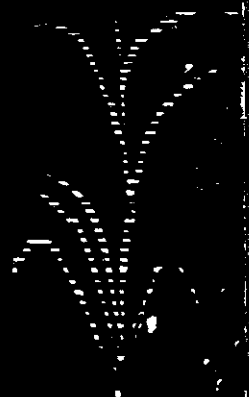
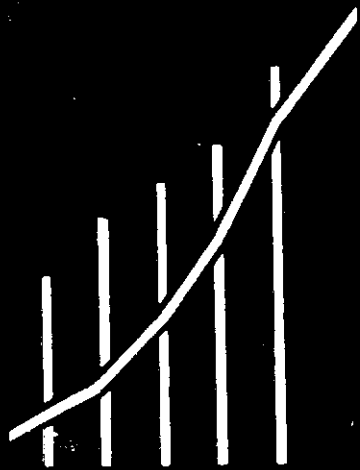


fertiliser statistics

1958



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FERTILISER STATISTICS

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PREFACE

This is the fourth edition of Fertiliser Statistics revised for 1958. The object of the publication is to keep those engaged in the Fertiliser Industry and in the propagation of fertiliser use informed of the various factors relating to fertilisers in India.

The data presented in this publication have been drawn from different sources and, therefore, do not conform to the same standard of accuracy. This has to be kept in view when utilising the data.

The present edition has some new features which are referred to in the introduction. Members of the Association and those interested in the improvement of Indian Agriculture will, I am sure, find this publication useful. The Association would welcome suggestions to make it more complete and comprehensive so as to make future editions an improvement on the present one.

C. R. RANGANATHAN
Executive Director
The Fertiliser Association of India.

New Delhi
May 1, 1959.

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INTRODUCTION

Statistics of fertilisers are generally found in the records of Government and Industry and are mostly unpublished. Even the published information is scattered through a large number of publications and, therefore, is not readily available for use. This booklet is brought out in order to bring together all these data, both published and unpublished, with a view to giving an objective presentation of information available with the Government and the Industry. It is hoped this publication will meet the needs of all those who are interested in fertilisers.

The book is divided into two parts. Part I consists of Fertiliser Statistics and Part II of Related Statistics. Part I gives details regarding the industries concerned with the manufacture of straight and mixed fertilisers, installed capacity, production, consumption, prices, imports and exports, targets of consumption of N, P, K in the Second Five-Year Plan, and world statistics. Certain useful information such as the plant nutrients removed by crops and the average analyses of important fertilisers is also included in this part. Part II deals with land utilisation statistics, area and production of crops, irrigation, prices and world statistics. In addition certain other useful information is also given in this part.

The book has been rearranged to give details in respect of nitrogen, phosphoric acid and potash separately in Part I. The arrangement in respect of prices of fertilisers and world statistics remains the same. This we feel, will facilitate reference as information relating to each plant nutrient is now presented under a single main heading.

A number of new tables are also included in this publication. In Part I are included tables giving world trade in fertilisers and a conversion table to find out the price per pound of nutrient for a given price per ton of fertiliser. In Part II are included a table on size of agricultural holdings—regionwise, and a conversion table from kilograms per hectare to pounds per acre. Excepting these additions, the material contained in this publication is more or less the same as in previous years.

(x)

Notes, abbreviations and signs

The source from which the data are derived is indicated at the bottom of each table. Where no source is given for a particular table, it should be understood that the data have been collected and tabulated by the F.A.I.

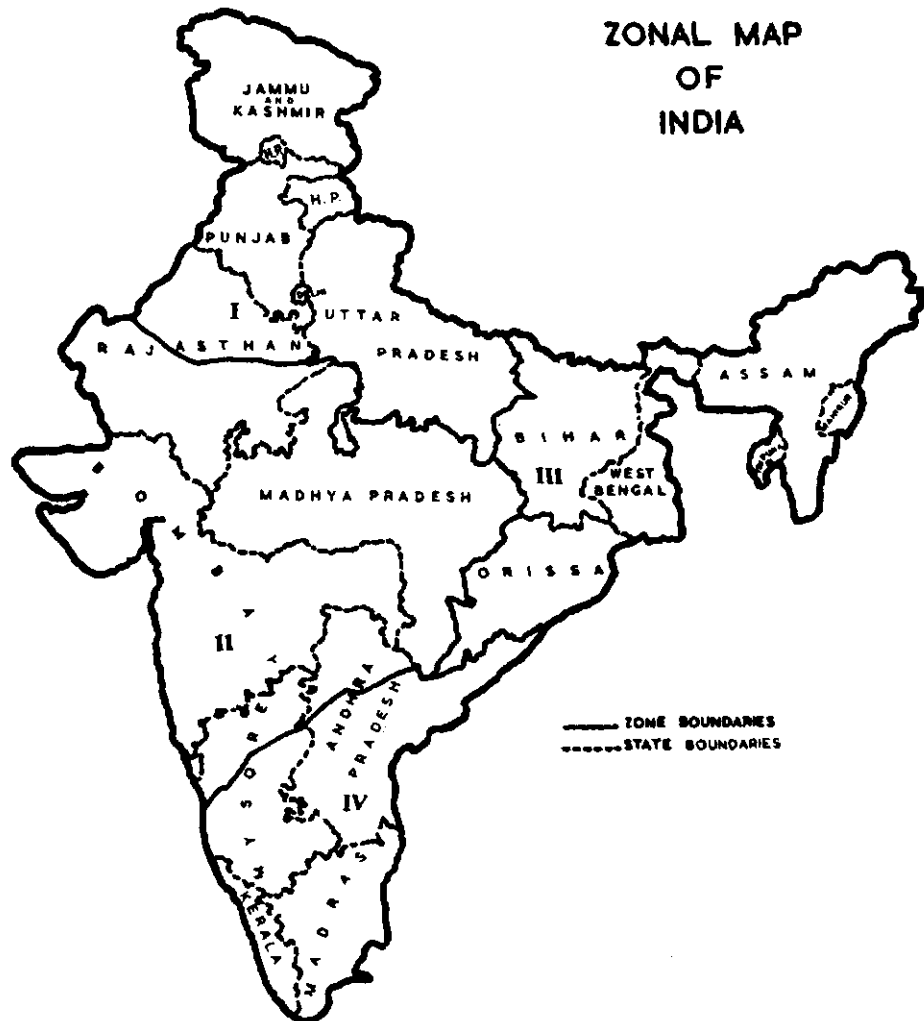
In all tables, unless otherwise stated, the years refer to calendar or agricultural years, as the case may be. For example, the year 1958 refers to the calendar year ending December 31, 1958 and 1957-58 refers to the agricultural year ending June 30, 1958.

Wherever special notes are required with reference to a particular table, they are given at the bottom of the table. The following abbreviations and symbols are used:

a	less than 500 acres
b	less than 500 tons
@	estimated
+	unofficial
—	negligible or nil or entry not applicable
*	incomplete data
**	data for the preceding or the following year has been repeated
...	Not available

PART I

Fertiliser Statistics



- Zone I** Punjab, North Rajasthan, Uttar Pradesh, Jammu and Kashmir, Delhi and Himachal Pradesh.
- Zone II** Andhra Pradesh (Telangana area), Bombay, Madhya Pradesh, Mysore, (Karnataka areas in former Hyderabad and Bombay States) and South Rajasthan.
- Zone III** Assam, Bihar, Orissa, West Bengal, Manipur and Tripura.
- Zone IV** Andhra Pradesh (Andhra area), Kerala, Madras and Mysore (excluding Karnataka areas in former Hyderabad and Bombay States).

I. NITROGENOUS FERTILISERS

I.1 MANUFACTURERS AND INSTALLED CAPACITY

Ammonium Sulphate

Name of the firm	Installed capacity in tons	
	Material	Nutrient (N)
ZONE III		
1. Bararee Coke Co., Ltd., Loyabad	1,155	236.8
2. Burrakur Coal Co., Ltd., Bansjora	1,250	256.2
3. The Indian Iron & Steel Co., Ltd., Burnpur	9,240	1894.2
4. The Indian Iron & Steel Co., Ltd., Kulti	1,650	338.2
5. Sindri Fertilizers & Chemicals Private Ltd., Sindri	350,000	71750.0
6. The Tata Iron & Steel Co., Ltd., Jamshedpur	16,500	3382.5
ZONE IV		
1. The Fertilisers and Chemicals Travancore Ltd., Alwaye	44,500	9122.5
2. The Mysore Chemicals & Fertilisers Ltd., Belagula	6,500	1332.5
Total :	430,795	88312.9

Proposed Factories

Name	Nitrogen production per annum (tons)	Type of product	Expected time of starting production
<i>Expansion Programme</i>			
1. Sindri	47,000	Urea and ammonium sulphate-nitrate	1959
2. F.A.C.T., Alwaye	9,000	Ammonium sulphate and ammonium phosphate	1960
3. Iron & Steel Works	6,000	Ammonium sulphate	—
<i>New Factories</i>			
1. Nangal	70,000	Calcium ammonium nitrate	1961
2. Rourkela	80,000	do.	1962
3. Neyveli	70,000	Urea	1962
4. Sahu Chemicals	12,000	Ammonium chloride	1959
Total :	294,000		

1.2 PRODUCTION OF AMMONIUM SULPHATE

(tons)

Year/Month	Production	
	Material	Nutrient (N)
1952	220,308	45,163.1
1953	316,790	64,941.9
1954	337,175	69,120.9
1955	389,887	79,926.8
1956	388,992	79,743.4
1957	381,047	78,114.6
1958	383,489	78,615.2
1958 January	33,534	6,874.5
February	31,269	6,410.1
March	36,029	7,385.9
April	31,528	6,463.2
May	30,229	6,196.9
June	28,455	5,833.3
July	30,177	6,186.3
August	30,255	6,202.3
September	30,208	6,192.6
October	31,745	6,507.7
November	34,060	6,982.3
December	36,680	7,519.4

1.3 DISTRIBUTION OF AMMONIUM SULPHATE

(tons)			
Distributed to	1955	1956	1957
1. Andhra Pradesh	89,074	76,855	93,199
2. Assam	5,000	8,754	4,930
3. Bihar	24,664	31,312	31,910
4. Bombay	42,432	67,174	84,812
5. Kerala	10,000	11,611	10,808
6. Madhya Pradesh	10,072	22,339	32,459
7. Madras	102,844	77,996	68,784
8. Mysore	18,034	18,054	25,984
9. Orissa	10,000	16,012	10,771
10. Punjab (including Pepsu)	23,360	21,292	35,480
11. Rajasthan (including Ajmer)	300	3,054	4,457
12. Uttar Pradesh	63,980	97,185	121,639
13. West Bengal	12,493	32,632	37,297
14. Jammu & Kashmir	5,511	...	...
15. Hyderabad	10,375	13,094	—
16. Delhi	2,090	300	1,080
17. Himachal Pradesh	225	340	200
18. Manipur	—	—	40
19. Tripura	13	400	—
20. Andamans	—	—	7
21. Kirkee	—	—	418
22. Pondicherry	1,096	893	1,486

(continued)

1.3 DISTRIBUTION OF AMMONIUM SULPHATE (concluded)

(tons)			
Distributed to	1955	1956	1957
23. U.P.A.S.I.	14,347	11,825	12,501
24. Coffee Board	7,095	4,119	
25. Tea & manure mixing firms	59,092	43,135	29,890
26. Industrial Users	1,641	1,111	2,760
27. Hyderabad Chemicals & Fertilizers	—	1,400	—
28. Bhutan	—	73	—
29. Nepal	100	—	—
30. Sikkim	10	—	—
31. Demonstrations	4,680	126	—
32. For preparation of mixtures for demonstration programme	2,948	—	—
33. Miscellaneous	85	86	—
Total :	521,561	561,172	610,912

NOTES :

- (i) Figures for 1957 according to reorganised States.
- (ii) For figures of 1955 and 1956, consider Andhra Pradesh as Andhra ;
Bombay as erstwhile Bombay State (including Saurashtra and Kutch) ;
Kerala as Travancore-Cochin ;
Madhya Pradesh as erstwhile Madhya Pradesh (including Madhya Bharat and Vindhya Pradesh);
Mysore as erstwhile Mysore including Coorg ;
Madras as erstwhile Madras.

Source : Ministry of Food & Agriculture.

**1.4 DISTRIBUTION OF UREA, AMMONIUM SULPHATE-
NITRATE AND CALCIUM AMMONIUM NITRATE**

(tons)

Distributed to :	1955			1956			1957-58		
	Urea	A.S.N.	C.A.N.	Urea	A.S.N.	C.A.N.	Urea	A.S.N.	C.A.N.
Andhra Pradesh	2,008	50	—	1,310	128	84	7,214	1,180	276
Assam	23	54	—	20	20	—	—	—	—
Bihar	—	—	—	—	—	—	—	—	—
Bombay ¹	591	457	—	653	1,715	—	2,308	4,713	—
Delhi	1	3	—	—	—	—	—	—	—
Himachal Pradesh	5	7	—	5	14	—	—	—	—
Jammu & Kashmir	—	—	—	14	18	—	—	—	—
Kerala	11	18	—	20	30	30	—	—	—
Madhya ² Pradesh	18	—	—	50	95	—	134	199	—
Madras	1,521	1,372	—	1,216	1,234	764	6,920	6,113	—
Manipur	1	2	—	1	1	—	—	—	—
Mysore	528	16	—	1,022	104	6	2,079	591	—
Orissa	106	159	—	16	36	—	—	—	—
Pondicherry	—	—	—	1	1	—	—	—	—
Punjab	—	—	—	6	6	—	347	133	4,000
Rajasthan	50	—	—	8	10	—	—	—	—
Tripura	5	7	—	—	—	—	—	—	—
Uttar Pradesh	364	388	—	357	110	—	3,224	259	—
W. Bengal	40	24	—	—	—	—	1,635	1,210	—
Andaman	—	—	—	0.6	1	—	—	0.5	—
Tea	—	—	—	—	—	—	1,000	940	—
U.P.A.S.I.	—	—	—	48	2,890	—	2,232	5,000	484
Coffee	—	—	—	2,440	1,910	—	3,400	4,216	273
Total :	5,272	2,557	—	7,188.6	8,323	884	30,493	24,554.5	5,033

1. Including former States of Kutch and Saurashtra.

2. Including former State of Vindhya Pradesh.

Source : Ministry of Food & Agriculture.

1.5 IMPORTS—1956

Article	Quantity (tons)	Value (Rs.)
Nitrate of soda	663	177,513
Ammonium sulphate	73,334	22,947,390
Urea	2,129	4,192,992
Others	1,911	618,668
Compounds		
Ammonium phosphate	...	...
Others	3	773
Total :	<u>78,040</u>	<u>27,937,336</u>

1.5 IMPORTS—1957

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Fertilisers—Manufactured nitrogenous fertilisers and nitrogenous fertiliser materials		
Nitrate of ammonia (upto 33% nitrogen)		
United Kingdom	75	42,412
Germany West	27	12,326
Total :	<u>102</u>	<u>54,738</u>

(continued)

1.5 IMPORTS—1957 (continued)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Nitrate of lime		
United Kingdom	...	55
Germany West	...	724
France	...	1,416
Total :	...	2,195
Ammonium sulphate		
United Kingdom	7	3,571
Germany West	41,956	14,050,986
Belgium	4	1,264
Italy	13,956	4,836,739
Canada	22	4,211
U.S.A.	28,165	8,280,657
Total	84,110	27,177,428
Urea		
(upto 45% nitrogen)		
United Kingdom	23	16,056
Germany West	...	42
Italy	4,670	2,574,297
Japan	1	725
U.S.A.	2	1,139
Total :	4,696	2,592,259

1.5 IMPORTS—1957 (concluded)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Others		
Germany West	3	1,023
Japan	317	349,995
Total :	320	351,018
Sub-Grand Total :	...	30,177,638
Natural sodium nitrate		
Chile	16,527	4,794,265
Total :	16,527	4,794,265
Sub-Grand Total :	16,527	4,794,265
Grand Total :	...	34,971,903

1.5 IMPORTS—1958

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Nitrogenous fertilisers and nitrogenous fertiliser materials		
Nitrate of lime		
Germany West	...	325
Total :	...	325
Ammonium sulphate		
United Kingdom	30	13,368
U.S.S.R.	13,348	5,367,450
Germany West	64,536	23,405,545

(continued)

1.5 IMPORTS—1958 (continued)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Germany East	...	192
Italy	29,050	9,138,444
Japan	34,195	14,212,054
Canada	19,747	6,636,534
U.S.A.	21,629	5,140,998
Total :	<u>182,535</u>	<u>63,914,585</u>
Urea		
(upto 45% nitrogen)		
Germany West	1	685
Netherlands	...	219
Italy	...	1,656,000
Japan	2,100	2,571,080
Total :	<u>...</u>	<u>4,227,984</u>
Others		
Germany West	2,642	987,918
Netherlands	...	959,400
Belgium	7,500	2,625,000
Italy	2	595
Austria	5,001	1,650,230
Total :	<u>15,145</u>	<u>6,223,243</u>
Sub-Grand Total :	<u>...</u>	<u>74,366,137</u>

1.5 IMPORTS—1958 (concluded)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Natural sodium nitrate		
Chile	6,672	1,712,633
Total :	6,672	1,712,633
Sub-Grand Total :	6,672	1,712,633
Grand Total :	...	76,078,770

NOTE : Owing to the operation of the "Note Pass" procedure obtaining in custom houses for the clearance *inter alia* of Government imports, such import data are deficient.

Source : Monthly Statistics of Foreign Trade of India.

1.6 IMPORTS ON GOVERNMENT ACCOUNT

Year	Ammonium sulphate		Urea		Ammonium sulphate nitrate	
	Quantity (tons)	Value (lakh Rs.)	Quantity (tons)	Value (lakh Rs.)	Quantity (tons)	Value (lakh Rs.)
1951-52	1,39,636	440.0	—	—	—	—
1952-53	2,05,535	721.2	1,027	6.6	—	—
1953-54	76,042	171.5	3,070	20.9	3,119	12.2
1954-55	67,825	212.7	9,158	59.7	8,085	28.6
1955-56	2,03,620	573.4	14,368	96.3	16,416	63.7
1956-57	2,30,000	644.9	9,907	63.4	14,283	61.7
1957-58	3,41,613	1,049.1	59,349	369.0	29,910	114.1
1958-59 (upto Oct. '58)	82,950	182.0	53,452	288.7	65,044	215.5

(continued)

I.6 IMPORTS ON GOVERNMENT ACCOUNT (concluded)

Year	Sodium nitrate		Ammonium phosphate		Nitro-phosphate	
	Quantity (tons)	Value (lakh Rs.)	Quantity (tons)	Value (lakh Rs.)	Quantity (tons)	Value (lakh Rs.)
1951-52	89	0.27	—	—	—	—
1952-53	—	—	4,000	22.12	1,012	5.00
1953-54	—	—	507	2.97	504	2.16

Year	Calcium ammonium nitrate		Ammonium nitrate	
	Quantity (tons)	Value (lakh Rs.)	Quantity (tons)	Value (lakh Rs.)
1953-54	—	—	3,137	19.7
1954-55	—	—	—	—
1955-56	—	—	—	—
1956-57	2,037	6.76	—	—
1957-58	22,138	55.55	—	—
1958-59 (upto Oct. '58)	42,134	7.8	—	—

Source : Development Wing, Ministry of Commerce and Industry.

I.7 EXPORTS—1956

Manures	Quantity (tons)	Value (Rs.)
Bones for manurial purposes	30	63,150
Bonemeal	—	—
Fish manures	1,144	584,495

(continued)

1.7 EXPORTS—1956 (concluded)

Manures	Quantity (tons)	Value (Rs.)
Guano	99	40,790
Hornmeal	3,117	1,447,091
Ammonium sulphate	—	—
Other kinds	7,104	2,068,402
Total :	11,494	4,203,928
Oil cakes	55,952	17,440,098
Grand Total:	67,446	21,644,026

1.7 EXPORTS—1957

Articles & country to which exported	Quantity (tons)	Value (Rs.)
Fertilisers - Crude natural fertilisers of animal or vegetable origin not chemically treated		
Fish fertilisers		
Kuwait	2	633
Singapore	29	22,000
Burma	...	2,600
Total :	...	25,233

(continued)

1.7 EXPORTS—1957 (continued)

Articles & country to which exported	Quantity (tons)	Value (Rs.)
Guano		
Germany West	1,249	533,064
Netherlands	72	28,930
Ceylon	99	40,000
Total :	<u>1,420</u>	<u>601,994</u>
Hoof meal for fertilisers		
United Kingdom	220	92,131
Ceylon	49	23,210
Total :	<u>269</u>	<u>115,341</u>
Horn meal for fertilisers		
United Kingdom	334	152,119
Germany West	5	7,147
Netherlands	2	6,727
Ceylon	525	269,375
Japan	20	9,226
Total :	<u>886</u>	<u>444,594</u>
Sterilised animal meal		
Ceylon	1,694	532,790
Singapore	3,435	1,008,344
Malaya	390	126,051
Sarawak	499	151,768
Total :	<u>6,018</u>	<u>1,818,953</u>

1.7 EXPORTS—1957 (concluded)

Articles & country to which exported	Quantity (tons)	Value (Rs.)
Other natural fertilisers		
Ceylon	397	101,745
Singapore	...	15,120
Japan	77	31,391
Total:	474	148,256
Sub-Grand Total :	...	3,154,371
Natural sodium nitrate		
Aden	2	3,880
Ceylon	2	2,475
Saudi Arabia	9	13,602
Burma	44	64,100
Kenya	...	80
Total :	57	84,137
Sub-Grand Total :	57	84,137
Grand Total :	...	3,238,508

1.7 EXPORTS—1958

Articles & country to which exported	Quantity (tons)	Value (Rs.)
Fertilisers - Crude natural fertilisers of animal or vegetable origin not chemically treated		
Fish fertilisers		
Kuwait	3	900
Singapore	65	19,022
Sarawak	50	15,000
Total :	<u>118</u>	<u>34,922</u>
Guano		
United Kingdom	98	48,834
Germany West	49	21,600
Netherlands	216	97,198
Total :	<u>363</u>	<u>167,632</u>
Hoof meal for fertilisers		
United Kingdom	555	209,454
Total :	<u>555</u>	<u>209,454</u>
Horn meal for fertilisers		
United Kingdom	850	334,800
France	30	11,895
Ceylon	50	23,000
Japan	20	8,916
Total :	<u>950</u>	<u>378,613</u>

(continued)

1.7 EXPORTS—1958 (concluded)

Articles & country to which exported	Quantity (tons)	Value (Rs.)
Sterilised animal meal		
Ceylon	423	131,349
Singapore	1,298	417,591
Malaya	274	91,138
Sarawak	436	132,585
Total :	2,431	772,663
Other natural fertilisers		
United Kingdom	156	52,330
Ceylon	250	52,832
Malaya	2	960
Total :	408	106,122
Sub-Grand Total :	4,825	1,669,406
Natural sodium nitrate		
Aden	2	1,640
Ceylon	3	2,850
Saudi Arabia	23	27,427
Burma	17	17,425
Total :	45	49,342
Sub-Grand Total :	45	49,342
Grand Total :	4,870	1,718,748

Source : Monthly Statistics of Foreign Trade of India.

**1.8 TARGETS OF CONSUMPTION FOR AMMONIUM
SULPHATE IN SECOND PLAN**

	(tons)	
State/District	1959-60	1960-61
Kerala		
1. Trivandrum	4,000	4,500
2. Quilon	9,800	11,500
3. Kottayam	6,000	7,000
4. Trichur	9,900	11,700
5. Palghat	9,500	11,700
6. Kozhikode	5,400	6,800
7. Cannanore	5,400	6,800
Total :	50,000	60,000
Madras		
1. Chingleput (including Madras)	13,700	14,650
2. Coimbatore	18,000	19,300
3. Malabar	1,090	1,200
4. Madurai	10,700	11,300
5. North Arcot	19,100	20,450
6. Ramnathpuram	4,250	4,550
7. Salem	6,500	6,950
8. South Arcot	12,750	13,650
9. Tanjore	17,650	19,100
10. Tiruchirapalli	19,100	20,450
11. Tirunelveli	14,800	15,850
12. The Nilgiris	220	250

(continued)

**1.8 TARGETS OF CONSUMPTION FOR AMMONIUM
SULPHATE IN SECOND PLAN (continued)**

(tons)

State/District	1959-60	1960-61
13. South Kanara	2,140	2,300
14. For manure mixing firms and other food and non-food crops for which no district-wise break-up can be given	20,000	25,000
Total :	<u>1,60,000</u>	<u>1,75,000</u>
Punjab including Pepsu		
<i>Punjab</i>		
1. Hissar	10,960	13,150
2. Rohtak	8,970	10,770
3. Gurgaon	4,000	4,800
4. Karnal	9,000	10,800
5. Ambala	1,000	1,200
6. Kangra	2,000	2,400
7. Hoshiarpur	2,000	2,400
8. Jullundur	7,000	8,400
9. Ludhiana	8,000	9,600
10. Ferozepur	27,000	32,370
11. Amritsar	15,000	18,020
12. Gurdaspur	5,070	6,090
Total :	<u>1,00,000</u>	<u>1,20,000</u>

**I.8 TARGETS OF CONSUMPTION FOR AMMONIUM
SULPHATE IN SECOND PLAN (continued)**

		(tons)	
State/District		1959-60	1960-61
<i>Pepsu</i>			
1. Bhatinda		14,000	17,500
2. Patiala		5,500	7,000
3. Sangrur		5,000	6,500
4. Kapurthala		2,500	3,000
5. Mohindergarh		1,000	1,000
	Total:	<u>28,000</u>	<u>35,000</u>
	Grand Total:	<u>1,28,000</u>	<u>1,55,000</u>
Uttar Pradesh			
1. Dehra Dun		642	828
2. Saharanpur		3,007	3,880
3. Muzaffarnagar		4,836	6,239
4. Meerut		9,065	11,695
5. Bulandshahr		8,816	11,374
6. Aligarh		9,195	11,862
7. Mathura		5,080	6,554
8. Agra		3,836	4,949
9. Mainpuri		5,207	6,717
10. Etah		5,659	7,301
11. Bareilly		1,581	2,039
12. Bijnor		971	1,252
13. Badaun		2,791	3,601
14. Moradabad		3,467	4,490
15. Shahjahanpur		1,589	2,050

**I.8 TARGETS OF CONSUMPTION FOR AMMONIUM
SULPHATE IN SECOND PLAN (continued)**

	(tons)	
State/District	1959-60	1960-61
16. Pilibhit	680	8,774
17. Rampur	379	489
18. Farrukhabad	3,667	4,753
19. Etawah	3,552	4,453
20. Kanpur	4,030	5,199
21. Fetehpur	2,668	3,442
22. Allahabad	3,376	4,356
23. Jhansi	1,606	2,073
24. Jalaun	2,490	3,398
25. Hamirpur	1,661	2,144
26. Banda	2,282	2,944
27. Varanasi	4,663	6,016
28. Mirzapur	2,599	3,353
29. Jaunpur	5,123	6,610
30. Ghazipur	3,085	3,980
31. Ballia	1,645	2,123
32. Gorakhpur	6,983	9,010
33. Deoria	5,727	7,388
34. Basti	8,798	11,350
35. Azamgarh	7,248	9,350
36. Nainital	1,339	1,728
37. Lucknow	1,615	2,084
38. Unnao	2,631	3,394

**I.8 TARGETS OF CONSUMPTION FOR AMMONIUM
SULPHATE IN SECOND PLAN (concluded)**

(tons)		
State/District	1959-60	1960-61
39. Rae Bareli	3,999	5,159
40. Sitapur	1,925	2,484
41. Hardoi	2,419	3,120
42. Kheri	853	1,100
43. Faizabad	4,840	6,244
44. Gonda	4,789	6,178
45. Bahraich	1,135	1,464
46. Sultanpur	4,018	5,184
47. Partapgarh	3,349	4,321
48. Barabanki	2,892	3,731
49. Almora	50	60
50. P. Garhwal	50	60
51. T. Garhwal	50	60
Total :	174,102	232,007
Himachal Pradesh		
1. Mahasu	700	1,400
2. Mandi	500	1,000
3. Sirmur	400	800
4. Chamba	260	520
5. Bilaspur	140	280
Total :	2,000	4,000
Delhi	2,400	2,800
Tripura	600	600

Source : Data supplied by State Governments.

2. PHOSPHATIC FERTILISERS

2.1 MANUFACTURERS AND INSTALLED CAPACITY SUPERPHOSPHATE

Name of the firm	Installed capacity (tons)
ZONE I	
1. The D.C.M. Chemical Works, Delhi	33,000
ZONE II	
1. Alembic Chemical Works Co. Ltd., Baroda	21,000
2. The Anil Starch Products Co. Ltd., Ahmedabad	11,000
3. The Dharamsi Morarji Chemical Co. Ltd., Ambernath	29,700
4. The Eastern Chemical Co. (India), Bombay	5,500
5. Hyderabad Chemicals & Fertilizers Ltd., Bellampalli	16,500
6. Petlad Turkey Red Dye Works, Petlad	990
7. Sonawala Industries Pvt. Ltd., Bombay	8,900
8. West India Chemicals Pvt. Ltd., Mandva	2,310
9. Western Chemical Co., Bombay	3,300
ZONE III	
1. The Phosphate Co. Ltd., Rishra	34,650
2. Bihar State Superphosphate Factory, Sindri Institute	23,100
ZONE IV	
1. The Fertilisers and Chemicals Travancore Ltd., Alwaye	49,500
2. Mettur Chemicals & Fertilisers Ltd., Mettur Dam	1,650
3. The Mysore Chemicals and Fertilisers, Belagula	6,600
4. Parry & Co. Ltd., Ranipet	50,000
5. Premier Chemical Industries, Mysore	6,600
6. Shaw Wallace & Co. Ltd., Madras	30,000
Total :	<u>334,300</u>

(continued)

**2.1 MANUFACTURERS AND INSTALLED CAPACITY
SUPERPHOSPHATE (concluded)**

Licenses for new factories

Name of the firm	Superphosphate production per annum (tons)
1. The Dharamsi Morarji Chemical Co., Ltd., Bombay	14,400
2. Andhra Fertilisers (P) Ltd., Madras	50,000
3. Krishna Industrial Corpn. Ltd., Madras	50,000
4. Adarsh Chemicals & Fertilisers Ltd., Navsari	36,000
Total:	150,400

2.2 PRODUCTION OF SUPERPHOSPHATE

Year/month	Production (tons)	
	Material	Nutrient (P ₂ O ₅)
1952	46,650	7,464
1953	46,419	7,427
1954	109,916	17,587
1955	78,704	12,593
1956	83,269	13,323
1957	145,038	23,206
1958	167,404	26,784
1958 January	11,664	1,866
February	11,610	1,858
March	14,761	2,362
April	12,357	1,977
May	14,778	2,364
June	14,138	2,262

(continued)

2.2 PRODUCTION OF SUPERPHOSPHATE (concluded)

(tons)

Year/month	P r o d u c t i o n	
	Material	Nutrient (P ₂ O ₅)
July	16,656	2,665
August	16,668	2,667
September	15,279	2,445
October	13,295	2,127
November	12,576	2,012
December	13,622	2,179

2.3 DISTRIBUTION OF SUPERPHOSPHATE (16 PER CENT)

Distributed to	1956	1957	1958
1. Andhra Pradesh	23,225	29,771	36,896
2. Assam	149	100	1,174
3. Bihar	8,694	10,301	7,860
4. Bombay	14,568	26,638	27,003
5. Kerala	586	1,329	1,580
6. Madhya Pradesh	1,229	1,826	5,440
7. Madras	19,253	22,040	21,600
8. Mysore	5,387	9,208	14,032
9. Orissa	562	2,735	3,136
10. Punjab	742	2,339	1,814
11. Rajasthan	42	395	1,633
12. Uttar Pradesh	3,269	3,762	12,058
13. West Bengal	7,027	8,791	17,856
14. Jammu & Kashmir	50	50	—

(continued)

2.3 DISTRIBUTION OF SUPERPHOSPHATE (concluded)

Distributed to	1956	1957	1958
15. Delhi	54	207	35
16. Himachal Pradesh	182	100	321
17. Manipur	—	50	20
18. Tripura	5	100	88
19. Pondicherry	—	—	137
20. G.O.I. against tender	—	—	1,082
21. Used in mixtures	12,624	15,106	16,310
Total :	97,648	134,848	170,075

N.B.—1. Figures for 1958 are subject to revision.

2. Figures of superphosphate used in mixtures represent only the quantity utilised by the superphosphate manufacturers who also prepare fertiliser mixtures.

2.4 IMPORTS—1956

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Superphosphate	260	101,155
Rock phosphate	45,874	3,730,170
Others	9,800	904,461
Total :	55,934	4,735,786
Sulphur (Brimstone)		
Germany West	2,774	972,311
U.S.A.	64,511	16,021,041
Other countries	14,102	4,083,720
Total :	81,387	21,077,072

2.4 IMPORTS—1957

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Phosphatic fertilisers and phosphatic fertiliser materials other than basic dephosphorisation slag		
Monoammonium phosphate		
United Kingdom	7	7,832
Germany West	...	746
Total :	<u>7</u>	<u>8,578</u>
Diammonium phosphate		
United Kingdom	3	10,701
Germany West	...	332
Total :	<u>3</u>	<u>11,033</u>
Calcium phosphate disintegrated		
United Kingdom	5	9,133
Germany West	...	697
Total :	<u>5</u>	<u>9,830</u>
Superphosphate		
United Kingdom	...	365
Netherlands	3,352	1,391,798
Belgium	335	638,138
U.S.A.	...	73
Total :	<u>3,687</u>	<u>2,030,374</u>

(continued)

2.4 IMPORTS—1957 (continued)

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Others		
Germany West	...	506
Netherlands	20	9,106
U.S.A.	...	847
	<hr/>	<hr/>
Total :	20	10,459
	<hr/>	<hr/>
Sub-Grand Total :	...	2,070,274
	<hr/>	<hr/>
Natural phosphates		
(ground or unground)		
Israel	1,943	248,267
Jordan	24,535	3,092,272
Uganda	100	16,773
Egypt	48,759	5,547,387
Tunis	2,499	474,449
Morocco	3,100	392,461
Netherlands Antilles	4,400	953,095
Fr. Oceania	20,527	2,795,634
Other Pacific Islands	14,932	2,578,819
	<hr/>	<hr/>
Total :	120,795	16,099,157
	<hr/>	<hr/>

2.4 IMPORTS—1957 (concluded)

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Other mineral phosphates		
United Kingdom	2	7,511
Germany West	4	6,360
U.S.A.	36	40,735
Total :	<u>42</u>	<u>54,606</u>
Sulphur		
United Kingdom	394	194,796
Germany West	270	113,232
Netherlands	39	17,701
Belgium	10	4,760
Italy	12	5,464
U.S.A.	105,555	29,946,197
Total :	<u>106,281</u>	<u>30,282,150</u>

2.4 IMPORTS—1958

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Phosphatic fertilisers and phosphatic fertiliser materials		
Monoammonium phosphate		
United Kingdom	12	14,621
Germany West	—	1,462
Total :	<u>12</u>	<u>16,083</u>

(continued)

2.4 IMPORTS—1958 (continued)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Diammonium phosphate		
United Kingdom	35	68,667
Germany West	—	257
Total :	35	68,924
Basic slag		
Belgium	1	178
Total :	1	178
Calcium phosphate disintegrated		
United Kingdom	—	767
Germany West	—	25
Netherlands	1	2,440
U.S.A.	—	692
Total :	1	3,924
Superphosphate		
United Kingdom	29	5,238
Netherlands	116	52,210
Belgium	117	52,813
U.S.A.	4	1,383
Total :	266	111,644
Others		
United Kingdom	—	802
Jordan	15	1,492
Total :	15	2,294
Sub-Grand Total:	—	203,047

2.4 IMPORTS—1958 (concluded)

Articles & country from which imported	Quantity (tons)	Value (Rs.)
Natural phosphates ground or un- ground		
Rock phosphate		
France	4,252	512,600
Jordan	40,145	3,980,248
Egypt	50,381	4,158,339
Morocco	26,438	2,642,321
Fr. Oceania	44	8,718
Total :	121,260	11,302,226
Other mineral phosphates		
United Kingdom	—	206
Jordan	4,480	409,400
Total :	4,480	409,606
Sub-Grand Total :	125,740	11,711,832
Sulphur		
United Kingdom	446	217,010
Sweden	11	4,765
Germany West	378	137,004
Netherlands	30	11,015
Belgium	5	2,259
China	1,303	180,477
U.S.A.	104,914	18,947,497
Total :	107,087	19,500,027
Sub-Grand Total :	107,087	19,500,027
Grand Total :	...	31,414,906

Source : Monthly Statistics of Foreign Trade of India.

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN**

	(tons)	
State/District	1959-60	1960-61
Andhra Pradesh		
1. Srikakulam	500	600
2. Visakhapatnam	500	600
3. East Godavari	1,500	1,600
4. West Godavari	2,500	2,600
5. Krishna	16,000	16,000
6. Guntur	7,600	7,800
7. Nellore	2,500	2,800
8. Chittoor	500	800
9. Cuddapah	1,500	1,800
10. Kurnool	500	800
11. Anantapur	400	600
12. Hyderabad	1,000	1,000
13. Mahboobnagar	1,500	1,500
14. Medak	1,500	1,500
15. Warangal	1,000	1,000
16. Nalgonda	1,700	1,700
17. Khammam	900	900
18. Karimnagar	2,100	2,100
19. Nizamabad	3,500	3,500
20. Adilabad	400	400
Total :	<u>47,600</u>	<u>49,600</u>

(continued)

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

(tons)

State/District	1959-60	1960-61
Assam		
1. Lakhimpur	60	80
2. Sibsagar	60	80
3. Nowgong	60	80
4. Darrang	60	80
5. Kamrup	60	80
6. Goalpara	60	80
7. Cachar	60	80
8. United K & J Hills	60	80
9. Garo Hills	40	50
10. Mikir Hills	40	50
11. Naga Hills	40	50
12. Mizo Hills	40	50
Total :	<u>640</u>	<u>840</u>
Bihar*	21,500	26,500
Bombay		
1. Ahmedabad	200	350
2. Sabarkantha	20	110
3. Mehsana	50	170
4. Amreli	60	210
5. Banaskantha	10	25
6. Kaira	875	1,000

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

State/District	(tons)	
	1959-60	1960-61
7. Panchmahals	150	175
8. Baroda	600	1,000
9. Broach	150	100
10. Surat	250	325
11. North Satara	1,160	1,160
12. South Satara	500	500
13. Kolaba	—	—
14. Kolhapur	150	200
15. Ratnagiri	30	30
16. Sholapur	120	175
17. Poona	100	100
18. Nasik	400	400
19. Ahmednagar	725	725
20. East Khandesh	300	300
21. West Khandesh	100	100
22. Thana	100	100
23. Dangs, Ahwa	—	—
24. Madhya Saurashtra	800	900
25. Gohilwad	700	850
26. Halar	650	800
27. Sorath	800	900
28. Zalawad	400	400

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

(tons)

State/District	1959-60	1960-61
29. Kutch	200	296
30. Nagpur	550	600
31. Wardha	350	500
32. Bhandara	3,000	3,000
33. Chanda	1,000	1,500
34. Amravati	250	300
35. Akola	550	600
36. Buldana	800	800
37. Yeotmal	300	300
38. Aurangabad	350	400
39. Bhir	125	125
40. Osmanabad	175	175
41. Parbhani	125	150
42. Nander	200	200
	Total :	17,375
		20,051
Kerala		
1. Trivandrum	1,600	2,000
2. Quilon	4,100	5,000
3. Kottayam	2,200	3,000
4. Trichur	4,600	5,300
5. Palghat	4,000	4,900

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

(tons)		
State/District	1959-60	1960-61
6. Kozhikode	1,700	2,400
7. Cannanore	1,800	2,500
Total :	<u>20,000</u>	<u>25,000</u>
Madras		
1. Chinglput	6,450	8,503
2. South Arcot	7,464	9,913
3. North Arcot	6,562	8,717
4. Salem	3,040	4,042
5. Coimbatore	1,627	2,159
6. Tiruchirapalli	5,629	7,474
7. Tanjore	15,754	20,915
8. Madurai	4,166	5,532
9. Ramnathpuram	4,329	5,749
10. The Nilgiris	106	141
11. Tirunelveli	4,050	5,378
12. Kanyakumari	1,712	2,275
Total :	<u>60,889</u>	<u>80,798</u>
Mysore		
1. Bangalore	700	700
2. Mandya	2,500	2,500
3. Chitaldrug	1,200	1,200

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

	(tons)	
State/District	1959-6	1960-61
4. Tumkur	800	800
5. Kolar	600	600
6. Dharwar	40	40
7. Belgaum	300	300
8. Bijapur	100	100
9. North Kanara	40	40
10. Mysore	400	400
11. Shimoga	400	400
12. Chikmagalur	200	200
13. Hassan	200	200
14. South Kanara	600	600
15. Coorg	700	700
16. Raichur	500	500
17. Gulbarga	80	80
18. Bidar	40	40
19. Bellary	600	600
	<hr/>	<hr/>
Total :	10,000	10,000
	<hr/>	<hr/>
Orissa		
1. Cuttack	5,940	6,960
2. Puri	2,190	2,880
3. Balasore	2,190	2,700

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

State/District	(tons)	
	1959-60	1960-61
4. Ganjam	4,000	4,800
5. Mayurbhanj	810	900
6. Phulbani	570	660
7. Keonjhar	810	900
8. Sambalpur	3,750	5,100
9. Sundergarh	810	900
10. Dhenkanal	810	900
11. Koraput	1,510	1,500
12. Kalahandi	810	900
13. Bolangir	810	900
	Total :	25,000
		30,000
Punjab including Pepsu		
<i>Punjab</i>		
1. Hissar	2,500	3,000
2. Rohtak	2,250	2,700
3. Gurgaon	1,000	1,200
4. Karnal	2,250	2,700
5. Ambala	250	300
6. Kangra	500	600
7. Hoshiarpur	500	600
8. Jullundur	1,750	2,100
9. Ferozepur	7,000	8,400

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

(tons)

State/District	1959-60	1960-61
10. Ludhiana	2,000	2,400
11. Amritsar	3,750	4,500
12. Gurdaspur	1,250	1,500
Total :	<u>25,000</u>	<u>30,000</u>
<i>Pepsu</i>		
1. Bhatinda	800	1,000
2. Patiala	1,400	2,000
3. Sangrur	1,300	2,000
4. Kapurthala	1,300	1,800
5. Mohindergarh	200	200
Total :	<u>5,000</u>	<u>7,000</u>
Grand Total :	<u>30,000</u>	<u>37,000</u>
Rajasthan		
1. Ganganagar & Hanumangarh	1,500	1,750
2. Jodhpur	21	25
3. Pali	45	50
4. Jalore	21	25
5. Sirohi	21	25
6. Nagour	21	25
7. Udaipur	219	150
8. Kapsin	21	25

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

	(tons)	
State/District	1959-60	1960-61
9. Bhilwara	45	50
10. Banswara	21	25
11. Kotah	48	56
12. Bundi	21	25
13. Jhalwar	21	25
14. Ajmer	135	156
15. Jaipur	21	25
16. Bharatpur	45	50
17. Alwar	21	25
18. Sikar	8	10
19. Jhunjhunu	4	6
20. Tonk	21	25
21. Sawai Madhopur	45	50
	Total:	
	2,232	2,613
Uttar Pradesh		
1. Dehra Dun	72	108
2. Saharanpur	344 ¹	516
3. Muzaffarnagar	556	834
4. Meerut	1,044	1,566
5. Bulandshahr	1,012	1,518
6. Aligarh	1,040	1,566
7. Mathura	584	876

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

State District	1959-60	1960-61
8. Agra	440	660
9. Mainpuri	600	900
10. Etah	652	978
11. Bareilly	180	270
12. Bijnor	112	168
13. Badaun	320	480
14. Moradabad	320	480
15. Shahjahanpur	184	276
16. Pilibhit	80	120
17. Rampur	44	66
18. Farrukhabad	492	738
19. Etawah	396	594
20. Kanpur	464	696
21. Fatehpur	312	468
22. Allahabad	388	582
23. Jhansi	184	276
24. Jalaun	304	456
25. Hamirpur	192	288
26. Banda	264	396
27. Varanasi	536	804
28. Mirzapur	300	450
29. Jaunpur	588	882
30. Ghazipur	356	534
31. Eallia	188	282

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOSPHATE
IN SECOND PLAN (continued)**

State/District	(tons)	
	1959-60	1960-61
32. Gorakhpur	804	1,206
33. Deoria	660	990
34. Basti	1,012	1,518
35. Azamgarh	832	1,241
36. Nainital	156	234
37. Lucknow	184	276
38. Unnao	304	456
39. Rae Bareli	460	690
40. Sitapur	220	330
41. Hardoi	280	420
42. Kheri	100	150
43. Faizabad	556	834
44. Gonda	552	828
45. Bahraich	132	198
46. Sultanpur	460	690
47. Pratapgarh	384	576
48. Barabanki	332	498
49. Almora	8	10
50. P. Garhwal	8	10
51. T. Garhwal	8	10
Total :	<u>20,000</u>	<u>30,000</u>

**2.5 TARGETS OF CONSUMPTION FOR SUPERPHOS-
PHATE IN SECOND PLAN (concluded)**

State/District	(tons)	
	1959-60	1960-61
West Bengal*	5,200	6,000
Delhi	300	400
Himachal Pradesh		
1. Mahasu	350	700
2. Mandi	250	500
3. Sirmur	200	400
4. Chamba	130	260
5. Bilaspur	70	140
	1,000	2,000
Manipur	60	80
Tripura	100	100

*Districtwise targets not fixed.

Source : Data Supplied by State Governments.

3. POTASSIC FERTILISERS

3.1 IMPORTS—1956

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Muriate of potash	15,927	4,692,185
Others	3,568	1,170,749
Total:	19,495	5,862,934

3.1 IMPORTS—1957

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Potassic fertilisers and potassic fertiliser materials except crude potash salt		
Muriate of potash		
United Kingdom	325	105,917
Germany West	9,481	2,991,161
Germany East	107	30,585
Netherlands	...	715
Belgium	1,051	318,412
France	7,383	2,353,364
U.S.A.	...	20
Total:	18,337	5,800,174
Sulphate of potash		
Germany West	4,264	1,509,962
Germany East	534	18,443
Belgium	825	282,776
France	3,229	1,129,373
Italy	200	74,868
Total:	19,052	3,015,422
Others		
Germany West	26	19,215
Total:	26	19,215
Grand Total:	37,415	8,815,596

(continued)

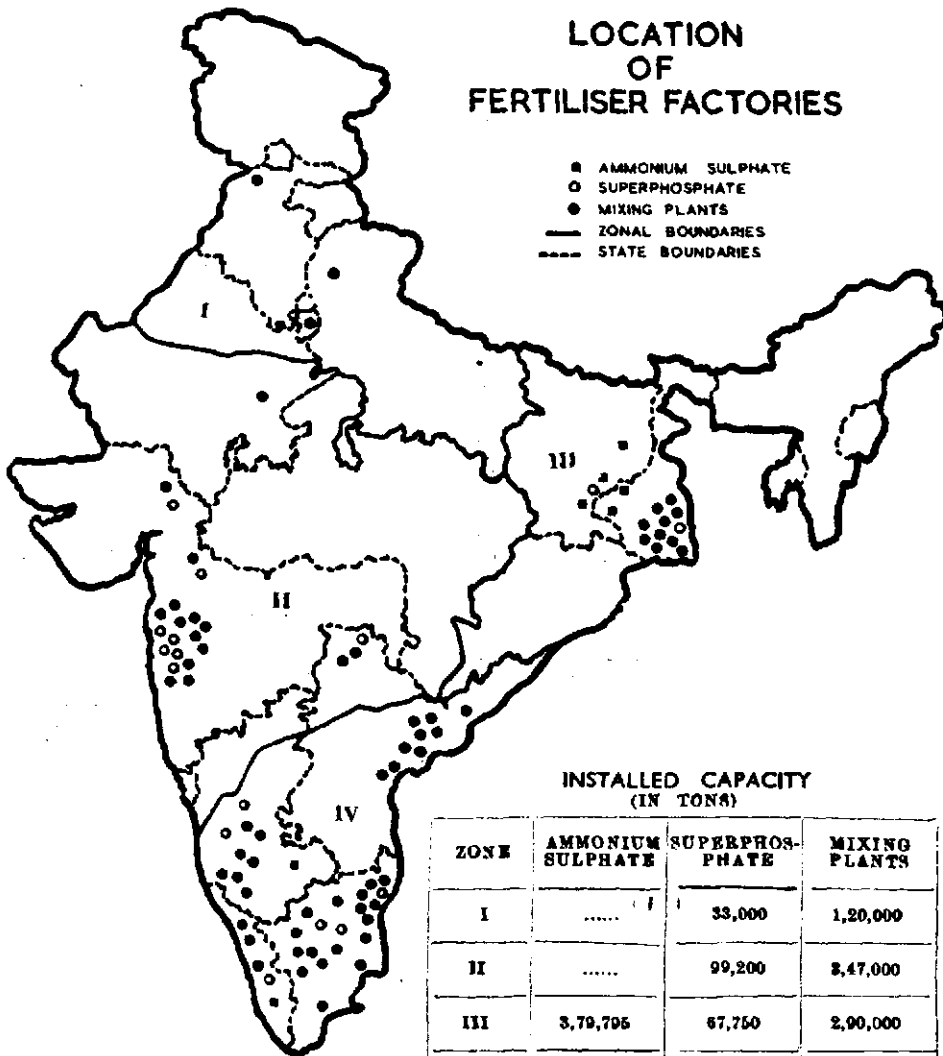
3.1 IMPORTS—1958 (concluded)

Articles and country from which imported	Quantity (tons)	Value (Rs.)
Potassic fertilisers and potassic fertiliser materials		
Muriate of potash		
U.S.A.	—	109
United Kingdom	...	1,042
Germany West	11,604	3,022,290
Germany East	7,060	1,703,706
Belgium	1,210	334,362
France	5,164	1,496,774
Total:	25,038	6,558,283
Sulphate of potash		
Germany West	1,767	612,614
Belgium	30	10,188
France	1,154	385,732
Japan	10	3,753
Total:	2,961	1,012,287
Sub-Grand Total:	27,999	7,570,570
Crude potash salts		
Kainite salts		
Netherlands	...	30
Others		
Germany West	7	1,034
Morocco	6,004	644,000
Total:	6,011	645,034
Sub-Grand Total:	6,011	645,064
Grand Total:	33,810	8,215,634

Source : Monthly Statistics of Foreign Trade of India

LOCATION OF FERTILISER FACTORIES

- AMMONIUM SULPHATE
- SUPERPHOSPHATE
- MIXING PLANTS
- ZONAL BOUNDARIES
- - - STATE BOUNDARIES

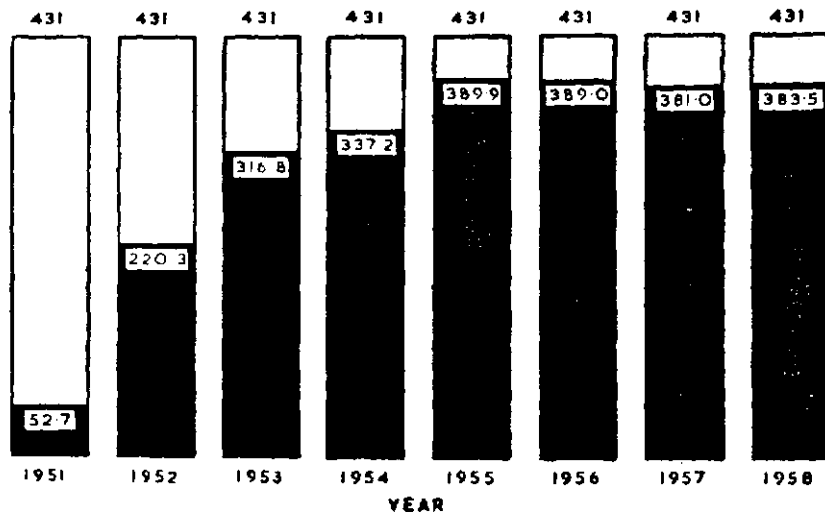


INSTALLED CAPACITY
(IN TONS)

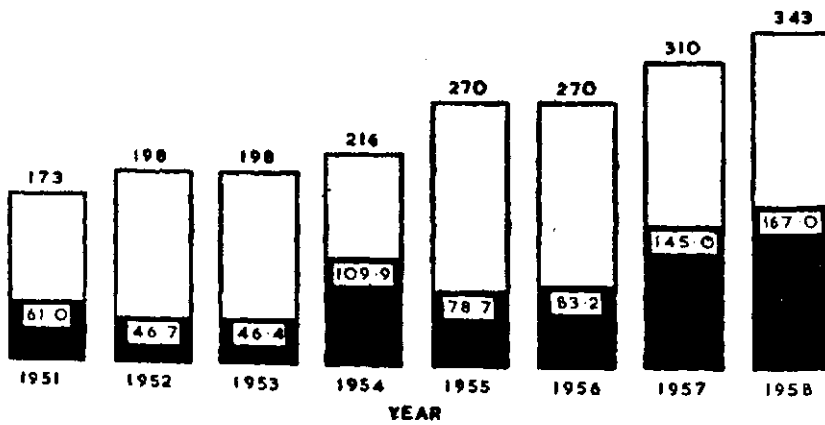
ZONE	AMMONIUM SULPHATE	SUPERPHOS- PHATE	MIXING PLANTS
I	.....	33,000	1,20,000
II	.....	99,200	2,47,000
III	3,79,795	67,750	2,90,000
IV	51,050	1,44,350	7,75,000

INSTALLED CAPACITY & PRODUCTION

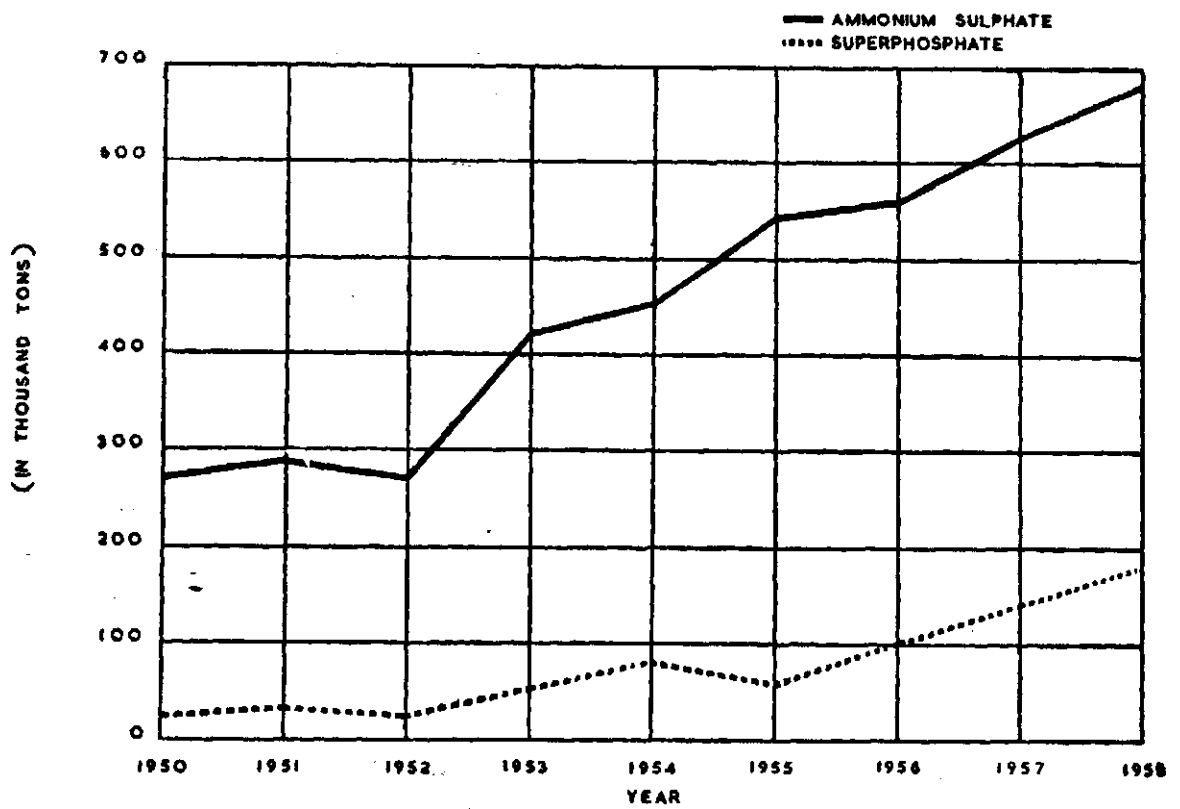
AMMONIUM SULPHATE (IN THOUSAND TONS)

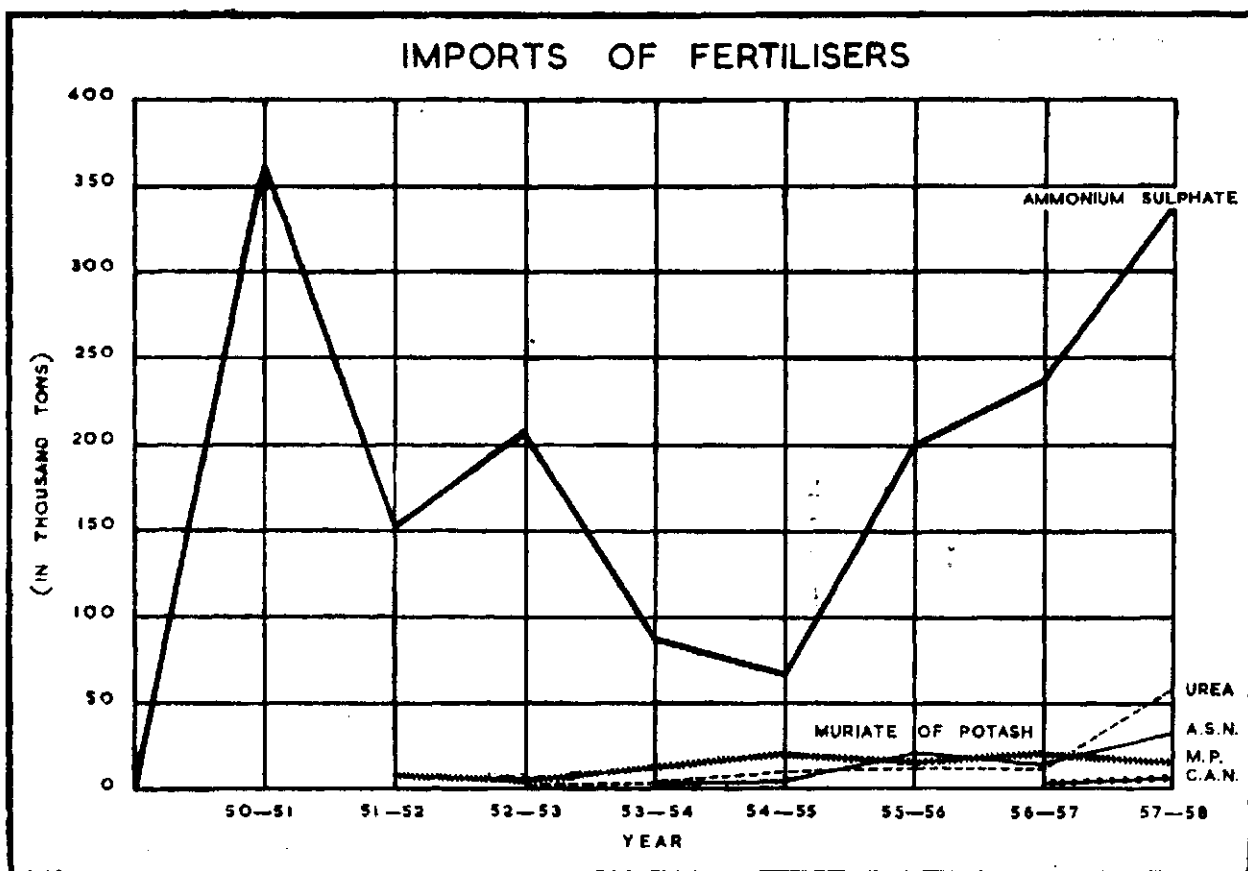


SUPERPHOSPHATE (IN THOUSAND TONS)



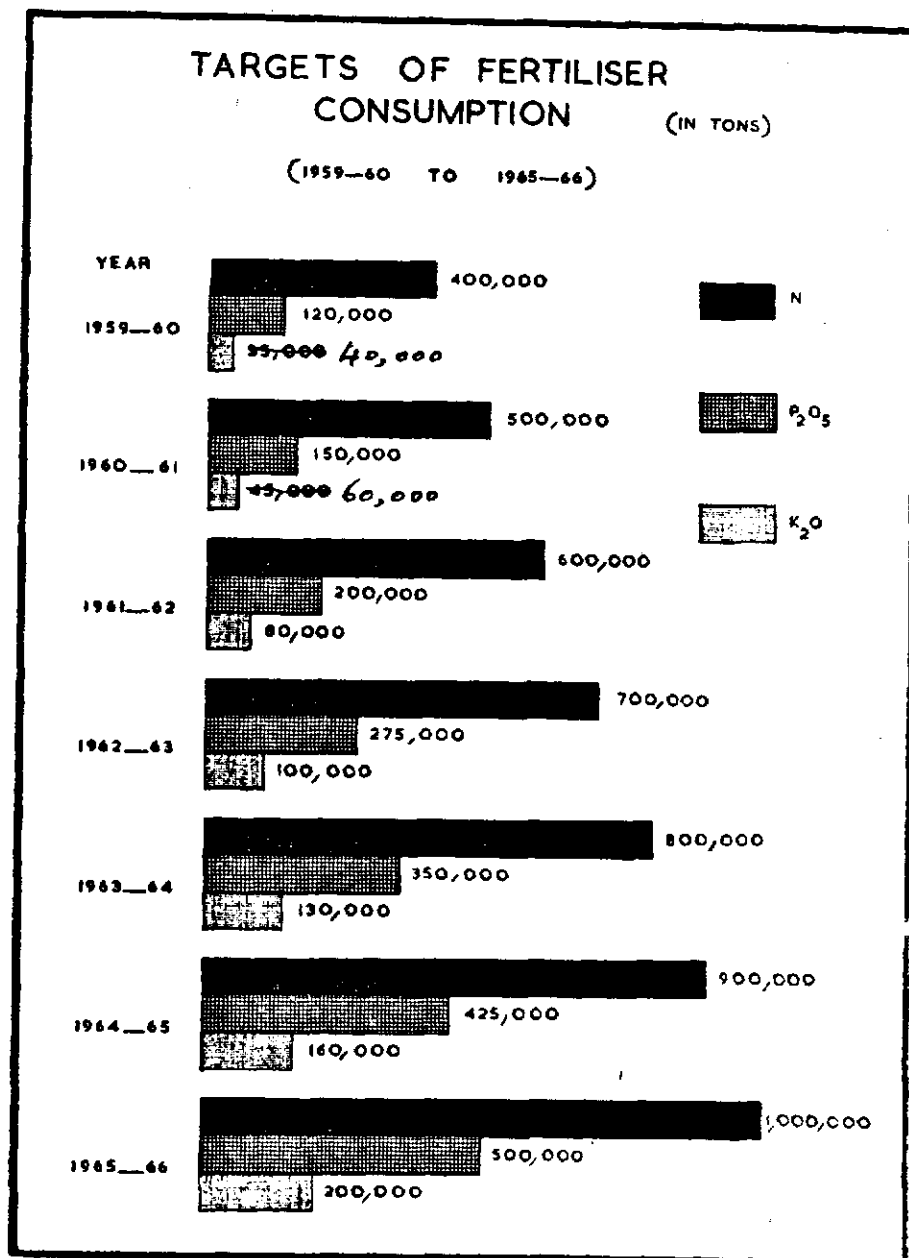
DISTRIBUTION OF FERTILISERS





A.S.N. = AMMONIUM SULPHATE-NITRATE
 C.A.N. = CALCIUM AMMONIUM NITRATE

M.P. = MURIATE OF POTASH



4. FERTILISER MIXTURES

4.1 MANUFACTURERS AND INSTALLED CAPACITY

Name of the firm	Installed capacity in tons
ZONE I	
1. The D.C.M. Chemical Works, Delhi	50,000
2. Rallis India Limited, Kanpur	50,000
3. Shambunath & Sons, Amritsar	20,000
ZONE II	
1. Alembic Chemical Works Co., Ltd., Baroda	20,000
2. Agri-Orient (Industries) Ltd., Bombay	10,000
3. Agri-Union Services, Bombay, Lasalgaon, Poona	5,000
4. The Anil Starch Products, Ahmedabad	20,000
5. Bharat Pulverising Mills Private Ltd., Bombay	5,000
6. The Dharamsi Morarji Chemical Co., Ltd., Bombay	50,000
7. Eastern Chemical Co., Bombay	10,000
8. The Hyderabad Chemicals & Fertilizers Ltd., Bellampalli and Bodhan	100,000
9. Nanavati & Co., Ltd., Bombay	20,000
Parry & Co., Ltd., Bombay	20,000
11. Raj Traders Ltd., Jaipur	5,000
12. Rallis India Ltd., Bombay	50,000
13. Shah Moteejee Meghajee, Bombay	5,000
14. Shaw Wallace & Co., Ltd., Bombay	12,000
15. Sonawala Industries, Bombay	10,000
16. Talukdar Chemicals & Fertilisers Co., Bombay	5,000
17. Western Chemical Co., Bombay	10,000
ZONE III	
1. Imperial Chemical Industries (India) Private Ltd., Calcutta	20,000

(continued)

4.1 MANUFACTURERS AND INSTALLED CAPACITY
(continued)

Name of the firm	Installed capacity in tons
2. Jardine Henderson Ltd., Calcutta	20,000
3. Khaitan Sons & Co., (Manure) Private Ltd., Calcutta	50,000
4. Manure Supply Agency, Calcutta	20,000
5. P. C. Chatterjee & Co., Calcutta	20,000
6. Rallis India Ltd., Calcutta	50,000
7. R. C. Mitter & Sons, Calcutta	20,000
8. R. N. Chatterjee & Co., Calcutta	20,000
9. Shaw Wallace & Co., Ltd., Calcutta	50,000
10. Talukdar & Co., Calcutta	20,000
ZONE IV	
1. Bharat Manure Co., Chirala	20,000
2. Boda Subrahmanyam & Co., Tapeswaram	10,000
3. Cochin Fertiliser Co., Trichur	20,000
4. Coimbatore Chemicals & Fertilisers Ltd., Podanur	10,000
5. Deccan Fertiliser Co., Coimbatore	20,000
6. The Fertilisers & Chemicals (Travancore) Ltd., Alwaye	100,000
7. The Hyderabad Chemicals & Fertilizers Ltd., Bezwada	50,000
8. The Hindustan Fertilisers & Bone Mills Ltd., Madras	10,000
9. The Mettur Fertilisers Company (Private) Ltd., Coimbatore	10,000
10. The Mysore Chemicles & Fertilisers Ltd., Mysore	20,000
11. The Mysore Fertiliser Co., Madras, Bezwada, Nellikuppam	100,000
12. Mysore Scientific Fertilisers, Kolar	10,000

4.1 MANUFACTURERS AND INSTALLED CAPACITY
(concluded)

Name of the firm	Installed capacity in tons
13. Nilgiri Fertilisers, Coonoor	20,000
14. Parry & Co., Ltd., Ranipet, Cuddalore, Mettupalayam, Guntur, Cochin & Mysore	100,000
15. Peirce, Leslie & Co., Ltd., Calicut	20,000
16. Premier Chemicals Co., Ltd., Mysore	20,000
17. Premier Fertiliser Co., Coimbatore	10,000
18. Rallis India Ltd., Madras, Mangalore, Mysore, Guntakal, Hospet, Cochin, Mettupalayam, Cuddalore and Tiruchirapalli	100,000
19. The Scientific Fertiliser Co., (Private) Ltd., Madras	20,000
20. Shaw Wallace & Co., Ltd., Madras, Karamadai, Bezwada and Mysore	75,000
21. T. Stanes & Co., Ltd., Coimbatore	20,000
22. Yercaud Coffee Curing Works, Kannankurichi	10,000
TOTAL	1,542,000

**4.2 PROGRESS OF FERTILISER PRODUCTION AND
DISTRIBUTION 1951-58**

(Tons)

Year	Nitrogen (N)			Phosphorus (P ₂ O ₅)		Potash (K ₂ O) ⁺
	Produced	Imported	Distributed	Produced	Distributed	Distributed
1951	10,500	20,800	58,700	9,780	6,880	7,669
1952	45,163	35,450	55,600	7,464	4,592	3,123
1953	64,942	21,050	85,500	7,427	8,131	8,545
1954	69,120	21,630	98,000	17,587	14,790	14,244
1955	79,927	52,020	111,000	12,593	12,812	10,826
1956	79,743	55,500	125,000	13,323	15,624	10,940
1957	78,115	103,695	150,000	23,206	21,576	15,528
1958	78,615	100,000 [@]	190,000 [@]	26,784	27,212	16,503

⁺All K₂O imported.

5. PRICES

5.1 PRICES OF FERTILISERS

(Rs. per ton)

Year	Month	Ammonium sulphate	Urea	Ammonium sulphate-nitrate	Calcium ammonium nitrate	Super-phosphate
1955		315	570	...	...	...
1956	Jan-May	315	570	...	...	...
	Jun-Aug	315	600	...	...	...
	Sep-Dec	315	600	380	...	...
1957	Jan-Apr	315	600	...	...	...
	May	350	600	420	330	...
	Jun-Dec	350	710	420	330	...
1958	Jan-Apr	350	710	420	330	...
	May-Sep	350	710	420	330	205-230
	Sep-Dec	350	695	415	330	205-230

The prices of ammonium sulphate, urea, ammonium sulphate-nitrate, and calcium ammonium nitrate are wholesale prices, delivered at any railway station.

The price of superphosphate is a wholesale price, delivered f. o. r. despatching station. The price varies from factory to factory and in some cases is subject to off-season rebates and commission for bulk purchases.

Source:- Agricultural Situation in India (for nitrogenous fertilisers).

6. OTHER STATISTICS

6.1 AVERAGE ANALYSES OF IMPORTANT PLANT FOOD MATERIALS

(per cent nutrient)

Material	Nitrogen (N)	Phosphoric Acid (P_2O_5)	Potash (K_2O)
Fertilisers			
Nitrate of Potash 70%	8-10	—	30-33
Ammonium phosphate 60%	17-18	20-21	—
Urea	46	—	—
Nitrate of soda	15-16	—	—
Ammonium sulphate	20.6	—	—
Ammonium sulphate-nitrate	26	—	—
Ammonium nitrate	32-33	—	—
Calcium cyanamide	18-20	—	—
Nitrolime	20-21	—	—
Superphosphate (single)	—	16-20	—
Superphosphate (concentrated)	—	45-50	—
Hyperphosphate	—	26	—
Basic slag	—	14-18	—
Mineral phosphate (various grades)	—	25-36	—
Muriate of potash	—	11	60
Sulphate of potash	—	—	48-52
Organic Manures			
Castor cake	4.3	1.8	1.3
Cottonseed cake (undecorticated)	3.9	1.8	1.6
Karanj or Honge cake	3.9	0.9	1.2

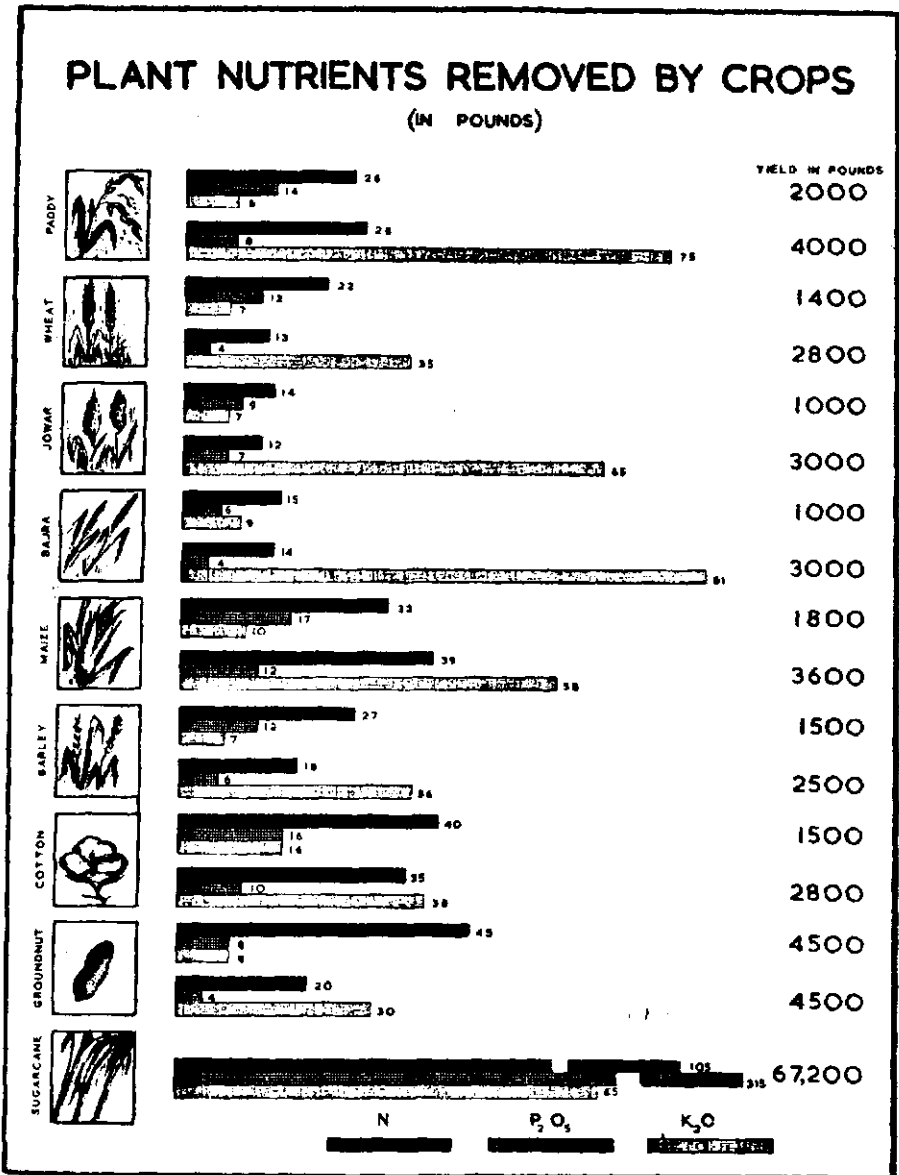
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6.1 AVERAGE ANALYSES OF IMPORTANT PLANT FOOD MATERIALS (concluded)

(per cent nutrient)

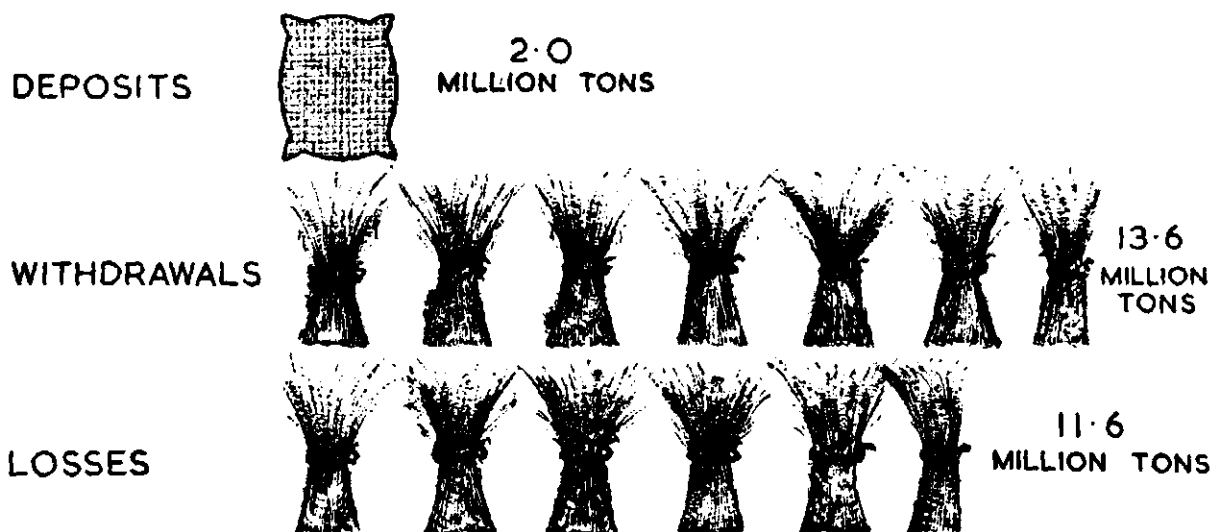
Material	Nitrogen (N)	Phosphoric acid (P ₂ O ₅)	Potash (K ₂ O)
<i>Mahua</i> or <i>Ippi</i> cake	2.5	0.8	1.8
<i>Neem</i> cake	5.2	1.0	1.4
<i>Safflower</i> cake (undecorticated)	4.9	1.4	1.2
<i>Coconut</i> cake	3.0	1.9	1.8
<i>Groundnut</i> cake	7.3	1.5	1.3
<i>Jambo</i> cake	4.9	1.6	1.9
<i>Linseed</i> cake	5.5	1.4	1.3
<i>Niger</i> cake	4.7	1.8	1.3
<i>Rapeseed</i> cake	5.2	1.8	1.2
<i>Safflower</i> cake (decorticated)	7.9	2.2	1.9
<i>Sesamum</i> or <i>Til</i> cake	6.2	2.0	1.2
Manures of Animal Origin			
Dried blood	10.0	1.5	1.0
Fish manures	4.0—10.0	3.0—9.0	0.3—1.5
Bonemeal (raw)	3.0—4.0	20.0—25.0	—
Bonemeal (steamed)	1.0—2.0	25.0—30.0	—
Bulky Organic Manures			
Farmyard manure	0.5—1.5	0.4—0.8	0.5—1.9
Compost (urban)	1.0—2.0	1.0	1.5
Compost (rural)	0.4—0.8	0.3—0.6	0.7—1.0
Green manure (various analyses)	0.5—0.7	0.1—0.2	0.8—1.6

Source :—Farm Bulletin No. 7, I.C.A.R.



SOIL BANK OF INDIA

(PLANT FOOD SAVINGS DEPARTMENT)



SOURCE : I.C.A.R. RESEARCH BULLETIN NO. 30

6.2 INDIAN STANDARD SPECIFICATIONS FOR FERTILISERS

AMMONIUM SULPHATE

Description—The material shall be in the form of colourless crystals and free from visible impurities.

Composition—The material shall comply with the requirements in Table I.

TABLE I
Requirements for ammonium sulphate

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture, per cent by weight, max.	1.0
(ii)	Ammoniacal nitrogen, per cent by weight, min.	20.6
(iii)	Free acidity (as H_2SO_4) per cent by weight, max.	0.025
(iv)	Arsenic (as As_2O_3), per cent by weight, max.	0.01
(v)	Pyridine (C_5H_5N), per cent by weight, max.	0.01

Full details in publication No. IS : 826-1955 of the Indian Standards Institution.

BONEMEAL (STEAMED)

Distribution—The material shall be in the form of particles, without undue amount of fluffy or foreign matter, and free flowing.

Particle size—Not less than 90 per cent by weight of the material shall pass through IS Sieve 120.

The material shall comply with the requirements given in Table I.

With respect to steamed bonemeal containing more than 16.0 per cent by weight of available phosphates soluble in 2 per cent citric acid solution, the manufacturer should be entitled to a pro-rata premium

for every unit (i.e., 1 per cent by weight) of available phosphate (as P_2O_5) soluble in 2 per cent citric acid solution over and above the minimum 16.0 per cent prescribed.

TABLE I
Requirements for bonemeal (steamed)

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Free moisture, per cent by weight, max.	7.0
(ii)	Total phosphates (as P_2O_5) per cent by weight, (dry basis), min.	22.0
(iii)	Available phosphates (as P_2O_5) solution in 2 per cent citric acid solution, per cent by weight, (dry basis), min.	16.0

Full details in publication No. IS : 1014-1950 of the Indian Standards Institution.

BONEMEAL (RAW)

Description--The material shall be in the form of particles, without undue amount of fluffy or foreign matter, and free flowing.

Particle size--The material shall pass wholly through IS Sieve 240 (aperture 2,399 microns) of which not less than 70 per cent shall pass through IS Sieve 80 (aperture 790 microns).

Composition--The material shall comply with the requirements given in Table I.

TABLE I
Requirements for bonemeal (raw)

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture, per cent by weight, max.	8.0
(ii)	Total phosphates (as P_2O_5) per cent by weight, min.	20.0
(iii)	Available phosphates (as P_2O_5), soluble in 2 per cent citric acid solution, per cent by weight, min.	8.0
(iv)	Total nitrogen, per cent by weight, min.	3.0

Full details in publication No. IS : 853-1956 of the Indian Standards Institution.

DICALCIUM PHOSPHATE

Description—The material shall be in the form of fine powder, white in colour and free from grit and other extraneous impurities.

The material shall comply with the requirements given in Table I.

TABLE I
Requirements for dicalcium phosphate

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture per cent, by weight, max.	8.0
(ii)	Available phosphates (as P_2O_5) soluble in neutral ammonium citrate solution, per cent by weight, min.	34.0
(iii)	Chlorides (as Cl), per cent by weight, max.	1.0
(iv)	Fluorides (as F), per cent by weight, max.	0.5

Full details in publication No. IS : 1023-1956 of the Indian Standards Institution.

KOTKA PHOSPHATE

Description—The material shall be free from lumps and hard cakes or in a form mutually agreed upon between the purchaser and the vendor.

The material shall comply with the requirements given in Table I.

TABLE I

Requirements for kotka phosphate

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture, per cent by weight, max.	8.0
(ii)	Water soluble phosphates (as P_2O_5) per cent by weight, min.	8.0
(iii)	Available phosphates (as P_2O_5) soluble in neutral ammonium citrate solution plus water soluble phosphates (as P_2O_5), per cent by weight, min.	16.0

Full details in publication No. IS : 1022-1956 of the Indian Standards Institution.

SUPERPHOSPHATE (TENTATIVE)

Form and condition—Superphosphate shall be free from excessive lumps and shall not form a hard cake on storage.

Composition—The material shall comply with the requirements in Table I.

TABLE I
Requirements for superphosphate

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture content, per cent by weight, max.	12.0
(ii)	Free phosphoric acid (as P_2O_5), per cent by weight, max.	3.0
(iii)	Water soluble phosphates (as P_2O_5), per cent by weight, min.	16.0
(iv)	Available phosphates (as P_2O_5) soluble in neutral ammonium citrate solution and water soluble phosphates (as P_2O_5), per cent by weight, min.	16.5

Full details in Amendment No. 1 of August 1956 to IS : 294-1951 of the Indian Standards Institution.

TRIPLE SUPERPHOSPHATE

Description—The material shall be free from excessive lumps and shall not form hard cakes on storage.

The material shall comply with the requirements given in Table I.

With respect to triple superphosphate containing more than 40.0 per cent by weight of available phosphate, soluble in water, the manufacturer should be entitled to a pro-rata premium for every unit (1.0 per cent of water soluble phosphate over and above the minimum 40.0 per cent) prescribed (see Table I, item iii).

TABLE I
Requirements for triple superphosphate

Sr. No.	Characteristic	Requirement
1	2	3
(i)	Moisture, per cent by weight, max.	12.0
(ii)	Free phosphoric acid (as P_2O_5), per cent by weight, max.	3.0
(iii)	Water soluble phosphates (as P_2O_5), per cent by weight, min.	40.0

Full details in publication No. IS : 1013-1956 of the Indian Standards Institution.

6.3 CONVERSION TABLE—PRICE PER TON OF FERTILISER TO PRICE PER POUND OF NUTRIENT

% Nutrient content price per long ton of fertiliser (Rs.)	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28
Price per pound of nutrient (in nP)															
150	67.0	60.9	55.8	51.5	47.8	44.6	41.8	39.4	37.2	35.2	33.5	30.4	27.9	25.8	23.9
155	69.1	62.9	57.6	53.2	49.4	46.1	43.2	40.7	38.4	36.4	34.6	31.5	28.8	26.6	24.7
160	71.4	64.9	59.5	54.9	51.0	47.6	44.6	42.0	39.7	37.6	35.7	32.5	29.8	27.5	25.5
165	73.6	66.9	61.4	56.7	52.6	49.1	46.0	43.3	40.9	38.8	36.8	33.5	30.7	28.3	26.3
170	75.9	68.9	63.2	58.4	54.2	50.6	47.4	44.6	42.2	39.9	37.9	34.5	31.6	29.2	27.1
175	78.1	71.0	65.1	60.1	55.8	52.1	48.8	46.0	43.4	41.1	39.1	35.5	32.6	30.0	27.9
180	80.4	73.0	66.9	61.8	57.4	53.6	50.2	47.3	44.6	42.3	40.2	36.5	33.5	30.9	28.7
185	82.6	75.1	68.8	63.5	59.0	55.1	51.6	48.6	45.9	43.5	41.3	37.5	34.4	31.8	29.5
190	84.8	77.1	70.7	65.2	60.6	56.5	53.0	49.9	47.1	44.6	42.4	38.5	35.3	32.6	30.3
195	87.1	79.1	72.5	66.9	62.2	58.0	54.4	51.2	48.4	45.8	43.5	39.6	36.3	33.5	31.1
200	89.3	81.2	74.4	68.7	63.8	59.5	55.8	52.5	49.6	47.0	44.6	40.6	37.2	34.3	31.9
210	93.8	85.2	78.1	72.1	67.0	62.5	58.6	55.1	52.1	49.3	46.9	42.6	39.1	36.1	33.5
220	98.2	89.3	81.8	75.5	70.2	65.5	61.4	57.8	54.6	51.7	49.1	44.6	40.9	37.8	35.1
230	102.6	93.3	85.6	79.0	73.4	68.5	64.2	60.4	57.0	54.0	51.3	46.7	42.8	39.5	36.7
240	107.1	97.4	89.3	82.4	76.5	71.4	67.0	63.0	59.5	56.4	53.6	48.7	44.6	41.2	38.3
250	111.6	101.5	93.0	85.8	79.7	74.4	69.8	65.7	62.0	58.4	55.8	50.7	46.5	42.9	39.9
260	116.1	105.5	96.7	89.3	82.9	77.4	72.5	68.3	64.5	61.1	58.0	52.8	48.4	44.6	41.5
270	120.5	109.6	100.4	92.7	86.1	80.4	75.3	70.9	66.0	63.4	60.3	54.8	50.2	46.4	43.0
280	125.0	113.6	104.2	96.2	89.3	83.3	78.1	73.5	69.4	65.8	62.5	56.8	52.1	48.1	44.6
290	—	117.7	107.9	99.6	92.5	86.3	80.9	76.2	71.9	68.1	64.7	58.8	53.9	49.8	46.2
300	—	121.7	111.6	103.0	95.7	89.3	83.7	78.8	74.4	70.5	67.0	60.9	55.8	51.5	47.8
325	—	—	120.9	111.6	103.6	96.7	90.7	85.3	80.6	76.4	72.5	65.9	60.5	55.8	51.8
350	—	—	—	120.2	111.6	104.2	97.7	91.9	86.8	82.2	78.1	71.0	65.1	60.1	55.8
375	—	—	—	—	119.6	104.6	97.7	91.9	86.8	82.2	78.1	71.0	65.1	60.1	55.8
400	—	—	—	—	—	119.0	111.6	105.0	99.2	93.9	89.3	81.2	74.4	68.7	63.8
425	—	—	—	—	—	—	118.6	111.6	105.4	99.9	94.9	86.2	79.1	73.0	67.8
450	—	—	—	—	—	—	—	118.2	111.6	105.7	100.4	91.3	83.7	77.3	71.7
500	—	—	—	—	—	—	—	—	—	117.5	111.6	101.5	93.0	85.9	79.7
550	—	—	—	—	—	—	—	—	—	—	—	111.6	102.3	94.4	86.1
600	—	—	—	—	—	—	—	—	—	—	—	—	—	111.6	103.6
650	—	—	—	—	—	—	—	—	—	—	—	—	—	—	111.6
700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	111.6

(continued)

6.3 CONVERSION TABLE—PRICE PER TON OF FERTILISER TO PRICE PER POUND OF NUTRIENT (concluded)

% Nutrient content Price per long ton of fertiliser (Rs)	30	32	34	36	38	40	45	50	55	60	65	70
	Price per pound of nutrient (in nP)											
170	25.3	23.7	22.3	21.1	—	—	—	—	—	—	—	—
175	26.0	24.4	23.0	21.7	—	—	—	—	—	—	—	—
180	26.8	25.1	23.6	22.3	21.1	—	—	—	—	—	—	—
185	27.5	25.8	24.3	22.9	21.7	—	—	—	—	—	—	—
190	28.3	26.5	24.9	23.6	22.3	21.2	—	—	—	—	—	—
195	29.0	27.2	25.6	24.2	22.5	21.8	—	—	—	—	—	—
200	29.8	27.9	26.3	24.8	23.5	22.3	—	—	—	—	—	—
210	31.3	29.3	27.6	26.0	24.7	23.4	20.8	—	—	—	—	—
220	32.7	30.7	28.9	27.3	25.8	24.6	21.8	—	—	—	—	—
230	34.2	32.1	30.2	28.5	27.0	25.7	22.8	20.5	—	—	—	—
240	35.7	33.5	31.5	29.8	28.2	26.8	23.8	21.4	—	—	—	—
250	37.2	34.9	32.8	31.0	29.4	27.9	24.8	22.3	20.3	—	—	—
260	38.7	36.3	34.1	32.2	30.5	29.0	25.8	23.2	21.1	—	—	—
270	40.2	37.7	35.5	33.5	31.7	30.1	26.8	24.1	21.9	20.1	—	—
280	41.7	39.1	36.8	34.7	32.9	31.2	27.8	25.0	22.7	20.8	—	—
290	43.2	40.5	38.1	36.0	34.1	32.4	28.8	25.9	23.5	21.6	—	—
300	44.6	41.9	39.4	37.2	35.2	33.5	29.8	26.8	24.3	22.3	20.6	—
325	48.4	45.3	42.7	40.3	38.2	36.3	32.2	29.0	26.4	24.2	22.3	20.7
350	52.1	48.8	46.0	43.4	41.1	39.1	34.7	31.2	28.4	26.0	24.0	22.3
375	55.8	52.3	49.2	46.5	44.6	41.9	37.2	33.5	30.4	27.9	25.8	23.9
400	59.5	55.8	52.5	49.6	46.9	44.6	39.7	35.7	32.5	29.8	27.5	25.5
425	63.2	59.3	55.8	52.7	49.9	47.4	42.2	37.9	34.5	31.6	29.2	27.1
450	67.0	62.8	59.1	55.8	52.9	50.2	44.6	40.1	36.5	33.5	30.9	28.7
500	74.4	69.8	65.7	62.0	58.7	55.8	49.6	44.6	40.6	37.2	34.3	31.9
550	81.8	76.7	72.2	68.2	64.6	61.4	54.6	49.1	44.6	40.9	37.8	35.1
600	89.3	83.7	78.8	74.4	70.5	67.0	59.5	53.6	48.7	44.6	41.2	38.3
650	96.7	90.7	85.3	80.6	76.4	72.5	64.5	58.0	52.8	48.4	44.6	41.5
700	104.2	97.7	91.9	86.8	82.2	78.1	69.4	62.5	56.8	52.1	48.1	44.6
750	111.6	104.6	98.5	92.0	88.1	83.7	74.4	67.0	60.9	55.8	51.5	47.8
800	119.0	111.6	105.0	99.2	94.0	89.3	79.3	71.4	64.9	59.5	54.9	51.0
850	126.5	118.6	111.6	105.4	99.9	94.9	84.3	75.9	69.0	63.2	58.4	54.2
900	—	125.6	118.2	111.6	105.7	100.4	89.3	80.4	73.1	67.0	61.8	57.4
950	—	—	—	117.8	111.6	106.0	94.2	84.8	77.1	70.7	65.2	60.6
1000	—	—	—	124.0	117.3	111.6	99.2	89.3	81.2	74.4	68.7	63.8

6.4 POSSIBLE SAVINGS IN FOREIGN EXCHANGE DUE TO IMPORT OF FERTILISERS

		Rice	
<i>Data</i>			
Price per ton of N	=		Rs. 1,500
Price per ton of imported rice	=		Rs. 690*
One ton of N gives an increased yield of 8.67 tons of rice.			
<i>Calculations</i>			
Cost of 8.67 tons imported rice	=		Rs. 5,982
Price per ton of N	=		Rs. 1,500
Savings by import of 1 ton N to produce 8.67 tons of rice	=		Rs. 4,482
Thus every rupee spent on imported N saves Rs. 2.99 on rice import.			

Import of rice (tons)	N required to produce the rice imported (tons)	Savings due to import of N (lakh Rs.)
50,000	5,767	258.5
1,00,000	11,534	517.0
1,50,000	17,301	775.5
2,00,000	23,068	1,034.0
2,50,000	28,835	1,292.5
3,00,000	34,602	1,551.0
3,50,000	40,369	1,809.5
4,00,000	46,136	2,068.0
4,50,000	51,903	2,326.5
5,00,000	57,770	2,585.0
6,00,000	69,204	3,102.0
7,00,000	80,738	3,619.0
8,00,000	92,272	4,136.0
9,00,000	1,03,806	4,653.0
10,00,000	1,15,340	5,170.0

*Based on price of rice under Indo-American Trade Agreement.

Wheat

Basic data

Price per ton of N	=	Rs. 1,500
Price per ton of imported wheat	=	Rs. 350*
One ton of N gives an increased yield of 11.2 tons of wheat.		

Calculations

Cost of 11.2 tons of imported wheat	=	Rs. 3,920
Price per ton of N	=	Rs. 1,500
Savings by import of 1 ton of N to produce 11.2 tons of wheat	=	Rs. 2,420
Thus every rupee spent on imported N saves Rs. 1.613 on wheat import.		

Import of wheat (lakh tons)	N required to produce the wheat imported (tons)	Savings due to import of N (lakh Rs.)
1	8,930	215.5
2	17,860	431.0
3	26,790	646.5
4	35,720	862.0
5	44,650	1,077.5
6	53,580	1,293.0
7	62,510	1,508.5
8	71,440	1,724.0
9	80,370	1,939.5
10	89,300	2,155.0
15	1,33,950	3,232.5
20	1,78,600	4,310.0
25	2,23,250	5,387.5
30	2,67,900	6,465.0
35	3,12,550	7,542.5
40	3,57,200	8,620.0
45	4,01,850	9,697.5
50	4,46,500	10,775.0

*Based on price of wheat under Indo-American Trade Agreement.

Cotton*Data*

Price per ton of N = Rs. 1,500

Price per ton of imported cotton = Rs. 5,000

One ton of N gives an increased yield of 1.8 tons of lint cotton.

Calculations

Cost of 1.8 tons of imported cotton = Rs. 9,000

Price per ton of N = Rs. 1,500

Savings by import of 1 ton N to produce
1.8 tons of cotton = Rs. 7,500

Thus every rupee spent on import of N saves foreign exchange worth
Rs. 5.67 on import of cotton.

Import of cotton lint (tons)	N required to produce the cotton imported (tons)	Savings due to import of N (lakh Rs.)
10,000	5,555	416
20,000	11,110	832
30,000	16,665	1,248
40,000	22,220	1,664
50,000	27,775	2,080
60,000	33,330	2,496
70,000	38,885	2,912
80,000	44,440	3,328
90,000	49,995	3,744
1,00,000	55,550	4,160

Sugarcane*Data*

Price per ton of N	=	Rs. 1,500
Price per ton of sugar for export	=	Rs. 500
One ton of N increases sugarcane yield enough to produce 22 tons of sugar.		

Calculations

Export value of 22 tons of sugar	=	Rs. 11,000
Price per ton of N	=	Rs. 1,500
Earning due to sugar export	=	Rs. 9,500

Thus every rupee spent on import of N earns foreign exchange worth Rs. 6.33 after deducting foreign exchange required for import of N.

Export of sugar (tons)	N required to produce the sugar for export (tons)	Earning in foreign exchange after deducting foreign exchange required for import of N (lakh Rs.)
50,000	2,273	216
1,00,000	4,546	432
1,50,000	6,819	648
2,00,000	9,092	864
2,50,000	11,365	1,080
3,00,000	13,638	1,296
3,50,000	15,911	1,512
4,00,000	18,184	1,728
4,50,000	20,457	1,944
5,00,000	22,730	2,160

**6.5 RELATIVE MERITS OF IMPORTING FOOD GRAINS,
FERTILISERS, AND SETTING UP OF FERTILISER
FACTORIES**

Year	Additional quantity of foodgrains needed over the initial level (tons)	Fertiliser N needed to produce additional quantity of foodgrains (tons)	Foreign exchange required for import of			
			Food grains	Fertiliser	Fertiliser plant	Heavy machinery plant
			(crore Rs.)			
First	8,40,000	70,000	33.6	10.5	16.8	10.0
Second	16,80,000	1,40,000	67.2	21.0	16.8	—
Third	25,20,000	2,10,000	100.8	31.5	16.8	—
Fourth	33,60,000	2,80,000	134.4	42.0	16.8	—
Fifth	42,00,000	3,50,000	168.0	52.5	16.8	—

- N.B. (i) The cost of foodgrains has been taken as Rs. 400 per ton.
- (ii) One ton of N has been assumed to produce 12 tons of foodgrains, extra.
- (iii) The cost of N has been taken to be Rs. 1,500 per ton.
- (iv) The foreign exchange component of a factory like Sindri producing 70,000 tons of nitrogen per annum and costing Rs. 28 crores has been taken to be 60 per cent or Rs. 16.8 crores.
- (v) A heavy machine factory capable of producing a fertiliser plant of the size of Sindri at the rate of one per annum has been assumed to cost Rs. 15 crores with a foreign exchange component of Rs. 10 crores.
- (vi) The figures under the head 'Fertiliser Plant' relate to the foreign exchange expenditure for an additional plant each year.

7. WORLD STATISTICS

7.1 FERTILISER PRODUCTION

Nitrogen (N)

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Europe			
Austria	113.0	128.5	129.0
Belgium	240.8	226.2	233.0
Czechoslovakia	35.0 ⁺	35.0 ⁺	...
Finland	15.9	17.4	21.3
France	360.1	400.5	428.8
Germany East	290.0 ⁺
Germany West	745.3	752.4	880.0
Italy	312.8	342.9	384.0
Netherlands	293.0	301.2	330.0
Poland	...	154.1	...
Spain	43.5	44.0	45.7
Sweden	28.5	26.0	32.8
United Kingdom	304.5	309.4	335.0
North America			
Canada	187.5	203.4	211.0 ⁺
U.S.A.	1813.0	1976.0	2023.0
South America			
Chile	233.3	180.1	186.5
Peru	44.5	42.2	34.0
Asia			
India	79.6	81.7	82.0

(continued)

7.1 FERTILISER PRODUCTION (Continued)*Nitrogen (N) (concluded)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Japan	632.5	704.4	770.6
Pakistan	...	...	...
Taiwan	13.8	17.3	17.5
Africa			
Egypt	24.8	26.7	33.3
Union of S. Africa	4.6	9.6	10.1
Oceania			
Australia	16.6	16.0	23.4
New Zealand	2.4	2.0	...
World (Excl. U.S.S.R.)	<u>6200.0</u>	<u>6600.0</u>	<u>7100.0</u>

Phosphoric Acid (P₂O₅)

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Europe			
Austria	8.3	7.6	7.2
Belgium	282.6	304.5	320.9
Czechoslovakia	56.0 ⁺
Denmark	81.9	85.7	80.1
Finland	53.1	60.2	75.5
France	706.7	652.6	629.1

7.1 FERTILISER PRODUCTION (Continued)
Phosphoric Acid (P₂O₅) (Concluded)

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Germany East	...	...	...
Germany West	522.2	488.0	593.0
Italy	443.2	453.9	414.0
Netherlands	155.1	145.6	158.9
Poland	123.3 ⁺	134.8 ⁺	...
Spain	255.0	257.4	263.5
Sweden	110.8	101.4	112.0
United Kingdom	305.8	341.2	340.0
North America			
Canada	125.1	118.2	122.0 ⁺
U.S.A.	2238.0	2268.0	2288.0
South America			
Chile	20.6	7.6	8.0
Peru	30.8	28.7	23.6
Asia			
India	14.4	12.1	14.0
Japan	314.0	370.4	381.9
Pakistan	...	...	...
Taiwan	15.2	19.0	19.0
Africa			
Egypt	15.0	63.1	74.0
Union of South Africa	104.2	115.0 ⁺	140.0 ⁺
Oceania			
Australia	438.4	475.2	408.4
New Zealand	183.8	196.0	182.9
World (Excl. U.S.S.R.)	<u>7100.0</u>	<u>7200.0</u>	<u>7400.0</u>

7.1 FERTILISER PRODUCTION (continued)

Potash (K_2O)

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Europe			
Austria	—	—	—
Belgium	—	—	—
Czechoslovakia	—	—	—
Denmark	—	—	—
Finland	—	—	—
France	1137.2	1188.1	1325.0
Germany East	1500.0	...	...
Germany West	1635.0	1666.3	1706.0
Italy	1.9	1.9	1.8
Netherlands	0.6	0.6	0.5
Poland	—	—	—
Spain	239.4 ⁺	250.3	189.4
Sweden	0.6	1.7	4.4
United Kingdom	...	...	...
North America			
Canada	...	...	...
U.S A.	1652.0	1699.0	1760.0
South America			
Chile	10.4	10.1	10.2
Peru	4.6	6.3	5.0
Asia			
India	0.2	0.6 ⁺	∴

7.1 FERTILISER PRODUCTION (Concluded)*Potash (K₂O) (Concluded)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Japan	—	—	—
Pakistan	—	—	—
Taiwan	—	—	—
Africa			
Egypt	—	—	—
Union of South Africa	—	—	—
Oceania			
Australia	—	—	—
New Zealand	—	—	—
World (Excl. USSR)	<u>6200.0</u>	<u>6400.0</u>	<u>6600.0</u>

Source :—F.A.O. Year Books.

7.2 FERTILISER CONSUMPTION*Nitrogen (N)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Europe			
Austria	29.8	31.8	37.6
Belgium	93.3	85.3	86.9
Czechoslovakia	80.0 ⁺	100.0 ⁺	20.4
Denmark	76.1	88.7	97.6
Finland	35.5	36.2	43.7
France	347.9	381.1	402.9

(continued)

7.2 FERTILISER CONSUMPTION (Continued)*Nitrogen (N) (Continued)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Germany East	208.0+	210.0+	218.0
Germany West	452.5	471.6	527.3
Italy	237.9	253.9	268.0
Netherlands	187.0	184.3	189.4
Poland	138.0	153.0+	...
Spain	142.6	171.7	168.7
Sweden	77.2	83.8	90.0
United Kingdom	253.5	297.0	311.0
North America			
Canada	49.5	47.6	48.0+
U.S.A.	2029.0	1731.2	1731.0
South America			
Brazil	22.3	24.0	...
Peru	47.5	43.6	36.8
Asia			
India	110.5	141.7	154.4
Japan	520.9	579.7	587.1
Korea South	...	146.5	156.0
Pakistan	12.1	10.2	31.1
Philippines	13.0	30.0+	...
Taiwan	82.4	75.7	84.1

7.2 FERTILISER CONSUMPTION (Continued)*Nitrogen (N) (Concluded)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Africa			
Egypt	112.1	118.2	123.3
Union of South Africa	25.6	28.0 ⁺	...
Oceania			
Australia	24.2	18.3	29.2
New Zealand	3.6	5.8	5.8
World (Excl. U.S.,S.R.)	<u>6000.0</u>	<u>6300.0</u>	<u>6600.0</u>

Phosphoric Acid (P₂O₅)

('000 metric tons)

Continent/country	1954-55	1955-56	1956-57
Europe			
Austria	41.4	47.5	59.8
Belgium	92.0	96.7	104.9
Czechoslovakia	90.0 ⁺	98.0	...
Denmark	90.1	98.7	107.8
Finland	63.8	68.7	80.3
France	643.6	629.3	667.8
Germany East	140.0 ⁺	133.0	...
Germany West	508.8	473.6	536.6
Italy	422.2	420.7	410.0

7.2 FERTILISER CONSUMPTION (Continued)

Phosphoric Acid (P_2O_5) (Concluded)

('000 metric tons)

Continent;Country	1954-55	1955-56	1956-57
Netherlands	108.4	110.6	110.9
Poland	145.8	150.0+	...
Spain	260.0	268.2	275.6
Sweden	104.1	103.9	107.0
United Kingdom	332.4	370.3	363.0
North America			
Canada	125.1	107.5	...
U.S.A.	2153.0	2122.0	...
South America			
Chile	33.3	14.5	15.4
Peru	30.1	25.8	21.3
Asia			
India	14.4	12.2	14.0
Japan	262.8	318.8	329.7
Korea South	10.7	28.2	66.0
Pakistan	...	0.1	...
Philippines	7.0	9.4+	12.8+
Taiwan	30.8	26.2	27.5
Africa			
Egypt	15.0	63.2	74.0
Union of South Africa	112.6	112.4	121.5
Oceania			
Australia	437.9	474.8	453.3
New Zealand	205.6	210.5	198.6
World (Excl. U.S.S.R.)	<u>7000.0</u>	<u>7100.0</u>	<u>7400.0</u>

7.2 FERTILISER CONSUMPTION (Continued)
POTASH (K₂O)

('000 metric tons)

Continent/Country	954-55	1955-56	1956-57
Europe			
Austria	50.2	43.5	70.2
Belgium	135.7	148.5	152.3
Denmark	144.7	157.1	169.6
Finland	48.8	55.5	70.2
France	493.2	581.3	579.8
Germany East	448.0 ⁺	425.0 ⁺	...
Germany West	859.2	846.9	878.5
Italy	46.6	57.0	63.8
Netherlands	146.1	165.4	151.6
Poland	260.0 ⁺	287.0 ⁺	...
Spain	69.4	82.4	...
Sweden	83.3	86.9	89.9
United Kingdom	259.0	312.0	321.0
North America			
Canada	74.7	106.1	...
U.S.A.	1677.0	1682.0	...
South America			
Brazil	40.9	37.0	...
Peru	4.9	7.5	6.6
Asia			
India	15.7	6.7	13.3

7.2 FERTILISER CONSUMPTION (Concluded)*Potash (K₂O) (Concluded)*

('000 metric tons)

Continent/Country	1954-55	1955-56	1956-57
Japan	371.5	385.9	470.5
Korea South	...	8.8	10.4
Pakistan	0.1	...	...
Philippines	3.4	4.5	...
Taiwan	6.5	17.9	24.8
Africa			
Egypt	0.5	...	...
Union of South Africa	21.7	22.0 ⁺	24.0 ⁺
Oceania			
Australia	16.3	23.2	17.6
New Zealand	24.8	21.2	22.5
World (Excl. U.S.S.R.)	<u>5800.0</u>	<u>6100.0</u>	<u>6300.0</u>

Source :—F.A.O. Year Books.

**7.3 AVERAGE CONSUMPTION OF FERTILISERS
PER ACRE OF AGRICULTURAL LAND**

1956-57

(pounds)

Country	N	P ₂ O ₅	K ₂ O	Total
Europe	11.6	13.6	13.9	39.1
Austria	6.87	10.91	12.81	30.59
Belgium	44.81	54.10	78.54	177.45

(continued)

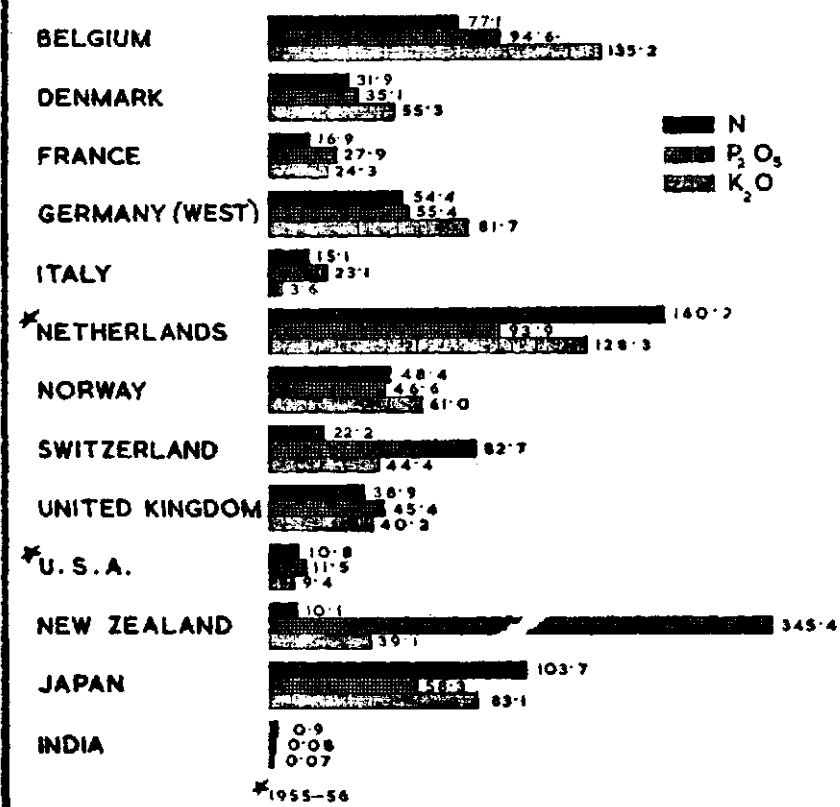
**7.3 AVERAGE CONSUMPTION OF FERTILISERS
PER ACRE OF AGRICULTURAL LAND
1956-57 (Concluded)**

(pounds)

Country	N	P ₂ O ₅	K ₂ O	Total
France	10.68	17.69	15.36	43.73
Germany West	32.93	33.51	54.87	121.31
Netherlands	73.31	42.92	58.67	174.90
United Kingdom	14.32	16.72	14.79	45.83
Denmark	27.99	30.85	48.54	107.38
Norway	38.90	37.43	49.05	125.38
Sweden	18.10	21.52	18.08	57.70
Italy	11.42	17.46	2.72	31.60
North & Central America	3.0	3.5	2.8	9.3
Canada	0.69	...	...	...
U.S.A.	3.48	...	...	...
South America	0.3	0.3	0.2	0.8
Chile	4.70	2.30	0.92	7.92
Peru	2.31	1.38	0.42	4.19
Asia	2.1	0.9	1.0	4.0
India	0.90	0.08	0.07	1.05
Japan	81.79	45.93	65.54	193.26
Korea (South)	...	...	...	...
Africa	0.3	0.4	0.08	0.78
Egypt	...	...	...	...
Oceania	...	...	...	...
Australia	...	...	...	...
New Zealand	0.40	13.50	1.52	15.42
World (Excl. U.S.S.R.)	...	...	...	...

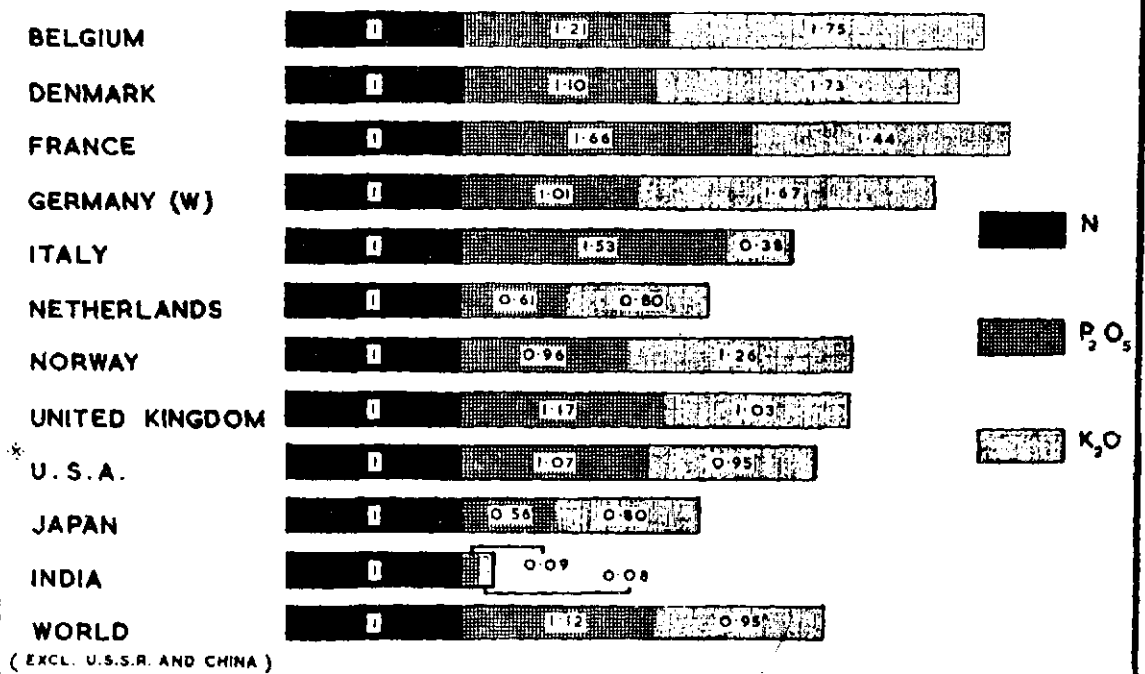
Source :—F.A.O. Monthly Bulletin of Agricultural Economics & Statistics.

FERTILISER CONSUMPTION IN DIFFERENT COUNTRIES (1956—57) (IN POUNDS PER ACRE OF ARABLE LAND)



RATIO OF N:P₂O₅:K₂O CONSUMPTION

(1956-57)



* 1955-56

7.4 FERTILISER PRICES

(In Rs. per long ton)

Country	Year/Month	Article	Rs. nP.
France	1956	Superphosphate 16 per cent f.o.r. bulk 20-ton lots	159.26
	1956	Basic Slag 18 per cent bulk, carlots wholesale price incl. taxes	95.55
	1956	Muriate of Potash 58 per cent wholesale price in bulk	249.07
	1956	Sulphate of Potash 48 per cent f.o.r. bulk 20-ton lots	360.99
Germany West	1958 Sept.	Ammonium sulphate 21 per cent bulk wholesale	207.92
	1956	Ammonium nitrate 20.5 per cent bulk wholesale price delivered at purchaser's railway station	291.19
	1956	Superphosphate 18 per cent wholesale price 20-ton lots	164.57
	1956	Basic Slag 15 per cent bulk wholesale price excl. sacking	90.24
	1958 Sept.	Muriate of potash 40 per cent bulk wholesale price delivered at purchaser's railway station	105.60
	1956	Sulphate of Potash 48 per cent bulk wholesale price delivered at purchaser's railway station	233.59
Italy	1958 Sept.	Superphosphate 16/18 per cent wholesale price warehouse Milan	129.04
U.S.A.	1958 Dec.	Ammonium sulphate 20.6 per cent bulk f.o.b. plant	168.97
	1958 Dec.	Ammonium nitrate 33.5 per cent f.o.b. shipping point in paper bags	280.17

(continued)

7.4 FERTILISER PRICES (concluded)

(In Rs. per long ton)

Country	Year/Month	Article	Rs. nP
	1958 Dec.	Calcium ammonium nitrate 20.5 per cent f.o.b. cars at port	214.83
	1958 Dec.	Concentrated superphosphate 48 per cent f.o.b. stowed Tampa in bulk	260.46
	1958 Dec.	Superphosphate 22 per cent f.o.b. stowed Tampa in bulk	108.84
	1958 Dec.	Rock phosphate 68/66 per cent f.o.b. bulk vessel Tampa Range	31.91
	1958 Dec.	Rock phosphate 72/70 per cent f.o.b. bulk vessel Tampa Range	38.42
	1958 Dec.	Rock phosphate 75/74 per cent f.o.b. bulk vessel Tampa Range	43.73
	1958 Dec.	Rock phosphate 77/76 per cent f.o.b. bulk vessel Tampa Range	54.22
	1958 Dec.	Muriate of potash 60 per cent f.o.b. Carlsbad, bulk	105.34

7.5 FERTILISER SUBSIDY IN UNITED KINGDOM

December 1958

Article	Price per long ton in Rs.	Subsidy in Rs.	Net Price Rs.
Ammonium sulphate (20.6% N)	284.98	134.01	150.97
Nitrate of soda (16% N)	365.89	102.99	262.90
Nitro-chalk (15.5% N)	250.70	99.94	150.76
Nitrashell (20.5% N)	319.13	131.44	187.69
Muriate of potash (60% K ₂ O)	271.70	—	271.70
Superphosphate powdered (18% P ₂ O ₅)	195.46	94.17	101.29
Basic slag (15% P ₂ O ₅)	101.62	44.72	56.90
Bonemeal (3.7 % N + 20.5% P ₂ O ₅)	362.48	—	362.48
Hoof and horn meal (13% N)	575.92	—	575.92

Note : 6-ton lots delivered to buyers' nearest railway station.

Source :—Fertilizer and Feeding Stuffs Journal.

7.6 WORLD TRADE IN FERTILISERS

Imports

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
EUROPE								
Austria								
Fert. crude	160.2	199.1	173.0	51.1	72.19	77.50	74.46	83.36
Belgium								
Fert. crude	692.9	60.7	692.9	763.4	48.46	39.15	51.54	58.86
Fert. manufactured	901.1	973.2	1156.5	1151.1	96.31	106.36	138.38	167.78
Potassic except crude salt	887.7	962.5	1120.8	1127.3	92.74	103.64	131.11	163.01
Denmark								
Fert. crude	276.6	241.7	284.0	270.5	19.77	19.08	24.57	24.51
Nitro. fert.	544.9	457.4	614.5	665.4	93.70	77.70	105.70	113.46
Potassic fert.	286.8	282.0	349.3	319.9	42.56	41.94	52.72	49.49
France								
Fert. crude	1527.0	1611.1	1579.4	1597.7	134.86	142.65	138.97	146.03
Fert. manufactured	82.5	231.2	414.0	431.8	22.13	45.46	51.07	54.48
Germany West								
Fert. crude	872.4	957.3	904.9	1067.8	58.90	75.50	77.85	96.42
Fert. manufactured	332.9	328.7	236.1	418.9	23.28	22.33	15.68	26.13
Greece								
Fert. crude	190.2	163.0	146.2	154.3	20.43	11.91	9.70	10.23
Fert. manufactured	222.1	125.6	133.7	211.4	59.30	36.71	38.39	53.50
Nitro. fert. other than natural	85.6	76.8	167.1	178.2	21.24	21.10	28.69	43.91
Italy								
Fert. crude	1385.1	1430.2	1580.5	1416.5	105.68	111.46	132.45	123.24
Fert. manufactured	122.6	148.3	180.0	159.3	18.99	24.24	31.40	29.86
Netherlands								
Fert. crude	1021.7	879.2	905.1	916.5	898.75	800.00	863.75	860.00
Fert. manufactured	662.9	482.7	492.3	521.6	817.50	591.00	613.75	640.00

(continued)

7.6 WORLD TRADE IN FERTILISERS (continued)

Imports (continued)

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
Norway								
Fert. crude	88.4	94.0	125.2	150.6	7.15	8.41	12.34	15.95
Fert. manufactured	135.1	106.3	111.9	131.6	22.91	21.29	19.80	22.97
Potassic other than natural	110.9	85.2	105.0	124.6	17.23	15.31	18.93	22.16
Sweden								
Fert. crude	396.1	365.9	374.7	394.1	36.40	36.95	37.96	45.20
Natural phosphate	360.0	312.4	350.2	351.9	26.95	24.20	31.63	33.65
Fert. manufactured	483.6	444.8	536.2	527.1	88.40	82.62	100.13	101.51
Nitro. fert. other than natural	302.0	274.0	340.5	351.8	62.36	54.93	67.12	69.97
Switzerland								
Fertilisers	306.1	319.5	307.5	318.8	...	...	...	...
United Kingdom								
Fert. crude	1202.4	1235.9	1283.0	1208.0	108.66	119.57	134.86	131.14
Fert. manufactured	543.6	632.7	732.0	777.0	104.54	126.48	152.55	159.33
Yugoslavia								
Fert. crude	50.6	85.8	115.1	161.9	5.53	8.62	14.02	12.19
Fert. manufactured	137.1	249.9	270.2	601.5	27.11	46.60	51.55	100.54
Nitro. fert. other than natural	77.5	115.8	162.0	286.8	18.54	23.18	36.09	56.00
NORTH AMERICA								
Canada								
Fert. crude	586.2	535.4	571.6	658.0	22.22	22.22	25.12	28.50
Fert. manufactured	360.5	280.8	381.9	383.0	53.62	57.00	58.45	60.38
U.S.A.								
Fert. crude	841.4	703.4	587.3	674.3	167.20	131.60	100.20	111.10
Fert. manufactured	1581.3	1489.8	1537.8	144.2	411.80	390.90	384.30	349.60
Nitro. fert. other than natural	1127.7	940.6	940.4	792.2	329.60	288.80	271.20	217.10

7.6 WORLD TRADE IN FERTILISERS (continued)

Imports (continued)

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
Mexico								
Fert. crude	13.8	9.6	11.2	14.5	0.40	0.32	0.35	0.41
Fert. manufactured	71.6	77.7	86.1	110.9	2.90	3.96	4.26	4.60
Phos. Fert. other than natural	...	26.2	31.0	28.5	...	...	1.45	1.22
SOUTH AMERICA								
Brazil								
Chemical fert.	352.4	423.0	445.8	547.1	...	...	...	...
ASIA								
Hongkong								
Fert. crude	5.8	4.3	3.6	3.0	1.36	0.84	0.90	0.67
Fert. manufactured	317.0	154.0	98.6	27.4	91.48	45.50	30.06	8.46
Nitro. fert. other than natural	316.7	153.7	97.8	27.0	91.42	45.40	29.79	8.33
Japan								
Fert. crude	2050.2	2369.3	1700.3	1573.7	297.60	316.16	201.16	198.17
Natural phos.	1386.4	1646.5	1686.5	1556.7	116.40	160.26	197.08	191.19
Crude potash salts	653.5	714.3	4.0	...	138.13	153.19	0.95	...
Taiwan								
Ammonium sulphate	290.9	256.7	251.1	...	...	...	...	...
Other fert.	68.5	64.1	62.6	...	...	...	...	...
AFRICA								
Egypt								
Fert. crude	91.3	30.9	90.9	43.8	26.73	9.00	25.37	13.50
Fert. manufactured	429.6	420.6	295.7	576.3	126.59	120.31	84.03	167.38
Nitro. fert. other than natural	428.9	420.1	295.4	573.3	126.39	120.18	83.90	166.42
Union of South Africa								
Fertilisers	468.6	558.5	602.7	532.7	47.35	63.18	41.10	41.90

7.6 WORLD TRADE IN FERTILISERS (continued)

Imports (concluded)

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
OCEANIA								
Australia								
Fert. crude	6.06	30.11	33.30	30.43
Fert. manufactured	28.62	8.62	13.09	0.96
Phos. other than natural	13.62	...	...	...

Source:—Year Book of International Trade Statistics—1957

Exports

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
EUROPE								
Austria								
Fert. crude	2.3	1.6	3.8	5.1	0.47	0.36	0.64	0.80
Belgium								
Fert. crude	20.5	14.8	8.9	4.9	27.30	1.94	1.99	1.19
Nitro. other than natural	645.5	673.6	709.6	694.9	148.81	161.89	170.06	152.90
Phos. other than natural	1347.4	1438.1	1614.7	1774.1	148.90	164.85	172.84	186.55
Potassic other than natural	653.8	735.0	865.0	897.8	85.26	96.84	122.15	166.74
Denmark								
Fert. crude	0.5	0.7	0.6	0.6	0.14	0.21	0.14	0.14
Fert. manufactured	—	—	—	—	0.07	0.07	0.07	0.07
France								
Fert. crude	387.5	329.0	369.5	365.4	35.06	31.50	36.26	34.87
Fert. manufactured	1275.9	1221.0	1436.7	1656.3	229.49	201.06	233.96	289.93
Fert. except crude salt	684.8	718.3	964.1	234.3	107.88	109.28	153.00	44.49

(continued)

7.6 WORLD TRADE IN FERTILISERS (continued)

Exports (continued)

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
Germany East								
Nitro. fert. (in terms of N)	63.0	83.0	90.0	83.0	...	...	...	...
Germany West								
Fert. crude	1527.0	1611.1	1579.4	1597.7	134.86	142.65	138.97	146.03
Fert. manufactured	82.5	231.2	414.0	431.8	22.13	45.46	51.07	54.48
Greece								
Fert. manufactured	1.0	1.2	7.0	8.4	0.11	0.12	0.70	0.96
Italy								
Fert. crude	0.4	0.5	1.1	1.7	0.08	0.10	0.14	0.42
Fert. manufactured	359.6	445.3	548.1	609.3	79.62	114.88	137.28	150.04
Nitro. fert. other than natural	249.3	373.3	452.3	486.8	65.32	106.18	124.16	132.52
Netherlands								
Fert. crude	66.2	71.7	86.0	97.4	1.37	1.25	1.62	1.37
Fert. manufactured	935.1	893.1	983.2	1217.4	200.25	195.25	211.12	268.37
Nitro. fert. other than natural	562.1	514.5	572.2	744.8	221.62	118.75	128.62	157.87
Norway								
Fert. crude	0.2	0.2	0.1	0.2	0.11	0.08	0.03	0.13
Fert. manufactured	959.5	906.8	948.9	1041.7	174.05	165.39	164.03	182.53
Nitro. fert. other than natural	945.7	885.4	925.7	1010.1	174.05	154.88	154.70	167.40
Sweden								
Fert. manufactured	13.8	10.1	26.5	26.2	1.65	0.82	2.38	2.01
United Kingdom								
Fert. crude	9.1	8.0	6.9	6.8	1.59	2.26	1.99	1.86
Fert. manufactured	383.6	236.2	48.5	230.0	93.36	61.04	14.49	54.26
Nitro. fert. other than natural	362.2	218.3	30.5	213.6	87.11	55.19	8.37	48.67
NORTH AMERICA								
Canada								
Fert. crude	1.4	2.4	1.6	2.4	0.97	1.45	0.97	1.45

7.6 WORLD TRADE IN FERTILISERS (concluded)

Exports (concluded)

Country/Article	Quantity ('000 metric tons)				Value (in million rupees)			
	1954	1955	1956	1957	1954	1955	1956	1957
Fert. manufactured	647.4	...	...	...	205.79	272.93	238.15	237.19
Nitro. other than natural	422.1	...	...	...	129.95	175.35	139.61	132.36
Phos. other than natural	175.8	...	...	...	64.25	84.05	74.88	62.80
U.S.A.								
Fert. crude	2458.6	2336.9	2987.5	3243.3	106.87	104.50	136.32	149.62
Fert. manufactured	857.8	1399.7	...	...	187.15	328.22	411.82	490.20
Nitro. fert. other than natural	259.5	706.5	888.0	954.2	70.70	189.05	225.62	219.92
Mexico								
Fert. crude	1.3	1.0	0.3	0.5	0.01	0.01	0.01	0.01
Fert. manufactured	1.2	—	—	—	0.06	—	—	—
ASIA								
Hongkong								
Fert. crude	4.2	7.0	4.3	5.0	1.12	1.72	1.11	1.15
Fert. manufactured	303.8	146.5	97.5	25.5	90.75	45.36	30.28	8.30
Japan								
Fert. crude	0.1	2.0	—	0.1	0.47	3.32	—	0.47
Fert. manufactured	714.7	762.9	919.5	1084.0	175.65	198.07	236.50	303.86
Nitro. fert. other than natural	548.1	523.7	551.6	850.2	150.00	159.17	175.56	258.73
AFRICA								
Egypt								
Fert. crude	399.3	424.9	417.9	382.7	16.09	17.05	17.05	16.37
Natural phosphate	395.1	421.0	415.1	379.7	15.27	16.09	16.23	18.82
OCEANIA								
Australia								
Fert. manufactured	...	...	...	...	0.43	0.32	0.53	4.15
Phos. other than natural	...	...	...	...	0.32	0.21	0.32	0.21

Source :—Year Book of International Trade Statistics—1957

PART II

Related Statistics

I. CROP STATISTICS

I.1 CLASSIFICATION

1955

State	Total geographical area according to :		Forests	Not available for cultivation			Other Permanent pastures and other grazing lands
	Surveyor General of India	Village Papers (Reporting area)		Land put to non-agricultural use	Barren and unculturable land	Total	
1	2	3	4	5	6	7	8
1. Andhra Pradesh	67,648	66,681	13,992	3,338	7,246	10,584	2,892
2. Assam* (incl. NEFA)	54,440	35,764	12,042	551	13,526	14,077	380
3. Bihar	42,952	42,823	9,676	3,140	1,926	5,066	508
4. Bombay (P)	122,028	120,907	15,946	2,388	16,941	19,329	5,704
5. Jammu & Kashmir	54,951	5,923	1,398	763	909	1,672	315
6. Kerala	9,560	9,412	2,433	471	497	968	116
7. Madhya Pradesh	109,632	107,551	33,489	4,692	6,799	11,491	6,417
8. Madras	32,111	32,021	4,488	3,195	2,352	5,547	933
9. Mysore	47,911	45,274	6,288	2,087	2,058	4,145	4,377
10. Orissa*	38,560	38,401	8,799	2,717	3,557	6,274	1,819
11. Punjab	30,119	30,289	843	1,642	6,139	7,781	378
12. Rajasthan	84,543	84,406	3,478	2,591	13,691	16,282	3,407
13. Uttar Pradesh	72,591	72,543 ^c	8,713 ^c	4,560	6,425 ^d	10,985 ^d	83
14. West Bengal	21,686	21,815	1,916	224	3,607	3,831	42
15. Delhi	367	366	4	82	3	85	12
16. Himachal Pradesh	6,999	2,305	400	87	72	159	860
17. Manipur	5,522	346	37	...	...	(b)	(c)

TION OF AREA

-56

('000 acres)

uncultivated land excluding fallow land			Fallow lands			Net area sown	Total cropped area	Area sown more than once
Land under misc. tree-crops and groves not included in net area sown	Culturable waste	Total	Fallow lands other than current fallows	Current fallows	Total			
9	10	11	12	13	14	15	16	17
631	4,120	7,643	1,729	4,834	6,563	27,899	30,399	2,500
2,983	275	3,638	413	476	889	5,118	6,003	885
...	2,492	3,000	2,027	4,444	6,471	18,610	24,498	5,888
649	4,620	10,973	5,051	2,516	7,567	67,092	69,910	2,818
79	261	655	293	372	665	1,533	1,840	307
508	406	1,030	364	140	504	4,477	5,466	989
983	10,711	18,111	3,409	2,467	5,876	38,584	43,392	4,808
571	2,106	3,610	1,611	2,594	4,205	14,171	16,967	2,796
954	1,555	6,886	1,674	1,905	3,579	24,376	25,208	832
1,143	3,504	6,466	739	2,269	3,008	13,854	14,953	1,104
88	1,915	2,381	54	1,436	1,490	17,794	23,500	5,706
112	18,090	21,609	9,374	5,360	14,734	28,303	31,006	2,703
2,945 ^v	4,508	7,536	3,165	473	3,638	41,671	51,925	10,254
1,584	191	1,817	891	238	1,129	13,122	15,317	2,195
...	36	48	...	12	12	217	323	106
62	100	1,022	9	36	45	679	1,047	368
74	17	91	(a)	...	(a)	218	218	...

(continued)

1.1 CLASSIFICA

1955

State	Total geographical area according to :		Forests	Not available for cultivation			Other Permanent pastures and other grazing lands
	Surveyor General of India	Village Papers (Reporting area)		Land put to non-agricultural use	Barren and unculturable land	Total	
1	2	3	4	5	6	7	8
18. Tripura	2,574	2,634	1,573	82	14	96	140
19. Andaman & Nicobar Islands	2,058	87	39	4	12	16	11
20. Laccadive, Minicoy & Amindivi Islands	27	7	...	(a)	...	(a)	(a)
TOTAL :	806,270	719,555	125,554	32,614	85,774	118,388	28,394

* Due to non-receipt of 1955-56 data figures for 1954-55 have been repeated. In case of Assam, the latest available data are for the year 1953-54.

P Provisional.

(a) Below 500 acres.

(b) Included under "Forests".

(c) Included under "Culturable waste".

(d) Excludes figures for the "Pakistan occupied" portion of the State (except in column 2).

(e) The figures are provisional and estimated after certain adjustments. They therefore do not tally with the figures given in the "State Season and Crop Report" for 1955-56. The figures given in the "Season and Crop Report" are 74,385 and 10,555 thousand acres for "Area according to village papers" and "Area under forest".

UTION OF AREA

-56 (concluded)

('000 acres)

uncultivated land excluding fallow land			Fallow lands			Net area sown	Total cropped area	Area sown more than once
Land under misc. tree-crops and groves not included in net area sown	Culturable waste	Total	Fallow lands other than current fallows	Current fallows	Total			
9	10	11	12	13	14	15	16	17
285	22	447	15	22	37	481	564	83
3	2	—	1	1	2	14	15	1
(a)	(a)	(a)	...	...	...	7	7	...
13,654	54,931	96,979	30,819	29,595	60,414	318,220	362,563	44,343

(f) Includes 3,433 thousand acres in respect of Kumaun Division (estimated hill portion) part of which is under "Land put to non-agricultural uses".

(g) Includes 429 thousand acres in respect of Kumaun Division (estimated hill portion) part of which is under "Permanent pasture and other grazing lands" and "Culturable waste".

NOTES:—

1. Difference between the figures of area according to Surveyor General of India and according to Village Papers in respect of certain States is due to different methods of survey.
2. Part of the areas in respect of (i) Barren and unculturable land (ii) Miscellaneous tree crops and groves not included in net area sown and (iii) Fallow land other than current fallows are also under other heads of classification.

Source:—Agricultural Situation in India, Vol. XIII, No. 6.

1.2 AREA, PRODUCTION AND AVERAGE YIELD

Crops	Area		
	1952-53	1953-54	1954-55
Rice	74,056	77,318	75,949
Wheat	24,286	26,394	27,517
Jowar	43,340	43,882	43,446
Bajra	26,613	30,145	27,983
Maize	8,908	9,561	9,311
Barley	8,021	8,719	8,309
Gram	17,930	19,689	22,047
Groundnut	11,848	10,495	13,548
Sugarcane	4,272	3,485	3,994
Potato	629	635	665
Tobacco	896	912	846
Cotton	15,713	17,263	18,684
Jute	1,813	1,228	1,243
Tea	778	775	777
Coffee	230	232	234
Rubber	169	163	...

PER ACRE OF PRINCIPAL CROPS

Area			Crops
1955-56	1956-57	1957-58	
			(⁰⁰⁰ acres)
76,864	79,320	79,027	Rice
30,386	33,580	29,657	Wheat
42,904	40,367	41,411	Jowar
28,024	27,542	...	Bajra
9,116	9,127	9,762	Maize
8,382	8,594	...	Barley
24,157	24,265	22,405	Gram
12,692	13,450	14,457	Groundnut
4,564	5,057	5,021	Sugarcane
667	691	...	Potato
1,013	1,029	926	Tobacco
19,978	19,893	20,158	Cotton
1,739	1,883	1,742	Jute
780	...	...	Tea
240	...	...	Coffee
...	...	...	Rubber

(continued)

1.2 AREA, PRODUCTION AND AVERAGE YIELD

Production

Crops	1952-53	1953-54	1954-55
Rice	22,537	27,769	24,531
Wheat	7,382	7,890	8,778
<i>Jowar</i>	7,243	3,142	9,093
<i>Bajra</i>	3,142	4,475	3,421
Maize	2,825	2,991	2,939
Barley	2,882	2,905	2,870
Gram	4,142	4,756	5,393
Groundnut	2,883	3,391	4,128
Sugarcane	50,190	44,230	57,600
Potato	1,961	1,925	1,762
Tobacco	241	268	244
Cotton*	3,194	3,944	4,227
Jute**	4,592	3,091	2,928
Tea†	675,270	588,733	647,970
Coffee†	47,800	55,616	58,654
Rubber†	35,996	44,700	...

PER ACRE OF PRINCIPAL CROPS (continued)

Production			Crops
1955-56	1956-57	1957-58	
			(⁰⁰⁰ tons)
26,846	28,282	24,821	Rice
8,569	9,314	7,654	Wheat
6,602	7,249	8,056	Jowar
3,379	2,926	...	Bajra
2,554	3,009	3,064	Maize
2,749	2,744	...	Barley
5,331	6,264	4,754	Gram
3,862	4,200	4,271	Groundnut
59,317	66,998	63,954	Sugarcane
1,599	1,649	...	Potato
295	294	252	Tobacco
4,001	4,735	4,753	Cotton*
4,197	4,197	4,052	Jute**
635,357	...	...	Tea ⁺
68,143	...	...	Coffee†
...	...	...	Rubber ⁺

* 1000 bales of 392 lbs. each of lint cotton.

** 1000 bales of 400 lbs. each.

+ 1000 lbs. and relate to calendar year.

† 1000 lbs.

1.2 AREA, PRODUCTION AND AVERAGE YIELD*Average yield per acre*

Crops	1952-53	1953-54	1954-55
Rice	682	804	723
Wheat	681	670	715
Jowar	374	406	469
Bajra	233	332	274
Maize	710	701	707
Barley	805	746	774
Gram	517	689	538
Groundnut	545	724	683
Sugarcane	26,320	28,420	32,380
Potato	6,977	6,793	5,935
Tobacco	603	658	646
Cotton	80	90	90
Jute	1,013	1,007	942
Tea	938	759	834
Coffee	221	240	250

PER ACRE OF PRINCIPAL CROPS (concluded)

Average yield per acre

(lbs.)

1955-56	1956-57	1957-58	Crops
782	799	704	Rice
632	621	578	Wheat
345	402	436	Jowar
270	238	...	Bajra
629	733	703	Maize
735	715	...	Barley
494	578	475	Gram
699	699	662	Groundnut
29,113	29,677	28,531	Sugarcane
5,370	5,346	...	Potato
652	529	503	Tobacco
79	93	92	Cotton
965	897	—	Jute
815	...	...	Tea
284	...	...	Coffee

Note :—Figures for 1956-57 and 1957-58 are subject to revision.

Source :—Tabulated from the publications of Directorate of Economics & Statistics,

1.3 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	6,728	6,994	6,974	3,046
2. Assam	4,218	4,313	4,207	1,633
3. Bihar	12,215	12,307	12,215	3,445
4. Bombay	4,025	4,099	4,124	1,412
5. Jammu & Kashmir	463	463	352	213
6. Kerala	1,882	1,909	1,912	861
7. Madhya Pradesh	9,456	9,674	9,664	2,873
8. Madras	5,491	5,538	5,605	2,964
9. Mysore	1,981	2,203	2,257	1,050
10. Orissa	9,361	9,612	9,476	2,074
11. Punjab	674	733	788	202
12. Rajasthan	169	230	169	86
13. Uttar Pradesh	9,297	9,531	9,637	2,547
14. West Bengal	10,154	10,846	10,771	4,146
15. Delhi	1	1	1	b
16. Himachal Pradesh	111	111	111	39
17. Manipur	222	340	390	117
18. Tripura	407	406	362	135
19. Andamans	9	10	12	3
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	76,864	79,320	79,027	26,846

AVERAGE YIELD PER ACRE OF RICE

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
3,141	3,468	1,014	1,006	1,114	Andhra Pradesh
1,707	1,586	867	886	844	Assam
3,728	2,198	631	678	404	Bihar
1,485	1,373	786	811	746	Bombay
214	162	1,030	1,035	1,031	Jammu & Kashmir
873	874	1,025	1,024	1,022	Kerala
3,273	2,093	681	758	485	Madhya Pradesh
3,103	3,134	1,209	1,255	1,252	Madras
949	1,118	187	965	1,110	Mysore
2,269	1,755	496	529	415	Orissa
277	296	671	846	841	Punjab
86	22	1,140	837	291	Rajasthan
2,286	2,284	614	537	531	Uttar Pradesh
4,573	4,185	915	944	870	West Bengal
b	b	...	...	...	Delhi
39	43	787	787	868	Himachal Pradesh
125	107	1,180	823	615	Manipur
150	120	743	827	743	Tripura
4	3	773	896	560	Andamans
—	—	...	...	...	Laccadive, Minicoy & Aminidivi Islands
28,282	24,821	782	799	704	INDIA

1.4 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	59	58	54	6
2. Assam	7	7	6	1
3. Bihar	1,468	1,882	1,188	357
4. Bombay	3,249	3,462	3,305	668
5. Jammu & Kashmir	304	303	328	81
6. Kerala	—	—	—	—
7. Madhya Pradesh	6,947	8,017	6,618	541
8. Madras	4	3	4	1
9. Mysore	716	733	744	64
10. Orissa	13	13	13	3
11. Punjab	4,699	5,140	5,009	1,751
12. Rajasthan	2,403	3,347	2,649	907
13. Uttar Pradesh	9,965	9,980	9,277	3,041
14. West Bengal	163	207	85	45
15. Delhi	70	74	72	16
16. Himachal Pradesh	319	329	330	87
17. Manipur	—	—	—	—
18. Tripura	—	—	—	—
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	33,386	33,580	29,657	8,569

AVERAGE YIELD PER ACRE OF WHEAT

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
5	4	228	193	166	Andhra Pradesh
1	1	320	320	373	Assam
182	243	545	217	458	Bihar
583	508	461	377	344	Bombay
86	78	597	587	576	Jammu & Kashmir
—	—	—	—	—	Kerala
1,704	1,087	497	476	368	Madhya Pradesh
1	1	560	746	560	Madras
71	72	200	217	217	Mysore
3	3	517	517	517	Orissa
2,114	2,010	835	921	899	Punjab
1,315	821	845	880	694	Rajasthan
3,115	2,714	683	700	655	Uttar Pradesh
27	19	618	292	501	West Bengal
12	17	513	363	529	Delhi
95	76	611	647	516	Himachal Pradesh
—	—	—	—	—	Manipur
—	—	—	—	—	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi Islands
9,314	7,654	632	621	578	INDIA

1.5 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	6,317	6,388	6,180	1,124
2. Assam	—	—	—	—
3. Bihar	5	8	5	1
4. Bombay	17,354	17,205	17,238	2,507
5. Jammu & Kashmir	1	1	1	b
6. Kerala	9	5	4	2
7. Madhya Pradesh	4,780	4,085	4,260	763
8. Madras	1,865	1,869	1,870	478
9. Mysore	6,764	5,732	6,359	990
10. Orissa	17	17	17	3
11. Punjab	700	706	748	33
12. Rajasthan	2,863	2,109	2,591	220
13. Uttar Pradesh	2,170	2,209	2,104	374
14. West Bengal	4	3	5	1
15. Delhi	55	30	29	6
16. Himachal Pradesh	—	—	—	—
17. Manipur	—	—	—	—
18. Tripura	—	—	—	—
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	42,904	40,367	41,411	6,602

AVERAGE YIELD PER ACRE OF JOWAR

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
1,104	1,178	398	387	427	Andhra Pradesh
—	—	—	—	—	Assam
1	1	448	280	448	Bihar
3,158	3,276	336	411	426	Bombay
b	b	...	...	...	Jammu & Kashmir
1	1	498	448	560	Kerala
1,083	1,168	357	594	614	Madhya Pradesh
496	484	574	594	580	Madras
702	1,031	328	274	363	Mysore
3	3	395	395	395	Orissa
45	106	106	143	317	Punjab
212	313	172	225	271	Rajasthan
439	490	386	445	522	Uttar Pradesh
1	1	560	747	448	West Bengal
4	4	244	299	309	Delhi
—	—	—	—	—	Himachal Pradesh
—	—	—	—	—	Manipur
—	—	—	—	—	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi Islands
7,249	8,056	345	402	436	INDIA

1.6 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	468	466	471	112
2. Assam	38	38	38	7
3. Bihar	1,347	1,406	1,590	261
4. Bombay	557	463	463	187
5. Jammu & Kashmir	459	444	343	135
6. Kerala	—	—	—	—
7. Madhya Pradesh	1,041	1,071	1,074	194
8. Madras	12	14	15	5
9. Mysore	33	28	25	6
10. Orissa	63	59	58	10
11. Punjab	985	1,009	1,166	389
12. Rajasthan	1,335	1,238	1,433	524
13. Uttar Pradesh	2,371	2,506	2,664	616
14. West Bengal	126	170	163	37
15. Delhi	3	4	4	6
16. Himachal Pradesh	278	281	285	71
17. Manipur	—	—	—	—
18. Tripura	—	—	—	—
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	9,116	9,197	9,762	2,554

AVERAGE YIELD PER ACRE OF MAIZE

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
104	154	536	500	732	Andhra Pradesh
7	7	413	413	413	Assam
391	344	434	622	485	Bihar
84	167	752	406	864	Bombay
127	101	659	641	660	Jammu & Kashmir
—	—	—	—	—	Kerala
189	179	417	395	373	Madhya Pradesh
6	7	933	960	1,045	Madras
9	9	408	720	806	Mysore
9	9	356	342	348	Orissa
651	638	885	1,445	1,226	Punjab
324	552	879	586	863	Rajasthan
986	783	582	881	658	Uttar Pradesh
47	45	658	619	618	West Bengal
1	1	373	560	560	Delhi
74	68	572	590	534	Himachal Pradesh
—	—	—	—	—	Manipur
—	—	—	—	—	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi islands
3,009	3,064	629	733	703	INDIA

1.7 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	322	292	263	42
2. Assam	5	5	4	1
3. Bihar	1,225	1,224	1,111	206
4. Bombay	1,616	1,577	1,377	227
5. Jammu & Kashmir	8	12	12	2
6. Kerala	—	—	—	—
7. Madhya Pradesh	3,668	3,815	3,547	805
8. Madras	4	5	6	1
9. Mysore	418	402	403	52
10. Orissa	57	51	51	6
11. Punjab	6,310	6,390	5,718	1,696
12. Rajaschan	3,234	3,813	3,078	707
13. Uttar Pradesh	6,715	6,147	6,337	1,443
14. West Bengal	474	439	423	138
15. Delhi	83	76	57	2
16. Himachal Pradesh	18	17	18	3
17. Manipur	—	—	—	—
18. Tripura	—	—	—	—
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	24,157	24,265	22,405	5,331

AVERAGE YIELD PER ACRE OF GRAM

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
34	32	292	261	273	Andhra Pradesh
1	1	448	448	560	Assam
143	182	377	262	367	Bihar
220	164	315	312	267	Bombay
3	3	560	560	560	Jammu & Kashmir
—	—	—	—	—	Kerala
992	579	492	582	366	Madhya Pradesh
1	1	560	448	373	Madras
50	50	278	278	278	Mysore
6	6	236	264	264	Orissa
2,022	1,654	602	709	648	Punjab
1,171	581	490	688	423	Rajasthan
1,507	1,407	481	549	497	Uttar Pradesh
109	90	652	556	476	West Bengal
3	2	54	88	79	Delhi
2	2	373	263	249	Himachal Pradesh
—	—	—	—	—	Manipur
—	—	—	—	—	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi Islands
6,264	4,754	494	578	475	INDIA

1.8 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	3,071	3,122	3,101	1,132
2. Bombay	4,545	4,700	5,713	1,049
3. Kerala	35	33	34	14
4. Madhya Pradesh	640	823	814	154
5. Madras	1,778	1,799	1,795	821
6. Mysore	2,035	2,221	2,154	469
7. Orissa	57	55	55	16
8. Punjab	133	148	146	38
9. Rajasthan	106	169	172	36
10. Uttar Pradesh	292	380	473	133
11. Himachal Pradesh	a	a	a	b
INDIA	12,692	13,450	14,457	3,862

AVERAGE YIELD PER ACRE OF GROUNDNUT

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
1,124	995	826	806	719	Andhra Pradesh
1,137	1,265	516	542	496	Bombay
16	11	896	1,086	725	Kerala
198	199	539	539	548	Madhya Pradesh
854	860	1,034	1,063	1,073	Madras
598	635	156	603	660	Mysore
16	16	629	652	652	Orissa
43	48	640	651	736	Punjab
38	35	762	504	456	Rajasthan
176	207	1,021	1,038	980	Uttar Pradesh
b	b	...	...	...	Himachal Pradesh
4,200	4,271	699	699	662	INDIA

1.9 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	175	180	176	5,156
2. Assam	64	63	65	662
3. Bihar	378	403	376	2,919
4. Bombay	217	244	270	5,324
5. Jammu & Kashmir	3	3	3	9
6. Kerala	18	19	22	331
7. Madhya Pradesh	100	131	122	1,150
8. Madras	121	115	121	3,112
9. Mysore	117	124	133	2,897
10. Orissa	56	59	59	918
11. Punjab	452	487	494	5,564
12. Rajasthan	65	83	83	453
13. Uttar Pradesh	2,720	3,066	3,017	29,400
14. West Bengal	62	60	58	1,293
15. Delhi	7	10	11	50
16. Himachal Pradesh	3	3	4	16
17. Manipur	—	—	—	—
18. Tripura	6	7	7	63
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	4,564	5,057	5,021	59,317

AVERAGE YIELD PER ACRE OF SUGARCANE

('000 tons of cane)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
5,227	4,907	65,997	65,047	62,453	Andhra Pradesh
666	673	23,170	23,680	23,192	Assam
3,673	3,183	17,298	20,416	18,963	Bihar
5,967	7,325	54,957	54,779	60,770	Bombay
9	9	6,720	6,720	6,720	Jammu & Kashmir
353	348	41,191	41,617	35,433	Kerala
1,672	1,245	25,760	28,590	22,859	Madhya Pradesh
2,989	3,104	57,611	58,221	57,462	Madras
3,129	3,207	55,464	56,524	54,013	Mysore
942	942	36,720	35,764	75,764	Orissa
5,388	6,742	27,573	24,783	30,571	Punjab
679	715	15,611	18,325	19,296	Rajasthan
84,793	30,542	24,212	25,551	22,676	Uttar Pradesh
1,170	846	46,715	43,680	32,673	West Bengal
70	70	16,000	15,680	14,251	Delhi
18	19	11,947	13,440	...	Himachal Pradesh
—	—	—	—	—	Manipur
73	77	23,520	23,360	24,640	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi Islands
66,998	63,954	29,113	29,677	28,531	INDIA

1.10 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	...	2	1	...
2. Assam	68	68	75	...
3. Bihar	100	123	155	243
4. Bombay	13	32	33	65
5. Madhya Pradesh	19	21	24	43
6. Madras	21	23	23	...
7. Mysore	14	14	14	11
8. Orissa	22	21	21	29
9. Punjab	19	20	25	85
10. Rajasthan	3	3	3	4
11. Uttar Pradesh	245	237	258	682
12. West Bengal	117	118	123	...
13. Delhi	a	a	a	...
14. Himachal Pradesh	21	22	27	...
15. Tripura	3	3	3	4
INDIA	667	707	785	1,599

AVERAGE YIELD PER ACRE OF POTATO

('000 tons)		Average yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
3	2	...	3,360	4,480	Andhra Pradesh
89	120	...	2,932	3,584	Assam
251	281	5,443	4,571	4,061	Bihar
123	128	11,200	8,610	8,688	Bombay
45	50	5,069	4,800	4,667	Madhya Pradesh
67	71	...	6,525	6,914	Madras
25	25	1,760	4,000	4,000	Mysore
28	28	2,953	2,987	2,987	Orissa
120	141	10,021	13,440	12,633	Punjab
4	4	2,987	2,987	2,987	Rajasthan
607	711	6,235	5,737	6,173	Uttar Pradesh
310	389	...	5,885	7,084	West Bengal
b	b	...	...	...	Delhi
22	27	...	...	...	Himachal Pradesh
4	4	2,987	2,987	2,987	Tripura
<u>1,698</u>	<u>1,981</u>	<u>5,370</u>	<u>5,380</u>	<u>5,653</u>	INDIA

1.11 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	395	390	362	128
2. Assam	23	23	24	7
3. Bihar	29	41	35	6
4. Bombay	246	246	236	60
5. Jammu & Kashmir	—	—	—	—
6. Kerala	1	1	1	1
7. Madhya Pradesh	16	16	12	4
8. Madras	67	48	49	36
9. Mysore	108	135	103	17
10. Orissa	11	11	11	3
11. Punjab	7	5	4	1
12. Rajasthan	17	22	9	4
13. Uttar Pradesh	49	46	33	15
14. West Bengal	40	40	42	12
15. Delhi	1	1	1	1
16. Himachal Pradesh	2	2	2	b
17. Manipur	—	—	—	—
18. Tripura	1	1	1	b
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	1,013	1,029	926	295

AVERAGE YIELD PER ACRE OF TOBACCO

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
129	109	726	741	674	Andhra Pradesh
7	7	682	682	653	Assam
7	9	463	382	576	Bihar
64	51	546	583	484	Bombay
—	—	—	—	—	Jammu & Kashmir
1	1	...	...	...	Kerala
4	2	448	560	373	Madhya Pradesh
27	27	1,204	1,260	1,234	Madras
21	18	352	348	391	Mysore
3	3	619	619	619	Orissa
1	1	320	448	560	Punjab
5	2	527	509	249	Rajasthan
15	11	686	730	747	Uttar Pradesh
10	11	672	560	587	West Bengal
b	b	...	...	...	Delhi
b	b	...	...	...	Himachal Pradesh
—	—	—	—	—	Manipur
b	b	...	...	...	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadive, Minicoy & Aminidivi Islands
294	252	652	529	503	INDIA

1.12 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Andhra Pradesh	1,031	1,014	939	131
2. Assam	38	35	34	9
3. Bihar	11	7	5	2
4. Bombay	10,858	10,833	10,988	1,921
5. Jammu & Kashmir	—	—	—	—
6. Kerala	22	22	21	10
7. Madhya Pradesh	2,425	1,898	1,982	403
8. Madras	1,160	1,123	1,165	335
9. Mysore	2,388	2,803	2,684	363
10. Orissa	24	23	23	2
11. Punjab	1,253	1,415	1,522	605
12. Rajasthan	604	550	578	184
13. Uttar Pradesh	141	148	196	29
14. West Bengal	a	a	a	b
15. Delhi	1	1	1	b
16. Himachal Pradesh	1	1	1	b
17. Manipur	—	—	—	—
18. Tripura	21	20	19	7
19. Andamans	—	—	—	—
20. Laccadive, Minicoy & Aminidivi Islands	—	—	—	—
INDIA	19,978	19,893	20,158	4,001

*Each of 392 Lbs.

AVERAGE YIELD PER ACRE OF COTTON

('000 bales*		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
135	127	50	52	53	Andhra Pradesh
9	8	93	101	92	Assam
1	1	71	56	78	Bihar
2,176	2,130	69	79	76	Bombay
—	—	—	—	—	Jammu & Kashmir
10	8	178	173	149	Kerala
569	464	65	117	92	Madhya Pradesh
359	392	113	125	132	Madras
451	512	60	63	75	Mysore
2	2	33	34	34	Orissa
800	825	189	222	212	Punjab
168	215	119	120	146	Rajasthan
47	61	81	124	122	Uttar Pradesh
b	b	...	...	...	West Bengal
b	b	...	...	...	Delhi
b	b	...	...	...	Himachal Pradesh
—	—	—	—	—	Manipur
8	8	131	127	165	Tripura
—	—	—	—	—	Andamans
—	—	—	—	—	Laccadivi, Minicoy & Aminidivi Islands
4,735	4,753	79	93	92	INDIA

I.13 STATEWISE AREA, PRODUCTION AND

State	Area ('000 acres)			Production
	1955-56	1956-57	1957-58	1955-56
1	2	3	4	5
1. Assam (Excluding NEFA)	367	355	349	1,212
2. Bihar	223	381	665	589
3. Orissa	111	91	94	245
4. Uttar Pradesh	34	56	56	89
5. West Bengal	826	720	759	2,013
6. Tripura	20	21	19	50
INDIA	1,739	1,908	1,754	4,198

AVERAGE YIELD PER ACRE OF JUTE

('000 tons)		Yield per acre (lbs.)			State
1956-57	1957-58	1955-56	1956-57	1957-58	
6	7	8	9	10	11
1,049	1,094	1,321	1,182	1,254	Assam (Excluding NEFA)
1,380	778	618	830	652	Bihar
183	208	883	805	208	Orissa
157	123	1,047	1,121	879	Uttar Pradesh
1,462	1,830	975	812	964	West Bengal
57	55	1,000	1,086	1,158	Tripura
4,288	4,088	966	899	932	INDIA

1.14 STATEWISE AREA, PRODUCTION AND AVERAGE YIELD PER ACRE OF TEA

State	Area ('000 acres)		Production ('000 lbs.)		Average yield per acre (lbs.)	
	1954	1955	1954	1955	1954	1955
1. Assam	385	386	352,992	335,524	917	869
2. Bihar	4	4	2,354	2,357	588	589
3. Madras	82	81	56,479	62,700	689	774
4. Punjab	9	9	2,003	2,036	223	32
5. Uttar Pradesh	6	6	2,250	2,098	375	350
6. West Bengal	192	192	168,514	164,040	878	854
7. Mysore	5	4	2,080	2,268	416	567
8. Travancore-Cochin	81 ^P	84	56,340	58,911	696	701
9. Coorg	a	a	300	313	...	...
10. Himachal Pradesh	2	2	57	197	28	99
11. Tripura	11	12	4,601	4,913	418	409
INDIA	<u>777</u>	<u>780</u>	<u>647,970</u>	<u>635,357</u>	<u>834</u>	<u>815</u>

P=Provisional

1.15 STATEWISE AREA, PRODUCTION AND AVERAGE YIELD PER ACRE OF COFFEE

State	Area ('000 acres)		Production ('000 lbs.)		Average yield per acre (lbs.)	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
1. Andhra Pradesh	a	a	l	l	...	...
2. Madras	64	66	9,900	11,397	155	173
3. Orissa	a	a	b	b	...	...
4. Mysore	109	109	27,924	30,058	256	275
5. Travancore-Cochin	7	7	1,441	1,474	206	211
6. Coorg	54	58	19,388	25,213	359	435
INDIA	234	240 ^P	58,654	68,143 ^P	250	284 ^P

P—Provisional

Source :- 1.3—1.13 tabulated from different issues of 'Agricultural Situation in India', Directorate of Economics and Statistics.

2. IMPORTS

2.1 IMPORTS OF FOODGRAINS

(in tons)

Year /Month	Rice	Wheat (Including flour)
1951	749,000	3,015,000
1952	722,000	2,511,000
1953	175,000	1,684,000
1954	603,000	197,000
1955	265,000	435,000
1956	325,000	1,095,000
1957	770,000	2,946,000
1958	388,883	1,668,959
1958 January	20,810	257,347
February	24,456	128,540
March	46,280	354,123
April	83,093	257,404
May	72,226	148,915
June	30,361	140,799
July	45,835	180,437
August	12,525	119,549
September	—	153,185
October	26,634	194,684
November	12,669	288,188
December	13,994	445,788

Source :—Agricultural Situation in India, Directorate of Economics & Statistics.

3. IRRIGATION

3.1 AREA IRRIGATED - CROPWISE 1955-56

('000 acres)

State	Rice	Jowar or Cholum	Bajra or Cumbu	Maize	Wheat	Barley	Other cereals and pulses	Sugar- cane	Other food crops	Cotton	Other non- food crops	Total (Gross)
Andhra Pradesh	6,301	96	180	61	12	...	517	173	264	17	286	7,907
Assam* (excl. NEFA)	1,433	...	...	(a)	...	...	16	...	2	...	82	1,533
Bihar	3,674	...	...	14	218	115	244	82	36	...	22	4,405
Bombay ^P	727	670	127	44	884	26	112	264	616	109	444	4,023
Jammu & Kashmir	443	...	1	73	75	11	48	1	26	2	58	738
Kerala	758	2	...	...	...	...	21	11	202	...	103	1,097
Madhya Pradesh	1,052	(a)	(a)	4	446	114	120	96	193	11	33	2,069
Madras	5,101	431	276	10	1	...	495	121	300	259	315	7,309
Mysore	1,072	58	5	18	21	8	112	109	119	15	155	1,692
Orissa ^P	2,425	1	(a)	5	9	...	108	59	126	6	81	2,820
Punjab	471	190	325	430	2,549	144	1,385	341	195	1,237	1,774	9,041
Rajasthan	15	59	49	197	1,328	903	423	60	218	301	384	3,937
Uttar Pradesh	820	30	10	218	4,571	2,278	2,485	1,794	428	102	524	13,260
West Bengal	2,680	(a)	...	14	51	5	93	31	139	...	32	3,045
Delhi	1	4	2	1	37	2	3	6	12	(a)	10	78
Himachal Pradesh	53	...	(a)	19	54	11	15	(a)	5	(a)	5	162
Manipur	145	...	...	...	...	...	...	...	...	...	...	145
Tripura	...	...	...	...	...	...	...	...	4	...	...	4
Andaman & Nicobar Islands	...	...	...	...	...	...	...	...	...	...	...	...
Laccadive, Minicoy and Aminidivi Islands	...	...	...	...	...	...	...	...	...	...	...	...
Total:	27,171	1,541	975	1,108	10,256	3,617	6,197	3,148	2,059	2,059	4,308	63,265

P—Provisional

* Due to non-receipt of data, figures for 1953-54 have been repeated.

Source :—Agricultural Situation in India, Vol. XIII, No. 6, Directorate of Economics & Statistics.

3.2 AREA IRRIGATED-SOURCEWISE
1955-56

('000 acres)

State	Area irrigated from					
	Canals		Tanks	Wells	Other sources	Total (Net)
	Government	Private				
1	2	3	4	5	6	7
Andhra Pradesh	3,129	63	2,639	703	254	6,788
Assam* (Excl. NEFA)	178	721	...	...	634	1,533
Bihar	934	604	755	402	1,710	4,405
Bombay ^P	597	56	500	2,274	166	3,593
Jammu & Kashmir**	136	549	2	6	23	716
Kerala	328	68	77	29	309	811
Madhya Pradesh	915	(a)	293	736	94	2,038
Madras	1,953	(a)	1,999	1,247	107	5,306
Mysore	367	16	759	318	174	1,634
Orissa ^P	487	69	1,223	94	541	2,414
Punjab	5,199	140	13	2,667	43	8,062
Rajasthan	702	...	440	2,155	39	3,336
Uttar Pradesh	4,284	26	1,226	5,934	765	12,235
West Bengal	590	902	952	38	488	2,970
Delhi	33	...	5	40	...	78
Himachal Pradesh	...	...	...	(a)	95	95
Manipur	...	145	...	...	(a)	145
Tripura	...	1	1	(a)	2	4
Andaman & Nicobar Islands	...	...	...	...	...	...
Laccadive, Minicoy & Amindivi Islands	...	...	...	...	...	...
TOTAL :	19,832	3,360	10,884	16,643	5,444	56,163

^P - Provisional.

* Due to non-receipt of data, figures for 1953-54 have been repeated.

** Excludes figures for the Pakistan occupied portion of the State.

4. SECOND FIVE-YEAR PLAN

4.1 TARGETS OF AGRICULTURAL PRODUCTION

Commodity	Unit	Estimated production 1955-56 (as given in the Plan)	Tentative targets of production 1960-61 (as given in the Plan)	Revised targets of production	Percentage increase in index of produce	
					As in the Plan	As revised
1. Foodgrains	Mill. tons	65.0	75.0	80.5	16	24
2. Oilseeds	-do-	5.5	7.0	7.6	27	38
3. Sugarcane (gur)	-do-	5.8	7.1	7.8	22	35
4. Cotton	Mill. bales ⁺	4.2	5.5	6.5	31	55
5. Jute	-do-*	4.0	5.0	5.5	25	38
6. Coconut oil	Lakh tons	1.3	2.1	2.1	63	63
7. Arecanut	Lakh mds.	22.0	27.0	27.0	23	23
8. Lac	-do-	12.0	16.0	16.0	33	33
9. Black pepper	Thou. tons	26.0	32.0	36.0	23	39
10. Cashewnut	-do-	60.0	80.0	106.0	33	77
11. Tea	Mill. lbs.	644.0	700.0	700.0	18	18
12. All commodities					17	27

⁺bale=392 lbs.

*bale=400 lbs.

Source :—Ministry of Food and Agriculture

4.2 IRRIGATION AND POWER (State-wise)

State	Additional area irrigated ('000 acres) (Major)	Additional installed generating capacity (K.W.)
1. Andhra	290	1,40,300
2. Assam	—	21,500
3. Bihar	1,140	2,05,000
4. Bombay	1,000	4,25,000
5. Madhya Pradesh	400	1,93,000
6. Madras	140	2,87,000
7. Orissa	1,600	2,47,000
8. Punjab	1,700	5,46,000
9. Uttar Pradesh	1,310	3,02,000
10. West Bengal	1,270	2,41,500
11. Hyderabad	610	75,000
12. Jammu & Kashmir	120	11,000
13. Madhya Bharat	300	56,000
14. Mysore	200	47,000
15. PEPSU	250	—
16. Rajasthan	1,160	72,800
17. Saurashtra	40	50,000
18. Travancore-Cochin	140	1,61,000
19. Ajmer	14	170
20. Bhopal	12	5,000
21. Coorg	3	—
22. Delhi	21	—

(continued)

4.2 IRRIGATION AND POWER (State-wise) (concluded)

State	Additional area irrigated ('000 acres) (Major)	Additional installed generating capacity (K.W.)
23. Himachal Pradesh	20	3,100
24.* Kutch	36	6,300
25. Manipur	—	340
26. Tripura	—	400
27. Vindhya Pradesh	68	23,000
28. Pondicherry	6	—
29. NEFA	—	1,150
INDIA	11,850	31,21,360

Source :—Draft Outline of Second Five-Year Plan.

4.3 IRRIGATION (Project-wise)

Name of Scheme	Total cost (Lakh Rs.) (Approximate)	Expenditure in 2nd Plan for irrigation (lakh Rs.)	Benefits ('000 acres)	
			On completion	During 2nd Plan
Continuing Schemes				
1. Bhakra Nangal	16,000@	2,823	3,604	2,347
2. Damodar Valley	8,600@	993	1,141	750
3. Hirakud (Stage I) incl. Mahanadi Delta	8,570@	2,194	1,785	1,288
4. Chambal (Stage I)	4,803@	2,105	1,100	480
5. Tungabhadra	6,000	550	700	370
6. Bhadras	1,775@	1,102	224	179

(continued)

4.3 IRRIGATION (Project-wise) (continued)

Name of Scheme	Total cost (Lakh Rs.) (Approximate)	Expenditure in 2nd Plan for irrigation (lakh Rs.)	Benefits ('000 acres)	
			On completion	During 2nd Plan
7. Mayurakshi	1,611@	212	600	600
8. Kosi	4,595	1,700	1,600	—
9. Nagarjun Sagar (Stage I)	7,508	3,400	1,910	—
10. Tungabhadra High Level Canal*	1,896	620	380	24
11. Kakrapar Canal (Lower Tapi)	1,101	386	562	309
New Schemes				
1. Ukai*	6,000@	650	614	—
2. Tawa*	1,839@	711	590	—
3. Purna	773@	500	157	60
4. Vamsadhara*	1,256	100	306	—
5. Narmada	2,500	400	1,157	—
6. Banas (Bombay)*	737	300	120	—
7. Mula	839	350	204	—
8. Girna	808	350	184	20
9. Khadakwasla	1,182	400	204	—
10. New Kattalai	149	148	21	12
11. Salandi	445	425	353	172
12. Gurgaon Canal	230	154	106	50
13. Kagsabali*	2,514	500	950	—

4.3 IRRIGATION (Project-wise) (concluded)

Name of Scheme	Total cost (Lakh Rs.) (Approximate)	Expenditure in 2nd Plan for irrigation (lakh Rs.)	Benefits ('000 acres)	
			On completion	During 2nd Plan
14. Chandrasekhar	75	75	15	15
15. Kabini	250	250	30	6
16. Banas (Rajasthan)	480	280	250	10
17. Bhadar	400	106	90	—
18. Bhothathan Kettu	348	348	63	32
19. Lidder Canal	75	58	15	3
20. Barna or Kolar*	400/500@	230	250	—
21. Laxmana Tirtha	25	25	3	3
22. Kasayari	160	25	40	—
23. Vidur	61	61	4	4

@ Includes outlay on power portion ;

* Figures are yet to be finally accepted.

Source :—A.I.C.C. Economic Review : Gauhati Session Number.

5. OTHER STATISTICS

**5.1 NORMAL SEASONAL RAINFALL IN DIFFERENT
RAINFALL DIVISIONS**

Divisions	1st June to 31st Sep.	1st Oct. to 30th Nov.	1st Dec. to 31st Mar.	1st Apr. to 31st May	Total 1st June to 31st May
1. Bay Islands	69.9	23.0	11.9	17.5	122.3
2. Assam (including Manipur & Tripura)	60.9	5.9	6.0	20.9	93.7
(a) West Bengal Sub-Himalayan	84.4	6.2	2.5	14.5	107.6
(b) West Bengal Gangetic	42.8	5.4	2.8	6.1	57.1
3. Orissa	44.2	7.9	2.8	4.5	59.4
4. Chota Nagpur	41.5	3.3	3.5	2.5	50.8
5. Bihar	43.2	3.0	2.0	3.2	51.4
6. Uttar Pradesh (East)	37.0	2.2	2.1	1.1	42.4
7. Uttar Pradesh (West)	36.3	1.2	3.3	1.0	41.8
8. Punjab (including Pepsu & Delhi)	20.5	0.7	3.6	1.1	25.9
9. Rajasthan (West)	10.8	0.3	0.8	0.6	12.5
10. Rajasthan (East)	24.6	0.8	0.9	0.7	27.0
11. Madhya Bharat (including Bhopal)	38.1	1.9	0.9	0.7	41.6
12. Vindhya Pradesh	39.0	1.9	2.2	0.6	43.7
13. Madhya Pradesh (East)	47.4	3.9	2.4	2.3	56.0
14. Madhya Pradesh (West)	43.0	2.3	1.9	0.9	48.1
15. Gujerat	22.2	1.0	0.3	0.3	23.8

(continued)

**5.1 NORMAL SEASONAL RAINFALL IN DIFFERENT
RAINFALL DIVISIONS (concluded)**

Divisions	1st June to 31st Sep.	1st Oct. to 30th Nov.	1st Dec. to 31st Mar.	1st Apr. to 31st May	Total 1st June to 31st May
16. Saurashtra	—	—	0.3	0.3	0.6
17. Konkan	77.6	5.4	0.4	2.6	86.0
18. Hyderabad (North)	26.5*	3.0	1.2	1.2	31.9*
19. Hyderabad (South)	—*	3.8	1.2	2.0	7.0
20. Coastal Andhra	20.4	14.7	2.5	2.4	40.0
21. Rayalaseema	15.5	6.3	1.0	2.1	24.9
22. Tamilnad	11.3	17.7	7.2	3.7	39.9
23. Malabar and South Kanara	...	...	...	...	...
24. Mysore	15.0	8.1	1.2	5.8	30.1
25. Travancore-Cochin	...	...	...	...	...

Source : Crop Calendar, Directorate of Economics and Statistics.

**5.2 PERCENTAGE OF LAND RECEIVING DIFFERENT
INTENSITIES OF RAINFALL**

Average annual rainfall	Percentage to the total area
Above 75"	11
Between 50—75"	21
30—50"	37
15—30"	24
Below 15"	7

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics.

5.3 INTENSITY OF RAINFALL—DIVISIONWISE

Rainfall	Division/Sub-Division
Above 100"	Bay Islands, Konkan, Malabar, and South Kanara.
Above 50" but below 100"	Assam (including Manipur and Tripura), West Bengal, Orissa, Chota Nagpur, Madhya Pradesh (East), and Travancore-Cochin.
Above 30" but below 50"	Bihar (Sub-Division), Uttar Pradesh (East-West) Jammu & Kashmir, Madhya Bharat (including Bhopal), Vindhya Pradesh, Madhya Pradesh (West), Gujerat, Deccan (Desh), Hyderabad (North and South), Coastal Andhra, Tamilnad and Mysore.
Below 30"	Punjab (including Pepsu and Delhi), Rajasthan (including Ajmer) and Rayalaseema.

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics.

5.4 DISTRIBUTION OF RAINFALL ACCORDING TO MONSOONS

Rainfall season	Duration	Percentage to the annual rainfall
South-West Monsoon	June-September	75.0
Post Monsoon	October-November	13.0
Winter and North-East Monsoon	December-February	2.0
Pre-Monsoon	March-May	10.0
		100.0

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics.

5.5 ASSURED MEDIUM AND DRY RAINFALL REGIONS

Rainfall	Area (million acres)
Assured rainfall region (50" and above)	209
Medium rainfall region (between 30" and 50")	432
Dry region (below 30")	165
	806
Total geographical area :	806
Area for which agricultural statistics are available, i.e., Reporting area :	722

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics.

5.6 CROP ROTATIONS AND MIXED CROPPING

Important Crop Mixtures

State	Crop mixtures
1. Bombay	Rice and <i>Jowar</i> ; Rice and Cotton ; Cotton and <i>Jowar</i> ; <i>Jowar</i> and <i>Tur</i> ; Wheat and Linseed ; Cotton and <i>Tur</i> ; <i>Bajra</i> and <i>Tur</i> ; Groundnut and Cotton.
2. Madhya Pradesh	Wheat and Gram ; Wheat and Linseed ; Linseed and Gram ; <i>Tur</i> and Cotton.
3. Punjab and Pepsu	Wheat and Gram ; Barley and Gram ; Wheat and Barley ; <i>Jowar</i> and <i>Guar</i> ; <i>Chari</i> and <i>Moth</i> ; Maize and <i>Senji</i> ; <i>Sarson</i> and Wheat ; <i>Toria</i> and Gram ; <i>Til</i> and Cotton ; <i>Moth</i> and Cotton ; Mellons and Cotton ; <i>Senji</i> and Cotton.
4. Uttar Pradesh	Wheat and Barley ; Wheat and Gram ; Barley and Gram ; Wheat and Mustard ; <i>Jowar</i> and <i>Arhar</i> ; Maize and <i>Urad</i> ; Cotton and <i>Arhar</i> ; <i>Bajra</i> and <i>Arhar</i> ; Barley and Peas.

(continued)

5.6 CROP ROTATIONS AND MIXED CROPPING (concluded)

Important Crop Mixtures

State	Crop mixtures
5. West Bengal (Wheat-growing tracts)	Wheat and Gram ; Wheat and Linseed.
6. Hyderabad	Jowar and Mung ; Jowar and Urad ; Jowar and Moth ; Tur and Cotton.
7. Rajasthan	Wheat and Gram ; Wheat and Mustard ; Gram and Mustard ; Wheat and Barley.

IMPORTANT CROP ROTATIONS

Two year rotations	Three year rotations
1. Rice Pulses	1. Wheat Maize Sugarcane
2. Jowar or Maize Wheat or Gram	2. Wheat Wheat Toria
3. Cotton or Jowar Groundnut or Jowar	3. Sugarcane Wheat Cotton
	4. Rice Sugarcane Sugarcane (Ratoon)
	5. Wheat Maize Sugarcane

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics

5.7 CROP YEARS

Crop season/Name of crop	Duration
1. Kharif	1st November to 31st October
2. Rabi	1st May to 30th April
3. Rice	1st November to 31st October
4. Wheat	1st May to 30th April
5. Sugarcane	1st November to 31st October
6. Cotton	1st September to 31st August
7. Jute	1st July to 30th June
8. Kharif Oil Seed	1st November to 31st October
9. Rabi Oil Seed	1st April to 31st March
10. Tea	1st January to 31st December
11. Coffee	1st July to 30th June
12. Tobacco	1st March to 28th February

Note : The beginning of the period denotes the time when generally the crops arrive at the market.

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics.

5.8 SEASON, DURATION AND SEEDS RATES OF PRINCIPAL CROPS

Crop	Season	Duration*	Seed rates @ (lbs. per acre)
1. Rice	Winter	5½-6 months	20-50 Transplanted Broadcast
	Autum	4 - 4½ months	
	Summer	2 - 3 months	
2. Wheat	Rabi	5 - 5½ months	40-80
3. Jowar	Kharif	4½-5 months	6-12
	Rabi	4½ months	
	Zaid Kharif	2½ months	

(continued)

**5.8 SEASON, DURATION AND SEED RATES OF
PRINCIPAL CROPS (concluded)**

Crop	Season	Duration*	Seed rates @ (lbs. per acre)
4. Bajra	Kharif	4½ months	6-10
5. Maize	Kharif	4 -4½ months	10-20
6. Ragi	Kharif	3½ months	10-20
7. Barley	Rabi	5 -6½ months	40-80
8. Gram	Rabi	6 months	30-80
9. Sugarcane	Perenial	10 -12 months	
10. Sesamum	Kharif	3½-4 months	2-10
	Rabi	5 months	
11. Groundnut	Kharif		
	Early :	4 -4½ months	40-80
	Late :	4½-5 months	
12. Rape and Mustard	Rabi	4 -5 months	4-10
	Zaid Rabi	4 months	
13. Linseed	Rabi	5½ months	10-16
14. Castor	Kharif		
	Early :	6 months	10-12
	Others :	8 months	
15. Cotton	Kharif		
	Early :	6 -7 months	6-20
	Late :	7 -8 months	
16. Tobacco	Kharif	7 months	
17. Jute	Kharif	6 -7 months	6-8

* Denotes the number of months for which the crop is in the land.

@Based on information supplied by Indian Council of Agricultural Research.

Source :—Indian Agriculture in Brief, Directorate of Economics and Statistics.

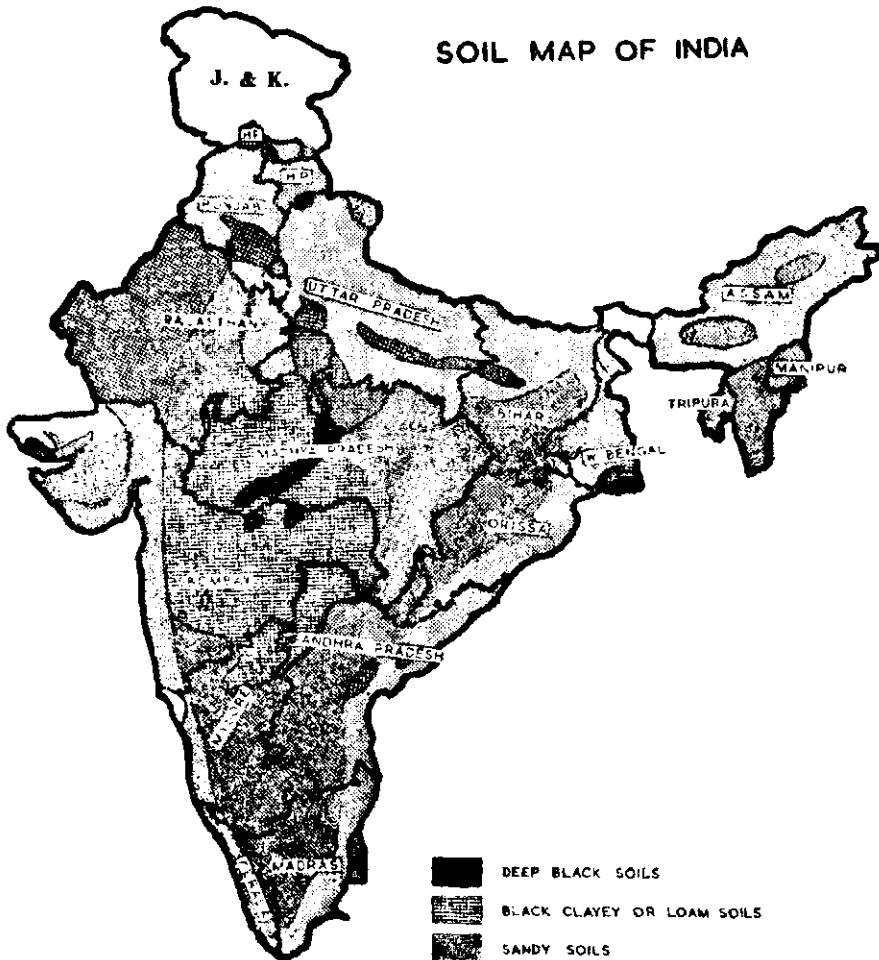
5.9 LOCATION OF SOIL TESTING LABORATORIES

State	Centre
1. Andhra Pradesh	Bapatla
2. do.	Hyderabad
3. do.	Rajahmundry*
4. Assam	Jorhat
5. Bihar	Damodar Valley Corporation Hazaribagh
6. do.	Sabour
7. Bombay	Nagpur
8. do.	Junagarh
9. do.	Poona
10. Kerala	Trivandrum
11. Madhya Pradesh	Gwalior
12. do.	Jabalpore
13. Madras	Coimbatore
14. Mysore	Balehonnur
15. do.	Bangalore
16. Orissa	Sambalpur
17. Punjab	Ludhiana
18. do.	Nabha
19. Rajasthan	Jodhpur
20. Uttar Pradesh	Kanpur*
21. West Bengal	Calcutta
22. Delhi	Indian Agricultural Research Institute
23. Himachal Pradesh	Simla
24. Tripura	Agartala

*Centres not yet started.

Source :—Indian Agricultural Research Institute, New Delhi.

SOIL MAP OF INDIA



- DEEP BLACK SOILS
- BLACK CLAYEY OR LOAM SOILS
- SANDY SOILS
- RED YELLOW OR DARK REDDISH BROWN SOILS
- MIXED SOILS (BLACK RED & YELLOW)
- COARSE ALLUVIUM
- ALLUVIUM
- SWAMP LANDS
- CALCAREOUS SOILS
- USAR OR KALLAR SOILS

5.10 CLASSIFICATION OF SOILS

State	Type of soil	Details of distribution
1. Assam	Red loam	Entire areas of Lushai hills, Manipur and Naga hills, parts of Cachar, Garo hills, Khasi and Janita hills and Sibsagar.
	Laterite soil	One small patch covering part of Cachar, a large part covering parts of Khasi and Janita hills, Sibsagar and Nowgong.
	Alluvial soil and old alluvium	Entire areas of Lakshmipur Darrang, Kamrup and Goalpara, parts of Garo hills and Sibsagar.
2. Bihar	Alluvial and calcareous soils	Northern districts of Saran, Champaran, Muzaffarpur, Dharbanga, Purnea and part of Bhagalpur (calcareous and alluvial soils) parts of Bhagalpur, Dhanbad, Gaya, Monghyr and the whole of Patna district (alluvial soils).
	Forest and hill soils	Latitudinal strip in centre running through Dhanbad, Gaya, Monghyr, Hazaribagh and Bhagalpur.
	Red loam	Whole of Palmau, Santal Parganas, Hazaribagh and Manbhum.
	Mixed red and black soils	Singhbhum and parts of Ranchi.
3. Bombay	Black soil	Entire areas of East and West Khandesh, Nasik, Ahmednagar, (continued)

5.10 CLASSIFICATION OF SOILS (continued)

State	Type of soil	Details of distribution
		Poona, Sholapur, Satara, Bijapur, and Belgaum, considerable parts of Surat, Thana, Kolaba, Ratnagiri, Kaira, Panchmahals, Dharwar and North Kanara.
	Coastal sandy alluvium	A coastal strip through all districts extending to West Coast.
	Laterite soil	Parts of Ratnagiri and North Kanara.
	Red sandy soil	Small patch in Broach.
	Old alluvium	Patches in Kaira and Ahmedabad.
	Mixed red and black soils	Parts of Dharwar.
4. Madhya Pradesh	Black soil	Entire areas of Yeotmal, Akola, Buldana, Nimar, Hoshangabad, and Saugar, parts of Wardha, and Jabalpure.
	Red sandy soil	Entire areas of Durg, Raipur, and Bilaspur, patches in Jabalpure and Mandla.
	Shallow clay loam	Entire districts of Bhandara, Chindwara, Betul, and Amroati, parts of Balaghat and Wardha.
	Gravelly soils	Parts of Mandla, Bilaspur, Balaghat, and most of Chanda.
5. Madras	Red loam	Entire areas of North and South Arcot, considerable parts of Ramnad, Tiruchirappali, and

5.10 CLASSIFICATION OF SOILS (continued)

State	Type of soil	Details of distribution
		Chittoor, parts of other districts except South Kanara, Nellore, Bellary and Kurnool.
	Laterite soil	Considerable parts of South Kanara, patches of Malabar, Visakhapatnam East and West Godavari, South Arcot, Chittoor and North Arcot.
	Black soil	Parts of Bellary, Kurnool, and Anantapur, small patches in Trinneveli, Madura, Ramnad, Tanjore, Guntur and Nellore.
	Sandy coastal alluvium	On the coasts in the districts of South Kanara, Malabar, Ramnad, Tanjore, South Arcot, Chingleput, Nellore, Krishna and Visakhapatnam.
	Red sandy loam	Small patches in the districts of Coimbatore, Nilgiris and Malabar.
6. Orissa	Old alluvium	Entire areas of Balasore, Cuttack and Koraput, more of Puri and parts of Ganjam.
	Laterite soil	Considerable parts of Ganjam, a patch in Puri.
	Mixed red and black soils	About half of the area of Sambalpur.
7. Punjab	Alluvial soil	Entire areas of Amritsar, Ferozepur, Hissar, Gurgaon, Rohtak,

5.10 CLASSIFICATION OF SOILS (continued)

State	Type of soil	Details of distribution
8. Uttar Pradesh		Karnal, Ambala, Ludhiana, and Jullundur ; parts of Gurdaspur, Hoshiarpur and Kangra.
	Sub-montane soil	Whole of Simla, most of Kangra, and parts of Gurdaspur.
	Forest and hill soils	Entire area of Almorah and Garhwal, parts of Nainital and Dehra Dun.
	Terai soils	Parts of Nainital, Pilibhit, Kheri, Bahraich, Gonda, Basti, and Gorakhpur.
	Calcareous soil	Entire areas of Saharanpur, Muzaffarpur, Meerut and Bereilly, parts of Bijnor, Badam, Pilibhit, Kheri, Bahraich, Gonda, Basti and Gorakhpur.
	Alluvial soil	Entire areas of Ballia, Banaras, Ghazipur, Jaunpur, Azamgarh, Pratapgarh, Sultanpur, Faizabad, Rae-Bareilly, Fatehpur, Kanpur, Etah, Unnao, Lucknow, Farrukhabad, Mainpuri, Mathura, Aligarh, and Bulandshahr, parts of Badaun, Agra, Allahabad, Bahraich, Gonda and Basti.
	Red sandy soil	Almost entire areas of Mirzapur District.
Mixed red and black soil	Parts of Etawah, Jalaun, Hamirpur, Bandah, Jhansi, Allahabad and Agra.	

5.10 CLASSIFICATION OF SOILS (concluded)

State	Type of soil	Details of distribution
9. West Bengal	Black soil	A patch in the southern part of Jhansi District.
	Alluvial soil and old alluvium	Entire areas of Hooghly, Nadia, Murshidabad, Malda, and Jessore, considerable parts of 24 Paraganas, Bhirbhum and Jalpaiguri. Some parts of Midnapur, Bankura and Burdwan.
	Laterite soil	A longitudinal strip running through south-western district of Midnapur, Bankura, Burdwan and Bhirbhum.
	Saline and deltaic soils	Near the sea coast in the districts of Midnapur and 24 Paraganas.
	Forest and hill soils	Parts of Darjeeling and Jalpaiguri.

Note :—Classification according to reorganised States not available.

Source :—Crop Calendar, Directorate of Economics and Statistics.

5.11 RAILWAY FREIGHT RATES FOR FERTILISERS

Name of the fertiliser material	General classification*		W/- or C.C. weight conditions under which wagon load rates apply		
	Smalls	Wagon loads	BG	MG	NG
	M a u n d s				
1. Calcium ammonium nitrate	42.5 A	32.5 A	550	440	220
2. Ground phosphate	42.5 A	32.5 A	550	440	220
3. Manure mixtures	42.5 A	32.5 A	550	440	220
4. Muriate of potash	42.5 A	32.5 A	550	440	220
5. Ammonium sulphate	42.5 A	32.5 A	550	440	220
6. Sulphate of potash	42.5 A	32.5 A	550	440	220
7. Superphosphate	42.5 A	32.5 A	550	440	220
8. Ammonium sulphate-nitrate	42.5 A	32.5 A	550	440	220
9. Urea	120—B	110—B	400	300	180
10. Sulphur	57.5 A	45 A	400	300	180
11. Gypsum	42.5 A	32.5 A	cc	cc	cc

*For rates see Goods Tariff No. 29 Part II, Goods Rate Tables.

5.12 DISTRIBUTION OF AGRICULTURAL HOLDINGS

(per cent)

ZONE	East India		South India		West India		Central India		N.W. India		North India		All India	
	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area
1.0 and below	21.4	2.1	28.0	2.7	11.2	0.5	7.4	0.3	5.4	0.2	14.8	1.4	16.9	1.0
1.1 to 2.5	24.4	9.1	27.1	9.5	15.6	2.1	12.3	1.5	14.4	2.0	26.2	8.3	21.3	4.6
2.6 to 5.0	26.4	20.8	20.9	16.3	13.9	4.1	16.4	4.5	16.9	5.1	25.1	16.7	21.0	9.9
5.1 to 10.0	18.4	27.6	14.0	21.1	20.4	11.9	22.1	12.0	22.5	13.4	20.6	26.4	19.1	17.6
10.1 to 25.0	8.0	25.1	7.9	25.4	25.4	32.6	28.4	33.7	31.0	39.3	11.4	30.6	16.2	32.5
25.1 to 50.0	1.0	7.4	1.6	11.8	10.1	28.6	9.6	24.1	8.0	22.3	1.4	8.8	4.2	19.0
Over 50.0	0.4	7.9	0.5	13.2	3.4	20.2	3.8	23.9	1.8	17.7	0.5	7.8	1.4	15.4
All Holdings														
Average size (acres)	4.5		4.5		12.3		12.2		12.6		5.3		7.5	
Estimated number (million)	10.4		7.2		3.2		4.9		3.1		6.7		35.5	

Zones :—East India—Assam, Bihar, Orissa and West Bengal :

South India—Madras, Mysore and Travancore-Cochin :

West India—Bombay and Saurashtra :

Central India—Madhya Pradesh, Madhya Bharat and Hyderabad :

N.W. India—Rajasthan, Punjab, Pepsu and Jammu & Kashmir :

North India—Uttar Pradesh.

Source : Agricultural Labour Enquiry, 1954, Ministry of Labour, Government of India.

6. WORLD STATISTICS

6.1 LAND

Continent/Country	Period	Total area	Land area	Agricultural area Arable land and land under tree crops
1	2	3	4	5
Europe				
1. Austria	1956	8,385	8,192	1,771
2. Belgium	1956	3,051	...	1,005
3. Czechoslovakia	1956	12,786	12,638	5,409
4. Denmark	1956	4,304	4,232	2,736
5. Finland	1956	33,701	30,545	2,586
6. France	1955	55,121	...	21,322
7. Germany East	1956	10,746	10,599	5,206
8. Germany West	1956	24,793	24,288	8,727
9. Italy	1956	30,123	29,397	15,809
10. Netherlands	1956	3,245	...	1,054
11. Poland	1955	31,173	...	16,224
12. Spain	1955	50,349	...	19,986
13. Sweden	1956	44,968	41,111	3,712
14. United Kingdom	1956	24,402	24,100	7,126
15. Yugoslavia	1956	25,580	25,479	8,263
North America				
1. Canada	1956	997,438	...	40,600
2. U.S.A.	1954	782,784	770,440	188,309
South America				
1. Brazil	1956	851,384	846,989	19,095
2. Peru	1955	124,905	...	1,730
Asia				
1. China (Mainland)	1954	976,101	...	109,354
2. Japan	1956	36,977	...	5,048
3. Korea (South)	1955	9,693	9,637	1,995
4. Pakistan	1955	94,482	...	24,404
5. Philippines	1955	29,940	29,741	6,414
Africa				
1. Egypt	1955	100,000	...	2,618
2. Union of S. Africa	1955	122,341	...	8,740
Oceania				
1. Australia	1955	770,416	...	23,173
2. New Zealand	1955	26,800	26,589	513
World (Excl. U.S.S.R.)		11,430,000	...	1,164,000

USE

('000 hectares)

Agricultural area Permanent meadows and pastures	Forests and woodland	Other land		Continent/Country
		Unused but potentially productive	Built on area wasteland and others	
6	7	8	9	10
2,317	3,124	17	1,156	Europe
725	591	...	730	Austria
1,968	4,332	...	1,077	Belgium
381	438	...	749	Czechoslovakia
283	21,670	...	9,162	Denmark
12,346	11,454	5,446	4,553	Finland
1,268	2,940	146	1,186	France
5,689	7,088	...	3,289	Germany East
5,127	5,769	1,083	2,335	Germany West
1,251	249	...	691	Italy
4,180	7,399	...	3,370	Netherlands
9,563	13,813	...	6,987	Poland
724	22,486	...	18,046	Spain
12,238	1,629	...	2,409	Sweden
6,670	8,876	...	1,771	United Kingdom
				Yugoslavia
				North America
21,876	341,963	72,721	520,278	Canada
255,927	259,363	6,100	73,099	U.S.A.
				South America
107,633	517,936	34,311	172,409	Brazil
12,000	70,000	...	41,175	Peru
				Asia
177,996	80,520	...	608,231	China (Mainland)
1,356	22,545	...	8,028	Japan
—	3,353	...	4,345	Korea (South)
...	2,501	...	67,577	Pakistan
1,174	15,875	...	5,655	Philippines
				Africa
—	1	511	96,870	Egypt
88,600	1,000	...	24,001	Union of S. Africa
				Oceania
362,269	41,375	...	343,599	Australia
12,612	8,681	405	4,589	New Zealand
2,140,000	3,096,000	5,030,000		World (Excl. U.S.S.R.)

6.2 AREA, PRODUCTION AND

Continent/Country	Area ('000 hectares)			Production
	1954	1955	1956	1954
Europe				
1. Italy	178	169	138	869
North America				
1. U.S.A.	1,032	740	635	2,912
South America				
1. Brazil	2,511	2,555	2,471	3,737
Asia				
1. Burma	3,931	3,968	4,048	5,804
2. Cambodia	1,050	1,050	1,281	800
3. China (Mainland)	28,772	...	...	70,851
4. Indonesia	6,613	6,570	6,692	11,747
5. Japan	3,038	3,079	3,096	11,392
6. Korea (South)	...	1,089	1,097	3,001
7. Laos	500	480	550	400
8. Pakistan	9,593	8,856	9,083	12,819
9. Philippines	2,656	2,742	2,768+	3,203
10. Thailand	4,524	5,356	5,826	5,709
Africa				
1. French West Africa	753	807	820+	559
2. Madagascar	700	740	730+	991
World (Excl. U.S.S.R.)	108,800	110,800	115,700	189,400

YIELD PER HECTARE—RICE

('000 metric tons)		Yield per hectare ('00 kg.)			Continent/Country
1955	1956	1954	1955	1956	
880	648	48.8	52.2	46.9	Europe Italy
2,537	2,243	28.2	34.3	35.3	North America U.S.A.
3,489	4,076	14.9	13.7	16.5	South America Brazil
5,873	6,464	14.8	14.8	16.0	Asia Burma
1,200	1,528	7.1	11.4	11.9	Cambodia
78,024	82,480	24.7	...	...	China (Mainland)
11,257	11,389	17.8	17.1	17.0	Indonesia
14,818	13,080	37.5	48.1	42.2	Japan
3,042	2,506	...	27.9	22.9	Korea (South)
510	550	...	...	10.0	Laos
10,982	13,718	13.4	12.4	15.1	Pakistan
3,273	3,346	12.1	11.9	12.1	Philippines
7,334	8,318	12.6	13.7	14.3	Thailand
673	680+	7.4	8.3	8.3+	Africa French West Africa
1,025	955+	14.2	13.9	13.1+	Madagascar
204,200	215,000	17.4	18.4	18.6	World (Excl. U.S.S.R.)

6.3 AREA, PRODUCTION AND

Continent/Country	Area ('000 hectares)			Production
	1954	1955	1956	1954
Europe				
1. France	4,491	4,554	2,745	10,566
2. Germany West	1,107	1,171	1,153	2,893
3. Greece	1,045	1,040	1,062	1,219
4. Italy	4,769	4,852	4,883	7,283
5. Spain	4,287	4,305	4,323	4,798
6. U.K.	994	788	928	2,828
7. Yugoslavia	1,854	1,907	1,627	1,385
North America				
1. Canada	9,820	8,703	9,219	9,407
2. Mexico	765	800	914+	839
3. U.S.A.	21,997	19,135	20,147	26,778
South America				
1. Argentina	5,462	4,062	5,392	7,690
2. Brazil	1,081	1,196	1,340	871
3. Chile	805	779	766	1,078
4. Uruguay	732	796	657	854
Asia				
1. China (Mainland)	26,967	...	...	23,335
2. Iran	2,300+	...	2,900	2,100+
3. Iraq	1,390	1,425	1,314	1,160
4. Japan	671	661	657	1,516
5. Pakistan	4,310	4,311	4,568	3,742
6. Syria	1,347	1,463	1,53	965
7. Turkey	6,541	7,186	7,458	5,010
Africa				
1. Algeria	1,962	1,898	1,942+	1,392
2. Egypt	754	640	660	1,729
3. Morocco (former French Zone)	1,547	1,664	1,455	1,205
4. Tunisia	1,358	1,025	1,188	624
5. Union of South Africa	974	1,001	1,081	600
Oceania				
1. Australia	4,319	4,114	3,154	4,589
World (Excl. U.S.S.R.)	138,700	134,400	136,800	151,600

YIELD PER HECTARE—WHEAT

('000 metric tons)		Yield per hectare ('00 kg.)			Continent/Country
1955	1956	1954	1955	1956	
10,365	5,683	23.5	22.8	20.7	Europe
3,379	3,487	26.1	28.9	30.2	France
1,337	1,245	11.7	12.9	11.7	Germany West
9,504	9,681	15.3	19.6	17.8	Greece
4,003	4,207	11.2	9.3	9.7	Italy
2,641	2,891	28.5	33.5	31.2	Spain
2,436	1,606	7.5	12.8	9.9	U.K.
					Yugoslavia
13,449	15,596	8.6	15.5	16.9	NORTH AMERICA
850	1,100 ⁺	11.0	10.6	12.0 ⁺	Canada
25,440	27,332	12.2	13.3	13.5	Mexico
					U.S.A.
5,250	7,100	14.1	12.9	13.2	South America
1,101	1,296	8.1	9.2	9.7	Argentina
1,048	988	13.4	13.5	12.9	Brazil
876	550	11.7	10.7	8.2	Chile
					Uruguay
22,965	24,801	8.7	...	...	Asia
2,313 ⁺	2,700	9.1 ⁺	...	9.3	China (Mainland)
453	776	8.3	3.2	5.9	Iran
1,468	1,375	22.6	22.2	20.9	Iraq
3,223	3,368	8.7	7.5	7.4	Japan
438	1,051	7.2	3.0	6.9	Pakistan
7,016	6,510	7.7	9.8	8.7	Syria
					Turkey
1,254	1,400 ⁺	7.1	6.6	7.2	Africa
1,451	1,547	22.9	22.7	23.4	Algeria
954	1,055	7.8	5.7	7.3	Egypt
395	477	4.6	3.9	4.0	Morocco (former French Zone)
795	836	...	...	...	Tunisia
					Union of South Africa
5,319	3,666	10.6	12.9	11.6	Oceania
					Australia
158,200	158,600	10.9	11.8	11.6	World (Excl. U.S.S.R.)

6.4 AREA & PRODUCTION

Continent/Country	Area ('000 hectares)		
	1954	1955	1956
Europe			
1. Spain	...	5	...
North America			
1. British West Indies	102	...	...
2. Cuba	1,072+	...	...
3. Mexico	258	...	...
4. Puerto Rico	136	139	...
5. U. S. A.	116	108	94
South America			
1. Argentina	284	287	303
2. Brazil	...	...	...
3. Peru	36	...	...
Asia			
1. Burma	27	24	23
2. China (Mainland)	...	...	...
3. Pakistan	...	...	...
4. Philippines	...	...	...
5. Thailand	95	103	121
Africa			
1. Egypt	34	...	...
2. Mauritius	71	71	71
3. Reunion	26	26	26
4. Union of South Africa	94	102	...
Oceania			
1. Australia	151	151	156
2. Fiji	24	24	23
3. Hawaii	43	...	...
World	...	...	...

—SUGARCANE

Production ('000 metric tons)			Continent/Country
1954	1955	1956	
369	426	406	Europe
			Spain
4,254	4,442	...	North America
...	...	...	British West Indies
14,002	...	...	Cuba
8,957	9,350	7,902	Mexico
6,244	6,188	5,456	Puerto Rico
			U.S.A.
9,643	9,321	9,316	South America
40,302	40,951	42,826	Argentina
6,089	...	...	Brazil
			Peru
1,168	1,118	1,250	Asia
8,592	8,110 ⁺	...	Burma
12,472	12,235	12,691	China (Mainland)
12,558	13,044	...	Pakistan
2,437	2,699	3,830	Philippines
			Thailand
4,222	4,139	4,085	Africa
4,280	4,228	4,421	Egypt
1,567	1,560	1,638	Mauritius
6,690	7,263	6,834	Reunion
			Union of South Africa
10,248	9,048	9,128	Oceania
1,091	1,306	1,000	Australia
8,952	8,990	...	Fiji
			Hawaii
<u>312,200</u>	<u>320,550</u>	<u>346,200</u>	World

6.5 AREA, PRODUCTION & YIELD

Continent/Country	Area ('000 hectares)			Production
	1954	1955	1956	1954
Europe				
1. Bulgaria	145	132	96	56
2. Greece	109	166	160	85
3. Romania	172	169	113	52
4. Spain	108	164	200	45
North America				
1. Mexico	922	1,059	873	661
2. United States	7,790	6,850	6,319	5,179
South America				
1. Argentina	540	533	545	221
2. Brazil	2,487	2,618	2,663	835
3. Peru	209	217	226+	185
Asia				
1. Burma	170+	162+	152+	48+
2. China (Mainland)	5,462+	5,773+	6,555+	1,950
3. Iran	200+	230+	210+	120+
4. Pakistan	1,289	1,431	1,453	568
5. Turkey	582	625	637	260
Africa				
1. Belgian Congo	334	349	337	96
2. Egypt	663	763	694	673
3. French Equat. Africa	376+	370+	365+	76
4. French West Africa	248	...	...	11
5. Mozambique	289+	293+	293+	61+
6. Sudan	277	242	322	173
7. Uganda	704+	642	635	116
Oceania				
1. Australia	5	4	4	2
World (Excl. U.S.S.R.)	32,100	32,700	32,300	14,100

PER HECTARE—COTTON (LINT)

('000 metric tons)		Yield per hectare ('00 kg.)			Continent/ Country
1955	1956	1954	1955	1956	
Europe					
41	26	3.9	3.1	2.8	Bulgaria
128	109	7.8	7.7	6.8	Greece
13	13	3.0	0.8	1.0	Romania
73	99	4.2	4.4	4.9	Spain
North America					
871	694	7.2	8.2	7.9	Mexico
5,482	4,905	6.6	8.0	7.8	United States
South America					
222	206	4.1	4.2	3.6	Argentina
813	762	3.4	3.1	2.9	Brazil
174	184	8.8	8.0	8.1	Peru
Asia					
35+	33+	2.8+	2.2+	2.2+	Burma
2,730	2,600	3.6	4.7	4.2	China (Mainland)
120+	125+	6.0+	5.2+	6.0+	Iran
618	618	4.4	4.3	4.3	Pakistan
285	294	4.5	4.6	4.6	Turkey
Africa					
97	103	2.8	2.8	3.1	Belgian Congo
648	639	10.1	8.5	9.2	Egypt
73	67	2.0+	2.0+	1.8+	French Equat Africa
8	...	0.5	...	...	French West Africa
43+	61+	2.1+	1.5+	2.1+	Mozambique
189	232	6.3	7.8	7.2	Sudan
139	157	1.6	2.2	2.3+	Uganda
Oceania					
1	1	3.0	2.7	2.8	Australia
15,200	14,500	4.4	4.7	4.5	World (Excl. U.S.S.R.)

6.6 PRICES OF IMPORTANT COMMODITIES

Continent/Country	RICE		
	(In U.S. \$ per metric ton)		
	1954	1955	1956
Europe			
1. Italy	100 ^P	93 ^P	93 ^P
North America			
1. United States	101 ^P	106 ^P	107 ^P
Asia			
1. Burma	30 ^P	30 ^P	30 ^P
2. Ceylon	121 ^P	121 ^P	121 ^P
3. India	93	94	105
4. Indonesia	215	249	302
5. Japan	175 ^P	158 ^P	144 ^P
6. Malaya	—	154	139
7. Pakistan	114	108	120
8. Philippines	156	170	190
9. Thailand	136	112	121
10. Viet Nam	96	130	131
Africa			
1. Egypt	49 ^P	52 ^P	52 ^P
Oceania			
1. Australia	...	...	...

P=Paddy

6.6 PRICES OF IMPORTANT COMMODITIES (continued)

WHEAT

(in U. S. \$ per metric ton)

Continent/Country	1954	1955	1956
Europe			
1. Austria	99	100	101
2. Belgium	94	91	92
3. Denmark	68	71	70
4. France	97	97	107
5. Germany West	97	99	96
6. Ireland	87	78	81
7. Italy	117	109	110
8. Netherlands	67	66	68
9. Norway	126	126	126
10. Sweden	85	80	82
11. Switzerland	153	153	153
12. United Kingdom	87	83	83
North America			
1. Canada	65	65	64
2. United States	87	80	82
3. Mexico	84	89	89
South America			
1. Argentina	92	39	42
2. Chile	114	174	64
Asia			
1. India	70	77	93
2. Japan	99	99	97
3. Pakistan	86	72	74
4. Turkey	121	124	128
Africa			
1. Union of South Africa	83	82	83
2. Algeria	95	96	96
3. Egypt	87	80	77
Oceania			
1. Australia	59	54	57

6.6 PRICES OF IMPORTANT COMMODITIES (continued)
SUGARCANE

(In U.S. \$ per metric ton)

Continent/Country	1954	1955	1956
Europe			
1. United Kingdom	113	112	116
North America			
1. United States	123	120	123
South America			
1. Cuba	81	75	...
2. Peru	78	76	108
Asia			
1. India	178	177	184
2. Indonesia	271	268	265
3. Philippines	118	109	110
Africa			
1. Mauritius	96	94	100
2. Union of South Africa	93	95	95
Oceania			
1. Australia	82	85	92

6.6 PRICES OF IMPORTANT COMMODITIES (concluded)
COTTON

(in U.S. \$ per metric ton)

Continent/Country	1954	1955	1956
Europe			
1. United Kingdom	1,322	1,433	1,604
North America			
1. Mexico	610	537	525
2. United States	741	714	700
South America			
1. Peru	663	645	690
Asia			
1. India	385	426	457
2. Pakistan	646	541	530
3. Turkey	860	1,072	1,090
Africa			
1. Egypt	940	1,089	1,274

Source : 6.1—6.6 F.A.O. Year Book.

7. CONVERSION FACTORS AND TABLES

7.1 CONVERSION FACTORS

(a) Engineering

<i>One cusec :</i>	Represents a volume of water equivalent to the flow of one cubic foot of water per second. Flowing continuously for 24 hours a cusec will cover five acres to a depth of about 5 inches normally considered as a good watering for irrigation purposes. One cusec can supply 30 gallons per head per day to a population of 18,000.
<i>An acre foot :</i>	Denotes a volume of water sufficient to cover an acre (4,840 sq. yds.) to a depth of one foot.
<i>Two acre feet :</i>	Are equivalent to one cusec flowing for 24 hours.
<i>A million acre feet :</i>	Is equivalent to 43,560 m. cubic ft. and is sufficient to cover an area of 10 sq. miles to a depth of 156 ft. This represents a storage sufficient to feed a canal of 1,850 cusecs capacity for the flow season in a year. (Normally 270 days).
<i>Water :</i>	Falling at the rate of one cusec through a height of 150 ft. can generate 10 K.W. or units of electric power will be sufficient to drive 12 H.P. car at a speed of 40 miles per hour on a reasonably good road and is roughly equal to a power output of 100 men.

(b) Handy equivalents

	<i>Area</i>
1 Hectare	= 2.47109 acres
1 Acre	= 0.40468 hectare
	= 4,840 sq. yds.
	= 4,3560 sq. ft.
	= 1.563
	<hr style="width: 50px; margin: 0 auto;"/> sq. miles
	1000

7.1 CONVERSION FACTORS

1 sq. mile	= 640 acres
	= 259 hectares
	= 2.59 sq. kilometres
1 sq. kilometre	= 0.3861 sq. miles
	= 100 hectares

Weight

1 metric ton	= 0.98421 long ton
	= 1.10232 short tons
	= 1000 kilograms
	= 2204.6 pounds
1 long ton	= 2240 pounds
	= 1.01605 metric tons
	= 27.22 maunds
1 short ton	= 2000 pounds
	= 0.90718 metric ton
1 kilogram	= 2.20463 pounds
1 pounds	= 0.45359 kilogram
2 maunds	= 82.2857 pounds

Liquid Measure

1 litre	= 0.26417 U.S. gallon
	= 0.21998 Imperial gallon
1 U.S. gallon	= 3.7853 litres
1 Imperial gallon	= 4.54596 litres
1 hectolitre	= 100 litres
1 gallon	= 4 quarts
1 cusec	= 538,860 Imperial gallons per day
	= 374 Imperial gallons per minute
	= 1.983 acre feet per day
1 acre foot	= 271,472 Imperial gallons
	= 43,560 cubic feet
	= 0.5 cusec per day

(continued)

7.1 CONVERSION FACTORS (concluded)*Yield*

100 kg. per hectare	=	1.4869 bushels (60 lbs.) per acre
1 bushel (60 lbs.) per acre	=	67.253 kgs. per hectare

Distance

1 mile	=	8 furlongs or 1760 yards
	=	1.609 kilometres
1 league	=	3 miles
1 kilometre	=	5/8 mile (3280.89 ft.)
1 metre	=	1.0936 yards
1 inch	=	25.4 millimetres
1 foot	=	30.48 centimetres
1 yard	=	91.44 centimetres

Exchange Rates

1 U.S. Dollar	=	.4464 EA (Austria)
	=	26.00 Schilling (Austria)
	=	50.00 Franc (Belgium)
	=	4.762 Rupee (Burma)
	=	4.762 Rupee (Ceylon)
	=	1.000 Peso (Cuba)
	=	6.907 Krone (Denmark)
	=	.3482 LE (Egypt UAR)
	=	420.0 Franc (France)
	=	4.200 D. Mark (Germany West)
	=	.3571 £WA (Ghana)
	=	4.762 Rupee (India)
	=	625.0 Lira (Italy)
	=	360.0 Yen (Japan)
	=	3.800 Guilder (Netherlands)
	=	7.143 Krone (Norway)
	=	4.762 Rupee (Pakistan)
	=	.3482 LE (Sudan)
	=	.3571 £SA (South Africa)
	=	.3571 £ (U.K.)
	=	300.00 Dinar (Yugoslavia)

Source :— United Nations Monthly Bulletin of Statistics.

7.2 CONVERSION TABLE

Existing Units to Metric Units

I. WEIGHTS

Tons to Metric Tonnes

Tons	1	2	3	4	5	6	7	8	9	10
Metric Tonnes	1.02	2.03	3.05	4.06	5.08	6.10	7.11	8.13	9.14	10.16

Pounds (av) to Kilograms

Pounds	1	2	3	4	5	6	7	8	9	10
Kilograms	0.45	0.91	1.36	1.81	2.27	2.72	3.18	3.63	4.08	4.54

Tolas to Grams

Tolas	1	2	3	4	5	6	7	8	9	10
Grams	11.66	23.33	34.99	46.66	58.32	69.98	81.65	93.31	104.97	116.64

Seers to Kilograms

Seers	1	2	3	4	5	6	7	8	9	10
Kilograms	0.93	1.87	2.80	3.73	4.67	5.60	6.53	7.46	8.40	9.33

Maunds to Quintals

Maunds	1	2	3	4	5	6	7	8	9	10
Quintals	0.37	0.75	1.12	1.49	1.87	2.24	2.61	2.99	3.36	3.73

2. LENGTH

Miles to Kilometres

Miles	1	2	3	4	5	6	7	8	9	10
Kilometres	1.61	3.22	4.83	6.44	8.05	9.66	11.27	12.87	14.48	16.09

Yards to Metres

Yards	1	2	3	4	5	6	7	8	9	10
Metres	0.91	1.83	2.74	3.66	4.57	5.49	6.40	7.32	8.23	9.14

Inches to Millimetres

Inches	1	2	3	4	5	6	7	8	9	10	11	12
Millimetres	25.40	50.80	76.20	101.60	127.00	152.40	177.80	203.20	228.60	254.00	279.40	304.80

(continued)

7.2 CONVERSION TABLES (concluded)

3. AREA

Acres to Hectares

Acres	1	2	3	4	5	6	7	8	9	10
Hectares	0.40	0.81	1.21	1.62	2.02	2.43	2.83	3.24	3.64	4.05

Square Yards to Square Metres

Square Yards	1	2	3	4	5	6	7	8	9	10
Square Metres	0.84	1.67	2.51	3.34	4.18	5.02	5.85	6.69	7.53	8.36

4. CAPACITY

Gallon (Imp) to Litres

Gallons	1	2	3	4	5	6	7	8	9	10
Litres	4.55	9.09	13.64	18.18	22.73	27.28	31.82	36.37	40.91	45.46

Kilograms per Hectare to Pounds per Acre

1 kg. per hectare=0.892169 lb. per acre

Kg. per hectare	0	1	2	3	4	5	6	7	8	9
	Pounds per acre									
0	0	0.892	1.784	2.677	3.569	4.461	5.353	6.245	7.137	8.029
10	8.922	9.814	10.706	11.598	12.490	13.382	14.274	15.167	16.059	16.951
20	17.843	18.735	19.628	20.520	21.412	22.304	23.196	24.089	24.981	25.873
30	26.765	27.657	28.549	29.442	30.334	31.226	32.118	33.010	33.902	34.795
40	35.687	36.579	37.471	38.363	39.255	40.148	41.040	41.932	42.824	43.716
50	44.608	45.500	46.393	47.285	48.177	49.069	49.961	50.854	51.746	52.638
60	53.530	54.422	55.314	56.207	57.099	57.991	58.883	59.775	60.667	61.560
70	62.452	63.344	64.236	65.128	66.020	66.913	67.805	68.697	69.589	70.481
80	71.373	72.266	73.158	74.050	74.942	75.834	76.727	77.619	78.511	79.403
90	80.295	81.187	82.080	82.972	83.864	84.756	85.648	86.540	87.433	88.325

APPENDIX

**Members of
The Fertiliser Association of India**

ACTIVE MEMBERS

ALEMBIC CHEMICAL WORKS CO., LTD., Baroda-3.

The Alembic Chemical Works Co. Ltd. with a capital of Rs. 297,050 was floated on July 30, 1907 by Prof. T. K. Gajjar, Mr. A.S. Kotisbhaskar and Rajmitra B.D. Amin with a view to establishing an indigenous industry on a sound basis and training Indian talent.

In 1950-51 Alembics, which had made a name in the pharmaceuticals industry, installed a 10-ton capacity plant to manufacture sulphuric acid by the contact process; superphosphate production started in 1951. An expansion scheme is now in hand to raise sulphuric acid production to 50 tons a day, and to step up manufacture of superphosphate and 'Alchemphos' (mixed fertilisers).

Alembics have now plans to manufacture penicillin, a wide range of insecticides, fungicides, etc., and a mineral feed for cattle.

The present capital of Alembics is Rs. 80,00,000 and over 1500 persons are on the rolls of the company.

Two sister concerns, Alembic Glass Industries Ltd. and Jyoti Ltd. together with Alembic Chemical Works Co. Ltd. constitute what is commonly known as the Alembic Group of Industries.

BHARAT FERTILIZER INDUSTRIES (PRIVATE) LTD., 12 Nanabhoy Lane, Bombay-1.

Established during 1951. Converted into a private limited company during 1959.

Manufacture manure mixtures for various field and cash crops, vegetables, grasses, etc., as per formulæ recommended by the Government of Bombay. These are marketed under the trade mark 'Bharat brand'. Special garden mixtures for lawns, flowers, etc., are sold in 2 lbs. and 14 lbs. packets and are particularly popular in Bombay city.

The firm has stockists at all important centres throughout Maharashtra and Gujerat. It supplies free samples to cultivators for experimental purposes. It has laboratory arrangements for analysis of manure mixtures, soils, etc.

BODA SUBRAHMANYAM & CO.,
Tapeswaram, East Godavari, Andhra Pradesh.

Mr. Boda Subrahmanyam, M. Sc., LL. B. is the lessee of Messrs. Raju, Jam & Co. who were Managing Agents for the Jupiter Manure and Bone Mills, Ltd.

The bone mill was started at Kakinada in 1936. It took up manure mixture manufacture in 1947 marketing 'Kamadhenu' brand product. An additional mixing centre at Vijayawada has now been opened.

The firm has now 85 distributors spread over 11 districts of Andhra Pradesh.

R. N. CHATTERJI & CO. (FERTILIZERS),
135 Canning Street, Calcutta.

Established in 1942.

Distributors for fertilisers allocated by the Government of India through Government of West Bengal. In particular supply fertilisers to N.E. India tea estates.

Exporters of crushed bones, oils, oilseeds, oilcakes and organic fertilisers.

Deal in jute and own a godown and Press House at Vizianagaram (Andhra Pradesh).

Approved contractors of the South-Eastern and Eastern Railways.

Managing Agents for Bongaon Electric Supply Co. Ltd.

**THE D. C. M. CHEMICAL WORKS,
Najafgarh Road, Delhi.**

In 1942 the Delhi Cloth and General Mills Co. Ltd., Delhi, set up a small 2-tons-per-day Sulphuric Acid Chamber Plant to meet the acid requirements of the Delhi Cloth Mills. Gradually this new unit expanded and today the D.C.M. Chemical Works is one of the largest factories in India producing quite a range of products essential for the industrialisation and economic growth of the country. They include: Acids (sulphuric, nitric, and hydrochloric), fertilisers (superphosphate and mixed) alums (ferric and ammonia), caustic soda, chlorine, active earth, hydrogenated oils, washing soap and polythene tubes. Most of the plants and equipment have been designed, fabricated and erected by the factory's own technicians who are now in a position to handle outside orders also. The factory has its own Power House and also supplies water, steam, and power to the Hindustan Insecticides (P) Ltd. and its sister concern, the S. B. Mills.

To ensure that all outgoing products conform to the high standards laid down by the management, various plants have Operational Control Laboratories and finally there is a Central Quality Control Laboratory equipped with the largest apparatus and manned by fully qualified chemists.

The company publishes a house journal and has a number of schemes in operation for the social and cultural welfare of its employees.

THE DHARAMSI MORARJI CHEMICAL CO., LTD.,

**Prospect Chambers,
317/21 Dadabhoy Naoroji Road,
Bombay-1.**

A public limited company incorporated in the year 1919. Authorised Capital : Rs. 25,00,000. Subscribed and Paid-up : Rs. 13,69,150. Fixed Assets exceed Rs. 28,00,000.

Promoters of the Company are Messrs. Dharamsi Morarji & Company who are the Managing Agents since the inception of the Company. The first Board of Directors consisted of eminent industrialists such as Sir F. E. Dinshaw, Sir Purshotam Das Thakurdas, Sir Fazulbhoj Currimbhoj. The Company had a very difficult time till the out-break of the Second World War on account of fierce competition from foreign manufacturers and lack of support from the then alien Government. However, since the formation of the National Government and the quickening of the tempo of industrialisation in the country, the situation has changed completely.

The Company has its works at Ambernath, 40 miles from Bombay, near Kalyan (Central Railway). It has a distribution centre at Byculla, from where the needs of the local customers are served. Products, manufactured by the Company include superphosphate, sulphuric acid hydrochloric acid and nitric acid, both commercial and pure grades, and also salts, such as alumina sulphate. The company has a long term arrangement to supply the entire requirements of sulphuric acid of India's largest refineries, The Burmah-Shell Refineries, Limited. For meeting this demand, a new 25/30 ton Contact Plant was specially erected in 1955. At the present moment another expansion scheme is in hand to increase the superphosphate and sulphuric acid manufacturing capacities to 84,000 tons and 37,000 tons respectively per annum. The new plants are expected to go into production towards the middle of this year. As it is, the Company is the biggest unit manufacturing acids and fertilisers in Western India, and one of the biggest in the country.

The members of the present Board of Directors are Messrs. P.R. Morarji (Chairman), C.M. Khatau, K.C. Nanavaty, B.M. Ghia, S.N. Vakil and D.R. Morarji.

Mr. D.R. Morarji is at present the Vice-Chairman of the Board of Directors of F.A.I.

HYDERABAD CHEMICALS AND FERTILIZERS LTD.,**Sarojini Devi Road, Secunderabad.**

The Company was incorporated in 1942 and in a large measure its activities were shaped by the pioneer industrialist of the erstwhile Hyderabad State, Khan Bahadur Nawab Ahmed Nawaz Jung Bahadur.

The following products are manufactured : Acids (sulphuric, hydrochloric and nitric), sulphates (magnesium and aluminium), superphosphate and fertiliser mixtures.

The factory is located at Belampalli for the manufacture of heavy chemicals and fertiliser mixtures. The Company has also a mixing plant at Bodhan for producing fertiliser mixtures.

The Company has a scheme for substantial expansion of its Sulphuric Acid and Superphosphate Units, for which licences have been obtained. At present it is the only heavy chemical and fertiliser unit in Andhra Pradesh and employs 450 people.

INDIAN IRON AND STEEL CO., LTD.,**12 Mission Rd., Calcutta.**

The Company was incorporated on March 11, 1918. From the outset the company concentrated on quality and it was this factor which rapidly established its reputation in all the important markets of the world for its famous 'BURN' pig iron.

The company has ore mines at Gua, Manoharpur and Chiria; collieries at Ramnagore, Noonodih-Jitpur and Chasuala; works at Burnpur (S.E. Railway) and Kulti (E. Railway) and branches at Delhi, Bombay and Kanpur.

The three batteries operating at Burnpur have a total capacity of approximately 700,000 tons of coke, whereas the output of two batteries at Kulti is 120,000 tons of coke.

The batteries have bye-product plants which produce sulphate of ammonia, tar and benzol.

Martin Burn Ltd. are the Managing Agents for the Indian Iron and Steel Co. Ltd.

JARDINE HENDERSON, LTD.,
4 Clive Row, Calcutta.

Registered 1946

Managing Directors : Mr. J.D.K. Brown (Chairman of the Board),
Mr. Girdharilal Mehta, and
Mr. J.V. Jardine Paterson.

Directors : Mr. G.C. Bangur,
Sir Asoka K. Roy, and
The Hon. S.K. Sinha.

Secretary : Mr. D. Fordwood, C.A.

Capital Authorised : Rs. 3,50,00,000

Capital Issued : Rs. 2,50,00,000

The Company is one of the well known agency and trading houses in Calcutta and are successors in business to the old established partnership firm of Messrs. Jardine, Skinner & Co. which had been trading in Calcutta for more than one hundred years. The Company holds a number of Managing Agencies and carries on an extensive business as General Traders and Agents, Shipping and Insurance Agents and Dealers in fertilisers, insecticides, spraying equipment, yarn, piece goods, white ant exterminators, paints, tea chests & fittings, industrial leathers, etc.

The Company also has a number of trading subsidiaries including Diamond Products Ltd. (Producers of packaging materials), Kassipur Co. Ltd. (Manufacturers of laminated waterproofing materials), Meameco Private Ltd. (Manufacturers of Mining Machinery & Equipment), Behabor Tea Co. Ltd. and Mangaldai Tea Co. (Private) Ltd.

KHAITAN SONS & CO. (MANURE) PVT. LTD.,
2 Dalhousie Square, Calcutta.

The fertiliser department of Messrs. Khaitan Sons & Co. was set up in 1926 when the firm handled the distribution of Japanese sulphate of ammonia imports on behalf of Messrs. Mitsui Busan Kaisha Ltd.

In 1942 small quota of 250 tons was allotted to the firm by the Central Government for distribution to the North-East Tea Industry. The quota was gradually increased until the firm became the third largest quota holder for the North-East India Tea Industry. In 1953 the entire preparation and distribution of agricultural fertilisers in Assam was entrusted to it; the Company then operating under the name and style of Compound Fertilisers Ltd. Seventy-five depots and distribution centres were organised throughout the State at that time.

The firm manufactures and distributes all types of fertilisers for tea and field crops and has depots throughout Assam.

Khaitan Sons & Co. also have a plywood factory, where both commercial and tea chest plywood is manufactured. Other interests include chemicals, jute and fibre, tea garden stores and machines.

R.C. MITTER & SONS,
54 Ramakanto Bose St., Calcutta.

Established in 1957.

The previous senior partner of the firm, the late Mr. R.C. Mitter, was connected with the fertiliser industry since 1910 before he embarked upon his own concern.

The firm deals in both inorganic and organic fertilisers and manufactures fertiliser mixtures. For last 10 years it has been a distributor of fertilisers for the North-East Indian Tea Industry on behalf of the Government of India.

**THE MYSORE FERTILISER COMPANY,
31-A North Beach Road, Madras.**

The Mysore Fertiliser Co., Madras, was established in the year 1935 at Bangalore. Later on the office was shifted to Madras in 1938 to take advantage of the harbour facilities. At present the firm has branches at Bezwada and Kuppam in Andhra Pradesh, Bangalore, Mysore, Kadur and Hubli in Mysore, Erode, Coimbatore, Coonoor and Ootacamund in Madras and Cochin in Kerala.

The firm has 8 mixing factories and its sales organisation is built up around 400 depots and sub-depots. It has a laboratory in Madras to control and examine the quality of manure mixtures marketed by the organisation. Besides the technical personnel, the firm employs inspectors and propagandists to visit the cultivators, conduct trials and demonstrations in cultivators' fields, and explain the advantages of using manure mixtures.

The firm manufactures special mixtures for field and plantation crops and converts various kinds of bone products and animal wastes into useful manures.

The firm is formulating through a sister concern insecticides and fungicides based upon D.D.T. and B.H.C. Endrin, Heptachlor, Chlordane, Parathion, Malathion, Copper, Sulphur, etc. and has two units, one at Madras and another at Kuppam in Andhra State. It also handles sprayers, dusters, hose pipes for spraying, etc.

**PARRY & CO., LTD.,
Dare House, Madras.**

Thomas Parry who arrived in India in 1787 to seek his fortune was granted a licence to trade within definite limits as a Free Merchant by the East India Company which held a monopoly of trade between India and the United Kingdom. That was the beginning of Parry & Co. The concern remained a private partnership until 1928 when it was converted

into a private limited liability company. Through the years the interests of Parry & Co. have continued to be wide and varied. At present the parent concern Parry & Co. together with other publicly subscribed limited liability companies, like The East India Distilleries & Sugar Factories Ltd., The Deccan Sugar and Abkhari Co., Ltd., and The Mofussil Warehouse & Trading Co., Ltd., of which Parry's are the Managing Agents, has an imposing pay roll of some 10,000 employees.

The Parry Group manufactures acids (hydrochloric, nitric and sulphuric) chemicals, bakers yeast, bone products, confectionery, carbonic acid gas, denatured and rectified spirit, dettol and dettolin, European liquors, molasses, pottery, pharmaceuticals, organic manures, fertiliser mixtures and superphosphate. The group sells engineering and constructional equipment and stores, agricultural implements & equipment, chemicals and pharmaceuticals, foods and drinks, toilet requisites, fertilisers and mixtures for field crops and plantations, and number of miscellaneous items which include paper, polishes, acid-jars, pickle jars, window glasses, etc.

Parry's were the first to start a superphosphate factory in India in 1906 at Ranipet.

PEIRCE, LESLIE & CO., LTD.,
Kozhikode.

Registered Office : 35, Crutched Friars, London E.C. 3.

Branches in India : Cochin, Calicut, Tellicherry, Coimbatore, Mangalore, Alleppey, Quilon.

Incorporated as a Private Company (Registered in England) in 1902. Established in India in about 1860.

Products manufactured include cashew products, coir and coir matting, tiles and bricks, fertiliser mixtures, coffee curing, printing press.

Other Lines Handled : Shipping Agents, Sea & Passage Air Booking.

Receiving & Forwarding, Estate Supplies, Insurance, Petroleum Products : Agents for Standard-Vacuum Oil Co., Agents for Shalimar Paints and Gordons Coffee Machinery. Exporters of all Malabar produce. 'A' Class Agents for the Coffee Board.

Managing Agents/Secretaries & Treasurers for the following Plantation Companies :

Rubber	The Cochin Malabar Estates Ltd. The Thirumbadi Rubber Co., Ltd.
Tea and Coffee	Chempra Peak Estates Ltd. Cowwoody Estates Ltd. The Kalasa Tea & Produce Co., Ltd. The Kil Kotagiri Tea & Coffee Estates Co., Ltd. Kumergode Estates Ltd. The Ouchterlony Valley Estates (1938) Ltd. The Peria Karamalai Tea & produce Co., Ltd. The Savamalai Estates Ltd.

The origin of the Company was the partnership of Peirce and Leslie which was set up in Cochin round about 1860. Later the partnership changed in form but retained the name of its founders and during the course of the second half of the 19th century spread its activities to various important centres on the Malabar coast and at Coimbatore. In 1902 it was incorporated as a Private Company and continues in that form today.

THE PHOSPHATE CO., LTD.,
14 Netaji Subhas Road, Calcutta.

The Company was established in 1949 with an authorised capital of Rs. 10,00,000. Production started during 1950, the capacity of the superphosphate plant being 105 tons a day. The requirements of sulphuric acid, at the initial stage, were purchased from the market.

The Company soon felt the need for having a sulphuric acid plant

of its own and installed one of 25 tons a day capacity in 1953 which has been meeting its requirements. The demand for superphosphate has been on the increase from 1955 and this has led the Company to contemplate expansion.

The Company also has an alum plant and has applied for licence to import aluminium hydrate.

RALLIS INDIA LIMITED,

21 Ravelin St., Bombay.

The Company has been established in India for over 100 years and has branches and distributors throughout the country.

The Company's activities cover a wide field which includes trading in commodities such as raw cotton, oilseeds, oils, gunnies, piece goods, machinery, etc. The Company also has substantial manufacturing interests in the pharmaceutical, electrical and textile industries through its subsidiaries. It manufactures bonemeal, hoof & horn meal, leather meal and sterilised animal meal. Through an extensive net-work of agents throughout the country, the Company distributes annually nearly a lakh tons of straight fertilisers and "Tree Brand" Fertiliser Mixtures.

Rallis India Ltd. are the Sole Distributors of Chilean Nitrate in this country.

SHAH MOTEEJEE MEGHAJEE,

98 Khand Bazar, Bombay.

Established in 1833.

Commission agents for oil and oilseeds, spices etc.

Dealers in jaggery, sugar, spices, edible oils and oil cakes, food grains, chemicals and fertilisers.

Manufacturers of "MOME" Brand Manure Mixtures.
 Exporters of oils, oilcakes, spices, talcum powder, and iron scrap.
 Importers of spices, chemicals and fertilisers.

The Head Office of the firm is at Poona with branches at Bombay and Baramati.

SHAW WALLACE & COMPANY LIMITED,

4 Bankshall St., Calcutta.

The Company was established as a partnership on the 1st January 1886, and became a Public Limited Company in June 1947.

The Company are Merchants, Agents, Manufacturers and Managing Agents carrying out the following activities :

Coal : Collieries under the Company's management produce 1,700,000 tons of coal per year.

Tea : Tea Gardens under the Company's management produce over 300,000 maunds of tea annually.

Flour : The Company manages two flour mills producing 13,00,000 maunds of wheat products annually.

Tinplate : The Company manages the Tinplate Company of India Private Limited, producing 80,000 tons of tinplate annually.

Steamers : The Company are Agents for the Isbrandtsen Company at all ports, and the Hansa Line at Madras and Bombay.

Agencies : The Company deals in wines and spirits, steatite, wire ropes, tea chests, paints and many other lines.

Glue : The Company manufactures high grade glue and technical gelatine at Madras/Calcutta/Cambay.

Agriculture : The Company engages in many activities connected with agriculture :

Fertiliser : The Company has been engaged in the manufacture and

distribution of fertilisers since 1914 and at present handles over 100,000 tons of fertilisers per annum.

Superphosphate: Manufactured at Madras. Production is at present 25,000 tons per year but will shortly be increased to 75,000 tons.

Organic Fertilisers: The Company produces organic fertilisers like sterilised animal meal.

Sprayers: The Company manufactures all types of agricultural sprayers.

Agro-Chemicals: The Company distributes agro-chemicals manufactured by Tata-Fison Limited in some Districts of India, also those of Sandoz Products Private Limited.

Mr. S.M. Smith of Shaw Wallace & Co., Ltd. is at present the Chairman of the Board of Directors of F.A.I.

SINDRI FERTILIZERS & CHEMICALS PVT. LTD.,
P. O. Sindri, Dist. Manbhum, Bihar.

As a result of post-war planning the first modern fertiliser unit to come into production in the public sector was the Sindri Fertilizers & Chemicals Factory. The factory was built at a cost of Rs. 28 crores. It went into production in October 1951 but it touched its full capacity of 330,000 tons of ammonium sulphate during 1957-58. An expansion scheme for raising its output by 60 per cent has been undertaken during the Second Plan and is nearing completion. The plan aims at producing an additional 47,000 tons of nitrogen in the form of urea and ammonium sulphate-nitrate, by utilising gas from coke oven plant.

Sindri, the first state-owned and state-managed industrial enterprise of such a great magnitude, boasts of being the biggest factory of its kind in Asia.

T. STANES & CO., LTD.,
Coimbatore.

The firm was founded nearly one hundred years ago by Sir Robert Stanes and was formed as a Public Company in 1956.

It was originally started as a Coffee Curing Works and is now an "A" Class agent of the Coffee Board. From the time of foundation it has supplied all planting requirements including fertilisers and now has two expanding fertiliser mixing factories, one at Cochin and the other at Tudyalur, Madras State. This latter factory is equipped with a modern mechanical mixing plant for compounding all types of manure mixtures for all crops. The chemical control of all ingredients used is by a qualified agricultural chemist operating in the Company's well equipped laboratory.

The Company now incorporate two wholly owned subsidiary companies—Messrs. Stanes Motors (South India) Limited and Messrs. United Coffee Supply Company Limited.

Messrs. Stanes Motors (South India) Limited is chiefly engaged in the marketing of motor vehicles, tractors, radios, spare parts and accessories and has fully equipped repair workshops in Coimbatore and four other branch offices. This company has the franchise for rebuilding of all motor vehicle tyres by the "TYRESOLES" process and tractors and "Off the Road" vehicle tyres by the "VACULUG" process.

This company also owns a subsidiary company—Stanes Transports Limited—which operates a fleet of eight passenger buses.

The United Coffee Supply Company Limited was founded in 1908 and is famous throughout India for coffee in its various forms. In 1956 a plant was installed for the manufacture of Pure Instant Coffee for the first time in India. This product has become a firm favourite amongst the public.

T. Stanes & Company are the Managing Agents for two large Planting Estate Groups—The United Nilgiri Tea Estates Company Limited and Messrs. Stanes Amalgamated Estates Limited—both in the Nilgiris

and comprising a total of 2429 acres of tea and 487 acres of coffee cultivation.

**THE TATA IRON AND STEEL COMPANY LIMITED,
23-B Netaji Subhas Road, Calcutta.**

Established in 1907.

Manufacturers of iron and steel materials.

Products : structurals, bars, rails, plates, sheets, electrical sheets, railway sheels, tyres and axles, sleepers, strips, billets, shovels, hoes, picks, coal tar, sulphate of ammonia, benzol, toluene, etc.

The Company's raw materials come mainly from its own mines, quarries and collieries in Bihar and Orissa.

The steel works are located at Jamshedpur (Bihar), originally a small jungle village and now a town of about 300,000, built, developed and administered by the Company. The administration of the town costs the company Rs. 65 lakhs a year.

Production in 1957-58	tons
Steel Ingots	1,104,000
Saleable Steel	787,000

The Company has practically completed a programme, known generally as the Two-Million Ton Programme, which in conjunction with its earlier Modernisation and Expansion Project has increased its ingot steel capacity to 2,000,000 tons and its saleable steel capacity to 1,500,000 tons. The Company has large investments in ancillary companies manufacturing products such as locomotives, diesel trucks, steel tubes and pipes, tinplates etc.

Managing Agents : Tata Industries Limited.

Head Office : Bombay House, 24 Bruce Street, Fort, Bombay.

Works : Jamshedpur, Tatanagar.

Branch and Head Sales Office : 23-B, Netaji Subhas Road, Calcutta.

ASSOCIATE MEMBERS

1. P. R. Baudard Esq.,
Potash Fertilizers Ltd.,
Jamshedji Tata Road,
Bombay.
2. Mr. H. K. Chakraborty,
5, Commercial Buildings,
Netaji Subhas Road,
Calcutta.
3. Messrs. C. Dhanvantrai & Co.,
Lentin Chambers,
Dalal Street,
Bombay.
4. The Hind Agricultural Corpn.,
Railpet,
Guntur,
Andhra Pradesh.
5. Messrs. Imperial Chemical Industries (India) Private Limited,
34 Chowringhee Road,
Calcutta.
6. Indian Potash Supply Agency,
8/9 Thambu Chetty Street,
Madras.
7. Messrs. International Ore & Fertilizer (India) Private Ltd.,
Secunderabad-Dn.
8. Messrs. Jayalakshmi Fertilisers,
Venkatarayapuram,
Tanuku,
Andhra Pradesh.
9. The Nitramoncal Scheme of India,
16-B Gangaram Hospital Marg,
New Delhi.

10. The Pioneer Fertiliser Co.,
26-2-12 Abhaskhaji Street,
Buckingampet P. O.,
Vijayawada.
11. Potascheme,
7 Lavelle Road,
Bangalore.
12. Messrs. Potash Fertilizers Ltd.,
6 Lotus Court,
Jamshedji Tata Road,
Bombay.
13. Dr. E. Rihm,
Agronomist of the Nitrate Corporation of Chile, Ltd.,
24 Graemes Gardens,
Madras.
14. Yercaud Coffee Curing Works.
3/22 Kondappanaickenpatty,
Kannankurichi P. O.,
Dist. Salem, Madras.
15. International Ore & Fertilizer Corp.,
New York,
U. S. A.
16. Osterreichische Stickstoffwerke,
Linz/Donau,
Austria.
17. Dr. Paul Tag,
c/o Mountain & Co.,
Nairobi, Kenya,
E. Africa.
18. Societe Commerciale Des Potasses D'Alsace,
Paris,
France.

19. Societa per il Commercio di Fertilizzanti Azotati,
Milan, Italy.
20. Verkaufsgemeinschaft Deutscher,
Kaliwerke G. M. B. H.
Hannover, Germany.