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EXPERIMENTS

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RAJASTHAN

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FOREWORD

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

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

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

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

NEW DELHI,
August 20, 1962.

PREFACE

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

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

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

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

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

The compendium is divided into 15 volumes one each for (1) Andhra Pradesh (2) Assam, Manipur and Tripura (3) Bihar (4) Gujarat (5) Kerala (6) Madhya Pradesh (7) Madras (8) Maharashtra (9) Mysore (10) Orissa (11) Punjab, Jammu & Kashmir and Himachal Pradesh (12) Rajasthan (13) Uttar Pradesh (14) West Bengal and (15) all Central Institutes. In each volume back-ground information of the respective State regarding its physical features, soils, rainfall and climate, agricultural production and area under different crops is given. A map showing different regions of the State, soils and agricultural research farms is also included. The experiments reported in each volume have been arranged cropwise for each State. All the experiments belonging to a particular crop at various research stations are grouped together. For a particular crop, experiments are arranged according to the following classification :

Manurial (M), Cultural (C), Irrigational (I), Diseases, Pests and Chemicals other than fertilisers (D), Rotational (R), Mixed Cropping (X) and combinations of these wherever they occur (e.g., CM as Cultural-cum-Manurial). Experiments in which crop varieties also form a factor are denoted by adding V to their symbol and are given together (e.g., MV as Manurial-cum-Varietal). The results of an experiment are given along with other basic information such as rotation of crops followed, cultural practices adopted, etc.

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

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

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

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

V.G. Panse

Statistical Adviser

Institute of Agricultural Research Statistics

(I.C.A.R.)

New Delhi,

August 16, 1962.

REGIONAL SUPERVISORS FOR THE NATIONAL INDEX OF FIELD EXPERIMENTS

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

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

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

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

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

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

Abbreviations adopted for States are as follows :-

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

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

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

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

Type :- Abbreviations used against this item are one or more than one of the following :—

C—Cultural ; D—Control of Diseases and Pests ; I—Irrigational ; M—Manurial ; R—Rotational ; V—Varietal and X—Mixed cropping. *e.g.* CM. is to be read as Cultural-cum-Manurial.

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

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

Abbreviations used in the text of the experiments :-

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

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

BASAL CONDITIONS

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

A. For annual crops :

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

B. For perennial crops :

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

C. For experiments on cultivators' fields :

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

DESIGN

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

A. For annual crops :

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

B. For perennial crops :

(i) Abbreviations for designs : C.R.D.—Completely Randomised Design ; R.B.D.—Randomised Block Design ; L. Sq.—Latin Square ; Confd.– Confounded. (other designs and modifications of the above indicated in full). (ii) (a) No of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) No. of trees/plot. (v) Border or guard rows kept. (vi) Are treatments randomised.

C. For experiments on cultivators' fields :

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

GENERAL

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

A. For annual crops :

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

B. For perennial crops :

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

C. For experiments on cultivators' fields :

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

GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1.	Rice, Paddy.	*Oryza sativa L.*	Dhan	Dhan	Dhano	Vadlu, Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chadl ; Dhan
2.	Wheat.	*Triticum Sativum* Lank *Triticum aestivum L.*	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Jowar.	*Andropogon sorghum* Brot ; *Sorghum vulgare* Pers.	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari ; Jondhla	Jowari ; Juar	Jowar ; Jaur	Jowar
4.	Barley.	*Hordeum vulgare L.*	Ja'dhan	Joba	Joba, Barlhi	Barley	Baarli arisi	Barley	Barley akki	Satu ; Jav	Jav	Jau	Jaun
5.	Bajra.	*Pennisetum typhoideum L.*	—	Bajra	Bajra	Sajja	Kambu	Kambu	Sajje	Bajri	Bajri	Bajra	Bajra
6.	Maize.	*Zea mays L.*	Gom dhan	Bhutta	Macca	Mokka jonna	Makka cholam	Cholam	Musukina jola	Makka	Makkai	Makka	Makki ; Makayee
7.	Gram.	*Cicer arietinum L.*	Butmah	Chola	Boot	Sanagalu	Kadalai ; Sundal	Kadala	Kadale	Harbara	Chana	Chana	Chhole Chana
8.	Moong.	*Phaseolus aureus Roxb.*	Magumah	Sonamug	Mung	Pachapesalu	Kadalai Pachaipayru ; Pasipayaru	Cerupayara ; Payaru	Hesaru	Mug	Mag	Moong	Moong
9.	Groundunt.	*Arachis hypogaea L.*	China badam	Cheena badam	China badam	Nelashanga	Nilakadalai	Nilakkadla	Kadale kayi	Bhuimug	Magafali	Mungphali	Mungfali
10.	Til.	*Sesamum indicum L.*	Til	Til	Rasi	Navvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
11.	Metha.	*Trigonella foenum-groecum*	—	—	—	—	—	—	—	—	—	Metha	—

CONTENTS

RAJASTHAN STATE

1. GENERAL

Rajasthan State is located on the north-western border of India. It lies between 23°3′ and 30° 12′ north latitudes and 69° 00′ and 78° 17′ east longitudes. The state is divided into 5 divisions and 26 districts for administrative purposes. The total area is 84.4 million acres of which the cultivated area is about 50%.

2. PHYSICAL FEATURES, CLIMATE AND SOILS

The Aravali range runs from north-east to south-west almost across the entire State dividing it naturally into two parts - the north-western which comprises 3/5 and the south-eastern which comprises 2/5 of the total area. The north-western region is on the whole, a sandy, ill-watered and unproductive area. In the extreme west of this region it is mere desert while towards the east it is comparatively more cultivable and habitable. The only river of consequence here is Luni. The soil yields rich returns if assured water supply is available as is known from the production in Ganganagar district which is served by canal. The climate of this region is extremely hot in summer, the temperature shooting upto 50°C (122°F) and extremely cold in winter when at places, the temperature goes below the freezing point.

The soil of this region is of sandy or sandy loam type with 2 to 6 feet sand dunes scattered over the surface of practically the whole of west Rajasthan. As one proceeds towards east the soil texture is finer. The soils of Ajmer division are sandy loam-of pale yellow to brown in colour. The region south-east of Aravalis is higher in elevation, more fertile and also diversified in character. It contains extensive hill ranges and long stretches of rocks and wood-land. The region is traversed by many rivers although not perennial and in some parts there are fertile table lands and great stretches of excellent soil. The chief rivers are Banas & Chambal. The climate of this region is milder in comparison to that of the north-west region, because of higher rainfall. The soils are rich varying from loam, clay loam to clay including the black cotton soil in Jhalwar district and parts of Udaipur division, loam in Bharatpur and Alwar districts. In parts of Udaipur division there are large forest areas in Durgapura and Banswara districts.

3. RAINFALL & IRRIGATION.

The annual rainfall varies from region to region from less than 1″ to about 30″. The State can be divided into 4 rainfall zones. The rainfall goes on decreasing from south-west to north-east. The normal seasonal rainfall figures for each zone are given in Table 1.

TABLE-1

Seasonwise normal rainfall in inches for regions of Rajasthan State.

No.	'Region (District)	Monsoon 1st June to 30th Sept.	Post Monsoon 1st Oct. to 31st Dec.	Winter 1st June. to 28th Feb.	Pre-Monsoon 1st March to 31st May	Total
1.	Jaisalmer	5.9	0.2	0.3	0.6	7.0
2.	Barmer, Jodhpur, Bikaner, Ganganagar, Churu, Jhunjunu, Nagaur, & Pali	11.0	3.9	4.3	7.1	26.3
3.	Jalore, Udaipur, Ajmer, Jaipur, Alwar, Sikar, Tonk, S. Madhopur, Bharatpur Bhilwara, Chittorgarh, Kotah, Bundi & Durgapura.	20.5	0.8	0.6	1.0	22.9
4.	Jhalwar, Sirohi & Banswara.	33.1	1.6	0.3	0.6	35.6
	State (simple average)	17.6	1.6	1.4	2.3	22.9

Out of the total cultivated area of the State amounting to 43 million acres only 8% is irrigated through varaious sources. Of the total irrigated area in 1955-56, 21% was irrigated by canals, 13% by tanks and 64% by wells and 1% by other sources. Ganganagar district accounts at present for entire canal irrigated area. The districts of Jaisalmer, Bikaner, Churu and Barmer depend entirely on rainfall and have almost no sources for irrigation. The Rajasthan canal which when completed would be of great significance in changing the agricultural economy of the State.

Of the total gross irrigated area in the State, about 76% is devoted to foodgrains, 8% to cotton and the rest to others.

5. CROPPING PATTERN AND AGRICULTURAL PRODUCTION.

Almost all types of crops ranging from wet crops like Paddy, Sugarcane etc., to the dry crops like Bajra, Jowar etc. are grown in Rajasthan.

The area under different crops and the acre yields are given in Table 2 below. The distribution of crops is such that in the desert areas of Jodhpur and Bikaner division,

TABLE 2

Area and yield of crops (1955-56)

		Area in million acres	% (area)	Yield in lb./ac.
1.	Bajra	8.95	28.86	194
2.	Jowar	2.86	9.23	172
3.	Wheat	2.40	7.75	845
4.	Maize	1.33	4.31	878
5.	Barley	1.37	4.42	945
6.	Gram	3.23	11.64	488
7.	Pulses	7.39	23.84	318
8.	Oilseeds	1.99	6.59	284
9.	Sugarcane	0.07		16912
10.	Cotton (lint)	0.60	2.00	118

Jhunjhunu and Sikar districts of Ajmer division Bajra is the only important crop while in the case of Kotah division Jowar is important. In Udaipur division there is preponderance of Maize. The Rabi crops are fairly well distributed throughout Rajasthan except in the desert area of Jodhpur and Bikaner divisions. The Cotton crop is concentrated in Ganganagar, Chittorgarh, Bhilwara, Udaipur and Jhalwar districts.

6. AGRICULTURAL STATIONS AND EXPERIMENTATION.

Agricultural research was organised on a proper basis only after the integration of the princely states. Research stations were established to cover the important agricultural regions in the state. A few agricultural experimental farms which had been in existence prior to the formation of the State were also utilized for the purpose of conducting research.

Tabular statement showing the details of each agricultural research station is appended.

The information on various items of the proforma prescribed by the Council were not maintained at the research stations. To meet this defficiency the State authorities have recently introduced a standardised proforma prescribed by the I.C.A R. to include all the basic information relating to the experiments.

7. EXPERIMENTS FOR THE PERIOD 1948-53.

The total number of experiments conducted during the period 1948-53 is 116. The table below shows the break-up of the number according to crop and treatments tried.

TABLE 3

Distribution of experiments according to crops and type of treatments tried.

Crops	M	MV	C	CV	D	Total
1. Paddy	4	—	—	—	—	4
2. Wheat	41	3	3	2	7	56
3. Jowar	1	—	—	—	2	3
4. Bajra	7	—	—	—	1	8
5. Barley	4	—	—	—	—	4
6. Maize	7	—	—	—	1	8
7. Oilseeds	5	—	—	—	—	5
8. Pulses	6	—	—	—	1	7
9. Green Fodder	2	—	—	—	—	2
Total	76	3	3	2	12	97
				T.C.M. Trials on Cultivators' Fields		9

It is seen from the Table 3 above that nearly half of the experimental work was carried out on wheat which accounts for only about 8% of the area under the crop. Although Bajra and Jowar are major food crops accounting for 28% & 8% respectively of the area under crops only few experiments have been conducted on them, the amount of experimentation being less than 10% in each case. The same is true of pulses also.

Majority of the manurial experiments were planned to study the effect of nitrogen and phosphatic fertilizers. Factorial combinations of graded doses of nitrogen and phosphorous in the form of Ammonium Sulphate and Superphosphate respectively were included in these experiments.

The experimental design adopted was mostly Randomised Block design. The plot sizes generally ranged from about ½ cent to 1½ cent and the number of replications varied from 3 to 6.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

Sl. No.	Name of station	District and location	year of commencement	Major crops	Soil Type	Normal rainfall	Irrigation facilities	No. of experiments
1.	Alphanagar. (Private.)	Distt. Bundi.	N.A.	—	—	—	—	Paddy — 4
2.	Govt. Agri. Farm, Bassi	Jaipur 1 mile from Rly. Stn. Bassi	1947	Barley, Bajra, Wheat, Moong etc.	Clay loam	20″	Well	Wheat — 5 Bajra — 4 Jowar — 1 Barley — 4 Pulses — 4 Groundnut— 2 Total —20
3.	Govt. Agri., Farm, Durgapura.	Jaipur 2 miles from Durgapura Rly. Station.	1948	Wheat, fodder grasses & legumes, bajra, kharif pulses & vegetables.	Sandy loâm	18″	Well	Wheat— 2 Jowar — 1 Bajra — 3 Pulses — 1 Total= 7
4.	Govt. Agri. Farm Sri Ganganagar.	Distt. Ganganagar.	1952	Wheat, Gram and Sugarcane.	Sandy loam	8″	Canal	Wheat—11
5.	Govt. Agri. Farm Kotah.	Distt. Kotah. 5 miles from Kotah Rly. Stn.	1952	Baram Wheat, Jowar, Linseed, Sugarcane and Gram.	Black cotton soil.	30″	Well	Wheat—10 Jowar — 1 Pulses — 2 Total —13

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS (Contd.).

Sl. No.	Name of station	District and location	year of commencement	Major crops	Soil Type	Normal rainfall	Irrigation facilities	No. of experiments
6.	Govt. Experimental Farm Makrera.	Ajmer 4 miles from Beawar Rly Stn.	1936	Maize, Barley, Cotton Oats.	Sandy loam	18″	Tank	Wheat—12 Maize — 1 Total —13
7.	Govt. Agri. Farm Mandore	Jodhpur 5 miles from Jodhpur Rly. Stn.	1952	Desert—Bajra and other kharif crops and trials on Wheat and Barley.	Sandy loam	10″	Well	Wheat— 5 Oilseeds— 3 Total — 8
8.	Govt Agri. Farm, Merta. Farm	Nagaur (not working)	N.A.	—	—	—	—	Bajra — 1
9.	Govt Experimental Tabiji.	Ajmer 2 miles from Tabiji Rly. Stn.	1936	Maize, Barley & Oats.	Sandy loam	18″	Well	Wheat—10 Maize — 4 Maitha — 2 Total —16
10.	Govt. Agri. Farm, Udaipur.	Udaipur. 3 miles from Rly. Stn. Udaipur.	1957	Maize	Clay loam	25″	Well	Wheat— 1 Maize — 3 Total — 4
11.	Simple Trials.	T.C.M. Trials on cultivators, fields	—	Wheat	—	—	—	Wheat—14
12.	Complex Experiments.	As above.	—	Wheat	—	—	—	Wheat— 5

Crop :-Paddy (Kharif). **Ref :-Rj. 52(20).**

Site :-Cultivators' Farm, Alfanagar. **Type :-'M'.**

Object :—To find out the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) N.A. (b) N.A. (iii) July, 1952. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) Oct. 1952.

2. TREATMENTS :

All combinations of (1) and (2)

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

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

N as A/S and P_2O_5 as Super. Fertilizers sprayed at the time of cultivation.

3. DESIGN :

(i) 3^2 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 33′×16½′. (b) 27′×10½′. (v) 3′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1317 lb./ac.

(ii) 174.4 lb./ac.

(iii) None of the effects is significant.

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

	N_0	N_1	N_2	Mean.
P_0	1178	1368	1336	1294
P_1	1336	1263	1475	1358
P_2	1245	1263	1486	1298
Mean.	1220	1298	1432	1317

S.E. of any marginal mean = 57.3 lb./ac.
S.E. of body of table = 100.7 lb./ac.

Crop :-Paddy (Kharif). **Ref :-Rj. 52(21)**

Site :-Cultivators' Farm, Alfanagar. **Type :-'M'.**

Object :—To find out the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil. (b) N.A. (iii) 28.8.52. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

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

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

N as A/S and P_2O_5 as Super. Fertilizers sprayed at cultivation before sowing.

3. DESIGN :

(i) 3^2 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) 36′×22′6″. (b) 30′×16′6″. (v) 3′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1589 lb./ac.
(ii) 139.1 lb./ac.
(iii) Only N and P_2O_5 effects are highly significant. Interaction is not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean.
P_0	1153	1266	1446	1288
P_1	1401	1537	1831	1590
P_2	1650	1898	2124	1891
Mean.	1401	1567	1800	1589

S.E. of any marginal mean = 56.6 lb./ac.
S.E. of body of table = 98.4 lb./ac.

Crop :-Paddy (Kharif). Ref :-Rj. 53(6).
Site :-Cultivators' Farm, Alfanagar. Type :-'M'.

Object :—To find out the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) N.A. (iii) 4.9.53. (iv) (a) N.A. (b) Transplanted according to the Japanese method. (c)—(d) and (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 22.12.1953.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=30 and N_2=50 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.
N as A/S and P_2O_5 as Super. Fertilizers were sprayed and mixed at the time of cultivation.

3. DESIGN :

(i) 3^2 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 27′×10′6″. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1324 lb./ac.
(ii) 150.4 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
P_0	1193	1387	1361	1314
P_1	1353	1281	1493	1376
P_2	1161	1281	1401	1281
Mean	1236	1317	1419	1324

S.E. of any marginal mean = 50.1 lb./ac.
S.E. of body of table = 86.8 lb./ac.

Crop :- Paddy (Kharif). **Ref :-Rj. 53(35).**

Site :- Cultivators' Farm, Alfanagar. **Type :- 'M'.**

Object :—To study the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Clay. (b) N.A. (iii) 10.9.1953. (iv) (a) 4 ploughings. (b) Transplanting. (c) ——. (d) & (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) Weeding five times. (ix) N.A. (x) 25.12.1953.

2. TREATMENTS :

All combinations of (1) & (2)

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

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

N as A/S and P_2O_5 as Super. Fertilizers sprayed at the time of cultivation.

3. DESIGN :

(i) 3^2 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 30′×13′ 6″. (b) 27′×10′ 6″. (v) 1½′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1317 lb./ac.
(ii) 659.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
P_0	1176	1373	1340	1296
P_1	1334	1261	1478	1338
P_2	1150	1261	1485	1299
Mean.	1220	1298	1434	1317

S.E. of any marginal mean = 220.0 lb./ac.

S.E. of the body of table = 381.0 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 51(2).**

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

Object :—To study the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat. (b) Maize. (c) Manured ; details N.A. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A. (iii) 4.12.51. (iv) (a) 2 ploughings after irrigation. (b) Drilled. (c) 1 md./ac. (d) 9″ apart. (e) N.A. (v) No. (vi) C-591. (vii) Irrigated. (viii) Intercultivation and weeding on 17.1.52. (ix) N.A. (x) 23.4.1952.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=30 lb./ac.

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

(3) 2 sources of P_2O_5 : Super & B.M.

& 3 extra treatments : N_0P_0=0 lb./ac. of N ; N_1P_0=20 lb./ac. of N ; N_2P_0=30 lb./ac. of N.

N as A/S. The fertilizers were applied evenly distributing in each plot by mixing with earth before sowing.

3. DESIGN :

(i) R.B.D. (Fact.) (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 30'3"×18'. (b) 24' 3"×12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 981 lb./ac.
(ii) 259.6 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

		Super		B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	834	872	989	867	1022	917
N_1	1088	1148	1082	825	810	990
N_2	980	1059	996	1031	1115	1036
Mean	967	1026	1022	908	982	981

S.E. of N marginal means = 57.9 lb./ac.
S.E. of P_2O_5 marginal means = 74.9 lb./ac.
S.E. of body of table = 129.8 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52(17).

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

Object :—To study the effect of N and P_2O_5 applied alone in different doses and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Wheat. (c) No. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A. (iii) 16.11.52. (iv) (a) 2 ploughings. (b) N.A. (c) 1 md./ac. (d) & (e) N.A. (v) No. (vi) C. 591 ; (Medium), (vii) Irrigated. (viii) Weeding two times on 5.1.53 and 22.1.53. (ix) N.A. (x) 6.4.53.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=30 lb /ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=25 and P_2=40 lb./ac.
(3) 3 levels of F.Y.M. : F_0=0, F_1=20 lb. N/ac and F_2=30 lb. N/ac.

N as A/S and P_2O_5 as Super. Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN :

(i) 3^3 Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 22'×15'. (b) 19'×12'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1573 lb./ac.
(ii) 711.6 lb./ac.
(iii) None of the effects is significant.

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

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
F_0	1462	1538	1710	1570	1658	1410	1642
F_1	1499	1653	1511	1554	1586	1607	1470
F_2	1548	1652	1587	1596	1571	1493	1724
Mean	1503	1615	1603	1573	1605	1503	1612
P_0	1507	1749	1559				
P_1	1417	1409	1684				
P_2	1586	1648	1564				

S.E. of any marginal mean = 118.6 lb./ac.
S.E. of body of table = 206.1 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 50(2).**
Site :- Govt. Agri. Farm, Bassi. **Type :- 'M'.**

Object :—To find the effect of N and P_2O_5 in different doses applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) No. (vi) C. 591. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=20 and N_2=30 lb./ac.
(2) 2 levels of P_2O_5 : P_0=0, and P_1=40 lb./ac.
N as A/S and P_2O_5 as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54′4″×20′. (b) 48′4″×15′. (v) 3′×2½′ (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1356 lb./ac.
(ii) 136.6 lb./ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
P_0	1130	1445	1377	1317
P_1	1259	1520	1404	1394
Mean	1195	1483	1391	1356

S.E. of marginal mean of P =32.2 lb./ac.
S.E. of marginal mean of N =39.4 lb./ac.
S.E. of body of table =55.8 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 51(1).**

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

Object :—To find out the response to B.M. and Super applied in different doses.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Guar. (c) N.A. (ii) (a) Yellow alluvium of Gangetic Plain-Sandy loam. (b) N.A. (iii) 1.12.51. (iv) (a) Land was ploughed twice ; each ploughing followed by planking. (b) Drilling. (c) N.A. (d) Distance between rows 9". (e) N.A. (v) No. (vi) C. 591. (vii) Irrigated. (viii) Interculture and weeding on 4.1.52. (ix) N.A. (x) 16.4.52.

2. TREATMENTS :

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

(1) 2 sources of P_2O_5 : Super and B.M.

(2) 3 levels of P_2O_5 : P_1=50, P_2=100 and P_3=150 lb./ac.

3. DESIGN :

(i) R.B.D. (iii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'3"×24'. (b) 24'3"×18'. (v) 3' alround. (vi) Yes.

4. GENERAL :

(i) Germination was good, but the early growth failed. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Ganganagar. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1685 lb./ac.

(ii) 468.5 lb./ac.

(iii) None of the effects is significant.

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

Control=1402 lb./ac.

	P_1	P_2	P_3	Mean
Super	1713	1581	1764	1686
B.M.	1784	1902	1652	1779
Mean	1748	1741	1708	1732

S.E. of marginal mean of sources =135.2 lb./ac.
S.E. of marginal mean of levels =165.6 lb./ac.
S.E. of body of table =234.3 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(55).**

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

Object :—To find out the effect of different doses of B.M. and Super on quality and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut in kharif. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain. (b) N.A. (iii) 16.12.52. (iv) (a) N.A. (b) Drilled. (c) 1 md./ac. (d) Row to row spacing 9". (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) One weeding on 31.12.52 to 1.1.53. (ix) N.A. (x) 12.4.53.

2. TREATMENTS :

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

(1) 2 sources of P_2O_5 : Super and B.M.

(2) 3 levels of P_2O_5 : P_1=50, P_2=100 and P_3=150 lb./ac.

P_2O_5 applied before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'3"×24'. (b) 24'3"×18'. (v) 3' alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2303 lb./ac.
(ii) 343 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=2269 lb./ac.

	P_1	P_2	P_3	Mean
Super	2488	2830	2472	2597
B.M.	2192	2083	2286	2187
Mean	2340	2456	2379	2392

S.E. of marginal mean of sources = 99.0 lb./ac.
S.E. of marginal mean of levels =121.3 lb./ac.
S.E. of body of table =171.5 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 51(23).**

Site :- Govt. Exp. Farm, Durgapura. **Type :- 'M'.**

Object :—To study the residual effect of different doses of B.M. & Super on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Moong. (b) Moong. (c) As per treatments. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 4th week of Sept. 51. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) Last week of March 1952.

2. TREATMENTS :

All combinations of (1) & (2)+a Control.
(1) 2 sources of P_2O_5 : Super & B.M.
(2) 3 levels of P_2O_5 : P_1=50, P_2=100 & P_3=150 lb./ac.
P_2O_5 sprayed at the time of cultivation of Moong crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30′3″×24′. (b) 24′3″×18. (v) 3′ all round. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) & (c)—. (v) (a) No. (b) Yes, (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1234 lb/ac.
(ii) 276.3 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

	P_1	P_2	P_3	Mean
Super	1168	1258	1217	1214
B.M.	1258	1451	1085	1265
Mean	1213	1354	1151	1239

S.E. of marginal mean of sources = 79.8 lb/ac.
S.E. of marginal mean of levels = 97.7 lb/ac.
S.E. of the body of table =138.1 lb/ac.

Crop :- Wheat (Rabi). Ref :- Rj. **51**(26).

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

Object :—To study the effect of N and P_2O_5 applied alone and in combination on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.51. (iv) (a) 2 ploughings & planting. (b) Drilling. (c) N.A. (d) Seed drilled in rows 9" apart. (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) Weeding on 17.1.52. (ix) N.A. (x) 2nd week of April, 52.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 & N_2=30 lb/ac.

(2) 2 levels of P_2O_5 : P_1=20 & P_2=40 lb/ac.

(3) 2 sources of P_2O_5 : Super & B.M.

Extra treatments are :—0, 20 and 30 lb/ac. of N at the level Po=0 lb. of P_2O_5.
N applied as A/S.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 30'3"×18' (b) 24'3"×12' (v) 3' alround (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) Yes 1951—52 to N.A. (b) No (c) N.A. (v) (a) No (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1, 000 lb/ac.
(ii) 247.1 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

	Super			B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	834	872	889	867	1256	964
N_1	1088	1083	1149	825	811	991
N_2	980	1059	996	1031	1157	1045
Mean	967	1005	1045	908	1075	1000

S.E. of N marginal mean = 55.1 lb/ac.
S.E. of P_2O_5 marginal mean = 71.2 lb/ac.
S.E. of the body of the table = 123.5 lb/ac.

Crop :- Wheat (Rabi). Ref :- Rj. **52** (47).

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

Object :—To find out the optimum dose of N and P_2O_5 applied alone and in combination to Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil (b) and (c) N.A. (ii) (a) Desert soil, sandy to sandy loam. (b) N.A. (iii) 15.11.52. (iv) (a) N.A. (b) Sown behind the plough. (c) 1 md./ac. (d) rows 9" apart. (e) N.A. (v) N.A. (vi) C. 591 (Medium) (vii) Irrigated (viii) Weeding three times (ix) N.A. (x) 3rd week of March 1953.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=30 lb./ac.

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

(3) 2 sources of P_2O_5 : Super and B.M.

Extra treatments are :—0, 20 and 30 lb./ac. of N at the level P_0=0 lb. of P_2O_5.
N as A/S. Fertilizers sprayed at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 30'-3" × 24'. (b) 24'-3" × 18' (v) 3' alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 740 lb./ac.
(ii) 99.41 lb./ac.
(iii) N effect and the interaction NP are highly siginficant.
(iv) Av. yield of grain in lb./ac.

	Super			B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	593	604	880	591	583	650
N_1	826	631	857	791	722	765
N_2	766	807	716	758	977	805
Mean	728	681	818	713	761	740

S.E. of N marginal mean $=25.6$ lb./ac.
S.E. of P_2O_5 marginal mean $=33.1$ lb./ac.
S.E. of body of table $=57.4$ lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 53 (19).
Site :- Govt. Agri. Farm, Ganganagar. Type :- 'M'.

Object :-To find out the effect of N and P_2O_5 alone and in combination on Wheat and their residual effect on the succeeding crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Desertsoil-sandy to sandy loam. (b) N.A. (iii) 4.11.53. (iv) (a) 4 ploughings. (b) Sowing behind the plough. (c) to (e) N.A. (v) No. (vi) C.591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 29.4.54.

2. TREATMENTS :

All combinations of (1), (2) and (3)+3 extra treatments
(1) 3 levels of N : $N_0=0$, $N_1=20$ lb./ac. and $N_2=30$ lb./ac.
(2) 2 levels of P_2O_5 : $P_1=20$ lb./ac. and $P_2=40$ lb./ac.
(3) 2 sources of P_2O_5 : Super and B.M.
3 extra treatments are :— 0, 20 are 30 lb./ac. of N at the level $P_0=0$ lb. of P_2O_5.
N as A/S. Fertilizers mixed and sprayed at the time of cultivation.

3. DESIGN :

(i) R.B.D. Fact. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 30'-3" × 18'. (b) 24'-3" × 12'. (v) 3' alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) Bassi. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1611 lb./ac.
(ii) 571.3 lb./ac.
(iii) Only N effect is highly significant.

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

	Super			B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	1050	1050	1590	1394	1330	1283
N_1	1652	1966	1345	1696	1536	1639
N_2	1976	1793	1845	1928	2014	1911
Mean	1559	1603	1593	1672	1627	1611

S.E. of N marginal mean = 104.1 lb./ac.
S.E. of P_2O_5 marginal mean = 133.9 lb./ac.
S.E. of body of table = 233.2 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 50 (3).**

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

Object :—To find out effect of N and P_2O_5 in different doses alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) and. (c) N.A. (ii) (a) Desertsoil-sandy to sandy loam. (b) N.A. (iii) N.A. (iv) (a) to. (e) N.A. (v) No. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

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

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

N as A/S and P_2O_5 as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54′-4″ × 20′. (b) 48′-4″ × 15′. (v) 3′ × 2½′ side (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1154 lb./ac.
(ii) 262.1 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
P_0	1149	1303	1043	1165
P_1	1092	1036	1298	1142
Mean	1121	1170	1171	1154

S.E. of marginal mean of P_2O_5 = 61.8 lb./ac.
S.E. of marginal mean of N = 75.6 lb./ac.
S.E. of the body of table = 107.0 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 51(7)**

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

Object :—To find out the effect of applying different doses of B.M. and Super on Wheat.

1. BASAL CONDITIONS .

(i) (a) N.A. (b) Guar. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) No. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

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

(1) 2 sources of P_2O_5 : Super and B.M.

(2) 3 levels of P_2O_5 : P_1=50, P_2=100 and P_3=150 lb./ac.

3. DESIGN :

(i) R.B D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'3"×24'. (b) 24'3"×18'. (v) 3' alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1785 lb./ac.

(ii) 228.0 lb./ac.

(iii) Only source of P_2O_5 effect is significant.

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

Control=1626 lb./ac.

	P_1	P_2	P_3	Mean
Super	1698	2091	2007	1932
B.M.	1600	1780	1696	1692
Mean	1649	1935	1851	1812

S.E. of marginal mean of sources = 65.8 lb./ac.

S.E. of marginal mean of levels = 80.6 lb./ac.

S.E. of body of table =114.0 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(18).**

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

Object :—To find out the effect of different trace elements in different doses on growth and germination of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Desert soil-sandy to sandy loam. (b) N.A. (iii) 24.11.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 17.4.53.

2. TREATMENTS :

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

(1) 3 levels of trace elements : T_1=5, T_2=10 and T_3=20 lb./ac.

(2) 7 trace elements : 1. Ferrous Sulphate. 2. Ammonium Molybdate. 3. Zinc Sulphate. 4. Copper Sulphate. 5. Magnesium Sulphate. 6. Borax Powder. 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) 30'3"×18'. (b) 24'3"×12'. (v) 3' alround. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1952—contd. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 776.0 lb./ac.
(ii) 211.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=810.5 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	728.1	779.8	900.5	843.0	996.3	684.0	1002.1	847.7
T_2	607.4	722.3	689.8	844.8	760.7	651.4	664.8	706.5
T_3	818.1	714.7	881.4	804.7	760.7	574.8	862.0	773.8
Mean	717.9	738.9	823.9	832.0	839.2	63.67	843.0	776.0

S.E. of marginal mean of levels = 46.2 lb./ac.
S.E. of marginal mean of trace elements = 70.6 lb./ac.
S.E. of the body of table =122.2 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(38).**

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

Object :—To study the effect of different trace elements in different doses on Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Nov. 1953. (iv) (a) to (e) N.A. (v) No. (vi) C. 591 (Medium). (vii) Irrigated. (vii) Weeding four times. (ix) N.A. (x) April, 1954.

2. TREATMENTS :

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

(1) 3 levels of traces elements : T_1=5 lb./ac., T_2=10 lb./ac. and T_3=20 lb./ac.

(2) 7 trace elements : 1. Ferrous Sulphate. 2. Ammonium Molybdate, 3. Zinc Sulphate. 4. Copper Sulphate. 5. Magnesium Sulphate. 6. Borax Powder and 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) 23′×14′. (b) 20′×11′. (v) 1½′ on each side. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—contd. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1447 lb./ac.
(ii) 273.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=1294 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	1771	1280	1220	1324	1220	1637	1652	1443
T_2	1741	1399	1711	1309	1488	1488	1518	1522
T_3	1161	1637	1414	1280	1414	1428	1443	1397
Mean	1558	1439	1448	1304	1374	1518	1538	1454

S.E. of marginal mean of level = 59.8 lb./ac.
S.E. of marginal mean of trace elements = 91.3 lb./ac.
S.E. of body of table =158.1 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52 (50).**

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

Object :—To study the offect of N and P_2O_5 applied alone and in combination on Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 1st week of Nov. 1952. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13 to 16.4 1952.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=30 lb./ac.

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

(3) 2 sources of P_2O_5 : Super and B.M.

3 extra treatments are :—0, 20 and 30 lb./ac. of N at P_0=0 lb./ac. of P_2O_5

N applied as A/S. Fertilizers spread at the time of cultivation.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 27'-3" × 15'. (b) 24'-3" × 12'. (v) 1½' on each side. (vi) Yes.

4, GENERAL :

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

5. RESULTS :

GRAIN

(i) 2399 lb./ac.

(ii) 326 lb./ac.

(iii) None of the effects is siginficant.

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

	Super			B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	2330	2377	2587	2696	2330	2464
N_1	2671	2350	2273	1952	2241	2297
N_2	2382	2696	2581	2131	2382	2435
Mean	2461	2474	2480	2260	2318	2399

S.E. of N marginal mean =72.9 lb./ac.
S.E. of P_2O_5 marginal mean =94.1 lb./ac.
S.E. of body of table =163.0 lb./ac.

FODDER

(i) 7783 lb./ac.

(ii) 1325 lb./ac.

(iii) Only N effect is highly significant.

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

	Super			B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	6561	5932	8166	6240	6600	6700
N_1	8654	7499	8577	8423	7524	8135
N_2	8423	8628	8372	7704	9450	8515
Mean	7879	7353	8372	7456	7858	7783

S.E. of N marginal mean =324.1 lb./ac.
S.E. of P_2O_5 marginal mean =441.6 lb./ac.
S.E. of body of table =765.0 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52 (14).**

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

Object :—To study the effect of N and P_2O_5 alone and in combination on germination and yield of crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Medium black soil. (b) N.A. (iii) 3.11.52. (iv) (a) Ploughing. (b) N.A. (c) one ind./ac. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 28.3.53.

2. TREATMENTS :

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

(1) 3 levels of N : $N_0=0$, $N_1=20$ and $N_2=30$ lb./ac.

(2) 2 levels of P_2O_5 : $P_1=20$ and $P_2=40$ lb./ac.

(3) 2 soures of P_2O_5 : Super and B.M.

Extra treatments are :—

0, 20 and 30 lb./ac. of N at $P_0=0$ of P_2O_5

N applied as A/S. Fertilizers spread at the time of cultivation before sowing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4 (iv) (a) 30—3″ × 18′. (b) 24—3″×12′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1798 lb./ac.

(ii) 281.3 lb./ac.

(iii) None of the effects is siginficant.

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

	Super		B.M.		
	P_0	P_1	P_2	P_1	P_2	Mean
N_0	1748	1754	1941	2023	1748	1842
N_1	2004	1763	1705	1465	1680	1723
N_2	1716	2023	1599	1786	1786	1827
Mean	1846	1846	1860	1696	1738	1798

S.E. of N marginal mean =63.6 lb./ac.
S.E. of P_2O_5 marginal mean =80.9 lb./ac.
S.E. of body of table =140.7 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 50(1).**

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

Object :—To find out the effect of N and P_2O_5 applied in different doses, alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) & (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin-clay loam. (b) N.A. (iii) 6.11.50. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium) (vii) Rainfed. (viii) N.A. (ix) 1″ on 6.1.51. (x) N.A.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of N : $N_0=0$, $N_1=15$ and $N_2=25$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=25$ and $P_2=40$ lb./ac.

N applied as A/S and P_2O_5 as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 20′×54.5′ (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Damage to treatmeat $N_1 \times P_1$ in 5th block.

5. RESULTS :

(i) 459.5 lb. ac.
(ii) 57.1 lb./ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean.
P_0	381.9	447.5	501.8	443.7
P_1	442.4	479.7	515.6	479.2
P_2	459.3	440.9	469.5	456.6
Mean.	427.9	426.0	495.6	459 5

S.E. of any marginal mean = 13.45 lb./ac.
S.E. of body of table = 23.30 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52(15).

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

Object :—To suty the effect of N and P_2O_5 alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) 3.11.52. (iv) (a) Ploughing. (b) N.A. (c) 1 md/ac. (d) & (e) N.A. (v) N.A. (vi) C. 591 (Medium) (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 7.4.53.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N : N_0=0, N_1=15 and N_2=25 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=25 and P_2=40 lb./ac.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60′—5″×26′. (b) 54′—5″×20′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 381.9 lb./ac.
(ii) 111.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
P_0	320.7	338.2	490.9	382.9
P_1	318.7	462.6	359.8	380.4
P_2	366.0	393.2	388.1	382.4
Mean	335.6	397.8	412.7	381.9

S.E. of any marginal mean = 32.1 lb./ac.
S.E. of body of table = 55.5 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(16).**

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

Object :—To study the effect of N and P_2O_5 applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) 4.11.53. (iv) (a) 4 Ploughings. (b) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Rainfed. (viii) No. (ix) N.A. (x) 24.3.54.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N : N_0=0, N_1=15 & N_2=25 lb./ac.

(2) 3 levels of P_2O_5 : P_0=0, P_1=25 & P_2=40 lb./ac.

N applied as A/S and P_2O_5 as Super mixed and spread at the time of cultivation.

3. DESIGN :

i) 3×3 Fact. in R.B.D. *(ii)* (a) 9. (b) N.A. *(iii)* 3. *(iv)* (a) 30′. 3″×18′. (b) 24′. 3″×18′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 529.3 lb./ac.

(ii) 117.5 lb./ac.

(iii) N effect and interaction are significant. P_2O_5 effect is not significant.

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

	N_0	N_1	N_2	Mean
P_0	497.3	350.8	651.5	499.9
P_1	668.2	514.0	458.7	547.0
P_2	697.8	462.6	462.6	541.0
Mean	621.1	442.5	524.3	529.3

S.E. of any marginal mean = 39.2 lb./ac.

S.E. of body of table = 68.1 lb./ae.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(22).**

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

Object :—To study the effect of trace elements with & without F.Y.M. on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Medium black soil. (b) N.A. (iii) 15.11.52. (iv) (a) to (e) N.A. (v) Nil. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of F.Y.M. :—F_0=0 & F_1=2 ton/ac.

(2) 7 doses of trace elements, :—M_0=Control (Nil), M_1=40 lb/ac. of catalyst, M_2=80 lb/ac. of catalyst. M_3=14 lb/ac. of Fe.Sul., M_4=28 lb/ac. of Fe. Sul., M_5=8 lb/ac. of Pot. Permanganate & M_6= 16 lb/ac. of Pot. Permanganate.

3. DESIGN :

(i) 7×2 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 16′×10′. (b) 12′×6′. (v) 2′ round the net plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1952 to 1953 (b) No. (c) N.A. (v) (a) Mandore. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 2156 lb/ac.
(ii) 390.4 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	2153	2177	2309	2122	2021	2153	2045	2140
F_1	2021	2045	2356	1998	2356	2278	2153	2172
Mean	2087	2111	2332	2060	2188	2216	2099	2156

S.E. of F marginal mean = 85.2 lb/ac.
S.E. of M marginal mean = 159.4 lb/ac.
S.E. of body of table = 225.4 lb/ac.

Crop :- Wheat (Rabi). Ref :- Rj. 53(17)
Site :- Govt. Agri. Farm, Kotah. Type :- 'M'.

Object :—To study the effect of trace elemcnts with & without F.Y.M. on growth, germination & yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) Wheat. (c) No. (ii) (a) Medium black soil of trap or gneiss origin-clay loam. (b) N.A. (iii) 29.11.53. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) 2 ton/ac. F.Y.M. (vi) C. 591. (vii) Rainfed. (viii) No. (ix) N.A. (x) March 1954.

2. TREATMENTS :

All combinations of (1) and(2)

(1) 2 levels of F.Y.M. :—F_0=0 & F_1=2 tons/ac.
(2) 7 doses of trace elements :—M_0=Control (Nil). M_1=40 lb/ac. of catalyst, M_2=80 lb/ac. of catalyst, M_3=14lb/ac. of Fe. Sul., M_4=28 lb/ac. of Fe. Sul., M_5=8 lb/ac. of Pot. Permananate & M_6=16 lb/ac. of Pot. Permangnate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 14′×8′. (b) 12′×6′. (v) 1′ round the net plot. (vi) Yes.

4. DESIGN :

(i) Good. (ii) No. (iii) Grain yield. (iv) (a) 1952—53. (b) No. (c) N.A. (v) (a) Mandore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 751.3 lb/ac.
(ii) 171.2 lb/ac.
(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	518.1	871.7	764.8	764.8	764.8	1093.8	682.6	780.1
F_1	986.9	871.7	435.8	715.5	682.6	847.1	518.1	722.5
Mean	752.5	871.7	600.3	740.2	723.7	970.5	600.4	751.3

S.E. of F marginal mean =37.3 lb/ac.
S.E. of M marginal mean =69.9 lb/ac.
S.E. of body of table =98.9 lb/ac.

Crop :-Wheat (Rabi). Ref :-Rj. 52(2).

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

Object :—To study the effect of different minor elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin-clay loam. (b) N.A. (iii) 28.10.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 20.3.1953.

2. TREATMENTS :

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

(1) 3 levels of trace elements : T_1=5 lb./ac., T_2=10 lb./ac. and T_3=20 lb./ac.

(2) 7 trace elements : 1. Ferrous Sulphate, 2. Ammonium Molybdate, 3, Zinc-Sulphate, 4. Copper Sulphate, 5. Magnesium Sulphate. 6. Borax Powder, 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20'×11'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1952—not known. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1098 lb./ac.
(ii) 222.6 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 1086 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	1033	1203	981	974	1170	1287	1178	1118
T_2	974	847	1069	1135	1176	1112	1051	1052
T_3	1178	1170	941	1341	1160	1152	992	1133
Mean	1062	1073	997	1150	1169	1184	1074	1101

S.E. of the marginal mean of levels = 48.6 lb./ac.
S.E. of the marginal mean of trace elements = 71.5 lb./ac.
S.E. of body of table = 128.5 lb./ac:

Crop :-Wheat (Rabi). **Ref :-Rj. 53(5).**

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

Object :—To study the effect of different minor elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS :

(i) No. (b) and (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) Oct. 1953. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irigated. (viii) N.A. (ix) N.A. (x) April, 1954.

2. TREATMENTS :

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

(1) 3 levels of trace elements : T_1=5 lb./ac., T_2=10 lb./ac. and T_3 =20 lb./ac.
(2) 7 trace elements : 1. Ferrous Sulphate. 2. Ammonium Molybdate. 3. Zinc Sulphate. 4. Copper Sulphate. 5. Magnesium Sulphate. 6. Borax Sulphate and 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20′×11′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) Grain yield. (iv) (a) 1952—not known. (b) N.A. (c) No. (b) N.A. (c) No. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 817.4 lb./ac.
(ii) 113.8 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 635.7 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	720.7	772.2	728.4	875.1	823.6	823.6	815.9	794.2
T_2	772.2	900.9	875.1	790.2	867.4	893.1	831.4	847.2
T_3	944.6	893.1	882.8	857.1	746.4	702.7	831.4	836.9
Mean	812.5	855.4	828.8	840.8	812.5	806.5	826.2	826.1

S.E. of marginal mean of levels = 24.8 lb./ac.
S.E. of marginal mean of trace elements = 37.9 lb./ac.
S.E. of body of table = 65.7 lb./ac.

Crop :- Wheat (Rabi). **Ref :-Rj. 49(1).**

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

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

1. BASAL CONDITIONS :

(i) (a) No. (b) & (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.12.49. (iv) (a) 4 times ploughing. (b) Drilling. (c) 1 md/ac. (d) Row to row spacing 9". (e) N.A. (v) Nil. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 4.4.50.

2. TREATMENTS :

All combinations of (1) & (2) + a Control.

(1) 4 sources of N : A/S, Oil cake, F.Y.M. & M.C.
(2) 2 levels of N : N_1=30 & N_2=40 lb./ac.

3. DESIGN :
(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 14′×30′. (b) 10′×26′. (v) 2′ alround (vi) Yes.

4. GENERAL :
(i) N A (ii) Nil. (iii) Grain Yield. (iv) (a) (b), (c) N.A. (v) (a) No. (b) N.A. (vi) (vii). Nli.

5. RESULTS :
(i) 621 lb./ac.
(ii) 151.9 lb /ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control =519 lb./ac.

	A/S	Oilcake	F.Y.M.	M.C.	Mean
N_1	654	633	543	586	604
N_2	719	680	682	618	675
Mean	686	656	612	602	639

S.E. of marginal mean of source of N =43.8 lb./ac.
S.E. of marginal mean of levels of N =31.0 lb./ac.
S.E. of body of table =62.4 lb./ac.

Crop :-Wheat (Rabi). Ref :- Rj. 51(20)
Site :- Govt. Agri. Res. Farm, Makrera. Type :- 'M'.

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

1. BASAL CONDITIONS :
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) .NA. (iii) 12.12.51, (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A (v) N.A. (vi) C-591. Medium (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 2.4.52.

2. TREATMENTS :
All combinations of (1) & (2)+a Control.
(1) 4 sources of N : A/S, Oilcake. F.Y.M. & M.C.
(2) 2 levels of N : N_1=30 & N_2=40 lb./ac.

3. DESIGN :
(i) R.B.D, (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 18′×34′. (b) 14′×30′. (v) 2′ alround (vi) Yes.

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

5. RESULTS :
(i) 911 lb./ac.
(ii) 154.5 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control =912 lb./ac.

	A/S	Oilcake	F.Y.M.	M.C.	Mean
N_1	1006	1058	985	1006	1014
N_2	798	881	643	913	809
Mean	902	969	814	959	911

S.E. of marginal mean of source of N =44.6 lb./ac.
S.E. of marginal mean of level of N =31.5 lb./ac.
S.E. of body of table =63.2 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj. 49(3).**

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

Object :—To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.12.49. (iv) (a) Ploughing 4 times. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 5.4.50.

2. TREATMENTS :

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

(1) 3 manures : M.C. : Farm Compost and F.Y.M.

(2) 4 levels of manures : M_1=50, M_2=100, M_3=150 and M_4=200 md/ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 28'×15'. (b) 25'×12' (v) 1½' alround (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Tabiji. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 191.7 lb./ac.

(ii) 81.97 lb./ac.

(iii) None of the effects is significant.

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

Control = 149.0 lb./ac.

	M_1	M_2	M_3	M_4	Mean
M.C.	152.8	240.3	177.0	210.5	195.1
Farm Compost	173.3	218.0	242.2	158.4	198.0
F.Y.M.	223.6	177.0	171.4	199.3	192.8
Mean	183.2	211.8	196.9	189.4	195.3

S.E. of marginal mean of M = 19.32 lb./ac.
S.E. of marginal mean of manures = 16.73 lb./ac.
S.E. of the body of table = 33 45 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj. 52(36).**

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

Object :—To find out the effect of N and P_2O_5 applied alone and in combinations on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.52. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 sources of N at 50 lb./ac. of N : A/S, Bloodmeal and Compost.

(2) 2 levels of P_2O_5 : P_0=0 and P_1=120 lb./ac.

P_2O_5 as Super. Fertilizers applied at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. Fact. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14'×32'. (b) 12'×30'. (v) 1' alround (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1457 lb./ac.
(ii) 284.0 lb./ac.
(iii) Only the effect of 'source of N' is highly significant.
(iv) Av. yield of grain in lb./ac.

	A/S	Bloodmeal	Compost	Mean
P_1	2043	1274	1359	1559
P_2	1471	1324	12	1356
Mean	1757	1299	1[illegible]	1457

S.E. of marginal mean of source of = 100.4 lb./ac.
S.E. of marginal mean of P = 82.0 lb./ac.
S.E. of body of table = 142.0 lb./ac.

Crop :-Wheat (Rabi). Ref :-Rj. 53(29).

Site :-Govt. Agril. Res. Farm, Makrera. Type :-'M'.

Object :—To study the effect of organic and inorganic sources of N applied alone and in combination on Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) Jowar. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii 29.11.53. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 3.4.54.

2. TREATMENTS :

1. Control.
2. 50 lb./ac. of N as A/S.
3. 50 lb /ac. of N as Compost.
4. 50 lb./ac, of N as /S+20 lb./ac. of P_2O_5 as Super.
5. 50 lb./ac. of N as Compost+12 lb./ac. of P_2O_5 as Super
6. 50 lb./ac. of N as Compost+20 lb./ac. of P_2O_5 as Super.

Fertilizers were mixed and sprayed at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34'×20'. (b) 32'×18'. (v) 1' alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 778 lb./ac.
(ii) 211.5 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	763
2.	792
3.	662
4.	960
5.	713
6.	781

S E./mean = 105.7 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj 52(46).**

Site :-Govt. Agri. Res. Stn. Makrera. **Type :-'M'.**

Object :—To find out the optimum dose of N for obtaining higher yield of Wheat.

1, BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 27.3.53.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 60 lb./ac. of N.
5. 80 lb./ac. of N

N applied as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6. (iv) (a) 27′×18′. (b) 25′×16′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) N A. (li) Nil. (iii) Yield of grain. (iv)(a) 1952-1954. (b) No. (c) N.A. (v)(a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 935.0 lb./ac.
(ii) 198.8 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	455
2.	750
3.	1041
4.	1189
5.	1239
S E./mean	= 87.2 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj. 53(28).**

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

Object :—To find out the optimum dose of N for obtaining higher yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.53. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 1.4.54.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N
3. 40 lb./ac. of N
4. 60 lb./ac. of N
5. 80 lb./ac. of N

N as A/S mixed and sprayed at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30′×22′. (b) 28′×20′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 547 lb./ac.
(ii) 271.4 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	458
2.	528
3.	528
4.	641
5.	581
S.E./mean =	135.7 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj. 52(43).**

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

Object :—To find out the optimum dose of N for obtaining high yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.52. (iv) (a) to (e) N.A. (v) Nil. (vi) Pb. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 27.3.53.

2. TREATMENTS :

1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 60 lb./ac. of N.
5. 80 lb./ac. of N.

N applied as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 29'×20'. (b) 25'×16'. (v) 2' alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Fodder yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) Tabiji. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS

(i) 7206 lb./ac.
(ii) 1627.5 lb./ac.
(iii) The treatment differences are significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3521
2.	5790
3.	8040
4.	9184
5.	9565
S.E./mean =	664.3 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 50(5).**

Site :- Govt. Agri. Exp. Farm ; Mandore. **Type :- 'M'.**

Object :—To find the effect of N and P_2O_5 alone and in combination on the yield of crop.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) to (ix) N.A. (x) 16.4.51.

2. **TREATMENTS :**

All combinations of (1) and (2)

(1) 3 levels of N as ammonia : N_0=0, N_1=2 lb. 6 oz./plot and N_2=3 lb. 12 oz./plot.

(2) 2 levels of Super : P_0=0 and P_1=5 lb./plot.

The fertilizes were evenly distributed in each plot by mixing with earth before sowing.

4. **DESIGN :**

(i) 3×2 Fact. in R.B D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 48'.4"×15'. (v) N.A. (vi) Yes.

4. **GENERAL :**

(i) N.A. (ii) Biock No. 5 effected by rust and also lodging etc. in half the area. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. **RESULTS :**

(i) 1168.0 lb./ac.

(ii) 206.2 lb./ac.

(iii) None of the effects is significant.

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

	N_0	N_1	N_2	Mean
P_0	1012	1285	1336	1211
P_1	1100	1120	1159	1126
Mean.	1056	1203	1248	1169

S.E. of N marginal mean = 59.5 lb./ac.
S.E. of Super marginal mean = 48.6 lb./ac.
S E. of body of table = 84.1 lb./ac.

Crop :-Wheat (Rabi). **Ref :-Rj. 52(10).**

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

Object :—To find out the effect of minor elements with and without F.Y.M., on germination and yield of Wheat.

1. **BASAL CONDITIONS :**

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil-Sandy. (b) N.A. (iii) 1.11.52. (iv) (a) Agricultural operations according to local practices. (b) N.A. (c) 1 md /ac. (d), (e) N.A. (v) N.A. (vi) C—591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1953.

2. **TREATMENTS :**

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.

(2) 7 doses of minor elements : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst, M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate and M_6=16 lb./ac. of Pot. Permanganate.

3. **DESIGN :**

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12'×6'. (v) N.A. (vi) Yes.

4. **GENERAL :**

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

5. **RESULTS :**

(i) 269.3 lb./ac.

(ii) 106.7 lb /ac.

(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	292.5	239.8	319.7	292.5	266.2	183.8	183.8	254.0
F_1	266.2	319.7	183.8	319.0	292.5	319.7	292.0	284.7
Mean	279.3	279.7	251,7	305.7	279.3	251.7	237.9	268.3

S.E. of F marginal mean =23.3 lb./ac.
S.E. of M marginal mean =45.7 lb./ac.
S.E. of body of table =61.6 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(36).**
Site :- Govt. Agri. Expt. Farm, Mandore. **Type :- 'M'.**

Object :—To study the effect of minor elements with and without F.Y.M. on germination, growth and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat, (c) Green manure guara. (ii) (a) Sandy loam. (b) N.A. (iii) 2nd week of Nov. 1953. (iv) (a) to (e) N.A. (v) No. (vi) N.A. (vii) Irrigated, (viii) Hocing on 16.1.54 ; weeding on 6.3.54. (ix) N.A. (x) 9.5.54.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.
(2) 7 doses of minor elements : M_0=0, M_1=40 lb./ae. of Catalyst, M_2=80 lb./ac. of Catalyst, M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate and M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 15′×9′. (b) 12′×6′. (v) 1½′ around. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-53—N.A. (b) Yes. (c) N.A. (v) (a) Kotah. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1262 lb./ac.
(ii) 230.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
N_0	1114	1166	1373	1088	1244	1192	1244	1203
N_1	1425	1425	1321	1321	1192	1192	1373	1321
Mean	1269	1295	1347	1204	1218	1192	1308	1262

S.E. of F marginal mean = 50.4 lb./ac.
S.E. of M marginal mean = 94.3 lb./ac.
S.E. of body of table =133.3 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(20).**

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

Object :—To study the effect of minor elements with and without F.Y.M. on the growth, germination & yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Desert soils sandy. (b) N.A. (iii) 1.11.53. (iv) (a) to (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) Weeding on 6.3.54. (ix) N.A.(x) 12.4.54.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton./ac.

(2) 7 doses of minor elements : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst, M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate & M_6=16 lb./ac. of Pot. Parmanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 14′×8′. (b) 12′×6′. (v) 1′ all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952—N.A. (b) No. (c) N.A. (v) (a) Kota. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1316 lb./ac.

(ii) 171.2 lb./ac.

(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	1175	1234	1456	1151	1340	1258	1340	1279
F_1	1505	1538	1423	1398	1258	1316	1456	1413
Mean	1341	1336	1449	1275	1299	1287	1398	1346

S.E. of F marginal mean = 37.3 lb./ac.
S.E. of M marginal mean = 69.9 lb./ac.
S.E. of body of table = 98.9 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 50(21).**

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

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

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.50. (iv) (a) Ploughing 5 times. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 12.4.51.

2. TREATMENTS :

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

(1) 4 sources of N : A/S, Oil cake, F.Y.M. and M.C.

(2) 2 levels of N : N_1=30 and N_2=40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 16′×32′. (b) 14′×30′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 647 lb./ac.
(ii) 104.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 603 lb./ac.

	A/S	Oilcake	F.Y.M.	M.C.	Mean
N_1	634	657	591	602	621
N_2	697	734	717	584	683
Mean.	665	695	654	593	652

S.E. of marginal mean of source = 30.2 lb./ac.
S.E. of marginal mean of N level = 21.4 lb./ac.
S.E. of body of table = 42.7 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 51(18).
Site :- Govt. Agri. Res. Farm, Tabiji. Type :- 'M'.

Object :—To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.51. (iv) (a) Ploughed 4 times with irrigation. (b) Drilled. (c) 1 md./ac. (d) rows 9" apart. (e) N.A. (v) No. (vi) N.P. 718. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 4.3.52.

2. TREATMENTS :

All combinations of (1) and (2)+a Control
(1) 3 manures *viz.* M.C., Farm Compost & F.Y.M.
(2) 4 levels of manures *viz.* M_1=50, M_2=100, M_3=150 & M_4=200 md./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 20′×12′. (b) 18′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Same experiment repeated in different fields at the same farm. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1390 lb./ac.
(ii) 297.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 1326 lb./ac.

	M_1	M_2	M_3	M_4	Mean
M.C.	1264	1440	1264	1409	1344
Farm Compost	1388	1368	1409	1575	1435
F.Y.M.	1471	1326	1409	1422	1407
Mean	1374	1378	1361	1469	1395

S.E. of marginal mean of M = 70.2 lb./ac.
S.E. of marginal mean of Manures = 60.9 lb./ac.
S.E. of body of table = 121.7 lb./ac.

Crop :- Wheat (Rabi). **Ref. :- Rj. 51(15).**

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

Object :—To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No (b), (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 20.11.51 (iv) (a) Ploughing 4 times with irrigation (b) Drilled (c) 1 md./ac. (d) rows 9" apart. (e) N.A. (v) Nil. (vi) N.P. 721 (vii) Irrigated (viii) N.A. (ix) N.A. (x) 31.3.52.

2. TREATMENTS :

All combinations of (1) & (2)+a Control.

(1) 3 manures *viz.* M.C., Farm Compost & F.Y.M.

(2) 4 doses of manures *viz.* M_1=50, M_2=100, M_3=150 & M_4=200 mds./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13 (b) N.A. (iii) 4 (iv) (a) 12'×20' (b) 10'×18' (v) 1' alround. (vi) Yes.

4. GENERAL :

(i) Normal (ii) No (iii) Yield of grain (iv) (a) No (b) No (c) N.A. (v) (a) The same experiment was repeated at different fields of the same farm (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 781.7 lb./ac.

(ii) 273.6 lb./ac.

(iii) None of the effects is significant.

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

Control = 725.2 lb./ac.

	M_1	M_2	M_3	M_4	Mean
M.C.	600.9	728.2	922.0	891.0	785.5
Farm Compost	891.0	683.8	891.0	953.1	854.7
F.Y.M.	828.8	849.5	808.1	642.3	782.2
Mean	773.6	753.8	873.7	828.8	807.5

S.E. of marginal mean of M =79.0 lb./ac

S.E. of marginal mean of Manures=68.4 lb./ac.

S.E. of body of table =136.8 lb./ac.

Crop :- Wheat (Rabi) **Ref. :- Rj. 52(37).**

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

Object :—To find out the effect of N and P_2O_5 applied alone and in combination on Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.52. (iv) (a) Ploughing 4 times (b) N.A. (c) 1 md./ac. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) 1.05" (15.11.52 to 26.3.53). (x) 26.3.53.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 sources of N each at 50 lb./ac. :- A/S, Blood meal & Compost.

(2) 2 levels of Super :- 0 & 100 lb./ac.

Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32'×18'. (b) 30'×16' (v) 1' alround (vi) Yes,

4. GENERAL :

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

5. RESULTS :

(i) 1715 lb./ac.
(ii) 135.7 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

		Source of 50 N			
		A/S	Bloodmeal	compost	Mean.
Super	0	1814	1634	1688	1712
	100	1723	1700	1732	1718
Mean.		1767	1667	1710	1715

S.E. of marginal mean of sources =48.00 lb./ac.
S.E. of marginal mean of super =39.2 lb./ac.
S.E. of body of table =67.8 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52 (39).
Site :- Govt. Agri. Res. Farm, Tabiji. Type :- 'M'.

Object :—To study the optimum dose of N on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.10.52. (iv) (a) 5 ploughings. (b) N.A. (c) 1 md./ac. (d). N.A. (e) N.A. (v) Nil. (vi) C. 591 (Medium) (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 21.3.53.

2. TREATMENTS :

1. Control
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 60 lb./ac. of N.
5. 80 lb./ac. of N.

N as A/S sprayed at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6 (iv) (a) 32′×18′. (b) 30′ × 16′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1324 lb./ac.
(ii) 123.4 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1120
2.	1472
3.	1550
4.	1281
5.	1197
S.E./mean	= 50.3 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52 (41).**

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

Object :—To study the effect of N and P_2O_5 in different doses applied alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 31.10.52. (iv) (a) Ploughing 4 times. (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 19.3.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N : N_0=0 and N_1=40 lb./ac.

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

N applied as A/S and P_2O_5 as Super sprayed before sowing.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 40′ × 27′. (b) 38′ × 25′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1884 lb./ac.
(ii) 85.3 lb./ac.
(iii) Only interaction N × P is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	Mean
P_0	1846	2015	1931
P_1	1835	1838	1837
Mean	1841	1927	1884

S.E. of any marginal mean =30.5 lb./ac.

S.E. of body of table =43.1 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 51 (5).**

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

Object :—To find out the effect of A/S and F.Y.M. on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat in rotation with maize. (b) Maize. (c) As per treatments. (ii) (a) Clay (b) N.A. (iii) 4.11.51 (iv) (a) Two ploughings. One pre-sowing irrigation and four ploughings to make the soil pulvarised. (b) N.A. (c) 1 md./ac. (d) Distance between each line 9″. (e) N.A. (v) Maize crop grown and taken as basa manure. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13.3.1952.

2. TREATMENTS :

1. Control.
2. 20 lb./ac of N as A/S.
3. 30 lb./ac. of N as A/S.
4. 40 lb./ac. of N as A/S.
5. 20 lb./ac. of N as F.Y.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30′3″ × 24′. (c) 24′3″ × 18′. (v) 3′ alround (vi) Yes.

4. GENERAL :

(i) Normal (ii) N.A. (iii) Yield of grain. (iv) (a) Yes 1950-51. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Too high yields.

5. RESULTS :

(i) 3399 lb./ac.
(ii) 609 lb /ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3090
2.	3570
3.	3354
4.	3701
5.	3281
S E /mean	=248.6 lb./ac.

Crop :- Wheat. **Ref :- Simple trials on cultivators' fields (T.C.M.) 1953.**

Centre :- Pisangunj (Rajasthan). **Type :- 'M'.**

Object :—I (b) (ii) To study different levels and types of N and P_2O_5

1. BASAL CONDITIONS :

(i) (a) N A. (b) N.A. (c) N.A. (ii) Red yellow—Sandy loam—pH. 8.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) November December. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March—April.

2. TREATMENTS :

0 =Control
P =20 lb/ac. P_2O_5 as Super.
N_1P =A/S at 20 lb/ac. of N+20 lb/ac. of P_2O_5 as Super.
N_2P =A/S at 40 lb/ac. of N+20 lb/ac. of P_2O_5 as Super.
$N_1''P$ =Urea at 20 lb/ac. of N+20 lb/ac. of P_2O_5 as Super.
$N_2''P$ =Urea at 40 lb/ac. of N+20 lb/ac. of P_2O_5 as Super.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Some damage to the crop was caused by frost and rot attack (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb/ac.
0	1158
P	1276
N_1P	1595
N_2P	1691
$N_1'P$	1497
$N_2''P$	1627
G.M.	1474
S.E./mean	48.9 lb/ac.
No. of expts.	28

Crop :- Wheat. **Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.**

Centre :- Pisangunj (Rajasthan). **Type :- 'M'.**

Object :— II To study the effect of N and P manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Red and yellow—Sandy loam. pH. 8.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) Nov.—Dec (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March—April.

2. TREATMENTS :

O =Control.
N =A/S at 20 lb./ac. of N.
NP =A/S at 20 lb./ac of N+Super at 20 lb./ac. of P_2O_5.
N'P =A/N at 20 lb./ac. of N+Super at 20 lb./ac. of P_2O_5.
N"P =Urea at 20 lb./ac. N+Super at 20 lb./ac. of P_2O_5.

Fertilizers broadcast before sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	1122
N	1372
NP	1476
N'P	1443
N"P	1457
G.M.	1374
S.E./mean	48.9 lb./ac.
No. of expts.	36

Crop :- Wheat. **Ref :- Simple trials on cultivator's fields (T.C.M.), 1953.**

Centre :- Pisangunj (Rajasthan). **Type :- 'M'**

Object :— IV (i) To study the effects of types and levels of N and P_2O_5.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Red and yellow-Sandy loam-pH. 8.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) Nov-Dec. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March—April.

2, TREATMENTS :

O =Control.
N =A/S at 40 lb./ac. of N.
NP_1 =A/S at 40 lb./ac. of N+Super at 20 lb./ac. of P_2O_5.
NP_2 =A/S at 40 lb./ac. of N+Super at 40 lb./ac. of P_2O_5.
NP'_1 =A/S at 40 lb./ac. of N+Nitro. Phos at 20 lb./ac. of P_2O_5.
NP'_2 =A/S at 40 lb./ac. of N+Nitro. Phos at 40 lb./ac. of P_2O_5.

Fertilizers broadcast before sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	1154
N	1348
NP_1	1419
NP_2	1535
NP'_1	1665
NP'_2	1601
G.M.	1454
S.E./mean	127.5 lb./ac.
No. of expts.	10.

Crop :- Wheat. Ref :- Simple trials on cultivator's fields (T.C.M.), 1953.

Centre :- Pisangunj (Rajasthan). Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Red and yellow-Sandy loam ; pH. 8.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) November—December. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March—April.

2. TREATMENTS :

O =Control.
N =A/S at 40 lb./ac. of N.
NP_1 =A/S at 40 lb./ac. of N+Super at 20 lb./ac. of P_2O_5.
NP_2 =A/S at 40 lb./ac. of N+Super at 40 lb./ac. of P_2O_5.
NP''_1 =A/S at 40 lb./ac. N+Ammo. Phos at 20 lb./ac. of P_2O_5.
NP''_2 =A/S at 40 lb /ac. N+Ammo. Phos. at 40 lb./ac. of P_2O_5.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this lists, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	842
N	1123
NP_1	1282
NP_2	1341
NP''_1	1343
NP''_2	1273
G.M.	1200
S.E./mean	98.7 lb./ac.
No. of Expts.	9

Crop :- Wheat. Ref :- Simple trials on cultivator's fields (T.C.M.), 1953.
Centre :- Pisangunj (Rajasthan). Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Red and yellow-sandy-loam ; pH-8.5. (iii) Nil. (iv) N.A. (v) N.A. (vi) November—December. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March—April.

2. TREATMENTS :

0 =Control.
N =A/S at 40 lb./ac. of N.
NP'_1=A/S at 40 lb./ac. of N+Nitro. Phos. at 40 lb./ac. of P_2O_5.
NP'_2=A/S at 40 lb./ac. of N+Nitro. Phos at 40 lb./ac. of P_2O_5.
NP''_1=A/S at 40 lb./ac. of N+Ammo. Phos at 20 lb./ac. of P_2O_5.
NP''_2=A/S at 40 lb./ac. of N+Ammo. Phos at 40 lb./ac. of P_2O_5.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
0	1131
N	1265
NP'_1	1286
NP'_2	1251
NP''_1	1573
NP''_2	1481
G.M.	1331
S.E./mean	82.3 lb./ac.
No. of Expts.	11

Crop :- Wheat Ref. :- Simple trials on cultivator's fields (T.C.M.), 1953.
Centre :-Raisingnagar (Rajasthan) Type 'M'

Object :- I (b) (ii) To study the effect of different levels and types of N and P_2O_5.

1. BASAL CONDITIONS.

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil—fine sandy soil ; pH 7.8 (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated (viii) N.A. (ix) N.A. (x) April.

2. TREATMENTS :

O = Control
P = 20 lb. P_2O_5/ac. as Super.
N_1P = A/S at 20 lb. N/ac. + 20 lb. P_2O_5/ac. as Super.
N_2P = A/S at 40 lb. N/ac. + 20 lb. P_2O_5/ac. as Super.
$N_1''P$ = Urea at 20 lb. N/ac + 20 lb. P_2O_5/ac. as Super.
$N_2''P$ = Urea at 40 lb. N/ac. + 20 lb. P_2O_5/ac. as Super.
Fertilisers drilled at the time of sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	2200
P	2487
N_1P	2736
N_2P	2617
$N_1''P$	2667
$N_2''P$	2794
G.M.	2584
S.E./mean	69.2 lb./ac.
No. of expts.	43

Crop :- Wheat Ref. :- Simple trials on cultivators' fields (T.C.M.), 1953.

Centre :-Raisingnagar (Rajasthan) Type :—'M'

Object :— II To study the effect of N,P & K manures

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil-fine sandy soil—pH. 7.8. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April.

2. TREATMENTS :

O = Control.
N = A/S at 20 lb. N/ac.
NP = A/S at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac.
N'P = A/N at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac.
N''P = Urea at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac.
NPK = A/S at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac.+Muriate of Potash at 20 lb. K_2O/ac.
Fertilizers drilled at the time of sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	2099
N	2264
NP	2660
N'P	2897
N''P	2756
NPK	2697
G.M.	2562
S.E./mean	86.6 lb./ac.
No. of expts.	36

Crop :- Wheat. Ref :- Simple trials on cultivators' fields (T.C.M.),1953.

Centre :- Raisingnagar (Rajasthan) Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil – fine sandy soil & p.H. 7.8 (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April.

2. TREATMENTS :

O = Control
N = A/S at 40 lb.N/ac.
NP_1 = A/S at 40 lb. N/ac. + Super at 20 lb. P_2O_5/ac.
NP_2 = A/S at 40 lb. N/ac. + Super at 40 lb. P_2O_5/ac.
NP'_1 = A/S at 40 lb. N/ac. + Nitro. Phos. at 20 lb. P_2O_5/ac.
NP'_2 = A/S at 40 lb. N/ac. + Nitro. phos. at 40 lb. P_2O_5/ac.
Fertilizers drilled at the time of sowing.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1953 - 56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb/ac.
O	1730
N	2169
NP_1	2510
NP_2	2560
NP'_1	2322
NP'_2	2246
G.M.	2323
S.E./mean	108.3 lb./ac.
No. of expts.	14

Crop :-Wheat. Ref :-Simple trials on cultivators' fields (T.C.M.), 1953.

Centre :-Raisingnagar (Rajasthan). Type :-'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil—fine sandy soil pH. 7.8. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April.

2. TREATMENTS :

O =Control.
N =A/S at 40 lb. N/ac.
NP_1 =A/S at 40 lb. N/ac.+Super at 20 lb. P_2O_5./ac.
NP_2 =A/S at 40 lb. N/ac.+Super at 40 lb. P_2O_5./ac.
NP'_1=A/S at 40 lb. N/ac.+Ammo. phos. at 20 lb. P_2O_5./ac.
NP'_2=A/S at 40 lb. N/ac.+Ammo. phos. at 40 lb. P_2O_5./ac.
Fertilizers drilled at the time of sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	2059
N	2366
NP_1	2459
NP_2	2692
NP''_1	2435
NP''_2	2491
G.M.	2417
S.E./mean	= 163.9 lb./ac.
No. of experiments	11

Crop :-Wheat. Ref :-Simple trials on cultivators' fields (T.C.M.), 1953.

Centre :-Raisingnagar (Rajasthan). Type :-'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil—fine sandy soil p.H. 7.8. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April.

2. TREATMENTS :

O =Control.
N =A/S at 40 lb. N/ac.
NP'_1=A/S at 40 lb. N/ac.+Nitro phos. at 20 lb. P_2O_5/ac.
NP'_2=A/S at 40 lb. N/ac.+Nitro phos. at 40 lb. P_2O_5/ac.
NP''_1=A/S at 40 lb. N/ac.+Ammo. phos. at 20 lb. P_2O_5/ac.
NP''_2=A/S at 40 lb. N/ac.+Ammo. phos. at 40 lb. P_2O_5/ac.
Fertilizers drilled at the time of sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	2523
N	2704
NP'_1	2471
NP'_2	2760
NP_1''	2299
NP_2''	2583
G.M.	2556
S.E./mean	= 166.6 lb./ac.
No. of experiments	12

Crop :- Wheat. **Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.**

Site :- Sumerpur (Rajasthan). **Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam-pH 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March-April.

2. TREATMENTS :

O =Control.
P =20 lb. P_2O_5/ac. as Super.
N_1P =A/S at 20 lb. N/ac.+20 lb. P_2O_5/ac. as Super.
N_2P =A/S at 40 lb. N/ac.+20 lb. P_2O_5/ac. as Super.
$N_1"P$ =Urea at 20 lb. N/ac.+20 lb. P_2O_5/ac. as Super.
$N_2"P$ =Urea at 40 lb. N/ac.+20 lb. P_2O_5/ac. as Super.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	602
P	743
N_1P	809
N_2P	937
$N_1"P$	860
$N_2"P$	877
G.M.	805
S.E./mean	55.3 lb./ac.
No. of experiments	20

Crop :- Wheat. **Ref :-Simple trials on cultivators' fields (T.C.M.), 1953.**

Centre :- Sumerpur (Rajasthan). **Type :- 'M'.**

Object :—II To study the effect of N and P manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam p.H. 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March-April.

2. TREATMENTS :

O =Control.
N =A/S at 20 lb. N/ac.
NP =A/S at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac
N'P =A/N at 20 lb. N/ac.+Super at 20 lb. P_2O_5/ac.
N"P =Urea at 20 lb.N/ac. +Super at 20 lb. P_2O_5/ac.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	678
N	914
NP	852
N'P	965
N"P	875
G.M.	857
S.E./mean	N.A.
No. of experiments	14

Crop :- Wheat. Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.

Centre :- Sumerpur (Rajasthan). Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam pH. 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March-April.

2. TREATMENTS :

O =Control.
N =A/S at 40 lb. N/ac.
NP_1 =A/S at 40 lb. N/ac.+Super at 40 lb. P_2O_5/ac.
NP_2 =A/S at 40 lb. N/ac.+Super at 40 lb. P_2O_5/ac.
NP'_1 =A/S at 40 lb. N/ac.+Nitro. phos. at 20 lb. P_2O_5/ac.
NP'_2 =A/S at 40 lb. N/ac.+Nitro. phos. at 40 lb. P_2O_5/ac.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	489
N	365
NP_1	555
NP_2	510
NP'_1	498
NP'_2	577
G.M.	499
S.E./mean	69.5 lb./ac.
No. of experiments	5

Crop :- Wheat. **Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.**

Centre :- Sumerpur (Rajasthan). **Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam p.H. 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) March-April.

2. TREATMENTS :

O =Control.
N =A/S at 40 lb. N/ac.
NP_1 =A/S at 40 lb. N/ac.+Super at 20 lb. P_2O_5/ac.
NP_2 =A/S at 40 lb. N/ac.+Super at 40 lb. P_2O_5/ac.
NP''_1 =A/S at 40 lb. N/ac.+Ammo. phos at 20 lb. P_2O_5/ac.
NP''_2 =A/S at 40 lb. N/ac.+Ammo. phos at 40 lb. P_2O_5/ac.
Fertilizers broadcast before sowing.

3. DESIGN :

(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
O	782
N	1018
NP_1	907
NP_2	1111
NP''_1	1207
NP''_2	1035
G.M.	1010
S.E./mean.	164.6 lb./ac.
No. of experiments	8

Crop :- Wheat. **Ref :- Complex experiments (T.C.M.), 1953.**

Centre :- Kotah (Rajasthan). **Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) N A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 19.11.53. (iv) N.A. (v) Pb-591 (vii) Irrigated. (viii) One weeding (ix) 31.04". (x) 11.4.54.

2. TREATMENTS :

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

(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 sources of N : A/S, A/N and Urea.
(3) 3 leve's of P_2O_5 as Super : P_0=0, P_1=20 and P_2=40 lb./ac.

and 3 extra treatments as :—

T_1=60 lb. N/ac. as A/S+40 lb. P_2O_5/ac. as Super.
T_2=40 lb. N/ac. as A/S+80 lb. P_2O_5/ac. as Super.
T_3=60 lb. N/ac. as A/S+80 lb. P_2O_5/ac. as Super.

3. DESIGN :

(i) R.B.D. Fact. (ii) (a) 12 plots/block and 3 blocks/replication. (3 plots for extra treatments in each block). (iii) 1 (iv) (a) N.A. (b) 48'5" × 15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, no lodging. (ii) Damage to crop by rats and stray cattle (iii) Yield of grain. (iv) (a) 1953-56 (b) No. (c) N.A. (v) (a) Niphad, Obedullaganj. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 677 lb./ac.
(ii) 301.1 lb./ac.
(iii) All effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	A/S	A/N	Urea
P_0	652	626	867	715	849	634	662
P_1	552	750	642	648	847	647	449
P_2	722	680	535	652	719	717	521
Mean	642	685	688	672	805	666	544
A/S	...	765	708	737			
A/N	...	596	770	683			
Urea	...	695	586	640			

Mean yield of 3 extra treatments.

T_1=619 lb./ac.
T_2=565 lb./ac.
T_3=898 lb./ac.
Mean=694 lb./ac.
S.E /mean=173.6 lb./ac.

S.E. of marginal mean of levels of N =100.4 lb./ac.
S.E. of marginal mean of sources of N =122.9 lb./ac.
S.E. of marginal mean of levels of P =100.4 lb./ac.
S.E. of body of table level of N × P 'or' source of N×P =173.6 lb./ac.
S.E. of body of table 'level × source' =173.6 lb./ac.

Crop :- Wheat. Ref :-Complex experiments (T.C.M.), 1953.

Centre :-Kotah (Rajasthan). Type :-'M'.

Object :—II To study the best time of application of N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 30.11.53. (iv) N.A. (v) N.A. (vi) Pb. 591 (vii) Irrigated. (viii) One weeding. (ix) 31.04". (x) 13, 16.4.54.

2. TREATMENTS :

All combinations of (1) and (2)+one Control (no manure).

(1) 2 times of application : D_1=at sowing and D_2=at first irrigation.
(2) 3 sources of N : A/S, A/N and Urea.

'N' applied at 20 lb./ac.

3. DESIGN :

(i) R.B.D. Fact. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 36.25' × 20'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, no lodging. (ii) Considerable damage to crop by rats and stray cattle. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Niphad, Satna, Paliad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2024 lb./ac.
(ii) 449.7 lb./ac.
(iii) Time of application, source of N and their interaction, and control *vs.* others are not significant.
(iv) Av. yield of grain in lb./ac.

Control=1752 lb./ac.

Source	D_1	D_2	Mean
A/S	2354	2180	2267
Urea	1872	1970	1921
A/N	1937	2109	2023
Mean	2054	2086	2070

S.E. of marginal mean of time of appliaction =129.8 lb./ac.
S.E of marginal mean of source of N =159.0 lb./ac.
S.E. of body of table =224.9 lb./ac.

Crop :- Wheat. Ref :- Complex experiments (T.C.M.), 1953.
Centre :- Kotah (Rajasthan). Type :- 'M'.

Object :—IV To study the effect of types, levels and methods of application of P.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 24.11.53. (iv) N.A. (v) N.A. (vi) Pb-591. (vii) Irrigated. (viii) One weeding. (ix) 31.04". (x) 6.4.54.

2. TREATMENTS :

All combinations of (1), (2) and (3)+one Control.

(1) 2 levels of P_2O_5 : P_1=15 lb./ac. and P_2=30 lb./ac.
(2) 3 sources of P_2O_5 : S_1=Super, S_2=Nitro. phos. and S_3=Ammo. phos.
(3) 2 methods of application : M_1=Broadcast before final cultivation and M_2=2½" below seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 14; 2 control plots/block. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 48'5" × 15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, no lodging. (ii) Crop slightly damaged by rats. (iii) Yield of grain. (iv) (a) 1953-56. (b) No (c) N.A. (v) (a) Banaras, Pura, Paliad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1394 lb./ac.
(ii) 250.2 lb./ac.
(iii) Main effects, interactions and control *vs.* others are not significant.

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

Control =1572 lb./ac.
S.E./mean =102.2 lb./ac.

	S_1	S_2	S_3	Mean	M_1	M_2
P_1	1239	1553	1363	1385	1363	1408
P_2	1264	1358	1410	1344	1427	1261
Mean	1252	1456	1386	1365		
M_1	1293	1411	1479	1395		
M_2	1210	1501	1293	1335		

S.E. of marginal mean of level or method = 58.9 lb./ac.
S.E. of marginal mean of source = 72.2 lb./ac.
S.E. of the mean in the body of 'source×level' or 'source×method' table = 102.2 lb./ac.
S.E. of the mean in the body of 'level×method' table = 83.4 lb./ac.

Crop :- Wheat. Ref :- Rj. 53 (30).
Site :- Govt. Agri. Farm, Makrera. Type :- 'MV'.

Object :—To find out the effect of different sources of 'N' on the yield of different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy Loam. (b) N.A. (iii) 10.11.53. (iv) (a) 4 ploughings. (b) N.A. (c) 1 md./ac. (d) Rows 9" apart. (e) Nil. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 31.3.54.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 2 varieties : V_1=C. 591 and V_2=Local.
(2) 5 Manuers : M_0=0 lb./ac., M_1=A/S at 50 lb./ac. of N, M_2=Compost at 50 lb./ac. of N, M_3=F.Y.M. at 50 lb./ac. of N and M_4=Oilcake at 50 lb./ac. of N.

3. DESIGN :

(i) 2×5 Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 32' × 18'. (b) 30' × 16' (v) 1' on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Grain yield. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 816.0 lb./ac.
(ii) 271.4 lb./ac.
(iii) Only manures effect is significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	Mean
V_1	723	1181	875	612	775	833
V_2	571	1288	525	875	735	799
Mean	647	1234	700	743	755	816

S.E. of marginal means of varieties = 60.6 lb./ac.
S.E. of marginal means of manures = 96.0 lb./ac.
S.E. of the body of table =135.7 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(42).**

Site :- Govt. Agri. Farm. Makrera. **Type :- 'MV'.**

Object :—To find the effect of different forms of N on two varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.52. (iv) (a) 4 ploughings. (b) N.A. (c) 1 md./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 27.3.53.

2. TREATMENTS :

Main-plot treatments :—

2 varieties viz. V_1=C. 591 and V_2=Local.

Sub-plot treatments :—

5 sources of 50 lb./ac. of N viz. A/S, Bloodmeal, Compost, F.Y.M., & Oilcake.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34′×20′. (b) 30′×16′. (v) 2′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) Yes, 1952 to 1954. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) & (vii) Nil.

5. RESULTS :

(i) 859 lb./ac.
(ii) (a) 505.3 lb./ac.
(b) 325.2 lb./ac.
(iii) Only sources of N effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	A/S	Bloodmeal	Compost	F.Y.M.	Oilcake	Mean
V_1	1509	503	942	529	889	875
V_2	1334	480	653	611	1147	844
Mean	1421	491	797	570	1018	859

S.E. of the difference of two
V means = 157.9 lb./ac.
sources of N means = 102.6 lb./ac.
N means at the same level of V = 230.5 lb./ac.
V means at the same level of N = 260.5 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(45).**

Site :- Govt. Agri. Farm, Tabiji. **Type :- 'MV'.**

Object :—To study the response to N obtained from different sources on two varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.10.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium), Local. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 31.3.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties viz. V_1=C. 591 and V_2=Local.

(2) 5 sources of 60 lb /ac. of N viz. A/S, Bloodmeal, M.C., F.Y.M., and Oilcake.

3. DESIGN :

(i) 2×5 Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 32′×18′. (b) 30′×16′. (v) 1′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1598 lb./ac.
(ii) 198.3 lb./ac.
(iii) Varieties & N effects are highly significant.
(iv) Av. yield of grain in lb./ac.

	A/S	Bloodmeal	M.C.	F.Y.M.	Oilcake	Mean
V_1	1791	1528	1466	1239	1528	1511
V_2	1913	1896	1607	1462	1543	1684
Mean	1854	1712	1536	1351	1536	1598

S.E. of variety marginal mean = 43.9 lb./ac.
S.E. of source marginal mean = 69.6 lb./ac.
S.E. of body of table = 99.1 lb./ac.

Crop :- Wheat. Ref :- Complex experiments (T.C.M.), 1953.
Centre :- Kotah (Rajasthan). Type :- 'MV'.

Object :—VIII To study the effect of N & P_2O_5 along with varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 12.12.53. (iv) N.A. (v) N.A. (vi) As under treatments. (vii) Irrigated. (viii) One weeding. (ix) 31.04″. (x) 24.4.54.

2. TREATMENTS :

All combinations of (1), (2) & (3)
(1) 3 levels of N : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of P_2O_5 : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 varieties : V_1=Pb. 591, V_2=31-1 and V_3=Malvi Local.
N as A/S applied by broadcast after final preparation of land.
P_2O_5 as triple super drilled along with seed.

3. DESIGN :

(i) 3^3 Fact. Confd. (ii) (a) 3 blocks/replication and 9 plots/block. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 36.25′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, no lodging. (ii) Slight rust attack was noted on Malvi wheat. Rat and cattle damage was considerable. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Niphad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 849 lb./ac.
(ii) 153.8 lb./ac.
(iii) Main effect of V is highly significant. Main effects of N & P, and interaction N×P are significant. Others are not significant.

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

	N_0	N_1	N_2	Mean	V_1	V_2	V_3
P_0	675	1163	1066	968	757	1499	649
P_1	793	654	1237	895	937	1251	495
P_2	821	536	693	683	626	1024	399
Mean	763	784	999	849	773	1258	514
V_1	708	780	833				
V_2	1233	1117	1424				
V_3	348	456	739				

S.E. of any marginal mean = 50.0 lb./ac.
S.E. of any mean in the body of table = 89.7 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 52(54).**
Site :- Govt. Agri. Farm, Makrera. **Type :- 'C'.**

Object :—To find out the effect of different sowing dates on Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 26.3.53.

2. TREATMENTS :

1. Sown on 15th Oct.
2. Sown on 30th Oct.
3. Sown on 1 th Nov.
4. Sown on 29th Nov.
5. Sown on 14th Dec.
6. Sown on 29th Dec.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 35′ × 15′. (b) 30′ × 10′. (v) 2½′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 867 lb./ac.
(ii) 272.3 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1743
2.	1505
3.	955
4.	876
5.	88
6.	37

S.E./mean = 136.1 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52(38).

Site :- Govt. Agri. Farm, Tabiji. Type :- 'C'.

Object :—To study the effect of different sowing dates on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30th Sept. 1952. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 26.3.53.

2. TREATMENTS :

1. Sown on 30th Sept.
2. Sown on 15th Oct.
3. Sown on 30th Oct.
4. Sown on 14th Nov.
5. Sown on 29th Nov.
6. Sown on 14th Dec.
7. Sown on 29th Dec.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 35′×20′. (b) 30′×16′. (v) 2′ along breadth, 2½′ along length. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 899.0 lb./ac.
(ii) 315.6 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1116
2.	1613
3.	1382
4.	1032
5.	809
6.	240
7.	36
S.E./mean	= 157.8 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 51(19).

Site :- Govt. Agri. Farm, Tabiji. Type :- 'C'.

Object :— To find out the effect of different methods of sowing on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b)&(c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.51. (iv) (a) 4 ploughings with irrigation. (b) Drilled. (c) 1 md/ac. (d) 9″ apart. (e) N.A. (v) No. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 18.3.52.

2. TREATMENTS :

1. Sowing in straight lines.
2. Cross-wise sowing.
3. Sowing after Palata.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 30′×30′. (b) 26′×26′. (v) 2′ on both sides. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1592 lb./ac.
(ii) 189.6 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1457
2.	1884
3.	1434

S.E./mean = 94.8 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(33).**

Site :- Govt. Agri. Farm, Makrera. **Type :- 'CV'.**

Object :— To find out the optimum seed rate for C-591 and country varieties of Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.12.53. (iv) (a), (b) N.A. (c) As per treatments. (d), (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 3.4.54.

2. TREATMENTS :

All combinations of (1) & (2)
(1) 2 varieties : V_1=Country local & V_2=C-591.
(2) 3 seedrates : R_1=30 lb./ac., R_2=40 lb./ac. & R_3=50 lb./ac.

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32′×14′. (b) 30′×12′. (v) 1′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1313 lb./ac.
(ii) 209.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
V_1	1299	1338	1299	1312
V_2	1268	1332	1342	1314
Mean	1283	1335	1320	1313

S.E. of marginal mean of variety =60.3 lb./ac.
S E. of marginal mean of seed rate =73.9 lb./ac.
S.E. of body of table =104.5 lb./ac.

Crop :- Wheat (Rabi). Ref : Rj. 52(40).

Site :- Govt. Agri. Farm, Tabiji. Type :- 'CV'.

Object :— To find out the optimum seed rate for C-591 and country varities of Wheat.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.52. (iv) (a) 4 ploughings. (b) N.A. (c) As per treatments. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591 and country wheat local. (vii) Irrigated. (viii) N.A. (ix) 1.11" (25.11.52 to 25.3.53). (x) 25.3.53.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 varieties : V_1=Country local & V_2=C-591.

(2) 3 seedrates : R_1=30 lb./ac., R_2=40 lb./ac. & R_3=50 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32'×18'. (b) 30'×16'. (v) 1' on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1532 lb./ac.

(ii) 250.3 lb./ac.

(iii) None of the effects is significant.

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

	R_1	R_2	R_3	Mean
V_1	1650	1299	1439	1463
V_2	1580	1679	1544	1601
Mean	1615	1489	1491	1532

S.E. of marginal mean of variety = 72.3 lb./ac.
S.E. of marginal mean of seedrate = 88.5 lb./ac.
S.E. of body of table =125.2 lb./ac.

Crop :- Wheat. Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Kotah (Rajasthan). Type :- 'IM'.

Object :— VII-To study the effect of irrigation along with manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 11.12.53. (iv) N.A. (v) N.A. (vi) 31-1 (improved variety). (vii) Irrigated. (viii) One weeding. (ix) 31.04", (x) 6.4.54.

2. TREATMENTS :

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

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

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

(3) 3 irrigations : I_1=2, I_2=3 & I_3= 4 irrigations.

A/S was broadcast after the final preparation of land. Triple super was placed 2½" below soil by bamboo drill with seed.

DESIGN :

(1) 3^2 Fact. Confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 36.25'× 20'. (v) N A. (vi) Yes.

4. GENERAL :

(i) Normal, no lodging. (ii) Crop slightly damaged by rats. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Satna, Paliad and Obedullaganj. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1410 lb./ac.
(ii) 359.6 lb./ac.
(iii) Main effect of N alone is significant.
(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	I_1	I_2	I_3
P_0	1344	1012	1730	1362	1648	1251	1186
P_1	1474	1100	1740	1438	1396	1424	1494
P_2	1540	1133	1618	1430	1028	1640	1623
Mean	1452	1082	1696	1410	1358	1438	1434
I_1	1589	606	1878				
I_2	1409	1470	1437				
I_3	1359	1169	1774				

S.E. of any marginal mean. =119.8 lb./ac.
S.E. of body of table =207.6 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52 (12).

Site :- Govt. Agri. Farm, Durgapura. Type :- 'D'.

Object :—To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under normal conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 29.10.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) N.A. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :

1. Dusting with sulphur 25 lb./ac.
2. Spraying with colloidal sulphur (1 : 1000).
3. Control.

Fertilizers spread at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 18′ × 30′ 3″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Kotah 52 (3), Mandore 52 (9). (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1191.0 lb./ac.
(ii) 233.2 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1173
2.	1173
3.	1226
S.E./mean	=95.2 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 51 (8).

Site :- Govt. Agri. Farm, Ganganagar. Type :- 'D'.

Object :—To test the relative efficacy of colloidal sulphur spray and sulphur dusting for the control of rust under natural conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) Broadcast sowing. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) C. 591. (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Sulphur dusting.
2. Colloidal sulphur spray.
3. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 26′ × 32′ 3″ (b) 24′ × 30′ 3″. (v) 1′ on each side of the plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2043 lb./ac.
(ii) 207 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2198
2.	2048
3.	1883
S.E./mean	=84.7 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 51 (9).

Site :- Govt. Agri. Farm, Ganganagar. Type :- 'D'.

Object :—To study the effect of Fernoxone to control rabi weeds.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No. (vi) N.A. (vii) N.A. (viii) No. (ix) N.A. (x) N.A.

2. TREATMENTS :

Spraying with :—

1. 1½ lb. of Fernoxone.
2. 2 lb of Fernoxone.
3. 2½ lb of Fernoxone.
4. Control.

Fernoxone dissolved in 180 gallons of water sprayed over an acre.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 40′ × 30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Originally the experiment was given 3 replications but the results for one of them were not available ; so the analysis has been done for two replications only.

5. RESULTS :

(i) 1119 lb./ac.
(ii) 231.5 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1090
2.	942
3.	1137
4.	1307
S.E./mean	=163.7 lb./ac.

Crop :- Wheat (Rabi). **Ref. Rj. 52 (52).**

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

Object :—To study the effect of guar seed powder on Wheat grain.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Nov. 1952. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS :

1. Guar seed powder at .02%
2. Guar seed powder at .05%
3. Guar seed powder at .10%
4. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 36′ × 26′. (b) 30′ × 20′. (v) 3′ on each side. (vi) Yes.

4 GENERAL :

(i) Average. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1952-54. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

GRAIN

(i) 3702 lb./ac.
(ii) 355.6 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3279
2.	3548
3.	4029
4.	3952
S.E./mean	=177.8 lb./ac.

FODDER

(i) 11377 lb./ac.
(ii) 807.8 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of fodder in lb./ac.

Treatment	Av. yield.
1.	10835
2.	12672
3.	13638
4.	8364
S.E./mean	= 403.9 lb./ac.

Crop :- Wheat (Rabi). **Ref :- Rj. 53(37).**

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

Object :—To study the effect of guar seed powder on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Nov. 1953. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 ; (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1954.

2. TREATMENTS :

1. Guar seed powder at .02%.
2. Guar seed powder at .05%.
3. Guar seed powder at .10%.
4. Control.

Method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 36'×26'. (b) 30'×20'. (v) 3' on each side. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1354 lb./ac.
(ii) 153 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1204
2.	1426
3.	1886
4.	898
S.E./mean	=76.5 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52(3).

Site :- Govt. Agri. Farm, Kotah. Type :- 'D'.

Object :—To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under natural conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin clay loam. (b) N.A. (iii) 27th Oct. 1952. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 23rd March 54.

2. TREATMENTS :

1. Dusting with sulphur at 25 lb./ac.
2. Spraying with colloidal sulphur (1 : 1000).
3. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 24'×30'3". (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Mandore 52(9). Durgapura 52(12). (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1246 lb./ac.
(ii) 168.2 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1218
2.	1180
3.	1341
S.E./ mean	= 687 lb./ac.

Crop :- Wheat (Rabi). Ref :- Rj. 52(9)

Site :- Govt. Agri. Farm, Mandore. Type :- 'D'.

Object—To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under natural conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil, sandy. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Dusting with sulphur at 25 lb./ac.
2. Spraying with colloidal sulphur (1: 1000).
3. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 24′×30′ 3″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) Kotah 52(3), Durgapura 52(12). (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1285.0 lb./ac.
(ii) 291.9 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1182
2.	1208
3.	1465
S.E./mean	=119 lb./ac.

———

Crop :- Jowar (Kharif). Ref :- Rj. 52(13).

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

Object :—To determine the effect of A/S and F.Y.M. on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) No (b), (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) 14.8.52. (iv) (a) to (e) N A. (v) Nil. (vi) Local. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) Last week of Nov. 1952.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 20 lb./ac. of N as A/S.
3. 30 lb./ac. of N as A/S.
4. 20 lb./ac. of N as F.Y.M.
5. Control.

Fertilizers spread at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36′×24′. (b) 30′×18′. (v) 3′ on either side. (vi) Yes.

4. GENERAL :

(i) Average. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) One missing plot of Treatment 2.

5. RESULTS :

(i) 872 lb./ac.

(ii) 420.4 lb./ac.

(iii) The treatment differences are not significant.

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

Treatment	Av. yield
1.	912
2.	609
3.	1480
4.	686
5.	671

S.E. of difference of two treatments not containing missing plot =242.6 lb./ac.

S.E. of difference of missing plot treatment and any other treatment=258.0 lb./ac.

Crop :- Jowar (Kharif). **Ref :- Rj. 51(11).**

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

Object :—To test the relative efficacy of different dosages of Agrosan GN & Sulphur etc. as seed treatments for control of loose and grain smut of Jowar.

1. BASAL CONDITIONS :

(i) (a) No. (b) Cotton. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 Ploughings. (b) Seed drilled and then mixed. (c) N.A. (d) Six lines in each plot at a distance of 1.5'. (e) N.A. (v) N.A. (vi) Local variety. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Sulphur (4 : 1000).
2. Sulphur (6 : 1000).
3. Agrosan GN (2 : 1000).
4. Agrosan GN (3 : 1000).
5. Mercuric-bi chloride 1 : 1000 solution for two mixtures.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 9'×100'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain and no. of germinated plants. (iv) (a) No. (b) No. (c) N.A. (v) (a) Durgapura. (b) N.A. (vi) Nil. (vii) Seed was not free from smut balls. 15—20 smut balls were present in 40 tolas of seed.

5. RESULTS :

Grain yield.

(i) 2001 lb./ac.

(ii) 250.5 lb./ac.

(iii) The treatment differences are not significant.

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

Treatment	Av. yield.
1.	1933
2.	2249
3.	2127
4.	1942
5.	1922
6.	1839
S.E./mean	= 112.0 lb./ac.

No. of plants germinated.

(i) 2186 plants/ac.

(ii) 636.5 plants/ac.

(iii) The treatment differences are not significant.

(iv) Av. number of plants germinated/ac.

Treatment	Av. no.
1.	2149
2.	2556
3.	2391
4.	2120
5.	1733
6.	2168
S.E./ mean	= 284.7 plants/ac.

Crop :- Jowar (Kharif). Ref :- Rj. **51(12)** .

Site :- Govt. Agri. Farm, Durgapura. Type :- 'D'.

Object :—To test the relative efficacy of different dosages of Agrosan GN & Sulphur as seed treatments on loose and grain smut of Jowar.

1. BASAL CONDITIONS :

(i) (a) No. (b) Cotton. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings. (b) Seed drilled & then thinned. (c) N.A. (d) Six lines sown in each plot at a distance of 1.5' (e) N.A. (v) N.A. (vi) Local. (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Sulphur (4 : 1000).
2. Sulphur (6 : 1000).
3. Agrosan GN (2 : 1000).
4. Agrosan GN (3 : 1000).
5. Mercuric bi-chloride 1 : 1000 solution for two mixtures.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 9'×100'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Bassi. (b) N.A. (vi) Nil. (vii) Seed was not free from smut balls. 15-20 smut balls were present in 40 tolas of seed.

5. RESULTS :

Grain yield.

(i) 605.9 lb./ac.
(ii) 253.10 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	597
2.	629
3.	607
4.	624
5.	591
6.	587
S.E./mean	= 113.2 lb./ac.

No. of plants germinated.

(i) 3244 plants/ac.
(ii) 275.0 plants/ac.
(iii) The treatment differences are highly significant.
(iv) Av. no. of plants germinated/ac.

Treatment	Av. no.
1.	3282
2.	3523
3.	3107
4.	3427
5.	2633
6.	3494
S.E./mean	=123.4 plants/ac.

Crop :- Barley (Rabi). Ref. Rj. **52 (4)**.

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

Object :—To study the effect of different trace elements in different doses on growth, germination and yield of Barley.

1. BASAL CONDITIONS :

(i) (a) No. (b) Barley in Rabi, 1951 and fallow in Kharif, 1952. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 9.11.1952. (iv) (a) N.A. (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing on 30.12.1952. (ix) N.A. (x) 23rd March, 1953.

2. TREATMENTS :

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

1. 3 levels of trace elements :—T_1=5 lb./ac. T_2=10 lb./ac. and T_3=20 lb./ac.
2. 7 trace elements :—1. Ferrous Sulphate. 2. Ammonium Molybdate 3. Zinc Sulphate. 4. Copper Sulphate. 5. Magnesium Sulphate. 6. Borax powder 7. Cobalt Sulphate.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20' × 11'. (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2893 lb./ac.
(ii) 402 lb./ac.
(iii) None of the effects is siginficant.
(iv) Av. yield of grain in lb./ac.

Control=2671 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	3468	3391	2442	2857	2816	2714	2628	2902
T_2	2816	3053	3027	2587	2882	2798	2943	2872
T_3	3468	3180	2798	2714	2671	2977	2748	2973
Mean	3251	3208	2756	2719	2790	2830	2773	2904

S.E. of marginal mean of levels = 87.7 lb./ac.
S.E. of marginal mean of trace elements =134.0 lb./ac.
S.E. of body of table =232.1 lb./ac.

Crop :- Barley (Rabi). Ref : Rj. 53 (1).
Site :- Govt. Agri. Farm, Bassi. Type :- 'M'.

Object :—To study the effect of different trace elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Oats in Rabi and Fallow. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain—sandy loam. (b) N.A. (iii) 20.11.53. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) One weeding and hoeing on 28.12.53. (ix) N.A. (x) 10.4.54.

2. TREATMENTS :

All combinations of (1) and (2)+a Control.
(1) 3 levels of trace elements : T_1=5 lb./ac., T_2=10 lb./ac. and T_3=20 lb./ac.
(2) 7 trace elements : 1. Ferrous Sulphate. 2. Ammoninm Molyb date. 3. Zinc Sulphate. 4. Copper-Sulphate. 5. Magnesium Sulphate. 6. Borax powder. 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20′ × 11′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 3272 lb./ac.
(ii) 333.4 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control=3037 lb./ac.

	1	2	3	4	5	6	7	Mean
T_1	3019	3668	3431	3192	3346	3184	3192	3290
T_2	3012	3552	3277	3243	3416	3354	3199	3293
T_3	3277	3277	3423	3467	3174	3192	3055	3266
Mean	3103	3499	3377	3301	3312	3243	3149	3283

S.E. of marginal mean of levels = 27.3 lb./ac.
S.E. of marginal mean of trace elements =111.1 lb./ac.
S.E. of the body of table =192.5 lb./ac.

Crop :- Barley (Rabi). Ref :- Rj. 52 (8).

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

Object :—To study the effect of Catalyst with and without F.Y.M. on germination, growth and yield of Barley.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain—sandy loam. (b) N.A. (iii) 10.11.52. (iv) (a) to. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.

(2) 7 manures : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst, M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate and M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′ × 6′. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3195.0 lb./ac.

(ii) 430.8 lb./ac.

(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	2823	3197	3330	3170	3090	2984	3197	3113
F_1	3250	3357	3304	3064	3010	3437	3517	3277
Mean	3037	3277	3317	3117	3050	3210	3357	3195

S.E. of F marginal mean =94.1 lb./ac.

S.E. of M marginal mean =170.9 lb./ac.

S.E. of body of table =248.7 lb./ac.

Crop :- Barley (Rabi). Ref :-Rj. 53(2).

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

Object : - To study the effect of Catalyst with and without F.Y.M. on germination, growth and yield of Barley.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A. (iii) 20.11.53. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) One weeding and hoeing on 28.12.53. (ix) N.A. (x) 1.4.54.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.

(2) 7 manures : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul. M_5=8 lb./ac. of Pot. Permanganate and M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 4214 lb /ac.
(ii) 276.1 lb./ae.
(iii) None of the effects is significant.
(iv) Av. y eld of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	4090	4113	4192	4302	4302	4192	4247	4206
F_1	4381	4538	3932	4302	4302	3932	4168	4222
Mean	4236	4326	4062	4302	4302	4062	4208	4214

S.E. of F marginal mean = 60.1 lb./ac.
S.E. of M marginal mean =112.7 lb./ac.
S.E. of body of table =159.4 lb./ae.

Crop :- Bajra (Kharif). Ref :- Rj. 50(6).
Site :- Govt. Agri. Farm, Bassi. Type :- 'M'.

Object :—To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 16.7.50. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 20.10.50.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15 lb./ac. of N as A/S+3000 lb./ac. of F.Y.M.
5. Control.

The fertiltzers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36′—3″×24′. (b) 30′—3″×18′. (v) 3′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 380.8 lb./ac.
(ii) 43.1 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	396.8
2.	392.7
3.	409.1
4.	380.4
5.	322.8
S.E./mean	=19.24 lb./ac.

Crop :- Bajra (Kharif). **Ref. :- Rj. 51(3).**

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

Objeet :—To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) N.A. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15 lb./ac. of N as F.Y.M.
5. Control.

4. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36′-3″×24′. (b) 30′-3″×18′. (v) 3′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 298.9 lb./ac.
(ii) 42.1 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	314.6
2.	355.7
3.	294.0
4.	292.0
5.	238.5
S.E./mean	±18.83 lb./ac.

Crop :- Bajra (Kharif). **Ref :- Rj. 52(16).**

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

Object :—To find out the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bajra. (c) No. (ii) (a) Yellow alluvium soils of Gangetic plain-Sandy loam. (b) N.A. (iii) 29.6.52. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No. (vi) Local. (vii) Rainfed. (viii) Weeding on 16.7.52. (ix) N.A. (x) Nov. 52.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15 lb /ac. of N as F.Y.M.
5. Control.

Fertilisers broadcast at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36′-3″×24′ (b) 30-3″×18′. (iv) 3′ all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1951-1952. (b) No. (c) N.A. (v) (a) Durgapura. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 464.6 lb./ac.
(ii) 52.24 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	417.3
2.	530.4
3.	474.9
4.	493.4
5.	407.1
S.E./mean	=23.32 lb./ac.

Crop :- Bajra (Kharif). **Ref :-Rj. 52(44).**

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

Object :— To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) Bajra, Moth or Moong. (b) Fallow. (c) Nil. (ii) Sandy loam. (b) N.A. (iii) 29.6.52. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) Local. (vii) Rainfed. (viii) Two weedings. (ix) N.A. (x) Nov. 1952.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb /ac. of N as A/S.
4. 15 lb./ac. of N as F.Y.M.
5. Control.

Fertilizers broadcast at cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'-3"×24'. (b) 30-3"×18'. (v) 3' all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 357.7 lb./ac.
(ii) 75.5 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	359.8
2.	462.6
3.	429.7
4.	273.4
5.	263.2
S.E./mean	= 33.5 lb./ac.

Crop :- Bajra (Kharif). **Ref :- Rj. 53(34).**

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

Object :— To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 8.3.53. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) 26.10.53.

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15. lb./ac. of N as F.Y.M.
5. Control.

Fertilizers broadcast at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 32′—3″×20′. (b) 30—3″×18′. (v) 1′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 500.2 lb./ac.
(ii) 170.7 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	527
2.	522
3.	602
4.	458
5.	392
S.E./mean	=76.2 lb./ac.

Crop :- Bajra (Kharif). Ref :- Rj. 53(4).

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

Object :—To find out the effect of Catalyst with and without F.Y.M., on germination and yield of Bajra.

1. BASAL CONDITONS :

(i) (a) No. (b) (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain. Sandy loam. (b) N.A. (iii) July, 53. (iv) (a) to (e) N.A. (v) No. (vi) Local. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) Oct. 53.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 doses of F.Y.M. :— F_0=0 and F_1=2 ton/ac.
(2) 7 manures :— M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst. M_3=14 lb./ac. of Fe. Sul. M_4= 28 lb./ac. of Fe.Sul. M_5=8 lb./ac. of Pot. Permanganate & M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. inR.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Yield of grain. (iv) (a) 1952—contd. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 852 lb./ac.
(ii) 295.1 lb./ac.
(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	707.8	855.2	786.5	550.6	786.5	865.2	786.6	764.0
F_1	1258.4	841.6	1022.5	865.2	943.8	865.2	786.5	940.1
Mean	983.1	853.4	904.5	707.9	865.2	865.2	786.0	852.0

S.E. of F marginal mean = 64.3 lb./ac.
S.E. of M marginal mean = 120.5 lb./ac.
S.E. of body of table = 170.4 lb./ac.

Crop :- Bajra (Kharif). **Ref :- Rj. 50(4)**

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

Object :— To study the effect of A/S and F.Y.M. on Bajra under *bārani* conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) N.A. (b) N.A. (iii) 19.7.50. (iv) (a) N.A. (b) Seed broadcast. (c) N.A. (d) N A. (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) Weeding once on 16.8.50. (ix) N.A. (x) 2.10.5).

2. TREATMENTS :

1. 10 lb./ac. of N as A/S.
2. 15 lb./ac of N as A/S.
3. 20 lb /ac. of N as A/S.
4. 15 lb./ac. of N as F.Y.M.
5. Control.

3. DESIGN :

(i) L. Sq. (ii) 5. (b) N.A. (iii) 5. (iv) (a) 36′—3″×24′. (b) 30′—3″×18′. (v) 3′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 220.8 lb/ac.
(ii) 69.7 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	180.9
2.	203.5
3.	254.9
4.	254.9
5.	209.7
S.E./mean	= 31.17 lb./ac.

Crop :- Bajra (Kharif). **Ref :- Rj. 51(4).**

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

Object :—To determine the relative effectiveness of dressing with different doses of Agrosan GN and Sulphur on the emergence & yield of Bajra for seed purposes.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain ; sandy loam. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No manuring given. (vi) Local. (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Agrosan GN (2 : 1000).
2. Agrosan GN (3 : 1000).
3. Agrosan GN (4 : 1000).
4. Sulphur (4 : 1000).
5. Sulphur (6 : 1000).
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 26′×32′-3″. (b) 24′×30′-3″. (v) 1′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 403.9 lb./ac.
(ii) 52.2 lb./ac.
(iii) The treatment differences are significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	471.8
2.	404.0
3.	380.8
4.	433.3
5.	447.2
6.	340.7

S.E./mean = 23.34 lb./ac.

Crop :- Maize (Kharif). Ref :- Rj. 49(2).

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

Object :—To study the effect of organic manures on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) A/S at 20 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 20.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) Local Sathi. (vii) Irrigated. (viii) Weeding on 14.8.49. (ix) N.A. (x) 10.10.49.

2. TREATMENTS :

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

(1) 3 manures *viz.* M.C., Farm Compost & F.Y.M.
(2) 4 doses of manures *viz.* 50, 100, 150 and 200 md./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 30′×17′. (b) 25′×12′. (v) 2½′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 117.9 lb./ac.
(ii) 80.1 lb./ac.
(iii) None of the effects is significant.

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

Control = 70.8 lb./ac.

Manures	Level 50	100	150	200	Mean
M.C.	102.5	121.1	87.6	68.9	95.0
Farm Compost	117.4	117.4	106.2	115.5	114.1
F.Y.M.	145.3	134.1	136.0	210.5	156.5
Mean	121.7	124.2	109.9	131.6	121.9

S.E. of marginal mean of level = 18.9 lb./ac.
S.E. of marginal mean of manures = 16.5 lb./ac.
S.E. of body of table = 32.7 lb./ac.

Crop :- Maize (Kharif). **Ref :- Rj. 40(6).**

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

Object :—To study the effect of organic manures on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) Local Sathi. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) 9.10.49.

2. TREATMENTS :

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

(1) 3 manures *viz.* M.C., Farm compost & F.Y.M.

(2) 4 doses of manures *viz.* 50, 100, 150, 200 md./ac.

Fertlizers applied by broadcasting before cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 20′×12′. (b) 18′×10′. (v) 1′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 196.6 lb./ac.
(ii) 88.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

Control = 233.4 lb./ac.

Manures	Level 50	100	150	200	Mean
M C.	302.3	212.5	197.0	181.4	223.3
Farm Compost	140.0	165.9	190.5	186.7	170.8
F.Y.M.	217.8	217.8	233.4	176.4	211.3
Mean	220.0	198.7	207.0	181.5	201.8

S.E. of marginal mean of level = 20.9 lb./ac.
S.E. of marginal mean of manures = 18.1 lb./ac.
S.E. of body of table = 36.2 lb./ac.

Crop : Maize (Kharif). **Ref :-Rj. 51(17).**

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

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.8.51. (iv) (a) to (e) N.A. (v) Nil. (vi) Maize Desi. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13.10.51.

2. TREATMENTS :

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

(1) 3 manures *viz.* M.C., Farm Compost and F.Y.M.

(2) 4 doses of manures *viz.* 50, 100, 150 and 200 md./ac.

1. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 20′×12′. (b) 18′×10′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 457 lb./ac.
(ii) 144.8 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of maize in lb./ac.

Control = 451 lb./ac.

Manure	Level 50	100	150	200	Mean
M.C.	566	382	411	476	459
Farm Compost	513	389	504	373	445
F.Y.M.	342	445	575	513	469
Mean	474	405	497	454	458

S.E. of marginal mean of levels = 34.1 lb./ac.
S.E. of marginal mean of manures = 29.6 lb./ac.
S.E. of body of table = 59.1 lb./ac.

Crop :-Maize (Kharif). **Ref :-Rj. 49(7).**

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

Object :—To study the effect of N and P_2O_5 in different doses on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) Local Sathi. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) 2.10.49.

2. TREATMENTS :

1. 40 lb./ac. of N as A/S.
2. 120 lb./ac. of P_2O_5 as Super.
3. 40 lb./ac. of N as A/S+120 lb./ac. of P_2O_5 as Super.
4. 40 lb./ac. of N as Oilcake.
5. Control.

Fertilizers applied by broadcast before cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 20′×12′. (b) 18′×10′. (v) 1′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 820.3 lb./ac.
(ii) 317.4 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	871.4
2.	715.8
3.	896.2
4.	778.0
5.	840.2
S.E./mean =	158.7 lb./ac.

Crop :-Maize (Kharif). **Ref :-Rj. 51(16).**

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

Object :—To study the effect of different sources of N and P_2O_5 on Maize.

1. BASAL CONDITIONS :

(i) (a) No. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.8.51. (iv) (a) to (e) N.A. (v) Nil. (vi) Desi. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13.10.51.

2. TREATMENTS :

1. 50 lb./ac. of N as A/S.
2. 50 lb./ac. of P_2O_5 as Super.
3. 50 lb./ac. of N as A/S+ 50 lb./ac. of P_2O_5 as Super.
4. 50 lb./ac. of N as Oilcake.
5. Control.

Fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 20′×12′. (b) 18′×10′. (v) 1′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 514.8 lb./ac.
(ii) 192.8 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	412
2.	560
3.	591
4.	630
5.	381
S.E./mean =	96 4 lb./ac.

Crop :-Maize (Kharif). **Ref :-Rj. 52(1).**

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

Object :—To find out the effect of A/S and F.Y.M. on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cotton. (c) No. (ii) (a) Clay. (b) N.A. (iii) 10.7.52. (iv) (a) Two cultivations were done by Desi plough and one after rains. (b) Desi way. (c) 20 lb./ac. (d) N.A. (e) N.A. (v) N.A. (vi) Jampur White Makki. (vii) Rainfed. (viii) Weeding on 13th, 14th August ; Interculture on 15th August. (ix) 27.53" (x) 27.9.52.

2. TREATMENTS :

1. 20 lb./ac. of N as A/S.
2. 30 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S.
4. 20 lb./ac. of N as F.Y.M.
5. Control.

Fertilizers broadcast before sowing at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30′-3″×24′. (b) 24′-3″×18′. (v) 3′ on either side. (vi) Yes.

4. GENERAL :

(i) Lodging. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Rains above normal, hence damage to crop. (vii) Nil.

5. RESULTS :

(i) 1263 lb./ac.
(ii) 163.1 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1245
2.	1266
3.	1356
4.	1237
5.	1208

S.E./mean = 66.6 lb./ac.

Crop :-Maize (Kharif). Ref :-Rj. 51(25)

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

Object .—To study the effect of A/S and F.Y.M. on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) M.C. at 5 C.L./bigha. (ii) (a) Black soil clay. (b) N.A. (iii) 21.6.51. (iv) (a) 4 ploughings with desi plough at sowing time. (b) N.A. (c) 20 lb./ac. (d) N.A. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Weeding with hand hoe on 3rd to 5th July 1951, cultivation with *kurpa* on 9th July. (ix) N.A. (x) 23, 24.9.1951.

2. TREATMENTS :

1. 20 lb./ac. of N as A/S.
2. 30 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S.
4. 20 lb./ac. of N as F.Y.M.
5. Control.

Fertilizers broadcast at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30′-3″×24′. (b) 24′-3″×18′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2395 lb./ac.
(ii) 45.9 lb./ac.
(iii) The treatment differences are highly significant.

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

Treatment	Av. yield
1.	2340
2.	2349
3.	2267
4.	2417
5.	2601
S.E./mean	= 18.70 lb./ac.

Crop :-Maize (Kharif). **Ref :-Rj. 51(27).**

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

Object :—To test the relative effectiveness of seed dressing with Agrosan GN on the emergence of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay. (b) N.A. (iii) 2nd week of July 1951. (iv) (a) N.A. (b) N.A. (c) N.A. (d) Rows 2′ apart, plants 9″ apart. (e) N.A. (v) No. (vi) Sathi Local. (vii) N.A. (viii) N.A. (ix) N.A. (x) Last week of Sept. 1951.

2. TREATMENTS :

1. Agrosan GN (1 : 1000).
2. Agrosan GN (2 : 1000).
3. Agrosan GN (3 : 1000).
4. Agrosan GN (4 : 1000).
5. Control.

Chemical solution sprayed before cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30′×24′. (b) 24′-3″×18′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Number of seeds germinated per plot. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) No. (c) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

No. of seeds germinated/plot.

(i) 23079 seeds/plot.
(ii) 17160 ,, ,,
(iii) The treatment differences are not significant.
(iv) Av. yield of seeds germinated/plot.

Treatment	Av. number
1.	23745
2.	21165
3.	24945
4.	22830
5.	22710
S.E./mean	= 8580

Crop :- Gram. (Rabi). **Ref :- Rj. 52(7)**

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

Object :—To study the effect of catalyst with and without F.Y.M on growth, germination & yield of Gram.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Zera. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain ; Sandy loam (b) N.A. (iii) 2.11.52 (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No. (vi) Local (vii) N.A. (viii) N.A. (ix) N.A. (x) 29.3.53.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 doses of F.Y.M. :—F_0=0, & F_1=2 ton/ac.

(2) 7 manures :—M_0=0, M_1=40 lb/ac. of Catalyst, M_2=80 lb/ac. of Catalyst M_3=14 lb/ac. of Fe. Sul., M_4=28 lb/ac. of Fe. Sul., M_5=8 lb/ac. of Pot. Permanganate & M_6=16 lb/ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×6′ (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 325.6 lb/ac.

(ii) 95.93 lb/ac.

(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	452.3	372.4	239.8	266.2	292.5	239.8	239.8	300.4
F_1	392.5	392.5	392.5	239.0	319.7	399.6	319.7	350.8
Mean	422.4	382.4	316.1	252.6	306.1	319.7	297.7	325.6

S.E. of F marginal mean =20.9 lb/ac.
S.E. of M marginal mean =39.2 lb/ac.
S.E. of the body of table =55.9 lb/ac.

Crop :- Gram (Rabi). Ref :- Rj. 52(48)

Site :- Govt. Agril. Farm, Kotah. Type :-'M'.

Object :—To study the effect of different trace elements in different doses on Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) Nov. 52 (iv) (a) to (e) N.A. (v) Nil (vi) N.A. (vii) Rainfed (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS :

All combinations of (1) & (2)+a Control.

(1) 3 levels of trace elements :—T_1=5 lb/ac, T_2=10 lb/ac. & T_3=20 lb/ac.

(2) 7 trace elements :—1. Ferrous Sulphate, 2. Ammonium Molybdate, 3. Zinc Sulphate, 4. Copper Sulphate, 5. Magnesium Sulphate, 6. Borax Powder and 7. Cobalt Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) 23′×14′. (b) 20′×11′, (v) 1½′ on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 811 lb/ac.

(ii) 161.0 lb/ac.

(iii) None of the effects is significant.

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

Control=695 lb/ac.

	1	2	3	4	5	6	7	Mean
T_1	712	763	721	865	814	814	806	785
T_2	763	890	865	780	763	882	822	824
T_3	933	882	873	848	903	695	822	855
Mean	803	845	820	831	837	797	817	821

S.E. of marginal mean of levels =35.1 lb/ac.
S.E. of marginal mean of trace elements =53.7 lb/ac.
S.E. of body of table =93.0 lb/ac.

Crop :- Gram (Rabi). **Ref :-Rj. 52(53)**

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

Object :—To study the effect of catalyst with and without F.Y.M. on germination, growth and yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) Nov. 52 (iv) (a) to (e) N.A. (v) No. (vi) N.A. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS :

All combinations of (1) & (2)
(1) 2 doses of F.Y.M. :—F_0=0 and F_1=2 ton/ac.
(2) 7 manures :—M_0=0, M_1=40 lb/ac. of Catalyst, M_2=80 lb/ac. of Catalyst, M_3=14 lb/ac. of Fe. Sul., M_4=28 lb/ac. of Fe. Sul., M_5=8 lb/ac. of Pot. Permanganate & M_6=16 lb/ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3 (iv) (a) 15′×9′ (b) 12′×6′ (v) 1½′ on each side. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-53 to N.A. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 638 lb/ac.
(ii) 141.5 lb/ac,
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	596	570	751	596	622	544	544	603
F_1	596	777	777	803	544	570	648	674
Mean	596	673	764	699	583	557	596	638

S.E. of F marginal mean =33.9 lb/ac.
S.E. of M marginal mean =57.8 lb/ac.
S.E. of body of table =81.7 lb/ac.

Crop :- Moong (Kharif). Ref :- Rj 52 (6).

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

Object :—To study the effect of catalyst with and without F.Y.M. on germination and yield of Moong.

1. BASAL CONDITIONS :

(i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) 10.7.52. (iv) (a) N.A. (b) N.A. (c) 8 Sr./ac. (d) N.A. (e) N.A. (v) N.A. (vi) Local. (vii) No. (viii) 2 weedings, hoeing and thinning on 5.8.52 and 6.8.52. (ix) N.A. (x) 1.11.52.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.

(2) 7 manures : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of Catalyst, M_3=14 lb./ac. of Fe. Sul. M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate. and M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) and (b) 24′ × 12′. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-contd. (b) and (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 447.0 lb./ac.

(ii) 81.0 lb./ac.

(iii) None of the effects is significant.

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

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	414.8	426.8	374.7	440.8.	394.8	474.9	466.9	427.7
F_1	466.9	446.9	446.9	507.0	454.9	400.8	541.1	436.3
Mean	440.8	436.8	410.8	473.9	424.8	437.8	504.0	447.0

S.E. of F marginal mean =19.1 lb./ae.

S.E. of M marginal mean =33.1 lb./ac.

S.E. of body of table. =46.8 lb./ac.

Crop :- Moong (Kharif). Ref. :- Rj. 53 (3).

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

Object :—To find out the effect of catalyst with and without F.Y.M. on germination, growth and yield of Moong.

1. BASAL CONDITIONS :

(i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 19.7.53. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 23.10.53.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 doses of F.Y.M. : F_0=0 and F_1=2 ton/ac.

(2) 7 manures : M_0=0, M_1=40 lb./ac. of Catalyst, M_2=80 lb./ac. of a Catalyst, M_3=14 lb./ac. of Fe. Sul., M_4=28 lb./ac. of Fe. Sul., M_5=8 lb./ac. of Pot. Permanganate and M_6=16 lb./ac. of Pot. Permanganate.

3. DESIGN :

(i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′ × 6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) 1952. Not known. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 473.0 lb./ac.
(ii) 138.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
F_0	471.9	416.8	416.8	495.5	448.3	416.8	495.5	451.7
F_1	495.5	471.9	448.3	605.6	448.3	495.5	495.5	494.3
Mean	483.7	444.3	432.5	550.5	448.3	456.2	495.5	473.0

S.E. of F marginal mean = 30.1 lb./ac.
S.E. of M marginal mean = 56.3 lb./ac.
S.E. of body of table = 79.7 lb./ac

Crop :- Moong (Kharif). **Ref :- Rj. 51(24).**
Site :- Govt. Agri. Farm, Durgapura. **Type :- 'M'.**

Object :—To study the effect of different doses of B.M. and Super on the yield of Moong.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 23.7.51. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) Local (Medium). (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 29.10.51.

2. TREATMENTS :

All combinations of (1) and (2) + a Control.
(1) 2 kinds of P fertilizers : Super and B.M.
(2) 3 levels of each kind : 50,100 and 150 lb./ac.
Fertilizers broadcast at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'-3"×24'. (b) 24'-3"×18. (v) 3' on each side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 105.1 lb /ac.
(ii) 48.32 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac

Control=99.2 lb./ac.

	Level			
Kind	50	100	150	Mean
Super	74.2	96.0	89.6	86.6
B.M.	116.5	121.6	138.9	125.7
Mean	95.3	108.8	114.2	106.1

S.E. of marginal means of sources = 13.95 lb./ac.
S.E. of marginal means of levels = 17.08 lb./ac.
S.E. of body of table = 24.16 lb./ac.

Crop :- Moong (Kharif). Ref :- Rj. 52(5).

Site :- Govt. Agri. Farm, Bassi. Type :- 'D'.

Object :—To find the effect of Guar bean powder on germination and yield of Moong.

1, BASAL CONDITIONS :

(i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain. Sandy loam. (b) N.A. (iii) 10.7.52. (iv) (a) N.A. (b) N.A. (c) 8 sr./ac. (d) N.A. (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) Weeding and hoeing on 5th and 8th Aug. 52. (ix) N.A. (x) 1st Nov. 52.

2. TREATMENTS :

1. Guar bean powder 0.02% of weight (3/4 seers).
2. Guar bean powder 0.05% of weight (1 sr. 14 ch.).
3. Guar bean powder 1% of weight (3 sr. 14 ch.).
4. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 16′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 471.4 lb./ac.
(ii) 179.4 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	435.9
2.	487.7
3.	538.7
4.	423.6
S.E./mean	=103.6 lb./ac.

Crop :- Groundnut (Kharif). Ref :- Rj. 51(14).

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

Object :—To find out the effect of different doses of B.M. and Super on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) to (x) N.A.

2. TREATMENTS ;

All combinations of (1) and (2)+a Control.
(1) 2 kinds of P fertilizer : Super & B.M.
(2) 3 levels of each kind : 50, 100 & 150 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 30′−3″×24′ (b) 24′−3″×18′. (v) 3′ on each side of the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Damage by rats and white ants. (iii) Yield of pod. (iv) (a), (b) No. (c) N.A. (v) (a) (b) N.A. (vi) Nil. (vii) Originally the experiment was laid in 4 blocks but due to considerable damage done to 4th replication, it has been neglected.

5. RESULTS :

(i) 2617 lb./ac.
(ii) 544.4 lb./ac.
(iii) Only control *vs.* other treatments effect is significant.

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

Control = 1731 lb./ac.

Kind	Level 50	100	150	Mean.
Super	3238	3345	2484	3022
B.M.	3015	2304	2201	2507
Mean.	3126	2824	2342	2764

S.E. of marginal mean of sources = 181.5 lb./ac.
S.E. of marginal mean of levels = 222.3 lb./ac.
S.E. of body of table = 314.3 lb /ac.

Crop :- Groundnut (Kharif). **Ref:- Rj. 51(22).**

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

Object :—To study the effect of different doses of B.M. and Super on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Oats—Groundnut—Wheat. (b) Oats. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) 30.7.51. (iv) (a) After the commencement of monsoon, the soil was planked. (b) Drilling in rows. (c) N.A. (d) Rows one foot apart. (e) N.A. (v) N.A. (vi) Lo al (Medium). (vii) Irrigated. (viii) Intercultivation and weeding on 10.8.51. (ix) N.A. (x) 3.11.51.

2. TREATMENTS :

All combinations of (1) and (2)+a Control.
(1) 2 kinds of P fertilizer : Super & B.M.
(2) 3 levels of each kind : 50, 100 and 150 lb./ac.
Fertilizers applied by broadcast before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'-3"×24'. (b) 24'-3"×18'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight damage by white ants. (iii) Yield of groundnut. (iv) (a) 1951-1952. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Yield of plot with B.M. at 150 lb./ac. in replication 4 was missing.

5. RESULTS :

(i) 2335 lb./ac.
(ii) 673.4 lb./ac.
(iii) Only control *vs.* other treatments effect is significant.
(iv) Av. yield of groundnut in lb./ac.

Control = 1428 lb./ac.

Kind	Level 50	100	150	Mean
Super	2743	2890	2214	2616
B.M.	2756	2125	2188	2356
Mean	2749	2507	2201	2486

S.E. of the difference of two means in the body of the table (other than missing) =476.2 lb./ac.
S.E. of the difference of two means in the body of the table (one containing the missing value) =520.4 lb./ac.
S.E. of the difference of 'Super *vs.* B.M.' marginal means =287.1 lb./ac.
S.E. of the difference of two levels of kind (50 *vs.* 150 lb.) =336.7 lb./ac.
S.E. of the difference of two levels of kind (100 *vs.* 50 or 150 lb.) =354.3 lb./ac.

Crop :- Til. (Kharif). **Ref :- Rj. 52(11).**

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

Object :—To find out the effect of different doses and sources of N on Til.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) No. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Castorcake.
5. 20 lb./ac. of N as F.Y.M.

Fertilizers broadcast at the time of cultivation before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36′-3″×24′. (b) 30′-3″×18′. (v) 3′ on either side. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 139.0 lb./ac.
(ii) 69.46 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	109.0
2.	148.0
3.	174.8
4.	104.9
5.	158.3
S.E./mean	= 28.35 lb./ac.

Crop :- Sesamum (Kharif). **Ref. :- Rj. 53(18).**

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

Object :—To study the effect of different doses and sources of N on Sesamum.

1. BASAL CONDITIONS :

(i) (a) No. (b), (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) 9.7.53. (iv) (a) Ploughing. (b) to (e) N.A. (v) No. (vi) N.A. (vii) Rainfed. (viii) No. (ix) N.A. (x) 9.11.53.

2. TREATMENTS :

1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Oilcake.
5. 20 lb./ac. of N as F.Y.M.

Fartilizers were mixed and broadcast at the time of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 36′-3″×24′. (b) 30′-3″×18′. (v) 3′ on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952-53. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 105.6 lb./ac.
(ii) 8.8 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	71.9
2.	82.2
3.	118.2
4.	107.9
5.	136.7
SE./mean	=4.4 lb./ac.

Crop :- Sesamum (Kharif). Ref. :- Rj. 52(19).
Site : Govt. Agri. Farm, Mandore. Type :- 'M'.

Object : —To study the effect of different doses and sources of N on Sesamum.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) 9.7.52. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) No. (vi) N.A. (vii) Rainfed. (viii) No. (ix) N.A. (x) 9.11.52.

2. TREATMENTS :

1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Oilcake.
5. 20 lb./ac. of N as F.Y.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36′—3″×24′. (b) 30′—3″×18′. (v) 3′ all round. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 120.3 lb./ac.
(ii) 61.0 lb./ac
(iii) The treatment differences are not significant.
(iv) Av. yield of seasmum in lb./ac.

Treatment	Av. yield.
1.	102.8
2.	124.4
3.	146.0
4,	87.4
5.	131.8
S.E./mean	= 24.9 lb./ac.

Crop :- Metha (Kharif) Ref. :- Rj. 49(5).

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

Object :—To study the effect of Super on the yield of Metha.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.8.49. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) N.A. (viii) Nil. (ix) N.A. (x) 13.11.49.

2. TREATMENTS :

1. Control.
2. 100 lb./ac. of Super.
3. 150 lb./ac. of Super.

3. DESIGN :

(i) R.B D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 18′×14′. (b) 16′×12′. (v) 1′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 19013 lb./ac.
(ii) 1950.5 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of fodder in lb./ac.

Treatment	Av. yield
1.	18937
2.	17463
3.	20638
S.E./mean	975.2 lb./ac.

Crop :- Metha (Kharif). Ref. :- Rj. 49(4).

Site : Govt. Agri. Farm, Tabiji Type : 'M'.

Object :—To study the effect of Super on the yield of Metha (fodder).

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 20.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) Local. (vii) N.A. (viii) N.A. (xi) N.A. (x) 13.10.49.

2. TREATMENTS :

1. Control.
2. 100 lb./ac. of Super.
3. 150 lb./ac. of Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 18′×14′. (b) 16′×12′. (v) 1′ all round. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 27896 lb./ac.
(ii) 4717.4 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of fodder in lb /ac.

Treatment	Av. yield.
1.	23247
2.	30844
3.	20597
S.E./mean	2358.7 lb./ac.