

BUREAU OF ECONOMICS AND STATISTICS

SEASON AND CROP REPORT

FOR

KERALA STATE

1963-64

PRINTED BY THE S.G.P. AT THE GOVERNMENT PRESS,
TRIVANDRUM, 1966.

FOREWORD

This report is the fifth in the series of Season and Crop Reports issued by this Department and relates to the agricultural year 1963-64. It gives a review of the overall agricultural situation of the State during the period.

The report is divided into four parts, the first being a narrative one. Parts II & III consist of summary tables and detailed tables respectively. The fourth part deals with other information relating to Agricultural Economy of Kerala State.

Trivandrum,
23—11—1965.

(Sd.)
Additional Director.

CONTENTS

PART I—REPORT

	PAGES
1. Introduction .	1
2. Population	2
3. Rainfall	4
4. Soil	5
5. Land utilisation	5
6. Weather and crop conditions	17
7. Production of important crops	20

PART II—SUMMARY TABLES

A. Classification of area	26
B1. Source of irrigation	28
B2. Area under crops irrigated	29
C. Area under crops	30
D. Production of important crops	33
E. Average yield per acre of certain crops	34
F. Average price and value of production	35
G. Livestock, poultry and agricultural machinery	36
H. Sowing, harvesting and peak marketing seasons of principal crops.	38

PART III—DETAILED TABLES

1.1 Normal rainfall	42
1.2 Average monthly rainfall	43
2.1 Classification of area in each district	44
2.2 Classification of area as percentage to the total area according to village papers	46
3.1 Area under crops in each district	47
3.2 Percentage of area under crops to the total area in each district.	55
4.1 Out-turn of important crops in each district.	59
5.1 Average farm price of important commodities	63
6.1 Agricultural wages	64
7.1 Number of live stock, poultry and agricultural machinery and implements.	66

PART IV—APPENDICES

1.	Index numbers of area, agricultural production & productivity.	72
2.	Cost of living index numbers in selected centres	77
3.	Index of parity between the prices received and prices paid by farmers.	83
4.	Quarterly retail prices of certain commodities	84
5.	Statistics of export of important agricultural commodities through the ports of Kerala.	89
6.	Notes on certain crops:	
	(i) Tea	91
	(ii) Coffee	92
	(iii) Rubber	94
	(iv) Cardamom	95
	(v) Pepper	96
	(vi) Ginger	97
	(vii) Lemongrass	98
7.	Classification of soils in Kerala	99
8.	Conversion ratio between raw materials and processed product.	101
9.	Average analysis of important fertilizers.	102
10.	Insects, pests etc. affecting paddy crop and their practical methods of control.	103
11.	List of centres selected for collecting meteorological information.	107
12.	Glossary of English, Botanical and Malayalam names of crops.	109
13.	Graphs and charts.	

SEASON AND CROP REPORT FOR THE YEAR

1963-64

PART I—REPORT

INTRODUCTION

The State is situated in the South Western corner of India. It lies between $8^{\circ} 18'$ and $12^{\circ} 48'$ north latitudes and $74^{\circ} 52'$ and $77^{\circ} 22'$ east longitudes. The area of the State according to professional survey is 15002 sq. miles. The State stretches to a length of 360 miles with an average width of 20 miles in the extremities and 80 miles in the middle.

Topographically the State is divided into three natural regions viz., lowland, midland and highland. The lowland is a narrow strip along the West coast. The highland lies in the eastern boundary of the State and comprises of the high ranges in the Western ghats. The land lying in between these two regions forms the midland.

The lowland which consists of a narrow strip of land along the sea coast has an annual rainfall varying between 900 m. m. in the extreme south to 3500 m. m. in the north. It has an almost unbroken line of lagoons and back waters receiving the drainage of several rivers. Rice and coconut are the important crops grown in this region.

The midland has an annual rainfall ranging between 1400 m. m. and 4000 m. m. This region consists of land of varying elevations, full of hills and valleys. The important crops grown in this region are paddy, tapioca, coconut, pepper, sugarcane and ginger. Rubber is also cultivated on the hill slopes.

The highland region which consists of the reserve forests has an annual rainfall varying between 2500 m. m. in the south to about 5000 m. m. in the north. The cultivation in this region is mainly confined to Tea, Coffee, Rubber and Cardamom. The important forest produce from this area are Teakwood, Rosewood and other kinds of hardwood and different varieties of softwood. The average elevation of the Western Ghats is about 5000 ft., the maximum being 8000 ft. in certain places. Mukkundi (8380 ft.), Anamudi (8887 ft.), Nilgiri (8118 ft.) and Pallangudi (6392 ft.) are some of the important peaks of the Western ghats.

The State is divided into 9 districts and 55 taluks for administrative convenience. The nine districts in the State are :

Trivandrum	Kottayam	Palghat
Quilon	Ernakulam	Kozhikode
Alleppey	Trichur	Cannanore

The State has a network of rivers, most of them originating from the Western ghats and flowing into the Arabian Sea. There are 44 rivers in the State. As the State receives the benefit of both the monsoons all the rivers are full during the monsoon seasons. Even during the dry seasons, most of them do not dry up completely and therefore water is available for irrigation purposes all the year round. The important rivers of the State are (1) Bharathapuzha, (2) Periyar, (3) Manimala, (4) Pamba and (5) Achencoil.

The State is purely an agricultural one. The peculiarity of agriculture in the State is the diversity in crops and heterogeneity in cultivation. The highland is mainly occupied by plantation crops while the lowland is monopolised by paddy and coconut. The midland has a combination of several major and minor crops, often cultivated intermixed with one another. The important crops grown in this region are Pepper, Coconut, Arecanut, Ginger, etc.

POPULATION

The population of the State according to 1961 census is 169.04 lakhs out of which 83.62 lakhs are males and 85.42 lakhs females. The density per square mile is 1127 persons. The population has increased by 22.5% in 1961 compared to 1951. This rate of growth in population is one of the highest in the world. The variation in population over the last six decades in the State is given in the following table.

Year	Area in sq. miles	Population in lakhs			No. of women per 1000 males	Density per sq. mile	Per capita land in acres
		Total	Male	Female			
1911	15002	70.15	34.99	35.16	1005	468	1.37
1921	15002	78.13	38.91	39.22	1008	521	1.23
1931	15002	95.02	47.06	47.96	1009	633	1.01
1941	15002	110.37	54.53	55.84	1024	736	0.87
1951	15002	135.52	66.83	68.69	1028	903	0.71
1961	15002	169.04	83.62	85.42	1022	1127	0.57

The District wise density of population according to 1961 census is given in the table below.

District	Area in sq. miles.	Population (in '000)			Density per square mile
		Male	Female	Total	
1	2	3	4	5	6
Trivandrum	844	870	875	1745	2067
Quilon .	1827	973	968	1941	1062
Alleppey	708	893	918	1811	2558
Kottayam	2456	883	850	1733	706
Ernakulam	1289	931	929	1860	1442
Trichur	1137	785	855	1640	1442
Palghat	1980	852	925	1777	897
Kozhikode	2570	1301	1316	2617	1018
Cannanore	2191	875	905	1780	812
STATE	15002	8392	8542	16904	1127

The estimated population in Kerala during the year 1964 was 180.58 lakhs. As per the 1961 census the urban population of the State was 2.55 million only whereas the rural population was 14.35 millions. In the case of literacy Kerala stands first among all the Indian States, the percentage of literacy being 46.8% against the All India average of 24.4%. The male literacy is 55% in Kerala whereas the All India percentage is only 34.4. Similarly the percentage of female literacy is 38.9 in Kerala while it is as low as 12.9 at the All India level.

RAINFALL

Kerala gets the benefits of rainfall from both the monsoons and the rainfall is heaviest during the months of May to September (S.W. Monsoon). The heavy floods which occur during this period cause substantial damages to the crops.

The normal monthly rainfall and the average monthly rainfall experienced in each district during the year 1963-64 are given in tables 1.1 and 1.2 respectively.

SOIL

The soil of Kerala can be classified into 7 broad categories, viz.

1. The hill and forest soil seen all along the eastern portions of the State.
2. The sandy soil of the coastal belt.
3. Laterite soil of the midland region.
4. Black soil which occurs as a patch on the eastern border of Palghat District.
5. Kari soil in Alleppey District.
6. Alluvial soil seen along the eastern and southern parts of Vembanad lake in Ernakulam, Kottayam and Alleppey Districts.
7. The red soil seen along the extreme tip of Trivandrum District.

LAND UTILISATION

The area of the State according to village papers is 9534611 acres which accounts only 99.3 percent of the area according to professional survey (9601299 acres). The District-wise area and the percentage of area in each District are given below:

<i>Name of District</i>	<i>Area (in acres)</i>	<i>Percentage</i>
Trivandrum	533983	5.6
Quilon	1159049	12.2
Alleppey	461568	4.8
Kottayam	1547434	16.2
Ernakulam	784381	8.2
Trichur	737137	7.6
Palghat	1261285	13.2
Kozhikode	1634814	17.2
Cannanore	1424960	15.0
State	9534611	100.0

Kozhikode is the largest District in the State followed by Kottayam and Cannanore. The smallest District is Alleppey.

The classification of area of the State for the year 1963-64 is given in the table 'A' of the summary tables and the District-wise breakup of the same is given in table 2.1 (detailed tables).

Forests

Forests occupy 2606395 acres of Land area during 1963-64. This works out to 27.4% of the total area of the State. It is seen that the area

under forest has decreased by 3369 acres in 1963-64 compared to the previous year. The District-wise area under forests in the State is given in the following table.

<i>Name of District</i>	<i>Area under forests (area in acres)</i>	<i>Percentage</i>
Trivandrum	110241	4.2
Quilon	523611	20.1
Alleppey	1268	0.1
Kottayam	614690	23.6
Ernakulam	136551	5.2
Trichur	328453	12.6
Palghat	246275	9.4
Kozhikode	479502	18.4
Cannanore	165804	6.4
State	2606395	100.0

Quilon, Kottayam and Kozhikode Districts account for 62% of the forest area of the State. Alleppey District has the least forest area viz. 1268 acres (0.1%). Compared to 1962-63, the area under forests decreased slightly in Quilon and Cannanore Districts.

Land put to non-agricultural uses

This classification includes the area occupied by Road, Rail, Water, building and court-yard etc. The area put under non-agricultural uses was 538557 acres during 1963-64. This works out to 5.6% of the total area of the State. The District-wise distribution of the area under non-agricultural uses is as follows:

<i>Name of District</i>	<i>Area under non-agricultural uses</i>	
	<i>Area (in acres)</i>	<i>Percentage</i>
Trivandrum	32205	5.9
Quilon	33159	6.2
Alleppey	26880	5.0
Kottayam	35216	6.5
Ernakulam	50145	9.3
Trichur	36089	6.7
Palghat	152217	28.3
Kozhikode	67908	12.6
Cannanore	104738	19.5
State	538557	100.0

The area under non-agricultural uses is maximum in Palghat and Cannanore Districts. The Malabar region of the State accounts for 60% of the area under this category.

Barren and uncultivable land

During the year 1963-64, 281857 acres were classified as barren and uncultivable land. The percentage of this type of land to the total area of the State was 3%. Compared to the year 1962-63, there was a reduction of 11276 acres of barren and uncultivable land during the year under report. The District-wise distribution of barren and uncultivable land in the State is given in the table below:

<i>District</i>	<i>Barren and uncultivable land</i>	
	<i>Area (acres)</i>	<i>Percentage</i>
Trivandrum	2337	0.8
Quilon	30273	10.5
Alleppey	4792	1.7
Kottayam	54456	18.9
Ernakulam	22329	7.7
Trichur	8072	2.8
Palghat	69422	24.0
Kozhikode	34948	12.1
Cannanore	62228	21.5
STATE	288857	100.0

Kozhikode, Cannanore and Kottayam Districts have comparatively larger areas of barren land. The Malabar Districts of Palghat, Kozhikode and Cannanore account for about 58% of the barren land in the State.

Permanent pastures and other grazing lands:

The area under permanent pastures and other grazing lands in the State was 85084 acres during 1963-64. The corresponding area during 1962-63 was 86108 acres. This type of land set apart exclusively for grazing purposes, is very small in the State viz. 0.8% of the total area of the State. The District-wise distribution of permanent pastures in the State is given below.

<i>District</i>	<i>Permanent pastures & grazing lands</i>	
	<i>Area (acres)</i>	<i>Percentage</i>
Trivandrum	1480	1.7
Quilon	3313	3.9
Alleppey	669	0.8
Kottayam	11126	13.1
Ernakulam	8239	9.7
Trichur	1344	1.6
Palghat	15483	18.2
Kozhikode	6873	8.0
Cannanore	36557	43.0
STATE	85084	100.0

Land under Miscellaneous tree crops

Land under Miscellaneous tree crops not included in the net area shown in the State covers 512380 acres. This is 5.4% of the total geographical area of the State. The area in each District is given in the following table.

District	Land under Miscellaneous tree crops	
	Area (in acres)	Percentage
1	2	3
Trivandrum	1633	0.3
Quilon	12235	2.4
Alleppey	20402	4.0
Kottayam	39254	7.7
Ernakulam	24659	4.8
Trichur	3751	0.7
Palghat	79893	15.6
Kozhikode	100238	19.6
Cannanore	230315	44.9
STATE	512380	100.0

Cannanore, Kozhikode and Palghat Districts account for 80% of the total area under miscellaneous tree crops in the State.

Cultivable Waste Land

During 1963-64 the extent of cultivable waste land in the State was 308721 acres. The corresponding area during 1962-63 was 313275 acres. The cultivable waste land occupies 3.2% of the geographical area of the State. A major share of the cultivable waste land in the State is situated in Cannanore, Kozhikode, Palghat and Kottayam Districts. The district-wise distribution of cultivable waste land in the State is given below:

District	Cultivable Waste lands	
	Area (in acres)	Percentage
1	2	3
Trivandrum	2901	0.9
Quilon	9700	3.1
Alleppey	6248	2.0
Kottayam	49417	16.0
Ernakulam	21148	6.9
Trichur	10756	3.5

(1)	(2)	(3)
Palghat	53841	17.4
Kozhikode	68576	22.2
Cannanore	86137	28.0
STATE	308721	100.0

Compared to 1962-63 it is seen that the cultivable waste land in the State has decreased by 4554 acres in 1963-64. The Malabar Districts of Palghat, Kozhikode and Cannanore account for 68% of the cultivable waste land in the State.

Fallow-land other than current fallow:

The extent of fallow land in the State other than current fallow was 104013 acres during the year under review while it was 106945 during the preceding year (1962-63). The extent of fallow-land in each District is given below:—

District.	Fallow-land other than current fallow.	
	Area (acres)	Percentage.
Trivandrum	7682	7.4
Quilon	4091	3.9
Alleppey	1138	1.1
Kottayam	3776	3.6
Ernakulam	4370	4.2
Trichur	1609	1.5
Palghat	13902	13.4
Kozhikode	18621	17.9
Cannanore	48824	47.0
STATE	104013	100.0

The Districts of Palghat, Kozhikode and Cannanore account for 78% of the "other fallow lands" in the State.

Current fallow:

During the year 1963-64, the extent of current fallow was only 94170 acres though in the previous year the area was 108443 acres. The

distribution of current fallow lands in each of the nine Districts is given in the following table.

<i>District.</i>	<i>Current fallow.</i>	
	<i>Area (acres)</i>	<i>Percentage.</i>
Trivandrum	4586	4.9
Quilon	4224	4.5
Alleppey	4755	5.0
Kottayam	11905	12.6
Ernakulam	6538	7.0
Trichur	4468	4.7
Palghat	21250	22.6
Kozhikode	26668	28.3
Cannanore	9776	10.4
STATE	94170	100.0

63 percent of the current fallow land is accounted by the Districts of Kottayam, Palghat and Kozhikode.

Net area sown:

The net area sown in the State increased from 4965115 acres in 1962-63 to 4996434 acres in 1963-64, thus registering an increase of 31319 acres. The net area sown in each District during the two year is as follows:—

<i>District.</i>	<i>Net area sown</i>			
	<i>Area (acres)</i> 1962-63	<i>Percentage</i>	<i>Area (acres)</i> 1963-64	<i>Percentage</i>
Trivandrum	371290	7.5	370918	7.4
Quilon	533579	10.7	538443	10.8
Alleppey	392323	7.9	395416	7.9
Kottayam	716710	14.4	727594	14.6
Ernakulam	506740	10.2	510402	10.2
Trichur	331612	6.7	332595	6.7
Palghat	610394	12.3	609002	12.2
Kozhikode	818526	16.5	831480	16.6
Cannanore	683941	13.8	680584	13.6
STATE	4965115	100.0	4996434	100.0

The total geographical area, the net area sown and the percentage thereof in each District are given in the following table.

(Area in acres)

<i>District.</i>	<i>Total geographical area</i>	<i>Net area sown (1963-64)</i>	<i>Percentage</i>
Trivandrum	533983	370918	69.5
Quilon	1159049	538443	46.5
Alleppey	461568	395416	85.7
Kottayam	1547434	727594	47.0
Ernakulam	784381	510402	65.1
Trichur	727137	332595	45.7
Palghat	1261285	609002	48.3
Kozhikode	1634814	831480	50.9
Cannanore	424960	680584	47.8
STATE	9534611	4996434	52.4

The percentage of net area sown to the total geographical area is highest in Alleppey District followed by Trivandrum and Ernakulam Districts.

The area of cultivable land in the State was 60.2 lakh acres during the year under review. The cultivable land consists of land under Miscellaneous tree crops, cultivable waste, current fallow, other fallow and net area sown. Cultivated land consists of net area sown and current fallow. The percentage of cultivated area to cultivable area in the State works out to 84.6. The distribution of cultivated area and cultivable area and the percentage thereof in each District is as follows :

<i>District</i>	<i>Cultivable area</i>	<i>Cultivated area</i>	<i>Percentage</i>
Trivandrum	3,87,720	3,75,504	96.8
Quilon	5,68,693	5,42,667	95.4
Alleppey	4,27,959	4,00,171	93.5
Kottayam	8,31,946	7,39,499	88.9
Ernakulam	5,67,117	5,16,940	91.2
Trichur	3,53,179	3,37,063	95.4
Palghat	7,77,888	6,30,252	81.0
Kozhikode	10,45,583	8,58,148	82.1
Cannanore	10,55,633	6,90,360	65.4
STATE	60,15,718	50,90,604	84.6

Cultivable area = Net area sown + current fallow + other fallow + cultivable waste + land under Miscellaneous tree crops.

Cultivated area = Net area sown + current fallow.

The proportion of cultivated area to cultivable area is highest in Trivandrum District followed by Quilon and Trichur Districts.

Area sown more than once :

This area includes all double and triple crop land in the State counted twice and thrice respectively. Area sown more than once in the State during 1963-64 was 10,86,459 acres while it was only 10,80,618 acres during 1962-63. The extent of area sown more than once in each District is given below :

<i>District</i>	<i>Area sown more than once</i>	
	<i>Area (acres)</i>	<i>Percentage</i>
Trivandrum	1,13,610	10.5
Quilon	1,46,025	13.4
Alleppey	1,48,714	13.7
Kottayam	70,608	6.5
Ernakulam	77,098	7.1
Trichur	1,67,674	15.4
Palghat	1,92,681	17.7
Kozhikode	79,526	7.4
Cannanore	90,523	8.3
STATE	10,86,459	100.0

The extent of area sown more than once is highest in Palghat District followed by Trichur and Alleppey Districts.

Total cropped area :

The total cropped area in the State was 60,82,893 acres during 1963-64 as against 60,45,733 acres during 1962-63, registering an increase of 37,160 acres. The total cropped area in each of the nine Districts is as follows :

<i>District</i>	<i>Total cropped area</i>	
	<i>Area (acres)</i>	<i>Percentage</i>
Trivandrum	4,84,528	8.0
Quilon	6,84,468	11.3
Alleppey	5,44,130	8.9
Kottayam	7,98,202	13.1
Ernakulam	5,87,500	9.7
Trichur	5,00,269	8.2
Palghat	8,01,683	13.2
Kozhikode	9,11,006	14.9
Cannanore	7,71,107	12.7
STATE	60,82,893	100.0

The percentage, of total cropped area be net area sown in the State and in the different Districts are given below :

District	Net area	Total cropped area	Percentage $\frac{3}{2} \times 100$
Trivandrum	370918	484528	130.6
Quilon	538443	684468	127.1
Alleppey	395416	544130	137.6
Kottayam	727594	798202	109.7
Ernakulam	510402	587500	115.1
Trichur	332595	500269	150.4
Palghat	609002	801683	131.6
Kozhikode	831480	911006	109.6
Cannanore	680584	771107	113.3
State	4996434	6082893	121.7

The percentages given in the above table stand for the indices of intensity of cultivation in each District. The percentage of total cropped area to net area sown is highest in Trichur District which shows that intensity of cultivation is maximum in that District. Next to Trichur come Alleppey and Palghat Districts. 43% of the total food crop area is in the Districts of Palghat, Kozhikode and Cannanore.

Area under food crops :

Agricultural crops in the State are broadly classified into food and non-food crops. The area under food crops in the State was 39,64,770 acres during 1963-64 while it was only 39,58,245 acres during 1962-63. During the year under reference the percentage of area under food crops to the total cropped area was 65.2.

The area under food crops in each District and the percentage of that to the total cropped area in the District are as follows :

District	Total cropped area	Area under food crops	Percentage	Area under food crops as % of the cropped area
Trivandrum	484528	319183	8.1	65.9
Quilon	684468	422283	10.7	61.7
Alleppey	544130	350872	8.8	64.4
Kottayam	798202	414226	10.4	51.9
Ernakulam	587500	364229	9.2	62.0
Trichur	500269	380619	9.6	76.1
Palghat	801683	659175	16.6	82.2
Kozhikode	911006	506923	12.8	55.6
Cannanore	771107	547755	13.8	71.0
State	6082893	3964770	100.0	65.2

The area under food crops is maximum in Palghat District followed by Cannanore and Kozhikode Districts. The percentage of area under food crops to total cropped area is also highest in Palghat District. Trichur and Cannanore Districts follow suit.

The Districts of Palghat, Kozhikode and Cannanore account for 43% of the area under food crops in the State.

Non-food crops :

The area under non-food crops is estimated as 2118123 acres during 1963-64 though it was only 2087488 acres during the year 1962-63. The extent of area under non-food crops in the different Districts is given in the following table.

<i>Area under non-food crops</i>			
<i>District</i>	<i>Area (acres)</i>	<i>Percentage</i>	<i>Percentage to total cropped area.</i>
Trivandrum	165345	7.8	34.1
Quilon	262180	12.4	38.3
Alleppey	193758	9.1	35.6
Kottayam	383976	18.1	48.1
Ernakulam	223271	10.5	38.0
Trichur	119650	5.7	23.9
Palghat	142508	6.8	17.8
Kozhikode	404083	19.1	44.3
Cannanore	223352	10.5	29.0
STATE	2118123	100.0	34.8

More than 60% of the area under non-food crops in the State is concentrated in the Districts of Kozhikode, Kottayam, Quilon, Ernakulam and Cannanore. The percentage of non-food crop area to total cropped area is maximum in Kottayam District. For the State as a whole the percentage of non-food crop area to the total cropped area 34.8 during the year under report.

The area under important food and non-food crops in the State during 1963-64 are discussed in the following paragraphs.

Paddy :

During the year under review the total cropped area under paddy in the State was 1989403 acres. Of this, 983628 acres were under Autumn paddy, 815467 acres under winter paddy and 190308 acres under summer paddy. Compared to 1962-63, there was an increase of 5989 acres in the paddy area during 1963-64. The paddy area in each District during the year is as follows:

<i>District</i>	<i>Area (in acres)</i>	<i>Percentage</i>
Trivandrum	95847	4.8
Quilon	122574	6.2
Alleppey	203412	10.2
Kottayam	100548	5.0
Ernakulam	206478	10.4
Trichur	268087	13.5
Palghat	481504	24.2
Kozhikode	274384	13.8
Cannanore	236567	11.9
STATE	1989403	100.0

50 percent of the paddy area in the State is concentrated in the three Districts of Palghat, Kozhikode & Cannanore.

Pulses :

The area under pulses in the State during 1963-64 was 108360 acres. The District-wise distribution of the area under pulses is as follows :

<i>District</i>	<i>(Area acres)</i>	<i>Percentage</i>
Trivandrum	6633	6.1
Quilon	17250	15.9
Alleppey	2664	2.5
Kottayam	1882	1.7
Ernakulam	4857	4.5
Trichur	21999	20.3
Palghat	31959	29.5
Kozhikode	13552	12.5
Cannanore	7564	7.0
STATE	108360	100.0

78 percent of the area under pulses is concentrated in Quilon, Trichur, Palghat and Kozhikode Districts.

Sugarcane :

During 1963-64, the sugarcane area in the State was estimated at 23440 acres, of which, more than 50% was in Alleppey District. The other important sugarcane growing Districts are Kottayam and Quilon. The area during the year showed an increase of 380 acres compared to the previous year.

Pepper :

Pepper, one of the dollar earning crops of the State is cultivated in an area of 245578 acres. Compared to 1962-63 (245226 acres), there is an increase of 352 acres during 1963-64. The important pepper growing district

in the State is Cannanore which accounts for about 40% of the pepper area in the State. Kozhikode and Kottayam Districts stand next in the order of importance. Trichur District stands behind all the other Districts with regard to this crop.

Ginger :

The area under ginger in the State was 29550 acres. Kozhikode and Kottayam Districts account for two thirds of the area under the crop.

Turmeric :

During 1963-64, turmeric was cultivated in 11405 acres, of which more than 80% was in the Districts of Kottayam, Palghat and Kozhikode.

Cardamom :

Cardamom is cultivated in 70877 acres in the State. The crop is mainly concentrated in Kottayam District. Kerala is the major cardamom producing State in India.

Betelnut :

The area under betelnut during the year under review was 140096 acres though during the year 1962-63 it was only 136648 acres. Nearly 40 percent of the area lies in Kozhikode and Cannanore Districts.

Mangoes :

Though the area under mango is estimated at 157316 acres during 1963-64, it is one of the important fruit crops of the State which is not subjected to any planned development.

Banana :

Banana is cultivated in 106603 acres in the State. More than 55% of the area under the crop is in the Malabar Districts viz., Palghat, Kozhikode and Cannanore.

Cashew :

Cashew trees occupy 203536 acres in the State. The important cashew growing Districts in the State are Cannanore, Kozhikode and Quilon in the order of importance.

Tapioca :

Tapioca which is one of the important food items and which is mainly used as a substitute for rice was cultivated in 518688 acres during 1963-64. Compared to 1962-63 there was a reduction of 28938 acres during the year under review. The Third Five Year Plan aims at reducing the area under tapioca to 3 lakhs acres by 1965-66. About 50% of the area under tapioca is in Trivandrum and Quilon Districts.

Groundnut :

The area under groundnut in the State is estimated as 35860 acres of which 34280 acres are in Palghat District.

Sesamum :

Sesamum is cultivated mainly as a third crop in paddy fields. The crop was cultivated in 29630 acres during 1963-64. The important sesamum growing Districts in the State are Alleppey, Quilon and Palghat.

Coconut:

Coconut is one of the important cash crops of the State. The area under coconut trees in the State was 1,346,689 acres during 1963-64 as against 1,332,535 acres during 1962-63. The District-wise area under the crop is given below:

<i>District.</i>	<i>Area (acres).</i>	<i>Percentage.</i>
Trivandrum	140510	10.4
Quilon	174036	12.9
Alleppey	170644	12.7
Kottayam	159870	11.9
Ernakulam	114663	8.5
Trichur	87713	6.5
Palghat	51715	3.8
Kozhikode	281391	20.9
Cannanore	166147	12.4
STATE	1346689	100.0

The important coconut growing District is Kozhikode followed by Quilon, Alleppey and Cannanore Districts.

Tea:

Tea is mainly cultivated in Kottayam District. The area under the crop during the year under review was estimated as 94901 acres of which about 80% was in Kottayam District. The other important tea growing Districts are Kozhikode and Quilon.

Coffee:

Coffee was cultivated in 49474 acres during the year 1963-64. The corresponding area during 1962-63 was 47372 acres only. 75% of the coffee area is in Kozhikode District. The other important coffee growing Districts are Palghat, Kottayam and Cannanore.

Rubber:

The area under rubber in the State is 353129 acres during 1963-64 as against 340780 acres during the previous year. One third of the rubber cultivation in the State is in Kottayam District. Quilon, Kozhikode and Ernakulam Districts stand next in the order of importance.

WEATHER AND CROP CONDITIONS 1963-64.**I. RAINFALL CONDITIONS****Trivandrum District:**

The rainfall was normal during Kharif and Rabi seasons in this District. There was plenty of rainfall in July and August. Rainfall conditions were satisfactory for Kharif and Rabi seasons throughout the District.

2. Quilon District :

During Kharif season there was heavy rainfall in almost all parts of the District. Slight damages to crops especially paddy crop was reported. Rain was scarce during Rabi season throughout the District. As a whole the Rabi crops were poor due to the lack of sufficient rainfall. During Rabi season in some parts of the District mainly in Karunagappally Taluk draught conditions prevailed affecting crops like coconut, arecanut, pepper, cashew-nut, banana and Tapioca.

3. Alleppey District :

The Kharif season began with heavy rainfall in almost all taluks of the District especially in Thiruvalla, Chenganoor and Mavelikara Taluks where the rainy season lasted till the middle of August 1963. Flood caused damages to the Kharif crop in these taluks. In Sherthalai, Ambalapuzha and Kuttanad Taluks, the rainfall condition was satisfactory during the season. Dry weather was prevailing during September which was helpful for the harvest of Kharif paddy.

During Rabi season rain was quite inadequate and dry weather was prevailing for about two months in the beginning of the season. The standing crops during Rabi season were adversely affected by the draught.

4. Kottayam District:

The rainfall was sufficient during Kharif season eventhough the rainfall was less compared to that of the previous year.

There was very little rainfall during January and February 1964 and hence it slightly, affected the crops in Rabi season.

5. Ernakulam District:

There was heavy rainfall during July and August in the District. But at the time of sowing of paddy the rain was insufficient.

During the Rabi season rainfall was insufficient. The weather conditions during the season were satisfactory throughout the District.

6. Trichur District:

There was heavy rain during the Kharif season in all taluks of the District except in Mukundapuram and Cranganore Taluks, resulting in flood in some of the villages. Consequently the sowing operations were delayed and in certain villages sowing had to be done again.

The weather condition was better during Rabi season in the District.

7. Palghat District:

Rainfall in all the taluks during both the Kharif and Rabi seasons was quite normal except in perinthalmanna taluk where the rain was excessive during the Kharif season.

8. Kozhikode District:

Rainfall was sufficient during the Khariff and Rabi seasons in the District.

9. Cannanore District:

The rainfall was normal in both the seasons viz., Kharif and Rabi seasons throughout the District. No adverse weather conditions to crops were experienced in this District during the agricultural year 1963-64.

II. CROP CONDITIONS

1. Trivandrum District:

The condition of crops in both the seasons was satisfactory. There was no serious attack of pests or diseases and no considerable loss or damage to crops was reported.

2. Quilon District:

The condition of crops in Kharif season was not so satisfactory, compared to that of the previous year due to excess rainfall. Slight damages to paddy crop in certain parts of the District were reported. The crop condition in Rabi season in the District was not satisfactory, compared to the previous year. Draught prevailed in the District and resulted in the low yield rate of seasonal crops. In general the crop conditions were not satisfactory during the Agricultural year 1963-64 throughout the District.

3. Alleppey District:

The yield of paddy was slightly affected by the heavy rains and floods prevailed during the beginning of the year in the eastern part of the District and in Mavelikara Taluk. The yield of Autumn paddy during the year was reduced considerably due to the adverse weather conditions. During the Rabi season the condition of crops was satisfactory to some extent, except due to the draught which prevailed in the beginning of the season.

4. Kottayam District:

During the Kharif season the condition of crops was good as there was moderate rainfall. The condition of crops in the Rabi season was not so good due to the scarcity of rain.

5. Ernakulam District:

The crop condition was satisfactory during the Kharif and Rabi seasons in the District.

6. Trichur District:

In Kharif season the rainfall was excess and consequently the paddy crop (Viruppu) was affected adversely in some parts of the District. The sowing operation was also delayed due to untimely rainfall. In short the crop condition during Kharif season was not good in most of the taluks especially in Trichur, Thalappally and Chowghat. The condition of other crops was some what good.

During the Rabi season the condition of crops was satisfactory throughout the District.

7. Palghat District:

Crop conditions of both the Kharif and Rabi crops in all the taluks except a very few villages in Palghat Taluk were satisfactory. No appreciable damage to crop was reported.

8. Kozhikode District:

The conditions of both the Kharif and Rabi crops in the District were satisfactory during the year 1963-64.

9. Kannanore District:

The climatic conditions were favourable for the healthy growth of the crops in both seasons viz., Kharif and Rabi. There were no damages due to natural calamities such as flood, draught etc., during the reference period.

PRODUCTION OF IMPORTANT CROPS

The production figures of all important crops in the State since 1952-53 are given in Table D of the summary tables. The District-wise production during the year under report is given in table 4.1 of the detailed tables. The trend in the production of some of the important crops is discussed in the following paragraphs.

1: Rice:

The production of rice in the State was 1110239 tons during 1963-64 though it was only 1075994 tons during 1962-63. The increase during the year under report was 34000 tons. The production of rice during the two years in the different paddy seasons is as follows:

Season	1962-63	1963-64	(Rice in tons)
Autumn	487164	502236	„
Winter	474288	491262	„
Summer	114542	116741	„
Total	1075994	1110239	„

The figures given above show that there was substantial increase in rice production during the Autumn and Winter crops of 1963-64. The Rice production in the different districts of the State during the year under report is given below:

District	Rice production	
	In tons	Percentage
Trivandrum	55644	5.0
Quilon	68183	6.1
Alleppey	110370	10.0
Kottayam	57963	5.2
Ernakulam	108442	9.8
Trichur	145141	13.0
Palghat	327506	29.5
Kozhikode	119776	10.8
Kannanore	117214	10.6
STATE	1110239	100.0

About 43 percent of the State's rice production is contributed by the two Districts of Palghat and Trichur.

Pulses:

The production of pulses in the State during 1963-64 was 16857 tons as against 16992 tons during the previous year. Palghat District leads the other Districts in the production of pulses.

Sugarcane:

The sugarcane gur production in the State was 43395 tons during 1963-64 as against 41044 tons during 1962-63. Alleppey and Kottayam Districts are the important sugarcane producing areas of the State.

Pepper:

The production of pepper suffered a slight decline during the period under review. The production was estimated at 22070 tons only though it was 24076 tons during 1962-63.

Cashewnut:

The cashewnut production in the State was estimated at 90858 tons during 1963-64. The corresponding figure during 1962-63 was 90592 tons. Cannanore and Kozhikode are the important cashew growing Districts of the State.

Tapioca:

The production of raw tapioca in the State was estimated at 2483833 tons during 1963-64. This production figure is not comparable with that of the previous years since the method of estimation of tapioca production was changed during the year under report. Till 1962-63, the production was estimated based on conventional yield rates viz., 6200 lb./acre throughout the State. But during 1963-64, the yield rates obtained through the crop cutting surveys conducted by the Bureau (during the period 1961-62, 1962-63 and 1963-64) were adopted and hence the following District-wise yield rates were adopted during the year under report for estimating total tapioca production in the State.

Raw Tapioca

<i>District</i>	<i>Yield rate/acre (Tons)</i>	<i>Total production (Tons)</i>	<i>Percentage.</i>
Trivandrum	5.1	632410	25.5
Quilon	4.4	596253	24.0
Alleppey	3.5	229968	9.3
Kottayam	6.3	611226	24.6
Ernakulam	5.9	199443	8.0
Trichur	3.5	40093	1.6
Palghat	3.7	24209	1.0
Kozhikode	3.3	99544	4.0
Cannanore	3.5	50687	2.0
STATE	4.79	2483833	100.0

About 75% of the tapioca production in the State is accounted for by Trivandrum, Quilon and Kottayam Districts.

Ginger (Dry):

The ginger production in the State during 1963-64 was 11113 tons of dry ginger. The major ginger growing District is Kottayam.

Turmeric (cured):

During the year 1963-64 the quantity of cured turmeric produced in the State was 3850 tons only though it was 4245 tons during 1962-63.

Cardamom:

The production of cardamom in the State was steady during the last three years viz., 1263 tons of processed cardamom.

Betelnut:

The State produced 8522 million nuts during the year under report though the production during 1962-63 was only 8312 million nuts. Kozhikode, Cannanore and Trichur are the important Betelnut producing Districts of the State accounting for more than 50 percent of the State's production.

Banana and Plantain:

The quantity of Banana and Plantain produced in the State during the year 1963-64 were 73773 and 246909 tons respectively. Quilon, Kottayam and Cannanore are the major Banana producing Districts while Palghat District is important for plantain.

Cocoanut:

During the year under report the State produced 3262 million nuts as against 3305 million nuts during 1962-63. The reduction in the production is on account of the fall in yield rate per acre. The yield rate was 2480 nuts/acre during 1962-63 and it came down to 2422 nuts during the year under report. The cocoanut production in the different Districts is as follows:

<i>District</i>	<i>Production (in Million nuts)</i>	<i>Percentage</i>
Trivandrum	340	10.4
Quilon	422	12.9
Alleppey	413	12.7
Kottayam	387	11.9
Ernakulam	278	8.5
Trichur	212	6.5
Palghat	125	3.8
Kozhikode	682	20.9
Cannanore	403	12.4
STATE	3262	100.0

Kozhikode District is the major producer of coconut in the State accounting for more than one fifth of the States production. Next come Quilon and Alleppey Districts.

Tea:

The Quantity of tea produced in the State was 40393 tons in 1963-64 as against 38162 tons during the previous year. Kottayam and Kozhikode are the important tea producing areas in the State.

Coffee:

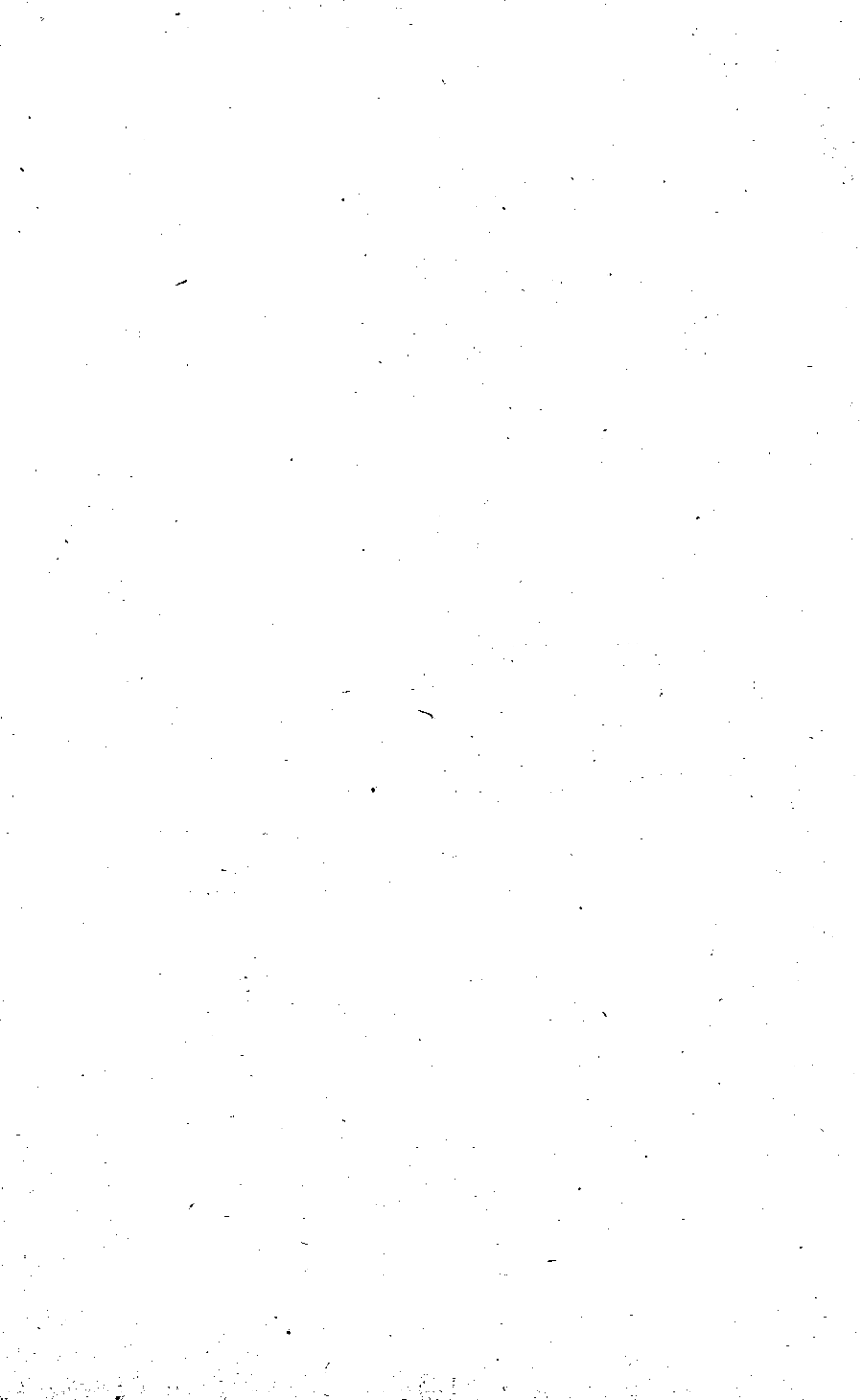
During 1963-64, the production of Coffee amounted to 8433 tons as against 8347 tons in 1962-63. Kozhikode and Palghat Districts account for about 75 percent of the State's coffee production.

Rubber:

The State produced 33258 tons of rubber during the year under report. Compared to 1962-63, the production increased by about 20% during the year. Kottayam Quilon and Kozhikode Districts account for two thirds of the rubber production in the State.

Lemongrass Oil:

Lemongrass Oil, one of the important foreign exchange earning agricultural product of the State, is mainly cultivated in Eranakulam, Kozhikode and Cannanore Districts. The State's production during 1963-64 was estimated at 1616 tons.



PART II—SUMMARY TABLES

- A. Classification of area
- B1. Source of irrigation
- B2. Area under crops irrigated
- C. Area under crops
- D. Production of important crops
- E. Average yield per acre of certain crops
- F. Average price and value of production
- G. Livestock, Poultry and agricultural machinery
- H. Sowing, harvesting and peak marketing seasons of principal crops.

Table—
CLASSIFICATION OF

Head of Classification	1952-53		1955-56	
	Area	%age	Area	%age
Total area by village papers ..	9411892	100.00	9411892	100.00
Forests ..	2340707	24.87	2489891	26.46
Land put to non-agricultural uses ..	506592	5.38	506494	5.38
Barren and uncultivable land ..	530902	5.64	504903	5.36
Permanent pastures and grazing land ..	137691	1.46	116337	1.24
Land under Miscellaneous tree crops ..	460412	4.89	486824	5.17
Cultivable waste ..	448690	4.77	374617	3.98
Current fallow ..	108752	1.16	139744	1.48
Other fallows ..	487436	5.18	268168	2.85
Net area sown ..	4390710	46.65	4524914	48.08
Total cropped area ..	5162294	54.85	5382717	57.19
Area sown more than once ..	771584	8.20	857803	9.11

A
AREA (Area in Acres)

1960-61		1961-62		1962-63		1963-64	
Area	%age	Area	%age	Area	%age	Area	%age
9534611	100.00	9534611	100.00	9534611	100.00	9534611	100.00
2609784	27.37	2609784	27.37	2609784	27.37	2606395	27.34
505688	5.30	517658	5.43	528714	5.55	538557	5.65
373978	3.92	361069	3.79	300133	3.15	288857	3.03
111770	1.17	110058	1.15	86108	0.90	85084	0.89
504991	5.30	499632	5.24	516114	5.41	512380	5.37
354371	3.72	348166	3.65	313275	3.29	308721	3.24
165868	1.74	150639	1.58	106945	1.12	94170	0.99
154545	1.62	164100	1.72	108443	1.14	104013	1.09
4753616	49.86	4773510	50.07	4965115	52.07	4996434	52.40
5804143	60.87	5785226	60.68	6045733	63.41	6082893	63.79
1050527	11.02	1011716	10.61	1080618	11.33	1086459	10.39

Table B. 1
SOURCES OF WATER SUPPLY AND NET AREA IRRIGATED (Area in Acres)

Sources	1955-56	1960-61	1961-62	1962-63	1963-64
Net area irrigated by Government canals	166470	328770	346980	365540	385280
Private canals	14180	14180	14180	14180	14180
Tanks	102790	116020	119230	122510	127350
Wells	5020	5020	5020	5020	5020
Other sources	323560	323560	323560	323560	326200
Total	612020	787550	808970	830810	858030
Percentage of Net area irrigated to net area sown	13.53	16.57	16.95	18.73	17.17
Area irrigated more than once in an year	251430	339880	342700	345760	350060
Total irrigated area	863450	1127430	1151670	1176570	1208090
Percentage of total irrigated area to total cropped area	16.04	19.42	19.91	19.46	19.86

TABLE-B. 2

AREA UNDER CROPS IRRIGATED (Area in Acres) IN KERALA

Sl. No.	Name of Crop	1955-56		1960-61		1961-62		1962-63		1963-64	
		Area	%age	Area	%age	Area	%age	Area	%age	Area	%age
1	Paddy	595450	69.0	859430	76.2	883670	76.7	908570	77.2	940090	77.8
2	Sugarcane	6910	0.8	9020	0.8	10400	0.9	10640	0.9	10640	0.9
3	Other food crops	163490	18.9	161380	14.3	160000	13.9	159760	13.6	151260	12.5
4	Total food crops	765850	88.7	1029830	91.3	1054070	91.5	1078970	91.7	1101990	91.2
5	Total non-food crops..	97600	11.3	97600	8.7	97600	8.5	97600	8.3	106100	8.8
	All crops	863450	100.0	1127430	100.0	1151670	100.0	1176570	100.0	1208090	100.0

TABLE—C

AREA UNDER CROPS IN KERALA (Area in Acres)

Name of Crop	1952-53	1955-56	1960-61	1961-62	1962-63	1963-64
Paddy	1833916	1876400	1924727	1859932	1983414	1989403
Jowar	3051	4601	3640	3510	3510	3485
Ragi	11345	11618	13770	12860	12875	12889
Other cereals and Millets	13467	13400	14445	16660	16625	16625
Total cereals and Millets	1861779	1906019	1956582	1892962	2016424	2022402
Tur	11220	30790	22072	20711	21792	21770
Other pulses	74683	79793	86951	86848	86888	16590
Total pulses	85903	110583	109023	107559	108680	108360
Sugarcane	16055	18022	22600	22790	23060	23440
Palmyrah	9730	13483	12479	12881	12704	12702
Total sugar crops	25785	31505	35079	35671	35764	36142
Pepper	194733	213715	246500	246720	245226	245578
Chillies (Dry)	10227	9999	8200	8210	8210	8140
Ginger	34772	25838	29682	29764	29820	29550
Turmeric	11148	11247	11529	11971	11940	11405
Cardamom	63111	69361	70689	70877	70877	70877
Arcanaut	148253	143563	134069	140207	136648	140096
Other condiments and spices	39579	39539	46035	46358	46804	46616
Total condiments and spices	501823	513262	546684	554107	549525	552262

AREA UNDER CROPS IN KERALA—(Contd.)

Name of crop	1952-53	1955-56	1960-61	1961-62	1962-63	1963-64
Mangoes	125984	141113	147224	151185	154757	157316
Citrus fruits	8195	5713	4841	4841	4841	4841
Banana	76637	116305	24746	21413	26120	25423
Other Plantains	..	..	85028	84039	81006	81180
Other fresh fruits	86685	125876	143701	146275	145813	169898
Cashewnut	87497	92576	134222	135976	202941	203536
Other dried fruits	40504	14951	60	60	60	60
Total fruits	425502	496534	539822	543789	615538	642254
Tapioca	505880	548900	598490	584837	547626	518688
Sweet potatoes	15115	20760	19846	19975	20656	22031
Other vegetables	98311	98311	61811	65359	62153	61155
Total Vegetables	619306	667971	680147	670171	632314	603350
Total Food crops	3520098	3725874	3867337	3804259	3958245	3964770
Groundnut	27312	32610	39610	39502	39610	35860
Castor	1660	1738	528	686	962	895
Sesamum	45867	49729	29867	29523	29438	29630
Coconut	1063544	1106895	1237398	1247436	1332535	1346689
Other oil seeds	26690	27690	23915	26511	27248	27646
Total oil seeds	1165073	1218662	1331374	1343714	1429849	1440776

AREA UNDER CROPS IN KERALA --(Contd.)

Name of crop	1952-53	1955-56	1960-61	1961-62	1962-63	1963-64
Cotton	15830	24270 167	24270 90	23680 90	19100 90	19675 90
Other fibres	15830	21830	24360	23770	19190	19765
Total fibres	1293	1412	1835	1738	1738	1740
Tobacco	111162	98553	92988	92441	95265	94901
Tea	31132	35324	41509	46453	47372	49474
Coffee	154653	159896	303605	328838	340780	353129
Rubber	5041	248	3475	3475	3475	3475
Other drugs, plantation crops	303281	295433	443412	472945	488630	502719
Total drugs, plantation crops etc.	1495	1495	1151	1167	1162	1131
Fodder	3578	3578	3530	17608	19233	19834
Green Manure crops						
Lemongrass		36805	63535	62752	61193	62117
Other non-food crops	152939	79040	69444	59011	59239	71781
Total non-food crops	1642196	1656843	1936806	1980967	2087488	2118123
Total area under all crops	5162294	5382717	5804143	5785226	6045733	6082893
Area sown more than once	771584	857803	1050527	1011716	1080618	1086459
Net area sown	4390710	4524914	4753616	4773510	4965115	4996434

... the ... years of the method of estimation changed in 1962-63. Refer index Nos. for comparison

Table D
PRODUCTION OF IMPORTANT CROPS IN KERALA

Name of crop	Unit	1952-53	1955-56	1960-61	1961-62	1962-63	1963-64
Paddy	'000 Tons	1082	1324	1599	1504	1638	1689
Jowar	Tons	438	820	630	610	610	535
Ragi	"	5460	6115	7880	7504	7495	7428
Pulses	"	13422	17279	17270	16889	16992	16857
Sugarcane (Gur)	"	29000	33447	37490	37110	41044	43395
Pepper (Black)	"	22271	27236	26600	26550	24076	22070
Ginger (Dry)	"	10015	10936	11086	11185	11250	11113
Turmeric (Dry)	"	4976	5021	4115	4267	4245	3850
Cardamom	"	1212	1239	1260	1263	1263	1263
Arecanut	"	4448	6460	7737	8091	8312	8522
Chillies (Dry)	Million nuts			2190	2190	2218	2200
Banana	Tons	205448	311790	64072	55443	75795	73773
Other Plantain	"			258615	256900	246380	246909
Cashewnut	"	53889	57860	83297	84449	90592	90858
Tapioca (Raw)	'00 Tons	14905	15690	16565	16187	15157	*24838
Groundnut	Tons	13718	14240	13580	13533	13320	20447
Sesamum	"	5834	6358	2545	2539	2536	2555
Coconut	Million Nuts	2978	3099	3220	3247	3305	3262
Tea	Tons	29744	29917	39737	37428	38162	40393
Coffee	"	5030	6155	7292	8145	8347	8433
Rubber	"	18958	20841	22682	24589	28598	33258
Cotton	Bales	7019	9560	10610	10300	7534	8030
Tobacco	Tons	NA	689	990	915	904	905
Lemongrass oil	"		1000	1676	1690	1598	1616

*Not comparable over previous years since method of estimation changed in 63-64 for comparison refer Index Production;

Table E
AVERAGE YIELD PER ACRE OF CERTAIN CROPS

Name of crop	Unit	1952-53	1955-56	1960-61	1961-62	1962-63	1963-64
Paddy	lb.	1322	1581	1861	1811	1850	1903
Rice	"	869	1039	1223	1190	1215	1250
Jowar	"	358	399	387	389	389	376
Ragi	"	1078	1179	1282	1307	1304	1291
Sugarcane (Gur)	"	4046	4157	3716	3647	3987	4147
Pepper (Black)	"	256	286	242	241	220	201
Ginger (Dry)	"	645	948	837	842	845	842
Turmeric (Dry)	"	1000	1000	800	798	796	756
Cardamom	"	43	40	40	40	40	40
Arecanut	Nuts	30000	45000	57710	57708	60830	60830
Banana	lb.	6005	6005	5800	5800	6500	6500
Other plantains	"			6813	6813	6813	6813
Cashewnuts	"	1380	1400	1390	1390	1000	+1000
Tapioca	"	6600	6300	6200	6200	6200	*10726
Groundnut	"	1125	978	768	767	753	1277
Sesamum	"	285	286	191	193	193	193
Coconuts	"	2800	2800	2602	2602	2480	2422
Cotton	Nuts	174	173	171	171	155	160
Tea	lb.	599	680	957	907	897	953
Coffee	"	362	332	394	393	395	382
Rubber	"	275	292	167	167	188	211

†I. C. A. R. Survey Results.

*State Cropping Results.

Table F
AVERAGE PRICE AND TOTAL VALUE OF PRODUCTION

Name of crop	Unit	Average Price (Rs.) *				Value of Production (Rs. in lakhs)			
		1960-61	1961-62	1962-63	1963-64	1960-61	1961-62	1962-63	1963-64
Paddy	Ton	411.58	444.23	416.74	437.28	6581	6681	6826	7390
Pepper (Black)	"	4110.89	3539.69	2536.09	2665.02	1093	940	611	588
Ginger (Dry)	"	1193.90	1212.11	2092.95	2895.32	132	136	235	322
Coconut (with husk)	1000 Nuts	215.05	213.99	247.60	239.80	6925	6948	8183	7822
Areca nut	"	27.34	29.74	28.00	30.80	2115	2406	2327	2625
Tapioca	Ton	78.67	103.44	97.72	87.20	1303	1674	1483	1366
Banana	100	6.73	8.53	8.80	9.00	241	321	453	451
Other plantains	"	..	..	..	..	..	..	..	..
Cashewnut	Ton	785.59	646.75	574.61	759.11	654	546	521	690

* Farm Harvest Price.

Table G
NUMBER OF LIVESTOCK, POULTRY AND AGRICULTURAL MACHINERY

<i>Sl. No.</i>			<i>1956 Census</i>	<i>1961 Census</i>
1	2	3	4	5
1.	Cattle	Males over 3 years		
		(a) Breeding	11026	29319
		(b) Working	553155	515241
		(c) Others	37718	21471
		TOTAL	601899	566031
		Female over 3 years		
		(a) Breeding		
		(1) In milk	396375	428194
		(2) Dry	454233	502935
		(3) Not calved	120996	207277
		(b) Working	7083	11274
		(c) Others	19223	12306
		TOTAL	997950	1161986
		Young stock	910527	1025148
		TOTAL CATTLE	2510376	2753165
2.	Buffaloes	Males over 3 years		
		(a) Breeding	4046	10627
		(b) Working	247313	267871
		(c) Others	5895	6614
		TOTAL	257254	285112
		Female over 3 years		
		(a) Breeding		
		(1) In milk	61336	59542
		(2) Dry	52128	49341
		(3) Not calved	11624	16846
		(b) Working	10109	7266
		(c) Others	3288	2118
		TOTAL	138485	135113
		Young Stock	91914	64864
		TOTAL BUFFALOES	487653	485089

Table G—(concl'd.)

NUMBER OF LIVESTOCK POULTRY AND AGRICULTURAL MACHINERY

Sl. No.			1956 Census	1961 Census
1	2	3	4	5
3.	Sheep	(a) One year and above	39143	18949
		(b) Below one year	58677	5292
		TOTAL	97820	24241
4.	Goats	(a) One year and above	363135	869414
		(b) Below one year	592435	442848
		TOTAL	955570	1312262
5.	Horse and Ponies	(a) Three years and above	1008	366
		(b) Below three years	682	42
		TOTAL	1690	408
6.	Mules		2	31
7.	Donkeys		1415	377
8.	Camels		..	..
9.	Pigs		113711	122381
		TOTAL LIVESTOCK	4168237	4697954
10.	Poultry	(a) Fowls	6462799	8708664
		(b) Ducks	332085	387072
		(c) Others	..	..
11.	Ploughs	(a) Wooden	570327	562281
		(b) Iron	10225	6441
12.	Carts		27283	21037
13.	Sugarcane crushers	(a) Power	230	175
		(b) Bullocks	1155	1071
14.	Oil engines		2504	3372
15.	Electric pumps		723	2565
16.	Tractors		187	276
17.	Ghains	(a) More than five seers	1858	2058
		(b) Less than five seers	2366	2164

Table—H.
SOWING, HARVESTING AND PEAK MARKETING SEASONS OF
PRINCIPAL CROPS IN KERALA STATE

Crop	1	2	3	Sowing	Harvesting	Peak marketing
				4	5	6
1 Rice	Autumn Winter Summer	April—June August—October November—December January—March	1st crop 2nd crop	April—July September—October	August—October December—February February—March April—May	September—October January—February March—April May—June
2 Ragi				April—July September—October	August—October December—January	September—October December—January
3 Small Millets (Samai)	Kharif Rabi	May September		May September	August December	August December
4 Red gram	1st crop 2nd crop 3rd crop	May—June August—October February		May—June August—October February	August—September November—January April	September—October January April
5 Horse gram	1st crop 2nd crop	August—October February—March		August—October February—March	November—January April—May	January—February May—June
6 Green gram	..	May—June		May—June	August—September	September—October
7 Blackgram	1st crop 2nd crop	May—June October—November		May—June October—November	August—October January—February	October February
8 Other pulses	..	May—June October		May—June October	August—September December—January	August—September January
9 Sugarcane	1st crop 2nd crop	November—February January—March		November—February January—March	October—December December—February	November—December February

10	Ginger (Raw)	..	April—May	November—January	December—January
11	Pepper	..	..	November—January	December—January
12	Sesamum	1st crop	February—March	June—July	July—August
		2nd crop	August—October	December—January	December—January
		3rd crop	December—January	March—April	April—May
13	Cotton	..	August—September	February—March	February—March
14	Sweet Potatoes	1st crop	June—July	September—October	September—October
		2nd crop	September—October	December—January	December—January
		3rd crop	November—December	February—March	February—March
15	Turmeric	..	April—May	December—January	January—February
16	Lemongrass	..	..	June—September	September
17	Tapioca	1st crop	October—November	August—September	August—September
		2nd crop	March—May	November—January	December—January
		3rd crop	July—September	May—July	June—July



PART—III DETAILED TABLES

- 1.1 Normal rainfall
 - 1.2 Average monthly rainfall
 - 2.1 Classification of area in each district
 - 2.2 Classification of area as percentage to the total area according to village papers
 - 3.1 Area under crops in each district
 - 3.2 Percentage of area under crops to the total area in each district
 - 4.1 Out-turn of important crops in each district
 - 5.1 Average farm price of important commodities
 - 6.1 Agricultural wages
 - 7.1 Number of livestock, poultry and agriculture, machinery and implements
-

Table 1.1
NORMAL RAINFALL (MILLEMETRES)

Sl. No.	District	July	August	September	October	November	December	January	February	March	April	May	June
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Trivandrum ..	217.1	129.4	123.9	286.0	205.1	59.3	21.9	20.7	40.9	120.8	200.7	347.7
2	Quilon ..	450.4	301.3	224.0	333.7	238.1	58.2	24.9	36.6	79.3	168.5	260.7	538.7
3	Alleppey ..	536.4	334.5	243.2	337.2	211.0	58.1	29.6	27.1	54.3	130.5	284.4	648.4
4	Kottayam ..	654.8	426.3	260.1	334.0	210.8	65.8	29.4	26.1	60.3	137.8	233.0	604.6
5	Ernakulam ..	789.0	513.7	286.9	380.7	210.0	45.0	13.5	22.1	52.3	146.2	298.9	760.5
6	Trichur ..	759.2	463.6	247.9	325.5	158.5	23.5	7.4	9.0	27.3	82.8	266.8	789.4
7	Palghat ..	657.1	361.9	175.7	257.4	144.3	30.4	9.1	9.3	26.6	80.0	175.2	532.2
8	Kozhikode ..	980.1	519.1	225.5	281.3	143.7	27.7	7.4	6.4	7.3	87.3	220.1	878.5
9	Cannanore ..	1063.5	584.7	239.4	218.0	106.0	22.8	5.3	4.8	11.2	58.6	200.6	923.0

Table 1.2

AVERAGE MONTHLY RAINFALL (IN MILLEMETRES) IN KERALA
DURING THE YEAR 1963-1964.

Sl. No.	District	1964											
		July	August	September	October	November	December	January	February	March	April	May	June
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Trivandrum ..	369.4	241.2	211.1	255.9	164.7	74.5	2.0	14.8	85.4	84.3	65.6	149.6
2	Quilon ..	535.4	326.4	211.7	287.9	131.8	63.1	3.7	20.4	143.1	171.1	88.5	204.6
3	Alleppey ..	671.1	416.5	355.9	310.7	154.1	48.6	9.1	16.3	103.5	94.5	142.3	293.3
4	Kottayam ..	569.9	355.0	279.4	294.6	129.3	68.5	0.7	1.8	78.2	80.6	112.2	239.6
5	Ernakulam ..	668.5	556.9	344.9	340.7	151.3	79.1	Nil	1.4	69.2	83.9	118.3	408.3
6	Trichur ..	742.8	621.8	223.8	248.2	88.3	21.1	Nil	0.1	49.8	30.7	160.8	560.0
7	Palghat ..	588.1	427.3	152.1	234.7	63.1	28.0	Nil	..	85.4	58.8	99.2	376.9
8	Kozhikode ..	988.6	637.5	166.9	257.5	41.5	35.1	Nil	1.0	17.5	56.9	37.2	585.6
9	Cannanore ..	1019.4	776.2	163.3	273.8	26.6	19.1	Nil	5.8	6.5	58.5	55.8	540.8

CLASSIFICATION OF AREA IN EACH DISTRICT OF

Sl. No.	District	Total area according to : Village papers	Classifications			
			Forests	Land put to non-Agricultural uses	Barren and other cultivable land	Permanent pastures and other grazing lands
1	2	3	4	5	6	7
1	Trivandrum ..	533983	110241	32205	2337	1480
2	Quilon ..	1159049	523611	33159	30273	3313
3	Alleppey ..	461568	1268	26880	4792	669
4	Kottayam ..	1547434	614690	35216	54456	11126
5	Ernakulam ..	784381	136551	50145	22329	8239
6	Trichur ..	727137	328453	36089	8072	1344
7	Palghat ..	1261285	246275	152217	69422	15483
8	Kozhikode ..	1634814	479502	67908	34948	6873
9	Cannanore ..	1424960	165804	104738	62228	36557
	State ..	9534611	2606395	538557	288857	85084

2.1

KERALA (AREA IN ACRES) 1963-64

Classifications					Area sown more than once	Total cropped area
Land under Mis-tree crops not included in net area sown	Cultivable waste	Other fallow lands	Current fallows	Net area sown		
8	9	10	11	12	13	14
1633	2901	7682	4586	370918	113610	484528
12235	9700	4092	4224	538443	146025	684468
20402	6248	1138	4755	395416	148714	544130
39254	49417	3776	11905	727594	70608	798202
24659	21148	4370	6538	510402	77098	587500
3751	10756	1609	4468	332595	167674	500269
79893	53841	13902	21250	609002	192681	801683
100238	68576	18621	26668	831480	79526	91100
230315	86134	48824	9776	680584	90523	771107
512380	308721	104013	94170	4996434	1086459	6082893

Table 2.2
CLASSIFICATION OF AREA AS PERCENTAGE TO THE TOTAL AREA ACCORDING TO
VILLAGE PAPERS 1963-64.

Sl. No.	District	Classifications											Total cropped area			Area sown more than once
		Area according to village papers											Food crops	Non-food crops	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
			Forests	Land put to non-agricultural uses	Barren and uncultivable waste lands	Permanent pastures and other grazing lands	Land under Misc. tree crops and groves	Cultivable waste	Other fallow lands	Current fallow	Net area sown	Food crops	Non-food crops	Total		
1	Trivandrum	100.0	20.64	6.030	0.44	0.28	0.31	0.54	1.44	0.86	69.46	59.77	30.96	90.73	21.27	
2	Quilon	100.0	45.18	2.86	2.61	0.29	1.05	0.84	0.35	0.36	46.46	36.43	22.62	59.05	12.59	
3	Alleppey	100.0	0.27	5.82	1.04	0.15	4.42	1.35	0.25	1.03	85.67	75.90	41.98	117.88	32.21	
4	Kottayam	100.0	39.72	2.28	3.52	0.72	2.54	3.19	0.24	0.77	47.02	26.77	24.81	51.58	4.56	
5	Ernakulam	100.0	17.41	6.39	2.85	1.05	3.14	2.70	0.56	0.83	65.07	46.44	28.46	74.90	9.83	
6	Trichur	100.0	45.17	4.96	1.11	0.18	0.52	1.48	0.22	0.62	45.74	52.34	16.45	68.79	23.05	
7	Palghat	100.0	19.53	12.07	5.50	1.23	6.33	4.27	1.10	1.69	48.28	52.26	11.30	63.56	15.28	
8	Kozhikode	100.0	29.33	4.15	2.14	0.42	6.13	4.20	1.14	1.63	50.86	31.01	24.72	55.73	4.87	
9	Cannanore	100.0	11.64	7.35	4.37	2.56	16.16	6.04	3.43	0.69	47.76	38.44	15.67	54.11	6.35	
	STATE	100.0	27.34	5.65	3.03	0.89	5.37	3.24	1.09	0.99	52.40	41.58	22.22	63.80	11.40	

Table-3.1

AREA UNDER CROPS IN EACH DISTRICT OF KERALA (AREA IN ACRES) DURING 1963-64

District	Food crops								
	Cereals								
	Rice			Total	Jowar	Ragi	Other cereals and millets	Total cereals and millets	
Autumn	Winter	Summer							
1	2	3	4	5	6	7	8	9	
Trivandrum ..	46863	48984	..	65847	..	55	..	95902	
Quilon ..	52411	68287	1876	122574	..	1016	..	123590	
Alleppey ..	54719	44237	104456	203412	..	101	143	203656	
Kottayam ..	16529	48554	35465	100548	..	115	2360	103023	
Ernakulam ..	103922	88913	13643	206478	..	133	838	207449	
Trichur ..	96418	149924	21745	268087	..	3054	..	271141	
Palghat ..	285562	188865	7077	481504	3310	2275	10080	497169	
Kozhikode ..	162766	108561	3059	274386	85	3840	3080	281391	
Cannanore ..	164438	69142	2987	236567	90	2300	124	239081	
STATE: ..	983628	815467	190308	1989403	3485	12889	16625	2022402	

Table 3-1—(contd.)

Food crops—(contd.)

District	Pulses							Total food grains
	Tur	Other pulses			Total pulses	Total	Total food grains	
		Kharif	Rabi	Total				
	10	11	12	13	14	15		
Trivandrum ..	40	3038	3555	6593	6633	102335		
Quilon ..	501	10604	6145	16749	17250	140840		
Alleppey ..	29	1235	1400	2635	2664	206320		
Kottayam ..	755	697	430	1127	1882	104905		
Ernakulam ..	170	1667	3020	4687	4857	212306		
Trichur ..	2365	6049	13585	19634	21999	293140		
Palghat ..	12095	8474	11390	19864	31959	529128		
Kozhikode ..	5410	632	7510	8142	13552	294943		
Cannanore ..	405	4054	3105	7159	7564	246645		
STATE ..	21770	36450	50140	86590	108360	2130762		

Table 3.1 (Contd.)

District	Food Crops—(Contd.)											
	Sugar crops			Condiments and spices								Total
	Sugarcane	Others	Total	Pepper	Chillies	Ginger	Turmeric	Cardamom	Betel nuts	Others		
16	17	18	19	20	21	22	23	24	25	26		
Trivandrum	..	918	918	20829	..	..	195	..	10070	9842	40936
Quilon	2315	37	2352	11744	..	389	55	..	15542	8398	36128	
Alleppey	13945	38	13983	3313	..	149	70	..	8190	2660	14382	
Kottayam	3680	594	4274	34794	..	9055	3990	60104	11650	6523	125216	
Ernakulam	1130	424	1554	16821	..	2860	940	2574	11867	5447	40509	
Trichur	..	852	852	1824	..	188	145	..	18557	4467	25181	
Palghat	1440	7938	9378	8599	2280	4760	3285	4564	9786	6683	39957	
Kozhikode	70	1884	1954	39509	1660	10970	3055	2667	28081	2170	88019	
Cannanore	860	17	877	108145	4200	1179	570	968	26353	489	141904	
STATE	23440	12702	36142	245578	8140	29550	11405	70877	140096	46616	552262	

Table 3. 1.—(Contd.)

Food crops—(Contd.)

Fruits and Vegetables

District	Fresh Fruits					Dried Fruits					Total Fruits
	Mangoes	Citrus Fruits	Banana (including plantains)	Others	Total	Cashewnuts	Others	Total	Total		
										27		28	29	30	31	32	33	34
Trivandrum	15224	..	5183	15506	35913	8173	..	8173	8173	44086	
Quilon	30392	..	12947	27355	70694	25809	..	25809	25809	96503	
Alleppey	12921	..	6454	17260	36635	6341	..	6341	6341	42976	
Kottayam	22079	..	10838	31677	64594	5343	..	5343	5343	69937	
Ernakulam	19821	..	5443	26619	51883	17187	..	17187	17187	69070	
Trichur	11847	..	7918	7081	26846	19825	..	19825	19825	46671	
Palghat	12556	..	21142	8006	41704	17997	..	17997	17997	59701	
Kozhikode	18807	238	16424	18128	53597	30330	30	30360	30360	83957	
Cannanore	13669	4603	20254	18266	56792	72531	30	72561	72561	129353	
STATE	157316	4841	106603	169898	438658	203536	60	203596	203596	642254	

Table-3.1 (Contd.)

Food Crops (Contd.)

District	Vegetables.						Total fruits and vegetables	Total Food Crops
	Food Crops (Contd.)							
	Tapioca	Sweet potatoe	Onions	Others	Total	Total		
	36	37	38	39	40	41	42	
Trivandrum	124002	1414	9	5283	130708	174794	319183	
Quilon	135512	216	735	10002	146465	242968	422288	
Alleppey	65705	118	42	6846	72711	115687	350372	
Kottayam	97020	296	53	12525	109894	179831	414226	
Ernakulam	33804	2207	46	4733	40790	109860	364229	
Trichur	11455	494	..	2826	14775	61446	380619	
Palghat	6543	3300	154	11014	21011	80712	659175	
Kozhikode	30165	3075	373	4407	38020	121977	506923	
Cannanore	14482	10911	64	3519	28976	158329	547755	
STATE :	518688	22031	1476	61155	603350	1245604	3964770	

Tab e-3.1 (Contd.)

District	Non-Food Crops					Oil Seeds					Total
	Groundnut	Castor	Sesamum	Rape & Mustard	Linseed	Cocoanuts	Others				
	43	44	45	46	47	48	49		50		
Tivandrum	1580	69	98			140510	2139		144396		
Quilon	..	136	7795			174036	486		182453		
Alleppey	..	63	9935			170644	660		181302		
Kottayam	..	211	272			159870	15420		175773		
Ernakulam	..	31	2400			114663	4658		121752		
Trichur	..	124	2870			87713	2624		93331		
Palghat	34280	227	3950			51715	1156		91328		
Kozhikode	..	20	1545			281391	27		282983		
Cannanore	..	14	765	20	36	166147	476		167458		
STATE :	35860	895	29630	20	36	1346689	27646		1440776		

Table 3.1—(Contd.)

District	Non-Food Crops									
	Fibres			Drugs, Narcotics and Plantation Crops						
	Cotton	Others	Total	Tobacco	Tea	Coffee	Rubber	Others	Total	
	51	52	53	54	55	56	57	58	59	
Trivandrum	..	..	..	..	2582	..	11596	..	14178
Quilon	..	..	..	..	6924	586	61170	..	68680
Alleppey	..	..	..	..	..	..	6709	..	6709
Kottayam	135	..	135	..	70280	4920	115322	..	190522	
Ernakulam	..	..	..	..	455	602	48031	..	49088
Trichur	195	..	195	..	991	..	18253	..	19244	
Palghat	18785	..	18785	..	1408	5078	12297	919	19702	
Kozhikode	560	..	560	..	8708	33868	49007	2556	94139	
Cannanore	..	90	90	1740	3553	4420	30744	..	40457	
STATE :	19675	90	19765	1740	94901	49474	353129	3475	502719	

Table 3.1—(Contd.)

District	Non-Food Crops—(Contd.)						
	Fodder crops	Green manure crops	Other non-food crops	Total non-food crops	Total area sown under all crops	Area sown more than once	Net area sown
	60	61	62	63	64	65	65
Trivandrum	65	740	5966	165345	484528	113610	370918
Quilon	109	3961	6977	262180	684468	146025	538443
Alleppey	103	2900	2744	193758	544130	148714	395416
Kottayam	121	1658	15767	383976	798202	70608	727594
Ernakulam	534	220	51677	223271	587500	77098	510402
Trichur	72	235	6573	119650	500269	167674	332595
Palghat	98	194	12401	142508	801683	192681	609002
Kozhikode	21	6680	19700	404083	911006	79526	811480
Cannanore	8	3245	12093	223352	771107	90523	680584
STATE:	1131	19834	133898	2118123	6082893	1086459	4996434

Table 3.2.—(Contd.)
FOOD CROPS

District	Condiments and spices							Fruits				
	Sugar	Pepper	Cardamom	Betel nuts	Others	Total	Fresh fruits			Dry fruits (Cashew-nuts)	Total fruits	
							Man- goes	Bana- nas	Others			
	12	13	14	15	16	17	18	19	20	21	22	23
Trivandrum	0.19	4.30	...	2.08	2.07	8.45	3.15	1.07	3.21	7.43	1.70	9.13
Quilon	0.34	1.72	...	2.27	1.29	5.28	4.44	1.89	4.00	10.33	3.77	14.10
Alleppey	2.57	0.61	...	1.50	0.53	2.64	2.57	1.19	3.42	7.18	1.17	8.35
Kottayam	0.55	4.36	7.53	1.46	2.34	15.69	2.77	1.35	3.97	8.09	0.67	8.76
Ernakulam	0.26	2.86	0.44	2.02	1.57	6.89	3.37	0.93	4.93	9.23	2.93	12.16
Trichur	0.17	0.36	...	3.71	0.96	5.03	2.37	1.58	1.42	5.37	3.96	9.33
Palghat	1.17	1.07	...	1.32	2.12	5.08	1.57	2.64	1.09	5.30	2.34	7.64
Kozhikode	0.21	4.54	0.29	3.08	1.95	9.86	2.06	1.80	2.22	6.08	3.33	9.41
Cannanore	0.11	14.48	0.12	3.42	0.83	18.85	1.77	2.63	3.46	7.36	9.91	17.77
STATE	0.59	3.54	1.17	2.30	1.57	8.58	2.59	1.75	2.37	6.71	3.35	11.06

District	Food crops					Non-food crops				
	Vegetables			Total fruits and vegetables	Total food crops	Sesamum	Oil seeds			Total
	Tapioca	Others	Total				Coconut	Ground-nut	Others	
	24	25	26	27	28	29	30	31	32	33
Trivandrum	25.84	1.09	26.93	36.06	65.88	..	28.95	0.33	0.44	29.72
Quilon	19.84	1.56	21.40	35.50	61.70	1.14	26.03	..	0.07	27.24
Alleppey	11.55	1.36	12.91	21.26	64.39	1.91	31.85	..	0.12	33.88
Kottayam	12.17	1.57	13.74	22.50	51.89	..	19.98	..	1.93	21.91
Ernakulam	5.75	0.80	6.55	18.71	62.00	0.41	19.49	..	0.79	20.69
Trichur	2.28	0.56	2.84	12.17	76.08	0.57	17.65	..	0.52	18.74
Palghat	0.82	1.40	2.20	9.84	82.22	0.49	6.46	4.29	0.14	11.38
Kozhikode	3.29	0.48	3.77	13.18	55.64	0.19	30.67	..	..	30.86
Cannanore	1.87	0.45	2.32	20.09	71.03	0.10	21.95	..	0.06	22.11
STATE	9.45	1.10	10.55	21.61	65.18	0.53	22.33	0.65	0.50	24.01

Table 3.2—(contd.)

District	Non-food crops										Total Non-food crops
	Fibres			Drugs Narcotics and plantation crops						Other Non-food crops	
	Cotton	Others	Total	Tea	Coffee	Rubber	Others	Total			
	34	35	36	37	38	39	40	41	42	43	
Trivandrum	..	..	..	0.53	..	2.39	..	2.92	1.48	34.12
Quilon	..	..	..	1.02	0.09	8.93	..	10.04	1.02	38.30
Alleppey	..	..	..	..	..	1.23	..	1.23	0.50	35.61
Kottayam	..	..	..	8.79	0.62	14.82	..	24.23	1.97	48.11
Ernakulam	..	..	..	0.08	0.10	8.24	..	8.42	8.89	38.00
Trichur	..	..	..	0.20	..	3.63	..	3.83	1.35	23.92
Palghat	2.35	..	2.35	0.18	0.63	1.54	0.11	2.46	1.59	17.78	
Kozhikode	0.06	..	0.06	0.95	4.19	5.87	0.28	11.29	2.15	44.36	
Cannanore	..	..	..	0.46	0.57	3.97	..	5.00	1.86	28.97
STATE	0.35	..	0.35	1.71	0.89	5.36	0.06	8.05	2.41	34.82	

TABLE-4.1

TOTAL OUT-TURN OF IMPORTANT COMMODITIES IN EACH DISTRICT 1963-64.

Year	District	Rice (Tons)	Jowar (Tons)	Ragi (Tons)	Other cereals and Millets (Tons)	Pulses (Tons)	Sugarcane (Tons of Gur)
1	2	3	4	5	6	7	8
	Trivandrum	55644	..	20	..	1001	..
	Quilon	68183	..	382	..	2646	3755
	Alleppey	110370	..	38	24	369	28190
	Kottayam	57963	..	43	449	311	5630
	Ernakulam	102442	..	51	149	721	1680
	Trichur	145141	..	1387	..	3337	..
	Palghat	327506	555	1342	1930	5071	2430
	Kozhikode	119776	10	2595	610	2324	130
	Cannanore	117214	20	1570	23	1077	1580
	STATE	1110239	585	7428	3185	16857	43395

TABLE—4.1—(contd.)

District	Black Pepper (Tons)	Dry Ginger (Tons)	Cured Turmeric (Tons)	Cured Cardamom (Tons)	Arechnut (Million nuts)	Bañana (Tons)
	9	10	11	12	13	14
Trivandrum ..	3019	..	70	..	613	3514
Quilon ..	1987	230	20	..	945	14640
Alleppey ..	401	81	25	..	498	6192
Kottayam ..	4392	3178	1070	1071	709	12315
Ernakulam ..	1998	1210	335	47	722	5064
Trichur ..	318	124	50	..	1129	5566
Palghat ..	510	1660	985	81	595	4834
Kozhikode ..	2580	4230	1090	47	1708	9283
Cannanore ..	6865	400	205	17	1603	12365
STATE ..	22070	11113	3850	1263	8522	73773

TABLE-4.1—(contd.)

District	Other Plantains (Tons)	Cashew-nuts (Tons)	Ground nut (Tons)	Sesamum (Tons)	Coconut (Million nuts)	Cotton (Bales of 392 lbs. each)
	15	16	17	18	19	20
Trivandrum	12081	3648	670	13	340	..
Quilon	24034	11521	..	860	422	..
Alleppey	13139	2831	..	335	413	..
Kottayam	20056	2385	..	32	387	20
Ernakulam	11247	7672	..	285	278	..
Trichur	18249	8850	..	320	212	50
Palghat	59236	8034	19777	425	125	7770
Kozhikode	40224	13539	..	170	682	190
Cannanore	48643	32378	..	115	403	..
STATE	246909	90858	20447	2555	3262	8030

TABLE-4.1—(contd.)

District	Tobacco (Tons)	Tea (Tons)	Coffee (Tons)	Rubber (Tons)	Lemon- grass Oil (Tons)	Dry Chillies	Tapioca (Tons)
	21	22	23	24	25	26	27
Trivandrum	..	1110	..	822	2	..	632410.
Quilon	..	2504	6	7234	5	..	596253
Alleppey	..	..	..	289	1	..	229968
Kottayam	..	28800	527	10918	134	..	611226
Ernakulam	..	81	56	3420	771	..	199443
Trichur	..	708	..	3291	42	..	40093
Palghat	..	656	1683	1069	18	..	24209
Kozhikode	..	5321	5317	5344	336	..	99544
Cannanore	905	1213	844	871	307	..	50687
STATE	905	40393	8433	33258	1616	..	2483833

TABLE—5.1
Average farm (harvest) prices of certain commodities for
the year 1963-64.

Sl. No. (1)	Name of crops (2)	Unit (3)	Trivan- drum (4)	Quilon (5)	Allep- pey (6)	Kotta- yam (7)	Erna- kulam (8)	Tri- chur (9)	Pal- ghata (10)	Kozhi- kode (11)	Can- manore (12)	State (13)
1	Paddy	Qtl	51.26	48.64	43.54	41.48	44.23	41.20	44.92	41.89	46.44	44.43
2	Tapioca	"	7.61	8.45	..	9.63	..	9.05	..	14.21	..	8.86
3	Ginger	"	..	..	..	287.51	279.81	..	..	303.42	..	294.18
4	Turmeric	"	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5	Sugarcane	"	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	Cashewnut	"	52.30	74.00	..	..	69.87	71.12	..	..	84.31	77.13
7	Pepper	"	280.20	257.01	..	265.72	261.31	259.93	..	261.25	280.58	270.78
8	Coconut	1000	238.30	237.10	252.90	262.90	256.90	255.60	..	216.60	226.20	239.80
9	Areca nut	Nos. 1000	28.40	34.10	..	32.40	29.50	32.50	31.30	28.10	31.20	30.80
10	Banana	Nos. 100	9.75	9.36	..	8.92	..	6.53	..	9.50	9.07	9.00
11	Other Plantains	Nos. N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	Tamarind	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

N.A.—Not available

Table 6.1—(Contd.)
THE AVERAGE DAILY WAGES FOR DIFFERENT DISTRICTS OF KERALA
(WAGES IN Rs.)

Districts	July	August	September	October	November	December	January	February	March	April	May	June	Average
	1963	1963	1963	1963	1963	1963	1964	1964	1964	1964	1964	1965	1963-64
Field Labour (Men)													
Trivandrum	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44
Quilon	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.13	2.13	2.13	2.13	2.13	2.07
Alleppey	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.50	2.27
Kottayam	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.06	2.06	2.06	2.06	2.06	2.03
Ernakulam	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.53	3.53	3.53	3.32
Trichur	2.81	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.87
Palghat	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.23	2.23	2.13
Kozhikode	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
Cannanore	2.92	2.92	2.92	2.92	2.92	2.92	3.12	3.12	3.12	3.12	3.12	3.12	3.02

Table 7.1

NUMBER OF LIVESTOCK POULTRY AND AGRICULTURAL MACHINERY AND IMPLEMENTS IN KERALA (1961 CENSUS)

Districts	Cattle													Total
	Males over three years				Females over three years (Breeding)					Young stock				
	Breeding	Working	Others	Total	In milk	Dry	Breeding		Working	Others	Total	Total	Total	
							Dry	Not calved						
2	3	4	5	6	7	8	9	10	11	12	13			
State	29319	515241	21471	566031	428194	502935	207277	11274	12306	1161986	1025148	2753165		
Trivandrum	1361	17461	1422	20244	22916	21885	11863	543	661	57868	48703	126815		
Quilon	2303	49300	2755	54358	47236	64808	25310	659	1498	139511	131864	325733		
Alleppey	1267	16739	1060	19066	52357	65916	31859	319	1668	152119	128072	299257		
Kottayam	2622	29819	1726	34167	63397	75240	27859	687	1422	168605	156287	359059		
Ernakulam	2335	86664	2038	91037	41216	45245	18110	1373	1158	107102	105097	303236		
Trichur	1379	56311	1504	59194	31112	30398	11266	530	724	74030	74457	207681		
Palghat	4576	85951	2984	93511	51582	53846	18490	2160	1138	127216	111564	332291		
Kozhikode	6698	102165	4944	113807	59566	72496	35247	3200	1735	172244	130009	416060		
Cannanore	6778	70831	3038	80647	58812	73101	27273	1803	2302	163291	139095	383033		

Table 7.1—(Contd.)

Districts	Buffaloes										
	Males over three years					Females over three years					
	Breeding	Working	Others	Total	Total	Breeding		Working	Total	Total	
						In Milk	Dry				
14	15	16	17	18	19	20	21	22	23		
State	10627	267871	6614	285112	59542	49341	16846	7266			
Trivandrum	708	20678	527	21913	7754	6381	2347	446			
Quilon	479	13776	575	14830	3826	3717	1390	239			
Alleppey	216	7577	164	7957	2323	2052	734	125			
Kottayam	402	5171	233	5806	2776	2485	949	219			
Ernakulam	379	11329	323	12031	3598	1857	754	372			
Trichur	793	37271	597	38661	10555	6128	2301	464			
Palghat	4001	122475	2505	128981	12488	9475	2682	2599			
Kozhikode	2018	30912	1087	34017	9245	9125	3575	2012			
Cannanore	1631	18682	603	20916	6977	8091	2114	790			

Table-7.1—(Contd.)

Districts	Sheep						
	Others	Total	Young stock	Total	One year and above	Below one year	Total
	22	23	24	25	26	27	28
State	2118	135113	64864	485089	18949	5292	24241
Trivandrum	249	17177	5171	44261	1049	494	1543
Quilon	128	9300	4233	28363	4151	1690	5841
Alleppey	96	5360	1695	15012	1528	610	2138
Kottayam	202	6631	2758	15195	1308	474	1782
Ernakulam	204	6785	2216	21032	173	142	315
Trichur	175	19623	9541	67825	226	102	335
Palghat	311	27555	22200	178736	8607	1328	9935
Kozhikode	412	24369	9793	68179	1758	399	2157
Cannanore	341	18313	7257	46486	149	46	195

Table-7.1—(Contd.)

Districts	Goats			Horses and Ponies			Mules
	One year and above	Below one year	Total	3 years and above	Below 3 years	Total	
	29	30	31	32	33	34	
State	869414	442848	1312262	366	42	408	31
Trivandrum	115819	66641	182460	42	..	42	..
Quilon	99069	50576	149645	4	..	4	1
Alleppey	60869	27499	88368	4	..	4	..
Kottayam	92341	45020	137361	110	12	122	10
Ernakulam	94383	50840	145223	11	..	11	..
Trichur	81997	45036	127033	7	4	11	..
Palghat	120772	53293	174065	131	16	147	4
Kozhikode	147001	73889	220890	32	10	42	16
Cannanore	57163	30054	87217	25	..	25	..

Table 7.1—(Contd.)

Districts	Donkeys	Camels	Pigs	Total live-stock	Poultry			
					Fowls	Ducks	Others	Total
	36	37	38	39	40	41	42	43
State	377	..	122381	4697954	8708664	387072	..	9095736
Trivandrum	4	..	8048	363173	762577	4756	..	767333
Quilon	..	..	1086	510673	807726	5518	..	813244
Alleppey	..	..	110	404889	882125	202644	..	1084769
Kottayam	159	..	61656	575344	1136275	74040	..	1210315
Ernakulam	..	..	45933	5115750	1201635	45157	..	1246792
Trichur	..	..	2498	405383	920975	43147	..	964122
Palghat	202	..	719	696099	901442	4745	..	906187
Kozhikode	11	..	1043	708398	1388764	6186	..	1394950
Cannanore	1	..	1288	518245	707145	879	..	708024

Table 7.1—(Contd.)

Districts	Ploughs		Charts	Sugarcane crushers			Electric pumps	Tractors	Ghanis		Persian wheels
	Wooden	Iron		Power	Bullocks	Oil Engines			More than 5 seers	Less than 5 seers	
			44				45	46			47	48	49	50	51	52	53	54
State	562281	6141	21037	175	1071	3372	2565	276	2058	2164	..
Trivandrum	26691	217	1905	11	53	4	15	3	216	437	..
Quilon	51355	1544	2295	4	217	28	22	4	99	213	..
Alleppey	24475	2446	1015	42	186	407	358	73	138	193	..
Kottayam	38802	232	1676	16	223	213	294	93	136	141	..
Ernakulam	78417	338	1037	20	138	245	676	22	80	125	..
Trichur	56337	220	2697	8	48	532	774	20	190	234	..
Palghat	144736	598	8558	63	86	845	353	23	504	194	..
Kozhikode	79108	242	1162	4	39	378	58	26	397	277	..
Cannanore	62360	604	695	7	81	720	15	12	298	350	..

PART IV—APPENDICES

- 1 Index numbers of Area, agricultural production & productivity.
- 2 Cost of living index numbers in selected centres.
- 3 Index of parity between the prices received and prices paid by farmers.
- 4 Quarterly retail prices of certain commodities.
- 5 Statistics of export of important agricultural commodities through the ports of Kerala.
- 6 Notes on certain crops.
 - (i) Tea
 - (ii) Coffee
 - (iii) Rubber
 - (iv) Cardamom
 - (v) Pepper
 - (vi) Ginger
 - (vii) Lemongrass.
- 7 Classification of soil in Kerala
- 8 Conversion ratio between raw materials and processed products.
- 9 Average analysis of important fertilizers.
- 10 Insects, pests etc. affecting paddy crop and their practical methods of control.
- 11 List of centres selected for collecting meteorological information.
- 12 Glossary of English, Botanical and Malayalam names of crops.
- 13 Graphs and charts.

1. Index of area under Crops; Production etc.

The index number of area under crops, production and productivity for the State from the year 1952-53 to 1963-64 are given in Table I, II and III respectively. The coverage of these three series of index numbers is one and the same viz. twenty-two important crops grown in the State. These crops are mainly divided into the following sub-groups.

(a) Food grains:

- (i) Cereals—1. Paddy, 2. Ragi, 3. Jower.
- (ii) Pulses.

(b) Non-food grains:

- (i) Oil seeds—1. Coconut, 2. Groundnut, 3. Sesamum, 4. Lemongrass.
- (ii) Fibres— 1. Cotton.
- (iii) Plantation crops—1. Tea, 2. Coffee, 3. Rubber.
- (iv) Miscellaneous crops—1. Sugarcane, 2. Pepper, 3. Cardamom, 4. Ginger, 5. Turmeric, 6. Arecanut, 7. Banana, 8. Cashewnut, 9. Tobacco, 10. Tapioca.

These twenty two crops cover more than 95% of the State's agricultural production. Hence the coverage may be considered as adequate for all practical purposes.

Base year:

The Agricultural year 1956-57 is taken as the base year for calculating these three indices.

Method of calculation:

The index number series is compiled using chain base method. The area/production of each crop in each year is expressed as a percentage of that of the previous year. These area/production relatives are then linked to the area/production in the base year through the intervening chain relatives to give the area/production index of the crop. The weighted arithmetic mean of the area/production indices of the crop under each group (or sub-group) is taken as the production index of that group (or sub-group).

Table

INDEX NUMBERS OF AREA-UNDER CROPS (KERALA)

Name of crops	1952-53	1953-54	1954-55	1955-56
All crops ..	94.4	98.4	98.6	98.8
A. Food grain ..	94.8	99.1	99.6	99.2
1. Cereals ..	97.2	99.7	100.00	99.6
Paddy ..	97.3	99.8	100.1	99.6
Jowar ..	62.9	66.0	74.1	94.9
Ragi ..	92.2	95.8	92.6	94.5
II. Pulses ..	72.4	89.2	92.9	93.1
B. Non food grains ..	93.4	97.8	97.8	98.4
1. Oil seeds ..	93.4	95.9	97.1	97.4
Coconut ..	93.6	95.6	96.7	97.4
Groundnut ..	88.8	99.6	103.2	98.8
Sesamum ..	93.8	104.4	107.1	101.7
Lemon grass ..	89.8	89.8	89.8	89.8
2. Fibers ..	70.5	81.3	97.7	96.5
Cotton ..	70.5	81.3	97.7	96.5
3. Plantation Crops ..	83.7	85.4	86.8	86.7
Tea ..	99.5	99.6	99.6	100.0
Coffee ..	84.4	93.6	98.6	95.7
Rubber ..	76.0	77.3	78.6	78.7
4. Miscellaneous Crops ..	96.8	104.1	101.9	103.1
Sugarcane ..	83.8	93.4	93.3	94.1
Pepper ..	90.6	93.5	95.7	99.4
Cardamom ..	90.7	97.8	99.7	99.7
Ginger ..	138.9	88.4	98.7	103.2
Turmeric ..	96.4	92.9	97.7	97.3
Arecanut ..	103.3	90.7	100.7	100.0
Banana ..	74.1	95.6	102.9	112.4
Cashewnut ..	94.7	96.6	87.7	100.2
Tobacco ..	105.1	108.3	112.6	114.8
Tapioca ..	98.2	116.3	108.2	106.5

I
(BASE 1956-57 = 100)

1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
100.00	101.9	103.4	106.4	108.6	107.9	110.0	110.1
100.00	98.7	98.8	99.7	100.9	97.6	103.7	104.0
100.00	99.0	99.7	100.7	102.0	98.5	105.0	105.3
100.00	99.0	99.7	100.7	102.0	98.6	105.1	105.4
100.00	82.9	78.0	75.0	75.0	72.3	72.3	71.8
100.00	100.9	101.9	107.8	111.9	104.5	104.7	104.8
100.00	93.9	92.4	91.8	91.0	90.7	91.6	91.3
100.00	104.3	106.9	111.5	114.4	115.6	114.7	114.6
100.00	101.8	104.3	108.3	108.9	109.7	109.9	110.6
100.00	100.7	103.4	107.1	108.9	109.8	110.0	111.2
100.00	102.4	107.4	96.7	119.9	119.6	119.9	108.5
100.00	102.8	99.2	88.9	61.0	60.3	60.1	60.5
100.00	128.1	129.6	170.8	154.9	154.9	154.9	151.5
100.00	95.7	87.5	92.2	108.1	105.5	85.1	87.7
100.00	95.7	87.5	92.2	108.1	105.5	85.1	87.7
100.00	114.1	119.5	119.9	129.7	138.5	143.1	147.2
100.00	100.8	95.0	95.0	95.0	94.5	97.3	96.9
100.00	111.4	111.4	115.5	115.5	129.2	131.8	137.6
100.00	121.4	133.1	133.1	149.3	161.7	167.6	173.6
100.00	104.3	106.5	113.2	116.4	115.9	112.3	110.1
100.00	112.6	113.6	114.9	118.0	119.0	120.4	122.3
100.00	104.5	104.2	105.2	114.7	114.8	114.1	114.2
100.00	100.1	100.1	100.1	100.3	100.6	100.6	100.6
100.00	91.5	88.0	109.1	118.4	118.8	119.0	117.9
100.00	130.6	91.7	99.1	99.8	103.6	103.3	98.7
100.00	100.2	101.0	107.1	109.3	114.3	116.4	119.3
100.00	105.9	101.8	102.8	102.2	100.9	109.7	105.0
100.00	117.8	123.6	140.2	145.2	147.1	140.6	141.0
100.00	105.1	106.3	125.2	149.2	141.3	141.3	141.4
100.00	102.6	107.3	115.4	116.1	113.4	106.2	100.6

Weights

For the production index, the weights are the total value of production of the crop during the base year. The average harvest price during the harvesting season of each crop in the base year is used to calculate the value of production. In the case of cotton the harvest price was not available and therefore the export price is used. The weights assigned to each crop/sub-group/group are given in tables I to III.

Concept of Area and production

The concept of area and production adopted in the computation of these index series are the gross area and gross production. No allowance is made for seed or wastage.

Variation in area

The area index under 'all crops' was 94.4 in 1952-53, 98.8 in 1955-56, 108.6 in 1960-61 and 110.1 in 1963-64, the base year being 1956-57 (= 100). Compared to the year 1962-63 there was no appreciable increase in total area during 1963-64. The area index under "food-grains" increased from 103.7 in 1962-63 to 104.0 in 1963-64 whereas the non-food grains crop index remained more or less constant.

Index of Agricultural production

The 'All crop' index in 1963-64 was 116.8 compared to 114.7 in 1962-63. The 'food grains' index rose from 122.8 in 1962-63 to 126.6 during the year under review. The production index of non-food grains was 128.8 in 1963-64 through the corresponding index was 111.4 only during the previous year. The index of production of 'plantation crops' during the year under reference was 129.5 though it was 119.4 in 1962-63. Contrary to this trend the index of 'Miscellaneous tree crops' decreased from 115.2 in 1962-63 to 113.4 in 1963-64. But index under some of the important Miscellaneous crops such as sugarcane, Arecanut etc. showed an increasing trend.

Index of Agricultural Productivity

The index of agricultural productivity is the ratio of the index of production and index of area. The index of productivity under all crops was 104.2 in 1962-63 and 106.1 in 1963-64. The corresponding indices in 'food grains' during the two years were 118.4 and 121.7 respectively, the increase being about 3%. The increase in 'non-food grains' index during the period was only about one percent. This low rate of increase in productivity index in respect of non-food grains crops is due to the young trees planted especially plantation crops which do not contribute to the production and at the same time included in area index.

2. Cost of living index numbers for selected centres

The cost of living index numbers are compiled in this State for 12 selected important industrial centres. The indices are calculated with the year 1939 as the base year for all the 12 centres other than Kozhikode. In respect of Kozhikode the year ending June 1936 is taken as the base year. The cost of living indices of these 12 centres increased from 1962-63 to 1963-64, on an average by 5 to 10%. The average cost of living index numbers for selected centres for the two years 1962-63 and 1963-64, are given below.

Table

INDEX NUMBERS OF AGRICULTURAL

Name of Crops	Weights	1952-53	1953-54	1954-55	1955-56
All crops ..	100.0	89.3	92.5	95.9	98.7
A. Food grains ..	29.18	81.3	84.7	92.2	100.3
I. Cereals ..	28.90	81.4	84.6	92.2	100.4
Paddy ..	28.63	81.4	84.5	92.2	99.6
Jowar ..	0.02	50.7	76.9	68.8	94.7
Ragi ..	0.25	81.4	90.9	90.2	91.3
II. Pulses ..	0.28	73.1	90.1	93.9	94.1
B. Non-foodgrains ..	70.82	92.6	95.7	97.4	98.1
1. Oil seeds ..	30.28	93.2	95.8	97.1	97.2
Coconut ..	28.81	93.4	95.6	96.7	97.4
Groundnut ..	0.53	87.6	106.6	118.6	00.0
Sesamom ..	0.47	91.7	104.1	106.7	191.2
Lemongrass ..	0.47	89.8	89.8	89.8	89.8
2. Fibres ..	0.31	70.2	80.9	97.3	95.6
Cotton ..	0.31	70.2	80.9	97.3	95.6
3. Plantation Crops ..	15.24	86.4	88.9	90.4	90.9
Tea ..	9.38	87.1	87.1	86.7	87.5
Coffee ..	1.71	76.1	84.5	89.0	93.1
Rubber ..	4.15	89.1	94.8	98.0	97.8
4. Miscellaneous Crops ..	24.99	95.8	99.9	101.9	103.7
Sugarcane ..	0.75	82.3	93.6	102.1	94.9
Pepper ..	2.81	83.0	86.9	96.8	101.6
Cardamom ..	1.28	88.6	95.4	97.3	99.8
Ginger ..	0.74	93.5	88.7	97.3	102.2
Turmeric ..	0.28	120.5	116.7	122.1	121.6
Arecanut ..	7.68	103.3	90.7	100.7	100.0
Banana ..	1.22	74.1	95.6	102.9	112.4
Cashewnut ..	1.93	94.4	96.3	87.5	100.2
Tobacco ..	0.18	105.2	108.4	112.5	114.9
Tapioca ..	8.12	98.2	116.3	108.3	108.3

II

PRODUCTION (BASE 1956-57=100)

1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
100.0	101.3	105.5	111.3	112.1	110.4	114.7	116.8
100.0	102.4	106.2	116.7	119.8	112.9	122.8	126.6
100.0	102.5	106.3	116.9	120.1	113.1	123.1	126.9
100.0	102.5	106.3	116.9	120.2	113.1	123.2	127.1
100.0	84.3	75.5	72.7	72.7	70.4	70.4	67.5
100.0	106.1	107.9	115.1	117.6	112.0	111.9	110.9
100.0	95.3	94.6	93.7	93.9	91.8	92.4	91.7
100.0	100.9	105.2	109.1	108.9	109.3	111.4	128.8
100.0	100.0	103.6	106.9	102.3	103.2	104.7	104.2
100.0	100.5	103.4	107.1	102.5	103.4	105.2	103.8
100.0	70.2	100.0	81.2	86.8	86.5	85.1	130.6
100.0	101.1	90.1	67.6	40.1	40.0	40.0	40.3
100.0	105.0	132.1	166.3	168.4	169.8	160.6	161.6
100.0	96.3	78.6	82.5	106.1	103.0	75.3	80.3
100.0	96.3	78.6	82.5	106.1	103.0	75.3	80.3
100.0	101.0	111.7	112.3	112.3	112.6	119.4	129.5
100.0	100.0	116.3	116.3	116.3	109.5	111.6	118.1
100.0	107.4	105.3	110.8	110.3	123.2	126.3	127.6
100.0	100.8	103.9	103.9	106.4	115.3	134.1	156.0
100.0	101.9	103.5	110.2	114.6	114.8	115.2	113.4
100.0	98.8	99.3	101.5	106.4	105.3	116.5	123.1
100.0	97.1	93.4	92.8	99.2	99.0	89.8	82.3
100.0	100.0	100.0	100.0	100.2	100.2	100.2	100.2
100.0	86.0	71.6	91.8	103.6	104.5	105.1	103.8
100.0	130.6	91.7	99.0	99.7	103.4	102.9	93.3
100.0	99.1	102.7	108.9	116.9	122.2	125.5	128.6
100.0	106.1	101.8	102.8	102.2	88.4	120.8	117.5
100.0	117.8	123.6	139.2	144.2	146.2	156.8	157.3
100.0	104.6	106.3	129.1	150.4	139.0	137.3	137.4
100.0	102.6	107.3	115.7	116.4	113.7	106.5	100.9

Table

INDEX NUMBERS OF AGRICULTURAL

Name of crop	1952-53	1953-54	1954-55	1955-56
All crops ..	94.6	94.0	97.3	99.9
A. Foodgrains ..	85.8	85.5	92.6	96.6
Cereals ..	83.7	84.9	92.2	100.3
Paddy ..	83.7	84.7	92.1	100.0
Jowar ..	80.6	116.5	92.8	99.8
Ragi ..	88.3	94.9	97.2	96.3
II. Pulses ..	101.0	101.0	101.1	101.1
B. Non-foodgrains ..	99.1	97.9	99.6	99.7
1. Oil seeds ..	99.8	99.9	100.0	99.8
Coconut ..	99.8	100.0	100.0	100.0
Groundnut ..	98.6	107.0	114.9	92.1
Sesamum ..	97.8	99.7	99.6	98.5
Lemongrass ..	100.0	100.0	100.0	100.0
2. Fibres ..	99.6	99.5	99.6	99.1
Cotton ..	99.6	99.5	99.6	99.1
3. Plantation Crops ..	103.2	104.1	103.7	104.8
Tea ..	87.5	87.4	87.0	87.5
Coffee ..	90.2	90.3	90.3	97.3
Rubber ..	117.2	122.6	124.4	124.3
4. Miscellaneous crops ..	99.0	96.0	100.0	100.6
Sugarcane ..	98.2	100.2	109.4	100.9
Pepper ..	91.6	92.9	101.1	102.2
Cardamom ..	97.7	97.5	97.6	100.1
Ginger ..	67.3	100.3	98.6	99.0
Turmeric ..	125.0	125.0	125.0	125.0
Arecanut ..	100.0	100.0	100.0	100.0
Banana ..	100.0	100.0	100.0	100.0
Cashewnut ..	99.7	99.7	99.8	100.0
Tobacco ..	..	..	..	..
Tapioca ..	100.0	100.0	100.1	101.7

III

PRODUCTIVITY (Base 1956-57 = 100)

1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
100.0	99.4	102.0	104.6	103.2	102.3	104.2	106.1
100.0	103.7	107.5	117.1	118.7	115.7	118.4	121.7
100.0	103.5	106.6	116.1	117.7	114.8	117.2	120.5
100.0	103.5	106.6	116.1	117.8	114.7	117.2	120.6
100.0	101.7	96.8	96.9	96.9	97.4	97.4	94.0
100.0	105.2	105.9	106.8	105.1	107.2	106.9	105.8
100.0	101.5	102.4	102.1	102.2	101.2	100.9	100.4
100.0	96.7	98.4	97.8	95.2	94.5	97.1	98.4
100.0	98.2	99.3	98.7	93.9	94.1	95.3	94.2
100.0	99.8	100.0	100.0	94.1	94.2	95.6	93.3
100.0	68.6	93.1	84.0	72.4	72.3	71.0	120.4
100.0	98.3	90.8	76.0	65.7	66.3	66.6	66.6
100.0	82.0	101.9	97.4	108.8	109.7	103.8	106.7
100.0	100.6	89.8	89.5	98.1	97.6	88.5	91.6
100.0	100.6	89.8	89.5	98.1	97.6	88.5	91.6
100.0	88.5	93.5	93.7	87.0	81.3	83.4	88.0
100.0	99.2	122.4	122.4	122.4	115.9	114.7	121.9
100.0	96.4	94.5	95.5	95.5	95.4	95.8	92.7
100.0	83.0	78.1	78.3	71.3	71.3	80.0	89.9
100.0	97.7	97.2	97.3	98.4	99.1	102.6	103.0
100.0	87.7	87.4	88.3	90.2	88.5	96.3	100.7
100.0	92.9	89.6	88.2	86.5	86.2	78.7	72.1
100.0	99.9	99.9	99.9	99.9	99.6	99.6	99.6
100.0	94.4	81.4	84.1	87.5	88.0	88.3	88.0
100.0	100.0	100.0	99.9	99.9	99.8	99.6	94.5
100.0	98.9	101.7	101.7	106.9	106.9	107.8	107.8
100.0	100.2	100.0	100.0	100.0	87.6	110.1	119.9
100.0	100.0	100.0	99.3	99.3	99.4	111.5	111.6
100.0	99.5	100.0	103.1	100.8	98.4	97.2	97.2
100.0	100.0	100.0	100.3	100.3	100.3	100.3	100.3

Table IV

WORKING CLASS CONSUMER PRICE INDEX NUMBERS FOR SELECTED CENTRES

Year	Month	Trivandrum	Quilon	Punalur	Alleppey	Changanacherry	Kottayam	Alwaye	Ernakulam	Trichur	Chalakyudy	Munnar	Kozhikode
1963-64	July	496	504	509	487	483	501	514	518	516	505	474	530
	August	501	515	519	496	484	504	518	528	516	515	474	537
	September	502	522	528	502	489	507	524	531	519	522	475	536
	October	504	522	521	504	490	500	522	534	523	522	473	536
	November	511	531	527	515	512	510	525	539	532	529	474	544
	December	529	549	543	522	516	522	539	549	540	543	488	563
	January	527	538	532	512	512	522	528	544	528	538	482	565
	February	526	535	533	524	520	524	540	547	537	547	493	577
	March	521	532	532	528	521	525	552	550	545	556	492	584
	April	523	546	546	538	528	532	562	557	552	562	495	591
	May	539	562	561	549	540	542	574	575	569	572	509	604
	June	554	568	569	559	557	562	592	584	578	588	509	620

Base for Kozhikode is year ended June 1936 = 100. Base for other centres is August 1939 = 100

**COST OF LIVING INDEX NUMBERS FOR
SELECTED CENTRES**

Sl. No.	Centres	Average		Percentage increase
		1962-63	1963-64	
1	Trivandrum	493	519	5
2	Quilon	501	535	7
3	Punalur	509	535	5
4	Alleppey	475	520	9
5	Changanacherry	475	512	8
6	Kottayam	486	521	7
7	Alwaye	496	541	9
8	Ernakulam	499	546	9
9	Trichur	496	538	8
10	Chalakudy	492	542	10
11	Munnar	465	487	5
12	Kozhikode	519	566	9

The working class cost of living index numbers for selected centres during the different months of June 1963 to July 1964 are given in Table IV.

3. Index numbers of parity between prices received and paid by Farmers.

These indices measures the economic prosperity of the farmers in relation to the farm prices, farm cultivation costs and cost of living indices. The parity index is defined as the ratio of the index of prices received and prices paid by farmers.

(a) *Index number of prices received by farmers*—This measures the relative changes in the receipts of the farmer from the important agricultural produces consequent on the fluctuations in the farm prices compared to the base year (1952-53). The price relatives properly weighed and averaged gives the index of prices received.

Table V.

INDEX NUMBERS OF PARITY BETWEEN PRICES RECEIVED
AND PRICES PAID BY FARMERS.

Year	Month	Index of prices received	Index of farm cultivation cost	Index of Parity
	July 1963	108	138	82
	August 1963	108	143	79
	September 1963	108	143	79
	October "	108	143	79
	November "	109	144	79
1963-64	December "	111	144	80
	January 1964	111	145	80
	February "	114	145	81
	March "	115	145	82
	April "	121	147	85
	May "	121	148	84
	June "	123	150	84

Base 1952-'53 = 100

(b) *Index number of prices paid*: This measures the relative changes incurred by the farmer on farm cultivation cost and domestic expenditure as a result of the variation in wages, cost of implements, manure, maintenance of livestock and the prices of consumer goods compared to those of the base year. The Geometric mean of the index of farm cultivation cost and domestic expenditure is defined as the index of prices paid.

The index of farm cultivation cost is again a properly weighted average of the different component items of cultivation costs. The index of domestic expenditure is taken as the average of the cost of living indices for the different centres with the base period shifted to 1952-53.

The indices of prices received as well as those of the farm cultivation cost are given in Table V. The parity indices are also given alongside.

4. Retail prices of important commodities:

(i) *Coconut*: The retail price of coconut (per 100) varied from Rs. 22.13 (in Palghat District) to Rs. 34.46 (in Kottayam District) during the year under review. Throughout the year the price in Kottayam District was higher compared to other Districts.

(ii) *Coconut oil*: The price of coconut oil per litre ranged between Rs. 2.63 to Rs. 3.11 during 1963-64. The price was maximum in Palghat District throughout the year.

(iii) *Rice*: Even though the price varied between quarter to quarter during the year, between Districts there was no wide variation. The price per Kilogram of rice ranged between 60 paise and 88 paise.

(iv) *Blackgram*: The price per Kilogram of blackgram ranged between 87 pies and Rs. 1.01 during the year 1963-64. The price during the first quarter was higher compared to the last three quarters of the year in all the districts other than Trivandrum, where, the trend was more or less just the reverse.

(v) *Gingelly oil*: The price of gingelly oil per litre varied from Rs. 2.56 to Rs. 3.28. The price was highest during the last quarter of the year throughout the State except in Cannanore District.

(vi) *Tapioca*: The price of raw tapioca per kilogram was increasing in the range of 11 pies to 28 pies. The price in Cannanore District was highest throughout the year compared to other Districts.

(vii) *Sugar*: Sugar being a controlled commodity the price was more or less steady during the year under review. The price per kilogram ranged between Rs. 1.20 to Rs. 1.30.

(viii) *Chillies*: The price of chillies varied between Rs. 3.41 to Rs. 2.39 per kilogram. The price rates were higher in Palghat District throughout the year, the minimum price during the year being Rs. 3 15 per kilogram.

(ix) *Coffee powder*: The price of coffee powder touched a low rate as Rs. 5.16 and a high rate of Rs. 8.14 per kilogram during 1963-64. The prices in Trivandrum, Trichur and Palghat Districts exceeded Rs. 7 throughout the year.

Table VI
QUARTERLY RETAIL PRICES OF CERTAIN COMMODITIES IN
EACH DISTRICT

Sl. No.	Item	Unit	Quarter of the year.	1963-64 (July-June)											
				Trivandrum	Quilon	Alleppey	Kottayam	Ernakulam	Trichur	Palghat	Kozhikode	Cannanore			
1	2	3	4	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	Cocoanut (without husk)	100 Nos.	I	23.80	24.14	26.57	32.70	28.04	24.33	24.21	23.85	24.73			
			II	26.12	26.92	27.83	34.46	28.99	25.74	24.27	24.55	24.90			
			III	24.49	24.93	25.04	33.70	27.76	24.64	23.55	24.62	26.88			
			IV	22.22	23.79	24.63	32.64	25.66	23.36	22.13	23.57	25.38			
2	Cocoanut Oil	Litre	I	2.73	2.89	2.64	2.77	2.78	2.89	3.00	2.83	2.88			
			II	2.83	3.07	2.73	2.88	2.84	3.00	3.11	2.89	2.70			
			III	2.85	2.93	2.58	2.78	2.74	2.85	3.00	2.76	2.74			
			IV	2.72	2.73	2.45	2.63	2.62	2.75	2.90	2.67	2.63			
3	Rice	K. g.	I	0.70	0.69	0.67	0.68	0.66	0.71	0.60	0.70	0.66			
			II	0.72	0.74	0.72	0.71	0.69	0.78	0.61	0.71	0.68			
			III	0.74	0.73	0.73	0.74	0.71	0.81	0.70	0.76	0.72			
			IV	0.80	0.80	0.80	0.81	0.79	0.88	0.79	0.84	0.80			

Table VI—(contd.)

1	2	3	4	5	6	7	8	9	10	11	12	13
4	Blackgram	Kg.	I II III IV	0.99 0.99 1.00 1.01	1.01 0.97 0.96 0.96	0.97 0.95 0.92 0.93	0.98 0.95 0.95 0.96	0.94 0.92 0.88 0.89	0.92 0.89 0.89 0.92	0.97 0.94 0.88 0.88	0.90 0.88 0.88 0.87	0.91 0.91 0.91 0.88
5	Gingelly Oil	Litre	I II III IV	2.70 2.66 2.72 2.97	2.75 2.73 2.88 3.23	3.01 2.94 2.99 3.17	2.81 2.76 2.74 2.97	2.62 2.56 2.89 3.16	2.67 2.66 2.89 3.15	2.81 2.81 3.07 3.28	3.00 2.93 2.99 3.19	2.96 2.83 2.87 2.93
6	Tapioca	Kg.	I II III IV	0.12 0.12 0.12 0.12	0.11 0.09 0.11 0.12	0.11 0.11 0.12 0.14	0.15 0.15 0.15 0.15	0.14 0.12 0.12 0.14	0.12 0.11 0.11 0.14	0.12 0.12 0.12 0.13	0.14 0.13 0.14 0.15	0.23 0.25 0.20 0.28
7	Sugar	Kg.	I II III IV	1.20 1.22 1.24 1.24	1.24 1.25 1.26 1.25	1.21 1.20 1.23 1.27	1.22 1.23 1.27 1.27	1.23 1.23 1.25 1.28	1.22 1.26 1.29 1.30	1.23 1.24 1.27 1.28	1.22 1.24 1.25 1.28	1.24 1.25 1.27 1.27
8	Chillies	Kg.	I II III IV	3.07 2.93 2.87 2.75	2.96 2.87 2.84 2.56	2.91 2.81 2.80 2.57	2.92 2.84 2.77 2.57	3.03 2.90 2.84 2.59	3.09 2.96 2.93 2.83	3.41 3.24 3.17 3.15	2.89 2.82 2.70 2.39	2.87 2.75 2.77 2.49

Table VI—(contd.)

1	2	3	4	5	6	7	8	9	10	11	12	13	
9	Coffee Powder	Kg.	I II III IV	7.25 7.25 7.25 7.60	6.96 7.13 7.10 7.14	6.00 6.46 6.50 6.77	5.86 6.15 6.29 6.57	5.16 5.21 5.19 5.44	7.40 7.43 7.66 8.14	7.08 7.24 7.25 7.43	5.00 5.17 5.38 5.13	6.08 6.05 6.33 5.65v	
10	Tea	Kg.	I II III IV	7.13 7.13 7.13 7.13	4.90 4.97 5.16 5.26	5.67 5.63 5.71 5.75	5.22 5.33 5.41 5.61	6.19 6.24 6.21 6.19	6.90 6.55 6.55 6.55	7.03 7.36 7.13 7.16	4.95 5.02 5.14 5.33	6.19 6.36 6.07 6.18	
11	Tobacco (Jaffna)	Kg.	I II III IV	8.74 8.74 8.74 8.74	6.46 6.50 6.29 6.33	7.50 7.67 7.50 7.50	7.91 7.75 7.76 7.94	10.00 10.00 10.00 10.00					
12	Tobacco (Ordinary)	Kg.	I II III IV	4.38 4.38 4.38 4.38	4.24 4.28 4.38 4.30	4.88 4.88 4.88 4.88	5.46 5.47 5.47 5.55	5.92 5.92 5.95 6.06	4.67 4.50 4.50 4.50	5.32 5.07 5.07 5.26	5.50 5.42 5.46 5.59	5.25 5.25 5.25 5.22	

(x) *Tea* :—The price in Trivandrum District was constant throughout the year viz., Rs. 7.13 per Kilogram. It was as low as Rs. 4.90 per Kilogram in Quilon District and as high as Rs. 7.36 in Palghat District during the course of the year.

(xi) *Tobacco (Jaffna)* :—The price of Tobacco (Jaffna) varied between Rs. 6.29 to Rs. 10 per Kilogram during the course of the year. Between Districts there was wide variation in price of tobacco.

(xii) *Tobacco (ordinary)* :—The price per Kilogram varied between Rs. 4.24 to Rs. 6.06. The price in Ernakulam District was highest compared to other Districts.

The detailed statement showing the quarterly retail prices of these 12 commodities in each of the Districts of Kerala during the year 1963-64 is given as table VI.

5. Statistics of export of important Agricultural commodities :

The statistics of export of important agricultural commodities through the parts of Kerala during the year 1963-64 is given in Table VII.

Table VII
EXPORT OF IMPORTANT AGRICULTURAL COMMODITIES THROUGH THE POSTS
OF KERALA (1963-64)

Value in Lakhs of Rupees.

Sl. No.	Commodities	Unit	Coastal		Foreign		Total	
			Quantity	Value	Quantity	Value	Quantity	Value
1	2	3	4	5	6	7	8	9
1	Betel nuts	M. T.	15681.38	802.29	..	..	15681.38	802.29
2	Cardamom	"	5.20	0.59	..	69.45	445.20	70.04
3	Cashew Kernel	"	74.20	3.50	51703.56	2198.38	51777.76	2201.88
4	Cashew Shell Liquid	Litres in lakhs	..	..	10457.77	142.47	10457.77	142.47
5	Cocanut	Nos. in lakhs	844.63	184.56	0.22	0.005	844.65	184.56
6	Cocunut oil	Litres in lakhs	10397.61	283.92	..	..	10397.61	283.92
7	Oil cake	M. T.	614.90	3.44	1862.60	5.87	2477.50	9.31
8	Copra	"	24076.02	486.97	..	..	24076.02	486.97
9	Coffec	"	119.72	4.19	11912.52	445.27	12032.24	449.46
10	Coir & Coir products	"	17021.22	204.24	75871.49	1117.83	92892.71	1322.07
11	Fish	"	48.90	1.34	8160.40	380.10	8209.30	381.44
12	Ginger	"	4426.30	128.86	3206.22	99.64	7632.52	228.50
13	Lemongrass oil	"	..	..	864.61	128.64	864.61	128.64
14	Pepper	M. T.	5509.31	221.37	16898.62	537.15	22407.93	758.52
15	Rubber raw	"	24731.16	927.30	..	..	24731.16	927.30
16	Rubber manufactures	"	2999.24	99.97	41.40	2.15	3040.64	102.12
17	Tea	"	4529.46	231.16	39975.20	2106.53	44504.66	2337.69
18	Wood & Timber	"	..	145.33	..	199.02	..	344.35
19	Others	"	..	954.60	..	474.55	..	1429.19
	Grand total			4683.63		7907.09		12590.72

Source : Administration Reports of the Cochin Chamber of Commerce and Calicut Chamber of Commerce.
 Wood item : D. G. C. I. S. Calcutta.
 Minor ports not given in the Reports—From the date given by the District Statistical Officer, Ernakulam
 (Office of the Collector of Custom and Central Excise, Cochin).

NOTES ON CERTAIN CROPS IN KERALA

1. Tea

Today India is the largest producer of tea in the world. Tea is one of the principal foreign exchange earners. Tea industry also substantially contributes to the national exchequer and also provides employment to a large number of people. India accounts for about 46 per cent of the world production of tea.

Climate :—The best climate for the tea plantation is a hot moist climate, the temperature varying from 55°F to 95°F and an annual rainfall ranging between 100 to 130 inches. These conditions are satisfied by the high ranges of Kerala State. Tea is usually cultivated at altitudes ranging from 3,000 feet to 5,000 feet above mean sea level.

Soil :—The best soil suitable for the successful cultivation of tea is a light friable soil of good depth through which water percolates freely.

Planting :—After removing the forest growth and after providing for roads, drains and building sites the planting is done. The actual spacing of the plants will depend upon the layout of the land, used for cultivation. They are usually planted in square rectangular or triangular patterns suitably spaced so that when mature they cover the ground almost completely without overcrowding the providing, for a coverage of about 3,000 plants per acre. 'Hedge planting, i. e., planting in rows five feet apart with a spacing of 2 feet between the bushes in a row, is also done in new estates. Before planting is done pits of 9" square and eighteen inches deep are taken and the pits filled with the soil best suited for the cultivation of tea.

Planting will begin in June or July depending mainly upon the South-west Monsoon. Water is essentially needed for the young plants for the first two or three months after planting. Young plants taken from the nursery are preferred to the seeds. Usually these plants are removed from the nursery after 6 to 18 months with great care, so that the tap root of the plant is not damaged and planted in the places fixed for the purpose.

Pruning :—When the plants are about two years old and five to six feet high, they are pruned to stimulate lateral growth and to develop them into a bush.

Plucking :—Plucking is usually done by women and children. The young and freshly sprouted leaves with "two leaves and a bud" are plucked. Plucking is done throughout the year in several rounds. The period of one round varies according to the altitude of the land. In the high ranges the plucking rounds cover a period upto fourteen days whereas in the plains the period is only seven or eight days.

Manure :—The important manures used are mixtures of nitrogen, phosphorous and potash. In some estates ammonium sulphate is also widely used.

Yield :—The average yield of a good estate is about thousand pounds of prepared tea per acre.

Diseases :—There are many kinds of diseases and attacks on the tea-bush. Tea mosquito, the red spider and thrips are some of the important pests attacking the crops.

Life of the plant :—The average life of a tea plant varies from sixty to eighty years. But it will depend upon various factors such as soil erosion due to heavy rains, climatic conditions etc.

From the garden to the market:—The leaves plucked from the tea garden has to undergo a series of processes before it appears in the market for sale.

In the tea factory, the leaves are spread on a wire mesh or hessian cloth racks for a period of eighteen hours for eliminating moisture so that it can be rolled easily. The next stage is called rolling. A rolling machine specially made for this purpose with pressure adjustments is used to twist the leaves for breaking the leaf cells so that the leaf juices ooze out. Then the rolled leaves are taken from the roll breakers and put in the fermentation room. Fermentation is a process of oxidation where the leaves undergo a chemical change. The green colour of tea leaves changes in reddish hue of copper. The next process is known as drying. Hot air (200° to 230°) from the drier furnace is forced into the chamber where the leaves are dried.

The last two processes are grading and packing. There are two important classification of grades. They are leaf grades and broken grades. The former group are mainly divided into Orange Pekoe and Pekoe Souchong. Broken Orange Pekoe, Broken Pekoe, Broken Souchong. Fannings and Dust are important broken grades. They are then packed category-wise and sent to the market for sale.

Besides the black tea, the manufacture of which has been described above, green tea is also manufactured in India in a small quantity. In this process the fresh leaf is subject to heat treatment by steaming or roasting. The green leaf after the heat treatment is rolled and dried, the process being repeated till the desired degree of dryness is reached.

2. Coffee

Coffee was first discovered in Africa although the earliest cultivation was begun in Southern Arabia. Coffee, an important plantation crop, was first introduced in India from Arabia. The production of Coffee in India is only 1 per cent of the world production. There are two important species of coffee grown in India, namely, Arabica and Robusta. Robusta flourishes at lower levels and has more power of resistance against extremes of climate and pests and diseases. It is easily distinguishable from Arabica by the size of its leaves and appearance of the berries.

Climate:—Coffee is a tropical plant. It is successfully cultivated in places where the altitude ranges from 1500 to 6000 ft. above mean sea level. The most suitable altitude is between 2,500 ft. to 4,500 ft. It needs a well distributed rainfall of about 60 to 80 inches per annum and a distinct rainy and dry season with a minimum average temperature of 70° F. A good dry spell from about December to March with a few intermittent showers in March and April and heavy rainfall in July and August constitute ideal condition for the growth of the coffee plant ("Report of the Plantation Enquiry Commission on Coffee, 1956, Government of India)

Soil:—Coffee requires sandy soils or clay loam soils with a good sub soil drainage system.

Planting:—Coffee is grown from seed usually. It is also propagated from cuttings from mature trees or shoots. Propagation from seeds is usually done in January or February in well prepared nursery beds. It is essential that the nursery beds must have shades to protect the tender shoots. These plants are to be transplanted after four to six months in the nursery. When the plants are twenty inches in height they are finally by transplanted. The spacing between each plot is ordinarily eight to nine feet. The plots are manured well and watered frequently.

In the second method of propagation—lower branches of the trees are bent down under the earth for at least four months so as to enable new roots to sprout up from these branches.

Shade trees are provided in coffee plantation for protection of the tree from the full intensity of the sun and for soil conservation.

Pruning:—Usually the coffee plants are pruned at a height of fifteen feet to enable easy plucking of the berries.

Plucking:—Coffee plants begin to bear fruit within 5 to 7 years of planting. The colour of the Berries is green at first. The colour slowly changes to golden and then to bright red. These red Cherries are plucked up by hand. Several pluckings are necessary before a crop is completely harvested.

Manure:—The important manures used for the coffee plants are super-phosphate, ammonium sulphate, copper sulphate and urea.

Yield:—Under good climatic conditions a coffee plant yields $\frac{1}{2}$ to 2 lb. of green coffee in a season. Good yield may be obtained from a plant for a period of 20 to 30 years. Excessive rains or want of rains in the blossoming season will adversely affect the yield.

Diseases:—The following diseases are prevalent in the coffee estates. They are (1) Coffee stem borer, (2) shot hole borer (3) Leaf disease (4) Root-rot (5) Die-Back (6) Chlorosis and (7) Green bug.

From garden to the market:—There are two processes by which raw coffee is cured. They are known as 'dry' and 'wash' methods. By the first method the coffee cherries are washed and spread out on the cement floors in the open air for drying. When they are completely dried they are allowed to run through fanning and hulling machines.

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them. The pulpy skin of the cherries are automatically removed. Then these cherries are put into big tanks for about twenty-four hours. A jelly like substance known as 'Honey' will be formed by these cherries due to fermentation. This honey is removed by thorough washing (canals). Then these cherries are spread out to dry for two or three weeks. When these cherries are completely dried they are put through hulling and polishing machines. The coffee prepared by the wet method is called parchment. For preparing parchment coffee only ripe berries can be utilised.

Berries at different stages of maturity have to be converted into cherries.

They are then graded and packed. The important grades are arabica cherry, arabica parchment, robusta cherry and robusta parchment.

3. Rubber

In India attempts were first made to plant rubber in Belgaum and Ratnagiri in the Bombay State. Now in the Kerala State 97 per cent of India's rubber is cultivated. India's place in the world acreage under rubber is comparatively very low. India's production comes to less than 2 percent of the total world out-put of rubber. Upto 1938 the raw rubber was exported to foreign countries. In that year a tyre factory was established in India. Consumption of the rubber in India has been rising steadily and now the production has begun to lag behind the demand.

Climate.—Rubber usually grows in the tropical belt lying within 15° N and 10° S of the equator and usually at an altitude of 1000 feet above sea level. For the cultivation of rubber a warm and humid climate is necessary. The annual rainfall should be between 80-120 inches and should be well distributed.

Soil.—A stiff alluvial soil which is neither too steep nor too swampy is suited for cultivating rubber.

Planting.—Young plants or seeds are planted in pits of about $18'' \times 18''$. The planting season is from May to September. Usually 150 to 200 plants are planted in an acre.

Tapping.—Tapping of rubber will begin seven or eight years after planting. The period of tapping is from September to January.

Diseases.—There are two serious leaf diseases of rubber now prevailing in India. They are 'Oidium hevea' and 'Phytophthora meadii' which cause secondary leaf fall. These diseases affect the growth of the tree and the yield of the tree.

Another disease known as 'Brown Bast' is prevalent in the trees which are used for frequent tapping. The symptom of the disease is the cessation of latex production by the trees in the affected portions of the bark.

From the estate to the market.—The latex brought by the tappers is first of all freed from sand, bark and other impurities by straining at the coagulating shed constructed specially for the purpose. In the case of crape rubber, coagulation is done by using acetic acid. For changing latex into sheet rubber the latex after being bulked and diluted is put into shallow pans. For removing water and for getting a definite shape the coagulam is pressed by hand. Then the sheets are allowed to pass two or three times between smooth rollers. The sheets are usually again passed through a machine for printing the trade mark of the estate. These sheets are washed. Then these sheets are placed in specially constructed houses, known as smoke houses, and hot air with temperature of 115° to 120° F is allowed to circulate in the room. This is done for fifteen days. The colour of the sheet will change into black from white. There are three important types of rubber, smoked sheet, latex crape and scrap rubber. Of these the most important one is smoked sheet.

4. Cardamom

The important cardamom producing countries are India, Ceylon and Indo-China. India is the largest producer of cardamom in the world. † This is better than the plants growing in other parts of the world. Cardamom possess an aromatic odour and it is commonly used for flavouring and medicines.

Climate.—The best climate suitable for the Cardamom cultivation is a warm and humid atmosphere with a temperature ranging between 50°—95°F. It is cultivated in the shades of huge forest trees. Cardamom plants require a fairly well-distributed annual rainfall of sixty to eighty inches. The best altitude for cardamom planting is between 2,500 to 5000 feet.

Soil.—Cardamom is cultivated usually in high ranges which has a fairly deep rich loam soil and a place sheltered from strong winds and too much sunlight.

Planting.—During February-March the forest land chosen for planting the cardamom is cleared. But care is taken that big trees providing shades are not cut down. Small pits of two feet square and one foot deep are dug, the distance between one pit and the next varying from 8 to 10 feet, thus providing for about 700 pits in one acre of land. During the month of May or June when the south-west monsoon sets in, the seeds are sown. Cardamom plants are usually prepared in specialised nurseries. The plants raised from seeds are usually free from any kind of diseases. When these plants attain one year of growth they are transplanted. Usually two plants are planted in one pit. In August-September the stagnant water is allowed to drain off.

Plucking.—The crop begins to yield from the third year onwards and annually thereafter. The harvest will begin in the month of August of the third year of growth and lasts for nine months. The fruits are gathered at intervals of 30 to 40 days.

Yield.—The first yield is low. The yield attains a normal stage by the fifth year.

Life of the plant—Nine years is the average life of the plant.

Manure.—The important manures used are well-rotten cattle manure, sheep and fish manure; and leaves of *phyllanthes emblica*. A mixture of castorcake, bone-meal and potassium chlorate is also considered to be a good manure.

Diseases.—The main disease is mosovic or marble disease or katte disease. The symptom of the disease is the mottling or curling of the leaves and degeneration of the clumps. The remedy lies in the roguing of affected plants. Another menace is that caused by Thrips, an insect pest. Dusting the plants with gammaxene is the remedy.

From the estate to the market.—The capsules of the cardamom are dried in the sun or specially built dry houses by using artificial heat. Usually three to four days are taken for drying the cardamom in the sun-light but at the same time forty-eight hours is only needed for artificial drying. The sun

† Cardamom is taken from the plant *Elletaria Cardamom*.

dried produce retains the mucilaginous coating on the seeds and possesses characteristic sweet aroma. The dried capsules are then cleaned. The final product of green cardamom is 20 to 28 percent of the green harvested produce.

Sometimes bleaching is done by exposure to sulphur fumes. This change the colour of the skin of the capsule to white and it helps to preserve it for longer periods.

Then they are graded. There are three important grades (1) Green cardamom, (2) White or bleached cardamom and (3) Seeds. The quality of cardamom varies according to place and variety of the seed.

Indian cardamom is mainly exported to Sweden and to Saudi Arabia.

5. Pepper

Kerala is famous for her pepper from time immemorial and is the chief producer of pepper in India. Black pepper which is one of the important spices is produced mainly by India and Indonesia. During the post-war period India stands, as the largest producer of pepper in the world.

Climate.—Pepper being a rain-fed crop, grows best in tropical regions where there is an average rainfall of 80 inches. The lower and upper limits of temperature in which the crop can flourish are 50° F and 140° F. It grows in places with altitude less than 3000 ft.

Soil.—The suitable soils for pepper cultivation are clay loam, red loam or sandy loam soils, the first being the most suitable.

Planting.—The crop is propagated vegetatively by means of cuttings. It is a wood climber and requires some support for the vines. Jack and Mango trees are commonly used as support for the vines. Elavu and Murukku trees are also used. On a plantation basis they are planted at a distance of ten feet apart. The vine is rarely allowed to grow beyond a height of twenty feet lest the picking of the Pepper berries becomes difficult.

Picking.—The vines begin to bear after three years of planting. Flowering period is from June to July. The harvesting period is from December to March. When ripe, the colour of the berries is orange. The berries are allowed to dry in the sun in mats for a week till the colour becomes black. Some times the skin of the ripe berries is removed before drying. This kind of pepper is known as white pepper and is produced only in limited quantities.

Yield.—The yield mainly depends upon the fertility of the soil and the locality. The yield at the first harvest is generally poor. Full yield can be expected from the seventh year. Usually in an acre there will be 300 to 400 standards where pepper is cultivated on a plantation scale. The average yield per standard varies between $\frac{1}{4}$ lb to 2 lb. of dried produce.

Life of the plant.—The life of the plant ranges between 25 to 30 years. But it is to be pointed out that some of the vines have been found to live upto sixty years.

Manure.—The best manures to be used for the pepper gardens are powered bean-cake, fish guano and dried prawn.

Diseases.—One of the major diseases that affects pepper is 'Pollu', by which the pepper berries are rendered hollow.

From garden to the market.—The dried black pepper is graded and packed. The pepper is generally packed in double gunny bags. Pepper is mainly exported to United States of America and United Kingdom.

6. Ginger (Dry)

The three important ginger growing regions are Indian, Jamaica and Sierra Leona. Of these ginger producing regions the best variety is seen in Jamaica and Sierra Leona. Indian Ginger contains more fibre-content.

Climate.—Ginger requires heavy rainfall. It needs a warm humid climate and considerable shade.

Soil.—The soils suitable for ginger cultivation are well-trained sandy, clay loam, red loam or laterite soils.

Planting.—Planting usually begins by the end of May or beginning of June before the commencement of the heavy rains. Ginger rhizomes (under-ground stem) are planted. Before planting, the ground is ploughed and manured. The seeds are planted in these beds in small pits at a distance of 6—10 inches. After planting the beds are covered with leaves with a view to protect the young shoots from the on slaught of the rain and to serve as manure also. The crop takes nine to ten months to attain maturity. In July-August weeding and manuring is done.

Harvest.—The harvesting is done by digging out of the rhizoms.

Manure.—Usually cattle manures used.

Yield.—The yield is generally eight to ten times of seed rate. Here in Kerala the average yield of ginger is about 1000 lbs. per acre.

Pests and Diseases.—Ginger crop is usually affected by a disease known as 'Soft-rot'. The colour of the green plants are changed into pale yellow and the production goes down. Use of mercuric chloride (0.05%) for treating the rhizoms stored as seeds is advocated as a preventive measure. Another important disease is known as 'Varmcularia'. The leaves become covered with yellowish and brownish spots and gradually dry up. Spraying of Bordeaux mixture is suggested in such cases.

From garden to the market.—Dry ginger, as market produce is prepared as follows: First the outer skin of the green rhizomes are removed. Then they are soaked in water and kept overnight. In the morning they are cleaned well. Then these rhizomes are allowed to dry for a week in the hot sun. They are again cleaned. The Ginger is known as the 'rough' or 'unbleached ginger' of commerce.

There is another variety of ginger known as 'Lime ginger' or 'bleached ginger'. The process is a bit different from the above. The green ginger is put in shallow cisterns and they are cleaned by water repeatedly. When

they are finally cleaned they are put in a solution containing milk of lime for some time after which they are dried in the sun. This process of dipping in lime and drying will be continued a number of times until the rhizomes get a uniform coating of lime.

Then they are graded. There are three important export grades B. C. and D. B quality ginger will have three fingers. The other two grades (C & D) have two fingers and one finger respectively.

The B and C grades Ginger are exported to foreign markets. The D grade being small pieces of ginger are mostly consumed internally, in India. Indian ginger is mainly exported to Aden, Arabia and United Kingdom.

7. Lemongrass Oil

Lemongrass oil which is an important raw material for the perfumery soap and cosmetic industries is extracted by distilling the leaves of the grass 'cymbopogon flexrosus, stapf'. The important lemongrass growing areas are Ceylon, Java, West-Indies, Malaya, Guatemala and India. The last two countries are holding almost a monopoly in the world market. In India, Kerala is the most important producer of this crop. The major lemongrass growing areas are Kurupampadi, Odakkali, Thodupuzha, Muvattupuzha, Wynad, Taliparamba, etc. At Odakkali, there is a lemongrass oil research station.

Climate:—It grows on the fertile hill slopes. The grass grows when the monsoon begins.

Soil:—It flourishes in hard laterite soils.

Cultivation:—Fertile hill slopes with hard laterite soils are selected for the cultivation. During February-March the site selected is first cleared of all undergrowth of vegetation by burning them. In April-May the land is ploughed and is prepared into long narrow beds for cultivation of lemongrass. Usually in one acre 15 to 20 lb. of seeds are sown. The seeds are sown broad-cast. The crop is also grown by transplanting of seedlings raised in separate nurseries. The cost of cultivation of this crop is very low. Much care is not needed during the period of growth of the plant. There are two varieties of lemongrass red stem and white stem. The former variety gives better quality of oil containing greater quantity of citral.

Harvesting:—Generally the harvesting will begin five months after sowing. The harvesting has to be done before the flowering season of the crop. Five cuttings are annually taken after the first cutting subsequent cuttings are done at intervals of 30 to 45 days. Usually the harvesting season ends by the month of December.

Life of the Plant:—The life of the lemongrass plant is five to eight years.

Yield:—The yield of the crop under different years are given below:

1st year	1½	dozen bottles of 22 oz. each	
2nd	2½	"	"
3rd	2	"	"
4th	2	"	"
5th	2	"	"

From the garden to the market:—Now in Kerala we are using an old country method for distilling the lemongrass oil. The old apparatus consists of copper boiler, condenser (Coil) receiver and wooden tub.

The raw grass and water are put in the boiler specially made for this purpose. The shape of the boiler is like a retort apparatus. Then the boiler is heated with fire wood. After some time a mixture of water vapour and essential oil escapes through the copper spiral connected to the retort. This copper spiral is allowed to cool down by immersing it in a wooden bucket full of water. The wooden bucket has an opening near the bottom to let off the water as it becomes hot during the distillation time. The essential oil and water will be collected in the receiver tub. The specific gravity of the essential oil is lower than water. At 30° C specific gravity is 0.878. So naturally the lemongrass oil floats at the top of the receiver tub. Then it is separated from water.

Lemongrass oil is packed in steel drums which has a capacity of 40 to 45 gallons. Lemongrass Oil is mainly exported to United States of America and United Kingdom.

7. Classification of soils in Kerala is given below:

<i>District</i>	<i>Type of soil</i>	<i>Details of distribution</i>
Trivandrum	1. Fairly rich brown loam of laterite origin	Middle part of the District
	2. Sandy loam	Western Coastal region
	3. Richest dark brown loam of granite origin	Eastern hilly part of the District
Quilon	1. Sandy loam	Karunagappally and part of Quilon Taluk
	2. Laterite soil	Kottarakara, Kunnathoor and part of Quilon, Pathanapuram and Pathanamthitta Taluks
	3. Hill and forest soil	Part of Pathanapuram and Pathanamthitta Taluks
Alleppey	1. Sandy loam	Karthigappally and Mavelikara Taluks
	2. Sandy soil	Sherthalla: and Ambalapuzha Taluks
	3. Clay loam with much of abidity	Kuttanad
	4. Laterite soil	Chengannur and part of Mavelikara

<i>District.</i>	<i>Type of soil.</i>	<i>Details of distribution.</i>
Kottayam	1. Laterite soil	Peermade and part of Meenachil Changanacherry and Kottayam Taluks
	2. Alluvial soil	Vaikom parts of Changanacherry and Kottayam Devicolam and Udumbanchola
Ernakulam	1. Laterite	Thodupuzha and Muvattupuzha and part of Kunnathunad.
	2. Sandy loam	Parur, Cochin, Kanayannur
	3. Alluvial	Part of Alwaye and Kunnathunad
Trichur	1. Sandy loam	Part of Mukundapuram, Trichur and Chowghat Taluks
	2. Laterite	Eastern area of Trichur and Western portion of Talappilly
	3. Granite	Northern part of Talappilly
	4. Clayey	Backwater area in Chowghat and part of Mukundapuram
	5. Alluvial soil	Portion of Chowghat and Kunnathunad Taluks.
Palghat	1. Laterite	Interior regions of the District
	2. Sandy	Along coastal and river side areas
	3. Black soil	North-Eastern portion of Chittur Taluk
Kozhikode	1. Laterite	Major part of the District barring coastal area
	2. Sandy	Coastal strip
Cannanore	1. Laterite	Major part barring coastal area
	2. Sandy	Coastal area

8. Conversion ratio between the raw materials and the processed product.

RICE	
Rice (cleaned) Production	2/3 paddy production
COTTON	
Cotton lint production	1/3 of kapas production
Cotton seed production	2/3 of kapas production 2 times of cotton lint production
GROUNDNUT	
Kernel to nuts in shell	70 per cent
Oils to nuts in shell	28 per cent
Oils to kernels crushed	40 per cent
Cake to kernels crushed	60 per cent
SESAMUM	
Oil to seeds crushed	40 per cent
Cake to seeds crushed	60 per cent
CASTOR SEED	
Oil to seeds crushed	37 per cent
Cake to seeds crushed	63 per cent
COCOA NUTS	
Copra to nuts one ton Copra	6775 nuts
Oil to copra crushed	62 per cent
Cake to copra crushed	38 per cent
NEEM SEED	
Oil to kernel crushed	45 to 50 per cent
Cake to kernels crushed	50 to 55 per cent
SUGAR	
Gur from cane crushed	10 per cent
Crystal sugar from gur refined	62.40 per cent
Do. from cane crushed	9.97 per cent
Khandassari sugar from gur refined	37.5 per cent
Molasses from cane crushed	3.5 per cent
CASHEW NUTS	
Cashew kernels	25 per cent of cashewnut
Butter from mixed milk	6.3 per cent
Ghee from mixed milk	5.3 per cent

Source—"Fertiliser Statistics".

9. Average Analysis of Important Fertilisers

Sl. No.	Name of Fertiliser.	Percentage		
		Nitrogen(N)	Phosphoric (P2O5)	Potash
(1)	(2)	(3)	(4)	(5)
1.	Nitrate of Potash 70%	8-10	..	30-33
2.	Ammonium Phosphate 60%	17-18	20-21	..
3.	Urea	46	..	..
4.	Nitrate of Soda	15-16	..	..
5.	Sulphate of Ammonia	20-6	..	..
6.	Ammonium Sulphate Nitrate	26	..	..
7.	Ammonium Nitrate	32-33	..	..
8.	Calcium Cyanamide	18-20	..	..
9.	Nitroline	20-21	..	..
10.	Super Phosphate (Single)	..	16-20	..
11.	Do. (Double)	..	45-50	..
12.	Hyper Phosphate	..	26	..
13.	Basic Slag	..	14-18	..
14.	Mineral Phosphate (various grades)	..	25-36	..
15.	Murite Potash	..	..	60
16.	Sulphate of Potash	..	..	48-52
ORGANIC MANURES				
17.	Castor cake	4.3	1.8	1.3
18.	Cotton Seed cake (Undecorticated)	3.9	1.8	1.6
19.	Neem cake	5.2	1.0	1.4
20.	Safflower cake (undecorticated)	4.9	1.4	1.2
21.	Do. (Decorticated)	7.9	2.2	1.9
22.	Cocoanut cake	3.0	1.9	1.8
23.	Groundnut cake	7.3	1.5	1.3
24.	Jambo cake	4.9	1.6	1.9
25.	Linseed cake	5.5	1.4	1.3
26.	Rape seed cake	5.2	1.8	1.2
27.	Sesamum cake	6.2	2.0	1.2
MANURES OF ANIMAL ORIGIN				
28.	Dried Blood	10.0	1.5	1.0
29.	Fish manures	4.0-10.0	3.0-3.0	0.3-1.5
30.	Bone meal (Raw)	3.0-4.0	20.0-25.0	..
31.	Do. (Steamed)	1.0-2.0	25.0-30.0	..
BULKY ORGANIC MANURES				
32.	Farm-yard manure	0.15-1.5	0.4-0.8	0.5-1.9
33.	Compost (urban)	1.0-2.0	1.0	1.5
34.	Do. (Rural)	0.4-0.8	0.3-0.6	0.7-1.0
35.	Green manure (Various averages)	0.5-0.7	0.1-0.2	0.8-1.0

Source—Indian Council of Agricultural Research Bulletin.

10. Insect pest affecting Paddy crops, their distribution and some Practical methods of Control.

Crop	Pest (Scientific name)	Distribution	Control
1	2	3	4
Paddy	Paddy may work or the swarming caterpillar (Spodoptera manita boisd)	This is a sporadic pest. Attacks mostly Viruppu (Autumn) crop of paddy throughout the State	<p>(i) Apply 10 per cent B. H. C. dust at 15 to 20 lb. per acre.</p> <p>(ii) Spray D. D. T. suspension prepared at the rate of 1 lb. of 50 per cent wettable powder in 25 gallons of water (3 to 35 gallons required for an acre.)</p> <p>(iii) Apply D.D.T. 50 per cent dust at 15 lb. per acre. In hardly affected fields give a top dressing of Ammonium Sulphate at 28 lb. per acre to promote rapid recuperation.</p>
"	Paddy stem borer (Schenobius incortellus W)	This pest is usually found in Mundakan (Winter) crop and often causes heavy damage. This also is commonly seen in all the districts of the State	(i) Spray Folidol E 605 thrice as follows:—First spraying in the nursery when the plants are about 15 days old, second spraying about three weeks after transplanting and third spraying at the short blade stage. The rate is 2 cc per gallon of water (1 oz. in 14 gallons of water) 30 to 35 gallons are required per acre. The sprayings are to be done when a good number of moths or eggs are found in the field.

1	2	3	4
Paddy	<p>Rice bug (Lip to coris actu: T)</p> <p>Rice (Hispa Arimigera 01) Nilaparvata Sp.)</p>	<p>This is found throughout the State</p> <p>Very common in Karunagappally, Haripad, Mavelikara, Kottarakara and Karthigappally of Quilon District and all parts of Alleppey and Trichur District.</p>	<p>(ii) Spray D. D. T. at the rate of 1 lb. of 50 per cent wettable powder in 25 gallons of water as follows:—One spraying in the nursery, dip the seedling in the suspension of the same strength, one spraying 2 to 3 weeks after transplant stage (in the short blade stage 40 to 45 gallons of the spray liquid are required per acre in both cases).</p> <p>(iii) At the time of transplanting eliminate and destroy the dead heads if any.</p> <p>(iv) In hardly affected fields give a top dressing of ammonium sulphate.</p> <p>(v) After harvest destroy the stems by burning.</p> <p>(i) In the early stage of attack collect the bugs by a hand net.</p> <p>(ii) Apply B. H. C. 10 per cent dust at the rate of 20 to 25 lb. per acre.</p> <p>(i) Apply 10 per cent B. H. C. dust at 15 to 20 lb. per acre.</p> <p>(ii) Spray D. D. T. at the rate of 1 lb. of 50 per cent wettable powder in 25 gallons of water 30 to 35 gallons of spray liquid required per acre).</p>

Paddy (contd.)	Paddy gall fly (Pachydiplaxis oryzae W)	Commonly found in Virupuru crops in the District of Quilon and Trichur	<p>(i) During seedling stage of the crops, if adultam are found in the field set up light traps.</p> <p>(ii) Spray the seedlings with D. D. T. at the rate of 1 lb. of 50 per cent wettable powder in 25 gallons of water when adults are observed in the field (30 to 35 gallons of spray liquid required for an acre).</p> <p>(iii) Give a top dressing of ammonium sulphate in the affected fields.</p>
Rice grass hopper (Heteroglyphids)	Commonly found in the various parts of Palghat and Tellicherry districts though the damage done is a minor form	Apply 10 per cent B. H. C. dust on field bunds soon after the nymphs appear and before they actually invade the crops. If the crop is already attacked apply B.H.C. 10 per cent dust at 20 to 25 lb per acre or drive the hopper to a convenient field corner and give a heavy dusting with B. H. V. 10 per cent.	
Leaf roller (Graphalocrocis megalanalis G)	Commonly found in Virupuru crops in the Districts of Quilon and Trichur	Spray D. D. T. suspension at the rate of lb. of 50 per cent wettable powder in 25 gallons of water (30 to 35 gallons required per acre).	
Paddy cockchafer/buttler (Phyllognathus dronysins F)	Found in Kottayam District	Prior to sowing plough into the soil 28 lb. of 5 per cent Aldrin dust of 56 lb. of 10 per cent B. H. C. dust per acre.	

1	2	3	4
<p>Paddy— (<i>contd.</i>)</p>	<p>The paddy jassid (The green jassid <i>nephotettix</i> sp. and the white jassid) <i>Tettigoniella Spectra</i> Dt.)</p> <p>Paddy blue bottle (<i>Leptisan Pygmaea</i>)</p>	<p>Found in Kottayam District</p> <p>Commonly noticed in Ottapalam and nearby places of the Palghat District resulting in heavy damage to paddy crops</p>	<p>(i) Collect the bugs by a hand net on the early stages of attack.</p> <p>(ii) Spray D. D. T. at the rate of 1 lb. of 50 per cent wettable powder in 25 gallons of water. 30 to 35 gallons of suspension required per acre.</p> <p>(iii) Dust D. D. T. 5 percent at the rate of 15 to 20 lb. per acre.</p> <p>(1) Apply 10 per cent B. H. C. dust at 15 to 20 lb. per acre of spray D.D.T. at the rate of 1 lb. 50 per cent wettable powder 30 to 35 gallons of the suspension required per acre.</p>

APPENDIX D

11. List of Centres selected for recording metrological information—1961.

TRIVANDRUM DISTRICT

1	Attingal	5	Ponmudi
2	Nedumangad	6	Trivandrum
3	Neyyattinkara	7	Varkala
4	Parassala		

QUILON DISTRICT

1	Adoor	11	Kottarakara
2	Alleppey	12	Mavelikara
3	Ambalapuzha	13	Nilamel
4	Arukutty	14	Paravur
5	Aryankavu	15	Pathanamthitta
6	Chengannur	16	Punalur
7	Haripad	17	Quilon
8	Karunagapally	18	Sherthallai
9	Kayamkulam	19	Thiruvalla
10	Konni		

KOTTAYAM DISTRICT

1	Alwaye	12	Munnar
2	Changanacherry	13	Muvattupuzha
3	Chinnar	14	Neriamangalam
4	Devicolam	15	Palai
5	Ettumanur	16	Parur
6	Kanjirapally	17	Pee made Residency
7	Karikode	18	Peer made Taluk
8	Kottayam	19	Perumbavoor
9	Kumali	20	Vaikom
10	Malayattur	21	Vandanmedu
11	Marayur	22	Veloor

TRICHUR DISTRICT

1	Cochin	5	Mukundapuram
2	Cochin Port	6	Thalappilly
3	Cranganore	7	Trichur
4	Ernakulam		

PALGHAT DISTRICT

1	Alathur	6	Palghat
2	Cherpalsseri	7	Parali
3	Chittur	8	Perinthalmann:
4	Mannarghat	9	Ponnani
5	Ottapalam		

KOZHIKODE DISTRICT

- | | | | |
|---|-----------|---|-------------|
| 1 | Badagara | 5 | Nilambur |
| 2 | Kozhikode | 6 | Quilandi |
| 3 | Kuttiyadi | 7 | Tirurangadi |
| 4 | Manjeri | 8 | Vythiri |

CANNANORE DISTRICT

- | | | | |
|---|-----------|---|-------------|
| 1 | Cannanore | 5 | Mananthody |
| 2 | Hosdurg | 6 | Payyannur |
| 3 | Irikkur | 7 | Taliparamba |
| 4 | Kasargode | 8 | Tellicherry |

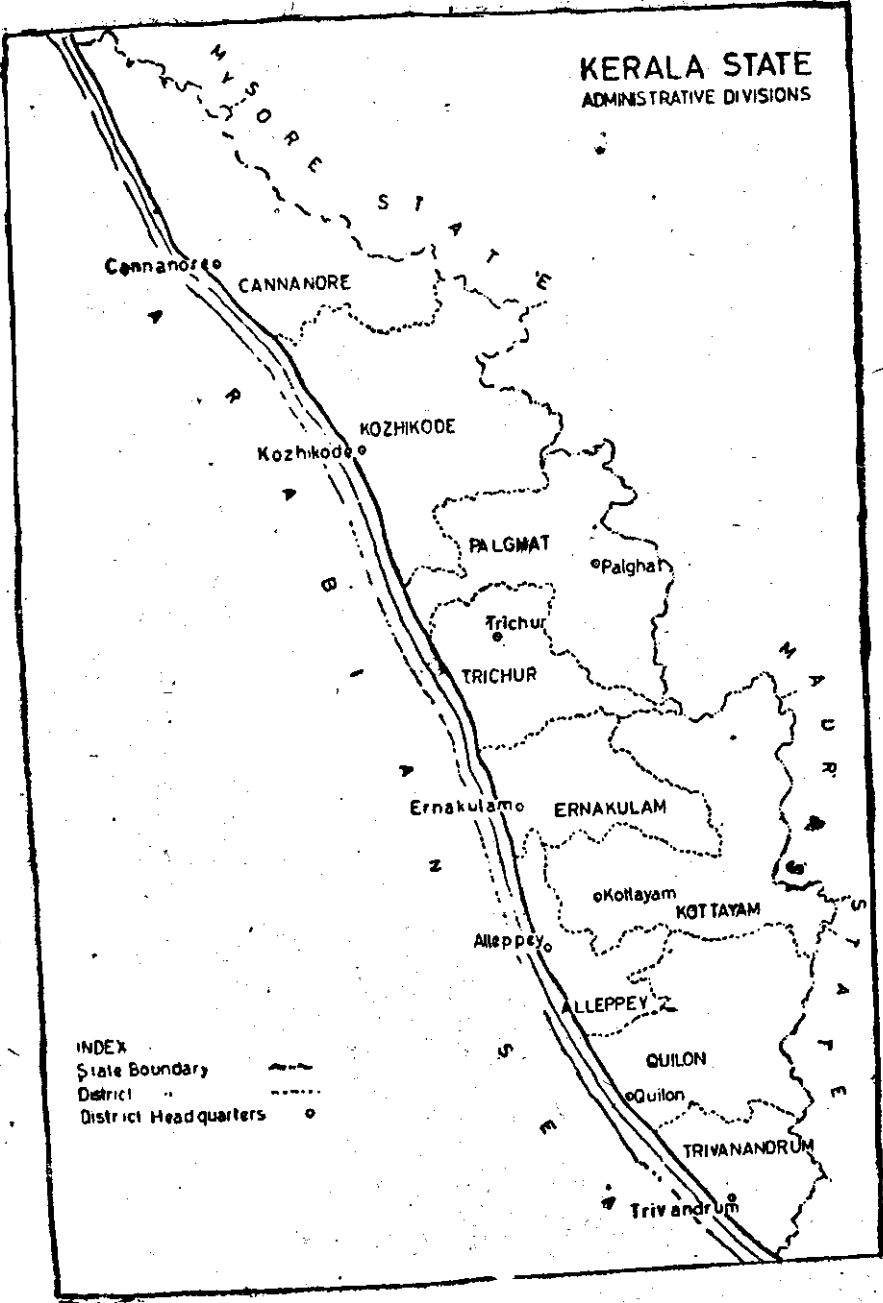
Sl. No.	English	Botanical	Malayalam
1	Alexandrian lamel	Calophyllum inophyllum	Punna
2	Amaranthus	"	Keera or cheera
3	Arrow root	Cucuma angustifolia	Kuva
4	Ash gourd	Banaiuccasa certifera	Kumbalanga
5	Bajra	Pannretam typhodeum	Kambu
6	Bamblaimas	Citrus madima	Bamblimas
7	Earlery	Horeum Volgana	Barley
8	Bungalagram	Oicer arietenum	Kadala
9	Betal leaves	Piper betel	Vettila
10	Betel nut	Areca Catecha	Adakka or paku
11	Bitter gourd	Mamodia charntia	Pavakka or Kaipakka
12	Black gram	Phasecur radiatus	Uzhunnu
13	Breed fruit	Artocarpus commuris	Simachakka or Kadachakka
14	Brinjal	Solanum Malogena	Vazhuthananga
15	Bottle gourd	Lagnaria Vulgaris	Churakkai
16	Cabbage	Erasica olavacea	Mottakkose
17	Cardamom	Electaria cardamom	Elakka
18	Carrot	Doncces carota	Mullanki
19	Cashew nut	Anacardium occidentale	Kasuandi or Parangiandi
20	Castor	Ricinus communis	Avanaku
21	Chillies (Dry)	Capcicum annum	Vattal Mulaku or Kappal mulaku
22	(Green)	do.	Pachamulaku
23	Cinnamon	Cinnamonam Zaylanicum	Karava or Gezhana
24	Cloves	Enginua Ceryophylate	Crampu
25	Cluster beams	Cyanopsis Psoralicides	Kothavara
26	Coconut	Coves nucipera	Naliker a or Theng
27	Colococasia	Colocasia Antiqueram	Chempu

Sl. No.	English	Botanical	Malayalam
28	Corriander	<i>Coriandrum sativum</i>	Kothamally
29	Cotton	<i>Gossypium herbaceum</i>	Paruthy
30	Cowgoram	<i>Vigna catiang</i>	Karamani or Kottapayaru
31	Cucumbur	<i>Cucumis sativan</i>	Vellarikka
32	Cumur	<i>Cuminum Yminum</i>	Jeerakam
33	Dramstic	<i>Moringa Clerifara</i>	Muringakka
34	Elephant foot yam	<i>Amorphaphallus—Companalathur</i>	Chena
35	Field beans	<i>Dolichos Hablal</i>	Mochakkota
36	Garlic	<i>Allium Sativum</i>	Veluthully
37	Ginger	<i>Zingiber Officinalis</i>	Inchi or chukku
38	Grape	<i>Vitis vinifar</i>	Munthringa
39	Greengram	<i>Phaseolus mango</i>	Cherupayaru
40	Groundnut	<i>Archis hypogea</i>	Nilakadala
41	Guvi	<i>Psidium gujava</i>	Perakka
42	Horsgram	<i>Dolichers Biflorous</i>	Muthira or Kanam
43	Italian millet	<i>Setaria italica</i>	Thina
44	Jack fruit	<i>Artocarpus intigrifoli</i>	Chakka
45	Jowar	<i>Sorghum Volgara</i>	Cholam
46	Jute	<i>Corchorous Capsularis</i>	Chanam
47	Kari leaf	<i>Murrya Zocnigari</i>	Karivapila
48	Ladies finger	<i>Habiscus esculentus</i>	Vendakka
49	Lemongras	<i>Cymbopogon spices</i>	Ezhumpull or Thalappullu
50	Lime fruits	<i>Citrus aurantifolia</i>	Cherunaranja
51	Lime fruits	<i>Citrus senensis</i>	Madhuranaranga
52	do.	<i>Citrus senensis</i>	Madhuranaranga
53	Long pepper	<i>Piper longum</i>	Tippali
54	Maize	<i>Fea mayas</i>	Mokka cholam
55	Mango	<i>Magnifera indica</i>	Mambazham
56	Neem	<i>Azhirachta Indica</i>	Veppu
57	Nutmeg	<i>Myristica foregrus</i>	Jathikka

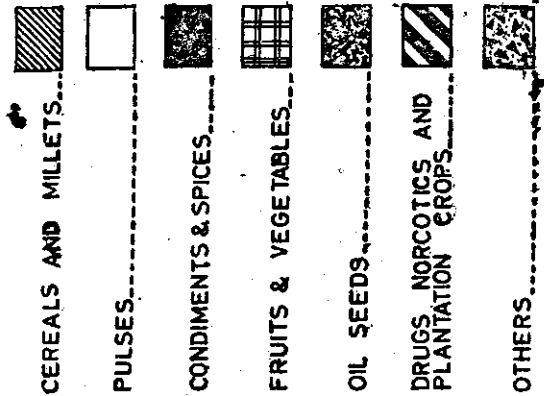
58	Onion	Allium cepa	Chevannulli
59	Opium	Papayar Somniferum	Karappu
60	Paddy	Dryza Sativa	Nellu
61	Palmyrah	Borassus Flabellifer	Kariampana
62	Pappaya	Cariota Papaya	Ommakka or Kappalanga
63	Pepper (Black)	Piper nigrum	Kurumulaku or Nallamulaku
64	Pineapple	Ananes comesus	Kaithachakka or Prithachakka
65	Plantain	Musa sepietun	Vazha
66	Pomegrante	Punicagranalum	Mathalam
67	Pumpkin	Cuvurbitamaxima	Mathanga
68	Ragi	Eleusive Coracana	Panjappulu or Koovaraku
69	Red gram	Cajanus Ind cus	Thuvara
70	Rose apple	Engenia jamos	Jampa
71	Samai	Panicum miliara	Chama
72	Sesamum	Sesamum indicum	Ellu
73	Snake gourd	Trichosan thesagum	Padavalanga
74	Sugarcane	Sechhuram officinarum	Karimbu
75	Sweet potato	Ipmoea batatas	Sarkaravalli or Madhurakizhangu
76	Sword beams	Canavalia ensiforms	Valaranga
77	Tamarind	Tamarindur indica	Valampuli
78	Tapioca	Manikot utilissima	Marachini or Kappa
79	Tobacco	Nicotiana tobacum	Pukayila
80	Tomato	Hycopersicum	Thakkali
81	Turmeric	Curcuma longa	Manjal
82	Water melon	Citrullus ulgaris	Thannimathan
83	Wheat	Triticum vulgare	Gothambu
84	Winged beans	Psophocarpustebra gonolobus	Chathurapayaru
85	Yam	Diowrea bulbiforia	Kachil
86	do.	Engenia cumim	Njarampazham
87	do.	Dioswrea acullota	Cheruvallikizhangu
88	do.	Coleus parriplorus	Koorka or Cheevakizhangu
89	do.	Luffa acutangula	Pichanka
90	do.	Garcinia Gambogia	Kodampulli or Pevaru



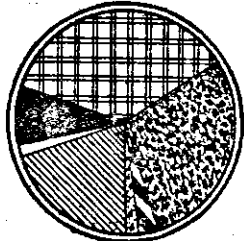
KERALA STATE ADMINISTRATIVE DIVISIONS



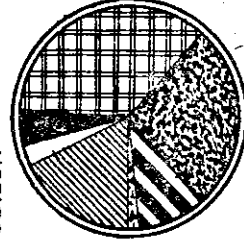
AREA UNDER CROPS-1963-64



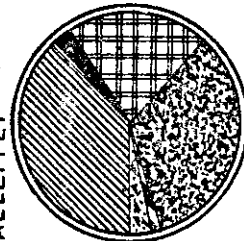
TRIVANDRUM



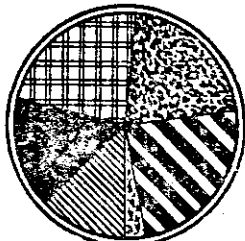
QUILON



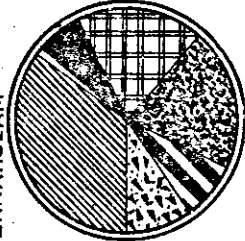
ALLEPPEY



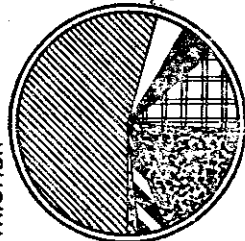
KOTTAYAM



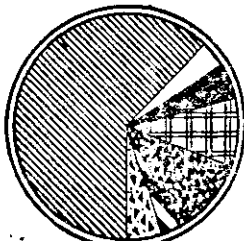
ERNAKULAM



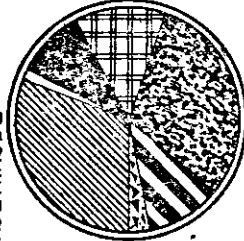
TRICHUR



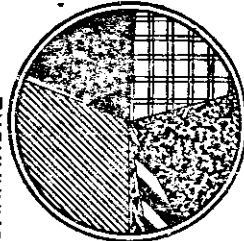
PALGHAT



KOZHIKODE



CANNANORE



AVERAGE MONTHLY RAINFALL

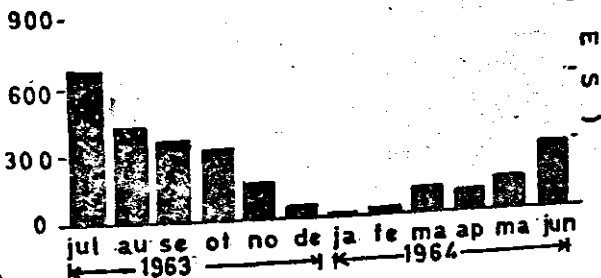
TRIVANDRUM



CUILON



ALLEPPEY



AVERAGE MONTHLY RAINFALL

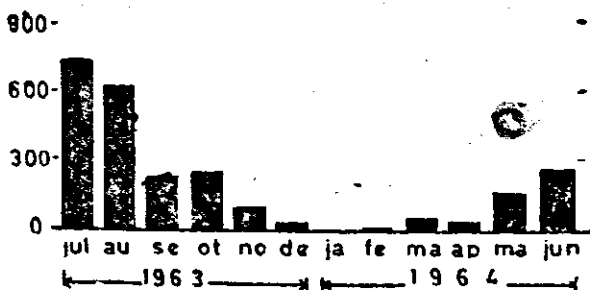
KOTTAYAM



ERNAKULAM



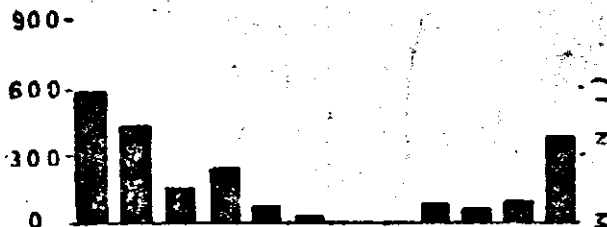
TRICUR



MILLIMETERS

AVERAGE MONTHLY RAINFALL

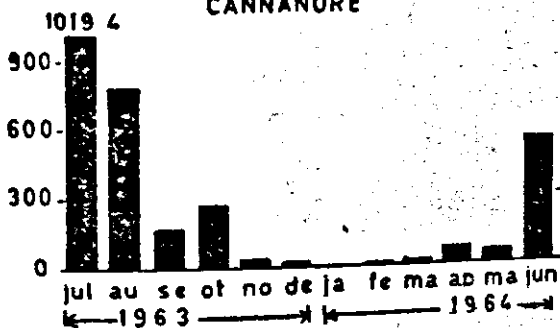
PALGHAT



KOZHIKODE

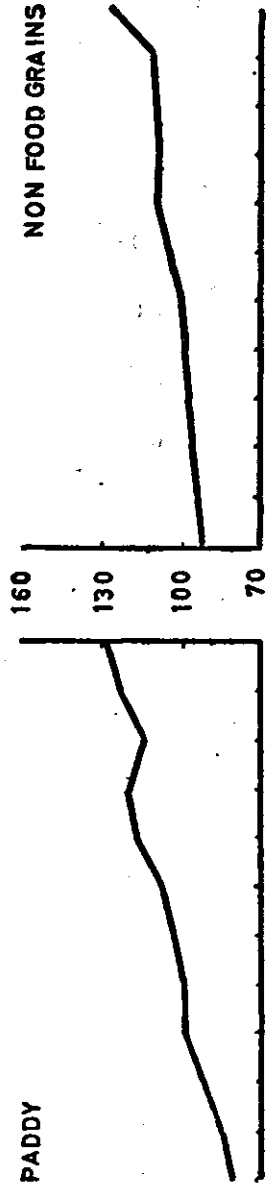
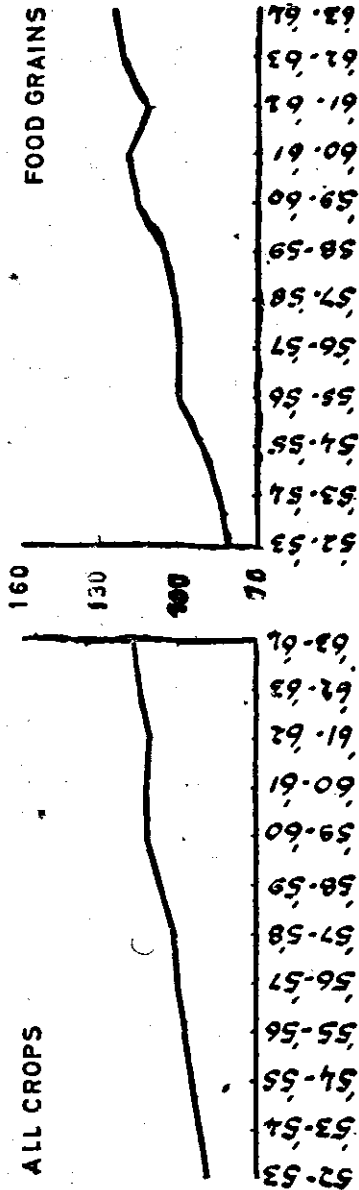


CANNANORE



INDEX NUMBERS OF AGRICULTURAL PRODUCTION

(BASE 1956-57=100)



INDEX NUMBERS OF AGRICULTURAL PRODUCTION

(BASE 1956-57:100)

Coconut

160

130

100

70

52-53
53-54
54-55
55-56
56-57
57-58
58-59
59-60
60-61
61-62
62-63
63-64

Sea

160

130

100

70

52-53
53-54
54-55
55-56
56-57
57-58
58-59
59-60
60-61
61-62
62-63
63-64

Coffee

160

130

100

70

Rubber

160

130

100

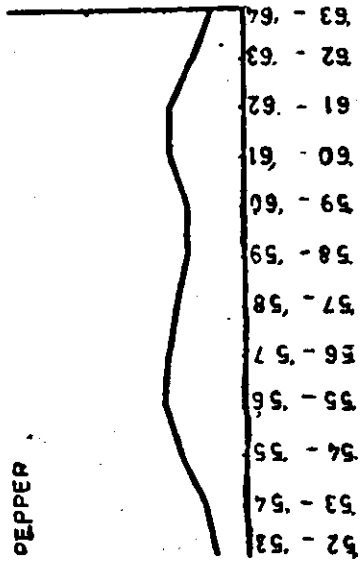
70

52-53
53-54
54-55
55-56
56-57
57-58
58-59
59-60
60-61
61-62
62-63
63-64

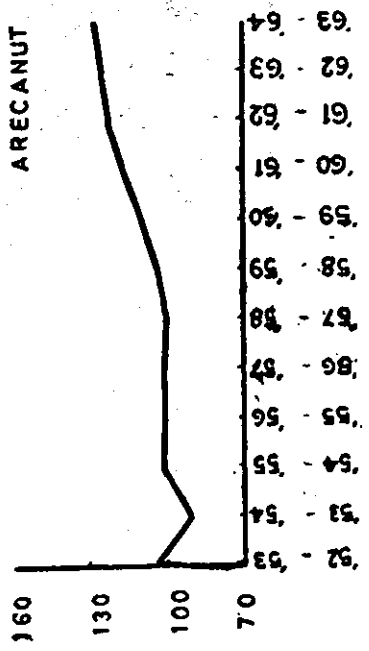
INDEX NUMBERS OF AGRICULTURAL PRODUCTION

(BASE 1956-57.100)

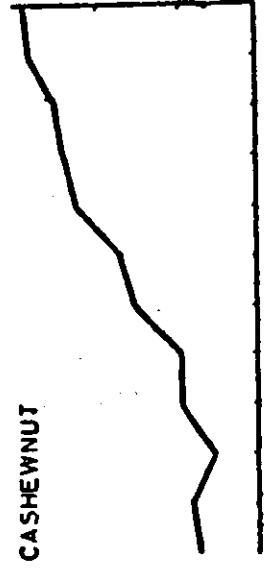
PEPPER



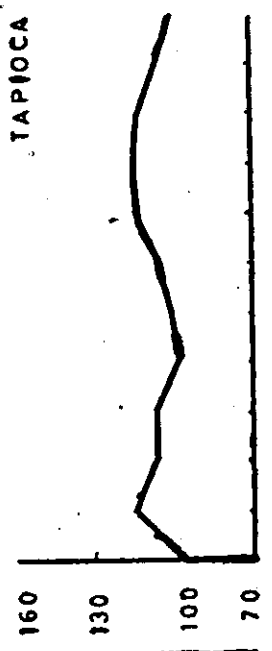
ARECANUT



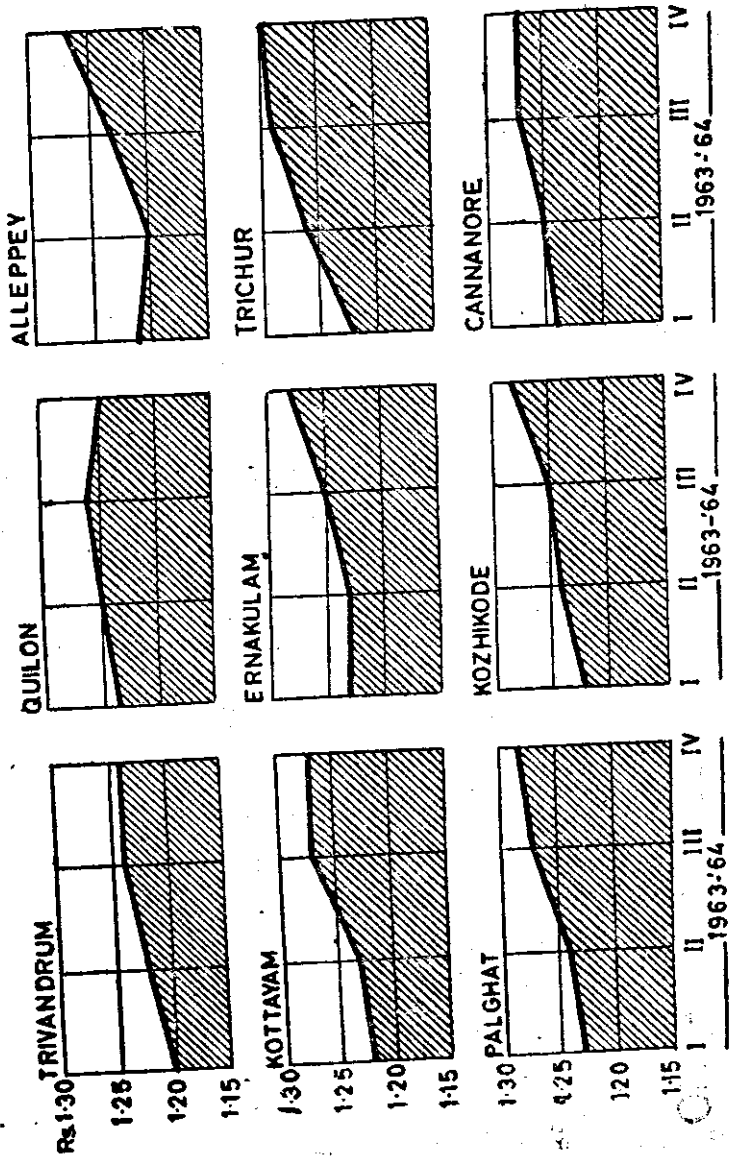
CASHEWNUIT



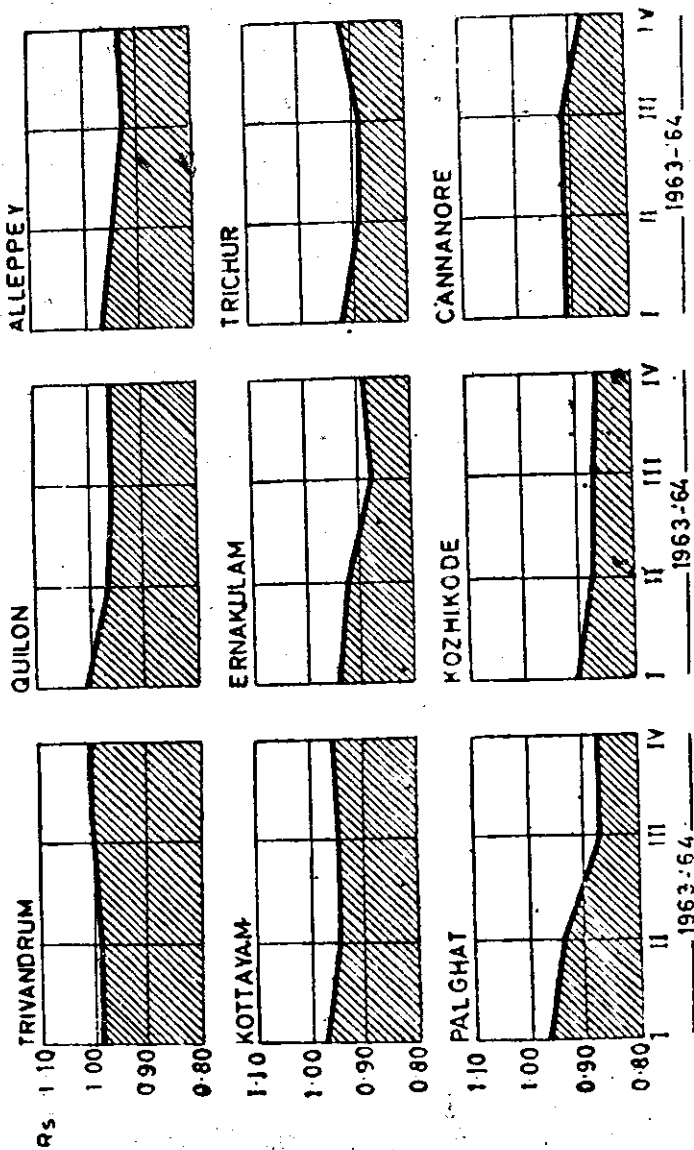
TAPIOCA



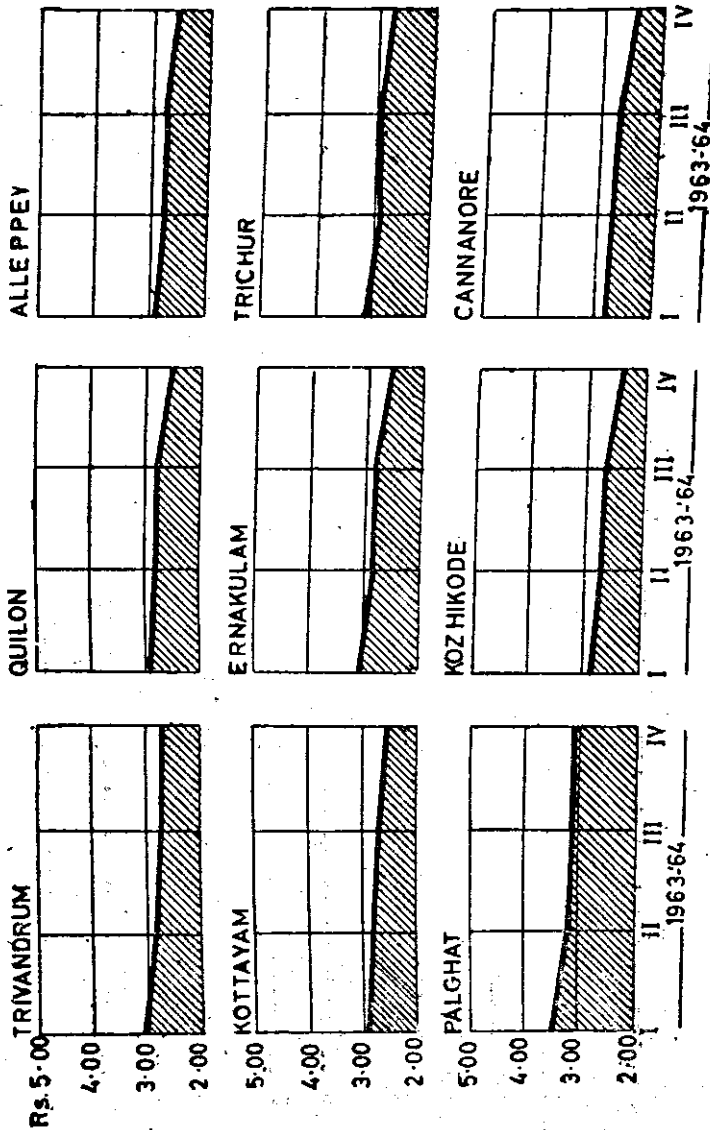
QUARTERLY RETAIL PRICES OF SUGAR (K.G)



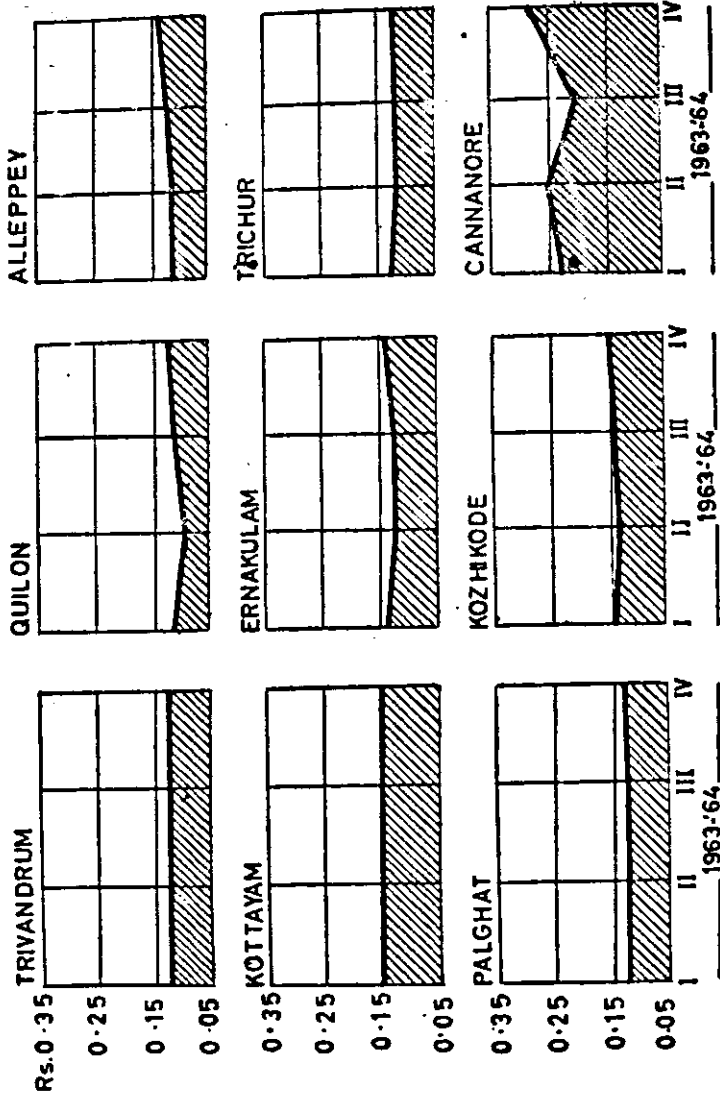
QUARTERLY RETAIL PRICES OF BLACKGRAM (K.G.)



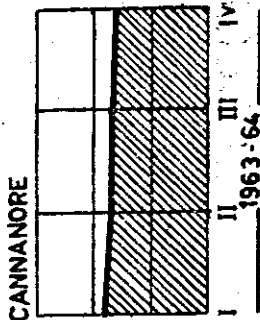
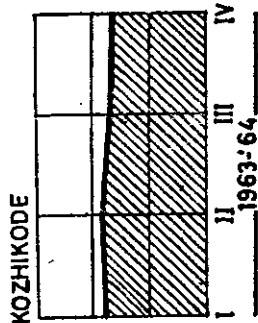
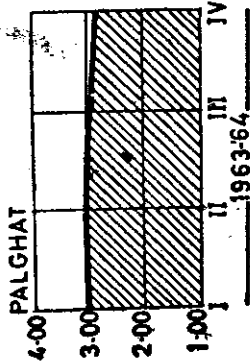
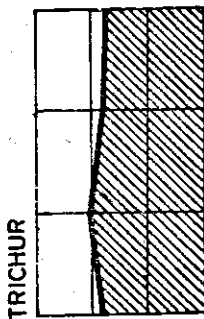
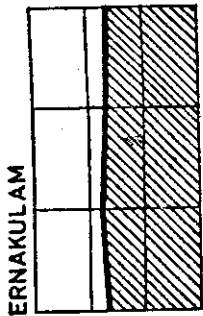
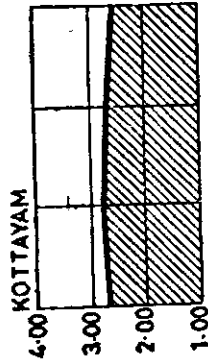
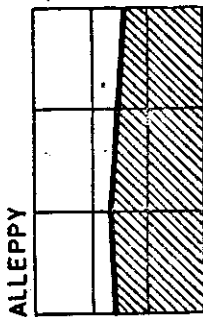
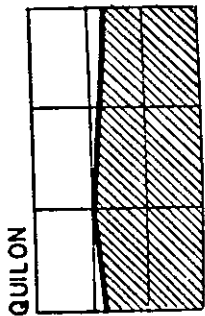
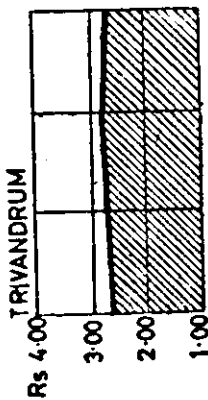
QUARTERLY RETAIL PRICES OF CHILLIES (K. g.)



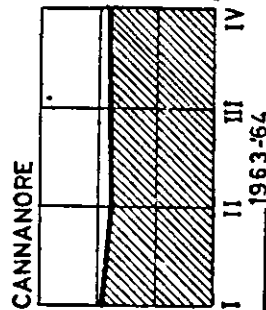
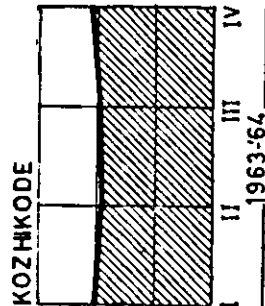
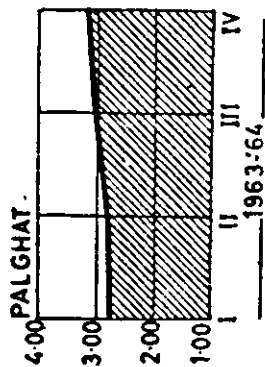
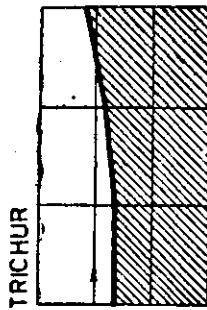
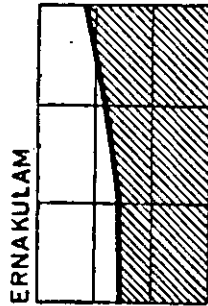
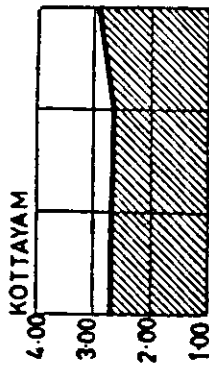
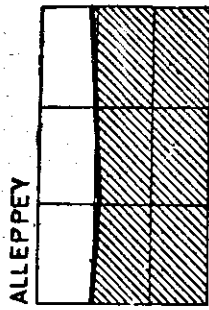
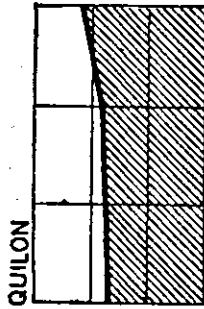
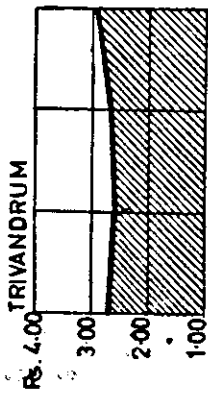
QUARTERLY RETAIL PRICES OF TAPIOCA (K.G.)



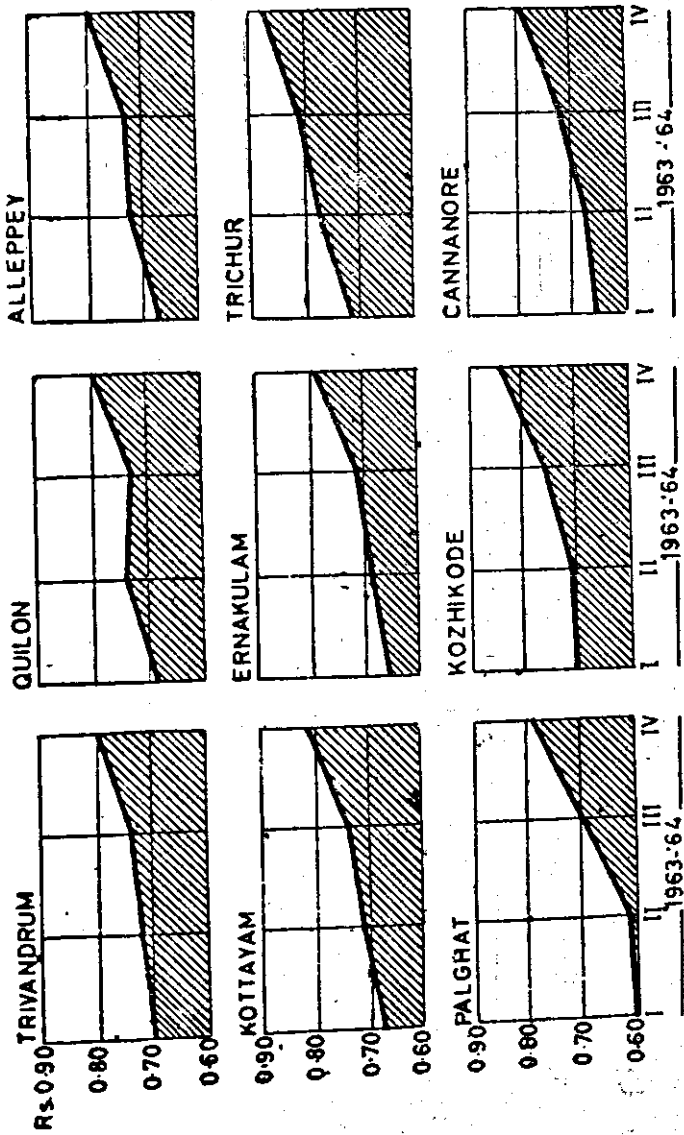
QUARTERLY RETAIL PRICES OF COCOANUT OIL (Litre)



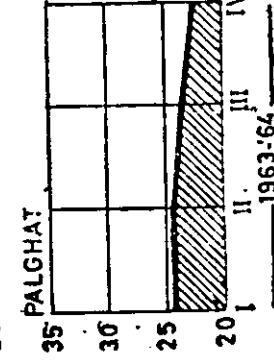
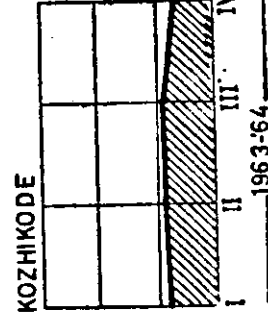
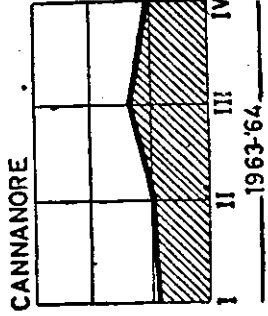
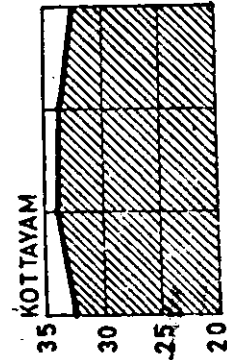
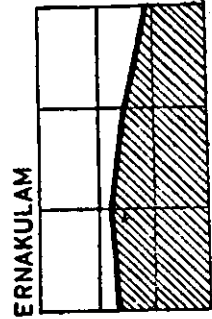
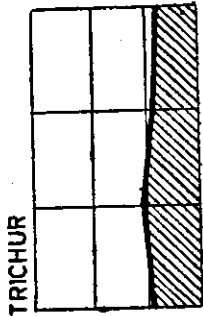
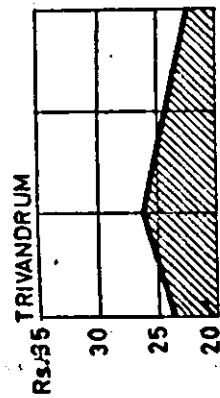
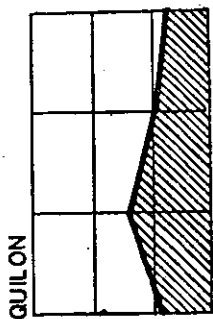
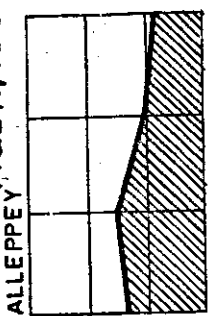
QUARTERLY RETAIL PRICES OF GINGELLY OIL (Litre)



QUARTERLY RETAIL PRICES OF RICE (K.G.)



QUARTERLY RETAIL PRICES OF COCOANUT (Without husk, 100Nos.)



QUARTERLY RETAIL PRICES OF TOBACCO (K.G.)

RS.12.00 TRIVANDRUM

9.00			
6.00			
3.00			

12.00 KOTTAYAM

9.00			
6.00			
3.00			

12.00 PALGHAT

9.00			
6.00			
3.00			

QUILON

ERNAKULAM

KOZHIKODE

ALLEPPEY

TRICHUR

CANNANORE

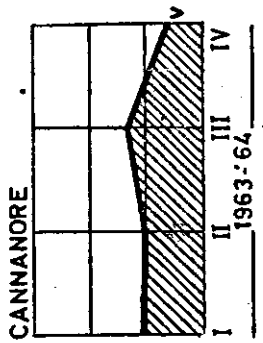
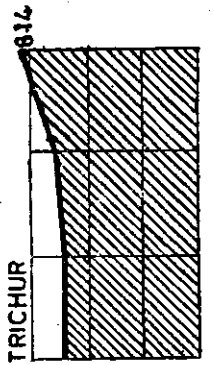
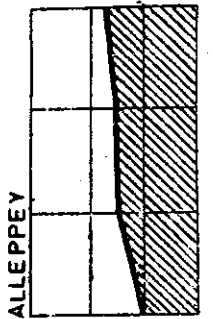
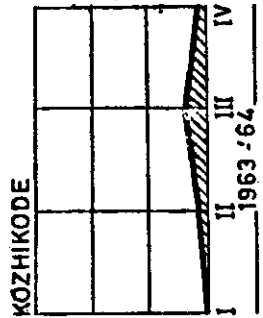
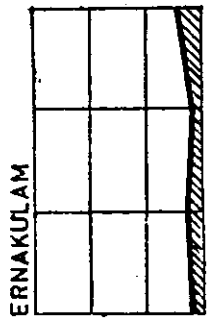
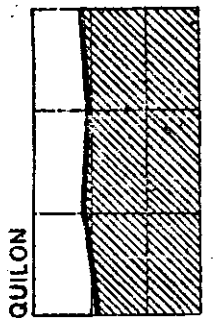
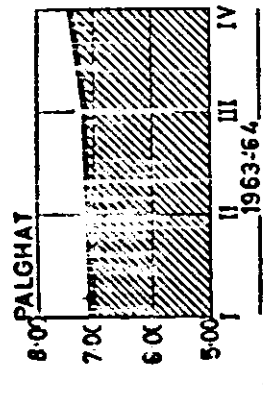
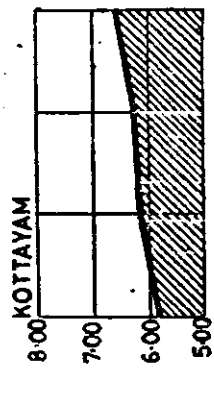
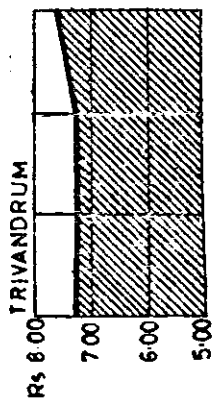
ORDINARY
JAFFNA

1963-64

1963-64

1963-64

QUARTERLY RETAIL PRICES OF COFFEE POWDER (K.g)



V. VARIETY CHANGE

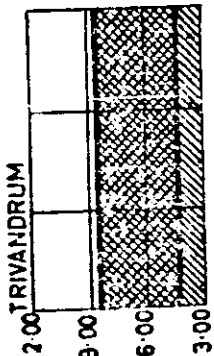
1963-64

1963-64

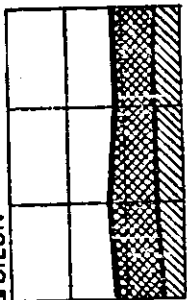
R.P.

QUARTERLY RETAIL PRICES OF TOBACCO (K.G.)

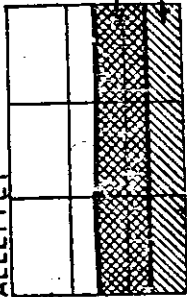
Rs. 12.00



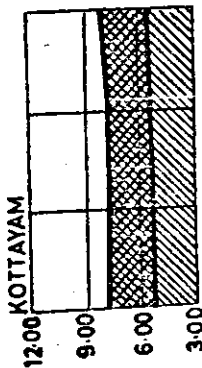
QUILON



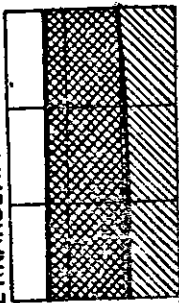
ALLEPPEY



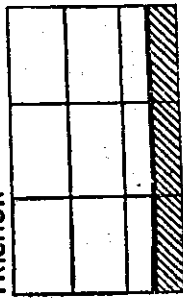
12.00



ERNAKULAM

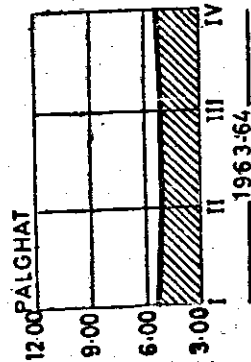


TRICHUR

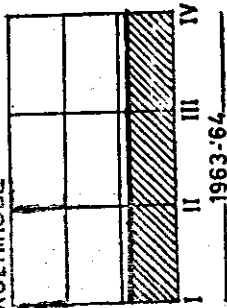


ORDINARY
JAFFNA

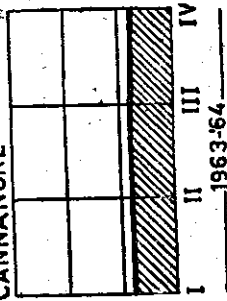
12.00



KOZHIKODE



CANNANORE



1963-64

1963-64

1963-64

1963-64

R.P.

CLASSIFICATION OF AREA 1963-64

FORESTS.



LAND PUT TO
NON-AGRICULTURAL USES.



BARREN AND UNCULTIVABLE
WASTE LANDS.



PERMANENT PASTURES &
OTHER GRAZING LANDS.



LAND UNDER MISC. TREE
CROPS & GROVES



CULTIVABLE WASTE



OTHER FALLOW LANDS.



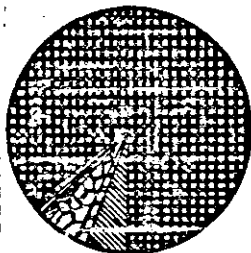
CURRENT FALLOW



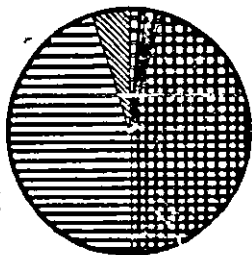
NET AREA SOWN.



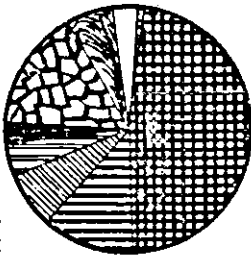
ALLEPPEY



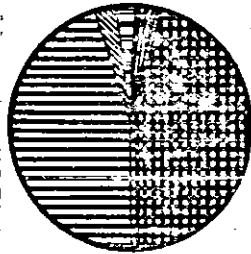
TRICHUR



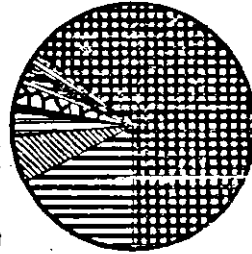
CANNANORE



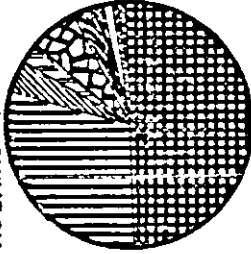
QUILON



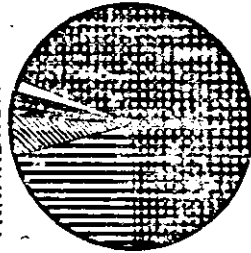
ERNAKULAM



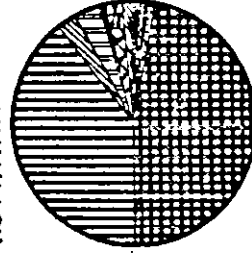
KOZHIKODE



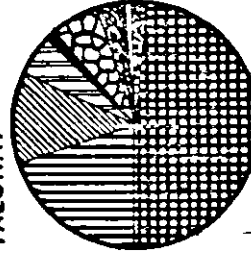
TRIVANDRUM



KOTTAYAM



PALGHAT

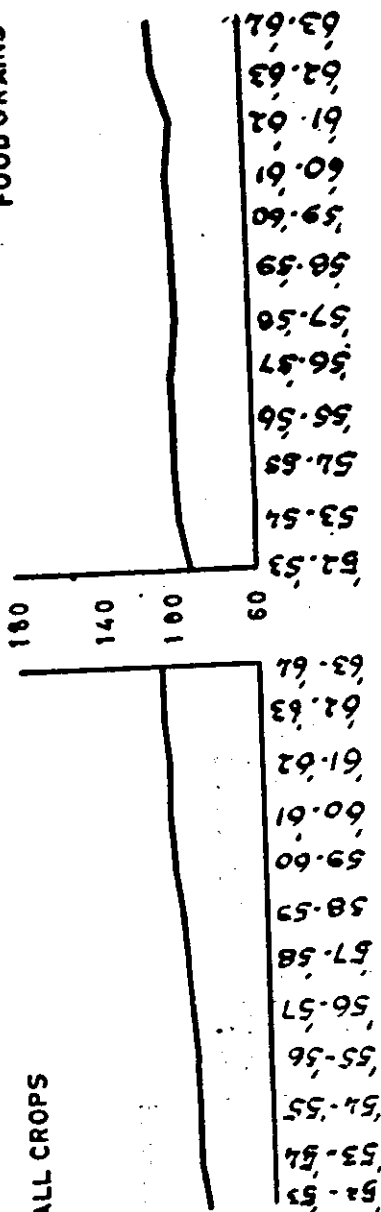


INDEX NUMBERS OF AREA UNDER CROPS

(Base 1956-57=100)

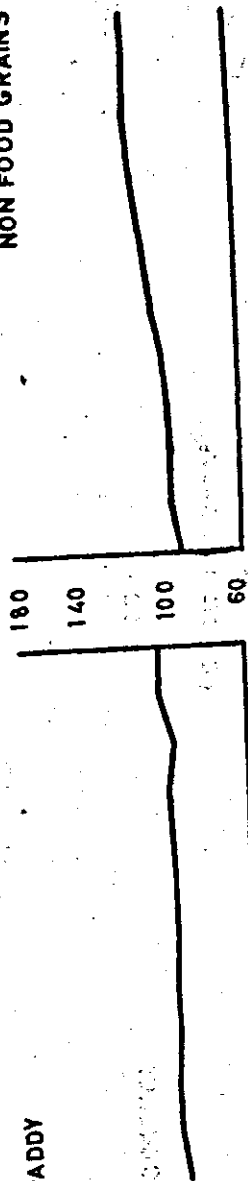
ALL CROPS

FOOD GRAINS



PADDY

NON FOOD GRAINS



INDEX NUMBERS OF AREA UNDER CROPS

(BASE 1956-57:100)

COCONUT

180

140

100

60

52.53
53.54
54.55
55.56
56.57
57.58
58.59
59.60
60.61
61.62
62.63
63.64

TEA

180

140

100

60

52.53
53.54
54.55
55.56
56.57
57.58
58.59
59.60
60.61
61.62
62.63
63.64

COFFEE

180

140

100

60

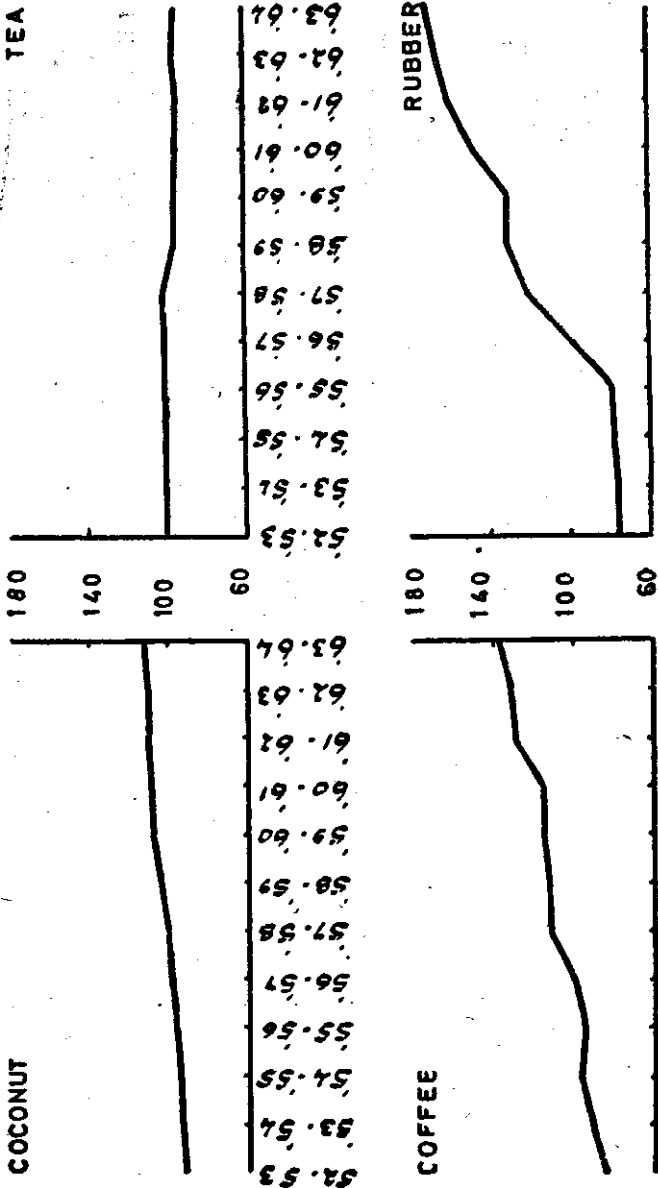
RUBBER

180

140

100

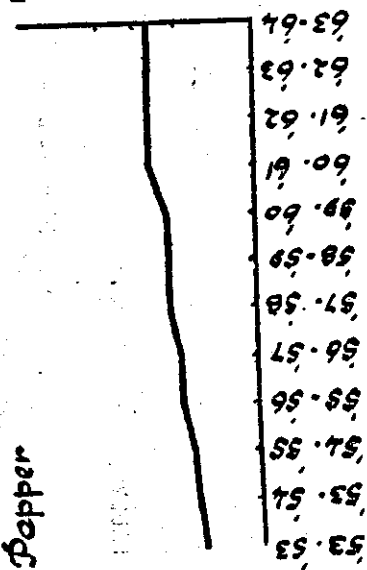
60



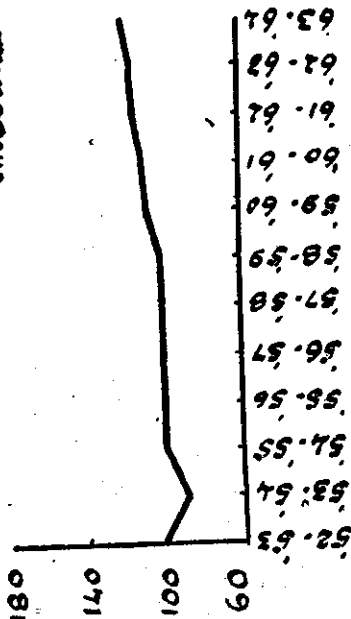
INDEX NUMBERS OF AREA UNDER CROPS

(BASE 1956-57=100)

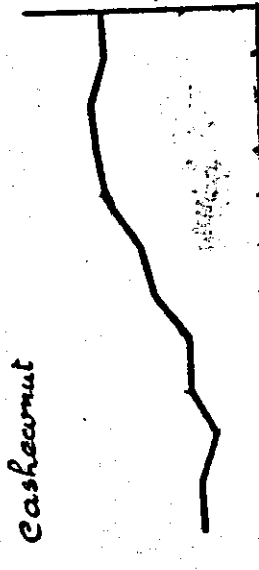
Pepper



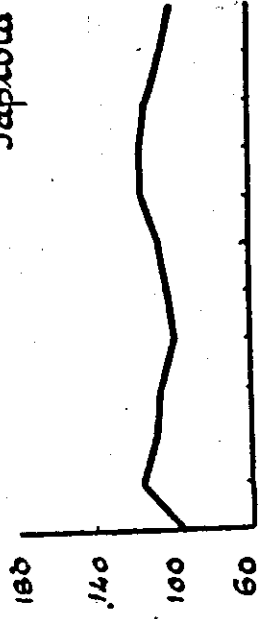
Areca nut



Cashewnut

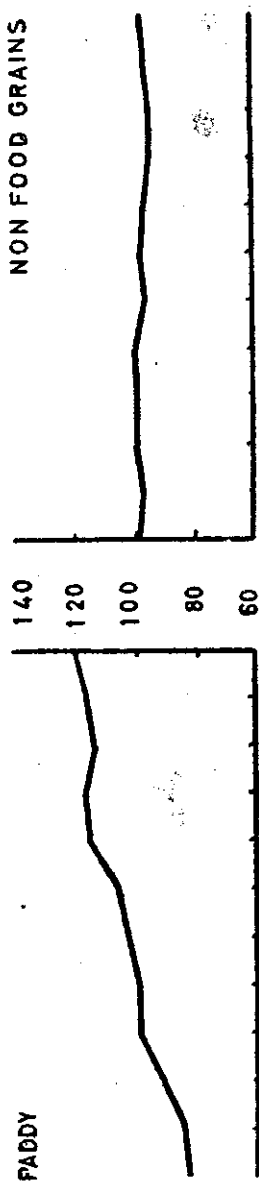
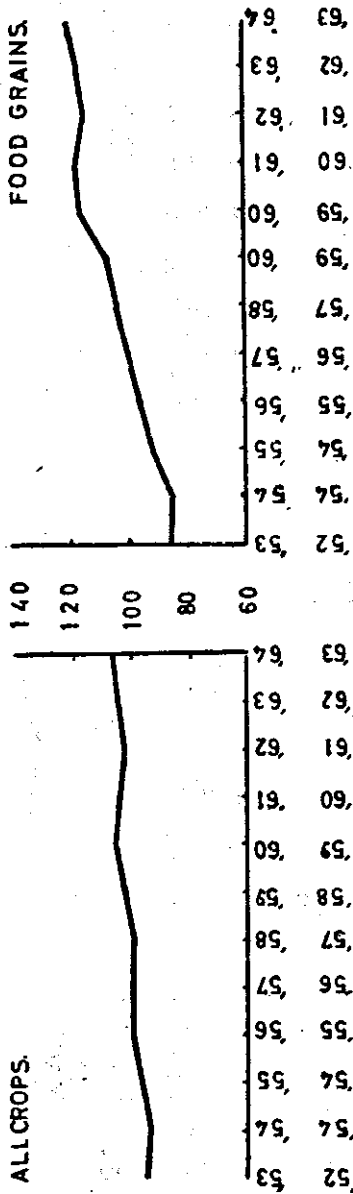


Jatroca



INDEX NUMBERS OF AGRICULTURAL PRODUCTIVITY

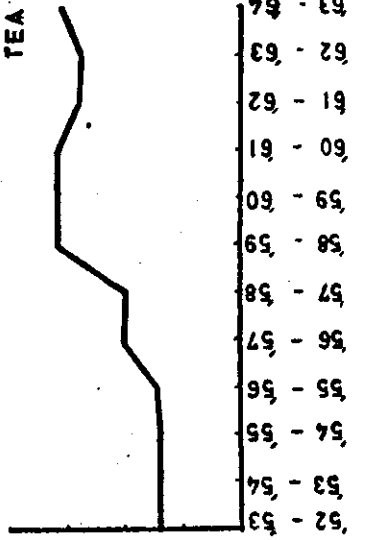
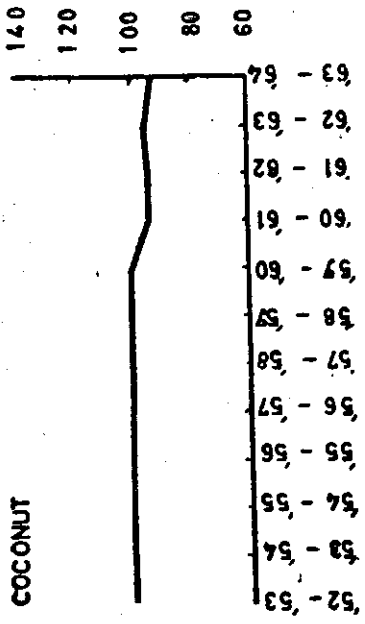
(BASE 1956-57:100)



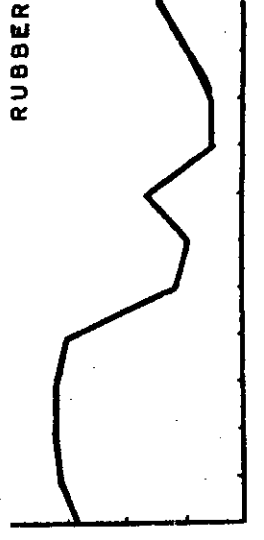
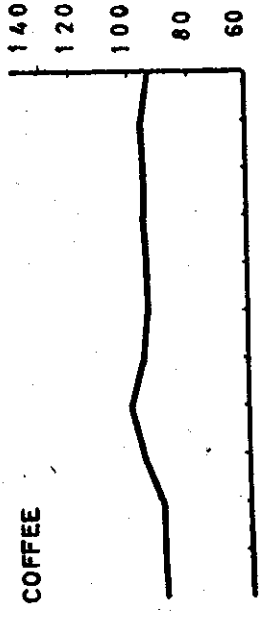
INDEX NUMBERS OF AGRICULTURAL PRODUCTIVITY

(BASE 1956-57:100)

COCONUT

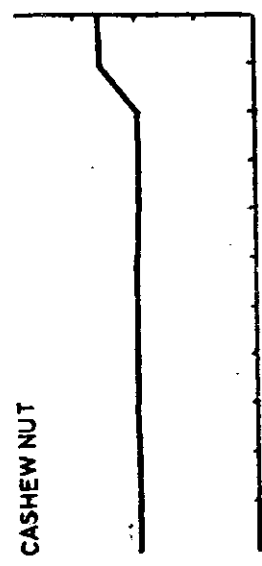
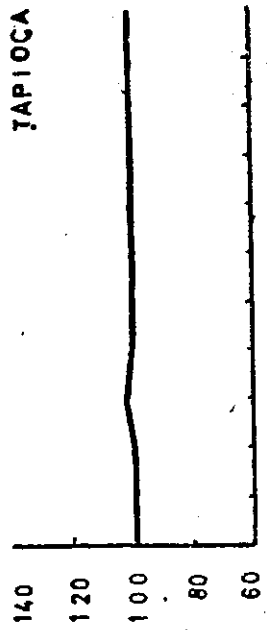
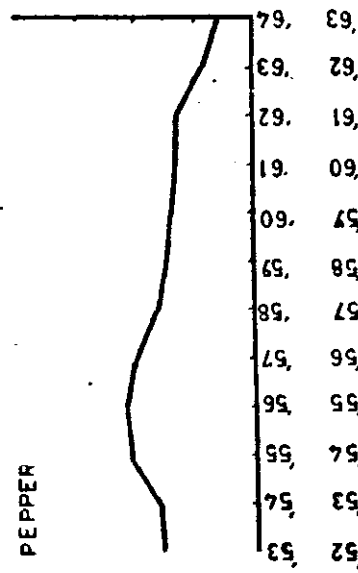
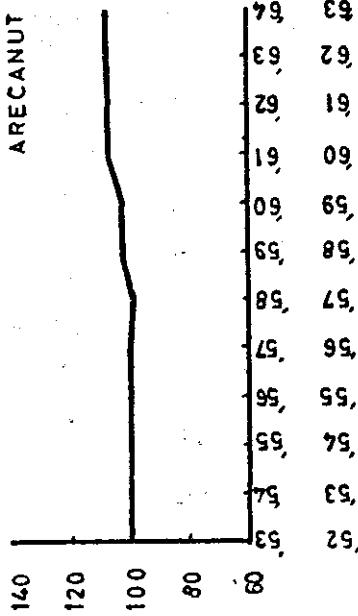


COFFEE



INDEX NUMBERS OF AGRICULTURAL PRODUCTIVITY

(BASE 1956-'57:100)



WORKING CLASS CONSUMER PRICE INDEX NUMBERS

(BASE AUG. 1959=100)

TRIVANDRUM

650.

600.

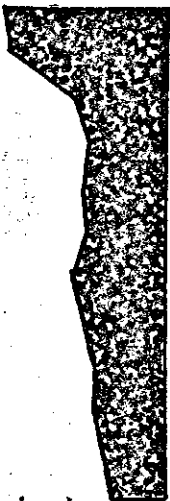
550.

500

450



QUILON



PUNALUR.

650

600

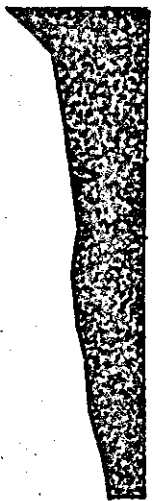
550

500

450



ALEPPEY



CHANGANACHERRY

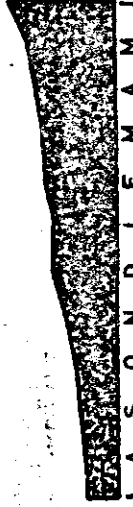
650

600

550

500

450



KOTTAYAM



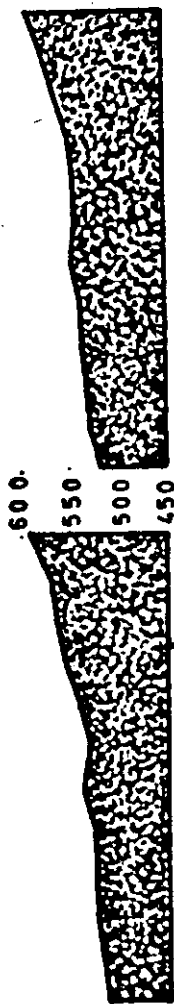
A S O N D J F M A M J J A S O N D J F M A M J
1963-'64

WORKING CLASS CONSUMER PRICE INDEX NUMBERS

ALWAYS

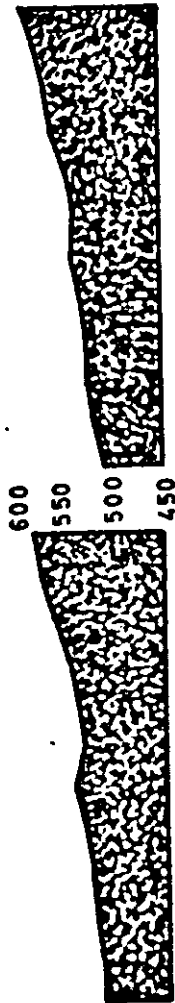
BASE AUG 1936=100

650 BERNAMULAM



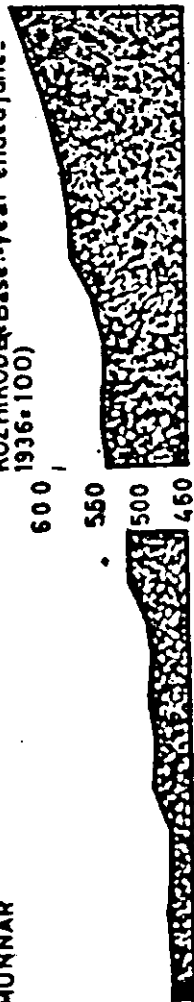
TRICUR

650 CHALAKUDY



MUNNAR

650 KOZHIKODE Base: year ended June -
1936=100)



J A S 1 0 9 N D J F M A M J J A S 1 0 9 N D J F M A M J

968