combinations of (1), (2) and (3)
   (1) 3 levels of N : N₀=0, N₁=20 and N₂=40 lb./ac.
   (2) 2 sources or N : A/S and Urea.
   (3) 3 levels of P₂O₅ as Super or Triple Super :— P₀=0, P₁=20 and P₂=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, Marutēru 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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
<th>A/S</th>
<th>Urea</th>
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<td>—</td>
<td>2354</td>
<td>2722</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Crop: Paddy (1st crop).  
Centre: Mankhanda.  
Object: III. To study the effect of minor elements and K on paddy.

1. BASAL CONDITIONS:

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.  
(B) Iron as Ferrous Sul.  
(C) Manganese as Mn Sul.  
(D) Zinc as Zn Sul.  
(E) Copper as c/s  
(F) Boron as granulated Borax  
(G) Molybdeum as Sodium Molybdate  
(K) Potash as Pot. Sul.

3. DESIGN:
(i) Fractional replicate (1/8th of 2⁸ 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.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean response (grain yield in lb./ac.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+59.25</td>
</tr>
<tr>
<td>B</td>
<td>+119.73</td>
</tr>
<tr>
<td>C</td>
<td>+38.26</td>
</tr>
<tr>
<td>D</td>
<td>+175.27</td>
</tr>
<tr>
<td>E</td>
<td>+78.99</td>
</tr>
<tr>
<td>F</td>
<td>+58.01</td>
</tr>
<tr>
<td>G</td>
<td>+27.15</td>
</tr>
<tr>
<td>K</td>
<td>+13.58</td>
</tr>
<tr>
<td>S.E./mean response</td>
<td>= 94.73 lb./ac.</td>
</tr>
</tbody>
</table>
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) Deltaic and Saline—Clayey in texture (b) N.A. (iii) T.P. 18.8.53. 

2. TREATMENTS :
   5 treatments replicated as follows :
   
<table>
<thead>
<tr>
<th>Treatment</th>
<th>No. of plots/block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>O = Untreated</td>
</tr>
<tr>
<td>2.</td>
<td>C = Control</td>
</tr>
<tr>
<td>3.</td>
<td>P1 = ½ unit dressing</td>
</tr>
<tr>
<td>4.</td>
<td>P2 = unit dressing</td>
</tr>
<tr>
<td>5.</td>
<td>P2 = Double dressing</td>
</tr>
</tbody>
</table>
   
   Unit dressing : 20 lb./ac. P2O5. 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. (• i) 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.  
   
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1879</td>
<td>139.3 lb./ac.</td>
</tr>
<tr>
<td>2.</td>
<td>1819</td>
<td>56.9 lb./ac.</td>
</tr>
<tr>
<td>3.</td>
<td>2087</td>
<td>139.3 lb./ac.</td>
</tr>
<tr>
<td>4.</td>
<td>1823</td>
<td>98.5 lb./ac.</td>
</tr>
<tr>
<td>5.</td>
<td>1919</td>
<td>98.5 lb./ac.</td>
</tr>
</tbody>
</table>

---

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 
   Ja. uary.

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. P2O5 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 \( \frac{1}{3} \)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 separately. No. of villages (replication) 28; size of cut 1/319. 8th acre. (iii) \( \frac{1}{3} \) to \( \frac{1}{3} \) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1939</td>
</tr>
<tr>
<td>2.</td>
<td>2197</td>
</tr>
<tr>
<td>3.</td>
<td>2291</td>
</tr>
<tr>
<td>G.M.</td>
<td>2142</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>72.46</td>
</tr>
<tr>
<td>No. of experiments</td>
<td>28</td>
</tr>
</tbody>
</table>

Significance — Highly significant.

Crop:— Paddy (Aman)  
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. (vii) 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<sub>2</sub>O<sub>5</sub> 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 \( \frac{1}{3} \)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 \( \frac{1}{3} \) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1928</td>
</tr>
<tr>
<td>2.</td>
<td>2219</td>
</tr>
<tr>
<td>3.</td>
<td>2395</td>
</tr>
<tr>
<td>G.M.</td>
<td>2181</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>46.1</td>
</tr>
</tbody>
</table>

No. of experiments = 32.
Significance — Highly significant.
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:
(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 1/3rd to 1/3rd 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) 1/4 to 1/4 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2688</td>
</tr>
<tr>
<td>2.</td>
<td>2936</td>
</tr>
<tr>
<td>3.</td>
<td>3106</td>
</tr>
<tr>
<td>G.M.</td>
<td>2910</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>57.6</td>
</tr>
</tbody>
</table>

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 (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.
DESIGN:
(i) and (ii) An experimental plot of size varying from 1/3rd to 3/3rd of an acre was selected at random in each selected village. The plot was then subdivided 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) 1/2 to 1/3 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1388</td>
</tr>
<tr>
<td>2.</td>
<td>1625</td>
</tr>
<tr>
<td>3.</td>
<td>1783</td>
</tr>
<tr>
<td>G.M.</td>
<td>1599</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>89.0 lb./ac.</td>
</tr>
</tbody>
</table>

No. of experiments: 18
Significance: Highly significant.

Crop: Paddy (Aman).
Site: Hooghly (West Bengal).
Ref: Scheme for Manurial trials (Stewart's Scheme), 1952.
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. P₂O₅ 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 1/3rd to 3/3rd 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 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 were noted. (iii) 1/2 to 1/3 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:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
<th>G.M.</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1821</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2237</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2373</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.M.</td>
<td>2144</td>
<td></td>
<td>50.2</td>
</tr>
</tbody>
</table>

No. of experiments — 26
Significance — Highly significant.

Crop: Paddy (Aman).
Site: Hooghly (West Bengal).

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. P₂O₅ 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 1/3rd to 1/3rd 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) 1 tot 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) & (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
<th>G.M.</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2488</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2816</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2939</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.M.</td>
<td>2748</td>
<td></td>
<td>60.9</td>
</tr>
</tbody>
</table>

No. of experiments : 16
Significance — Highly significant.

Crop: Paddy (Aman).
Site: State Agri. Farm, Midnapore.

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”x9”. (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 $M_4$ = $M_2 + B.M.$ 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) 4 main-plots/block and 5 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) Sub-plot $19^\prime \times 34^\prime$; Main-plot $103^\prime \times 34^\prime$. (b) Sub-plot $17^\prime \times 32^\prime$. (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:

<table>
<thead>
<tr>
<th></th>
<th>$V_1$</th>
<th>$V_2$</th>
<th>$V_3$</th>
<th>$V_4$</th>
<th>$V_5$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_1$</td>
<td>946</td>
<td>973</td>
<td>772</td>
<td>1001</td>
<td>1139</td>
<td>966</td>
</tr>
<tr>
<td>$M_2$</td>
<td>1056</td>
<td>1387</td>
<td>1286</td>
<td>1261</td>
<td>1254</td>
<td>1249</td>
</tr>
<tr>
<td>$M_3$</td>
<td>1426</td>
<td>1296</td>
<td>1276</td>
<td>1193</td>
<td>1690</td>
<td>1375</td>
</tr>
<tr>
<td>$M_4$</td>
<td>1282</td>
<td>1156</td>
<td>1221</td>
<td>1382</td>
<td>1268</td>
<td>1262</td>
</tr>
<tr>
<td>Mean</td>
<td>1178</td>
<td>1203</td>
<td>1139</td>
<td>1209</td>
<td>1338</td>
<td>1213</td>
</tr>
</tbody>
</table>

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).  
Site:— State Agri. Farm, Midnapore.  
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. (viii) 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 $M_4$ = $M_2 + B.M.$ 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.

<table>
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<th>V3</th>
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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 varieties of Paddy.

1. BASAL CONDITIONS:

2. TREATMENTS:
All combinations of (1), (2) and (3)
(1) 3 levels of N :- N0 =0, N1 =20 and N2 =40 lb/ac.
(2) 3 levels of P2O5 :- P0 =0, P1 =20 and P2 =40 lb/ac.
(3) 3 varieties :- V1 =Jamaninadu, V2 =Kaumragere and V3 =Bhasamanik.
P2O5 applied as Super. Date of manuring 14.8.53.

3. DESIGN:
(i) 3° Fact. Conf. (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.
Object: To study the effect of N and P on different varieties of Paddy.

1. BASAL CONDITIONS:

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 \( P_0 \): \( P_0 = 0, P_1 = 20 \) and \( P_2 = 40 \) lb./ac.
   (3) 3 varieties: \( V_1 = \text{Kalma}, V_2 = \text{Jhingasal} \) and \( V_3 = \text{Nagra} \).

3. DESIGN:
   (i) 3\(^3\) C.F.C. (ii) 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, Manikanda, Maruteru and Chalva (b) N.A. (vi) (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.

---

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Mean: 1966 2371 2765 2367

S.E. of marginal mean = 49.3 lb./ac.
S.E. of body of table = 85.4 lb./ac.

Crop: Paddy (1st crop).
Centre: Burdwan (W.B.).
Ref: Complex experiments (T.C.M.), 1953.
Type: ‘MV’.

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Mean: 3410 3402 3374 3395

\( V_1 \): 3398 3373 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.  
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 3" 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: D1 =1.12.52, D2 =16 12.52, D3 =31.12.52, D4 =15.1.53, D5 =30.1.53 and D6 =14.2.53.

Sub-plot treatments :-
3 spacings (bet. rows): S1 =4", S2 =6" and S3 =9".

3. DESIGN:
(i) Split plot. (ii) (a) 6 main-plot/block; 3 sub-plots/main-plot. (b) N.A. (iii) (a) 33' x 12' (b) 32.33' x 11.33' for 4" spacing. 32' x 11' for 6" spacing and 31.5' x 10.5' for 9" spacing. (v) Distance bet. plots 1.5' and blocks 2'; !row 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 transplanting and spacing effects are highly significant. Interaction is not significant.  
(iv) Av. yield of grain in lb./ac.

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Mean | 456| 395| 301| 384|

S.E. of difference of two
1. main-plot treatment means
2. sub-plot treatment means
3. sub-plot treatment means at the same level of main-plot treatment
4. main-plot treatment means at the same level sub-plot treatment

Crop :-Paddy (Aman).
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" x 6". (e) 3-4  
(v) 20 lb./ac. N in the form of A/S, 49 lb./ac. P2O5 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 January.
2. TREATMENTS:

Main-plot treatments:

Sub-plot treatments:
4 dates of transplanting: D₁ = 28th August, 51, D₂ = 8th Sept., 51, D₃ = 19th Sept., 51 and D₄ = 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' x 19'. (b) 9' x 18' (v) Distance between plots 1.5' and blocks 2': 1' 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) 396.7 lb./ac.
(iii) Effects of variety and dates of transplanting are highly significant.
(iv) Av. yield of grain in lb./ac.

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<tr>
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<th>V₃</th>
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S.E. of difference 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)

Site := State Agri. Farm, Chinsurah.

Ref := W.B. 52(55).

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" x 6". (e) 3—4, (v) 20 lb./ac. of N in form of A/S. & T.C. and 20 lb. P₂O₅/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:
D₁ = 5th Aug. 52, D₂ = 15th Aug. 52, D₃ = 25th Aug. 52, D₄ = 4th Sept. 52, and D₅ = 14th Sept. 52.

Sub-plot treatments:
3 varieties: V₁ = Tilak Kachary, V₂ = Asra 108/l and V₅ = 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 x 9'. (b) 17' x8'. (v) Distance between plots 1.5' and bet. replicates 2.5'y 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 x V are highly significant.
(iv) Av. yield of grain lb./ac.

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Mean 861 594 733 736

S.E. of difference of two
1. main-plot treatment means =88.7 lb./ac.
2. sub-plot treatment means =88.5 lb./ac.
3. sub-plot treatment 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).
Site: State Agri. Farm Chinsurah.
Ref: W.B. 53(35).
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' x 6'. (e) 50 to 100 md/ac. of sludge. (v) As per treatments. (vi) Irrigated. (vii) 1 weeding (hand) for each case. (viii) 45.19'. (x) December to January.

2. TREATMENTS:
Main-plot treatments :
Sub-plot treatments —
3 varieties:— V1= Tilak Kachary. V2=Asra 108/1. V3=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" x10'6" (b) 18'6" x9'6". (v) 1/4 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.

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S.E. of difference of two
I. 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 = 193.8 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 stem-borer (*Schoenobius incertellus*, *Wil*).

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Aman paddy. (c) Nil. (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—3. (v) A/S at 40 lb.N/ac.+Super at 40 lb./ac. P₂O₅. (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 *Silovertellus*. (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) Contra vs. other treatments effect alone is highly significant.
(iv) Percent damaged earheads.

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</table>

S.E. of the marginal mean = 0.022%
S.E. of body of table = 0.032%

Crop :-Paddy (Aman).
Site :-State Agri. Farm, Chinsurah.
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. P₂O₅. (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'x9'. (e) 2. (v) A/S (20.6%) 40 lb.N/ac.; Super (Single 16% P₂O₅) 4 lb. 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 : M₁=5% dusted M₂=50% wettable, sprayed with 0.1% concentration. 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'x8.25'. (b) 16.50'x8.25'. (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.

<table>
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<tr>
<th></th>
<th>D.D.T.</th>
<th>B.H.C.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
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<tr>
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<td>0.95</td>
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</table>

S.E. of marginal 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” x 9”. (e) 2. (v) Nil. (vi) Bhasmanik (CH-3, Medium). (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.
   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. Toxaphene (5% dust).
   9. Toxaphene (25% spray) with 0.1% concentration.

3. DESIGN:
   (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 12. (iv) (a) 16.5’ x 8.25’. (b) 16.5’ x 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.

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<th>Av.</th>
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<tr>
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</tr>
<tr>
<td>4.</td>
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</tr>
<tr>
<td>5.</td>
<td>0.56</td>
</tr>
<tr>
<td>6.</td>
<td>1.02</td>
</tr>
<tr>
<td>7.</td>
<td>1.13</td>
</tr>
<tr>
<td>8.</td>
<td>1.03</td>
</tr>
<tr>
<td>9.</td>
<td>1.01</td>
</tr>
<tr>
<td>S.E/mean</td>
<td>0.18%</td>
</tr>
</tbody>
</table>
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, Maida. (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) (a) 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' x 27'. Main-plot 76' x 27'. (b) 34' x 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.

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<tr>
<th></th>
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<th>Satika</th>
<th>Mean</th>
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<tr>
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<td>Agrosan G.N.</td>
<td>1604</td>
<td>1161</td>
<td>1382</td>
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<tr>
<td>Coperocide</td>
<td>1711</td>
<td>1201</td>
<td>1456</td>
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</table>

Mean 1729 1147 1438

S.E. of difference of two types

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.  
Site :- State Agric. Farm, Berhampur.  
Ref :- W.B. 48(1).  
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: N₀ = 0, N₁ = 30 and N₂ = 60 lb./ac.
(2) 3 levels of P₂O₅: P₀ = 0, P₁ = 30 and P₂ = 60 lb./ac.

N applied as A/S; P₂O₅ as Super.

Sub-plot treatments:

2 methods of application of Super: M₁ = Spread on and M₂ = 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' X 11.5'. (b) 28' X 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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
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1. S.E. of marginal mean of N or P
2. S.E. of body of N X P table
3. S.E. difference of two
4. 'Method of application means'
5. 'Method' means at the same level of N or P
6. N or P means at the same level of 'method'

Crop: Wheat.
Site: State Agri. Farm, Malda.
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) 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: N₀ = 0, N₁ = 30, N₂ = 60 lb./ac.
(2) 3 levels of P₂O₅: P₀ = 0, P₁ = 30, P₂ = 60 lb./ac.

Sub-plot treatments:

2 methods of application of Super: M₁ = Spread on and M₂ = 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' x 21.5'. (b) 28' x 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 significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>M₁</th>
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<td>1415</td>
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<td>1393</td>
<td>1494</td>
<td>1442</td>
<td>1443</td>
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<tr>
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<tr>
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<td>1429</td>
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<tr>
<td>M₂</td>
<td>1399</td>
<td>1500</td>
<td>1434</td>
<td>1444</td>
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1. S.E. of marginal mean of N or P = 23.2 lb./ac.
2. S.E. of the body of N X 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).
Site : State Agri. Farm, Malda.

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 : N₀=0, N₁=30 and N₂=60 lb./ac.
(2) 3 levels of P₀ O₅ : P₀=0, P₁=30, and P₂=60 lb./ac.
Sub-plot treatments :—
2 methods of application of Super : M₁=spread on and M₂=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) 30' x 21.5'. (b) 28' x 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.

<table>
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<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
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</table>

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.
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).
Site : Muchia ; Distt. Malda.

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. (vii) N.A. (ix) About 2". (x) March, 1950.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 4 levels of N : N₀ = 0, N₁ = 20, N₂ = 40 and N₃ = 60 lb./ac.
(2) 3 levels of P₂ O₅ : P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.
P₂ O₅ 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 x P2O5 are highly significant while P2O5 effect is significant.
(iv) Av. yield of grain in lb./ac.

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<td>1026.3</td>
<td>939.4</td>
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</table>

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)
Site :- State Agri. Farm, Bankura.

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 laderings. (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 15 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) 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 significantly.
(iv) Av. yield of fodder in lb./ac.

<table>
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<td>14911</td>
</tr>
<tr>
<td>5.</td>
<td>8300</td>
</tr>
<tr>
<td>6.</td>
<td>11553</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 1798 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Maize fodder
Site: State Agri. Farm, Bankura.

Ref: W.B. 49 (4).
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) Irrigated. (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) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 33' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>5234</td>
</tr>
<tr>
<td>2.</td>
<td>11994</td>
</tr>
<tr>
<td>3.</td>
<td>10573</td>
</tr>
<tr>
<td>4.</td>
<td>13146</td>
</tr>
<tr>
<td>5.</td>
<td>11654</td>
</tr>
<tr>
<td>6.</td>
<td>13980</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 730.1 lb./ac.</td>
</tr>
</tbody>
</table>
Crop :- Arhar.
Site :- State Agri. Farm, Berhampore.

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) 3–4 ploughings and laddering. (b) Sowing is done in lines (c) N.A. (d) 5' × 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2271</td>
</tr>
<tr>
<td>2.</td>
<td>1985</td>
</tr>
<tr>
<td>3.</td>
<td>2257</td>
</tr>
<tr>
<td>4.</td>
<td>1062</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>=249.6 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Arhar.
Site :- State Agri. Farm, Berhampore.

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 & thinning 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3372</td>
</tr>
<tr>
<td>2.</td>
<td>2359</td>
</tr>
<tr>
<td>3.</td>
<td>2116</td>
</tr>
<tr>
<td>4.</td>
<td>1687</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>236.8 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Arhar.
Site: State Agri. Farm, Berhampore.
Object:—To find out best time of sowing for Arhar.

Ref: W.B. 53(47).
Type: 'C'.

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 healthy plant. (v) Nil. (vi) W.B. type 7 (Medium) (vii) Unirrigated. (viii) 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:

<table>
<thead>
<tr>
<th>Times of sowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 7.6.53.</td>
</tr>
<tr>
<td>2. 22.6.53.</td>
</tr>
<tr>
<td>3. 7.7.53.</td>
</tr>
<tr>
<td>4. 22.7.53.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2281</td>
</tr>
<tr>
<td>2.</td>
<td>1970</td>
</tr>
<tr>
<td>3.</td>
<td>1491</td>
</tr>
<tr>
<td>4.</td>
<td>1003</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>298.1 lb./ac.</td>
</tr>
</tbody>
</table>
Crop :- Arhar.  
Site :- State Agri. Farm, Berhampore.  

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' x 2'
2. 2' x 3'
3. 2' x 4'
4. 3' x 3'
5. 3' x 4'
6. 4' x 4'
7. Broadcast

3. DESIGN:
(i) R.B.D.  (ii) (a) 7  (b) N.A.  (iii) 4  (iv) (a) 24' x 12' (b) 24' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2309</td>
</tr>
<tr>
<td>2.</td>
<td>2033</td>
</tr>
<tr>
<td>3.</td>
<td>1939</td>
</tr>
<tr>
<td>4.</td>
<td>2188</td>
</tr>
<tr>
<td>5.</td>
<td>1911</td>
</tr>
<tr>
<td>6.</td>
<td>1429</td>
</tr>
<tr>
<td>7.</td>
<td>2197</td>
</tr>
</tbody>
</table>

S.E./mean = 125.5 lb./ac.

---

Crop :- Arhar.  
Site :- State Agri. Farm, Berhampore.  

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 earthing 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’x2’
2. 2’x3’
3. 2’x4’
4. 3’x3’
5. 3’x4’
6. 4’x4’
7. Broadcast.

3. DESIGN:
(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a) & (b) 24’x12’ (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 lb./ac.
(iii) Treatments do not differ significantly.
(v) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3181</td>
</tr>
<tr>
<td>2.</td>
<td>2088</td>
</tr>
<tr>
<td>3.</td>
<td>2786</td>
</tr>
<tr>
<td>4.</td>
<td>1796</td>
</tr>
<tr>
<td>5.</td>
<td>1485</td>
</tr>
<tr>
<td>6.</td>
<td>1190</td>
</tr>
<tr>
<td>7.</td>
<td>2277</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 321.4 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Grain and Lentil.
Site: State Agri. Farm, Maida.
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 Maida. (iii) 9.11.52 (iv) (a) 3—4 ploughings and laddérings (b) to (c) N.A. (v) Super at 1.5 md/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’x15’ (b) 28’x9’ (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.

Ref: W.B. 52(77)
Type: 'D'.
5. RESULTS:
(i) 2116 lb/ac.
(ii) 253.6 lb/ac.
(iii) Treatments differ significantly.
(iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1476</td>
</tr>
<tr>
<td>2.</td>
<td>1633</td>
</tr>
<tr>
<td>3.</td>
<td>2580</td>
</tr>
<tr>
<td>4.</td>
<td>2775</td>
</tr>
<tr>
<td>S.E/mean</td>
<td>= 73.2 lb/ac.</td>
</tr>
</tbody>
</table>

Crop: Potato.
Site: State Agri. Farm, Burdwan

Object: To study the effect of different balanced fertilizers containing different proportions of N, P₂O₅ and K₂O 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. N₄₀ P₂₀ K₂₀
   3. N₆₀ P₁₂₀ K₃₀
   4. N₈₀ P₁₈₀ K₄₀
   5. N₁₂₀ P₂₄₀ K₆₀

   Here N₄₀ P₂₀ K₂₀ is a combination of 40 lb./ac. of N; 80 lb./ac. of P₂O₅ and 20 lb./ac. of K₂O and similarly other treatments.

   N as A/S ; P₂O₅ as Super & K₂O 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) 5.  (b) N.A.  (iii) 6.  (iv) 33' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>7508</td>
</tr>
<tr>
<td>2.</td>
<td>8604</td>
</tr>
<tr>
<td>3.</td>
<td>9250</td>
</tr>
<tr>
<td>4.</td>
<td>8671</td>
</tr>
<tr>
<td>5.</td>
<td>9133</td>
</tr>
<tr>
<td>S.E/mean</td>
<td>= 661 lb/ac.</td>
</tr>
</tbody>
</table>
Crop: Potato.  
Site: State Agri. Farm, Burdwan.  
Object: To study the effect of different balanced fertilizers containing different proportions of N, P₂O₅ and K₂O on yield of Potato.

1. BASAL CONDITIONS:
   (i) (a) Nil (b) Aust (c) N.A.  
   (ii) Sandy loam.  
   (iii) (a) 21/22.11.53. (b) Refer soil analysis, Burdwan.  
   (iv) 15 to 20 md/ac. (v) 2' from row to row and 9' from tuber to tuber.  
   (vi) Royal Kidney (Medium).  
   (vii) Irrigated.  
   (viii) Weeding operated—3 times (app.). Earthing up done three times.  

2. TREATMENTS:
   1. Control  
   2. N₄₀ P₈₀ K₂₀  
   3. N₆₀ P₁₂₀ K₂₀  
   4. N₈₀ P₁₆₀ K₄₀  
   5. N₁₂₀ P₂₄₀ K₆₀  

   N₄₀ P₈₀ K₂₀ is a combination of 40 lb/ac. of N, 80 lb/ac. of P₂O₅ & 20 lb/ac. of K₂O and similarly other treatments.  
   (a) 1952 to 1953 (b) Yes (c) N.A.  
   (d) Ploughing six times by country plough followed by laddering.  

3. DESIGN:
   (i) R.B.D.  
   (ii) 5.  
   (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.  
   (b) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>11481</td>
</tr>
<tr>
<td>2.</td>
<td>15173</td>
</tr>
<tr>
<td>3.</td>
<td>16284</td>
</tr>
<tr>
<td>4.</td>
<td>17053</td>
</tr>
<tr>
<td>5.</td>
<td>19474</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>706.9 lb/ac.</td>
</tr>
</tbody>
</table>

Crop: Potato.  
Site: State Agri. Farm, Burdwan.  
Object: To study the response to N, P₂O₅ & K₂O 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: N₀=0 and N₁=40 lb./ac.
(2) 2 levels of P₂O₅: P₀=0 and P₁=40 lb./ac.
(3) 2 levels of K₂O: K₀=0 and K₁=40 lb./ac.
N as A/S, P₂O₅ as Super and K₂O as Pot. Sul.

3. DESIGN:
(i) 2² 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' x 22' (b) 39' x 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.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>Mean</th>
<th>K₀</th>
<th>K₁</th>
</tr>
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<td>10597</td>
<td>10721</td>
<td>10346</td>
<td>11096</td>
</tr>
<tr>
<td>N₁</td>
<td>15180</td>
<td>14244</td>
<td>14712</td>
<td>13386</td>
<td>16038</td>
</tr>
<tr>
<td>Mean</td>
<td>13012</td>
<td>12420</td>
<td>12716</td>
<td>11866</td>
<td>13567</td>
</tr>
<tr>
<td>K₀</td>
<td>11825</td>
<td>11907</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K₁</td>
<td>14199</td>
<td>12935</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. N₆ P₁₂₀ K₃₀
3. 100 md/ac of T.C.+N₆ P₁₂₀ K₃₀
4. 200 md/ac of T.C.+N₆ P₁₂₀ K₃₀
5. 300 md/ac of T.C.+N₆ P₁₂₀ K₃₀
Half of the fertiliser mixture applied in trenches at the time of planting and half at the time of first earthing up. N₆=60 lb./ac. of N ; P₁₂₀=120 lb./ac. of P₂O₅; K₃₀=30 lb./ac. of K₂O.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33' x 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 Perennox and 2 lb. of 20% water dispersible D.D.T. in 100 gallons of water. (iii) Yield of potato. (iv) (a) 1950 to 1952 (b) Yes (c) N.A. (v) (a) Nil (vi) Nil. (vii) Sprouted white tubers used.

5. RESULTS:
(i) 119.9 lb/ac.
(ii) 2341 lb/ac.
(iii) Control vs others is not significant. Fertilisers differ significantly.
(iv) Av. yield of potato in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>11778</td>
</tr>
<tr>
<td>2.</td>
<td>9995</td>
</tr>
<tr>
<td>3.</td>
<td>13835</td>
</tr>
<tr>
<td>4.</td>
<td>11263</td>
</tr>
<tr>
<td>5.</td>
<td>12772</td>
</tr>
</tbody>
</table>

S.E./mean = 956.6 lb/ac.

Object: To study the effect of organic and inorganic manures on yield of Potato.

3. 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 harrowings. (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. (iv) (a) 21'X21'. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>4406</td>
</tr>
<tr>
<td>2.</td>
<td>4516</td>
</tr>
<tr>
<td>3.</td>
<td>4177</td>
</tr>
<tr>
<td>4.</td>
<td>4408</td>
</tr>
</tbody>
</table>

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 52% 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 : $V_1=1''$, $V_2=1''$ and $V_3=1''$

(3) 3 row distances : $R_1=1.5'$, $R_2=2'$ and $R_3=2.5'$

3. DESIGN :

(i) 3 Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 36'x18'. (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 is lb/ac.

<table>
<thead>
<tr>
<th>$D_1$</th>
<th>$D_2$</th>
<th>$D_3$</th>
<th>Mean</th>
<th>$R_1$</th>
<th>$R_2$</th>
<th>$R_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_1$</td>
<td>7539</td>
<td>7427</td>
<td>7772</td>
<td>7579</td>
<td>7039</td>
<td>7814</td>
</tr>
<tr>
<td>$V_2$</td>
<td>8148</td>
<td>6749</td>
<td>8008</td>
<td>7635</td>
<td>7764</td>
<td>7570</td>
</tr>
<tr>
<td>$V_3$</td>
<td>9386</td>
<td>7835</td>
<td>7168</td>
<td>8030</td>
<td>8004</td>
<td>7914</td>
</tr>
<tr>
<td>Mean</td>
<td>8258</td>
<td>7337</td>
<td>7649</td>
<td>7748</td>
<td>7602</td>
<td>7766</td>
</tr>
</tbody>
</table>

S.E. of the body of the table = 405.1 lb/ac.
S.E. of any marginal mean = 464.8 lb/ac.
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): \( P_1 = 6" \), \( P_2 = 13" \), \( P_3 = 20" \), \( P_4 = 5" \), \( P_5 = 10" \), \( P_6 = 15" \), \( P_7 = 4" \), \( P_8 = 8" \) & \( P_9 = 12" \).

3. 3 tuber sizes (T): \( T_1 = 1" \), \( T_2 = 1.5" \) and \( T_3 = 2" \).

4. 4 manures: \( M_1 = N_{40} P_{80} K_{40}, M_2 = N_{60} P_{120} K_{60} \) and \( M_3 = N_{80} P_{60} K_{80} \).

N in the form of A/S; P in the form of Super and K in the form of M or P.

3. DESIGN:

(i) 9 \times 3^b Factorial Confd. (ii) (a) 9 plots/block. 9 blocks/replication. (b) N.A. (iii) (3rd replicate) (iv) (a) Does not arise. (b) 30' \times 10'. (v) No border area. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Incidence of virus reported; spayed thrice during the season with a mixture 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) 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.
(iv) Av. yield in lb./ac.

<table>
<thead>
<tr>
<th>T1</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>Mean</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>13084</td>
<td>12572</td>
<td>12955</td>
<td>12864</td>
<td>12749</td>
<td>13217</td>
<td>12625</td>
<td></td>
</tr>
<tr>
<td>13634</td>
<td>14185</td>
<td>15212</td>
<td>14477</td>
<td>14563</td>
<td>15058</td>
<td>13818</td>
<td></td>
</tr>
<tr>
<td>15343</td>
<td>16694</td>
<td>16972</td>
<td>16137</td>
<td>16448</td>
<td>16149</td>
<td>15814</td>
<td></td>
</tr>
</tbody>
</table>

S.E. marginal mean of M or T or R = 422.97 lb./ac.
S.E. of body of table = 731.20 lb./ac.

Av. of inter-tuber distances (P)

<table>
<thead>
<tr>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>P7</th>
<th>P8</th>
<th>P9</th>
</tr>
</thead>
<tbody>
<tr>
<td>15339</td>
<td>14606</td>
<td>13815</td>
<td>15496</td>
<td>15799</td>
<td>13331</td>
<td>15086</td>
<td>13830</td>
<td>13331</td>
</tr>
</tbody>
</table>

S.E./mean (P) = 733.20 lb./ac.

Crop :- Potato.
Site :- State Agri. Farm, Berhampore.
Ref :- W.B. 50(4)
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) 10 (b) N.A. (iii) 4. (iv) (a) 40' x 14.6'. (b) 35' x 12.6'. (v) Distance 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.

<table>
<thead>
<tr>
<th>No. of spraying</th>
<th>Perenox</th>
<th>Diathane Z-78</th>
<th>Bordeaux Mixture 1%</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>750</td>
<td>689</td>
<td>629</td>
<td>683</td>
</tr>
<tr>
<td>3</td>
<td>606</td>
<td>667</td>
<td>641</td>
<td>638</td>
</tr>
<tr>
<td>4</td>
<td>689</td>
<td>714</td>
<td>578</td>
<td>660</td>
</tr>
<tr>
<td>Mean</td>
<td>675</td>
<td>690</td>
<td>616</td>
<td>661</td>
</tr>
</tbody>
</table>

S.E. of the body of table = 54.8 lb./ac.
S.E. of any marginal mean = 31.6 lb./ac.

Crop: Potato.
Site: State Agri. Farm, Berhampore.
Object: To study the effect of different fungicides on Potato.

Ref: W.B. 51(3)
Type: 'D'.
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.

<table>
<thead>
<tr>
<th>No. of spraying</th>
<th>Perenox</th>
<th>Diathane</th>
<th>Bordeaux</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>580</td>
<td>434</td>
<td>459</td>
<td>491</td>
</tr>
<tr>
<td>3</td>
<td>488</td>
<td>538</td>
<td>422</td>
<td>483</td>
</tr>
<tr>
<td>4</td>
<td>459</td>
<td>447</td>
<td>501</td>
<td>469</td>
</tr>
</tbody>
</table>

Mean |

S.E.'s = N.A.

Crop := Potato.
Site := State Agri. Farm, Bérbampore.

Réf. := W.B. 52(5)
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 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) 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

<table>
<thead>
<tr>
<th>No. of spraying</th>
<th>Perenox</th>
<th>Diathane</th>
<th>Boxdeaux</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>11357</td>
<td>11663</td>
<td>11932</td>
<td>11651</td>
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<td>3</td>
<td>12603</td>
<td>12086</td>
<td>11241</td>
<td>11977</td>
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<td>4</td>
<td>11644</td>
<td>11472</td>
<td>14522</td>
<td>12546</td>
</tr>
<tr>
<td>Mean</td>
<td>11868</td>
<td>11740</td>
<td>12565</td>
<td>12058</td>
</tr>
</tbody>
</table>

S.E. of body of table = 822.8 lb./ac.
S.E. of any marginal mean = 475.0 lb./ac.

Crop := Potato
Site := State Agri. Farm, Cooch Behar.

Object := To study the effect of different fungicides on the yield of Potato.

1. BASAL CONDITIONS:
   (i) (a) Paddy—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) Cowduts 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 6.1.51. 2nd spraying from 23.2.52 to 2.3.52.

   . DESIGN:
      (i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 4 (iv) (a) 26'x16' (b) 22'x13' (v) Distance between plots 3' and between blocks 4'; 1' border around 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 beetles 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 x 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.

<table>
<thead>
<tr>
<th>Type of Fungicide</th>
<th>No. of sprayings</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.</td>
<td>1185</td>
<td>4289</td>
</tr>
<tr>
<td>2.</td>
<td>930</td>
<td>1880</td>
</tr>
<tr>
<td>3.</td>
<td>1214</td>
<td>1841</td>
</tr>
<tr>
<td>4.</td>
<td>1254</td>
<td>1567</td>
</tr>
<tr>
<td>5.</td>
<td>1146</td>
<td>2213</td>
</tr>
<tr>
<td>6.</td>
<td>1440</td>
<td>1195</td>
</tr>
<tr>
<td>7.</td>
<td>1018</td>
<td>1538</td>
</tr>
</tbody>
</table>

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.

Site :- State Agri. Farm, Kooch Behar.

Object :- To see the effect of different fungicides on the yield of Potato.

Ref:- W.B. 52(1).

Type :- ‘D’.

1. BASAL CONDITIONS :

(i) (a) Aus—Potato—Jute. (b) Jute. (c) Cowdung at 200 md./ac. + A/S at 1 seer/ac. + Sugar 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 / 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 earthing up 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. (5) Diathane 2 lb./100 gallons of water.
(2) Perenox 4 lb./100 gallons of water. (6) Diathane 2.5 lb./100 gallons of water.
(3) Perenox 5 lb./100 gallons of water. (7) Bordeaux mixture 1%/100 gallons of water.
(4) Diathane Z-78 1.5 lb./100 gallon 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’ x 16’ (b) 25’ x 15’ (v) Distance between plots 5’ 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.

<table>
<thead>
<tr>
<th>No. of sprayings</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean</th>
</tr>
</thead>
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<tr>
<td>1.</td>
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<td>8573</td>
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<td>2.</td>
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<td>8026</td>
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<td>3.</td>
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<td>6244</td>
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<td>6592</td>
</tr>
<tr>
<td>4.</td>
<td>8006</td>
<td>7140</td>
<td>6752</td>
<td>7299</td>
</tr>
<tr>
<td>5.</td>
<td>5228</td>
<td>7439</td>
<td>6274</td>
<td>6314</td>
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<tr>
<td>6.</td>
<td>6752</td>
<td>9635</td>
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<td>7593</td>
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<tr>
<td>7.</td>
<td>5945</td>
<td>6393</td>
<td>6662</td>
<td>6133</td>
</tr>
</tbody>
</table>

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.
Site :- State Agri. Farm, Cooch Behar.
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 seed./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 hollowings (b) N.A. (c) N.A. (d) Between rows :- 2' and between tubers :- 9' (e) 1 tuber/ hole (v) Cowdung 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. (vi) Pot. Sulphate 3 md./ac. at the time of 1st earthing. (vii) Darjeeling Red Round (viii) Unirrigated (ix) Weeding, hoeing and earthing up twice (ix) 1.67" (x) 5 to 8.2.54.

2. TREATMENTS:
   All combinations of (1) and (2)+ a Control (no spraying)
   1. 7 types of 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% /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' x 15' (b) 25.5' x 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) 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.

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean</th>
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<td>4</td>
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<td>7</td>
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<td>10858</td>
<td>12239</td>
<td>12479</td>
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</tbody>
</table>

Mean: 10255, 9941, 9551, 9916

S.E. of body 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
Site: State Agri. Farm, Malda.
Ref: W.B. 52 (35)
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. (f) (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) 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 in a gallon of water].
   3. Seradix—A [(a) Sprouted tubers soaked in a solution of the hormone of the strength 50 drops (about 24 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 dispersible 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. TREATMENTS:
   (i) 11937 lb./ac.
   (ii) 948.4 lb./ac.
   (iii) Treatments do not differ significantly.
(iv) Av. yield of potato in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
<td>11572</td>
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<td>3.</td>
<td>12833</td>
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<tr>
<td>S.E./mean</td>
<td>=473.2 lb./ac.</td>
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</tbody>
</table>

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 analysis, 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' x 10' (b) 40' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10128</td>
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<tr>
<td>2.</td>
<td>13937</td>
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<tr>
<td>3.</td>
<td>14116</td>
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<tr>
<td>4.</td>
<td>13040</td>
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<td>5.</td>
<td>12861</td>
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<tr>
<td>S.E./mean</td>
<td>=888.2 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Potato.

Ref :- W.B. 49 (26).

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) 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' x 10' (b) 40' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>3.</td>
<td>4530</td>
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<tr>
<td>4.</td>
<td>4029</td>
</tr>
<tr>
<td>5.</td>
<td>4247</td>
</tr>
</tbody>
</table>

S.E./mean = 363.0 lb./ac.

Crop: Potato
State: State Agri. Farm, Maynaguri
Object: To study the efficacy of fungicides in controlling blight of potato.
Ref: W.B. 50(27).
Type: 'D'.

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. (f) 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' x 26' (b) 16' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
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<td>3.</td>
<td>19087</td>
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<tr>
<td>4.</td>
<td>18732</td>
</tr>
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<td>5.</td>
<td>17045</td>
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<tr>
<td>S.E./mean</td>
<td>1369.2 lb/ac.</td>
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</table>

Crop :- Potato.  
Site :- State Agri. Farm, Maynaguri.  
Ref :- W.B. 51(28). 
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.

<table>
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</thead>
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<td>7.</td>
<td>5251</td>
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<tr>
<td>S.E./mean</td>
<td>505.6 lb/ac.</td>
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</table>
Crop: Potato.  
Site: State Agri. Farm, Maynaguri.  
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, ladderling 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. Bordeaux mixture 1%—(10 lb lime +10 lb C/S) in 100 gallons of water.
   4. Diathane Z-78 at 2 lb 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′x25″. (b) 23′x25″. (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.

<table>
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<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
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<td>3039</td>
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<tr>
<td>6.</td>
<td>2036</td>
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<td>7.</td>
<td>2572</td>
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<td>8.</td>
<td>3371</td>
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<td>9.</td>
<td>3069</td>
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<tr>
<td>S.E./mean</td>
<td>572.3 lb/ac</td>
</tr>
</tbody>
</table>

Crop: Potato.  
Site: State Agri. Farm, Maynaguri.  
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 & ladderling 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\% D.D.T. spray in water.
   4. 0.20\% D.D.T. spray in water.
   5. 0.25\% D.D.T. spray in water.
   6. 0.30\% D.D.T. spray in water.

First spraying on 21.1.52; 2nd spraying on 8.2.52.

3. DESIGN:
   (i) R.B.D. (ii) A. (b) N.A. (iii) 6. (iv) (a) 30' x 19'. (b) 25' x 17.3'. (v) One guard row. (vi) Yes.

4. GENERAL:
   (i) Poor. (ii) Nil. (iii) Yield of potato. (iv) A. (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) A. yield of potato lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2148</td>
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<tr>
<td>2.</td>
<td>3164</td>
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<tr>
<td>3.</td>
<td>3758</td>
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<tr>
<td>4.</td>
<td>3181</td>
</tr>
<tr>
<td>5.</td>
<td>3174</td>
</tr>
<tr>
<td>6.</td>
<td>3160</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 273.2 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Potato. Site: State Agri. Farm, Midnapore. Object: To study the effect of hormone therapy on Potato crop.

1. BASAL CONDITIONS:
   (i) A. (b) Napier grass (c) Cowdung at 75 md./ac. (ii) (a) Red laterite (b) Refer soil analysis, Midnapore (iii) 210.12.50 (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:

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) A. yield of potato in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>4925</td>
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<tr>
<td>S.E./mean</td>
<td>= N.A.</td>
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Crop: Potato.
Site: State Agri. Farm, Midnapore.
Ref: W.B. 52(36).
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) 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 ml/ac. (d) 2’ from row to row and 9” from
tuber to tuber (e) N.A. (v) 100 ml/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 hormone 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 hormone of the strength 50 drops (about
      2~ cc.) in a pint of water (b) 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) 3 (b) N.A. (iii) 4 (iv) 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) Maida 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.
Site: State Agri. Farm, Midnapore.
Ref: W.B. 53(33).
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 ml/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. Hormone-A. [(a) Sprouted tubers soaked in a solution of hormone 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 potato
      when sprouts came out of the soil surface. The strength of the solution was 2 fluid ounces in a gallon
      of water].
   Seradix-A. [(a) Sprouted tubers soaked in a solution of the hormone of the strength 50 drops (about
      2~ cc.) in a pint of water (b) Second dose of hormone applied on the base of plants when sprouts
      came out of the soils 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’ x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
<td>13732</td>
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<tr>
<td>3.</td>
<td>16029</td>
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<tr>
<td>S.E./mean</td>
<td>1408.8 lb./ac.</td>
</tr>
</tbody>
</table>

References:

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’ x 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<sub>0</sub>=0, N<sub>1</sub>=30 and N<sub>2</sub>=60 lb./ac.
(2) 2 levels of P<sub>2</sub>O<sub>5</sub>: P<sub>0</sub>=0 and P<sub>1</sub>=60 lb./ac.
(3) 2 levels of K<sub>2</sub>O: K<sub>0</sub>=0 and K<sub>1</sub>=60 lb./ac.
All the fertilisers mixed in proportion; broadcast on 7.10.52 and levelled.

3. DESIGN:
(i) 3 x 2 x 2 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3 (iv) (a) 33’ x 21’. (b) 30’ x 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

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>Mean</th>
<th>K₀</th>
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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).
Type: 'M'.

Object: To study the response to N, P₂O₅ and K₂O 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'x3'. (e) N.A. (v) Nil. (vi) 8-20 (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: N₀=0, N₁=30 and N₂=60 lb./ac.
   (2) 2 levels of P₂O₅: P₀=0 and P₁=60 lb./ac.
   (3) 2 levels of K₂O: K₀=0 and K₁=60 lb./ac.
   N as A/S; P₂O₅ as Super and K₂O 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) 20'×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.

<table>
<thead>
<tr>
<th></th>
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<td>11560</td>
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<td>9418</td>
<td>9317</td>
<td>9368</td>
<td>9056</td>
<td>9680</td>
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</table>

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

Object: To find out the effect of N, P₂O₅ and placement of P₂O₅ on the yield of Sugarcane.

1. BASAL CONDITIONS:
   (i) (a) No. (b) and (c) N.A. (ii) (a) Sandy soil. (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). (vi) Irrigated. (vii) Weeding and earthing up 3 times. (ix) N.A.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N : N₀=0, N₁=60 and N₂=120 lb./ac.
   (2) Application of P₂O₅ : P₀=60 P₂O₅, P₁=80 lb./ac. P₂O₅ broadcast, and P₁'=80 lb./ac. P₂O₅ applied in furrows 4" deep.
   N as mixture of A/S and oil cake in 1 : 1 ratio and P₂O₅ 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.

<table>
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<tr>
<th></th>
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<th>N₂</th>
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<td>71.89</td>
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<td>66.75</td>
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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<sub>2</sub>O<sub>5</sub> and placement of P<sub>2</sub>O<sub>5</sub> 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<sub>0</sub> = 0, N<sub>1</sub> = 60 and N<sub>2</sub> = 120 lb/ac.
   (2) Application of P<sub>2</sub>O<sub>5</sub>: P<sub>0</sub> = No P<sub>2</sub>O<sub>5</sub>, P<sub>1</sub> = 80 lb/ac. of P<sub>2</sub>O<sub>5</sub> broadcast and P<sub>1</sub>' = 80 lb/ac. of P<sub>2</sub>O<sub>5</sub> applied in furrows 4” deep.

N as mixture of A/S and oil cake in 1:1 ratio and P<sub>2</sub>O<sub>5</sub> as Super.

3. DESIGN:
   (i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 44.5’ x 35’. (b) 41.5’ x 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.

<table>
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<th></th>
<th>N&lt;sub&gt;0&lt;/sub&gt;</th>
<th>N&lt;sub&gt;1&lt;/sub&gt;</th>
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<td>24.10</td>
<td>24.09</td>
<td>22.16</td>
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</table>

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<sub>2</sub>O<sub>5</sub> and placement of P<sub>2</sub>O<sub>5</sub> 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) 16.1.52/24.1.52 (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 13.3.53.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N : N<sub>0</sub> = 0, N<sub>1</sub> = 60 and N<sub>2</sub> = 120 lb/ac.
   (2) Application of P<sub>2</sub>O<sub>5</sub>: P<sub>0</sub> = No P<sub>2</sub>O<sub>5</sub>, P<sub>1</sub> = 80 lb/ac. of P<sub>2</sub>O<sub>5</sub> broadcast ; P<sub>1</sub>' = 80 lb/ac. of P<sub>2</sub>O<sub>5</sub> applied in furrows 4” deep.

N as mixture of A/S and oil Cake in 1:1 ratio ; P<sub>2</sub>O<sub>5</sub> as Super.
3. DESIGN:
(i) 3 x 3 Fact. in R.B.D.  (ii) (a) 9  (b) N.A.  (iii) 6  (iv) (a) 44.5' x 35'  (b) 41.5' x 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.

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<th>N₂</th>
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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, P₂O₅ and placement of P₂O₅ 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) 10.3.51 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 : N₀=0, N₁=60  and  N₂=120 lb/ac.
(2) Application of P₂O₅: P₀=No P₂O₅,  P₁=80 lb/ac. of P₂O₅ broadcast
and  P₁'=80 lb/ac. of P₂O₅ applied in furrows 4' deep.
N as mixture of A/S and oil cake in 1 : 1 ratio.  P₂O₅ as Super.

3. DESIGN:
(i) 3 x 3 Fact. in R.B.D.  (ii)(a) 9  (b) N.A.  (iii) 6  (iv) (a) 44.5' x 35'. (b) 41.5' x 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) 32.77 ton/ac.
(ii) 5.27 ton/ac.
(iii) Main effects of N and P are highly significant. Interaction is not significant.
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.
   - (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).

2. **TREATMENTS:**
   - 1. Control (no manure).
   - 2. 60 lb/ac. of N (as oil cake+ as A/S).
   - 3. 120 lb/ac. of N (as oil cake+ as A/S).
   - 4. 60 lb/ac. of N (as stearameal+ as inorganic mixture).
   - 5. 120 lb/ac. of N (as stearameal+ 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) &c. (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.

<table>
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<th>Unirrigated</th>
<th>Mean</th>
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<td>35.01</td>
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<tr>
<td>5</td>
<td>45.06</td>
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<td>Mean</td>
<td>42.58</td>
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<td>33.81</td>
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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 = 2.47 ton/ac.
Crop :- Sugarcane.  
Site :- Agri. Farm, Kadamkhali.  
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% ; P₂O₅—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 :— N₀ =0, N₁ =60 & N₂ =120 lb./ac. 
   (2) Application of P₂O₅ :—P₀ =No P₂O₅, P₁ =80 lb./ac. P₂O₅ broadcast. and P₁' =80 lb./ac. P₂O₅ applied in furrows 4" deep. 
   N as mixture of A/S and Oilcake in 1 : 1 ratio ; P₂O₅ as Super.

3. DESIGN : 
   (i) 3 x 3 Fact in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63' x23'. (b) 60'x18'. (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. 

<table>
<thead>
<tr>
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<th>N₀</th>
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<th>N₂</th>
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<td>31.63</td>
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</table>

S.E. of any marginal mean =0.90 ton/ac.
S.E. of body of table =1.55 ton/ac.
3. DESIGN:
(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63'x23' (b) 60'x18'. (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.

<table>
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<th>N₂</th>
<th>Mean</th>
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<td>31.54</td>
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</table>

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%, P₂O₅=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 :- N₀=0, N₁=60 & N₂=120 lb./ac.
(2) Application of P₂O₅:— P₀=No P₂O₅, P₁=80 lb./ac. P₂O₅ broadcast.
and P₁=80 lb./ac. P₂O₅ applied in furrows 4" deep.
N as mixture of A/S and Oilcake in 1 : 1 ratio ; P₂O₅ as Super.

3. DESIGN:
(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63'x2 3'. (b) 60'x18'(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.
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.
   (v) Nil
   (vi) Co-453
   (vii) Irrigated
   (viii) 3 weedings, 2 hoeings and 2 earthing up.
   (ix) 55' approx.
   (x) Jan. 1953.

2. TREATMENTS:
   All Combinations of (1) and (2)
   (1) 3 levels of N: N₀ =0, N₁ =60 and N₂ =120 lb./ac.
   (2) Application of P₂ O₅: P₀ =No P₂ O₅, P₁ =80 lb./ac.
   P₂ O₅ broadcast before final ploughing:
   and P₁ =80 lb./ac. P₂ O₅ applied in furrows 4" deep.
   N as mixture of A/S and G.N.C. in 1 : 1 ratio; P₂ O₅ as Super.
   G.N.C. applied at planting while A/S applied half at planting, half during earthing up.

3. DESIGN:
   (i) 3 x 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.
   (iv) Av. yield of cane in ton/ac.

   \[
   \begin{array}{|c|c|c|c|}
   \hline
   & N₀ & N₁ & N₂ & \text{Mean} \\
   \hline
   P₀ & 19.27 & 20.35 & 21.75 & 20.46 \\
   P₁ & 18.00 & 19.15 & 20.18 & 19.11 \\
   P₁² & 17.90 & 18.27 & 18.96 & 18.38 \\
   \hline
   \text{Mean} & 18.39 & 19.26 & 20.30 & 19.32 \\
   \hline
   \end{array}
   \]

   S.E. of any marginal mean =0.73 ton/ac.
   S.E. of body of table =1.27 ton/ac.

   Crop: Sugarcane.
   Site: State Chandanpur Farm, Plassey, Nadia.
   Ref.: W.B. 51(27).
   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. (f) Nil (g) 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 \( N_2 = 120 \text{ lb./ac.} \)
   (2) Application of \( P_2O_5 \): \( P_0 = \text{No} \ P_2O_5, P_1 = 80 \text{ lb./ac.} \ P_2O_5 \) broadcast.
   and \( P_2 = 80 \text{ lb./ac.} \ P_2O_5 \) 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 x 3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63' x 23' (b) 60' x 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.

<table>
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<th>( N_1 )</th>
<th>( N_2 )</th>
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<td>29.33</td>
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<tr>
<td>( P_2 )</td>
<td>28.26</td>
<td>29.82</td>
<td>29.03</td>
<td>29.04</td>
</tr>
</tbody>
</table>

Mean 28.76 33.00 28.71 29.16

S.E. of any marginal mean \( = 0.79 \) ton./ac.
S.E. of body of table \( = 1.37 \) ton./ac.

Object:—To find out the effect of N, P and placement of P on the yield of Sugarcane.
3. **DESIGN:**
   (i) 3 x 3 Fact. in R.B.D.  
   (ii) (a) 9  
   (b) N.A.  
   (iii) 6  
   (iv) (a) 63' x 23'  
   (b) 60' x 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.

<table>
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<td>10.01</td>
<td>9.76</td>
<td>8.87</td>
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</table>

S.E. of any marginal mean = 0.96 ton./ac.
S.E. of body of table = 1.66 ton./ac.

---

**Object:** To find out the effect of N, P and placement of P on the yield of sugarcane.

**Crop:** Sugarcane.  
**Site:** Chandanpur Farm Plassey, Nadia.  
**Ref:** W.B. 53(27).  
**Type:** 'M'.

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: N₀ = 0, N₁ = 60 and N₂ = 120 lb./ac.
   (2) Application of P₂O₅: P₀ = No P₂O₅, P₁ = 80 lb./ac. P₂O₅ broadcast  
   and P'₁ = 80 lb./ac. P₂O₅ applied in furrows 4' deep.
   N as mixture of A/S and Oilcake in 1:1 ratio; P₂O₅ as Super.

3. **DESIGN:**
   (i) 3 x 3 Fact. in R.B.D.  
   (ii) (a) 9  
   (b) N.A.  
   (iii) 5  
   (iv) (a) 63' x 23'  
   (b) 60' x 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.

<table>
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<th>Treatment</th>
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</table>

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.
Site: Chandanpur Farm, Plassey, Nadia.
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) Sets placed horizontally end to end in trenches 10" deep. (c) N.A. (d) Between rows about 3'. (e) N.A. (f) 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: N₀=0, N₁=60 and N₂=120 lb./ac.
   (2) Application of P₂O₅: P₀=No P₂O₅, P₁=80 lb./ac. P₂O₅ broadcast and P’₁=80 lb./ac. P₂O₅ applied in furrows 4" deep.
   N as mixture of A/S and oilcake in 1 : 1 ratio; P₂O₅ as Super, G.N.C. applied at planting while A/S applied half at planting, half during earthing up.

3. DESIGN:
   (i) 3 x 3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 6 (iv) (a) 63’ x 23’ (b) 60’ x 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) Kadalmkhali, 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.

<table>
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<th>Treatment</th>
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<th>N₁</th>
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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.  
Site: - Chandanpur Farm, Plassey, Nadia.  
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 (Plant); (early).  (vii) Irrigated.  (viii) Weeding done; earthing up 3 times.  (ix) 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 \( P_2O_5: P_0 = N_0 \) 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 x 3 Fact. in R.B.D.  
(ii) (a) 9.  (b) N.A.  
(iii) 6.  
(iv) (a) 63' x 23'.  (b) 60' x 18'.  (v) 1' x 2'.  (vi) Yes.

4. GENERAL:
(i) No lodging.  
(ii) Nil.  
(iii) Yield of Sugarcane.  
(iv) (a) 1951 to 1953.  
(v) (a) Kadamtali, Burdwan.  
(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.

<table>
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S.E. of any marginal mean = 0.67 ton/ac.  
S.E. of body of table = 1.15 ton/ac.

---

Crop: - Sugarcane.  
Site: - Chandanpur Farm, Plassey, Nadia.  
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.  

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 \( P_2O_5: P_0 = N_0 \) 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) 3x3 Fact. in R.B.D.  (ii) (a) 9, (b) N.A.  (iii) 6.  (iv) (a) 63'x23', (b) 60'x18'.  (v) 1'x21'  (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.

<table>
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<td>( P_1' )</td>
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Mean 9.59  10.63  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 \( P_2 O_5 :- \ P_0 =No \ P_2 O_5, P_1 =80 \) lb/ac. broadcast and \( P'_1 =80 \) lb/ac. applied in furrows 4' deep.
N as mixture of A/S and Olicake in 1 : 1 ratio ; \( P_2 O_5 \) as Super.

3. DESIGN:
(i) 3 x 3 Fact. in R.B.D.  (ii) (a) 9, (b) N.A.  (iii) 6.  (iv) (a) 63'x23', (b) 60'x18'.  (v) 1'x21'.  (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 effect is highly significant.  P effect is significant while interaction NP is not significant.
(iv) Av. yield of cane in ton/ac-

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<td>27.75</td>
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<td>$P''_1$</td>
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<td>26.62</td>
<td>28.81</td>
<td>29.41</td>
<td>28.28</td>
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</table>

S.E. of any marginal mean = 0.54 ton/ac.
S.E. of body of table = 0.93 ton/ac.

Crop : Sugarcane.

Site : Kadamkhal Farm, Plassey, Nadia.

Ref : W.B. 51(28).

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%; $P_2O_5$ = 0.05%; pH = 7.3. (iii) Nov. 1951. (iv) (a) 2 tractor ploughings & 2 harrowings (b) Sets 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 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63’ x 23’. (b) 60’ x 18’. (v) Distance between plots 2’ blocks 6’. 14’ x 24’. (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.

<table>
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<tr>
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<td>30.46</td>
<td>30.71</td>
<td>30.28</td>
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S.E. of any marginal mean = 0.49 ton/ac.
S.E. of body of table = 0.85 ton/ac.
Crop :- Sugarcane.  
Site :- Kadamkhali Farm, Plassey, Nadia.  
Ref :- W.B. 52(8).  
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 up 3 times. (ix) N.A. (x) March.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 3 levels of N :-
N₀=0, N₁=60 and N₂=120 lb./ac.
(2) Application of P₂O₅ :-
P₀=No P₂O₅, P₁=80 lb./ac. broadcast
and P₁'=80 lb./ac. applied in furrows 4" deep.
N as mixture of A/S and Oil cake in 1 : 1 ratio ; P₂O₅ as Super.

3. DESIGN:
(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63' x 23'. (b) 69' x 18'. (v) 1½' x 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.

<table>
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<td>P₁'</td>
<td>23.99</td>
<td>23.31</td>
<td>25.12</td>
<td>24.14</td>
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</tbody>
</table>

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.  
Site :- Kadamkhali Farm, Plassey, Nadia.  
Ref :- W.B. 52(10).  
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%; P₂O₅—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 :-
N₀=0, N₁=60 and N₂=120 lb./ac.
(2) Application of P₂O₅ :-
P₀=No P₂O₅, P₁=80 lb./ac. broadcast
and P₁'=80 lb./ac. applied in furrows 4" deep.
N as mixture of A/S and Oil cake in 1 : 1 ratio ; P₂O₅ as Super.
3. DESIGN:
(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63' x 23'. (b) 60' x 18'. (v) 14' x 24'. (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.

<table>
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<td>12.41</td>
<td>13.20</td>
<td>12.29</td>
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</table>

S.E. of any marginal mean = 0.49 ton/ac.
S.E. of body of table = 0.85 ton/ac.

Crop: Sugarcane.
Site: Kadamkhali Farm, Plassey, Nadia.
Ref: W.B. 51 (29).
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) N₄ = 0.06%; Pₒ₅ = 0.5%; pH = 7.3. (iii) November 1951. (iv) (a) 2 tractor ploughings & 2 harrowings. (b) Sets 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:— N₀ = 0, N₁ = 60 and N₂ = 120 lb./ac.
(2) Application of Pₒ₂₀:— P₀ = No Pₒ₂₀, P₁ = 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; Pₒ₂₀ as Super.

3. DESIGN:
(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 63' x 23'. (b) 60' x 18'. (v) Distance between plots 2' & blocks 6'; 14' x 24'. (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.

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<td>P'</td>
<td>42.07</td>
<td>43.67</td>
<td>46.64</td>
<td>44.13</td>
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</table>

S.E. of any marginal mean = 0.85 ton/ac.
S.E. of the body of table = 1.47 ton/ac.

---

**Crop :** Sugarcane.  
**Site :** Kadamkhali Farm, Plassey, Nadia.  
**Ref :** W.B. 52(9).  
**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) N₂—0.06%; P₂O₅—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 : N₀=0; N₁=60 and N₂=120 lb./ac.
   (2) Application of P₂O₅ :  
      P₀=No P₂O₅. P₁=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 ; P₂O₅ as Super.

3. **DESIGN :**
   (i) 3 x 3 Fact. in R.B.D.  
   (ii) (a) 9. (b) N.A.  
   (iii) 6. (iv) (a) 63’ x 12’. (b) 60’ x 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.

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<th>N₂</th>
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Mean

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</tr>
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<td>24.09</td>
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S.E. of any marginal mean = 1.07 ton/ac.
S.E. of body of table = 1.86 ton/ac.
Object:—To find out the effect of N in combination with P on the yield of Sugar cane.

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 P₂O₅.
   3. 164 , , +32 
   4. 205 , , +40 
   5. 287 , , +56 
   6. 359 , , +72 
   7. 492 , , +96 
   N applied as A/S :  P₂O₅ applied as Super.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A.  (iii) 6. (iv) (a) 52’x42’. (b) 48’x38’.  (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>22.04</td>
</tr>
<tr>
<td>2.</td>
<td>21.07</td>
</tr>
<tr>
<td>3.</td>
<td>22.23</td>
</tr>
<tr>
<td>4.</td>
<td>23.65</td>
</tr>
<tr>
<td>5.</td>
<td>23.40</td>
</tr>
<tr>
<td>6.</td>
<td>23.80</td>
</tr>
<tr>
<td>7.</td>
<td>24.47</td>
</tr>
</tbody>
</table>
   S.E./mean = 1.21 ton/ac.

Crop :-Sugarcane.  Site :-Palimath Farm, Plassey, Nadia.  Type :-'M'.  
Ref :-W.B. 52(12).

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) 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) $52'\times42'$. (b) $48'\times38'$. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>7.88</td>
</tr>
<tr>
<td>2.</td>
<td>8.21</td>
</tr>
<tr>
<td>3.</td>
<td>7.31</td>
</tr>
<tr>
<td>4.</td>
<td>10.35</td>
</tr>
<tr>
<td>5.</td>
<td>7.66</td>
</tr>
<tr>
<td>6.</td>
<td>8.30</td>
</tr>
<tr>
<td>7.</td>
<td>7.90</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>0.92 ton/ac.</td>
</tr>
</tbody>
</table>

Crop : Sugarcane.  
Site : Palimath Farm, Plassey, Nadia.  
Type : M'.

Ref : W.B. 52(11).

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 19' 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) $52'\times42'$. (b) $48'\times38'$. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>22.88</td>
</tr>
<tr>
<td>2.</td>
<td>24.67</td>
</tr>
<tr>
<td>3.</td>
<td>23.18</td>
</tr>
<tr>
<td>4.</td>
<td>25.79</td>
</tr>
<tr>
<td>5.</td>
<td>24.05</td>
</tr>
<tr>
<td>6.</td>
<td>25.10</td>
</tr>
<tr>
<td>7.</td>
<td>21.67</td>
</tr>
</tbody>
</table>

S.E./mean = 0.987 ton/ac.

Crop: Sugarcane.
Site: Palimath Farm, Plassey, Nadia.

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 P₂O₅.
   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 P₂O₅ 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'x42'. (b) 48'x38'. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>14.00</td>
</tr>
<tr>
<td>2.</td>
<td>16.43</td>
</tr>
<tr>
<td>3.</td>
<td>18.52</td>
</tr>
<tr>
<td>4.</td>
<td>16.71</td>
</tr>
<tr>
<td>5.</td>
<td>15.39</td>
</tr>
<tr>
<td>6.</td>
<td>14.55</td>
</tr>
<tr>
<td>7.</td>
<td>14.80</td>
</tr>
</tbody>
</table>

S.E./mean = 1.072 ton/ac.
Crop : Sugarcane.
Site : Agri. Farm, Srinagar.

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—1953. (b) N.A. (v) (a) No. (b) N.A. (vi) Plantation had been heavily damaged due to drought. There had been practically no rain since the plantation had been completed. (vii) Nil.

5. RESULTS:
   (i) 53.23 ton/ac.
   (ii) 24.40 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.

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 (Raticorn); 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>28.41</td>
</tr>
<tr>
<td>2.</td>
<td>28.08</td>
</tr>
<tr>
<td>3.</td>
<td>26.45</td>
</tr>
</tbody>
</table>

S.E./mean = 9.2 ton/ac.

Crop :- Sugarcane.  
Site :- Rural Reconstruction Institute, Sriniketan.  
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. P₂O₅+Mustard cake at 30 lb./ac. N₂ (ii) (a) Laterite (b) Ref. soil analysis, Sriniketan. (iii) 27.2.51/2.3.51. (iv) (a) 4-5 cross ploughings, incising & levelling of soil. (b) Sets placed in trenches 10" deep. (c) N.A. (d) between plants 9" & rows 3'. (e) N.A. (v) Nil. (vi) Co. 27. (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 : N₁=3, N₂=60 and N₃=120 lb./ac.
(2) Application of P₂O₅ : P₀=No P₂O₅, P₁=50 lb./ac. broadcast and P₁=80 lb./ac. applied in furrows 4" deep.
N as mixture of A/Sand oilcake in 1 : 1 ratio ; P₂O₅ as Super.

3. DESIGN:
   (i) 3×3 Fact. R.B.D. (ii) 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 canes. (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 exp. 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.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>P₀</td>
<td>4.66</td>
<td>11.17</td>
<td>7.65</td>
<td>7.83</td>
</tr>
<tr>
<td>P₁</td>
<td>8.39</td>
<td>11.32</td>
<td>14.88</td>
<td>11.53</td>
</tr>
<tr>
<td>P₁</td>
<td>6.66</td>
<td>8.73</td>
<td>12.03</td>
<td>8.94</td>
</tr>
</tbody>
</table>

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.  
Site: State Agri Farm, Maida.  
Ref: W.B. 52(73).  
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, Maida. (iii) 18.5.53. (iv) (a) 4-5 ploughings & fallowing. (b) Sowing in lines 1' apart. (c) 3 Sows/ac. (d) & (e) N.A. (v) Compost at 4 ton/ac. (vi) Obstetrics. (vii) Unirrigated. (viii) 1st weeding on 28.6 and 2nd on 21.7. Extraction of fibre on 4.6.10.53 (ix) 59.93. (x) 19.9.53.

2. TREATMENTS:
   All combinations of (1) & (2): a Control.
   (1) 2 levels of N: N₁=33 and N₂=60 lb./ac.
   (2) 2 sources of N: A/S and C/N.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5. (iv) (a) 20' x 18'. (b) 18' x 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) 2190 lb./ac.  
   (iii) None of the effects is significant.  
   (iv) Av. yield of jute in lb./ac.

   Control  =  1524 lb./ac.
   N₁       =  1532
   N₂       =  1789
   Mean     =  1660
   S.E. of any marginal mean =  75.5 lb./ac.
   S.E. of body of table =  106.8 lb./ac.

   Mean
   A/S      =  1547
   C/N      =  1731
   =  1639

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:
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. K₂O 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 3rd to 6th 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 separately but for dry fibre combined weights for two cuts were noted. (iii) 4 to 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1087</td>
</tr>
<tr>
<td>2.</td>
<td>1356</td>
</tr>
<tr>
<td>3.</td>
<td>1874</td>
</tr>
<tr>
<td>G.M.</td>
<td>1306</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>32.9</td>
</tr>
<tr>
<td>No. of experiments</td>
<td>21</td>
</tr>
<tr>
<td>Significance</td>
<td>Highly significant.</td>
</tr>
</tbody>
</table>

Crop :- Jute.
Site :- Burdwan (West Bengal).
Ref :- Scheme for Manurial Trials (Stewart's Scheme), 1953.
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. K₂O 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 3rd to 6th 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 separately but for dry fibre combined weights of the two cuts were noted. (iii) 4 to 5 of an ac. (iv) Yes.

4. GENERAL:
5. RESULTS:

Av. yield of dry fibre in lb/ac:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1207</td>
</tr>
<tr>
<td>2.</td>
<td>1347</td>
</tr>
<tr>
<td>3.</td>
<td>1703</td>
</tr>
<tr>
<td>G.M.</td>
<td>1485</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>47.7</td>
</tr>
<tr>
<td>No. of experiments</td>
<td>14</td>
</tr>
<tr>
<td>Significance :</td>
<td>Highly significant.</td>
</tr>
</tbody>
</table>

Crop: Jute.  
Ref:- Scheme for Manurial Trials (Stewart's Scheme), 1952.

Site: Hooghly (West Bengal). Type: N.

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 K2O 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 3rd to 5th 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 separately but for dry fibre combined weights of the two cuts were noted. (iii) ¼ to ½ 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:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>934'</td>
</tr>
<tr>
<td>2.</td>
<td>1148'</td>
</tr>
<tr>
<td>3.</td>
<td>1175</td>
</tr>
<tr>
<td>G.M.</td>
<td>1085</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>26.3</td>
</tr>
<tr>
<td>No. of experiments</td>
<td>29</td>
</tr>
<tr>
<td>Significance :</td>
<td>Highly significant.</td>
</tr>
</tbody>
</table>
Crop: Jute.  Ref: Scheme for Manural 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 K2O 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 1/4 to 1/3 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 separately but for dry fibre combined weights of the two cuts were noted. (iii) 1 to 1/3 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1829</td>
</tr>
<tr>
<td>2.</td>
<td>2416</td>
</tr>
<tr>
<td>3.</td>
<td>2373</td>
</tr>
<tr>
<td>4.</td>
<td>2260</td>
</tr>
<tr>
<td>5.</td>
<td>2100</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>88.5 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Jute.
Site :- State Agri. Farm, Chinsurah.
Ref :- W.B. 49(21).
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) Irrigated.  (viii) Broadcasting :- 3 hand weedicings; no thinning; 3-4 wheel hoeings.  Spacings :- one hand weeding and thinning to requisite spacing; 3-4 wheel hoeings between lines.  (ix) 71.89w 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1095</td>
</tr>
<tr>
<td>2.</td>
<td>1226</td>
</tr>
<tr>
<td>3.</td>
<td>1191</td>
</tr>
<tr>
<td>4.</td>
<td>1267</td>
</tr>
<tr>
<td>5.</td>
<td>1319</td>
</tr>
<tr>
<td>S.E./Mean</td>
<td>= 46.6 lb./ac.</td>
</tr>
</tbody>
</table>
Crop : Jute.
Site : State Agri. Farm, Chinsurah.

Ref :- W.B. 50 (24).
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1494</td>
</tr>
<tr>
<td>2.</td>
<td>1812</td>
</tr>
<tr>
<td>3.</td>
<td>1775</td>
</tr>
<tr>
<td>4.</td>
<td>1788</td>
</tr>
<tr>
<td>5.</td>
<td>1766</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>38.37 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Jute.
Site : State Agri. Farm, Chinsurah.

Ref :- W.B. 51 (32).
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1560</td>
</tr>
<tr>
<td>2.</td>
<td>1587</td>
</tr>
<tr>
<td>3.</td>
<td>1528</td>
</tr>
<tr>
<td>4.</td>
<td>1482</td>
</tr>
<tr>
<td>5.</td>
<td>1545</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>25.68 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Jute.
Site :- State Agri. Farm, Chinsurah.

Ref :- W.B. 48 (18).
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 treatments. (e) N.A. (v) Compost at 3 ton/ac. broadcast at the time of general preparation of land. (vi) Chinsurah Green (Ollotones) 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) 1965 lb./ac.
(ii) 122.0 lb./ac.
(iii) Treatments do not differ significantly.
(iv) Av. yield of Jute fibre in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1893</td>
</tr>
<tr>
<td>2.</td>
<td>1911</td>
</tr>
<tr>
<td>3.</td>
<td>1869</td>
</tr>
<tr>
<td>4.</td>
<td>1945</td>
</tr>
<tr>
<td>5.</td>
<td>1959</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>~49.8 lb./ac.</td>
</tr>
</tbody>
</table>
Crop : Jute.  
Site : State Agri. Farm, Chinsurah. 
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 (O. litorina); 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2419</td>
</tr>
<tr>
<td>2.</td>
<td>2703</td>
</tr>
<tr>
<td>3.</td>
<td>2703</td>
</tr>
<tr>
<td>4.</td>
<td>2700</td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>S.E./mean</td>
<td>116.5 lb/ac.</td>
</tr>
</tbody>
</table>

Crop : Jute.  
Site : State Agri. Farm, Chinsurah.  
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 (O. litorina); 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 thinning 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) 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.

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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1651</td>
</tr>
<tr>
<td>2.</td>
<td>1623</td>
</tr>
<tr>
<td>3.</td>
<td>1570</td>
</tr>
<tr>
<td>4.</td>
<td>1592</td>
</tr>
<tr>
<td>5.</td>
<td>1564</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>75.9 lb/ac</td>
</tr>
</tbody>
</table>

Crop :- Roselle (Kharif). Site :- State Agri. Farm, Chinsurah. Ref :- W.B. 49(23) 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) 75.6N approx. (x) H1 : 5.11.49; H2 : 16.11.49 and H3 : 22.11.49.

2. TREATMENTS:
   Main-plot treatments :-
   5 spacings :— S1 = broadcasting, S2 = no thinning within lines×12'. S3 = 2'×12', S4 = 4'×12' and S5 = 6'×12'.

   Sub-plot treatments :—
   3 stages of harvest :— H1 = harvesting at bud stage, H2 = harvesting at flower stage and H3 = 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) 1948 to 1951. (b) N.A. (v) 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.

<table>
<thead>
<tr>
<th></th>
<th>$H_1$</th>
<th>$H_2$</th>
<th>$H_3$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$S_1$</td>
<td>1990</td>
<td>2006</td>
<td>1822</td>
<td>1939</td>
</tr>
<tr>
<td>$S_2$</td>
<td>2069</td>
<td>2195</td>
<td>1897</td>
<td>2054</td>
</tr>
<tr>
<td>$S_3$</td>
<td>2233</td>
<td>2405</td>
<td>2187</td>
<td>2275</td>
</tr>
<tr>
<td>$S_4$</td>
<td>2279</td>
<td>2257</td>
<td>2082</td>
<td>2206</td>
</tr>
<tr>
<td>$S_5$</td>
<td>2168</td>
<td>2324</td>
<td>2178</td>
<td>2223</td>
</tr>
<tr>
<td>Mean</td>
<td>2148</td>
<td>2237</td>
<td>2033</td>
<td>2139</td>
</tr>
</tbody>
</table>

S.E. of difference of two
1. main-plot treatment means
2. sub-plot treatment means
3. main-plot treatment means at a level of sub-plot treatment
4. sub-plot treatment means at a level of main-plot treatment

Crop: Roselle (Kharif),
Site: State Agri. Farm, Chinsurah.

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. (f) 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 $\times 12'', S_3 = 2'' \times 12'', S_4 = 4'' \times 12''$ and $S_5 = 6'' \times 12''$

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'x17'; (sub-plot) N.A. (b) Main-plot 54'x15'; sub-plot 17'x15'. (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) 387.0 lb/ac.
(ii) (a) 164.6 lb/ac.
(b) 63.5 lb/ac.
(iii) Only spacing and stages of harvest effects are significant.
(iv) Avg. yield of fibre in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>Mean</th>
</tr>
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<tr>
<td>S1</td>
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<td>699</td>
<td>699</td>
<td>695</td>
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<tr>
<td>S2</td>
<td>506</td>
<td>515</td>
<td>577</td>
<td>533</td>
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<td>S3</td>
<td>560</td>
<td>536</td>
<td>601</td>
<td>566</td>
</tr>
<tr>
<td>S4</td>
<td>571</td>
<td>619</td>
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<td>599</td>
</tr>
<tr>
<td>S5</td>
<td>506</td>
<td>535</td>
<td>580</td>
<td>540</td>
</tr>
</tbody>
</table>

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).
Site : State Agri. Farm, Chinsurah.
Ref : W.B. 51(39).
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 ploughings 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. (vii) Unirrigated. (viii) 3 weeding for broadcast sowing; 3 weeding and thinning to proper spacings for others. (ix) 38.93° approx., (x) H1 = 2.11.51, H2 = 20.11.51, and H3 1.12.51.

2. TREATMENTS :
   Main-plot treatments :-
   5 spacings :- S1 = broadcasting, S2 = no thinning within lines x 12", S3 = 2" x 12", S4 = 4" x 12" and S5 = 6" x 12".
   Sub-plot treatments :-
   3 stages of harvest :- H1 = harvesting at bud stage, H2 = harvesting at flower stage and H3 = 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' x 17' : sub-plot : N.A. (b) Main-plot : 51’ x 15’ ; sub-plot : 17’ x 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 x stage of harvest is significant.
(iv) Av. yield of fibre in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$H_1$</th>
<th>$H_2$</th>
<th>$H_3$</th>
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<td>$S_2$</td>
<td>1223</td>
<td>1184</td>
<td>1402</td>
<td>1270</td>
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<td>$S_3$</td>
<td>1240</td>
<td>1033</td>
<td>1248</td>
<td>1174</td>
</tr>
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<td>$S_4$</td>
<td>1289</td>
<td>1122</td>
<td>1403</td>
<td>1271</td>
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<td>$S_5$</td>
<td>1282</td>
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<td>1335</td>
<td>1339</td>
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</tbody>
</table>

Mean = 1262, $H_4 = 1211$, $H_5 = 1310$, Mean = 1261

S.E. of difference of two

1. main-plot treatment means = 0.67 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).
Site :-State Agri. Farm, Chinsurah.
Ref :-W.B. 49 (24).
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 $\times 12'$, $S_3$ = $2' \times 12'$, $S_4$ = $4' \times 12'$ and $S_5$ = $6' \times 12'$.
   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 : $53' \times 17'$; sub-plot : N.A. (b) Main-plot : $51' \times 15'$; sub-plot ; $17' \times 15'$. (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.

<table>
<thead>
<tr>
<th></th>
<th>$H_1$</th>
<th>$H_2$</th>
<th>$H_3$</th>
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</tr>
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<td>687.7</td>
<td>682.1</td>
<td>692.1</td>
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<tr>
<td>$S_2$</td>
<td>677.6</td>
<td>590.2</td>
<td>631.7</td>
<td>633.2</td>
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<tr>
<td>$S_3$</td>
<td>686.6</td>
<td>673.1</td>
<td>692.2</td>
<td>684.0</td>
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<td>$S_4$</td>
<td>576.8</td>
<td>564.5</td>
<td>586.9</td>
<td>576.1</td>
</tr>
<tr>
<td>$S_5$</td>
<td>445.8</td>
<td>417.8</td>
<td>406.6</td>
<td>423.4</td>
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<tr>
<td>Mean</td>
<td>618.5</td>
<td>586.7</td>
<td>599.9</td>
<td>601.7</td>
</tr>
</tbody>
</table>

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).
Site: State Agri. Farm, Chinsurah.
Ref: W.B. 50(26).
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. (f) 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 $\times 12'$, $S_3$ = $2'' \times 12''$, $S_4$ = $4'' \times 12''$ and $S_5$ = $6'' \times 12''$.

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: $52'' \times 17''$; sub-plot N.A. (b) Main-plot: $51'' \times 15''$; sub-plot: $17'' \times 15''$. (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 malignant disease during the year 1951. The exp't. 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.

<table>
<thead>
<tr>
<th></th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>1299</td>
<td>1508</td>
<td>1681</td>
<td>1.96</td>
</tr>
<tr>
<td>S2</td>
<td>1318</td>
<td>1363</td>
<td>1383</td>
<td>1.351</td>
</tr>
<tr>
<td>S3</td>
<td>1416</td>
<td>1583</td>
<td>1531</td>
<td>1.510</td>
</tr>
<tr>
<td>S4</td>
<td>1.91</td>
<td>1361</td>
<td>1353</td>
<td>1.335</td>
</tr>
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<td>S5</td>
<td>1045</td>
<td>1225</td>
<td>1066</td>
<td>1.112</td>
</tr>
<tr>
<td>Mean</td>
<td>1272</td>
<td>1408</td>
<td>1403</td>
<td>1.361</td>
</tr>
</tbody>
</table>

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.
Site :- State Agri. Farm, Berhampur.

Ref :- W.B. 52(38).
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 31 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” x 9”.
2. 18” x 12”.
3. 24” x 12”.
4. 18” x 6”.
5. 12” x 9”.
6. 24” x 6”.
7. 18” x 9”.
8. 12” x 12”.

3. DESIGN :
(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) & (b) 17’x9’. (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.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1441</td>
</tr>
<tr>
<td>2.</td>
<td>1353</td>
</tr>
<tr>
<td>3.</td>
<td>1271</td>
</tr>
<tr>
<td>4.</td>
<td>1238</td>
</tr>
<tr>
<td>5.</td>
<td>1183</td>
</tr>
<tr>
<td>6.</td>
<td>1101</td>
</tr>
<tr>
<td>7.</td>
<td>1037</td>
</tr>
<tr>
<td>8.</td>
<td>978</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>149.2 lb./ac.</td>
</tr>
</tbody>
</table>
Crop: Groundnut.  Ref: W.B. 52(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" x 9'.
2. 24" x 12'.
3. 24" x 6'.
4. 18" x 12'.
5. 18" x 9'.
6. 12" x 12'.
7. 12" x 9'.
8. 18" x 6'.

3. DESIGN:
(i) R.B.D.  (ii) (a) 8.  (b) N.A.  (iii) 6.  (iv) (a) & (b) 17' x 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.  (d) N.A.  (e) and (f) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
<td>2039</td>
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<td>3.</td>
<td>1911</td>
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<tr>
<td>4.</td>
<td>1857</td>
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<tr>
<td>5.</td>
<td>1767</td>
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<tr>
<td>6.</td>
<td>1764</td>
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<tr>
<td>7.</td>
<td>1511</td>
</tr>
<tr>
<td>8.</td>
<td>1371</td>
</tr>
</tbody>
</table>

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.  (f) Cowdung at 150 md./ac.  (g) K-3 (Kopargaon) (early).  (h) Unirrigated.  (i) 2 weedings, 2 mulchings and 2 earthings.  (ix) 39.72°.  (x) 2.12.52.
2. TREATMENTS:

Spacings:
1. 24" x 6'.
2. 12" x 9'.
3. 24" x 12'.
4. 18" x 6'.
5. 18" x 12'.
6. 18" x 9'.
7. 12" x 12'.
8. 24" x 9'.

3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) and (b) 17' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
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<tr>
<td>3.</td>
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</tr>
<tr>
<td>4.</td>
<td>1418</td>
</tr>
<tr>
<td>5.</td>
<td>1418</td>
</tr>
<tr>
<td>6.</td>
<td>1318</td>
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<tr>
<td>7.</td>
<td>1172</td>
</tr>
<tr>
<td>8.</td>
<td>662</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>165.8 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Groundnut. Site: State Agri. Farm, Berhampore.
Ref: W.B. 55(45). 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.
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
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<tbody>
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<tr>
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<tr>
<td>3.</td>
<td>955.4</td>
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<td>4.</td>
<td>903.5</td>
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<td>5.</td>
<td>877.2</td>
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<td>6.</td>
<td>785.0</td>
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<td>706.9</td>
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<td>8.</td>
<td>685.5</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Crop: Groundnut.  
Site: State Agri. Farm, Berhampur.  
Ref: W.B. 53 (43).  
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>281.4</td>
</tr>
<tr>
<td>2.</td>
<td>571.1</td>
</tr>
<tr>
<td>3.</td>
<td>806.4</td>
</tr>
<tr>
<td>4.</td>
<td>747.2</td>
</tr>
<tr>
<td>5.</td>
<td>581.8</td>
</tr>
<tr>
<td>6.</td>
<td>618.0</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>
Crop: Linseed.  
Site: State Agri. Farm, Berhampore.  
Ref: W.B. 52. (37).  
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' x 17'. (b) 20' x 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) 280.4 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.         | 233.9     |
   4.         | 265.0     |
   5.         | 250.2     |
   6.         | 242.8     |
   S.E./mean  | =N.A.     |

Crop: Linseed.  
Site: State Agri. Farm, Berhampore.  
Ref: W.B. 53 (40).  
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) 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 weedicings and mulching. (ix) N.A. (x) 13.3.54.

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) 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 linseed (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1497</td>
</tr>
<tr>
<td>2.</td>
<td>1461</td>
</tr>
<tr>
<td>3.</td>
<td>1378</td>
</tr>
<tr>
<td>4.</td>
<td>1352</td>
</tr>
<tr>
<td>5.</td>
<td>1314</td>
</tr>
<tr>
<td>6.</td>
<td>1244</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

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) 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>650.1</td>
</tr>
<tr>
<td>2.</td>
<td>759.5</td>
</tr>
<tr>
<td>3.</td>
<td>767.8</td>
</tr>
<tr>
<td>4.</td>
<td>752.1</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>
Crop: Til.  
Site: State Agri. Farm, Berhampore.  
Ref: W.B. 52(40).  
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>129.2</td>
</tr>
<tr>
<td>2.</td>
<td>133.3</td>
</tr>
<tr>
<td>3.</td>
<td>118.5</td>
</tr>
<tr>
<td>4.</td>
<td>125.1</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>10.03 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Til.  
Site: State Agri. Farm, Berhampore.  
Ref: W.B. 53(42).  
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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>220.9</td>
</tr>
<tr>
<td>2.</td>
<td>183.8</td>
</tr>
<tr>
<td>3.</td>
<td>246.5</td>
</tr>
<tr>
<td>4.</td>
<td>239.5</td>
</tr>
<tr>
<td>5.</td>
<td>192.1</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Crop :- Til.  
Site :- State Agri. Farm, Berhampore.  
Ref :- W.B. 53(41).  
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 broadcast by hand; levelled 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:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Date of sowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>9.6.53</td>
</tr>
<tr>
<td>2.</td>
<td>23.6.53</td>
</tr>
<tr>
<td>3.</td>
<td>7.7.53</td>
</tr>
<tr>
<td>4.</td>
<td>21.7.53</td>
</tr>
<tr>
<td>5.</td>
<td>4.8.53</td>
</tr>
<tr>
<td>6.</td>
<td>19.8.53</td>
</tr>
</tbody>
</table>

3. DESIGN:
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 24’ x 12’. (b) 20’ x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>745.8</td>
</tr>
<tr>
<td>2.</td>
<td>446.8</td>
</tr>
<tr>
<td>3.</td>
<td>364.6</td>
</tr>
<tr>
<td>4.</td>
<td>263.8</td>
</tr>
<tr>
<td>5.</td>
<td>248.1</td>
</tr>
<tr>
<td>6.</td>
<td>155.4</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 52.2 lb./ac.</td>
</tr>
</tbody>
</table>
Crop: Banana.  

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.

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. 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 $P_2O_5$ 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 around. (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.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Mean Height (cm.) (Nov. 51).</th>
<th>Mean leaf count (Nov. 51).</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>52.62</td>
<td>6.01</td>
</tr>
<tr>
<td>2.</td>
<td>61.93</td>
<td>8.02</td>
</tr>
<tr>
<td>3.</td>
<td>123.56</td>
<td>10.88</td>
</tr>
<tr>
<td>4.</td>
<td>118.56</td>
<td>11.30</td>
</tr>
<tr>
<td>5.</td>
<td>103.75</td>
<td>11.58</td>
</tr>
<tr>
<td>6.</td>
<td>75.37</td>
<td>8.90</td>
</tr>
<tr>
<td>7.</td>
<td>76.31</td>
<td>8.64</td>
</tr>
<tr>
<td>8.</td>
<td>77.06</td>
<td>8.94</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>≈4.70 cm.</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Crop: Banana.  

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 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 P2O5 as super.
7. 4 oz. of N from cowdung+8 oz. of K2O from pot. sul.
8. 4 oz. of N from cowdung+8 oz. of P2O5 as super+8 oz. of K2O 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:

5. RESULTS:
(i) 14.12 lb./plant.
(ii) 2.36 lb./plant.
(iii) Treatments differ significantly.
(iv) Av. yield of banana in lb./plant.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>8.35</td>
</tr>
<tr>
<td>2.</td>
<td>12.82</td>
</tr>
<tr>
<td>3.</td>
<td>17.22</td>
</tr>
<tr>
<td>4.</td>
<td>17.95</td>
</tr>
<tr>
<td>5.</td>
<td>16.85</td>
</tr>
<tr>
<td>6.</td>
<td>13.02</td>
</tr>
<tr>
<td>7.</td>
<td>13.05</td>
</tr>
<tr>
<td>8.</td>
<td>13.67</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>1.18 lb./plant</td>
</tr>
</tbody>
</table>

Crop :- Banana.
Ref :- W.B. 53 (83).
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 P2O5 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 mustard cake.
6. 4 oz. of N from cowdung+8 oz. of P2O5 as super.
7. 4 oz. of N from cowdung+8 oz. of K2O as pot. sul.
8. 4 oz. of N from cowdung+8 oz. of P2O5 as Super+8 oz. of K2O 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 each. (v) 1 guard row around. (vi) Yes.
4. GENERAL:
(i) Fair. (ii) Heavily infested by Panama disease. The experiment had to be 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>13.20</td>
</tr>
<tr>
<td>2.</td>
<td>21.30</td>
</tr>
<tr>
<td>3.</td>
<td>30.25</td>
</tr>
<tr>
<td>4.</td>
<td>30.75</td>
</tr>
<tr>
<td>5.</td>
<td>29.47</td>
</tr>
<tr>
<td>6.</td>
<td>22.42</td>
</tr>
<tr>
<td>7.</td>
<td>21.62</td>
</tr>
<tr>
<td>8.</td>
<td>23.05</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>1.22 lb./plant.</td>
</tr>
</tbody>
</table>

Crop: Banana.  
Site: State Banana Res. Strn. Chinsurah.  
Ref: W.B. 53 (77).  
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 of 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean height (cm.) Dec. 1953.</th>
<th>Mean girth (cm.) Dec. 1953.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>172.95</td>
<td>55.31</td>
</tr>
<tr>
<td>2.</td>
<td>177.36</td>
<td>58.03</td>
</tr>
<tr>
<td>3.</td>
<td>180.95</td>
<td>57.98</td>
</tr>
<tr>
<td>4.</td>
<td>180.45</td>
<td>57.06</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean height (cm.) Dec. 1953</th>
<th>Mean girth (cm.) Dec. 1953</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>167.85</td>
<td>54.68</td>
</tr>
<tr>
<td>2.</td>
<td>182.35</td>
<td>57.96</td>
</tr>
<tr>
<td>3.</td>
<td>167.43</td>
<td>54.10</td>
</tr>
<tr>
<td>4.</td>
<td>175.11</td>
<td>55.86</td>
</tr>
</tbody>
</table>

Crop :- Banana.
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 around. (vi) Yes.

4. GENERAL:


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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Sept. 51.</th>
<th>May 52</th>
<th>Sept. 51</th>
<th>May 52</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>53.87</td>
<td>242.17</td>
<td>4.82</td>
<td>9.77</td>
</tr>
<tr>
<td>2.</td>
<td>51.56</td>
<td>224.80</td>
<td>5.35</td>
<td>9.62</td>
</tr>
<tr>
<td>3.</td>
<td>41.54</td>
<td>224.17</td>
<td>4.77</td>
<td>9.82</td>
</tr>
<tr>
<td>4.</td>
<td>35.62</td>
<td>229.75</td>
<td>4.80</td>
<td>9.27</td>
</tr>
<tr>
<td>5.</td>
<td>37.43</td>
<td>231.75</td>
<td>4.70</td>
<td>10.05</td>
</tr>
<tr>
<td>6.</td>
<td>31.50</td>
<td>227.17</td>
<td>4.25</td>
<td>10.07</td>
</tr>
</tbody>
</table>

Ref :- W.B. 51(37.)
Type :- 'C'.
Crop :- Banana.
Ref :- W.B. 52(65).
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 around. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>21.21</td>
</tr>
<tr>
<td>2.</td>
<td>19.53</td>
</tr>
<tr>
<td>3.</td>
<td>20.68</td>
</tr>
<tr>
<td>4.</td>
<td>21.12</td>
</tr>
<tr>
<td>5.</td>
<td>20.41</td>
</tr>
<tr>
<td>6.</td>
<td>19.66</td>
</tr>
<tr>
<td>S.E/Mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Crop :- Banana.
Ref :- W.B. 51(34).
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 (= organic+4 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. (xii) 58.97°. (xiii) 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 plants each. Net: 4 rows of 4 plants each. (v) 1' border row around. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean height (cm) May, 52</th>
<th>Mean leaf count, May, 52</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>137.82</td>
<td>11.57</td>
</tr>
<tr>
<td>2.</td>
<td>140.47</td>
<td>12.32</td>
</tr>
<tr>
<td>3.</td>
<td>136.67</td>
<td>12.12</td>
</tr>
<tr>
<td>4.</td>
<td>141.22</td>
<td>11.60</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>=0.17 (leaf count.)</td>
<td></td>
</tr>
</tbody>
</table>

September, October Planting
(i) 99.73 cm (for height); 10.52 (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean height (cm) May 52</th>
<th>Mean leaf count May 52</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>94.92</td>
<td>10.77</td>
</tr>
<tr>
<td>2.</td>
<td>.96.50</td>
<td>10.87</td>
</tr>
<tr>
<td>3.</td>
<td>102.17</td>
<td>11.02</td>
</tr>
<tr>
<td>4.</td>
<td>105.23</td>
<td>11.00</td>
</tr>
</tbody>
</table>

Crop :- Banana. 

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, 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. (xi) 28.11 52-20.53 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 around. (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.
(iv) Av. yield of banana in lb./plant.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>29.71</td>
</tr>
<tr>
<td>2.</td>
<td>29.11</td>
</tr>
<tr>
<td>3.</td>
<td>29.75</td>
</tr>
<tr>
<td>4.</td>
<td>27.00</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>22.10</td>
</tr>
<tr>
<td>2.</td>
<td>21.75</td>
</tr>
<tr>
<td>3.</td>
<td>23.55</td>
</tr>
<tr>
<td>4.</td>
<td>21.65</td>
</tr>
</tbody>
</table>

Crop : Banana.  
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 (4 organic + 4 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 around. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>28.47</td>
</tr>
<tr>
<td>2.</td>
<td>24.72</td>
</tr>
<tr>
<td>3.</td>
<td>29.00</td>
</tr>
<tr>
<td>4.</td>
<td>30.80</td>
</tr>
</tbody>
</table>

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' x 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' x 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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>8855</td>
</tr>
<tr>
<td>2.</td>
<td>9995</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>458 lb./ac.</td>
</tr>
</tbody>
</table>


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' x 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' x 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 | S.E./mean |
      |-----------|-----------|-----------|
      | 1.         | 9474      | 212.8 lb./ac. |
      | 2.         | 13084     |            |

---

**Crop:** Banana.  
**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' x 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 150 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' x 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 | S.E./mean |
      |-----------|-----------|-----------|
      | 1.         | 7869      | 553 lb./ac. |
      | 2.         | 12535     |            |

---

**Crop:** Banana.  
**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' x 8'.
2. 6' x 6'.

3. **DESIGN:**

(i) Paired plot. (ii) 2. (iii) 6. (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line around.
(vi) Yes.

4. **GENERAL:**


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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean height (in cm.)</th>
<th>Mean leaf count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>62.30</td>
<td>12.91</td>
</tr>
<tr>
<td>2.</td>
<td>69.80</td>
<td>12.83</td>
</tr>
</tbody>
</table>

---

**Crop:** Banana.  
**Site:** State Horti. Res Stn. Krishnagar.  
**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 (1 organic + 1 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' x 8'.
2. 6' x 6'.

3. **DESIGN:**

(i) Paired plot. (ii) 2. (iii) 6. (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line around.
(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)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>119.10</td>
</tr>
<tr>
<td>2.</td>
<td>190.13</td>
</tr>
</tbody>
</table>

S.E./mean = 15.93 lb./plot.
Crop :- Banana.  
Ref :- W.B. 52(57).
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 (organic+ inorganic); organic manure (T.C.) applied soon after onset of monsoon and A/S applied in 4 doses starting from onset of monsoon and at interval of one month, thereafter 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'x8'.
   2. 6'x6'.

3. DESIGN :
   (i) Paired plot (ii) 2 (iii) 6 (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line around. (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) 25.98 lb./plot. 
   (iii) Treatments differ significantly. 
   (iv) Av. yield of banana in lb./plot.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>233.31</td>
</tr>
<tr>
<td>2.</td>
<td>435.97</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>11.83 lb./plot.</td>
</tr>
</tbody>
</table>

———

Crop :- Banana.  
Ref :- W.B. 53(76).
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 (organic+ inorganic); T.C. mixed with soil applied at the onset of monsoon. A/S mixed with soil and applied in 4 equal doses starting from 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'x8'.
   2. 6'x6'.

3. DESIGN :
   (i) Paired plot (ii) 2 (iii) 6 (iv) 9 for treatment 1 and 16 for treatment 2. (v) Single border line around. (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.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>164.25</td>
</tr>
<tr>
<td>2.</td>
<td>298.33</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>6.37 lb./plot</td>
</tr>
</tbody>
</table>

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) Nil. (xii) N.A.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 2 varieties viz. Martaman and Champa.
(2) 2 spacings viz. 12' x 12' and 9' x 9'.

3. DESIGN:
(i) R.B.D. (Fact.). (ii) 4. (iii) 4 (iv) Net area 36' x 36'; 16 for 9' x 9' spacing and 9 for 12' x 12' spacing. (v) Single border row all round. (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.

<table>
<thead>
<tr>
<th>Variety</th>
<th>12' x 12'</th>
<th>9' x 9'</th>
<th>Mean Height (in cm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martáman</td>
<td>135.10</td>
<td>148.81</td>
<td>141.96</td>
</tr>
<tr>
<td>Champa</td>
<td>166.62</td>
<td>161.31</td>
<td>163.97</td>
</tr>
<tr>
<td>Mean</td>
<td>150.86</td>
<td>155.06</td>
<td>152.96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variety</th>
<th>12' x 12'</th>
<th>9' x 9'</th>
<th>Mean leaf count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martáman</td>
<td>10.10</td>
<td>10.50</td>
<td>10.30</td>
</tr>
<tr>
<td>Champa</td>
<td>10.25</td>
<td>10.10</td>
<td>10.18</td>
</tr>
<tr>
<td>Mean</td>
<td>10.18</td>
<td>10.30</td>
<td>10.24</td>
</tr>
</tbody>
</table>
Crop: Banana.

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. (§ organic+§ 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'x12' and 9'x9'.

3. DESIGN:
   (i) R.B.D. (Fact.) (ii) 4. (iii) 4. (iv) Net area 36'x36'; 16 for 9'x9' spacing and 9 for 12'x12' spacing. (v) Single border row all around. (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.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Spacing</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12'x12'</td>
<td>9'x9'</td>
</tr>
<tr>
<td>Martaman</td>
<td>175.75</td>
<td>355.20</td>
</tr>
<tr>
<td>Champa</td>
<td>145.87</td>
<td>256.37</td>
</tr>
<tr>
<td>Mean</td>
<td>160.81</td>
<td>305.79</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of variety or spacing = 9.60 lb./plot.
S.E. of body of table = 13.57 lb./plot.
2. TREATMENTS:
All combinations of (1) and (2)
(1) 2 varieties viz. Martaman and Champa.
(2) 2 spacings viz. 12' x 12' and 9' x 9'.

3. DESIGN:
(i) R.B.D. (Fact.). (ii) 4. (iii) 4. (iv) Net area 36' x 36'; 16 for 9' x 9' spacing and 9 for 12' x 12' spacing. (v) Single border row around. (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.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Spacing</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12' x 12'</td>
<td>9' x 9'</td>
</tr>
<tr>
<td>Martaman</td>
<td>247.00</td>
<td>452.68</td>
</tr>
<tr>
<td>Champa</td>
<td>290.65</td>
<td>497.77</td>
</tr>
<tr>
<td>Mean</td>
<td>268.82</td>
<td>475.22</td>
</tr>
</tbody>
</table>

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.
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 (+ organic+ 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' x 12' and 9' x 9'.

3. DESIGN:
(i) R.B.D. (Fact.). (ii) 4. (iii) 4. (iv) Net area 36' x 36'; 16 for 9' x 6' spacing and 9 for 12' x 12' spacing. (v) Single border row around. (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) 3.609 lb./plot.

(ii) 34.02 lb./plot.

(iii) Main effect of spacing alone is highly significant.

(iv) Av. yield of banana in lb./plot.

<table>
<thead>
<tr>
<th>Spacing</th>
<th>Variety</th>
<th>12'×12'</th>
<th>9'×9'</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Martaman</td>
<td>242.50</td>
<td>398.25</td>
<td>320.37</td>
</tr>
<tr>
<td></td>
<td>Champa</td>
<td>226.50</td>
<td>357.12</td>
<td>291.81</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>234.50</td>
<td>377.68</td>
<td>306.09</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of variety or spacing = 12.03 lb./plot.

S.E. of body of table = 17.01 lb./plot.