KERALA STATE

SEASON AND CROP REPORT

JULY 1956 to JUNE 1957
(FASLI 1366)

Published by the Director of Statistics,
Trivandrum

PRINTED BY
THE S. G. P. AT THE GOVERNMENT PRESS,
ERNAKULAM
1959

FOREWORD

This is the first Season and Crop Report of the Kerala State. It relates to the year 1956-57.

Part I of the report narrates the overall agricultural situation in the State while Parts II and III give detailed tables on the important topics of agricultural statistics.

The compilation of this volume was done in the Agriculture Section of the Department. It involved gathering a number of loose ends from two distinct administrative areas, the residuary T-C. area and the old Malabar District of Madras State. This involved a large measure of judicious sifting and rebuilding. In spite of the best efforts of the Department, this volume contains a few gaps here and there. In subsequent reports the range and scope will be widened.

Trivandrum,
5th May 1959.

K. C. CHERIYAN,
Assistant Director-in-charge

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PART I—REPORT

I. Introduction

The new Kerala State came into existence on 1st November 1956 on the reorganisation of Indian States. The State consists of the old Travancore-Cochin State excluding the taluks of Thovala, Agastheeswaram, Kalkulam, Vilavancode and the bulk of the Shencottah Taluk transferred to the Madras State and the District of Malabar and the Kasargode Taluk transferred from Madras State. Kerala is the smallest State in the Indian Union and is the most densely populated. It has an area of 14,991·6 sq. miles. Kerala State lies at the southern end of the Indian Peninsula between North latitudes 8°-18′ and 12°-48′ and East longitude 74°-52′ and 77°-22′. This small State is bounded on the east by the Western Ghats and on the west by the Arabian Sea. The Western Ghats form almost a continuous barrier on the eastern border except for the Palghat Pass. From the Western Ghats the country undulates to the west presenting a series of hills and valleys cut across by numerous rivers and streams. The costal line from south to north is nearly 360 miles. The breadth of the State varies from 20 miles in the extreme north and south to about 80 miles in the middle. The State can be divided into the three natural regions Lowland, Midland and Highland.

The highland consists mainly of the dense reserve forests. Forests form 26·12 per cent of the area of the State. The major forest produces are teak-wood, rose-wood and other kinds of hardwood and several varieties of softwood. The important cash crops of the State, *viz.*, rubber, tea and cardamom are grown in this area on a plantation scale. The Western Ghats has an elevation of 5,000 feet on the average ; the height going up to about 8,000 feet at certain places. Some of the important peaks in the Western Ghats are Mukunni (8,380 ft.), Anamudi Peak (8,837 ft.), Nilgiri Peak (8,118 ft.) and Pullangudi (6,392 ft.)

In the midland area, rice is the most common crop in the valleys while the hillslopes and uplands are utilised for cultivation of tapioca, cashew, coconut, ginger and pepper.

The lowland area bordering the Arabian Sea is mostly under rice and coconut cultivation.

The State receives copious rainfall both from the south-west monsoon (May to August) and the retreating south-west monsoon, popularly known as north-east monsoon (October to December). Rainfall ranges from 35 inches in the extreme south to 220 inches in the north.

With the mountain range all along the eastern border precipitating heavy rains, the State has a good number of rivers originating in the Ghats.

There are 44 rivers running through this State. Out of these, 41 rivers are west flowing. The other three are east flowing rivers and all these are tributaries of the Cauveri River. The average length of the river is calculated as 40 miles with a catchment area of 200 sq. miles. Most of the rivers abound in hydro-electric potential. There are numerous backwaters along the coast interconnected by a net work of canals affording cheap water communication facilities.

Kerala has an equable climate. Mean temperature varies from 75° to 90°. In the highland regions the climate is cool and bracing. Rainfall ranges from 100 to 200 inches. The midland region also receives good rainfall varying from 55 inches to 155 inches. The rainfall in the coastal range varies from 35 inches in the south to 140 inches in the north. There is high percentage of humidity in the coastal tract, the percentage being as high as 93, during the months of July and August. Even during the dry weather of December and January the percentage humidity seldom goes below 60. Generally speaking, the percentage humidity shows a progressive decline a s we advance to the foot of the Western Ghats.

The lowland area are the most densely populated the density going as high as 5,019 per square mile in certain areas followed by the midland and highland in that order.

For administrative purposes Kerala was divided into seven districts, Trivandrum, Quilon, Kottayam, Trichur, Palghat, Kozhikode and Cannanore during the period under review.

This is the first Season and Crop Report after the formation of the Kerala State.

II. Population—General Economic Conditions

The population of the State according to the 1951 Census was 13,551,529. The population is increasing. The variation in population for the last fifty years is given below :—

Year	Area in square miles	Population (in lakhs)			Number of women for 1,000 men	Density of Population	Land per capita (Acres)
		Total	Male	Female			
1901	14992	63·38	31·66	31·72	1,002	423	1.51
1911	14992	70·15	35·48	35·67	1,005	468	1·37
1921	14992	78·13	38·91	39·22	1,008	521	1·23
1931	14992	95·02	47·06	47·96	1,019	634	1·01
1941	14992	110·37	54·53	55·84	1 024	736	0·87
1951	14992	135·52	66·83	68·69	1.028	904	0·71

The population increased by 114 per cent during the last five decades. The rate of growth is considered to be one of the highest in the world.

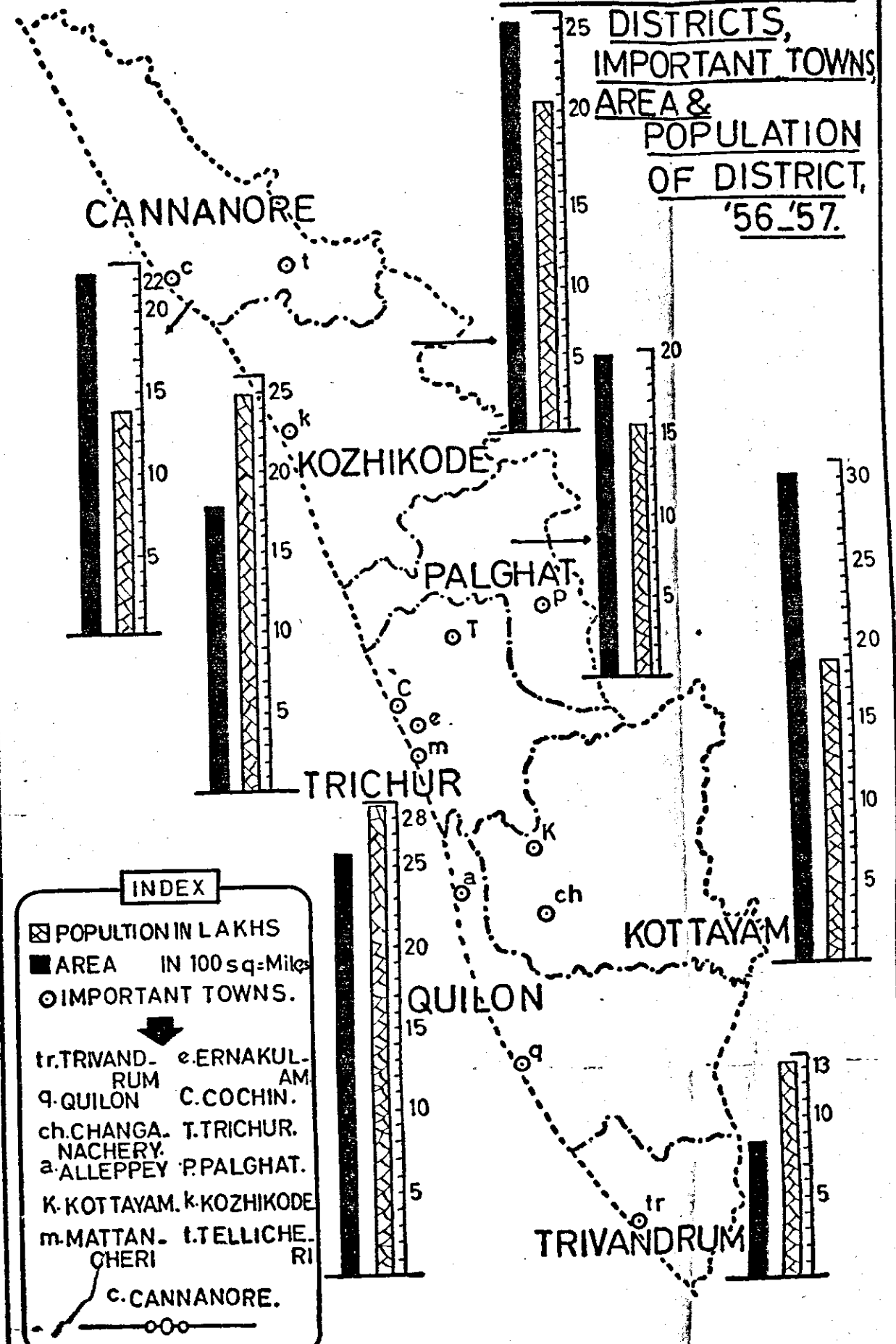
The total population may be classified mainly into two "Livelihood classes"—(i) Agricultural, (ii) Non-agricultural.

The agricultural population comes to 53·65 per cent of the total population. The non-agricultural population constituting 46·35 per cent is about 63 lakhs. 86·5 per cent of the total population live in the rural areas.

Even though 46 per cent of the people depend on non-agricultural operations (as per the 1951 Census), agriculture is the mainstay of the

MAP OF KERALA

DISTRICTS, IMPORTANT TOWNS, AREA & POPULATION OF DISTRICT, '56-'57.



masses. The fact that 46 per cent of the population is dependent on non-agricultural operations may give the impression that the State is industrialised. The situation is however far from it. There are no heavy industries in the State. The average daily employment in the organised industrial sector (Factories and Plantations) is only 1·5 lakhs of persons which is only one per cent of the total population. The number of persons employed in small-scale and cottage industries has been roughly estimated at 2·5 lakhs. The non-agricultural operations mainly relate to handicrafts, trade, small-scale business and industries requiring only very low investments. Naturally the return is bound to be poor. Almost three-fourths of the non-agricultural classes live in the rural areas where factories do not exist. This is true for all the districts in the State. Even among non-agricultural classes, agriculture forms an important secondary means of livelihood. In this context it would be interesting to have an idea of the average earnings per worker in some of the important organised industries.

Average monthly earnings of Industrial Workers in Kerala State during the year 1956

Industry		*Average earnings* Rs.
Rice Mills	..	29·13
Oil Mills	..	45·71
Tea	..	48·45
Cashew	..	21·97
Textiles	..	70·89
Coir	..	57·64
Saw Mills	..	58·10
Splints and Veeners	..	23·48
Printing	..	56·76
Rubber	..	50·94
Match	..	22·40
Bricks and Tiles	..	48·69
Automobile repairing	..	81·49
Beedi and Cigar	..	39·12
All Industries	..	47·67

In the light of the facts pointed out above it may be seen that the majority of the people in the State are maintaining themselves on an agricultural economy. Of the 56 per cent of the population which forms the agricultural classes, 21 per cent are agricultural labourers who have the lowest levels of consumer expenditure. An enquiry conducted by the Department in 1955 in the Travancore-Cochin area has revealed that the average per capita income of the agricultural labourer is only Rs. 68·5 per annum.

Land resources in the State are not unlimited and there is high density of population. Of the total area of 94·12 lakhs acres only 53·24 is available for cultivation. Thus the cultivable land per capita is only 37 cents. The per capita cultivated land in the State is the lowest in India. Only Jammu and Kashmir is comparable to the State in this regard.

The pressure of population on land has led to excessive sub-division or fragmentation.

The census of land holdings and cultivation conducted in the Travancore-Cochin State (former) in 1955 revealed that 67 per cent of the cultivator's holdings are below one acre. Though a third of the number of holdings exceeds one acre, only 5 per cent is over 5 acres. Conditions in the Malabar area are also not far different.

The percentage of small-holdings is comparatively more in the case of wet lands producing paddy than in the case of dry and garden lands.

The circumstances being as pointed out above it is no wonder that about 85 per cent of the families in the State are living on incomes below Rs. 100 per mensem. It has also to be noted that only 27 per cent of the population are self-supporting, 7 per cent are earning dependents, and 66 per cent non-earning dependents.

The age distribution of the population according to the 1951 Census in Kerala State is given below:

Age group		*No. of persons in lakhs*	*Percentage to total*
All ages	..	135·52	100·00
Below 5 years	..	19·27	14·20
5—14	..	32·88	24·30
15—24	..	27.80	20·50
25—34	..	19·13	14·10
35—54	..	25·36	18·70
55 and above	..	11·08	8·20

The percentage of literates (1951 Census) in the State is 40·4 per cent.

III. Rainfall

Agriculture depends upon climatic and soil conditions. As already pointed out the State receives heavy rainfall both from the south-west monsoon (May to August) and the north-east monsoon (October to December). South-west monsoon brings in the greater part of the rainfall. Nearly two-thirds of the annual rainfall are received during the period May to September.

As regards the geographical distribution of the rainfall it can generally be said that there is a progressive increase from the south to the north. There is a similar increase from stations on the coast to the stations at the foot of the Ghats.

Even though the State is in receipt of the benefit of both the monsoons this does not rule out the possibility of the seasonal distribution of rainfall being unfavourable to agriculturists. Heavy floods which do occur occasionally cause substantial damage to the crops in the basins and banks of the rivers.

The average annual rainfall in the different districts for the agricultural year 1956-57 is given in the Table I, Patrt III.

In this connection, it has to be noted that most of the rain-guage stations are in taluk offices and there is reason to believe that the rain-guages are not properly maintained and the readings not correctly recorded. With a view to improve the quality of the meteorological data the State Government have at the instance of the Department of Statistics sanctioned the installation of a set of meteorological instruments, (Rain-guage, Maximum and Minimum

Thermometer, Wet and Dry Bulb Thermometer) at each of the Block (Development) Headquarters under proper conditions.

Rainfall data were available for 58 centres during the year 1956. Eighty centres were selected for the collection of the rainfall data for the year 1957. The district-wise break up of the centres is given below :

Year	State	Trivandrum	Quilon	Kottayam	Trichur	Palghat	Kozhikode	Cannanore
1956	58	7	11	8	8	9	7	8
1957	80	7	19	22	7	9	8	8

The south-west monsoon began in the third week of May 1956 and lasted up to the month of September. Heavy rain was recorded during the month of June. In July 1956 Kuttiyadi station in the Kozhikode District recorded the maximum rainfall of 40·83 inches. In the same month Parassala (Trivandrum District) had a rainfall of only 2·43 inches.

Skies were heavily clouded and there was heavy rain for 25 days each in June, July and August.

In the month of September, the recorded average rain was only 7·21 inches in the State.

The north-east monsoon began by the month of October and it ended in the month of November. There was an average rainfall of 14·35 inches in the month of October in the State. Trichur District had the maximum rainfall of 19·37 inches. Palghat District recorded the least with 9·83 inches. The main characteristics of the north-east monsoon in the Kerala State is that the thunder showers occur only in the afternoon. From March to May the atmosphere got hotter. In the month of June 1957, Kozhikode District had a rainfall of 49·90 inches and Trivandrum had the least rainfall of 24·59 inches.

As mentioned above the south-west monsoon gives more rain than the north-east monsoon. The seasonal distribution of the rain is very important for the agriculturists.

During the period under review there were no great floods or droughts. In some coastal parts of the country sea-erosion has, of late, become a great menace. Cyclones are rare in the State.

IV. Soils and Communication Facilities

The classification of soils in the Kerala State is given in Appendix B.

Trivandrum District.—The soils in the three natural sub-divisions in this District fall under three types. The soil in the highland region is clay-loam and rests on a bed of rocks; it is black in colour and is rich in organic matter,

nitrogen and potash and is slightly acidic. In the midland, the soil is clay-loam of lateritic origin with an admixture of graval and sand. The valleys in the midland have loamy clay with high sand content. The coastal strip is sandy with a lateritic foundation.

The main southern road from Trivandrum, the headquarters of the district to Cape Comorin connects this district with Kanyakumari District of Madras State. Within the district a net work of subsidiary and feeder roads are linked to this road. This district is connected with neighbouring district of Quilon by the National High Way and the Main Central Road.

The backwaters and canals in this district afford facilities of water transport also.

Trivandrum is the southern terminus of the Southern Railway (Meter guage) and the length of Railway passing through the district is 30 miles.

At Trivandrum there is an airport. There are regular services to places like Cochin, Madras, Bombay, etc.

Quilon District.—The soils in the coastal tracts consist mainly of pure crystalline sand. The swamp paddy lands of some taluks of this district contain clay soils of different depths mixed with varying proportions of organic matter in different stages of decay. The soils in the valleys and deltas of rivers are alluvial in nature and consist mainly of fine silt. The soils in the hills are loamy in nature with great admixture of humus. Peaty marsh-soil occurs in parts of two taluks of the district.

The soils in this district are generally deficient in nitrogen and phosphorus while the sands along the coast are deficient in potash also. Lime deficiency is a general defect in this district.

The National High Way and the Main Central Road pass through this district.

Quilon, the headquarters of this district is connected to the adjoining districts of Trivandrum, Thirunelveli and Kottayam by rail (Meter guage).

There is also a large volume of water transport along the backwaters and rivers.

Kottayam District.—Swamp paddy lands occur in three taluks of this district. Patches of peaty marsh soil are found in another taluk. The soils in the hills are loamy with great admixture of humus. The soils in the district are generally deficient in nitrogen, phosphorus and lime.

The Main Central Road traverses this district on its western side connecting it with the other districts in the State. The high ranges and Cochin Harbour are linked by the Cochin-Munnar Road which passes through this district.

The neighbouring districts of Trichur and Quilon are linked to this district by the Southern Railway.

A very large volume of water traffic is carried over the Vembanad lake, the rivers flowing into it, and the net work of navigation canals.

Trichur District.—The soils in this district is a red ferruginous loam. On the slopes of the Ghats there is in several places an overlying layer of black mould formed of decayed vegetable matter. In the middle zone the soil is lateritic varying in quality from rich loam to uncultivable laterite. In

the low land the soil is arenaceous, consisting mainly of recent deposit of sand and mud due to river alluvium.

Navigable rivers, backwaters and canals, abundant in the southern taluks of the district provide cheap and easy transport. These waterways link the district with Malabar District.

The whole district is covered by a net work of roads. The Cochin-Madras Railway passes through this district.

Malabar District.—A narrow belt of arenaceous soil is seen on the shores of the coastal taluks. The soil of the plains belongs to the red ferruginous series composed of a mixture of clay and river sand. They are classified as red clay, red loam and red sand. Except in Ponnani, and Chittur Taluks of the District red loam is the prevailing soil. Clay is found only in the areas inundated by monsoon and in beds of shallow lakes and lagoons of Ponnani. In Chittur a layer of black cotton soil is found in some areas. In Wynad the soils are of red ferruginous series with regar soils in the north of the taluk. The black and blackish soils derived from the forest washes are highly fertile.

There are roads leading to the Mysore State, districts of Nilgiris and Coimbatore in Madras State and Trichur District. But on the whole, communication facilities in the interior parts of the district are not satisfactory. There is only about ·38 miles of road per square mile in the district.

Many of the rivers in the district flow into backwaters along the coast which are linked up by artificial canals forming important means of communications along the coast.

There is one uninterrupted waterway from Kozhikoke, (*via.*) Tirur into places in Trichur District.

The Broad guage mainline from Madras to Mangalore traverses the taluks of Palghat and Ponnani and proceeds along the coast.

V. Classification of area

The classification of area in the State is given in Table No. II, Part III.

The total area according to professional Survey is 95,94,622 acres while according to village papers it is only 94,11,892 acres. 26·12 per cent of the total area (according to village papers) is under forests. The details of the forests in each district are given below :—

	Area (in acres)	*Percentage to the total forest area*
State ..	24,58,423	100·00
District.—1. Trivandrum ..	1,01,703	4·14
2. Quilon ..	5,69,246	23·15
3 Kottayam ..	6,39,215	26·00
4. Trichur ..	3,15,224	12·82
5. Palghat ..	2,56,424	10·43
6. Kozhikode ..	3,91,361	15·92
7. Cannanore ..	1,85,250	7·54

Kottayam District has the maximum forest area when compared to other districts with 26 per cent of the total.

The area under barren and uncultivable waste was 497,306 acres which constituted 5·28 per cent of the total area.

Land put to non-agricultural uses formed 5·34 per cent of the total area.

4·65 per cent of the total area was cultivable waste. Permanent pastures and grazing lands accounted for an area of 120,589 acres forming 1·28 per cent of the total area.

Land under miscellaneous tree crops (not included in net area sown) formed another 5·40 per cent of the total area.

Current fallows and other fallows constituted 1·65 per cent and 2·20 per cent respectively of the total,area of the State.

"Net area sown" in the Kerala State was 48·08 per cent of the total area, the area being 4,525,062 acres. Area sown more than once is only 9·11 per cent.

The percentage of net area sown to the total area of the district was highest in the Trivandrum District (65·3 per cent), Trichur District came second with 56·6 per cent and Cannanore stood last with 37·2 per cent. Total cropped area in the State during 1956-57 was 5,382,408 acres which was 57·19 per cent of the total area. The per capita cropped area is thus only 39·72 cents. The per capita cropped area in the various districts are given below, taking into account the total population of the district:

District		*Per capita cropped area (in cents)*
1. Trivandrum	..	36·12
2. Quilon	..	38·54
3. Kottayam	..	48·07
4. Trichur	..	28·21
5. Palghat	..	42·91
6. Kozhikode	..	42·02
7. Cannanore	..	47·83

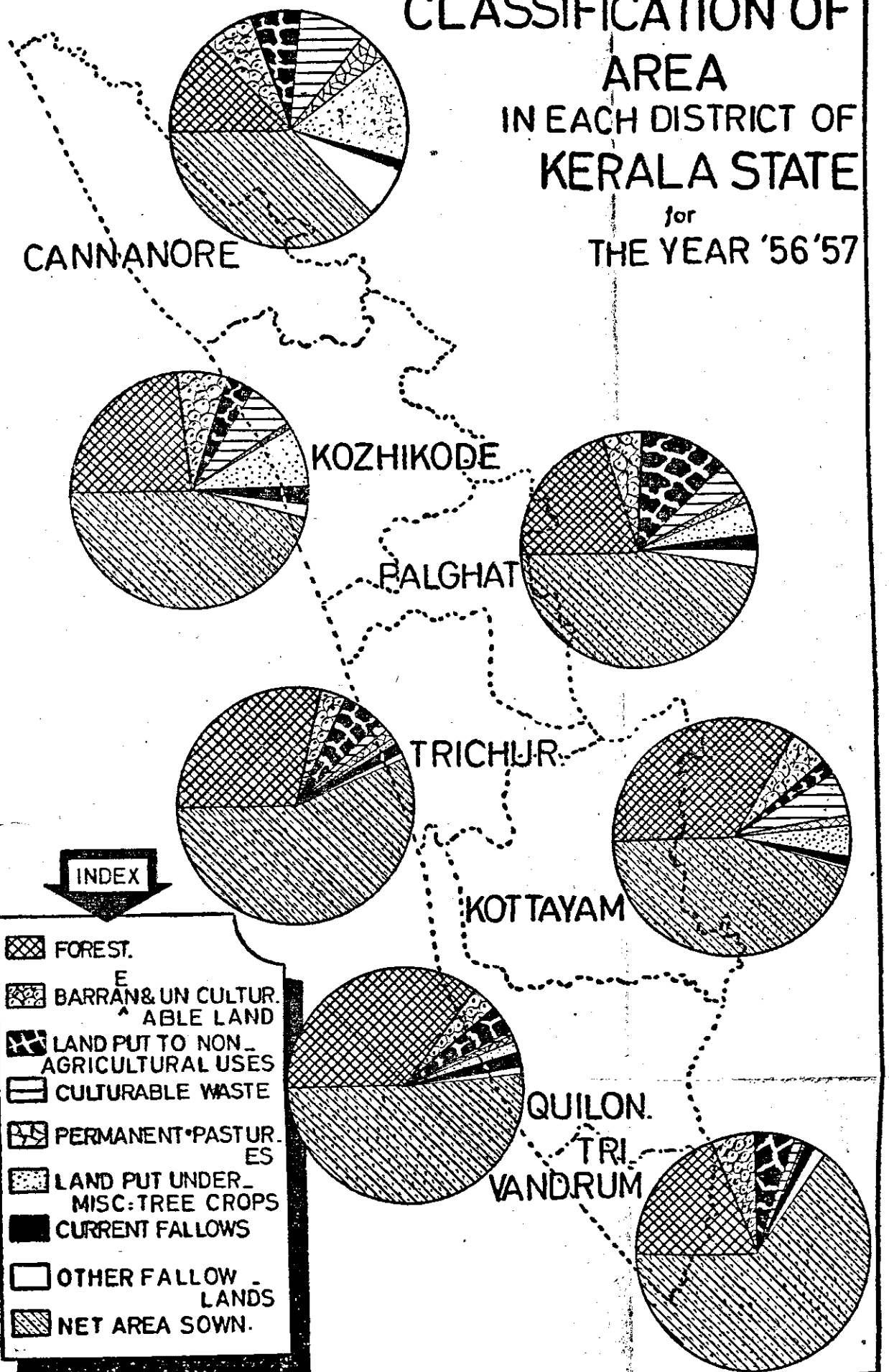
The per capita cropped area was highest in Kottayam District closely followed by the Cannanore Distict. Trichur District stood last in this regard.

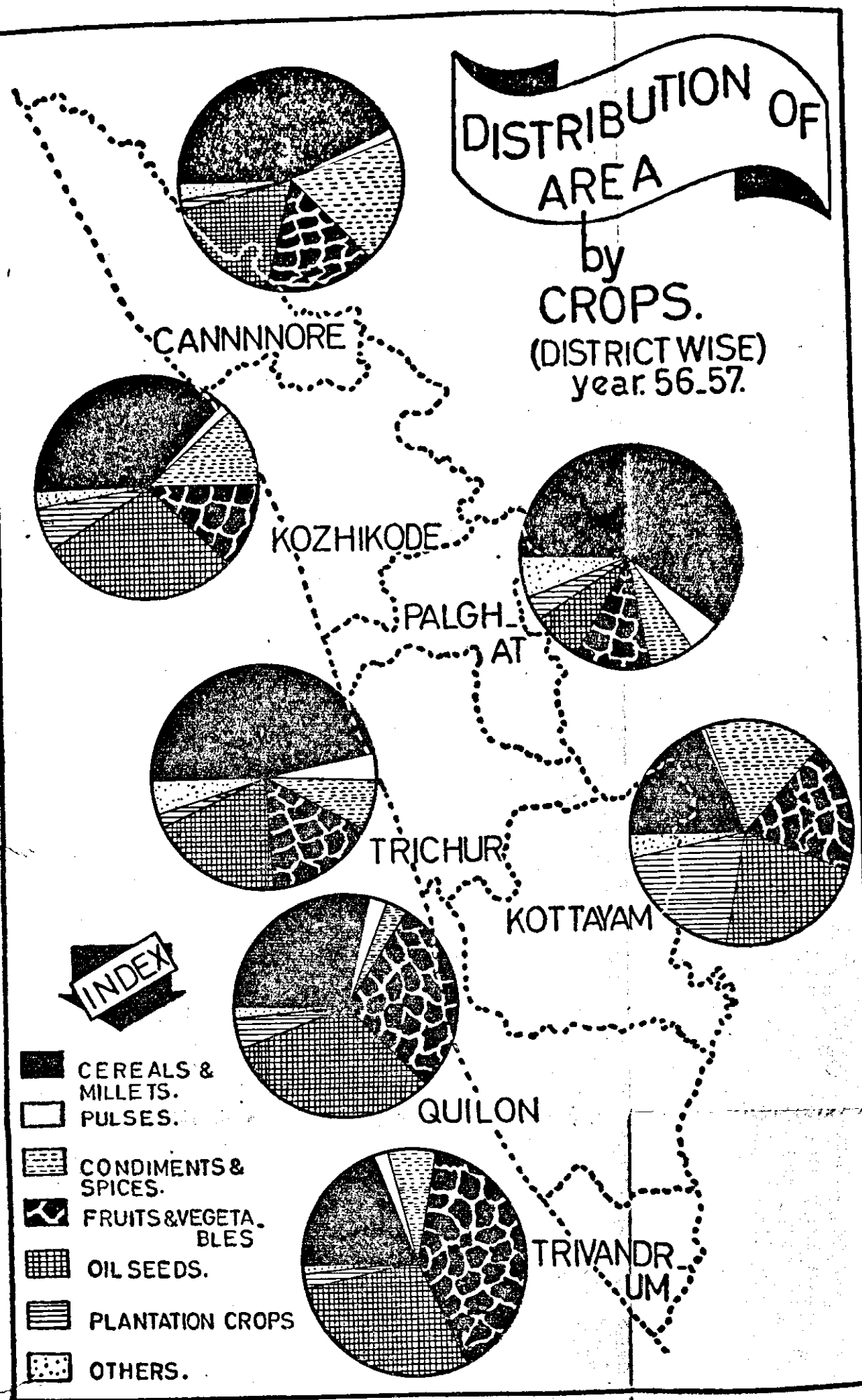
VI. Crops in the State

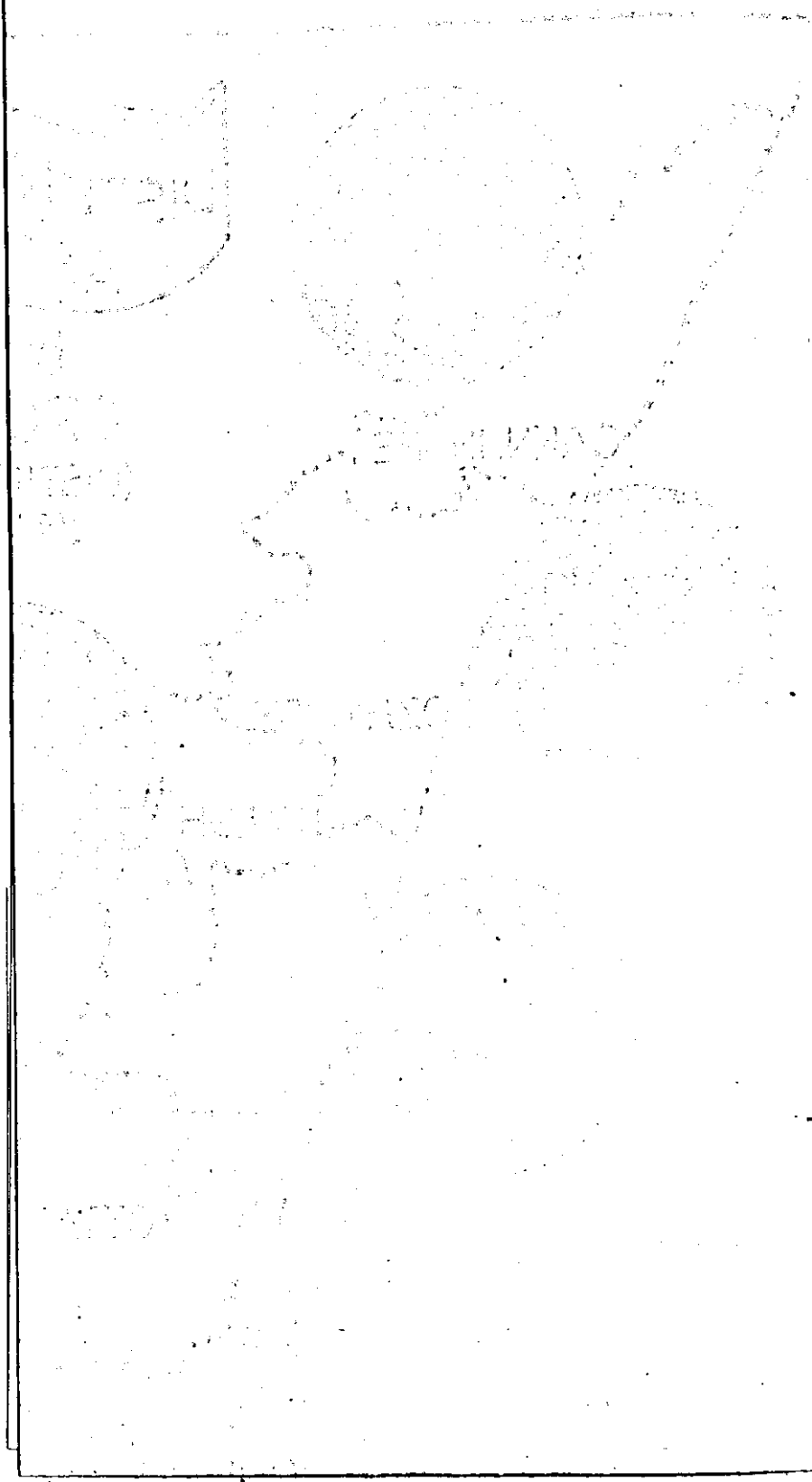
Diversity in crops and heterogenity in cultivation are the key notes of agriculture in the State. Details of areas under various crops are given in Table No. IV-B.

(*a*) *Paddy.*—The most important crop in the State from point of view of area is paddy. There are three crops of paddy—Autumn, Winter and Summer. The Autumn crop is sown during the period of April to June and harvested during the period August-October. The period of sowing and harvesting of the winter crop is August-October and December-February respectively. The sowing of summer crop is done during the period November-December and the harvesting is done during the period February-March. In certain parts however the summer crop is sown during the period January-March and harvested during the period April to May. 34·98 per cent of the total area under all crops comes under paddy. The important paddy growing districts are Palghat, Trichur, Kozhikode and Quilon in that order.

CLASSIFICATION OF AREA IN EACH DISTRICT OF KERALA STATE for THE YEAR '56'57




DISTRIBUTION OF AREA by CROPS. (DISTRICT WISE) year. 56_57.
CANNNNORE
KOZHIKODE
PALGH_AT
TRICHUR
KOTTAYAM
QUILON
TRIVANDR_UM
INDEX
CEREALS & MILLETS.
PULSES.
CONDIMENTS & SPICES.
FRUITS & VEGETABLES
OIL SEEDS.
PLANTATION CROPS
OTHERS.



The area under paddy was more than 40 per cent of the total area sown in the Palghat, Trichur and Cannanore Districts (vide the sub-joined table).

		Percentage of area under paddy to the cropped area.
	State ..	34·98
District.—1.	Trivandrum ..	20·34
2.	Quilon ..	28·88
3.	Kottayam ..	17·43
4.	Trichur ..	47·11
5.	Palghat ..	57·43
6.	Kozhikode ..	36·58
7.	Cannanore ..	42·05

(*b*) *Other cereals and millets.*—The area under jowar, ragi and other cereals and millets was small. Palghat District accounted for the major part of the area under these crops.

(*c*) *Pulses.*—As regards pulses also Palghat District stood first with 4·61 per cent of the total area sown in that district. In the State 2·21 per cent of the total cropped area was under pulses. The more important pulses grown in the State are redgram, greengram, blackgram, horsegram and peas and beans.

(*d*) *Sugar Crops.*—0·36 per cent of the total cropped area is under sugarcane. Quilon District has the maximum area under sugarcane forming about 61·93 per cent of the total area under sugarcane.

(*e*) *Spices and Condiments.*—Kerala is the land of spices. Many foreigners were attracted to India by these spices and condiments. The important condiments and spices are black pepper, ginger, turmeric, cardamom and betelnuts. The important districts for spices and condiments are Kottayam, Cannanore and Kozhikode in that order.

Kerala's black pepper is famous. 214,900 acres were under black pepper which formed 3·99 per cent of the total area under all crops. Pepper crop was grown in all the districts. But the cultivation is prominent in the Cannanore, Kottayam, Trivandrum and Kozhikode Districts in that order.

Ginger is another important spice crop. 0·47 per cent of the total area sown was under ginger cultivation. The bulk of the produce is accounted for by the Kottayam District. It was followed by the Kozhikode and Palghat Districts, respectively.

Turmeric was an important spices crop in the Kottayam and Palghat Districts.

69,572 acres of land was under cardamom cultivation in the State. The cultivation was mainly confined to the high ranges of the Kottayam District which accounted for more than 75 per cent of the total area under the crop.

2·26 per cent of the total cropped area of the State was under arecanuts. The main betelnut growing areas were in Kozhikode, Palghat, Cannanore and Kottayam Districts, during the period under review. The trees are found in all the districts of the State especially in midland region.

Chillies (Dry) were grown mainly in the Cannanore, Palghat and Kozhikode Districts. The area under the crop was anly about 7,400 acres.

(*f*) *Fresh Fruits.*—Mangoes and Bananas are the main fresh fruits in Kerala State. They together account for an area of 238,442 acres. They are met with in almost all orchards and fairly well distributed in all the districts.

(*g*) *Dried Fruits.*—Cashewnuts is the most important fruit in the State coming under the category of 'dried fruits'. 1·72 per cent of the total area under all crops was under cashew cultivation during the year, the area being 92,395 acres. Trichur and Quilon Districts together account for more than 50 per cent of the area under the crop.

(*h*) *Vegetables.*—Tapioca is a tuber crop which occupies an important place among the food crops of the State. It forms the subsidiary food for a vast section of the population. The duration of the crop is from 9 to 12 months and the crop is raised on almost all types of land. 515,233 acres were under tapioca cultivation which was 9·57 per cent of the total area sown during the period under review. The areas under tapioca in the different districts are given below :—

District	*Area (in acres)*	*Percentage of the area to the area sown in the district*
Trivandrum ..	130,400	27·19
Quilon ..	199,922	18·12
Kottayam ..	103,363	11·46
Trichur ..	29,169	4·17
Palghat ..	8,200	1·22
Kozhikode ..	30,450	3·51
Cannanore ..	13,729	2·09

Sweet potatoe was another tuber crop (18,576 acres) cultivated mostly in Cannanore, Kozhikode and Palghat Districts.

(*i*) *Oil Seeds.*—Among the oil seeds the most important is coconut to which the State owes her name. Sesamum and groundnut are the other important oil seeds.

1,136,284 acres of land were under coconut cultivation during the year which was 21·11 per cent of the total area sown. The district-wise break up of the area under coconuts is given below :—

District	*Percentage of area under coconut to total cropped area of the district*
Kozhikode ..	28·95
Quilon ..	27·86
Trivandrum ..	27·82
Kottayam ..	20·74
Trichur ..	19·08
Cannanore ..	17·06
Palghat ..	1·68

It may thus be seen that the cultivation of coconut is important in all the districts.

Sesamum is another important oil seed. 48,910 acres of land was under the cultivation of sesamum during 1956-57. Out of this 36,165 acres was in Quilon District.

Groundnut, another important oil seed, was almost solely cultivated in the Palghat District. 0·61 per cent of the total area sown was under cultivation of groundnut, the area being 33,000 acres.

Cotton was grown on 22,450 acres in the Palghat District during the year.

(*j*) *Plantation Crops.*—There are three major plantation crops in the State, *viz.*, rubber, tea and coffee.

Tea is grown in the high ranges. During 1956-57 tea was cultivated in an area of 98,556 acres. This formed 1·83 per cent of the total area sown. Kottayam District had the largest acreage under tea with about 70,000 acres.

Coffee cultivation covered an area of 36,902 acres during 1956-57. Kozhikode District accounted for about 63·16 per cent of this.

Kerala holds a monopoly of rubber cultivation in India. 3·78 per cent of the total cropped area of the Kerala State was under rubber cultivation, the area involved being 2,03,282 acres. More than half of the total area under rubber was in the Kottayam District. Next in importance was Quilon District which accounted for about 20·72 per cent of the total area under the crop.

(*k*) *General.*—Food crops occupied 68 per cent of the total cropped area during 1956-57 (*i.e.*, 36,59,953 acres). The area under non-food crops was 17,22,455 acres during the period under report which formed 32 per cent of the total cropped area.

The proportion of area under food crops to the total cropped area was highest in the Palghat District with 84·62 per cent and lowest in Kottayam District with 54·15 per cent.

The most important food crops in the State are paddy and tapioca which account for about 34·98 per cent and 9·57 per cent respectively of the total cropped area in the State. Among the non-food crops cocoanut is the most extensively grown with 21·11 per cent of the total cropped area. Rubber, tea, coffee and cardamom are the other important non-food crops.

VII. Irrigation

During 1956-57 the total net irrigated area was 8,29,458 acres (vide Table III-A appended) which formed 18·33 per cent of the net area sown. The sub-joined table gives the percentage of area irrigated by different sources.

Source	*Percentage of area irrigated*
1. Canals ..	49·89
2. Tanks ..	9·34
3. Wells ..	3·46
4. Other sources ..	37·31

The main source was canals. This was true in almost all districts.

VIII. Crops Irrigated

The total area under irrigated crops during 1956-57 was 11,09,620 acres (vide Table III-B appended). The percentage of irrigated area to total area under some of the important crops during the period under review are given below:

Name of Crop	Percentage of irrigated area to total area							
	State	Trivandrum	Quilon	Kottayam	Trichur	Palghat	Kozhikode	Cannanore
1. Rice ..	39·31	90·66	41·89	95·09	82·19	20·72	5·22	0·53
2. Jowar ..	11·01	..	..	..	73·76	..	..	..
3. Ragi ..	0·81	..	..	61·33	..	..	1·76	..
4. Pulses ..	18·15	41·08	21·54	22·89	39·84	..	2·93	..
5. Sugarcane ..	53·80	..	57·33	50·61	75·14	63·41	100·00	..
6. Total Food Crops ..	26·70	44·49	29·57	44·01	59·36	14·29	4·11	0·28
Total Non-Food Crops ..	7·69	53·57	..	4·99	13·47	0·93	1·51	..
Total ..	20·62	47·32	18·96	26·12	46·75	12·24	3·12	0·22

IX. Weather and Crop Conditions

The rainfall was normal during the year. The south-west monsoon started by the third week of May. Heavy rainfall was recorded during the month of June 1956. Floods occurred in some parts of the State. The south-west monsoon died out by the end of July 1956. In August, days were sunny and bright. The north-east monsoon started in the second week of October 1956. Puncha fields in some of the taluks of the State were seriously affected by the drought. The north-east monsoon lasted up to the end of November 1956. Hot days and chilly nights were experienced during the month of December. January and February were dry. There were slight rains in some parts of the State. The south-west monsoon began by the second week of May 1957. There was heavy rain during June 1957.

On the whole the weather conditions were satisfactory in the State.

Condition of Kharif Crops.—Sowing of autumn paddy began in April 1956. The rain was not quite sufficient during the month. There was no serious attacks of pests.

During the period under review the cocoanuts and arecanuts were affected by a disease known as "Vasantha" in some taluks of the State.

Slight disturbances were experienced during the harvest period on account of floods. In the Trichur Taluk the low lying areas were flooded and

the crop went under water. There was heavy loss to almost all the crops in that area. In some parts of the Hosdurg and Cannanore Taluks crops were affected by heavy floods.

Condition of Rabi Crops.—Sowing season of the rabi crops began by the first week of October. Neyyattinkara, Trivandrum, Nedumangad, Chirayinkil and Parur Taluks were affected by drought.

There was heavy rainfall and floods in Ambalapuzha, Vaikom, Thodupuzha, Moovattupuzha, Cochin and Kunnathunad Taluks. In all other taluks the rainfall was adequate and beneficial to the crops. The yields of the crops were satisfactory during the period under review.

X. Yield per acre of Principal Crops

Table E (Summary tables) gives the average yield per acre of principal crops in the State. The average yield for the rice crop alone is based on the results of crop-cutting surveys. In other cases the figures are conventional estimates.

XI. Crop Calendar and Pests and Diseases

A calendar showing the sowing, harvesting and marketing periods in regard to the main seasonal crops of the State is given in Table J.

Appendix C gives details of the usual pests and diseases affecting paddy in the State.

XII. Prices of Agricultural Commodities and Agricultural Wages

Data on prices of agricultural commodities and agricultural wages are given in Tables VI and VII. It has to be mentioned that in regard to Farm Prices and Agricultural Wages' data for Malabar area were not available and hence not included.

XIII. Farm Prices

The price level for paddy and rice during 1956-57 was higher than that during 1955-56.

In regard to sugarcane also the price level for 1956-57 was higher than that for 1955-56.

In the case of pepper, turmeric, ginger, cardamom and lemon grass oil the price level for 1956-57 was lower than that for 1955-56.

The price level of cashewnut, tapioca and cocoanut was on the whole higher during 1956-57 when compared to 1955-56.

The price of rubber did not show much of fluctuations. The same was the position in the case of bananas also.

Seasonal fluctuation in price was noticed in the case of arecanut both during 1956-57 and 1955-56. The average price level was slightly higher during 1956-57.

XIV. Cost of living indices

The Department of Statistics was computing and publishing the Cost of Living Indices for the following Centres :—

1. Trivandrum
2. Quilon
3. Punalur
4. Alleppey
5. Changanacherry
6. Kottayam
7. Munnar
8. Ernakulam
9. Alwaye
10. Chalakkudy
11. Trichur
12. Kozhikode

The weights for all the centres except Kozhikode were adopted on the basis of the result of the Family Budget enquiry conducted in 1955. The weights for Kozhikode are based on the Family Budget enquiry conducted in 1940 by the Government of Madras. For Kozhikode the compilation of indices by the Department was taken up from November 1956. Prior to November 1956 the Department of Statistics, Madras, was computing the indices.

Compared with the previous year the average cost of living index at all the centres was higher during 1956-57.

XV. Agricultural Wages

The level of agricultural wages did not show much variation during 1956-57 as compared to 1955-56. The level was lower during 1956-57 in all the districts except Quilon. (Vide Table VII.)

XVI. Livestock

General.—Livestock plays an important part in the economic life of the State which is predominantly agricultural. Statistics of livestock numbers are obtained through censuses taken every five years. The last Livestock Census was conducted in 1956.

Under livestock were enumerated the following :—

(*i*) Cattle
(*ii*) Buffaloes
(*iii*) Sheep
(*iv*) Goats
(*v*) Horses and Ponies
(*vi*) Donkeys
(*vii*) Pigs

Fowls and ducks were also enumerated under Poultry.

The major part of the cattle wealth of the State belongs to non descript breeds.

The total number of livestock in the State according to the 1956 census was 41·68 lakhs as against 35·62 lakhs during 1951. As regards the distribution of the livestock, cattle formed the largest number, being of the order of 25·10 lakhs. They were followed by goats numbering about 9·56 lakhs and by Buffaloes whose number was about 4·88 lakhs. The position of pigs

was fourth and sheep fifth, their numbers being nearly 1·14 lakhs and 0·98 lakhs respectively. Horses and ponies numbered 1,690 and donkeys 1,415. No camels were recorded.

A. Bovine Stock

(1) *Cattle.*—The cattle population (1956 Census) of the State is about 1·6 per cent of the cattle population of India. The proportion of males over 3 years, females over 3 years and young stock in the total number of cattle was 24·0 per cent, 39·7 per cent and 36·3 per cent, respectively. The district-wise distribution of cattle as per 1956 Census is given below. 1951 Census figures are also given for purposes of comparison.

Districts	Males over 3 years		Females over 3 years		Young stock
	1956	1951	1956	1951	1956
1	2	3	4	5	6
Trivandrum ..	20867	23390	47623	44499	47684
Quilon ..	80037	89511	249265	216906	257012
Kottayam ..	87788	84453	179536	150762	183529
Trichur ..	123556	117124	114513	93489	119874
Malabar (including Kasargode) ..	289651	281664	407013	390997	302428
Total ..	601899	596142	997950	896653	910527

Districts	Young stock	Total		Percentage of total	
	1951	1956	1951	1956	1951
	7	8	9	10	11
Trivandrum ..	32989	116174	100878	4·6	4·7
Quilon ..	142198	586314	448615	23·3	20·8
Kottayam ..	111190	450853	346405	18·0	16·1
Trichur ..	75307	357943	285920	14·3	13·3
Malabar (including Kasargode) ..	297043	999092	969704	39·8	45·1
Total ..	658727	2510376	2151522	100·0	100·0

There has been an increase in the cattle population during the quinquennium 1951-56, the per centage increase being 16·68.

Of the bulls aged over 3 years in the State 91·9 per cent were working and only 1·8 per cent were breeding. 94·3 per cent of the bulls were found in the rural areas and only 5·7 per cent in the urban areas. In regard to cows the population in the rural areas was only 91·1 per cent of the total.

(2) *Buffaloes.*—The number of buffaloes in the State was about 4·88 lakhs which was about 1·1 per cent of the population of buffaloes in India. The sub-classification adopted under the heading buffaloes was the same as for cattle. The proportion of males, females and young stock to the total number of buffaloes was 32·8 per cent, 28·4 per cent and 18·8 per cent respectively. In the case of buffaloes the number of males was 2 times those of females while in the case of cattle the number of females was one and a half times those of males. This is probably because male buffaloes are preferrred as draught animals on account of their greater capacity for work. 92·6 per cent of the male buffaloes (over 3 years) were concentrated in the rural areas. As regards female buffaloes (over 3 years) the rural population was 84·2 per cent of the total.

The district-wise distribution of the buffaloes as per the 1956 and 1951 census is given in the subjoined Table.

Districts	Males over 3 years		Females over 3 years	
	1956	1951	1956	1951
1	2	3	4	5
Trivandrum ..	22042	19832	14832	13927
Quilon ..	17323	16164	12613	10753
Kottayam ..	7642	8415	6608	4000
Trichur ..	47663	42470	27960	20612
Malabar (including Kasargode) ..	162584	162137	76472	74153
Total ..	257254	249018	138485	123445

Districts	Young stock		Total		Percentage of total	
	1956	1951	1956	1951	1956	1951
	6	7	8	9	10	11
Trivandrum ..	8159	5012	45033	38771	9·2	8·7
Quilon ..	9161	5115	39097	32032	8·0	7·2
Kottayam ..	4578	2160	18828	14575	3·9	3·3
Trichur ..	15810	10089	91433	73171	18·8	16·5
Malabar (including Kasargode) ..	54206	49529	293262	285819	60·1	64·3
Total ..	91914	71905	487653	444368	100·0	100·0

The increase in the buffaloe population during the quinquennium 1951-1956 is 9·7 per cent.

B. Ovine Stock

(*i*) *Sheep.*—The total sheep population of the State was 97,820. Of the sheep aged over 1 year, males formed 18·1 per cent and females 81·9 per cent. 90·4 per cent of the sheep population is confined to the rural areas.

(*ii*) *Goats.*—The number of goats in the State was about 9·56 lakhs. This is about 1·7 per cent of the total goat population of India. Amongst the goats aged over 1 year the male female ratio was 10 : 46 : This closely followed the sex ratio in the case of sheep. Apparently the reason for the predominance of females is that males are butchered for meat in more numbers and the females reared for purposes of milk. Goats in the rural areas formed 89·3 per cent of the total.

The distribution of sheep and of goats as per 1956 Census and 1951 Census is presented in the following table :—

SHEEP

Districts	One year and above		Below one year	
	1956	1951	1956	1951
1	2	3	4	5
Trivandrum ..	11682	47783	8878	21345
Quilon ..	24838	92388	17870	27768
Kottayam ..	4697	86960	3404	31443
Trichur ..	10828	84493	5436	29213
Malabar (including Kasargode) ..	6632	1998	3355	122
Total ..	58677	313622	39143	109891

Districts	Total		Percentage to total	
	1956	1951	1956	1951
	6	7	8	9
Trivandrum ..	20560	59128	21·0	16·3
Quilon ..	42708	120156	43·7	28·4
Kottayam ..	8801	118403	8·3	28·0
Trichur ..	16264	113706	16·6	26·8
Malabar (including Kasargode) ..	10187	2120	10·4	00·5
Total ..	97820	423513	100·0	100·0

GOATS

Districts	One year and above		Below one year	
	1956	1951	1956	1951
1	2	3	4	5
Trivandrum ..	65382	865	45724	161
Quilon ..	100431	2062	69214	693
Kottayam ..	85437	5344	53466	2390
Trichur ..	110213	46794	78621	14920
Malabar (including Kasargode) ..	230972	274928	116110	75188
Total ..	592435	329993	363135	93352

Districts	Total		Percentage to total	
	1956	1951	1956	1951
	6	7	8	9
Trivandrum ..	111106	1026	11·6	00·2
Quilon ..	169645	2755	17·8	00·7
Kottayam ..	138903	7734	14·5	81·8
Trichur ..	188834	61714	19·8	14·6
Malabar (including Kasargode) ..	347082	350116	36·3	82·7
Total ..	955570	423345	100·0	100·0

It is almost clear from the above that a good number of goats were wrongly enumerated as sheep in the 1951 Census in the Travancore-Cochin area.

Taking sheep and goats together the percentage increase of population during 1951-56 is 24·4 per cent.

C. Horses and Ponies

The number of horses and ponies (together) in the State was 1,690 of which 43·3 per cent were males and 56·7 per cent females. Out of the 1,690 horses and ponies 1,291 were in the rural areas and the remaining in the urban areas. According to the 1951 Census the total number of horses and ponies in the State was 518.

D. Donkeys

The number of donkeys was 1,415 of which 762 males and 653 females. The number of donkeys as per the 1951 Census was 689.

E. Pigs

The pig population of the State as per the 1956 Census was 1,13,711 of which 97·8 per cent were in the rural areas and 2·2 per cent in the urban parts. In the 1951 Census 1,17,932 pigs were recorded.

F. Poultry

The total number of poultry in the State as per the 1956 Census was about 67·95 lakhs of which 95·11 per cent was fowls. The poultry population of the State was 7·2 per cent of the all-India population. The rural parts account for 93·38 per cent of the poultry population of the State.

Districts	Fowls		Ducks	
	1956	1951	1956	1951
1	2	3	4	5
Trivandrum ..	620825	309969	4731	4092
Quilon ..	1459666	651174	134610	67757
Kottayam ..	1236177	773927	114750	37365
Trichur ..	1224509	546876	69268	148672
Malabar (including Kasargode) ..	1921622	1572373	8726	5261
Total ..	6462799	3854319	332085	263147

Districts	Total		Percentage to total	
	1956	1951	1956	1951
	6	7	8	9
Trivandrum ..	625556	314061	9·2	7·6
Quilon ..	1594276	718931	23·5	17·5
Kottayam ..	1350927	811292	19·9	19·7
Trichur ..	1293777	695548	19·0	16·9
Malabar (including Kasargode) ..	1930348	1577634	28·4	38·3
Total ..	6794884	4117466	100·0	100·0

The poultry population has increased by 65 per cent during the period 1951-1956.

G. Agricultural Implements and Machinery

The following summary table gives a comparative study of the position of the number of agricultural implements and machinery in 1956 and 1951:—

Agricultural Machinery and Implements—(Livestock Census 1951 and 1956)

Serial No.	Districts	Year	Ploughs			Sugarcane crushers			Oil engine with pumps for irrigation purposes	Electric pumps for irrigation purposes	Tractors			Persian wheels	Ghanis		
			Wooden	Iron	Carts	Worked by power	Worked by bullocks	Total			Government	Private	Total		Five seers and more	Less than five seers	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	State	1956	570327	10225	27283	230	1155	1385	2504	723	13	168	181	NA	1853	2366	4224
		1951	510908	13126	26378	269	2023	2292	1158	1630	NA	NA	59	..	..	..	..
1	Trivandrum	1956	25408	288	2360	3	86	89	34	2	NA	NA	1	NA	105	525	630
		1951	25127	43	2263	1	246	247	4	1	..	..	1	4	NA	NA	NA
2	Quilon	1956	71960	4738	4803	69	399	468	622	175	NA	NA	42	NA	847	866	1713
		1951	67476	2298	3894	25	667	692	255	29	..	..	15	1143	NA	NA	NA
3	Kottayam	1956	69567	477	2391	27	189	216	381	139	NA	NA	73	NA	249	297	546
		1951	70959	112	2332	29	179	208	153	19	..	NA	18	5264	NA	NA	NA
4	Trichur	1956	98318	3379	6562	79	232	311	763	367	NA	NA	3	...	548	404	952
		1951	70554	10148	5562	128	381	509	304	1516	..	..	7	2049	NA	NA	NA
5	Malabar and Kasargode	1956	305074	1343	11167	52	249	301	704	40	11	57	68	NA	109	274	383
		1951	276792	525	12327	86	550	636	442	65	NA	NA	18	..	76	..	76

There has not been any appreciable increase in the number of ploughs during the quinquennium 1951 to 1956.

The number of sugarcane crushers worked by power remained almost the same during the period. But the number of sugarcane crushers worked by bullocks has gone down to half the previous number. This seems to be indicative of the unpopularity of outmoded machines.

The number of oil engines (with pumps for irrigation purposes) was more than doubled during the quinquennium. Simultaneously a marked decline was noticed in the number of electric pumps for irrigation purposes in the Trichur District. This seems to be the result of the adoption of oil engines for irrigation pumping.

The number of tractors rose from 59 to 187 during the five year period.

Certain ratios.—The number of cattle available per thousand acres of cultivated area is 560. This is exclusive of buffaloes. Inclusive of buffaloes the number is 670.

The number of cows and buffaloes in milk per thousand of population works out to 31.

The number of working cattle and buffaloes together per 100 ploughs is 141. The number of working cattle and buffaloes per 1,000 acres of cultivated area is 183.

The number of ploughs available per 100 acres of cultivated area works out to 13.

The number of poultry per 1,000 persons is 461.

Livestock Diseases.—Infectious diseases usually occur to livestock in the State, their power of resistance being very low.

The main diseases which affected the livestock were :

(*a*) Anthrax
(*b*) Black Quarter
(*c*) Haemorrhagic septicaemia
(*d*) Proplasmosis
(*e*) Trypanosmiasis
(*f*) Rinderpest
(*g*) Fowl Cholera
(*h*) Johnes Disease
(*i*) Variola
(*j*) Surra

There were 39 Veterinary Hospitals and 49 Veterinary Dispensaries functioning in the State during the year under the Animal Husbandry Department. Eight Inspector's Stations and eight Stockmen's Stations were also working. Thus one hospital or dispensary was available for every 38,200 animals. The number of inpatients treated in all the institutions together during the year was 8,026 and the number of out-patients 228,514. There was 14,961 cases of castration and operations performed. The number of veterinary institutions was not adequate taking into account the livestock population of the State and the extent of the incidence of diseases. Slaughtering of cattle in the State was limited to animals that were not useful for draught or milk.

Livestock Products.—Reliable statistics of livestock products in the State are lacking.

PART II—SUMMARY TABLES

A. Classification of Area—Kerala State

Serial number	Classification	1956-57	
		Area in acres	Percentage to total area according to village papers
1	Total geographical area—		
	(*a*) According to professional survey ..	9594622	..
	(*b*) According to village papers ..	9411892	100·00
2	Forests ..	2458423	26·12
3	Barren and unculturable waste ..	497306	5·28
4	Land put to non-agricultural uses ..	503064	5·34
5	Culturable waste ..	437198	4·65
6	Permanent pastures and grazing lands ..	120589	1·28
7	Land under miscellaneous tree crops ..	508372	5·40
8	Current fallows ..	154734	1·65
9	Other fallows ..	207144	2·20
10	Net area sown ..	4525062	48·08
11	Area sown more than once ..	857346	9·11
12	Total cropped area ..	5382408	57·19

B. Sources of Irrigation and Net Area Irrigated

Serial No.	Specification of Sources	Area in acres 1956-57	Percentage to total net area irrigated
	Net area irrigated by—		
1	Canals — Government ..	342,955	41·35
	Canals — Private ..	70,849	8·54
	Total ..	413,804	49·89
2	Tanks ..	77,477	9·34
3	Wells ..	28,696	3·46
4	Other sources ..	309,481	37·31
	Total ..	829,458	100·00
5	Percentage of net area irrigated to net area sown ..	..	18·33
6	Area irrigated more than once in the same year ..	..	280,162 acres
7	Total area of crops irrigated ..	..	1,109,620 "
8	Percentage of total irrigated area to total area sown	..	20·62

C. Area of Crops Irrigated

Sl. No.	Crops	Area in acres	Percentage
1	Rice ..	740,291	66·72
2	Jowar ..	534	0·05
3	Ragi ..	100	0·01
4	Other cereals ..	702	0·06
5	Pulses (Total) ..	21,558	1·94
6	Sugarcane ..	10,302	0·93
7	Condiments and spices ..	784	0·07
8	Other food crops ..	202,841	18·28
9	Total food crops ..	977,112	88·06
10	Total non-food crops ..	132,508	11·94
	Total under all crops ..	1,109,620	100·00

D. Area under Crops in acres, Kerala State

Sl. No.	Name of the crop	Area in acres	Percentage to the total area under all crops
1	2	3	4
1	Rice ..	18,83,000	34·98
2	Jowar ..	4 847	0·09
3	Ragi ..	12,300	0·23
4	Other cereals and millets ..	14,107	0·26
	Total cereals and millets ..	19,14,254	35·56
5	Tur or Redgram ..	28,058	0·52
6	Other Pulses ..	90,691	1·68
	Total Pulses ..	1,18,749	2·20
7	Betelnuts ..	1,21,409	2·26
8	Cardamom ..	69,572	1·29
9	Chillies ..	7,412	0·14
10	Ginger ..	25,038	0·47
11	Pepper ..	2,14,900	3·99
12	Turmeric ..	11,560	0·21
13	Other condiments and spices ..	45,002	0·84
	Total condiments and spices ..	4,94,893	9·20
14	Sugarcane ..	19,150	0·36
15	Other Sugar crops ..	10,789	0·20
	Total Sugar crops ..	29,939	0·56
16	Banana ..	99,469	1·85
17	Mangoes ..	1,38,973	2·58
18	Other fresh fruits ..	1,31,584	2·44
19	Cashewnuts ..	92,395	1·72
20	Other dry fruits ..	6,991	0·13
21	Potatoes ..	..	..
22	Sweet Potatoes ..	18,576	0·35
23	Tapioca ..	5,15,233	9·57
24	Onions ..	586	0·01
25	Other vegetables ..	98,311	1·83
	Total fruits and vegetables ..	11,02,118	20·48

D. Area under crops in acres—(*cont.*)

Sl. No.	Name of crop	Area in acres	Percentage to the total area under all crops
1	2	3	4
26	Other miscellaneous food crops ..	..	..
	Total food crops ..	36,59,953	68·00
27	Cotton ..	22,450	0·42
28	Other fibres ..	344	0·01
	Total fibres ..	22,794	0·43
29	Ground nut ..	33,000	0·61
30	Cocoanut ..	11,36,284	21·11
31	Gingelly (Sesamum) ..	48,910	0·91
32	Castor ..	1,511	0·03
33	Other oil seeds ..	29,101	0·54
	Total oil seeds ..	12,48,806	23·20
	Total Dyes ..	..	..
34	Tea ..	98,556	1·83
35	Coffee ..	36,902	0·68
36	Rubber ..	2,03,282	3·78
37	Other drugs, narcotics and plantation crops ..	5,301	0·10
	Total drugs, narcotics and plantation crops ..	3,44,041	6·39
	Other non-food crops ..	1,06,814	1·98
	Total non-food crops ..	17,22,455	32·00
	Total area under all crops ..	53,82,408	100·00

E. Average yield per acre and total out-turn of crops, 1956-57

Serial No.	Name of the crop	Average yield per acre in lb.	Total outturn in tons
1	2	3	4
1	Rice*	1,039	873,200
2	Jowar	400	866
3	Ragi	1,220	6,700
4	Arecanut	54,500 (a)	6,617 (b)
5	Cardamom	40 (c)	1,242 (c)
6	Ginger (Dry)	957	10,700
7	Turmeric (Dry)	800	4,129
8	Pepper (Black)	279	26 800
9	Sugarcane (Cane)	41,200	352,500
10	Banana	5,800	62,692
11	Other Plantains	6,800	2,28,460
12	Cashew nuts (unshelled)	1,400	57,750
13	Cotton	174	10.000 (d)
14	Tapioca	6,200	1,426,000
15	Groundnut (unshelled nuts)	1,062	15,650
16	Sesamum	291	6,348
17	Cocoanut	2,800 (a)	3,182 (b)
18	Tea	776	34,175
19	Coffee	221	6,610
20	Rubber	235	21,319
21	Tobacco	1,200	659
22	Lemon grass	50	N.A.

*Cleaned rice
N. A. Not available

(a) Number of nuts.
(b) In million nuts.
(c) In terms of dry pods.
(d) In bales of 392 lb. each.

F. Number of Livestock, Poultry and Agricultural Machinery

Sl. No.		1951 Census	1956 Census
1	2	3	4
1	Cattle:		
	Males over 3 years		
	(*a*) Breeding	7,793	11,026
	(*b*) Working	551,750	553,155
	(*c*) Others	36,599	37,718
	Total	596,142	601,899
	Females over 3 years		
	(*a*) Breeding (*i*) In milk	313,253	396,375
	(*ii*) Dry	424,030	454,233
	(*iii*) Not calved	141,889	120,976
	(*b*) Working	3,936	7,083
	(*c*) Others	13,485	19,223
	Total	896,653	997,950
	Young stock	658,727	910,527
	Total Cattle	2,151,522	2,510,376
2	Buffaloes:		
	Males over 3 years		
	(*a*) Breeding	3,154	4,046
	(*b*) Working	234,636	247,313
	(*c*) Others	11,228	5,895
	Total	249,018	257,254

F. Number of Livestock Poultry and Agricultural Machinery—(*cont.*)

Sl. No.		1951 Census	1956 Census
1	2	3	4
2	Buffaloes—(*cont.*)		
	Females over 3years		
	(*a*) Breeding (*i*) In milk	51,794	61,336
	(*ii*) Dry	45,203	52,128
	(*iii*) Not calved	13,870	11,624
	(*b*) Working	9,196	10,109
	(*c*) Others	3,382	3,288
	Total	123,445	138,485
	Young stock	71,965	91,914
	Total Buffaloes	444,368	487,653
3	Sheep:		
	(*a*) One year and above	109,891	39,143
	(*b*) Below one year	313,622	58,677
	Total	423,513	97,820
4	Goats:		
	(*a*) One year and above	93,352	363,135
	(*b*) Below one year	329,993	592,435
	Total	423,345	955,570
5	Horses and Ponies:		
	(*a*) Three years and above	439	1,008
	(*b*) Below three years	79	682
	Total	518	1,690

F, Number of Livestock, Poultry and Agricultural Machinery—(*cont.*)

Sl. No.		1951 Census	1956 Census
1	2	3	4
6	Mules	14	2
7	Donkeys	689	1,415
8	Camels	..	..
9	Pigs	117,932	113,711
	Total Livestock	3,561,901	4,168,237
10	Poultry:		
	(*a*) Fowls	3,854,319	6,462,799
	(*b*) Ducks	263,147	332,085
	(*c*) Others	..	161
	Total	4,117,466	6,795,045
11	Ploughs:		
	(*a*) Wooden	510,908	570,327
	(*b*) Iron	13,126	10,225
12	Carts	26,378	27,283
13	Sugarcane Crushers:		
	(*a*) Power	269	230
	(*b*) Bullocks	2,023	1,155
14	Oil Engines	1,158	2,504
15	Electric Pumps	1,630	723
16	Tractors	59	187
17	Ghanis:		
	(*a*) More than five seers	N.A.	1,858
	(*b*) Less than five seers	N.A.	2,366

G. Important Manufacturers of Fertilisers in Kerala

		Installed capacity in tons
1. Fertilisers and Chemicals (Travancore Ltd.) Alwaye—		
Ammonium sulphate	..	44,000
Super phosphate	..	49,500
Mixed manure	..	100,000
2. Pierce Leslie and Co., Ltd., Calicut —		
Mixed manure	..	20,000
3. Cochin Fertilizer Company, Trichur—		
Mixed manure	..	20,000

Source—Fertilizer Statistics.

H. Average Analysis of Important Fertilisers

Serial No.	Name of Fertiliser	Percentage		
		Nitrogen (N)	Phospherous (P_2O_5)	Potash (K_2O)
1	2	3	4	5
1	Nitrate of potash 70 per cent ..	8—10	..	30—33
2	Ammonium phosphate 60 per cent ..	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 cynamide ..	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	Muriate of 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

H. Average Analysis of Important Fertilisers—(*cont.*)

Serial No.	Name of Fertiliser	Percentage		
		Nitrogen (N)	Phosphorous (P_2O_5)	Potash (K_2O)
1	2	3	4	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 ..	0·5— 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—1·6

Source—I.C.A.R. Bullettin.

I. Conversion Ratios between the Raw Material and the Processed Product

1. Rice—		
Rice (cleaned) production	..	2/3 paddy production
2. Cotton—		
Cotton lint production	..	1/3 Kapas production
Cotton seed production	..	2/3 of Kapas production
	..	2 times of cotton lint production
3. Ground nut—		
Kernel to nuts in shell	..	70 per cent
Oils to nuts in shell		28 per cent
Oil to kernels crushed	..	40 per cent
Cake to kernels crushed	..	60 per cent
4. Sesamum—		
Oil to seeds crushed	..	40 per cent
Cake to seeds crushed	..	60 per cent
5. Castor seed—		
Oil to seeds crushed	..	37 per cent
Cake to seeds crushed	..	63 per cent
6. Cocoanuts—		
Copra to nuts—one ton copra	..	6,773 nuts
Oil to copra crushed	..	62 per cent
Cake to copra crushed	..	38 per cent
7. Neem seed—		
Oil to kernels crushed	..	45 to 50 per cent
Cake to kernels crushed	..	50 to 55 per cent
8. Sugar—		
Gur from cane crushed	..	10 per cent
Crystal sugar from gur refined	..	62·4 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
9. Cashew nuts—		
Cashew kernels	..	25 per cent of cashew nuts
10. Butter and Ghee—		
Butter from mixed milk	..	6·3 per cent
Ghee from mixed milk	..	5·3 per cent

Source—Fertiliser Statistics.

J. Sowing, Harvesting and Peak Marketing Seasons of Principal Crops in Kerala State

Crop		Sowing	Harvesting	Peak Marketing
1	2	3	4	5
1. Rice	Autumn	April-June	Aug.-Oct.	Sept.-Oct.
	Winter	Aug.-Oct.	Dec.-Feb.	Jan.-Feb.
	Summer	Nov.-Dec.	Feb.-March	March-April
		Jan.-March	April-May	May-June
2. Ragi	1st crop	April-July	Aug.-Oct.	Sept.-Oct.
	2nd crop	Sept.-Oct.	Dec.-Jan.	Dec.-Jan.
3. Small millets (samai)	Kharif	May	August	August
	Rabi	September	December	December
4. Red Gram	1st crop	May-June	Aug.-Sept.	Sept.-Oct.
	2nd crop	Aug.-Oct.	Nov.-Jan.	January
	3rd crop	February	April	April
5. Horse-gram	1st crop	Aug.-Oct.	Nov.-Jan.	Jan.-Feb.
	2nd crop	Feb.-March	April-May	May-June
6. Green-gram	..	May-June	Aug.-Sept.	Sep.-Oct.
7. Black-gram	1st crop	May-June	Aug.-Oct.	October
	2nd crop	Oct.-Nov.	Jan.-Feb.	February
8. Other pulses	..	May-June	Aug.-Sept.	Aug.-Sept.
		October	Dec.-Jan.	January
9. Sugar-cane	1st crop	Nov.-Feb.	Oct.-Dec.	Nov.-Dec.
	2nd crop	Jan.-March	Dec.-Feb.	February
10. Ginger (raw)	..	April-May	Nov.-Jan.	Dec.-Jan.
11. Pepper	..	..	Nov.-Jan.	Dec.-Feb.
12. Sesamum	1st crop	Feb.-March	June-July	July-Aug.
	2nd crop	Aug.-Oct.	Dec.-Jan.	Dec.-Jan.
	3rd crop	Dec.-Jan.	March-April	April-May
13. Cotton	..	Aug.-Sept.	Feb.-March	Feb.-March
14. Sweet potatoes	1st crop	June-July	Sept.-Oct.	Sept.-Oct.
	2nd crop	Sept.-Oct.	Dec.-Jan.	Dec.-Jan.
	3rd crop	Nov.-Dec.	Feb.-March	Feb.-March
15. Turmeric	..	April-May	Dec.-Jan.	Jan.-Feb.
16. Lemon-grass	..	..	June-Sept.	September
17. Tapioca	1st crop	Oct.-Nov.	Aug.-Sept.	Aug.-Sept.
	2nd crop	March-May	Nov.-Jan.	Dec.-Jan.
	3rd crop	July-Sept.	May-July	June-July

PART III—DETAILED TABLES

TABLE I

Average monthly rainfall in inches in the different Districts for the year 1956-57

State and Districts	1956						1957					
	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
State ..	15·70	12·44	7·12	14·35	7·24	0·33	0·10	0·73	1·39	3·42	15·60	33·90
Trivandrum ..	5·99	8·42	3·51	10·63	7·13	1·48	0·05	0·58	0·93	5·59	15·40	24·59
Quilon ..	8·34	8·84	7·47	17·58	9·05	0·46	0·24	0·74	2·56	5·13	16·67	30·12
Kottayam ..	11·45	18·83	11·03	15·99	10·11	0·29	0·02	1·28	2·08	4·12	17·21	32·05
Trichur ..	13·31	11·42	8·21	19·37	5·34	0·12	0·36	1·52	0·73	2·21	20·40	42·13
Palghat ..	16·84	10·81	5·02	9·83	7·12	..	..	0·12	0·37	2·05	13·50	25·37
Kozhikode ..	24·05	14·24	6·79	12·59	7·61	0·01	..	..	0·37	1·33	12·32	49·90
Cannanore ..	32·05	15·67	7·58	11·18	3·43	.....	.....	.....	..	..	10·49	42·10

TABLE II

Classification of area in each District for the year 1956-57

State and Districts	Total geographical area		Forests		Barren and unculturable land		Land put to non-agricultural uses		Culturable waste		Permanent pastures and other grazing lands		Land under other miscellaneous tree crops not included in net area sown	
	By professional survey	According to village papers	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
State ..	9594622	9411892	2458423	26·12	497306	5·28	503064	5·34	437198	4·65	120589	1·28	508372	5·40
Trivandrum ..	541632	533983	101703	19·05	31057	5·82	29245	5·48	6772	1·27	..	..	1880	0·35
Quilon ..	1653184	1586496	569246	35·88	54225	3·42	59016	3·72	4993	0·31	9518	0·60	26715	1·68
Kottayam ..	1937408	1878899	639215	34 02	98534	5·24	42718	2·27	108307	5·77	16358	0·87	76666	4·08
Trichur ..	1139840	1091455	315224	28·88	37548	3·44	60600	5·55	14570	1·33	14258	1·31	7927	0·73
Palghat ..	1262784	1261285	256424	20·34	71383	5·66	151460	12·01	60567	4·80	16154	1·28	57181	4·53
Kozhikode ..	1634814	1634814	391361	23·93	105724	6·47	62225	3·81	111240	6·80	8598	0·53	129408	7·92
Cannanore ..	1424960	1424960	185250	13·00	98835	6·94	97800	6·86	130749	9·17	55703	3·91	208595	14·64

TABLE II—(*cont.*)

Districts	Current fallows		Other fallow lands		Net area sown		Area sown more than once		Total cropped area	
	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area	Area in acres	Percentage to the total area
1	2	3	4	5	6	7	8	9	10	11
STATE ..	154734	1·65	207144	2·20	4525062	48·08	857346	9·11	5382408	57·19
Trivandrum ..	6704	1·25	8119	1·52	348503	65·26	131059	24·54	479562	89·80
Quilon ..	28064	1·77	11874	0·75	822845	51·87	280414	17·68	1103259	69·55
Kottayam ..	24051	1·28	7836	0·42	865214	46·05	36985	1·97	902199	48·02
Trichur ..	15712	1·44	7904	0·72	617712	56·59	82086	7·52	699798	64·11
Palghat ..	23505	1·86	36499	2·89	588112	46·63	83451	6·62	671563	53·25
Kozhikode ..	42738	2·61	30659	1·88	752861	46·05	115368	7·06	868229	53·11
Cannanore ..	13960	0·98	104253	7·32	529815	37·18	127983	8·98	657798	46·16

TABLE III-A

Sources of irrigation and net area irrigated therefrom in each District during 1956-57

Districts	Area irrigated from						
	Canals			Tanks	Wells	Other sources	Total
	Government (acres)	Private (acres)	Total (acres)	(acres)	(acres)	(acres)	(acres)
1	2	3	4	5	6	7	8
STATE ..	342955	70849	413804	77477	28696	309481	829458
Trivandrum ..	57182	..	57182	34650	132	52247	144211
Quilon ..	28312	8837	37149	6108	295	172357	215909
Kottayam ..	71379	37984	109363	12316	12994	65759	200432
Trichur ..	131293	18496	149789	15880	12031	13121	190821
Palghat ..	50609	3440	54049	6972	1444	5639	68104
Kozhikode ..	3368	2092	5460	1401	1506	358	8725
Cannanore ..	812	..	812	150	294	..	1256

TABLE III-B

Area of crops irrigated in each District for the year 1956-57

(Area in acres)

Districts	Food crops											
	Rice				Jowar			Ragi	Other cereals and millets	Total cereals and millets	Pulses	Total food grains
	Autumn	Winter	Summer	Total	Kharif	Rabi	Total					
1	2	3	4	5	6	7	8	9	10	11	12	13
STATE ..	249729	379428	111134	740291	534	..	534	100	702	741627	21558	763185
Trivandrum ..	44718	43674	..	88392	..	..	..	..	..	88392	3719	92111
Quilon ..	47926	52130	33410	133466	..	..	..	..	..	133466	6234	139700
Kottayam ..	29029	66042	54506	149577	..	..	..	46	35	149658	688	150346
Trichur ..	116264	138034	16609	270907	534	..	534	..	..	271441	10555	281996
Palghat ..	4742	72970	2196	79908	..	..	..	..	..	79908	..	79908
Kozhikode ..	7050	5368	4157	16575	..	..	..	54	667	17296	362	17658
Cannanore ..	..	1210	256	1466	..	..	..	..	..	1466	..	1466

TABLE III-B—(*cont.*)

(Area in acres)

State and District	Food crops				Non-food crops					Total under all crops
	Sugarcane	Condiments and spices	Other food crops	Total food crops	Oil seeds			Other non-food crops	Total non-food crops	
					Sesamum	Others	Total			
1	14	15	16	17	18	19	20	21	22	23
STATE ..	10302	784	202841	977112	62	3944	4006	128502	132508	1109620
Trivandrum ..	..	..	54802	146913	..	..	...	80026	80026	226939
Quilon ..	6799	..	62625	209124	..	..	..	..	..	209124
Kottayam ..	2065	..	62592	215003	..	..	..	20659	20659	235662
Trichur ..	402	..	18837	301235	..	..	..	25907	25907	327142
Palghat ..	981	..	319	81208	..	..	..	964	964	82172
Kozhikode ..	55	784	3666	22163	62	3944	4006	946	4952	27115
Cannanore ..	..	..	..	1466	..	..	..	..	..	1466

TABLE IV-A

Details of cropped area in each District for 1956-57

Districts	Food Crops		Non-food Crops		Total		Area sown more than once		Net area sown	
	Area (in acres)	Percentage	Area (in acres)	Percentage	Area (in acres)	Percentage	Area (in acres)	Percentage	Area (in acres)	Percentage
1	2	3	4	5	6	7	8	9	10	11
STATE	3659953	100·00	1722455	100·00	5382408	100·00	857346	100·00	4525062	100·00
Trivandrum ..	330184	9·02	149378	8·67	479562	8·91	131059	15·29	348503	7·70
Quilon ..	707215	19·39	396044	22·99	1103259	20·50	280414	32·71	822845	18·18
Kottayam ..	488552	13·35	413647	24·02	902199	16·76	36985	4·31	865214	19·12
Trichur ..	507486	13·87	192312	11·17	699798	13·00	82086	9·50	617712	13·65
Palghat ..	568325	15·53	103238	5·99	671563	12·48	83451	9·73	588112	13·00
Kozhikode ..	539580	14·74	328649	19·08	868229	16·13	115368	13·46	752861	16·64
Cannanore ..	518611	14·17	139187	8·08	657798	12·22	127983	14·93	529815	11·71

TABLE IV-B

Area under Crops in each District for the year 1956-57

FOOD CROPS

(Area in acres)

Districts	Cereals								
	Rice				Jower	Maize	Ragi	Other cereals and millets	Total cereals and millets
	Autumn	Winter	Summer	Total					
1	2	3	4	5	6	7	8	9	10
STATE ..	963800	736000	183200	1883000	4847	211	12300	13896	1914254
Trivandrum ..	46400	51100	..	97500	..	..	258	4	97762
Quilon ..	109700	127100	81800	318600	..	..	1567	11	320178
Kottayam ..	35500	66700	55100	157300	..	..	75	118	157493
Trichur ..	145800	164000	19900	329700	724	..	3072	943	334439
Palghat ..	219600	158400	7700	385700	3776	211	2148	9585	401420
Kozhikode ..	187400	114500	15700	317600	271	..	3072	2874	323817
Cannanore ..	219400	54200	3000	276600	76	..	2108	361	279145

TABLE IV-B FOOD CROPS—(*cont.*)
(Area in acres)

Districts	Pulses						Sugar			Condiments and spices							
	Tur (Red gram)	Other Pulses			Total pulses	Total Food grains	Sugarcane	Others	Total	Black Pepper	Chillies	Ginger	Turmeric	Cardamom	Betelnuts	Others	Total
		Kharif	Rabi	Total													
1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
STATE ..	28058	38334	52357	90691	118749	2033003	19150	10789	29939	214900	7412	25038	11560	69572	121409	45002	494893
Trivandrum ..	2380	3120	3551	6671	9051	106813	280	927	1207	21100	229	62	79	..	6587	5812	33869
Quilon ..	9240	12160	7544	19704	28944	349122	11860	91	11951	18000	321	126	86	..	13281	9203	41017
Kottayam ..	730	970	1306	2276	3006	160499	4080	590	4670	43800	482	11433	6030	64422	14687	5714	146568
Trichur ..	2485	8056	15954	24010	26495	360934	535	795	1330	3942	86	305	415	..	13799	8515	27062
Palghat ..	9604	8741	12596	21337	30941	432361	1547	6797	8344	6255	1900	4652	2704	2355	18513	6249	42628
Kozhikode ..	3287	669	8407	9076	12363	336180	55	1564	1619	33473	1677	8132	1887	1565	38675	8529	94038
Cannanore ..	332	4618	2999	7617	7949	287094	793	25	818	88330	2717	328	359	1230	15867	880	109711

TABLE IV-B—FOOD CROPS—(*cont.*)

(Area in acres)

Districts	Fruits and Vegetables														
	Fresh Fruits					Dried Fruits			Total fruits	Vegetables				Total fruits and vegetables	Total Food Crops
	Mangoes	Fruits of citres variety	Bananas	Other fresh fruits	Total fresh fruits	Cashew-nuts	Others	Total dry fruits		Tapioca	Sweet potatoes	Onion	Other vegetables		
1	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
STATE ..	138973	5713	99469	125871	370026	92395	6991	99386	469412	515233	18576	586	98311	1102118	3659953
Trivandrum ..	17337	NA	6964	23200	47501	8412	NA	8412	55913	130400	358	..	1624	188295	330184
Quilon ..	33257	NA	9521	27430	70208	20281	NA	20281	90489	199922	961	..	13753	305125	707215
Kottayam ..	22712	NA	6421	27060	56193	10428	NA	10428	66621	103363	493	9	6329	176815	488552
Trichur ..	23922	NA	8757	23145	55824	27086	NA	27086	82910	29169	715	183	5183	118160	507486
Palghat ..	7741	46	21415	4577	33779	4437	6385	10822	44601	8200	2327	98	29766	84992	568325
Kozhikode ..	22923	..	19054	13354	55331	10483	576	11059	66390	30450	3832	296	6775	107743	539580
Cannanore ..	11081	5667	27337	7105	51190	11268	30	11298	62488	13729	9890	..	34881	120988	518611

TABLE IV-B—(*cont.*)
NON-FOOD CROPS—(Area in acres)

Districts	Oil Seeds						Fibres				
	Groundnut	Castor	Sesamum	Cocoanut	Others	Total	Cotton	Jute	San-hemp	Others	Total
	44	45	46	47	48	49	50	51	52	53	54
STATE ..	33000	1511	48910	1136284	29101	1248806	22450	29	101	214	22794
Trivandrum ..	..	4	500	133404	2027	135935	..	..	..	..	..
Quilon ..	..	35	36165	307344	777	344321	..	..	..	..	..
Kottayam ..	..	51	627	187128	21720	209526	..	..	..	..	..
Trichur ..	31	772	3944	133545	3228	141520	..	29	10	214	253
Palghat ..	32969	593	2452	11303	1133	48450	22450	..	..	..	22450
Kozhikode ..	..	..	3158	251339	50	254547	..	..	..	..	..
Cannanore ..	..	56	2064	112221	166	114507	..	..	91	..	91

TABLE IV-B—(*cont.*)

NON-FOOD CROPS—(Area in acres)

Districts	Drugs, Narcotics and Plantation Crops						Fodder crops	Green manure crops	Other non-food crops	Total non-food crops	Total area sown under all crops
	Tobacco	Tea	Coffee	Rubber	Others	Total					
	55	56	57	58	59	60	61	62	63	64	55
STATE ..	1230	98556	36902	203282	4071	344041	504	1265	105045	1722455	5382408
Trivandrum ..	..	2943	..	5382	..	8325	4	..	5114	149378	479562
Quilon ..	..	8296	575	42124	..	50995	18	..	710	396044	1103259
Kottayam ..	..	69888	3189	104364	..	177441	350	..	26330	413647	902199
Trichur ..	..	991	..	14531	4	15526	132	..	34881	192312	699798
Palghat ..	..	3207	7028	12310	76	22621	..	..	9717	103238	671563
Kozhikode ..	..	9531	23309	21833	3785	58458	..	284	15360	328649	868229
Cannanore ..	1230	3700	2801	2738	206	10675	..	981	12933	139187	657798

TABLE IV-C

Percentage of area under principal crops to the total area sown 1956-57

Districts	Cereals									
	Rice				Jower			Ragi	Other cereals and millets	Total cereals and millets
	Autumn	Winter	Summer	Total	Kharif	Rabi	Total			
1	2	3	4	5	6	7	8	9	10	11
STATE ..	17·91	13·67	3·40	34·98	0·09	..	0·09	0·23	0·26	35·56
Trivandrum	9·68	10·66	..	20·34	..	..	..	0·05	..	20·39
Quilon ..	9·94	11·52	7·42	28·88	..	..	..	0·14	..	29·02
Kottayam ..	3·93	7·39	6·11	17·43	..	..	..	0·01	0·01	17·45
Trichur ..	20·83	23·44	2·84	47·11	0·10	..	0·10	0·44	0·14	47·79
Palghat ..	32·70	23·58	1·15	57·43	0·56	..	0·56	0·32	1·46	59·77
Kozhikode ..	21·58	13·19	1·81	36·58	0·03	..	0·03	0·35	0·33	37·29
Cannanore .	33·35	8·24	0·46	42·05	0·01	..	0·01	0·32	0·06	42·44

TABLE IV-C—(*cont.*)

Districts	Pulses			Total food grains	Sugar			Condiments and Spices							
	Tur or Red-gram	Other pulses	Total pulses		Sugarcane	Others	Total	Black pepper	Chillies	Ginger	Turmeric	Cardamom	Betelnuts	Others	Total
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
STATE ..	0·52	1·69	2·21	37·77	0·36	0·20	0·56	3·99	0·14	0·47	0·21	1·29	2·26	1·84	9·20
Trivandrum ..	0·50	1·39	1·89	22·28	0·06	0·19	0·25	4·40	0·05	0·01	0·02	..	1·37	1·21	7·06
Quilon ..	0·84	1·78	2·62	31·64	1·07	0·01	1·08	1·63	0·03	0·01	0·01	..	1·20	0·86	3·72
Kottayam ..	0·08	0·25	0·33	17·78	0·45	0·07	0·52	4·86	0·05	1·27	0·67	7·14	1·63	0·63	16·25
Trichur ..	0·36	3·43	3·79	51·58	0·08	0·11	0·19	0·56	0·01	0·04	0·06	..	1·97	1·22	3·86
Palghat ..	1·43	3·18	4·61	64·38	0·23	0.01	1·24	0·93	0·28	0·69	0·40	0·35	2·77	0·93	6·35
Kozhikode ..	0·38	1·05	1·43	38·72	0·01	0·18	0·19	3·86	0·19	0·93	0·22	0·18	4·45	0·99	10·83
Cannanore ..	0·05	1·16	1·21	43·65	0·12	*	0·12	13·43	0·41	0·05	0·06	0·19	2·41	0·13	16·68

* Negligibly small.

TABLE IV-C—(*cont.*)

Districts	Fruits and Vegetables														
	Fresh fruits					Dried fruits			Total fruits	Vegetables					Total fruits and vegetables
	Mangoes	Fruits of citrus variety	Bananas	Other fresh fruits	Total fresh fruits	Cashewnuts	Others	Total dry fruits		Tapioca	Sweet potatoes	Onions	Other vegetables	Total vegetables	
1	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
STATE ..	2·58	1·10	1·85	2·34	6·87	1·72	0·13	1·85	8·72	9·75	0·35	0·01	1·83	11·76	20·48
Trivandrum ..	3·62	..	1·45	4·84	9·91	1·75	..	1·75	11·66	27·19	0·07	..	0·34	27·60	39·26
Quilon ..	3·01	..	0·86	2·49	6·36	1·84	..	1·84	8·20	18·12	0 09	..	1·25	19·46	27·66
Kottayam ..	2·52	..	0·71	3·00	6·23	1·16	..	1·16	7·39	11·46	0·05	..	0·70	12·21	19·60
Trichur ..	3·42	..	1·25	3·31	7·98	3·87	..	3·87	11·85	4·17	0·10	0·03	0·74	5·04	16·89
Palghat ..	1·15	0·01	3·19	0·68	5·03	0·66	0·95	1·61	6·64	1·22	0·35	0·01	4·43	6·01	12·65
Kozhikode ..	2·64	..	2·19	1·54	6·37	1·21	0·07	1·28	7·65	3·51	0·44	0·03	0·78	4·76	12·41
Cannanore ..	1·68	0·86	4·16	1·08	7·78	1·71	0·01	1·72	9·50	2·09	1·50	..	5·30	8·89	18·39

TABLE IV-C—(*cont.*)

Districts	Total food crops	Oil seeds						Fibres				
		Groundnut	Castor	Sesamum	Cocoanut	Others	Total	Cotton	Jute	San hemp	Others	Total
1	42	43	44	45	46	47	48	49	50	51	52	53
STATE ..	68·00	0·61	0·03	0·91	21·11	0·54	23·20	0·42	*	*	*	0·43
Trivandrum ..	68·85	..	..	0·10	27·82	0·42	28·34	..	..	..	..	..
Quilon ..	64·10	..	*	3·28	27·86	0·07	31·21	..	..	..	..	..
Kottayam ..	54·15	..	0·01	0·07	20·74	2·40	23·22	..	..	..	..	..
Trichur ..	72·52	0·01	0·11	0·56	19·08	0·46	20·22	..	*	*	0·04	0·04
Palghat ..	84·62	4·91	0·09	0·37	1·68	0·17	7·22	3·34	..	..	..	3·34
Kozhikode ..	62·15	..	..	0·36	28·95	0·01	29·32	..	..	..	..	..
Cannanore ..	78·84	..	0·01	0·31	17·06	0·03	17·41	..	..	0·01	..	0·01

* Negligibly small

TABLE IV-C--(*cont.*)

Districts	Drugs, Narcotics and Plantation crops						Fodder crops	Green manure crops	Other non-food crops	Total non-food crops	Total area sown under all crops
	Tobacco	Tea	Coffee	Rubber	Others	Total					
	54	55	56	57	58	59	60	61	62	63	64
STATE ..	0·02	1·83	0·68	3·78	0·08	6·39	0·01	0·02	1·95	32·00	100·00
Trivandrum ..	..	0·62	..	1·12	..	1·74	*	..	1·07	31·15	100·00
Quilon ..	..	0·75	0·05	3·82	..	4·62	*	..	0·07	35·90	100·00
Kottayam ..	..	7·75	0·35	11·57	..	19·67	0·04	..	2·92	45·85	100·00
Trichur ..	..	0·14	..	2·08	*	2·22	0·02	..	4·98	27·48	100·00
Palghat ..	..	0·48	1·05	1·83	0·01	3·37	..	..	1·45	15·38	100·00
Kozhikode ..	..	1·10	2·68	2·51	0·44	6·73	..	0·03	1·77	37·85	100·00
Cannanore ..	0·19	0·56	0·42	0·42	0·03	1·62	..	0·15	1·97	21·16	100·00

* Negligibly small.

TABLE V

Total out-turn of principal crops in each District for the year 1956-57

Districts	Rice in '00 tons	Jowar (tons)	Ragi (tons)	Pulses (tons)	Sugarcane (tons)	Black pepper (tons)	Ginger (tons)	Turmeric (dry) (tons)	Cardamom (dry) (tons)	Arecanut in million nuts	Cashewnut (unshelled)(tons)	Groundnut (tons)	Tapioca ('000 tons)	Sesamum (tons)	Coconut (Million nuts)	Cotton in bales of 392 lb.	Tea (tons)	Coffee (tons)	Rubber (tons)	Tobacco (tons)	Bananas (tons)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
STATE ..	8732	866	6700	18362	352500	26800	10700	4129	1242	6617	57750	15650	1426	6348	3182	10000	34175	6610	21319	659	291152
Trivandrum..	514	..	109	1360	4200	3900	30	28	..	359	5260	..	361	67	373	..	547	..	692	..	20729
Quilon ..	1622	..	660	4353	237200	3300	50	31	..	724	12680	..	553	4842	861	..	2079	2	5339	..	27403
Kottayam ..	936	..	31	451	61200	8000	4880	2154	1150	800	6520	..	286	84	524	..	21939	346	10224	..	18389
Trichur ..	1417	129	1246	3956	8040	712	130	148	..	752	16930	15	81	532	374	..	465	..	1791	..	24758
Palghat .	1862	675	1364	4954	25460	532	1990	966	42	1009	2770	15635	23	266	32	10000	500	1269	1092	..	63335
Kozhicode ..	1302	48	1951	2088	1060	2846	3480	674	28	2108	6550	..	84	337	704	..	7378	4623	1938	..	55740
Cannanore ..	1079	14	1339	1200	15340	7510	140	128	22	865	7040	..	38	220	314	..	1267	370	243	659	80798

TABLE VI-A

Statement of average farm prices of certain crops for the year 1956-57 for the Travancore-Cochin area

Sl. No.	Crop	Unit	Farm prices 1956-57 Rs.
1	2	3	4
1	Paddy	Para	2·76
2	Ragi	Maund	10·53
3	Sugarcane	,,	1·37
4	Turmeric (Raw)	,,	14·05
5	Cardamom	,,	658·32
6	Rubber	,,	124·16
7	Cashewnut	,,	21·36
8	Pepper	,,	66·93
9	Ginger	,,	43·79
10	Tapioca	,,	3·64
11	Lemongrass oil	48 oz.	13·18
12	Arecanut	1,000	20·18
13	Coconut	1,000	157·47
14	Banana	100	6·05
15	Plantain	100	1·12

Note.—Rubber wholesale prices at Kottayam; Cardamom wholesale prices at Munnar.

TABLE VI-B

Average retail prices of commodities for the agricultural year 1956-57 Travancore-Cochin region.

Sl. No.	Commodity	Unit	Quarter of the year	Trivandrum Rs.	Quilon Rs.	Kottayam Rs.	Trichur Rs.
1	2	3	4	5	6	7	8
1	Coconut (Without husk)	100	I	12·77	13·34	16·92	15·31
			II	15·04	15·39	18·31	16·79
			III	15·55	16·46	19·47	17·78
			IV	14·00	15·87	19 41	16·90
2	Coconut oil	Edangazhi	I	2·46	1·92	2 02	1·92
			II	2·75	2·06	2·06	2·05
			III	2·89	2·21	2·04	2·15
			IV	2·79	2·16	2·14	2·16
3	Rice	,,	I	0·68	0·66	0·63	0·59
			II	0·70	0·68	0·63	0·61
			III	0·64	0·62	0·57	0·55
			IV	0·70	0·68	0·62	0·59
4	Blackgram	,,	I	0·87	0·84	0·84	0·79
			II	0·84	0·79	0·82	0·82
			III	0·84	0·79	0·82	0·84
			IV	0·84	0·82	0·82	0·87
5	Gingelly oil	,,	I	3·99	3·33	3·18	2·90
			II	3·93	3·57	3·22	3·15
			III	3·95	3·49	3·20	3·15
			IV	3·85	3·48	3·24	3·22
6	Tapioca	lb.	I	0·05	0·06	0·06	0·06
			II	0 06	0·05	0·07	0·06
			III	0·06	0·07	0·07	0·07
			IV	0 06	0·05	0·06	0·07
7	Sugar	,,	I	0·46	0 45	0·46	0·48
			II	0·44	0·44	0·45	0·46
			III	0·45	0·44	0·45	0·46
			IV	0·47	0·47	0·49	0·50
8	Chillies	,,	I	1·01	1·05	1·11	1·14
			II	1·02	1·06	1·13	1·18
			III	1·03	1·05	1·12	1·16
			IV	0·91	0·98	1·05	1·08
9	Coffee powder	,,	I	2·87	2·79	2·32	2·52
			II	2·97	2·76	2·35	2·48
			III	2·93	2·77	2·32	2·50
			IV	3·10	2·79	2·36	2 62
10	Tea	,,	I	2·57	2·32	2·27	2·56
			II	2·56	2·38	2·31	2·46
			III	2·73	2·47	2·34	2·52
			IV	2·80	2·58	2·39	2·57
11	Tobacco (Jafna)	,,	I	4·12	4·33	5·10	N.A.
			II	4·17	4·42	4 84	5·05
			III	4·10	4·37	4·57	4·75
			IV	4·24	4·25	4·82	4·74
12	Tobacco (Ordinary)	,,	I	1·57	1·55	1·91	1·75
			II	1·51	1·55	1·85	1·72
			III	1·61	1·44	1·70	1·73
			IV	1·55	1·52	2·01	1·76

TABLE VI-C

Average retail prices of commodities for the Agricultural year 1956-57 (Kozhikode Town)

Serial No.	Commodity	Unit	Prices for the Quarter			
			I	II	III	IV
1	2	3	4	5	6	7
1	Coconut (Without husk) ..	100	N. A.	21·00	20·00	19.00
2	Coconut oil ..	Edangazhi	do.	2·20	2·42	2·22
3	Rice ..	Seer	do.	0·46	0·43	0·46
4	Gingelly oil ..	Edangazhi	do.	3·40	3·42	3·24
5	Sugar ..	lb.	do.	0·47	0·46	0·49
6	Chillies ..	do.	do.	1·17	1·03	1·08
7	Coffee ..	do.	do.	2·25	2·25	2·25
8	Tea ..	do.	do.	2·30	2·47	2·25
9	Tobacco (Ordinary) ..	do.	do	1·12	1·12	1·24

Seer—66·3 Tolas

N. A.=Not available

TABLE VI-D

Cost of Living Index numbers for important urban centres in Kerala State 1956-57

Base August 1939 = 100

Year and Month	Alleppey	Alwaye	Ernakulam	Kottayam	Quilon	Trichur	Trivandrum	Kozhikode‡
1956—July	394	393	407	385	391	387	400	440
August ..	396	397	413	387	403	394	408	438
September ..	389	393	411	381	399	387	402	441
October .	388	396	410	391	414	399	390	431
November ..	397	411	412	400	429	407	399	447
December ..	390	406	400	398	414	393	395	437
1957—January ..	391	400	399	394	402	383	396	425
February ..	400	401	404	389	403	386	392	428
March ..	399	404	407	383	406	388	396	434
April ..	409	405	402	386	411	396	402	442
May ..	418	413	411	389	411	405	408	449
June	416	413	417	389	404	409	410	448

‡ Base-year ended June 1936=100

TABLE VII

Statement showing the average daily wages for agricultural labour in the different Districts of the Travancore-Cochin State for the year 1956-57.

Year and Month	Trivandrum Rs.	Quilon Rs.	Kottayam Rs.	Trichur Rs.
1	2	3	4	5
1956—July ..	1·24	1·75	1·53	1·13
August ..	1·35	1·71	1·69	1·40
September ..	1·32	1·71	1·56	1·30
October ..	1·29	1·69	1·56	1·35
November ..	1·41	1·69	1·55	1·31
December ..	1·29	1·69	1·47	1·21
1957—January ..	1·29	1·69	1·56	1·41
February ..	1·64	1·77	1·51	1·45
March ..	1·41	1·81	1·57	1·45
April ..	1·53	1·75	1·55	1·37
May ..	1·41	1·71	1·55	1·50
June ..	1·20	1·67	1·47	1·64

TABLE VIII

Statement showing total outturn and total value of principal agricultural commodities 1956-57

Sl. No.	Name of Commodity	Total output (tons)	Value Rs. (in thousands)
1	2	3	4
1	Rice	8,73,200	4,78,352
2	Ragi	6,700	1,920
3	Arecanut	6,617 (a)	1,33,531
4	Cardamom	1,242 (b)	29,017
5	Ginger (dry)	10,700	12,754
6	Pepper (Black)	26,800	58,303
7	Sugarcane (cane)	3,52,500	13,145
8	Banana and other plantains	2,911,52	78,556
9	Cashewnut (Unshelled)	57,750	33,577
10	Tapioca	14,26,000	1,41,288
11	Groundnut	15,650	9,338
12	Sesamum	6,348	6,689
13	Cocoanut	3,182 (a)	5,01,070
14	Tea	34,175	1,66,541
15	Coffee	6,610	36,355
16	Rubber	21,319	64,703

(a) in million nuts
(b) in terms of dry pods

TABLE IX

Number of Livestock, Poultry aud Agricultural Machinery and implements in each District (of Kerala State)

Districts	Cattle						
	Males over three years				Females over three years (Breeding)		
	Breeding	Working	Others	Total	In milk	Dry	Not calved
1	2	3	4	5	6	7	8
1951 Census							
STATE ..	7793	551750	36599	596142	313253	424090	141889
Trivandrum ..	823	21808	759	23390	18201	19755	5972
Quilon ..	2230	83859	3422	89511	65089	113677	33440
Kottayam ..	1701	79011	3741	84453	53753	69862	24726
Trichur ..	1028	112719	3377	117124	41596	41776	7425
Malabar and Kasargod ..	2011	254353	25300	281664	134614	179020	70326
1956 Census							
STATE ..	11026	553155	37718	601899	396375	454293	120976
Trivandrum ..	864	19002	1001	20867	21883	19711	4765
Quilon ..	3082	73339	3616	80037	91482	123507	26709
Kottayam ..	2166	82656	2966	87788	73532	85442	14902
Trichur ..	1099	120317	2140	123556	51276	50093	9893
Malabar and Kasargod ..	3815	257841	27995	289651	158202	175540	64707

TABLE IX—(*cont.*)

Districts	Cattle					Buffaloes			
	Females over three years			Young stock	Total	Males over three years			
	Working	Others	Total			Breeding	Working	Others	Total
	9	10	11	12	13	14	15	16	17
1951 Census									
STATE ..	3936	13485	896653	658727	2151522	3154	234636	11228	249018
Trivandrum ..	31	540	44499	32989	100878	424	19053	349	19832
Quilon ..	115	4585	216906	142198	448615	407	15352	405	16164
Kottayam ..	524	1897	150762	111190	346405	512	6819	1084	8415
Trichur ..	1135	1557	93489	75307	285920	1069	39916	1485	42470
Malabar and Kasargod ..	2131	4906	390997	297043	969704	742	153490	7905	162137
1956 Census									
STATE ..	7083	19223	997950	910527	2510376	4046	247313	5895	257254
Trivandrum ..	185	1079	47623	47684	116174	507	21185	350	22042
Quilon ..	903	6664	249265	257012	586314	620	16293	410	17323
Kottayam ..	1196	4464	179536	183529	450853	311	7086	245	7642
Trichur ..	1216	2035	114513	119874	357943	838	46096	729	47663
Malabar and Kasargod ..	3583	4981	407013	302428	999092	1770	156653	4161	162584

TABLE IX—(*cont.*)

Districts	Buffaloes								Sheep			Goats		
	Female over three years						Young stock	Total	One year and above	Below one year	Total	One year and above	Below one year	Total
	Breeding			Working	Others	Total								
	In milk	Dry	Not calved											
	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1951 Census														
STATE	51794	45203	13870	9196	3382	123445	71905	444368	313622	109891	423513	329993	93352	423345
Trivandrum	6015	5530	1381	659	342	13927	5012	38771	47783	21345	69128	865	161	1026
Quilon	4315	4903	967	181	387	10753	5115	32032	92388	27768	120156	2062	693	2755
Kottayam	1362	1371	485	651	131	4000	2160	14575	86960	31443	118403	5344	2390	7734
Trichur	10378	7226	1036	1069	903	20612	10089	73171	84493	29213	113706	46794	14920	61714
Malabar and Kasargod	29724	26173	10001	6636	1619	74153	49529	285819	1998	122	2120	274928	75188	350116
1956 Census														
STATE	61336	52128	11624	10109	3288	138485	91914	487653	58677	39143	97820	592435	363135	955570
Trivandrum	7294	5119	1179	913	327	14832	8159	45033	11682	8878	20560	65382	45724	111106
Quilon	5685	5167	1008	409	344	12613	9161	39097	24838	17870	42708	100431	69214	169645
Kottayam	3203	2614	358	317	116	6608	4578	18828	4697	3404	8101	85437	53466	138903
Trichur	12157	13176	861	1396	370	27960	15810	91433	10828	5436	16264	110213	78621	188834
Malabar and Kasargod	32997	26052	8218	7074	2131	76472	54206	293262	6632	3555	10187	230972	116110	347082

TABLE IX—(*cont.*)

Districts	Horses and Ponies			Mules	Donkeys	Camels	Pigs	Total live stock	Poultry			Total
	3 years and above	Below 3 years	Total						Fowls	Ducks	Others	
	32	33	34	35	36	37	38	39	40	41	42	43
1951 Census												
STATE ..	439	79	518	14	689	..	117932	3561901	3854319	263147	..	4117466
Trivandrum ..	56	9	65	..	27	..	3182	213077	309969	4092	..	314061
Quilon ..	11	9	20	..	65	..	680	604323	651174	67757	..	718931
Kottayam ..	67	23	90	14	86	..	102279	589586	773927	37365	..	811292
Trichur ..	65	18	83	..	114	..	10598	545306	546876	148672	..	695548
Malabar and Kasargod..	240	20	260	..	397	..	1193	1609609	1572373	5261	..	1577634
1956 Census												
STATE ..	1008	682	1690	2	1415	..	113711	4168237	6462799	332085	161	6795045
Trivandrum ..	283	165	448	..	36	..	5567	298924	620825	4731	..	625556
Quilon ..	159	148	307	..	88	..	1882	840041	1459666	134610	..	1594276
Kottayam ..	160	77	237	..	225	..	93358	710505	1236177	114750	..	1350927
Trichur ..	269	142	411	..	198	..	10472	665555	1224509	69268	..	1293777
Malabar and Kasargod..	137	150	287	2	868	..	2432	1653212	1921622	8726	161	1930509

TABLE IX—(*cont.*)

Ddistricts	Ploughs		Carts	Sugarcane crushers		Oil engines	Electric pumps	Tractors	Ghanis		Persian wheels
	Wooden	Iron		Power	Bullocks				More than 5 seer	Less than 5 seer	
	44	45	46	47	48	49	50	51	52	53	54
1951 Census											
STATE ..	510908	13126	26378	269	2023	1158	1630	59	NA	NA	18830
Trivandrum ..	25127	43	2263	1	246	4	1	1	NA	NA	4
Quilon ..	67476	2298	3894	25	667	255	29	15	NA	NA	11413
Kottayam ..	70959	112	2332	29	179	153	19	18	NA	NA	5264
Trichur ..	70554	10148	5562	128	381	304	1516	7	NA	NA	2049
Malabar and Kasargod..	276792	525	12327	86	550	442	65	18	76	916	NA
1956 Census											
STATE ..	570327	10225	27283	230	1155	2504	723	187	1858	2366	..
Trivandrum ..	25408	288	2360	3	86	34	2	1	105	525	..
Quilon ..	71960	4738	4803	69	339	622	175	42	847	866	..
Kottayam ..	69567	477	2391	27	189	381	139	73	249	297	..
Trichur ..	98318	3379	6562	79	232	763	367	3	548	404	..
Malabar and Kasargod..	305074	1343	11167	52	249	704	40	68	109	274	..

TABLE X

District-wise Calendar of Agricultural Operations for important crops in Kerala State, 1956-57

Districts	Paddy						Cholam (Jowar)				Ragi			
	Viruppu		Mundakan		Punja		First Crop		Second Crop		First Crop		Second Crop	
	S	H	S	H	S	H	S	H	S	H	S	H	S	H
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Trivandrum ..	April-May	August-Sept.	Sept.-October	February-March	..	..	..	..	..	..	June-July	October-Nov.	..	..
Quilon ..	do.	do.	August-Sept.	January-Feb.	Nov.-Dec.	Feb.-March	..	..	..	..	April-May	August-Sept.	Sept.-October	Dec.-Jan.
Kottayam ..	do.	do.	do.	do.	do.	do.	..	..	..	..	June-July	Sept.-October	do.	do.
Trichur ..	do.	do.	Sept. October	do.	January-Feb.	April-May	..	..	..	..	do.	do.	do.	do.
Palghat ..	do.	do.	do.	do.	Feb.-March	May-June	..	..	Sept.	Dec.	May-June	do.	do.	do.
Kozhikode ..	do.	do.	August-Sept.	Dec.-January	January-Feb.	April-May	..	..	..	..	do.	do.	do.	do.
Cannanore ..	April. June	August-October	do.	do.	do.	do.	April-May	Sept.-October	..	..	do.	do.	..	..

TABLE X—(*cont.*)

Districts	Sesamum						Sugarcane				Redgram			
	First Crop		Second Crop		Third Crop		First Crop		Second Crop		First Crop		Second Crop	
	S	H	S	H	S	H	S	H	S	H	S	H	S	H
	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Trivandrum ..	April-May	Aug.-Sept.	..	..	..	..	..	..	..	..	..	..	..	..
Quilon ..	..	..	..	..	Dec.-Jan.	March-April	October-Dec.	August-Oct.	Jan.-Feb.	Nov.-Dec.	June-July	August-Sept.	..	..
Kottayam ..	..	..	Sept.-Oct.	Dec.-Jan.	do.	do.	Nov.-Dec.	Oct.-Nov.	March-April	Feb.-March	May-June	do.	..	..
Trichur ..	..	..	do.	do.	do.	do.	Jan.-Feb.	Nov.-Dec.	Feb.-March	Jan.-Feb.	do.	do.	..	..
Palghat ..	Feb.-March	June-July	August-Sept.	Nov.-Dec.	..	..	Dec.-Jan.	do.	Jan.-Feb.	do.	do.	do.	..	..
Kozhikode ..	..	..	do.	Dec.-Jan.	Dec.-Jan.	April-May	..	..	..	..	..	..	Aug.-Sept.	Nov.-Dec.
Cannanore ..	..	..	July-August	October-Nov.	..	..	Nov.-Dec.	Dec.-Jan.	March-April	Feb.-March	..	..	Sept.-Oct.	Dec.-Jan.

TABLE X—(*cont.*)

Districts	Redgram		Greengram		Horsegram				Blackgram		Peas and Beans			
	Third Corp				First Crop		Second Crop				First Crop		Second Crop	
	S	H	S	H	S	H	S	H	S	H	S	H	S	H
	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Trivandrum	..	..	April-May	July-Aug.	..	..	April-May	June-July	April-May	June-July	April-May	June-July	..	..
Quilon	..	..	..	..	Sept.-October	Dec.-Jan.	..	..	May-June	Aug.-Sept.	May-June	Aug.-Sept.	Oct.-Nov.	Jan.-Feb.
Kottayam	..	..	..	..	do.	do.	..	..	..	..	do.	do.	..	..
Trichur	..	..	May-June	August-Sept.	do.	do.	..	..	May-June	Aug.-Sept.	do.	do.	Sept.-Oct.	Jan.-Feb.
Palghat	..	..	do.	do.	August-Sept.	Nov.-Dec.	February-March	April-May	do.	do.	do.	do.	do.	do.
Kozhikode	..	..	..	..	do.	do.	..	..	do.	Sept.-Oct.	do.	do.	do.	do.
Cannanore	Feb.	April	..	..	Sept.-October	Dec.-Jan.	February-March	April-May	Oct.-Nov.	Jan.-Feb.	do.	do.	do.	do.

TABLE X—(cont.)

Districts	Groundnut		Cotton		Tapioca					
					First Crop		Second Crop		Third Crop	
	S	H	S	H	S	H	S	H	S	H
	44	45	46	47	48	49	50	51	52	53
Trivandrum ..	..	..	..	..	Oct.-Nov.	Aug.-Sept.	April-May	Jan.-Feb.	Aug.-Sept.	June-July
Quilon ..	..	..	..	..	do.	do.	March-April	Dec.-Jan.	do.	do.
Kottayam ..	..	..	..	..	..	..	do.	do.	Sept.-Oct.	May-June
Trichur ..	..	..	..	..	..	..	do.	do.	July-Aug.	June-July
Palghat ..	April-May	Aug.-Sept.	Aug.-Sept.	February-March	..	..	April-May	Nov.-Dec.	Aug.-Sept.	do.
Kozhikode ..	..	..	..	..	..	..	do.	do.	July-Aug.	do.
Cannanore ..	..	..	..	..	..	..	May-June	do.	..	..

S: Sowing. H: Harvesting.

TABLE X—(cont.)

Districts	Ginger		Turmeric		Sweet Potatoes						Tubers		Chillies			
					First Crop		Second Crop		Third Crop				First Crop		Second Crop	
	S	H	S	H	S	H	S	H	S	H	S	H	S	H	S	H
	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Trivandrum ..	April-May	Dec.-Jan.	..	..	..	..	Sep.-Oct.	Dec.-Jan.	Nov.-Dec.	Feb.-Mar.	Mar.-April	Oct.-Nov.	..	..	Feb.-Mar.	April-May
Quilon ..	do.	do.	April-May	Dec.-Jan.	..	..	do.	do.	do.	do.	do.	do.	..	..	Mar.-April	Aug.-Sep.
Kottayam ..	do.	do.	do.	do.	..	..	do.	do.	do.	do.	do.	do.	..	..	April-May	Sep.-Oct.
Trichur ..	do.	Nov.-Dec.	do.	do.	June-July	Sep.-Oct.	Aug.-Sep.	Nov.-Dec.	..	..	do.	do.	Nov.-Dec.	April-May	..	..
Palghat ..	do.	do.	do.	Nov.-Dec.	do.	do.	..	..	..	..	do.	Sep.-Oct.	..	..	May-June	Aug.-Sep.
Kozhikode ..	do.	do.	do.	Dec.-Jan.	do.	do.	..	..	..	..	do.	do.	Nov.-Dec.	April-May	..	..
Cannanore ..	do.	do.	do.	do.	do.	do.	Sep.-Oct.	Dec.-Jan.	Dec.-Jan.	Mar.-April	do.	do.	..	..	May-June	Sep.-Oct.

TABLE XI

Statistics of Export of important Agricultural Commodities through the Ports of Kerala during the years 1951-52 to 1955-56

Serial No.	Commodities	Unit	Quantity					
			1951-52	1952-53	1953-54	1954-55	1955-56	Total
1	2	3	4	5	6	7	8	9
1	Betelnuts ..	Cwts.	39417	58291	43865	44726	56822	243121
2	Cardamom ..	Do.	2369	4251	3233	4048	5436	19337
3	Cashew Kernals ..	Tons	20858	24124	25761	32078	30541	133362
4	Cashewnut Shell liquid ..	Gal.	1285454	1261499	1342444	1301771	1048047	6239212
5	Coconuts ..	Nos.	63409803	164138133	99918805	123540968	142303199	593310908
6	Coconut Oil ..	Gal.	2309252	4281398	1956102	1823155	1665698	11935605
7	Copra ..	Tons	14268	19289	14589	12718	15757	76621
8	Coffee ..	Cwts.	13527	14985	47629	31732	30552	137925
9	Coir and Coir Products ..	Sq Yds.	1358048	1566697	1513687	1812547	1568364	7819343 }
	Do. ..	Cwts.	1826915	3281630	3819498	2906648	39160	148551 }
10	Fish, Prawns and Meat ..	Do.	41011	107694	125673	99408	43033	516819
11	Ginger ..	Do.	127606	110498	96748	87238	134331	556421
12	Lemon Grass Oil ..	Gal.	121845	102071	163401	142259	193672	723248
13	Oil Cakes ..	Tons	3377	3523	2685	3803	5753	19141
14	Pepper ..	Cwts.	333021	300466	341125	339823	340475	1654910
15	Rubber ..	Lb.	39005661	39038719	51868454	46516312	47953612	224382758
16	Tea ..	Do.	78952724	73658504	84582655	80221032	84201622	401616537
17	Wood and Timber ..	Value	..	..	..	..	..	..
18	Sundries	Do.	..	..	..	..	..	..

TABLE XI—(*cont.*)

Serial No.	Commodities	Unit	Value in rupees					
			1951-52	1952-53	1953-54	1954-55	1955-56	Total
			10	11	12	13	14	15
1	Betelnuts ..	Cwts.	4002802	7237668	5867080	6378339	8305589	31791478
2	Cardamom ..	Do.	2975092	3721656	3015717	3748686	5770319	19231470
3	Cashew Kernals ..	Tons	92116680	111719003	88633370	104909558	130942263	528320874
4	Cashewnut Shell liquid ..	Gal.	5824640	5978911	5049277	4597074	3480967	24830869
5	Coconuts ..	Nos.	24648559	21238184	24094644	21909625	24453337	116344349
6	Coconut Oil ..	Gal.	20065842	28785434	16203884	13662576	12061743	90779479
7	Copra ..	Tons	24117019	29775302	17438565	18045179	19131536	108507601
8	Coffee ..	Cwts.	4269145	4212140	14874808	9157598	10298813	42812504
9	Coir and Coir Products ..	Sq. yds.	102836083	81421739	90473305	93241498	98592633	466565258
	Do. ..	Cwts.	4746637	10097144	10278705	7888610	3194153	29105249
10	Fish, Prawns and Meat ..	Cwts.	15911303	7998730	8188229	10282751	17034019	59415032
11	Ginger ..	Do.	12888999	3973562	7262374	10472637	13075675	47673247
12	Lemongrass Oil ..	Gal.	1349222	1472710	991014	1129613	1666967	6609526
13	Oil Cakes ..	Tons	221866576	182301662	125605906	71011867	56540370	657326381
14	Pepper ..	Cwts.	48851305	50950872	68507280	60564721	64754160	293628338
15	Rubber ..	Lb.	168851876	152587579	200519438	242960315	220895589	985814797
16	Tea ..	Do.	9212447	10632007	10831444	11657433	17142227	59475558
17	Wood and Timber ..	Value	72044728	86233233	89427446	100141270	130283572	478130249
18	Sundries ..	Do.						
	Total ..		836578955	800337536	787263486	789559350	837623932	4046362259

PART IV—APPENDICES

APPENDIX A

Notes on certain crops

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 and 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 inches 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 into 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, 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 green leaf is subjected 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 driness 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 powers 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 1,500 to 6,000 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 seaosn 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 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 propogation—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 trees from the full intensity of the sun and for soil conservation.

Pruning.—Usually the coffee plants are pruned at an 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 superphosphate, ammonium sulphate, copper sulphate and urea.

Yield.—Under good climatic conditions a coffee plant yields ½ to 2 lb. of green coffee in a season. Good yields 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 per cent 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 1,000 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"×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 after 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 "Odium hevea" and "Phytophtora 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 crepe 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 a 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 crepe 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. Cardamom is taken from the plant Ellettaria cardamom. 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 5,000 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 castorake, 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 in specially built dry houses by using artificial heat. Usually three to four days are taken for drying the cardamom in the sunlight but at the same time forty-eight hours is only needed for artificial drying. The sun dried produce retains the mucilaginous coating on the seeds and possesses a characteristic sweet aroma. The dried capsules are then cleaned. The final product of reen cardamom is 20 to 28 per cent of the green harvested produce.

Sometimes bleaching is done by exposure to sulpher fumes. This changes 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—(*i*) green cardamom, (*ii*) white or bleached cardamom, and (*iii*) 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 about 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 3,000 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 growing. Jack and Mango trees are commonly used as supports 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 ¼ lb. to 2 lbs. 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 powdered 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 India, Jamaica and Sierra Leone. Of these ginger producing regions the best variety is seen in Jamaica and Sierra Leone. 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-drained 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 (underground 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 onslaught 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.

Harvesting.—The harvesting is done by digging out the rhizomes.

Manure.—Usually cattle manure is used.

Yield.—The yield is generally eight to ten times of the seed rate. Here in Kerala the average yield of ginger is about 1,000 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 rhizomes stored as seeds is advocated as a preventive measure. Another important disaese is known as "Varmi-cularia". The leaves become covered with yellowyish and brownish spots and gradually dry up. Spraying of Bordeaux mixture is suggested in such cases.

From Garden to the Market.—Dry ginger, as a market produce is prepared as follows: First the outer skin of the green rhizomes are removed. Then they are soaked in water and kept over night. 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. This 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 sum. 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 and D) have two fingers and one finger respectively.

The B and C grades of 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 lemon grass 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 Kuruppampadi, 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 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.

APPENDIX B

Classification of Soils

District	*Type of soil*	*Details of distribution*
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 and Alleppey	1. Sandy loam	Karunagapally, Karthigapally and portions of Mavelikara and Quilon taluks.
	2. Sandy soil	Sherthalai and Ambalapuzha taluks.
	3. Laterite soil	Kottarakara, Pathanapuram and Kunnathur taluks and some portions of Quilon and Mavelikara taluks
	4. Clay loam with much of abidity	Kuttanad taluk.
Kottayam	1. Laterite soil	Thodupuzha Moovattupuzha, Peermade and parts of Meenachil, Changanacherry and Kottayam taluks.
	2. Alluvial soil	Parts of Changanacherry and Kottayam taluks.
	3. Loam	Devicolum.
Trichur	1. Sandy loam	Parur and Cochin-Kanayannur and part of Mukundapuram, Trichur and Chowghat taluks.
	2. Laterite	Eastern area of Trichur, Western portion of Talapally and parts of Kuttanad.
	3. Granite	Northern portion of Talappilly.
	4. Clayey	Backwater area in Chowghat and part of Mukundapuram.
	5. Alluvial soil	Parts of Chowghat and Kunnathunad taluks.
Palghat	1. Sandy loam	Interior regions of the district.
	2. Alluvial soil	Along coastal and river side areas.
Kozhikode	1. Alluvial soil	Coastal area.
	2. Laterite	Major part of the district barring the coastal area.
Cannanore	1. Sandy loam	Coastal areas of the district.
	2. Laterite	Uplands.

APPENDIX C

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 army worm or the swaming caterpillar (Spodopteramauritia boisd)	This is a sporadic pest. Attacks mostly Viruppu (Autumn) crop of paddy throughout the State	*i.* Apply 10 per cent B.H.C. dust at 15 to 20 lb. per acre. *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). *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 lbs. per acre to promote *rap d recuperation.*
,,	Paddy stem borer (Schoenobius 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

APPENDIX C—(*cont.*)

Crop	Pest (Scientific name)	Distribution	Control
1	2	3	4
Paddy—(*cont.*)	Paddy stem borer (Schoenobius 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	*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 seedlings in the suspension of the same strength, one spraying 2 to 3 weeks after transblade stage (in the short blade stage 40 to 45 gallons of the spray liquid are required per acre in both cases). *iii.* At the time of transplanting eliminate and destroy the dead heards if any. *iv.* In hardly affected fields give a top dressing of Ammonium Sulphate. *v.* After harvest destroy the stumps by burning.
	Rice bug (Lip to corisa actus T)	This is found throughout the State	*i.* In the early stage of attack collect the bugs by a hand net. *ii.* Apply B.H.C. 10 per cent dust at the rate of 20 to 25 lb. per acre.

APPENDIX C—(*cont.*)

Crop	Pest (Scientific name)	Distribution	Control
1	2	3	4
Paddy—(*cont.*)	Rice Hispa (Hispa Arinigera Ol) (Nilaparvata Sp.)	Very common in Karunagapally, Haripad, Mavelikara, Kottarakara and Karthigappally of Quilon district and all parts of Alleppey and Trichur districts	*i.* Apply 10 per cent B.H.C. dust at 15 to 20 lb. per acre. *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).
,,	Paddy gall fly (Pachydiplosis oryal W)	Commonly found in Viruppu crops in the districts of Quilon and Trichur	*i.* During seedling stage of the crops, if adultam are found in the fields set up light traps. *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). *iii.* Give a top dressing of ammonium sulphate in the affected fields.
,,	Rice grass hopper (Hero glyphlds)	Commonly found in the various parts of Palghat and Tellicherry districts though the damage done is of 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.C. 10 per cent.

APPENDIX C—(*cont.*)

Crop	Pest (Scientific name)	Distribution	Control
1	2	3	4
Paddy—(*cont.*)	Leaf roller (Craphalocrocis medinalis G)	Commonly found in Viruppu crop in the districts of Quilon and Trichur	Spray D.D.T. suspension at the rate of 1lb. of 50 per cent wettable powder in 25 gallons of water (30 to 35 gallons required per acre).
,,	Paddy cockchaferbuttle (Phyllognathus dronysins F)	Found in Kottayam district.	Prior to sowing plough into the soil 28 lb. of 5 per cent Aldrin dust or 56 lb. of 10 per cent B.H.C. dust per acre
,,	The paddy jassid. (The green jassid Nephotettix sp. and the white jassid) Tettigoniella spectra Dt	Found in Kottayam district	*i.* Collect the bugs by a hand net on the early stages of attack. *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. *iii.* Dust D.D.T. 5 per cent at the rate of 15 to 20 lb. per acre.
,,	Paddy blue buttle (Leptisan pygameae)	Commonly noticed in Ottappalam and nearby places of the Palghat district, resulting in heavy damage to paddy crops	*i.* Apply 10 per cent B.H.C. dust at 15 to 20 lb. per acre or spray D.D.T. at the rate of 1 lb. 50 per cent wettable powder. 30 to 35 gllons of the suspension required per acre.

APPENDIX D

List of Centres selected for recording Meteorological Information—1957

Trivandrum District

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

Quilon District

1. Adoor
2. Alleppey
3. Ambalapuzha
4. Arukutty
5. Aryankavu
6. Chengannur
7. Harippad
8. Karunagappally
9. Kayamkulam
10. Konni
11. Kottarakkara
12. Mavelikkara
13. Nilamel
14. Paravur
15. Pathanamthitta
16. Punalur
17. Quilon
18. Sherthalai
19. Thiruvalla

Kottayam District

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

Trichur District

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

Palghat District

1. Alathur
2. Cherpolasseri
3. Chittur
4. Mannarghat
5. Ottappalam
6. Palghat
7. Parli
8. Perinthalmanna
9. Ponnani

Kozhikode District

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

Cannanore District

1. Cannanore
2. Hosdurg
3. Irikkur
4. Kasargode
5. Manantoddy
6. Payyannur
7. Taliparamba
8. Tellicherry

APPENDIX E

Glossary of English, Botanical and Vernacular names of Crops

Serial No.	English	Botanical	Malayalam
1	2	3	4
1	Paddy	Oryza sativa	Nellu
2	Wheat	Triticum vulgare	Gothambu
3	Cholam	Sorghum volgare	Cholam
4	Bajara or Spiked millet	Pennisetum typhoideum	Kambu
5	Italian millet	Setaria italica	Thina
6	Samai	Panicum miliare	Chama
7	Ragi	Eleusine coracana	Panjapullu or Koovaraku
8	Maize	Zea mays	Mokka cholam
9	Barley	Hordeum volgana	Barley
10	Bengal gram	Cicer arietinum	Kadala
11	Green gram	Phaseolus mungo	Cherupayaru
12	Black gram	Phasedus radiatus	Uzhunnu
13	Red gram	Cajanus indicus	Thuvara
14	Horse gram	Dolichers biflorous	Muthira or Kanam
15	Cow gram	Vigna catiang	Karameni or Kottappayaru
16	Field beans	Dolichos Lablal	Mochakkota
17	Winged beans	Psophocarpus tebra gonolobus	Chathurapayaru
18	Sword beans	Canavalia ensiforms	Valaringa
19	Cluster beans	Cyamopsis psoralioides	Kothavara
20	Sugarcane	Sachhurum offici-narum	Karimbu

APPENDIX E—(*cont.*)

Serial No.	English	Botanical	Malayalam
1	2	3	4
21	Palmyra	Borassus flabellifer	Karimpana
22	Plantain	Musa sepientun	Vazha
23	Mangoes	Magnifera indica	Mambazham
24	Guava	Psidum guajava	Perakka
25	Pomegranate	Punicagranalum	Mathalam
26	Jack fruit	Artocarpus intigrifoli	Chakka
27	Papaya	Cariota papaya	Omakka or Kappalanga
28	Pine apple	Ananas comosus	Kaithachakka or Piruthichaka
29	Grapes	Vitis vinifer	Munthiringa
30	Lime fruits	Citrus aurantifolia	Cherunaranga
31	Do.	Citrus medica	Vadukappuli naranga
32	Do.	Citrus sinensis	Madhuranaranga
33	Bamblimas	Citrus madima	Bamblimas
34	..	Engenia cumim	Njarapazham
35	Rose apple	Eugenia jamos	Jamba
36	Bread fruit	Artocarpus communis	Simachakka or Kadachakka
37	Sweet Potatoe	Ipmoea batatas	Sarkaravalli or Mathura-Kizhangu
38	Elephant foot yam	Amorphaphallus Campanu'atus	Chena
39	Yam	Diocorea bulbiforia	Kachil
40	..	Dioswrea acullote	Cheruvallikizhangu
41	Colocasia	Colocasia antiquoram	Chempu
42	..	Coleus parviflorus	Koorka or Cheevakizhangu
43	Tapioca	Manihot utilissima	Marachini or Kappa

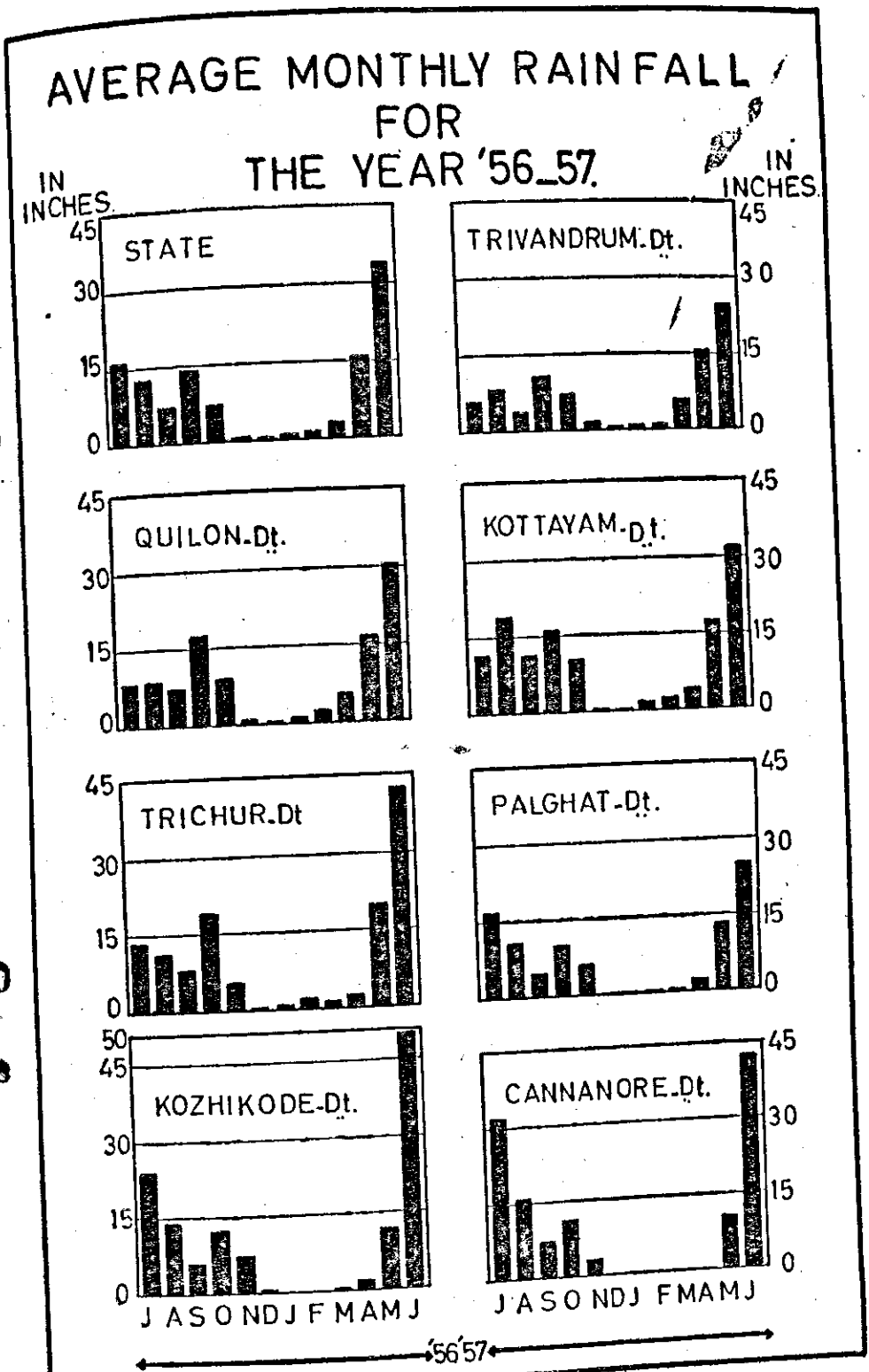
APPENDIX E—(*cont.*)

Serial No.	English	Botanical	Malayalam
1	2	3	4
44	Arrow root	Curcuma angustifolia	Kuva
45	Ladies finger	Habiscus esculentus	Vendakka
46	Drum-stick	Moringa oleifera	Muringakka
47	Brinjal	Solanum melongena	Vazhuthananga
48	Amaranthus	..	Keera or Cheera
49	Ash gourd	Beniancasa cerifera	Kumbalanga
50	Cucumbur	Cucumis sativas	Vellarikka
51	Pumpkin	Cucurbitamaxima	Mathanga
52	Snake gourd	Trichosan thesanguim	Padavalanga
53	Bottle gourd	Lagenaria vulgaris	Churakkai
54	..	Luffa acutangula	Pichanka
55	Bitter gourd	Momordica charntia	Pavakka or Kaipakka
56	Water melon	Citrullus vulgaris	Thannimathan
57	Onion	Allium cepa	Chuvannulli
58	Cabbage	Brassica oleracea	Mottakkoose
59	Tomato	Lycopersicum	Thakkali
60	Carrot	Danceos Carota	Mullanki
61	Tobacco	Nicotiona tobacum	Pukayila
62	Opium	Papayar somniferum	Karuppu
63	Betel leaves	Piper betel	Vettila
64	Betelnut (Arecanut)	Areca Catechu	Adakka or Pakku
65	Cardamom	Elettaria cardamom	Elakkai
66	Black Pepper	Piper nigrum	Kurumulaku

APPENDIX E—(*cont.*)

Serial No.	English	Botanical	Malayalam
1	2	3	4
67	Long pepper	Piper longum	Tippali
68	Ginger	Zingiber officinalis	Inchi or Chukku
69	Turmeric	Curcuma longa	Manjal
70	Cloves	Eugenia caryophylatta	Kramp or Grampu
71	Cinnamon	Cinnamomum zeylanicum	Karuva or Vazhana
72	Nut-meg	Myrstica fragrus	Jathikka
73	Chillies (Dry)	Capsicum annum	Vettal Mulaku or Kappal Mulaku
	Do. (Green)	"	Pachamulaku
74	Garlic	Allium sativum	Vellulli
75	Corriander	Coriandrum sativum	Kothamally
76	Cummin	Cuminum cyminum	Jirakam
77	Tamarind	Tamarindus indica	Valampuli
78	"	Gareinia cambogia	Kodampuli or Pinaru
79	Kari leaf	Murraya kocnigui	Karivepila
80	Neem (Margosa)	Azadirachta indica	Vepu
81	Sesamum	Sesamum indicum	Yellu
82	Castor	Ricinus communis	Avanakku
83	Ground nut	Arachis hypogea	Nilakkadala
84	Cocoanut	Cocos nucifera	Thenga or Nalikeram
85	Alexandrian lamel	Calophyllum inophyllen	Punna
86	Cashew nut	Anacardium occidentale	Parankiyandi or Kasuandi
87	Lemongrass	Cymbopogon spicies	Ezhumpullu or Thailapullu
88	Cotton	Gossypium herbaceum	Paruthi
89	Jute	Corchorous capsularis	Chanam

APPENDIX F


AVERAGE MONTHLY RAINFALL
FOR
THE YEAR '56_57.
IN INCHES
IN INCHES
STATE
TRIVANDRUM.Dt.
QUILON.Dt.
KOTTAYAM.Dt.
TRICHUR.Dt
PALGHAT-Dt.
KOZHIKODE-Dt.
CANNANORE.Dt.
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15
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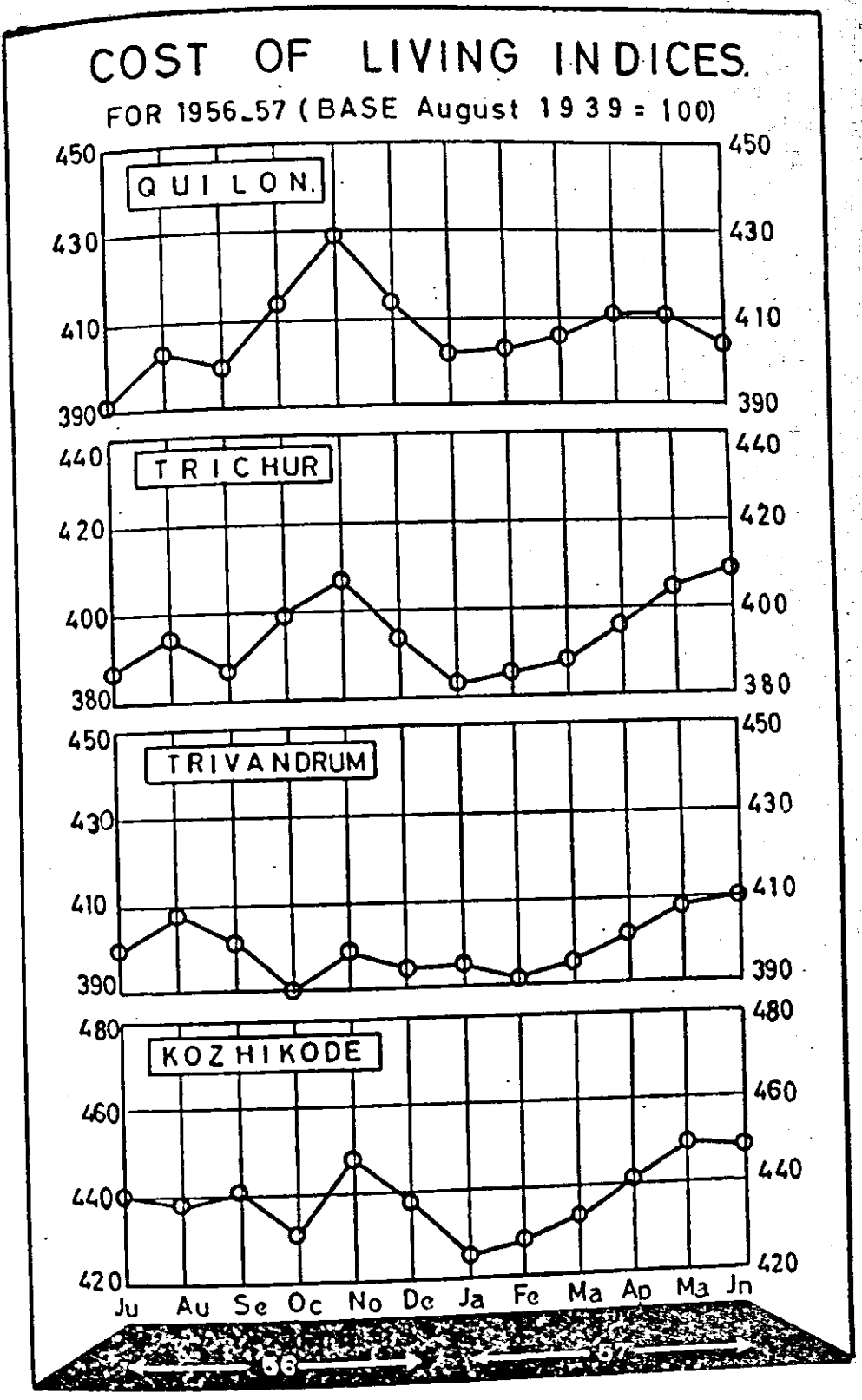
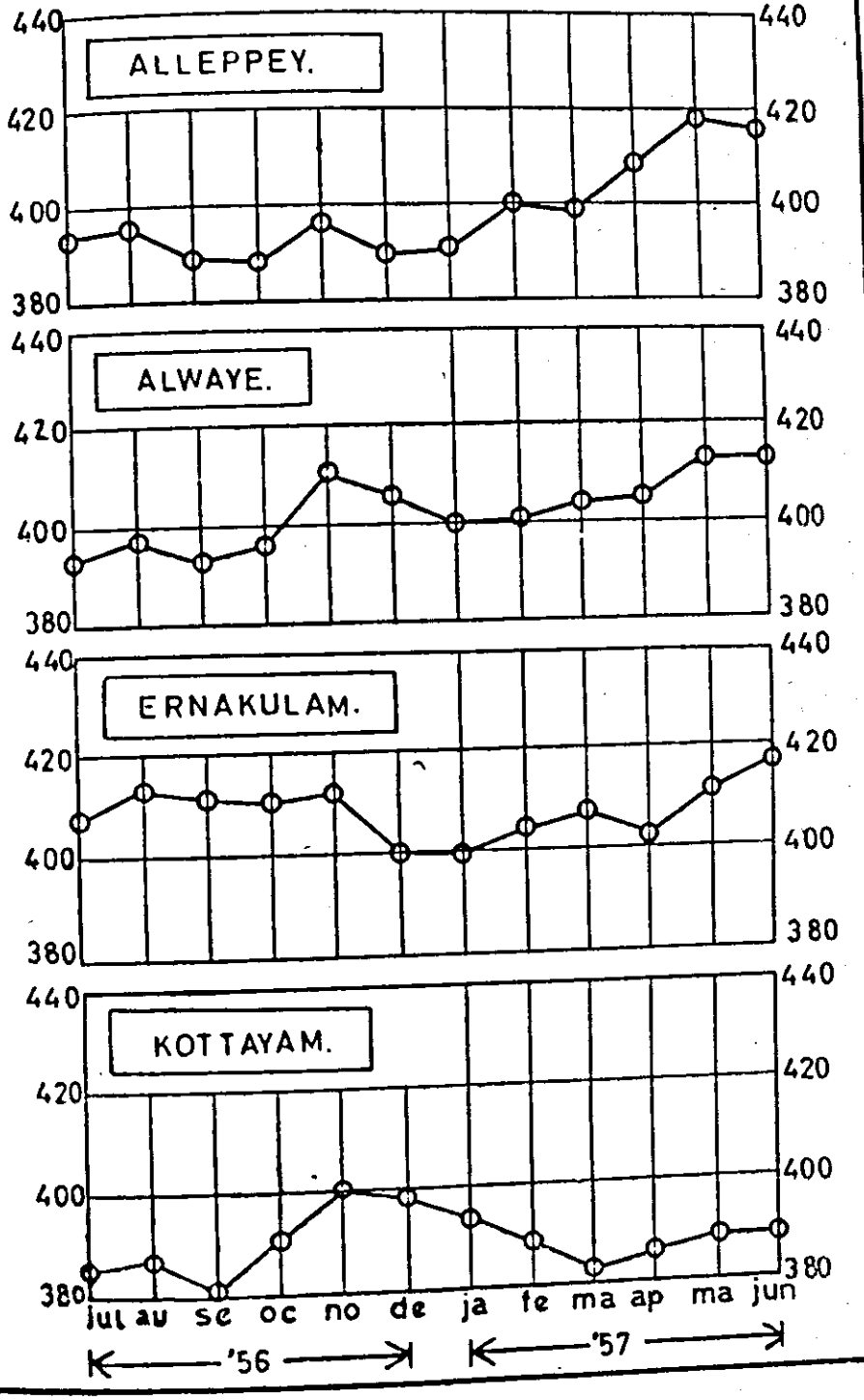
J A S O N D J F M A M J
'56'57

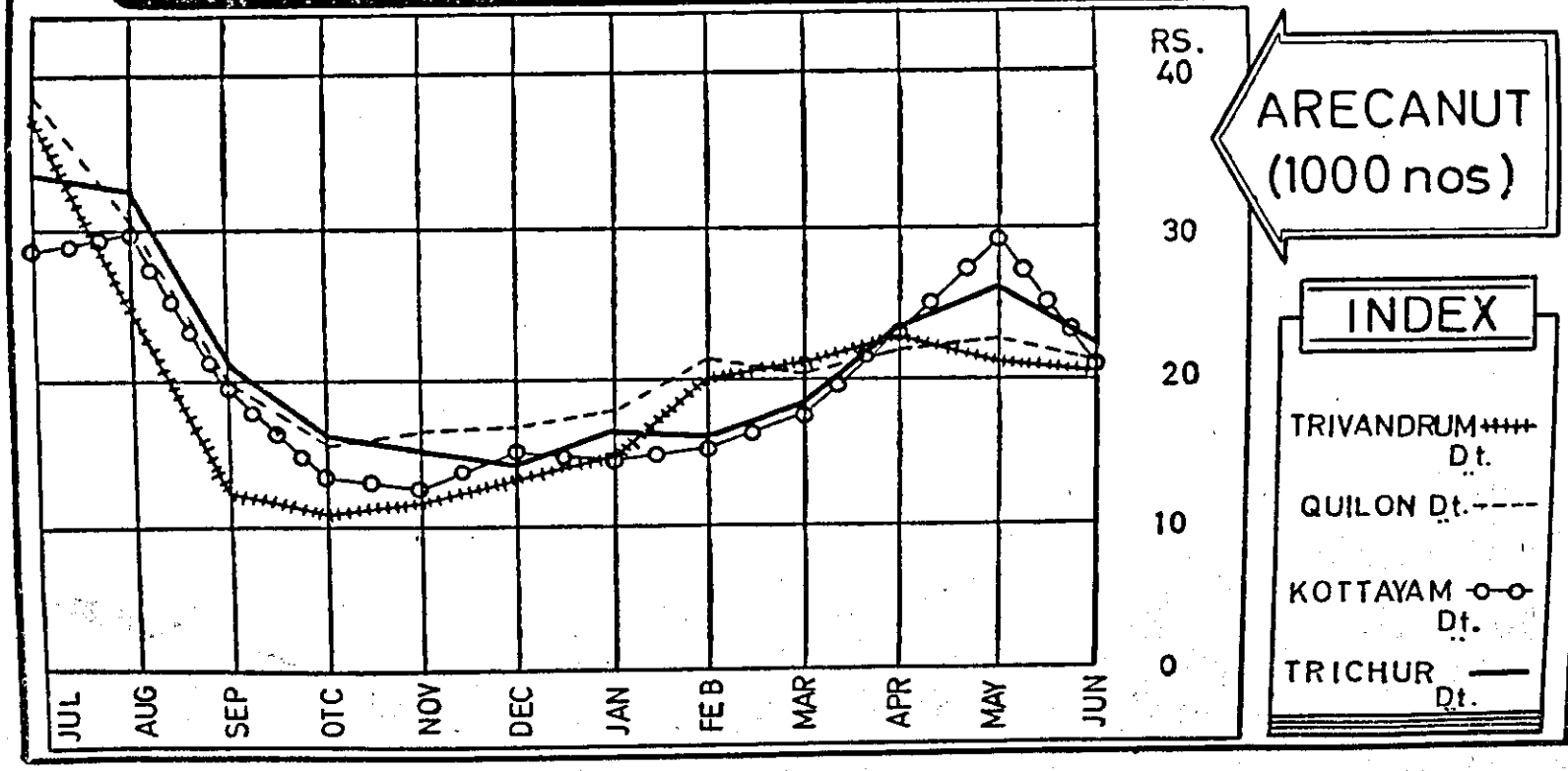

COST OF LIVING INDICES.
FOR 1956-57 (BASE August 1939 = 100)
QUILON.
450
430
410
390
TRICHUR
440
420
400
380
TRIVANDRUM
450
430
410
390
KOZHIKODE
480
460
440
420
Ju Au Se Oc No De Ja Fe Ma Ap Ma Jn
56
57

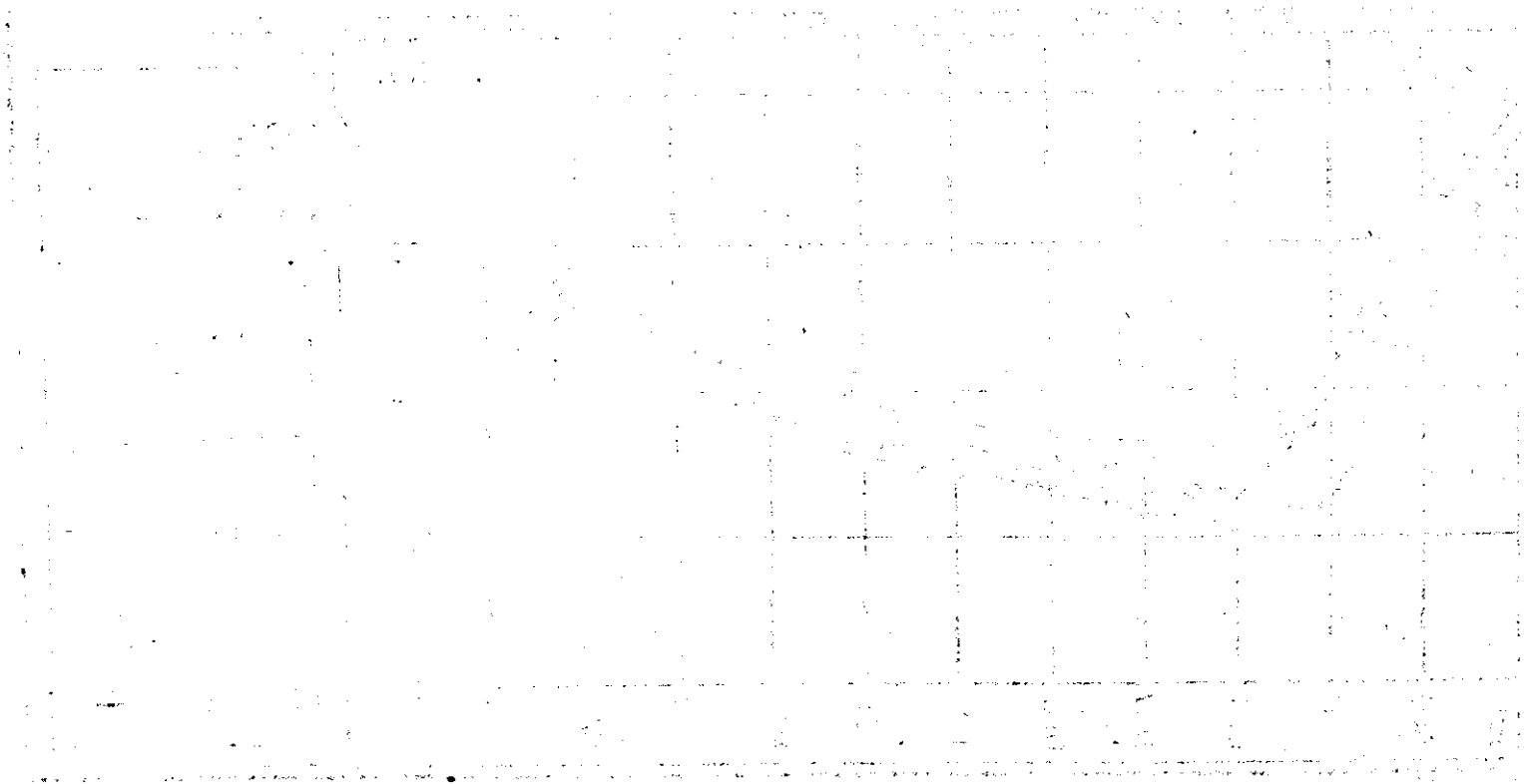
COST OF LIVING INDICES

FOR 1956_57 (BASE August 1939 = 100)

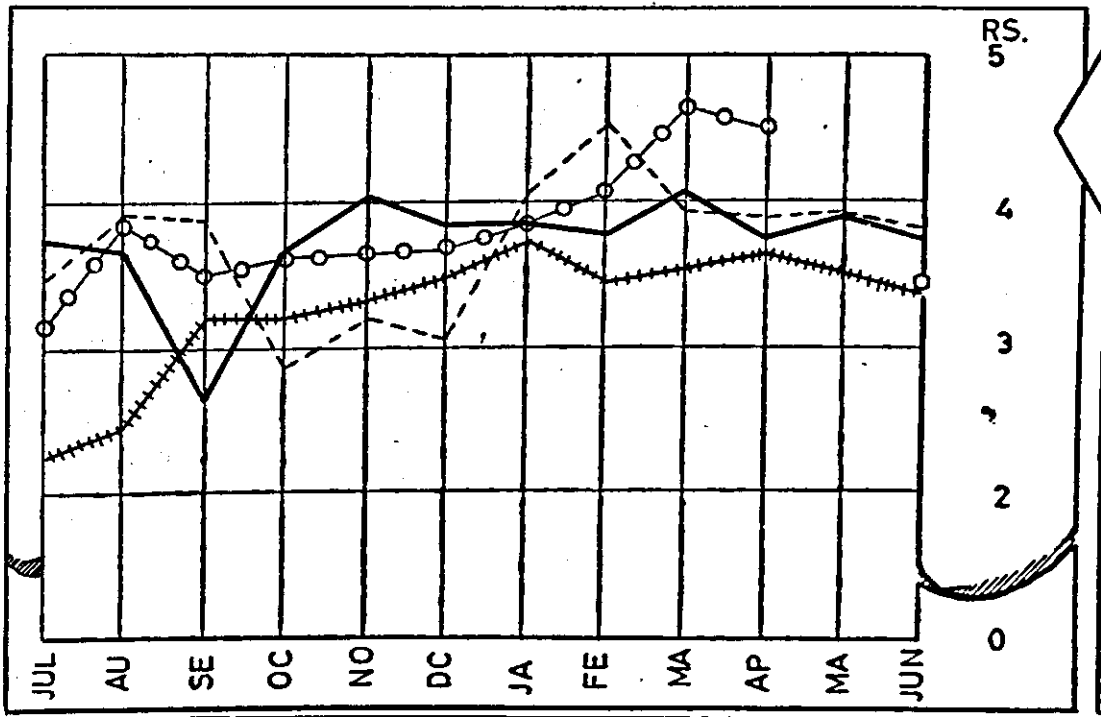


AVERAGE MONTHLY FARM PRICES '56-'57



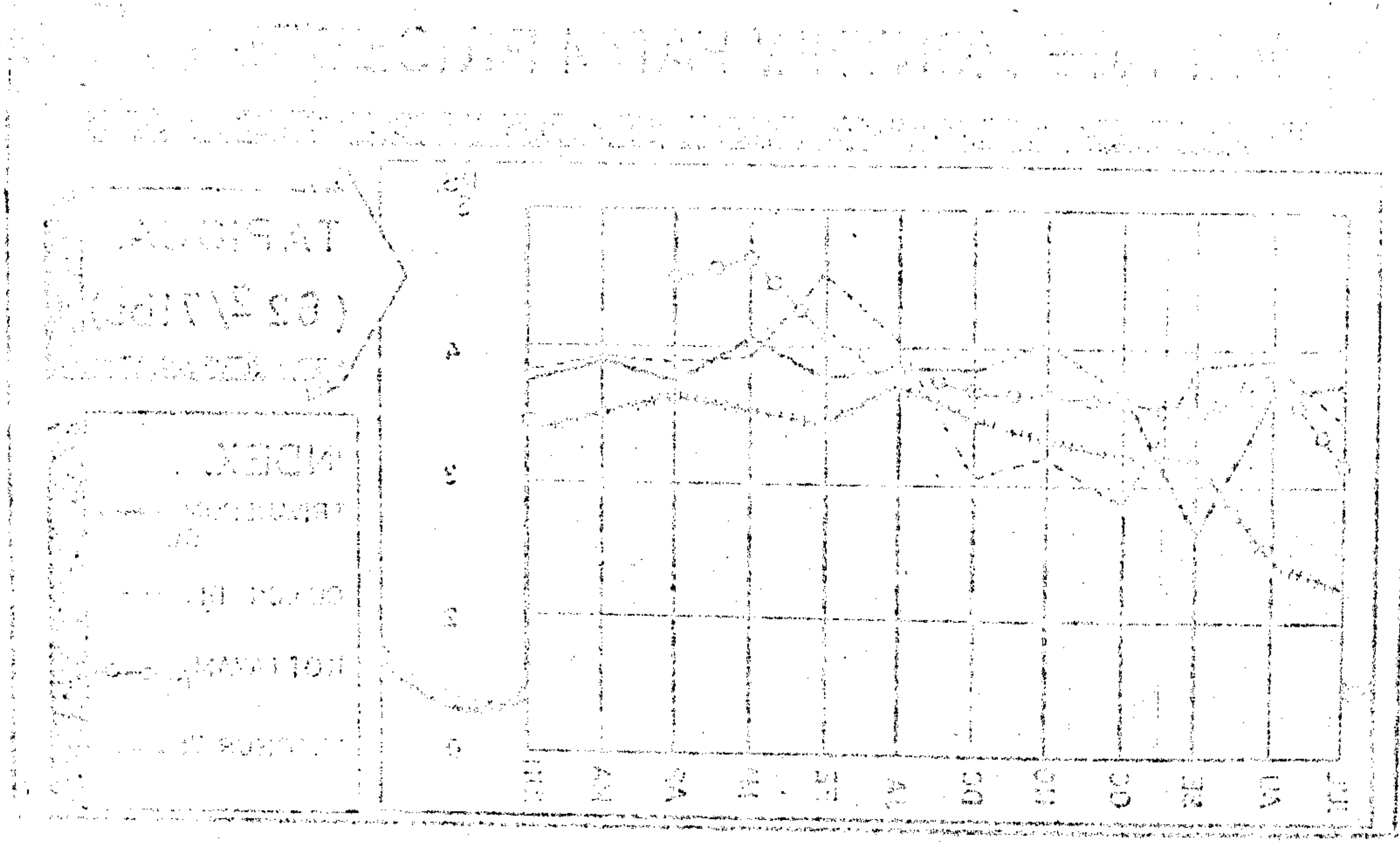


AVERAGE MONTHLY FARM PRICES,'56-'57.

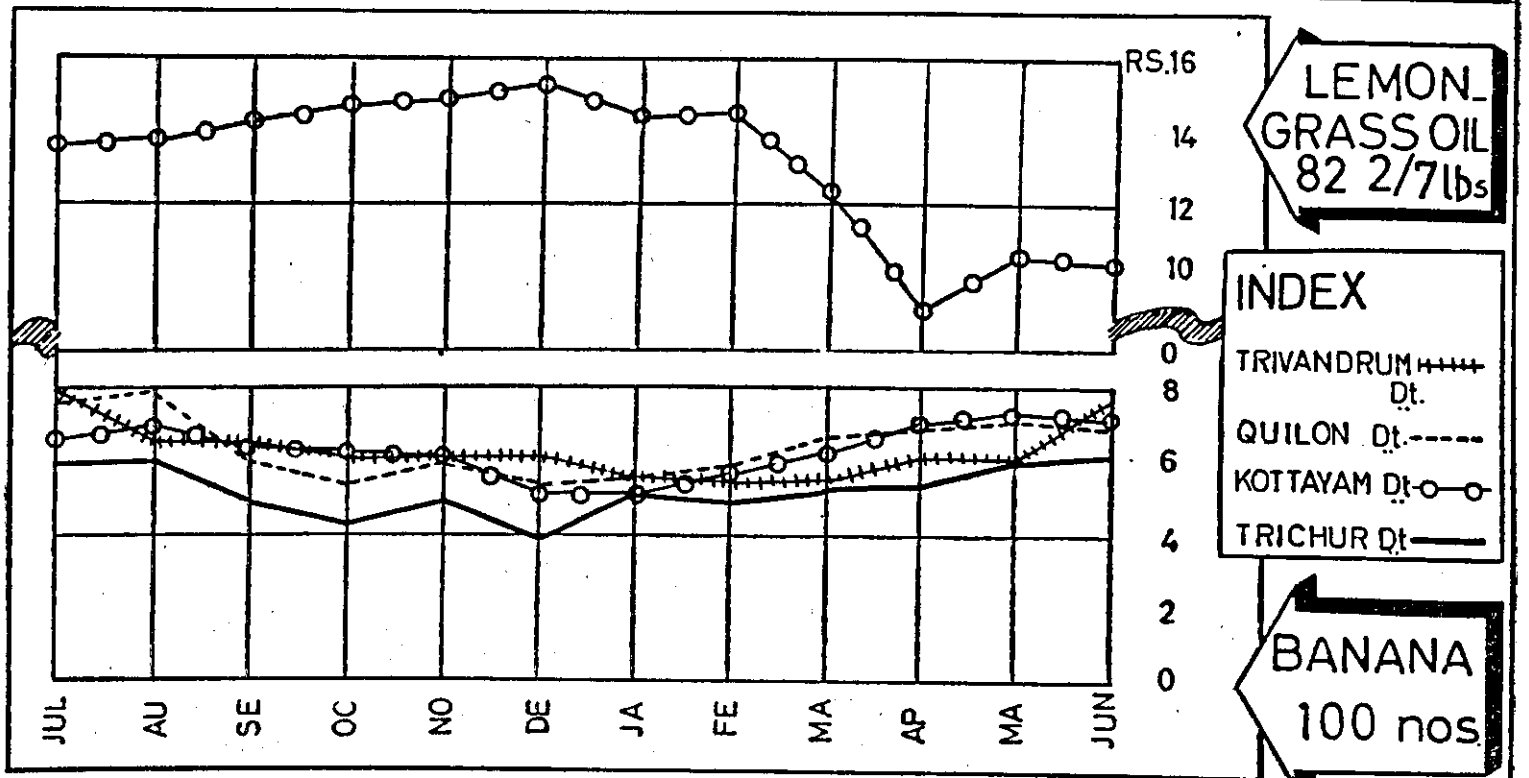


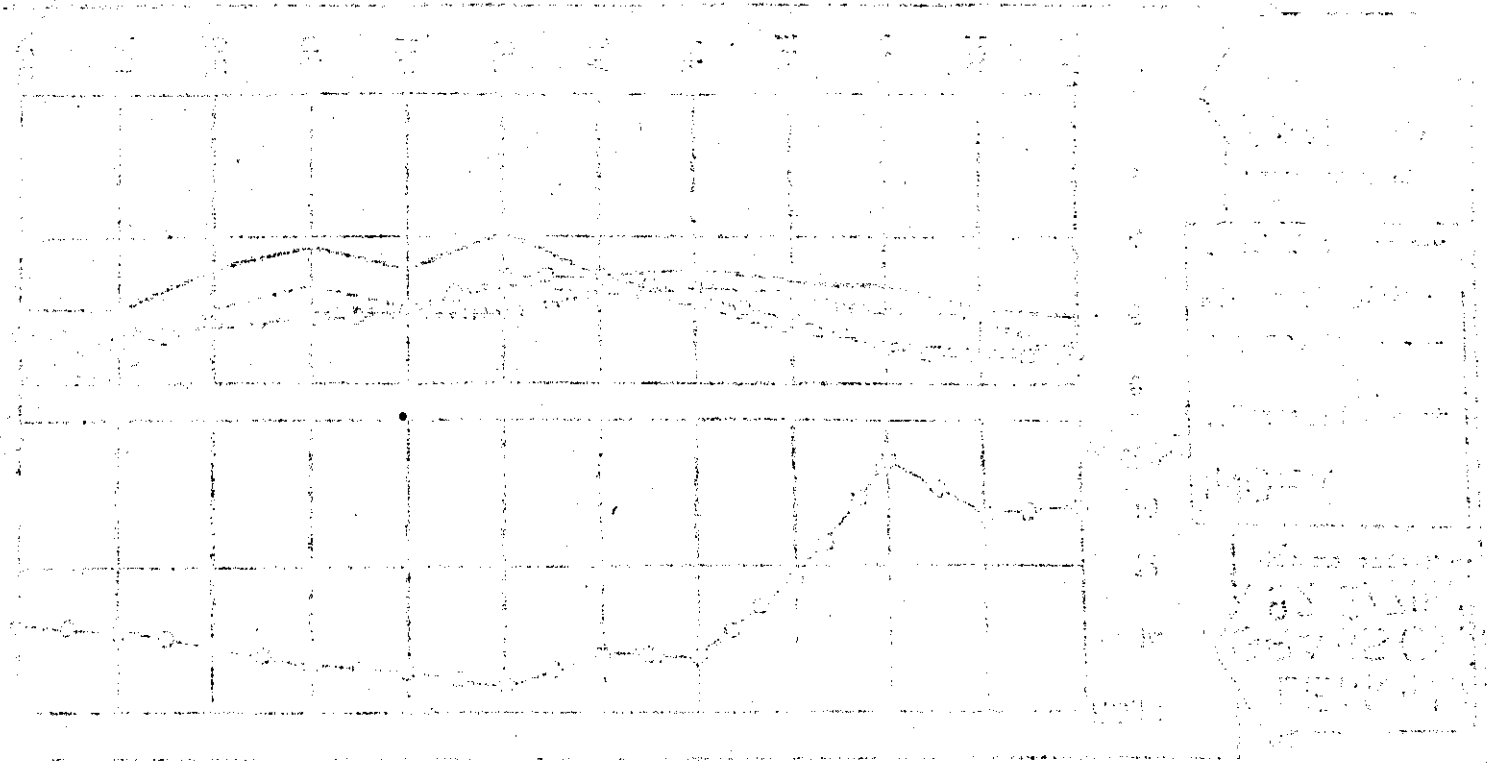
TAPIOCA.
(82 2/7lbs)

INDEX.
TRIVANDRUM Dt.
QUILON Dt.
KOTTAYAM Dt.
TRICHUR Dt.

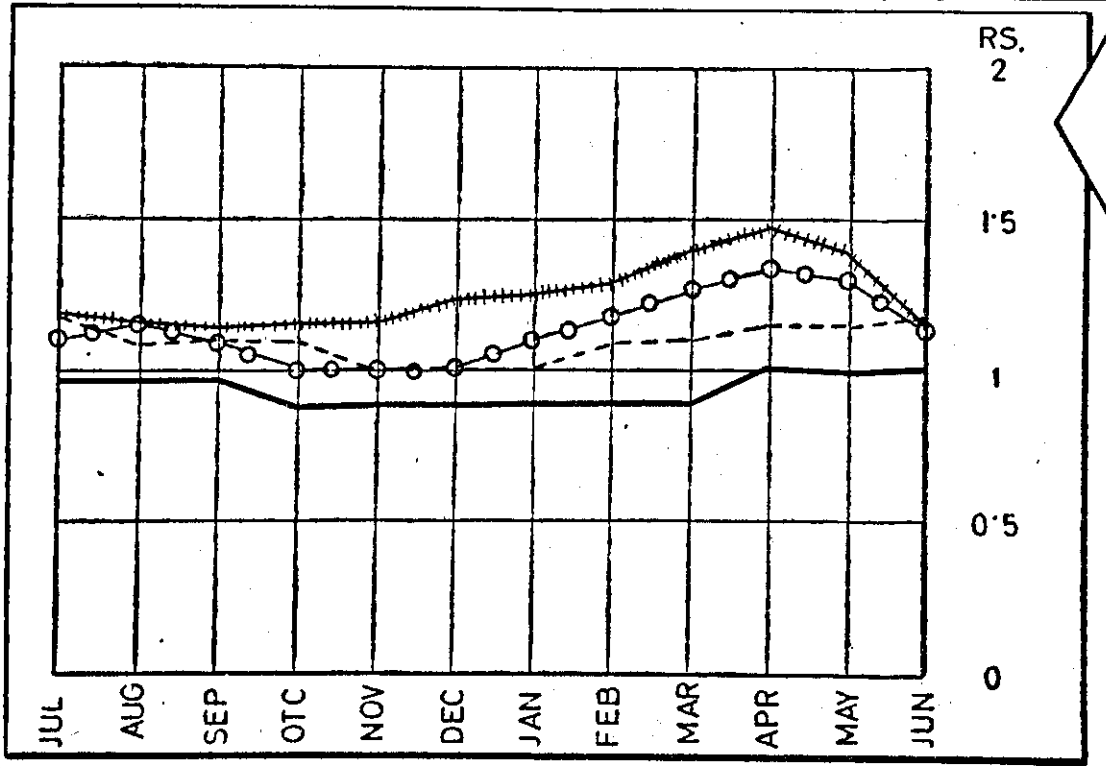


AVERAGE MONTHLY FARM PRICES,'56-'57





AVERAGE MONTHLY FARM PRICES '56 - '57



PLANTAIN
(100 nos.)

INDEX

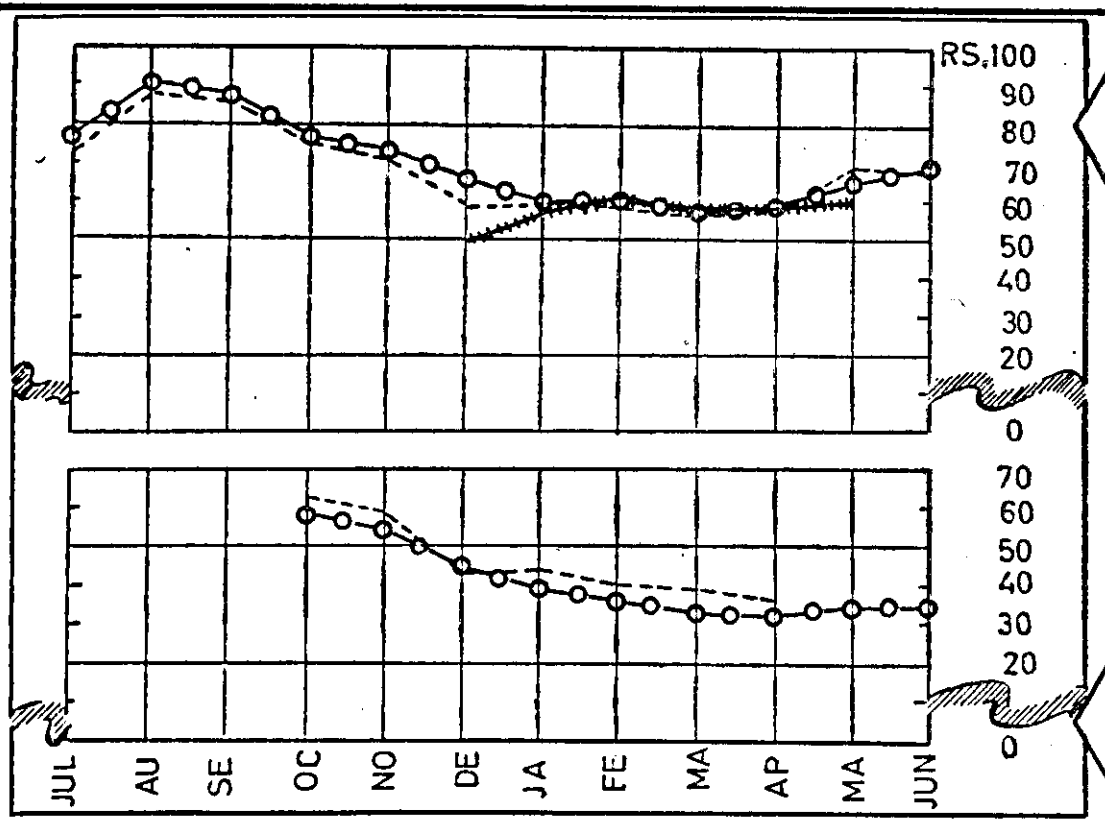
TRIVANDRUM Dt.

QUILON Dt.

KOTTAYAM Dt.

TRICHUR Dt.

AVERAGE MONTHLY FARM PRICES,'56-'57



PEPPER.
(82 2/7lbs)

INDEX

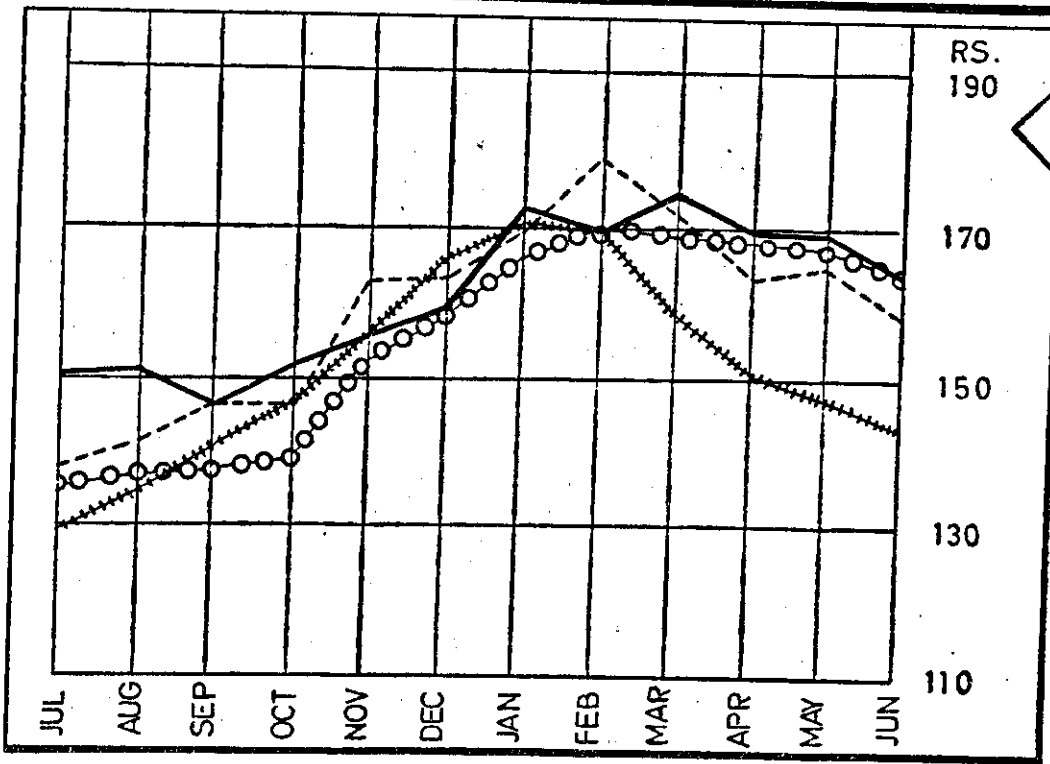
TRIVANDRUM Dt

QUILON Dt

KOTTAYAM Dt

GINGER.
(82 2/7lbs.)

AVERAGE MONTHLY FARM PRICES_56'57



COCONUT(1000_nuts_with husk)

INDEX

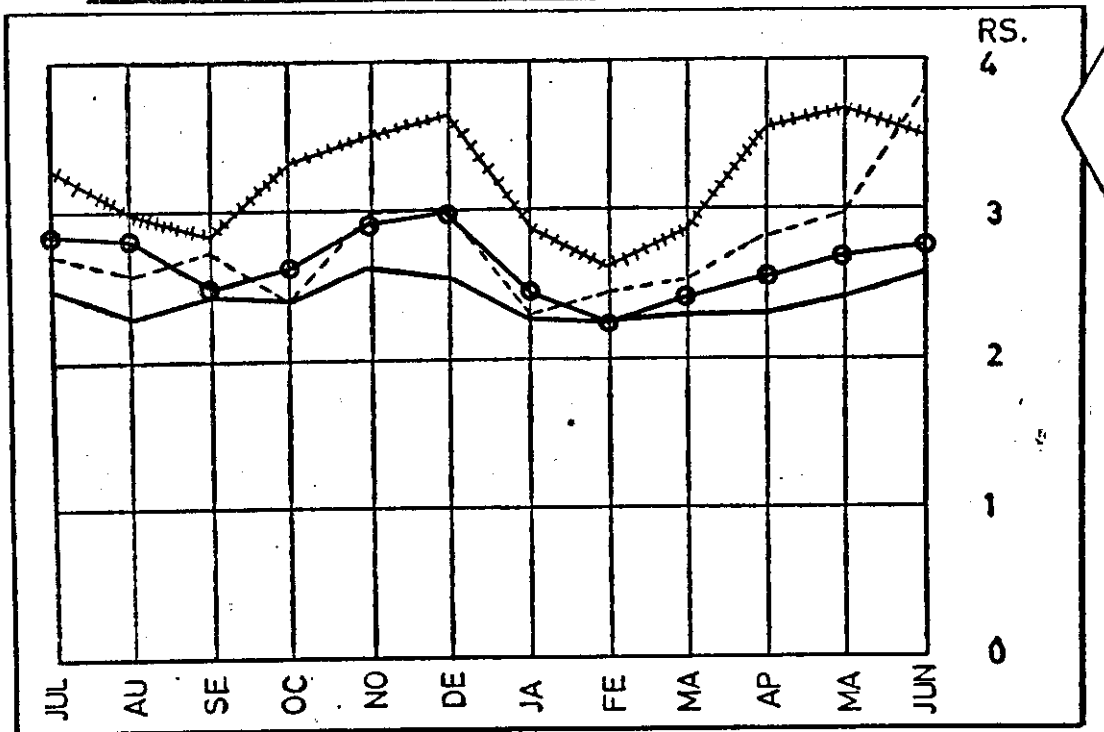
TRIVANDRUM Dt.

QUILON Dt.

KOTTAYAM Dt.

TRICHUR Dt.

AVERAGE MONTHLY FARM PRICES,'56–'57.



PADDY.
(Para)

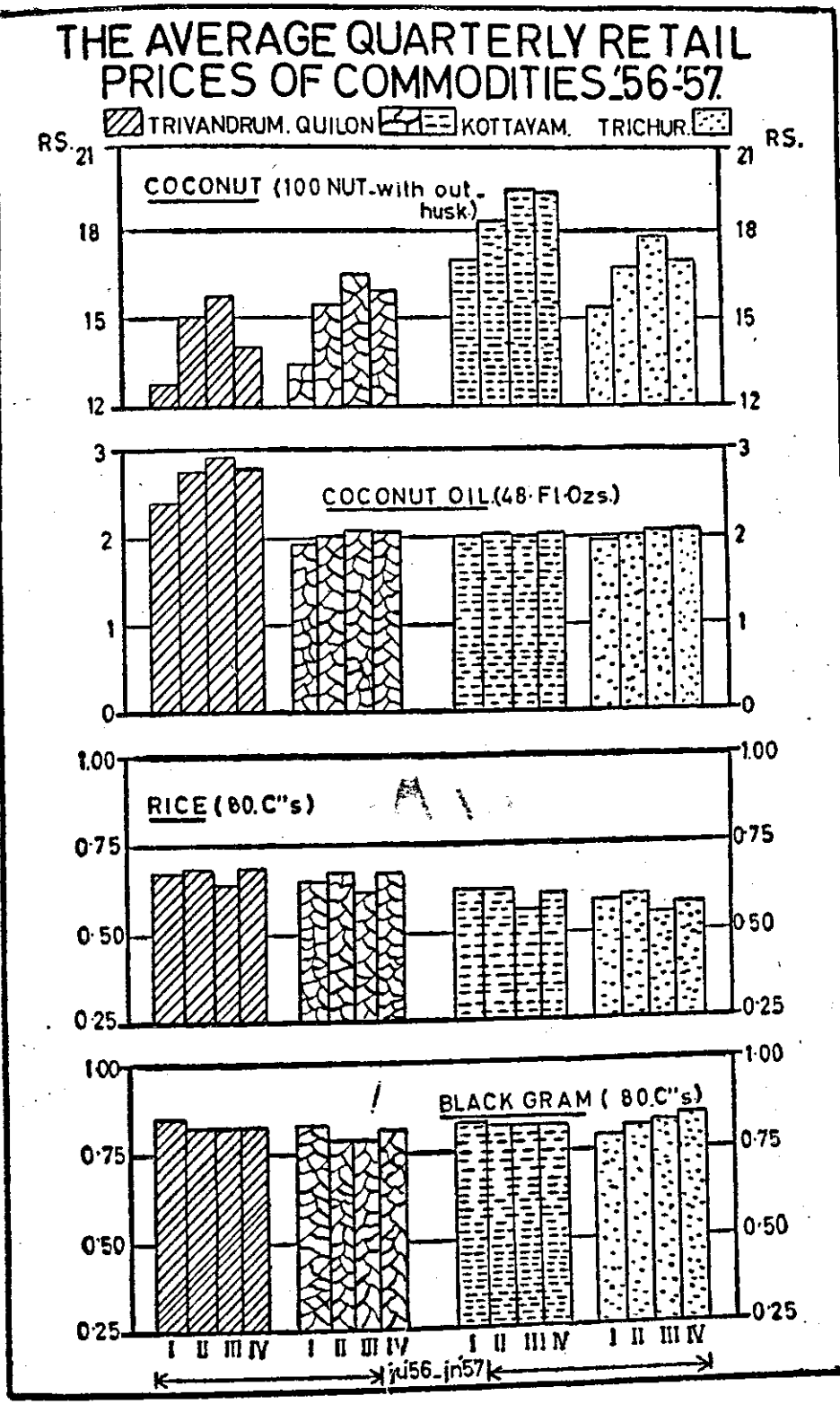
INDEX

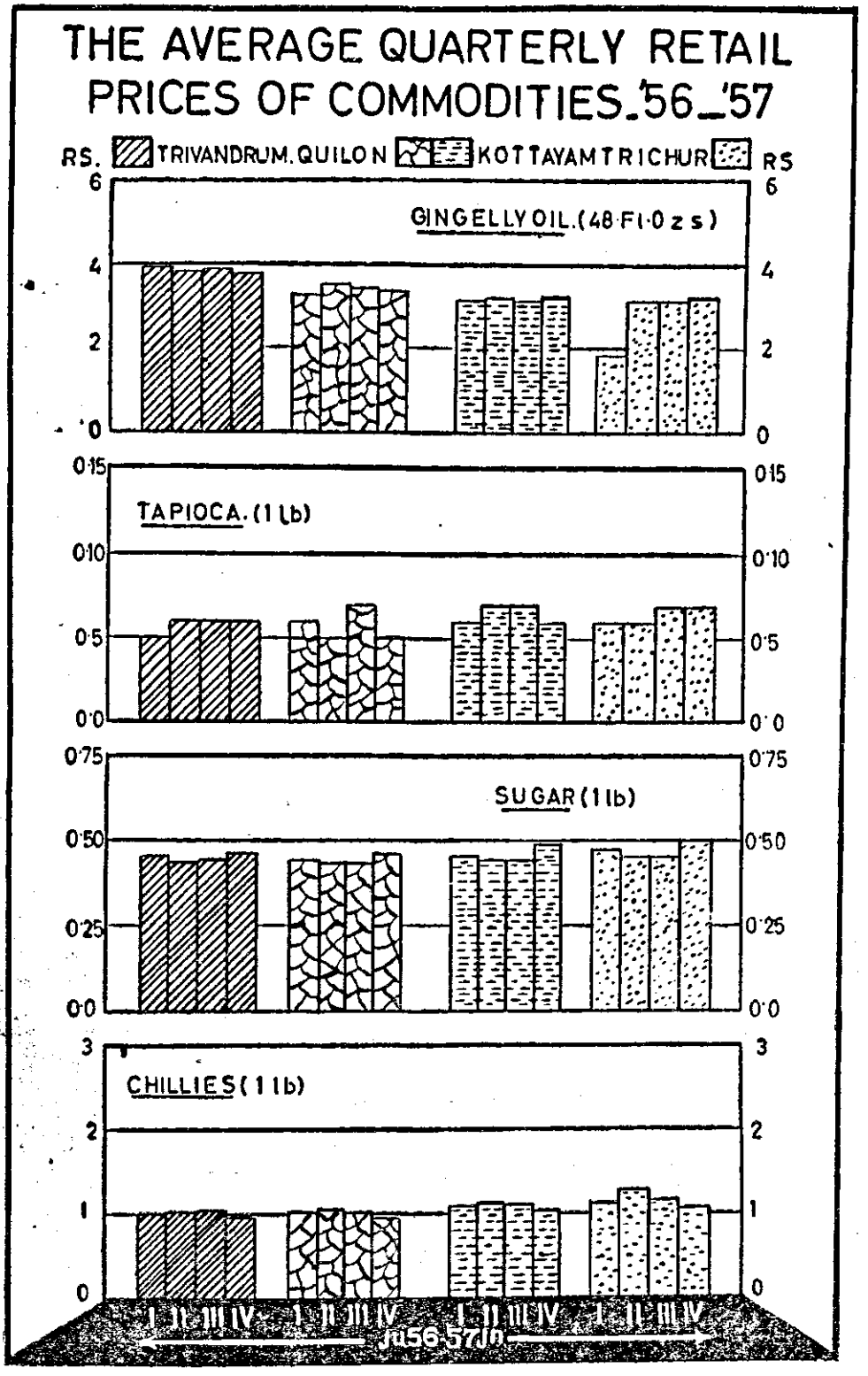
TRIVANDRUM Dt.

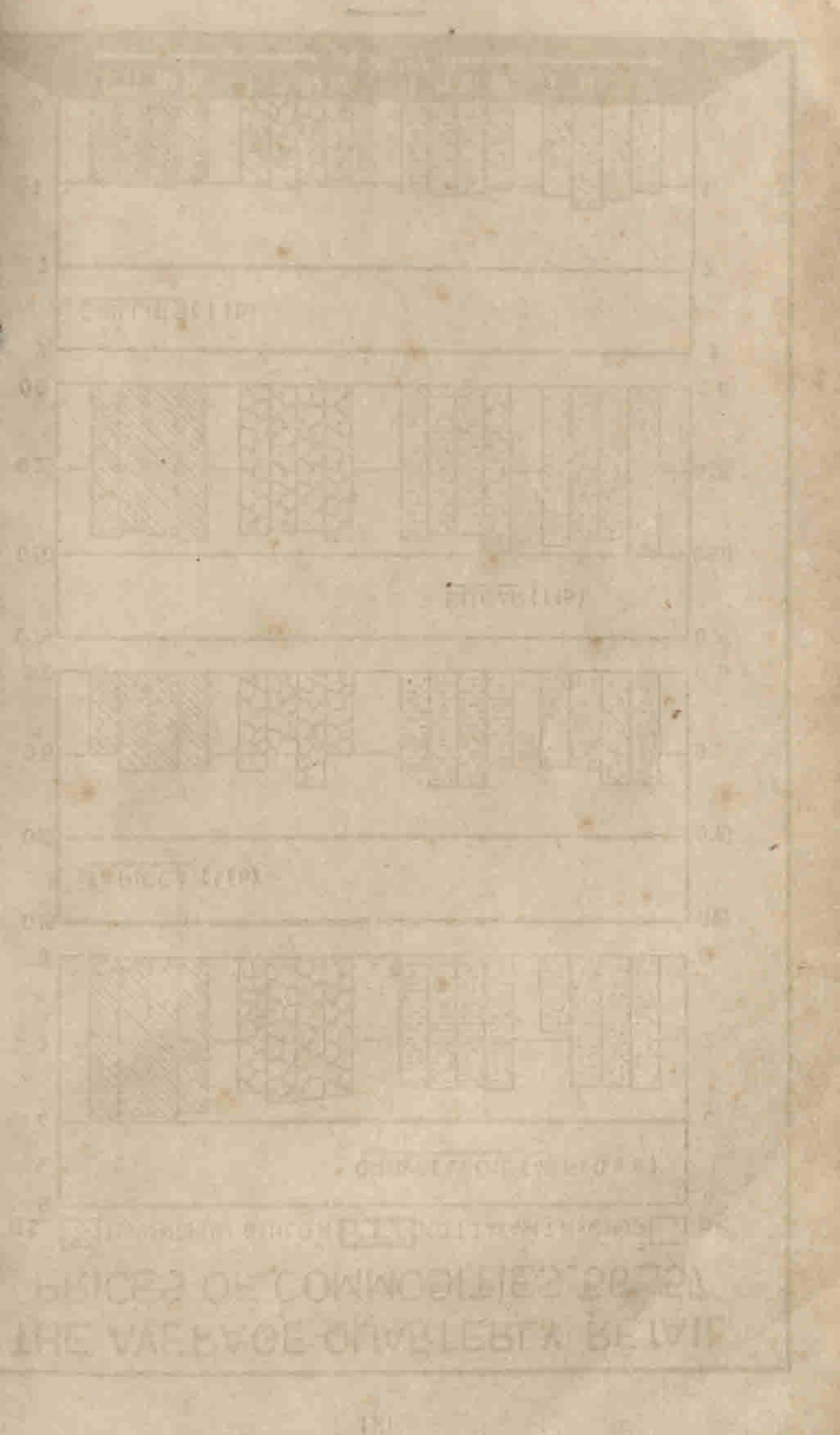
QUILON Dt.

KOTTAYAM Dt.

TRICHUR Dt.


THE AVERAGE QUARTERLY RETAIL PRICES OF COMMODITIES '56-'57
TRIVANDRUM. QUILON
KOTTAYAM.
TRICHUR.
RS.
COCONUT (100 NUT-with out-husk)
COCONUT OIL (48·Fl·Ozs.)
RICE (80.C"s)
BLACK GRAM (80.C"s)
I II III IV
ju'56-jn'57


THE AVERAGE QUARTERLY RETAIL PRICES OF COMMODITIES.'56_'57
RS.
TRIVANDRUM.
QUILON
KOTTAYAM
TRICHUR
RS
GINGELLY OIL.(48 Fl·Ozs)
TAPIOCA.(1 lb)
SUGAR(1 lb)
CHILLIES(1 lb)
I II III IV I II III IV I II III IV I II III IV
Jn56.57Jb



Names of Agents appointed for the sale of Government publications in the erstwhile Malabar area

1. Sri Justus Paul, Proprietor, J. S. Paul and Sons, Book Sellers, Cannanore.
2. Messrs. Moulavi Book Depot, Book Sellers, M. A. Bazar, Kasargode.
3. Sri G. Vithal Prabhu, News Agent, Manjeswar.
4. Messrs. Touring Book Stall, Calicut.
5. Messrs. K. R. Brothers, Calicut.
6. Messrs. K. P. Ahmed Kunhi and Bros., Camp Bazar, Cannanore.
7. Sri Kottayi Gopalan, Book Seller and Stationery Merchant, Main Road, Tellicherry.