

## SEASON AND CROP REPORT 1975-76

### FOREWORD

This report is the 17th issue in the series of season and crop reports relating to Kerala State. It deals with the different aspects of the agricultural economy of the state during the year 1975-76. The data relating to land use, area under crops and production of crops are based on the results of the T. R. S. conducted in 10 per cent villages of the state.

The report consists of four parts as detailed below:

- Part I—Narrative part
- Part II—Summary tables
- Part III—Detailed tables
- Part IV—Appendices

DR. P.A. NAIR,  
*Additional Director-in-charge*

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**PART I**  
**REPORT**

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# SEASON AND CROP REPORT FOR KERALA 1975-76

## 1. General

Kerala is a small State lying at the south-west corner of Indian peninsula between  $8^{\circ}18'$  and  $12^{\circ}48'$  North latitudes and  $74^{\circ}52'$  and  $77^{\circ}22'$  east longitudes. It has a geographical area of 3,886,400 hectares which accounts for only 1.2 per cent of the total area of the country. The State is gifted with a long coast line of 580 km. The width of the state varies from 130 km. in the middle to 32 km. in the extremities.

The physical configuration of the State is singularly diversified. The forest clad westernghats form the eastern boundary of the State. From the westernghats the country undulates to the west presenting a series of hills and valleys intersected by a number of rivers and streams. On the west, the country is more or less flat. These characteristics demarcate the State into three natural regions viz. the high land, the midland, and the low land and are responsible for the diversity in the plant growth.

The high land is most suited for the cultivation of plantation crops like tea, rubber, coffee and cardamom. The midland region is famous for its diversity in the cropping pattern. Rice is grown in the valleys, while tapioca, coconut, arecanut, rubber, pepper, etc. are cultivated in the slopes of hills. The low land is monopolised for the cultivation of coconut and rice.

Agriculture is the main occupation of the people. Paddy and coconut are the important crops cultivated in the State. Paddy is cultivated in three seasons viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja). During Autumn and Winter, paddy is cultivated more extensively than during the summer season. Other important seasonal crops cultivated in the State are tapioca, groundnut, pulses, tubers, sesamum and ginger. Important annual crops grown in the State are banana and plantains, sugarcane and pineapple. The major perennial crops of the State are coconut, arecanut, cashew and pepper in addition to plantation crops such as tea, coffee, rubber and cardamom. Jack and mango are also grown extensively in the State.

A heavy rainfall, a warm humidity of atmosphere and a fairly uniform temperature throughout the year are the characteristic features of the State. The state has a normal rainfall of about 3000 mm per annum.

For administrative purposes the State is divided into 11 districts and 57 taluks. The districts are Trivandrum, Quilon, Alleppey, Kottayam, Idikki, Ernakulam, Trichur, Palghat, Malappuram, Kozhikode and Cannanore.

## 2. Population

The population of the State as per 71 census is 213.47 lakhs and the density of population is 549 per sq. km. The estimated population for 1975 is 232.45 lakhs. The district-wise distribution of population of the density per sq. km. as per 1971 census are given below:

TABLE I

<i>District</i>	<i>Population 1971 census (lakhs)</i>	<i>Density per sq.km. 1971 census</i>
Trivandrum	21.99	1003
Quilon	24.13	522
Alleppey	21.26	1128
Kottayam	15.39	679
Idikki	7.65	149
Ernakulam	21.64	914
Trichur	21.29	702
Palghat	16.85	383
Malappuram	18.56	510
Kozhikode	21.06	565
Cannanore	23.65	415
Kerala	213.47	549

The per capita land available for cultivation in the State is 0.10 hectare and the per capita cultivated land is 0.09 hectare.

In literacy Kerala is the leading State in India. According to 1971 census the percentage literacy in the State is 60.16 and this is more than double the All India rate of 29.32.

## 3. Rainfall

The yearly normal rainfall of the State is 3,017.6 mm. It varies from 2,001.6 mm. in Trivandrum District to 3,796.0 mm. in Kozhikode District. The seasons are mainly controlled by the two periods of rainfall viz., the south-west monsoon (from June to August) and north-east monsoon (from October to December). June to September is the season when nearly two thirds of the annual rainfall is received. Two essential features of the distribution of the rainfall are its progressive increase from south to north and a similar increase from stations on the coast to stations at the foot of the ghats. The normal and the actual rainfall for the year are furnished in the following table:



TABLE II

## Normal and Actual Rainfall

<i>District</i>	<i>Normal rainfall in m.m.</i>	<i>Actual rainfall m.m. (1975-76)</i>
(1)	(2)	(3)
Trivandrum ..	2001.6	1533.9
Quilon ..	2760.2	2354.2
Alleppey ..	3012.0	2940.9
Kottayam ..	3462.6	2887.1
Idikki ..	2898.9	3034.0
Ernakulam ..	3548.5	2969.5
Trichur ..	3177.4	2936.5
Palghat ..	2397.7	2218.1
Malappuram ..	2900.1	2625.6
Kozhikode ..	3796.0	3427.8
Cannanore ..	3437.9	3086.9
State Average ..	3017.6	2728.6

The monthly normal rainfall and monthly actual rainfall are given in Tables 1.1 and 1.2 of Part III.

## 4. Soil

The different types of soils seen in the State are classified as follows:—

- (1) The hilly and forest soil seen all along the eastern part of the State.
- (2) The sandy soil seen in the coastal belt.
- (3) The laterite soil seen in the midland.
- (4) The black soil occurring as patches and seen in the eastern border of Palghat District.
- (5) The peat or kari soil seen in Alleppey District.
- (6) The alluvial soil seen along the southern and eastern parts of Vembanad lake and in small patches in Trivandrum District.
- (7) The red soil found in the extreme tip of Trivandrum Taluk.

## 5. Communication

The State has got a well developed road transport system. The different parts of the State are connected by a net work of roads. The State is also connected with the neighbouring states by roads. There is a railway line between Trivandrum in the South and Kasargod in the north. By conversion of meter guage to broad guage from

Trivandrum to Ernakulam, the communication between the different parts of India and the State capital became easy. The backwaters of the State with a net work of connecting canals provide immense facilities of inland water transport. Besides the major part of Cochin there are eight minor ports and three intermediary ports in the State. There are two Aerodromes, one at Trivandrum and the other at Cochin.

## 6. Land utilisation

The land utilisation particulars of the State relating to 1975-76 have been furnished in Table-A of the summary tables and district-wise details in table 2.1 of the detailed tables. The particulars of different land use for the year are given below. The estimates for 1975-76 have been framed on the basis of the T.R.S. conducted in 10 per cent of the villages in the State. There are variations in figures for 1975-76 compared to the figures for 1974-75. It may be noted that the figures for 1974-75 are the estimates from a very small sample (0.6 per cent) whereas the figures for 1975-76 are the estimates from a sufficiently large sample (10 per cent). Naturally the estimates of 1975-76 have more precision.

(1) *Total area of the State.*—The total area of the State according to village papers is 3,885,497 hectares. The district-wise area of the State is furnished in the table given below:

TABLE III

### District-wise Area of the State

District	Area in hectare (as per village records)	Percentage	Area as per 1971 census (hectares)
(1)	(2)	(3)	(4)
Trivandrum	218,600	5.6	219,200
Quilon	474,290	12.2	462,300
Alleppey	182,270	4.7	188,400
Kottayam	219,550	5.7	219,500
Idikki	515,048	13.2	508,700
Ernakulam	235,319	6.1	237,700
Trichur	299,390	7.7	303,200
Palghat	438,980	11.3	440,000
Malappuram	363,230	9.3	363,800
Kozhikode	371,150	9.6	372,900
Cannanore	567,670	14.6	570,600
State	3,885,497	100.0	3,886,400

(2) *Forests.*—The total forest area of the State is 1,081,506 hectares and this is about 28 per cent of the geographical area. District-wise details of forest for 1974-75 and 1975-76 are given below in Table IV.

TABLE IV  
Area Under Forests

District (1)	Area under forests (hectares)	
	1974-75 (2)	1975-76 (3)
Trivandrum ..	43,860	49,861
Quilon ..	209,074	236,048
Alleppey ..	513	518
Kottayam ..	5,912	8,141
Idikki ..	297,626	260,993
Ernakulam ..	1,312	8,123
Trichur ..	131,634	103,619
Palghat ..	67,185	136,257
Malappuram ..	97,627	103,417
Kozhikode ..	128,607	90,876
Cannanore ..	63,932	83,656
State ..	1,047,282	1,081,506

(3) *Land put to non-agricultural uses.*—The estimated area under non-agricultural uses for the year is 259,230 hectares as against 295,113 hectares in the previous year. District-wise break up is furnished in the following table:

TABLE V

District (1)	Area under non-agricultural uses/hectares	
	1974-75 (2)	1975-76 (3)
Trivandrum ..	17,534	17,293
Quilon ..	18,042	22,229
Alleppey ..	12,450	26,965
Kottayam ..	12,805	17,696
Idikki ..	14,557	13,517
Ernakulam ..	23,638	30,460
Trichur ..	18,748	18,029
Palghat ..	52,897	32,147
Malappuram ..	14,389	13,925
Kozhikode ..	44,670	20,620
Cannanore ..	65,383	46,349
State ..	295,113	259,230

Cannanore, Palghat and Ernakulam are Districts having large area under non-agriculture uses. The percentage of area under non-agricultural uses to the total area of the district varies from 3 to 15 per cent. The lowest being Idikki and the highest being in Alleppey.

(4) *Barren and uncultivable land.*—The area under this category is estimated to be 78,494 hectares as against 64,887 hectares in 1974-75. About 2/3 of the area under this category falls in the three Districts of Idikki, Palghat and Cannanore.

(5) *Permanent pastures and grazing land.*—The estimated area under this class during the year under report is 19,915 hectares where as the area for the previous year is 27,800 hectares. Idikki and Cannanore. Districts account for the major portion of the area under this category.

6. *Land under miscellaneous tree crops.*—The area under this item is estimated as 84,250 hectares during 1975-76 as against 97,687 hectares in 1974-75. More than 60 per cent of the area under this class is situated in Idikki and Cannanore Districts.

7. *Cultivable waste land.*—During the year under report the area under this category is estimated as 113,414 hectares. It was 71,950 hectares in the previous year. District-wise break up for this year and that of the previous year are given in the table given below. About 50 per cent of the cultivable waste lands lie in Idikki and Cannanore Districts.

TABLE VI

District (1)	Area under cultivable waste land (hectare)	
	1974-75 (2)	1975-76 (3)
Trivandrum ..	340	1208
Quilon ..	1985	1557
Alleppey ..	800	2311
Kottayam ..	1308	2524
Idikki ..	13556	33184
Ernakulam ..	1716	4740
Trichur ..	1493	4027
Palghat ..	4017	18374
Malappuram ..	23323	12943
Kozhikode ..	7126	8421
Cannanore ..	16286	24125
State ..	71950	113414

8. *Fallow land other than current fallow.*—The area under this category of land for the year 1975-76 is 22,954 hectares. The corresponding estimate for the previous year is 20,808 hectares.

9. *Current Fallow*.—It is estimated that during the year under report an area of 36,559 hectares of land have come under current fallow as against 24,545 hectares during 1974-75. The district-wise figures for the two years are given in Table VII.

TABLE VII

District (1)	Current fallow (hectare)	
	1974-75 (2)	1975-76 (3)
Trivandrum ..	224	1,304
Quilon ..	484	1,313
Alleppey ..	530	1,475
Kottayam ..	1,849	1,421
Idikki ..	3,711	2,074
Ernakulam ..	3,644	4,815
Trichur ..	1,546	3,583
Palghat ..	2,082	6,342
Malappuram ..	4,677	5,445
Kozhikode ..	1,910	1,615
Cannanore ..	3,888	7,172
State ..	24,545	36,559

10. *Net area sown*.—The estimates of the year under net area sown show a slight decline by 1 per cent when compared to that of the previous year. The area under this item occupies 56 per cent of the total area of the State and 73 per cent of the total cropped area. The percentage of net area sown to the total geographical area is highest in Kottayam District followed by Alleppey and Ernakulam Districts. The district-wise area for 1974-75 and 1975-76 are given below:

TABLE VIII

District (1)	Net area sown (hectare)	
	1974-75 (2)	1975-76 (3)
Trivandrum ..	151,923	145,473
Quilon ..	229,511	207,565
Alleppey ..	164,384	149,095
Kottayam ..	182,943	183,924
Idikki ..	166,861	156,188
Ernakulam ..	185,698	177,789
Trichur ..	139,332	161,513
Palghat ..	293,036	219,503

<i>District</i>	<i>Net area sown (hectare)</i>	
	<i>1974-75</i>	<i>1975-76</i>
(1)	(2)	(3)
Malappuram ..	210,453	213,457
Kozhikode ..	166,426	232,813
Cannanore ..	317,884	341,852
State ..	<u>2,208,451</u>	<u>2,189,172</u>

11. *Area sown more than once.*—The area sown more than once in the State during 1975-76 is 792,107 hectares. This is slightly less than the previous year's estimate of 819,624 hectares. The district-wise details are presented in Table IX. Though the extent of area sown more than once is highest in Quilon District followed by Palghat and Trivandrum Districts, the percentage of area sown more than once to the total geographical area of the District is highest in Alleppey followed by Trivandrum and Trichur Districts.

TABLE IX

<i>District</i>	<i>Area sown more than once (hectares)</i>	
	<i>1974-75</i>	<i>1975-76</i>
(1)	(2)	(3)
Trivandrum ..	94,740	91,575
Quilon ..	147,937	137,784
Alleppey ..	80,329	87,671
Kottayam ..	88,962	63,455
Idikki ..	3,055	10,892
Ernakulam ..	40,840	61,534
Trichur ..	107,025	85,573
Palghat ..	54,693	102,301
Malappuram ..	52,025	63,295
Kozhikode ..	113,390	46,677
Cannanore ..	36,628	41,350
State ..	<u>819,624</u>	<u>792,107</u>

12. *Total cropped area.*—The total cropped area of the State during 1975-76 is estimated as 2,981,279 which forms 76.7 per cent of the total area of the State. The corresponding figure for 1974-75 is 3,028,075 hectares. The district-wise distribution is given in Table X.

TABLE X

<i>District</i>	<i>Total cropped area (hectares)</i>	
	<i>1974-75</i>	<i>1975-76</i>
(1)	(2)	(3)
Trivandrum ..	246,663	237,048
Quilon ..	377,448	345,349
Alleppey ..	244,713	236,766
Kottayam ..	271,905	247,379
Idikki ..	169,916	167,080
Ernakulam ..	226,588	239,323
Trichur ..	246,357	247,086
Palghat ..	347,729	321,804
Malappuram ..	262,478	276,752
Kozhikode ..	279,816	279,490
Cannanore ..	354,512	383,202
State ..	<u>3,028,075</u>	<u>2,981,279</u>

Though Cannanore, Quilon and Palghat rank in the extent of total cropped area in the Districts, Alleppey, Kottayam and Trivandrum rank in the percentage of total cropped area to the geographical area of the Districts. The total cropped area is found to be more than the geographical area in Alleppey, Kottayam, Trivandrum and Ernakulam Districts whereas it is only less than  $\frac{1}{2}$  of the geographical area in Idikki District.

13. *Total cropped area and net area sown.*—Table XI provides the district-wise distribution of the net area sown and total cropped area in the State during 1975-76.

TABLE XI

<i>District</i>	<i>Net area sown (hectares)</i>	<i>Total cropped area (hectares)</i>	<i>Percentage of total cropped area to net area sown</i>
(1)	(2)	(3)	(4)
Trivandrum ..	145,473	237,048	163
Quilon ..	207,565	345,349	166
Alleppey ..	149,095	236,766	159
Kottayam ..	183,924	247,379	135
Idikki ..	156,188	167,080	107
Ernakulam ..	177,789	239,323	135
Trichur ..	161,513	247,086	153
Palghat ..	219,503	321,804	147
Malappuram ..	213,457	276,752	130
Kozhikode ..	232,813	279,490	120
Cannanore ..	341,852	383,202	112
State ..	<u>2,189,172</u>	<u>2,981,279</u>	<u>136</u>

The percentages given in the above table stand for the indices of intensity of cultivation in each district. The percentage of the total cropped area to net area sown is highest in Quilon District which shows that the intensity of cultivation is maximum in Quilon District. Next to Quilon come Trivandrum and Alleppey Districts.



14. The district-wise gross area under seasonal, annual and perennial crops during 1975-76 is given in table XII below:

TABLE XII

**District-wise distribution of area under seasonal, annual and Perennial crops**

<i>District/State</i>	<i>Year 1975-76</i>		<i>Area in (hectare)</i>	
	<i>Seasonal crops</i>	<i>Annual crops</i>	<i>Perennial crops</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)
Trivandrum ..	117,268	4,763	115,017	237,048
Quilon ..	156,090	9,188	180,071	345,349
Alleppey ..	132,102	6,433	98,231	236,766
Kottayam ..	91,675	6,726	148,978	247,379
Idikki ..	30,827	5,066	131,187	167,080
Ernakulam ..	129,008	5,728	104,587	239,323
Trichur ..	148,486	7,984	90,616	247,086
Palghat ..	245,925	5,653	70,226	321,804
Malappuram ..	125,521	5,991	145,240	276,752
Kozhikode ..	71,494	5,638	202,358	279,490
Cannanore ..	124,125	8,269	250,808	383,202
State ..	<u>1,372,521</u>	<u>71,439</u>	<u>1,537,319</u>	<u>2,981,279</u>

Of the gross area under cultivation during the year, 52 per cent are under perennial crops, 46 per cent under seasonal crops and 2 per cent under annual crops. In the case of perennial and annual crops there is no difference between gross area and net area. Hence it can be seen that perennial and annual crops occupies nearly  $\frac{3}{4}$  of the net area under cultivation. In only 4 Districts of the State namely, Alleppey, Ernakulam, Trichur and Palghat, the gross area under seasonal crops is more than  $\frac{1}{2}$  of the gross area under cultivation in the districts.

15. The district-wise distribution of the area under single, double and triple crop of paddy during 1975-76 in the wet lands in the State is given in Table XIII.

TABLE XIII

**District-wise area under single, double and triple crop of paddy in wet lands of 1975-76**

District	Area under paddy (hectares)			Total
	Single crop	Double crop	Triple crop	
(1)	(2)	(3)	(4)	(5)
Trivandrum ..	980	14,513	2,361	17,854
Quilon ..	1,034	24,109	268	25,411
Alleppey ..	28,181	33,191	99	61,471
Kottayam ..	22,867	6,546	60	29,473
Idikki ..	1,383	3,683	123	5,189
Ernakulam ..	11,577	30,405	7,160	49,142
Trichur ..	16,062	44,957	4,416	65,435
Palghat ..	11,504	68,601	6,637	86,742
Malappuram ..	14,044	30,276	3,869	48,189
Kozhikode ..	14,304	16,705	2,099	33,108
Cannanore ..	22,378	21,498	4,145	48,021
Total ..	144,314	294,484	31,237	470,035
Dry land paddy ..	49,029	..	..	..
Grand Total ..	193,343	..	..	..

In the wet lands growing paddy, only less than  $\frac{1}{4}$  of the area is cultivated with single crop paddy and in the rest  $\frac{3}{4}$  the area is cultivated with paddy more than once during the year. More than half of the single crop paddy land lie in the three Districts of Alleppey, Kottayam and Cannanore. The three Districts of Alleppey, Trichur and Palghat accounts for more than 45 per cent of the area under paddy in the State and the three Districts account for nearly half of the production of rice in the State.

### 7. Area under crops

Agricultural crops in the State are broadly classified into food crops and non-food crops. The details of area under food crops in the State have been furnished in Table C of the Summary tables and district-wise area in Table 3.1 of the detailed Tables

#### A. Food Crops

The area under food crops in the State which was 1,885,876 hectares in 1974-75 rose to 1,909,205 hectare during the year registering an increase of 2 per cent. The area under food crops in each District and percentage of that to the total cropped area in the District are as follows:

TABLE XIV

<i>District</i>	<i>Total cropped area (hectares) 1975-76</i>	<i>Area under food crops (hectares) 1975-76</i>	<i>Percentage of area under food crops in each dis- trict to the state total</i>	<i>Area under food crops as percentage to total cropped area</i>
(1)	(2)	(3)	(4)	(5)
Trivandrum ..	237,048	154,449	8.09	65.16
Quilon ..	345,349	204,906	10.73	59.33
Alleppey ..	236,766	152,114	7.97	64.25
Kottayam ..	247,379	130,112	6.81	52.60
Idikki ..	167,080	104,472	5.47	62.53
Ernakulam ..	239,323	160,710	8.42	67.15
Trichur ..	247,086	186,762	9.78	75.58
Palghat ..	321,804	252,492	13.22	78.46
Malappuram ..	276,752	183,385	9.61	66.26
Kozhikode ..	279,490	129,370	6.78	46.29
Cannanore ..	383,202	250,433	13.12	63.35
State ..	2,981,279	1,909,205	100.00	64.04

The area under food crops is maximum in Palghat District followed by Cannanore and Quilon Districts. The percentage of food crops to total cropped area is also highest in Palghat District. The relative position of some of the important food crops during 1975-76 to that of 1974-75 is given in the following paragraphs.

1. *Paddy*.—The area under paddy during the year under report is estimated as 876,022 hectares as against 881,466 hectares during 1974-75:

TABLE XV

<i>District</i>	<i>Area under paddy (hectare)</i>	
	1974-75	1975-76
(1)	(2)	(3)
Trivandrum ..	39,926	37,447
Quilon ..	51,686	53,053
Alleppey ..	96,459	96,316
Kottayam ..	44,346	44,159
Idikki ..	13,272	15,873
Ernakulam ..	87,863	99,017
Trichur ..	108,966	126,426
Palghat ..	185,123	174,278
Malappuram ..	92,018	88,871
Kozhikode ..	63,846	56,116
Cannanore ..	97,961	84,466
State ..	881,466	876,022

The area under paddy is largest in Palghat District and smallest in Idikki. Palghat District alone accounts for one-fifth of the total area under paddy. District-wise percentage distribution of area under paddy and the percentage of area under paddy to the total cropped area are furnished below:

TABLE XVI

<i>District</i>	<i>Area under paddy (hectares)</i>	<i>Percentage to total</i>	<i>Percentage of area under paddy to total cropped area</i>
(1)	(2)	(3)	(4)
Trivandrum ..	37,447	4.27	15.80
Quilon ..	53,053	6.06	15.36
Alleppey ..	96,316	11.00	40.68
Kottayam ..	44,159	5.04	17.85
Idikki ..	15,873	1.81	9.50
Ernakulam ..	99,017	11.30	41.37
Trichur ..	126,426	14.43	51.17
Palghat ..	174,278	19.89	54.16
Malappuram ..	88,871	10.15	32.11
Kozhikode ..	56,116	6.41	20.08
Cannanore ..	84,466	9.64	22.04
State ..	876,022	100.00	29.38

(2) *Other cereals and millets.*—Jowar, Ragi, Chama, Thina, etc., are cultivated in the State. The area under these crops during 1975-76 comes to 12,562 hectares. Out of this 3,196 hectares were under Jowar 4819 hectares under Ragi. Other cereals and millets are cultivated mainly in Palghat District.

(3) *Pulses.*—During the year under report the area under pulses is estimated as 37,485 hectares as against 37,262 hectares during 1974-75. During 1975-76 also Palghat District continues the lead in respect of area under pulses. About  $\frac{1}{3}$  of the total area under the crop was in Palghat District.

(4) *Sugarcane.*—The area under this crop is estimated as 7,596 hectares as against 9,506 hectares in the previous year. About  $\frac{1}{3}$  of the total area under the crop is in Alleppey District. The other sugarcane growing Districts are Idikki, Quilon and Palghat.

(5) *Pepper.*—Pepper, one of the dollar earning crops of the State is cultivated in 108,251 hectares. Compared to the corresponding figures in 1974-75 (118,245) there is a decline in area under the crop by 9,994 hectares. The important pepper growing district in the State is Cannanore which occupies 30 per cent of the total area under the crop in the State. Kozhikode comes next in the order of importance followed by Kottayam and Idikki. Palghat stands behind all other districts with regard to this crop.

(6) *Chillies.*—This is cultivated only in the three districts viz. Cannanore, Malappuram and Palghat. The area under the crop during the year is 2,782 hectares. During 1974-75 the area under chillies was 3,173 hectares.

(7) *Ginger.*—The extent of area under ginger during 1975-76 is 11,671 hectares as against 12,201 hectares during 1974-75. The important ginger growing districts are Kottayam, Kozhikode and Ernakulam.

(8) *Turmeric.*—Turmeric is cultivated in an area of 2,477 hectares during the year. It was 4,263 hectares during the previous year.

(9) *Cardamom.*—The area under cardamom has increased from 47,492 hectares during 1974-75 to 54,004 hectares in 1975-76. Idikki is the major cardamom producing district out of 54,004 hectares under the crop 49,856 hectares are in Idikki.

(10) *Arecanut.*—The estimated area under arecanut for the year is 76,618 hectares as against the previous year's estimate of 92,042 hectares. Even though arecanut is cultivated in all districts fairly on a large scale, Cannanore, Trichur and Malappuram Districts occupy about 50 per cent of the area under the crop.

(11) *Mangoes*.—The area under mangoes has increased from 62,532 hectares in 1974-75 to 68,215 hectares in 1975-76.

(12) *Jack*.—Jack is cultivated on a large scale in all the districts. The area under the crop during the year is 50,174 hectares.

(13) *Banana*.—A consistently upward trend is observed in the area under cultivation of this crop. The total area under banana is estimated as 11,155 hectares during 1975-76 as against 9,063 hectares during 1974-75.

(14) *Other plantains*.—The area under plantains has increased from 38,080 hectares during 1974-75 to 41,125 hectares during 1975-76.

(15) *Cashew*.—The upward trend noticed in the area under cashew during 1974-75 has been continued this year also. The total area under cashew during the year is estimated as 109,057 hectares as against 104,885 hectares during 1974-75. The major cashew producing district is Cannanore. About 42 per cent of the total area under the crop is in Cannanore District. Cashew is also reported to be grown in 3,334 hectares in forest land.

(16) *Tapioca*.—Tapioca is an important food crop of the State and it is extensively cultivated in all districts. Quilon and Trivandrum Districts occupy about 50 per cent of the total area under the crop. During 1975-76, tapioca is cultivated in an area of 326,865 hectares in the State. The estimate for the previous year was 317,880 hectares.

## B. Non-food crops

The non-food crops cover only 36 per cent of the total cropped area of the State. The total area under non-food crops during 1975-76 is estimated as 1,072,074 as against 1,142,199 hectares during 1974-75. The changes in area under certain crops during 1975-76 compared to that of the previous year is given below:

(1) *Groundnut*.—This crop is cultivated only in Palghat District. The area under the crop has increased from 17,510 hectares in 1974-75 to 26,679 hectares during the year.

(2) *Sesamum*.—It is mainly cultivated in Alleppey and Quilon Districts. About 42 per cent of the total area under the crop is in Alleppey District. It is estimated that an area of 16,785 hectares are under the crop during the year under report. The corresponding figures during the previous year was 11,782 hectares.

(3) *Coconut*.—Coconut is the most important non-food crop of the State. About 65 per cent of the non-food crops and 23 per cent of the total cropped area fall under this category. It is cultivated fairly on a large scale in all districts. Quilon stands first in the extent of area

under the crop followed by Kozhikode and Cannanore Districts. The estimates for the year 1975-76 under coconut is 692,945 hectares which is lower than the previous years estimate.

(4) *Cotton*.—Palghat is the main cotton growing district in the State. It accounts for 7,562 hectares during the year under report as against 7,551 hectares during the previous year.

(5) *Tobacco*.—Tobacco is cultivated only in Cannanore District. The area under the crop is estimated as 607 hectares during 1975-76. The area for the previous year was 762 hectares.

(6) *Tea*.—The area under the crop during the year under report is estimated to be 37,698 hectares. There was no appreciable increase in area under the crop compared to the previous year. Idikki is the important tea growing district. About 64 per cent of the total area under the crop is in Idikki District.

(7) *Coffee*.—Coffee is another plantation crop of the State. Among the Districts Kozhikode occupies the foremost place in the extent of cultivation of coffee with more than 50 per cent of the total area under the crop. The area under the crop has increased from 36,589 hectares during the previous year to 41,778 hectares in the current year.

(8) *Rubber*.—Kerala holds a monopoly for rubber cultivation in India. It is cultivated extensively in all districts. The area under rubber during the year rose to 206,686 hectares registering an increase of 4,368 hectares compared to the previous year. Kottayam, Quilon, Ernakulam and Cannanore are the leading districts in rubber cultivation.

### 8. Irrigation

The net area irrigated in the State during the year is estimated as 228,217 hectares. Government canals are the major source of irrigation. During the year 10 per cent of the net area sown is brought under irrigation.

### 9. Weather and crop conditions

The State receives the benefit of both the monsoons and hence complete failure of rain is unknown. This does not however rule out the possibility of the seasonal distribution of rain being unfavourable to the agriculturist. The weather and crop conditions during the year under review in each district are described briefly in the following paragraphs.

### Trivandrum

During Autumn season the rainfall was almost normal in all the taluks of the district. The rainfall was heavy during October–November resulting in floods in some parts of Trivandrum and Neyyattinkara Taluks. In spite of the damages due to flood, autumn and winter crop of paddy were good. Severe drought was felt during January, February and March and summer crop of paddy was badly affected.

### Quilon

The rainfall was moderate during kharif season. The yield rate of paddy in Quilon Taluk was even better than that of the previous year. But during October and November the district received heavy and continuous rain and heavy loss to winter paddy and other seasonal crops due to flood was reported to have occurred in the low lying areas. During January and February there was no rainfall and all seasonal and standing crops were affected by severe drought.

### Alleppey

The southwest monsoon was very late in the district. The rain fall during August to October was heavy resulting in flood in many parts of the district. Untimely rain and flood has caused much damage to autumn paddy in Mavelikkara, Kuttanad and Karthikappally Taluks. Tapioca in Mavelikkara was also affected badly. Mundakan crop was fairly good in all taluks. Severe attack of brown hopper, blight and blast were reported from some villages in Mavelikkara, Thiruvalla, Ambalapuzha, Kuttanad and Karthikappally. As remedial measures were taken by the cultivators, only very little area were damaged. The weather and crop conditions were quite favourable to summer crop of paddy. The conditions of seasonal crops such as sugarcane, banana and tubers were fairly good and that of perennial crops such as coconut, arecanut and pepper, etc., were normal. In Alleppey District coconut trees continue to be affected by the root and leaf diseases.

### Kottayam

During the kharif season there was heavy and continuous rain and this badly affected autumn paddy in the low lying areas of the district. Due to flood and rain, the sowing and transplanting of rabi crops were carried out very late. Widespread attack of pests were reported from Kottayam, Changanaserry and Meenachil Taluks. A cyclonic wind was reported to have occurred on 24th April 1976 in Ayarkunnam village and this has caused much damage to agricultural crops. Breaches of bunds occurred in several places during in southwest monsoon season and this had affected the autumn paddy crop adversely. The latter part of the rabi season witnessed severe drought adversely affecting the crops like coconut, arecanut and pepper.



### Idikki

The rainfall during the 1st half of the year was fairly widespread in the district, the second half witnessed prolonged dry climate which was unusual. The heavy rain at the time of flowering adversely affected the yield rate of autumn paddy in Thodupuzha. Winter crop of paddy was better in all the four taluks. The crop condition of tea, rubber, coffee cardamom and pepper was fairly satisfactory.

### Ernakulam

There was heavy rain from June to October followed by flood in many parts of the district. Cyclones were reported to have occurred in some parts of Alwaye, Parur and Kothamangalam Taluks. Crops like coconut, arecanut, banana, tapioca, nutmeg, jack, mango and paddy were badly affected. About 200 hectares of paddy area were fully damaged by flood. The crop condition during rabi season was satisfactory.

### Trichur

During autumn season heavy rainfall was experienced in all taluks of the district. Due to flood and continuous rain the agricultural operations for autumn crop of paddy was delayed. The flood spreaded during August-September adversely affected the autumn crop of paddy at its flowering stage. The heavy rain during winter season caused damage to paddy, banana, plantain and tapioca in Mukundapuram Taluk. After November there was very little rain and experienced severe drought. However summer crop of paddy was not affected by drought, since there was sufficient water supply from Peechi dam. In Trichur and Talappilly Taluks arecanuts were affected by 'Mahali' which is said to be the after effect of heavy rain and flood. The climatic condition was more or less satisfactory in respect of coconut, pepper, cashew, etc. Attack of brown hopper to summer paddy was reported to have occurred in some parts of the district.

### Palghat

The southwest monsoon has started very late in the district. Autumn paddy was affected by the late rain in all taluks. During kharif season the rainfall was normal in all taluks except Alathur. About 40 hectares of paddy were damaged by heavy rain in Alathur. The rainfall during rabi season was below normal.

### Malappuram

The total rainfall in the district was below normal during the year. During the first half of the year the rainfall was above normal and it was below normal during the second half.

### Kozhikode

The rainfall during July-August was heavy in all taluks of the district and it was normal during rabi season. Heavy and stagnating

rain at the beginning of monsoon led to decrease in the production of paddy, pepper, arecanut and ginger. The tenure of tapping of rubber was curtailed due to the continuous rain. The latter part of rabi season experienced severe drought and summer crop of paddy was adversely affected.

### Cannanore

The southwest monsoon started late in the district. Continuous rain during the late kharif season caused flood in the low lying areas and banks of rivers of Kumba, Chandragiri Punamaram and Mananthody. In Hosdurg some parts of the coastal area were submerged under water. Heavy loss to paddy, banana, coconut and arecanut were reported. Due to wind many houses were also damaged. The rainfall during the 1st half of rabi season was moderate in all taluks. But during the 2nd half of the season inadequate rain and drought affected the summer crops to a limited extent. During the year major pest attacks were not reported from any part of the district.

### 10. Production of important crops

The production of important crops in the State is given in table 'D' of the summary tables. District-wise production estimates have been furnished in table 4.1 of the detailed tables. The production of important crops are indicated below:

1. *Paddy*.—The total production of rice in the State during 1975-76 is 1,331,191 tonnes as against 1,333,931 tonnes in the previous year. Palghat district continues the lead in respect of production of rice this year also. The district-wise details of production of rice are furnished in the following tables.

TABLE XVII

District	Production of rice (Tonnes)	
	1974-75	1975-76
Trivandrum	58,037	59,060
Quilon	78,241	81,702
Alleppey	157,231	140,881
Kottayam	79,680	76,047
Idikki	22,579	26,148
Ernakulam	125,416	132,534
Trichur	150,031	162,189
Palghat	359,953	349,667
Mulappuram	104,308	125,129
Kozhikode	70,675	66,223
Cannanore	127,780	111,611
State	<u>1,333,931</u>	<u>1,331,191</u>

The season-wise production of rice for the two years are as follows:

TABLE XVIII

Season	Rice production (Tonnes)	
	1974-75	1975-76
Autumn	535,545	552,322
Winter	602,186	597,975
Summer	196,200	180,894
State	1,333,931	1,331,191

(2) *Pulses*.—The production of pulses has registered an increase of 1,136 tonnes during the year under report compared to 13,764 tonnes in the previous year.

(3) *Sugarcane*.—The production of gur is estimated to be 41,831 tonnes during 1975-76.

(4) *Black pepper*.—During the year under report production of black pepper was estimated as 24,580 tonnes. There was reduction of 2,648 tonnes in production when compared to the previous years estimate. Cannanore, Kozhikode and Kottayam are the major pepper producing districts.

(5) *Dry ginger*.—The quantity of dry ginger produced during the year is 28,840 tonnes as against 26,040 tonnes in the previous year. About 41 per cent of the total production is concentrated in Kottayam District.

(6) *Turmeric (Cured)*.—During 1975-76, 2,608 tonnes of turmeric was produced. The production during 1974-75 was 4,480 tonnes.

(7) *Cardamom (processed)*.—The quantity of cardamom produced is estimated as 2,050 tonnes. The major cardamom producing District is Idikki.

(8) *Betel nuts*.—During the year under report, the arecanut production is estimated as 11,387 tonnes. This is 17 per cent less than that of the previous years estimate.

(9) *Banana*.—The production of banana in the State during 1975-76 is estimated as 81,273 tonnes. The increase in production during the year compared to the previous year was 15,240 tonnes. Cannanore, Quilon and Trichur accounts for about 42 per cent of the production of banana in the State.

(10) *Other plantains*.—The production of plantain also has increased from 290,550 tonnes in 1974-75 to 313,769 tonnes during 1975-76.

(11) *Cashewnut*.—The cashewnut production during 1975-76 is estimated as 122,360 tonnes. The increase during the year compared to the previous year was 4,681 tonnes. About 42 per cent of the cashewnut are produced in Cannanore District.

(12) *Tapioca*.—During the year under review 5,390,217 tonnes of tapioca has been produced in the State. A slight decrease in production was noticed when compared to the previous year. The production was estimated using the results of the crop cutting survey conducted by the Bureau. The district-wise yield rates for 1974-75 and 1975-76 are furnished below:—

TABLE XIX

District	Yield rate of tapioca (tonnes per hectare)	
	1975-76	1974-75
Trivandrum	14.29	14.96
Quilon	18.02	19.27
Alleppey	16.80	18.65
Kottayam	17.98	20.63
Idikki	21.64	20.61
Ernakulam	18.94	16.52
Trichur	13.54	18.44
Palghat	14.10	18.52
Malappuram	11.92	12.29
Kozhikode	18.19	14.70
Cannanore	18.30	26.32
State	16.49	17.70

The major tapioca producing Districts are Trivandrum and Quilon.

(13) *Groundnut*.—The production of groundnut for the year is 35,268 as against 19,471 tonnes during 1974-75.

(14) *Sesamum*.—A slight increase in the production of sesamum is noticed during 1975-76 compared to the previous year. The production of sesamum was increased from 3,264 during 1974-75 to 4,271 tonnes during 1975-76.

(15) *Coconut*.—The quantity of coconut produced during 1975-76 is estimated as 3,439 million nuts. The estimate for the year 1974-75 was 3,703 million nuts.

(16) *Cotton*.—The cotton produced during 1975-76 is estimated as 10,273 bales of 170 kg.

(17) *Tobacco*.—This crop is cultivated only in Cannanore District. The total production during the year is 1,230 tonnes.

(18) *Tea*.—The estimated production of tea for the year is 43,264 onnes as against 48,899 tonnes in the previous year.

(19) *Coffee*.—The production of coffee has declined from 17,528 tonnes during 1974-75 to 14,395 tonnes during 1975-76.

(20) *Rubber*.—The quantity of rubber produced during the year is 128,769 tonnes. This shows an increase of 7,211 tonnes over the previous years estimate of 121,558 tonnes.

### 11. Farm price of certain commodities

The average farm price of certain commodities are given in table F of the summary tables and 5.1 of the detailed tables.

### 12. Agricultural wages

District-wise and class-wise details of agricultural wages are given in table 6.1.

### 13. Livestock, poultry and agricultural implements

The details relating to these items have been furnished in table G of the summary tables and 7.1 of detailed tables.

### 14. Sowing, harvesting and peak marketing periods

The information on these topics has been furnished in table H of the summary tables.



The first part of the document  
 discusses the general principles  
 of the system and its  
 objectives. It is intended to  
 provide a clear understanding  
 of the scope and purpose of  
 the project. The following  
 sections will describe the  
 various components and  
 procedures involved in the  
 implementation of the system.

**1. Introduction**

This document is a technical  
 manual for the system. It  
 provides detailed information  
 on the system's architecture,  
 components, and operation.  
 It is intended for use by  
 system administrators and  
 users. The manual is divided  
 into several sections, each  
 covering a different aspect  
 of the system.

The first section, "Introduction",  
 provides an overview of the  
 system and its objectives.  
 The second section, "System  
 Architecture", describes the  
 overall structure of the  
 system and the relationships  
 between its various  
 components. The third  
 section, "Installation",  
 provides instructions on  
 how to install the system  
 on a computer. The fourth  
 section, "Operation",  
 describes the various  
 functions of the system  
 and how to use them. The  
 fifth section, "Maintenance",  
 provides information on  
 how to maintain the system  
 and troubleshoot any  
 problems that may arise.

**PART II**  
**SUMMARY TABLES**

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



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TABLE A

Classification of area (hectare)		
<i>Head of classification</i>	<i>Area</i>	<i>Percentage</i>
1. Total area by village papers	3,885,497	100.00
2. Forests	1,081,509	27.84
3. Land put to non-agricultural uses	259,230	6.67
4. Barren and uncultivable land	78,494	2.02
5. Permanent pastures and other grazing lands	19,915	0.51
6. Land under miscellaneous tree crops	84,250	2.17
7. Cultivable waste lands	113,414	2.92
8. Current fallow	36,559	0.94
9. Other fallows	22,954	0.59
10. Net area sown	2,189,172	56.34
11. Total cropped area	2,981,279	76.73
12. Area sown more than once	792,107	20.39

TABLE B

**Source of water supply and net area in (hectares)  
Irrigated in 1975-76**

Net area irrigated by

1. Government canals	..	85,261
2. Private canals	..	472
3. Government tanks and wells	..	11,630
4. Private tanks and wells	..	46,065
5. Minor and lift irrigation (Government scheme)	..	54,224
6. Other sources	..	30,565
7. Total	..	228,217
8. Percentage of area irrigated to net area sown	..	10.42

TABLE C

## Area under crops in Kerala (hectare) 1975-76

	<i>Name of crop</i>	<i>Area (hectare)</i>
Cereals and millets	Paddy	876,022 ✓
	Jowar	3,196 ✓
	Ragi	4,819 ✓
	Other cereals and millets	4,547
	Total cereals and millets	888,584
Pulses	Tur	3,020 ✓
	Other pulses	34,465 ✓
	Total pulses	37,485 ✓
Sugar crops	Sugarcane	7,596 ✓
	Palmyrah	10,935
	Total sugar crops	18,531
Spices and condiments	Pepper	108,251 ✓
	Chillies	2,782 ✓
	Ginger	11,671 ✓
	Turmeric	2,427 ✓
	Cardamom	54,004 ✓
	Arecanut	76,618
	Other condiments and spices	5,229
	Total condiments and spices	261,032
Fresh fruits	Mango	68,215 ✓
	Jack	50,174 ✓
	Banana	11,155 ✓
	Other plantains	41,125 ✓
	Pineapple	8,971 ✓
Dried fruits	Other fruit trees	27,868 ✓
	Cashew	109,057 ✓
	Total fruits	316,565
Vegetables	Tapioca	326,865 ✓
	Sweet potatoes	5,882
	Tubers	34,759
	Other vegetables	10,383
	Total vegetables	377,889
	Other food crops (tamarind)	9,119
	Total food crops	1,909,205
Oil seeds	Coconut	692,945 ✓
	Sesamum	16,785 ✓
	Groundnut	26,679 ✓
	Other oil seeds	2,889
	Total oil seeds	739,298
Fibres	Cotton	7,562 ✓

TABLE C—(cont.)

	<i>Name of crop</i>	<i>Area (hectares)</i>
Drugs, narcotics and plantation crops	Tobacco	607
	Tea	37,698 ✓
	Coffee	41,778 ✓
	Rubber	206,686 ✓
	Total	286,769
Other non-food crops	Fodder grass	918
	Green manure crops	17,882
	Lemon grass	2,315
	Betel leaves	2,592
	Other crops	14,738
	Total	38,445
	Total non-food crops	1,072,074
	Total area under all crops	2,981,279
	Area sown more than once	792,107
	Net area sown	2,189,172

TABLE D

## Production of important crops in Kerala 1975-76

<i>Name of crop</i>	<i>Unit</i>	<i>Quantity</i>
Rice	Tonnes	1,331,191 ✓
Paddy	"	2,026,073 ✓
Jowar	Tonnes	1,438 ✓
Ragi	"	5,001 ✓
Tur	"	731
Other pulses	"	14,169
Sugarcane (Gur)	"	41,831 ✓
Pepper (black)	"	24,580 ✓
Chillies (dry)	"	2,442 ✓
Ginger (dry)	"	28,840 ✓
Turmeric (cured)	"	2,608 ✓
Cardamom (processed)	"	2,050 ✓
Arecanut (Betel nuts)	Million nuts	11,387 ✓
Banana	Tonnes	81,273 ✓
Other plantain	"	313,769 ✓
Cashewnuts	"	122,360 ✓
Tapioca (Raw)	"	5,390,217 ✓

<i>Name of crop</i> (1)	<i>Unit</i> (2)	<i>Quantity</i> (8)
Sweet potatoes	Tonnes	26,472 ✓
Groundnut	"	35,268 ✓
Sesamum	"	4,271 ✓
Coconut	Million nuts	3,439 ✓
Cotton	Bales of 170 kg.	10,273 ✓
Tobacco	Tonnes	1,230
Tea	"	43,264 ✓
Coffee	"	14,395 ✓
Rubber	"	128,769 ✓

TABLE E

Average yield per hectare of certain crops for the year 1975-76

<i>Name of crop</i> (1)	<i>Unit</i> (2)	<i>1975-76</i> (3)	<i>1974-75</i> (4)
1. Paddy	Kg./hect.	2,313	2,303
2. Jowar	"	450	388
3. Ragi	"	1,038	923
4. Sugarcane (Gur)	"	5,507	5,671
5. Pepper (Black)	"	227	230
6. Ginger (Dry)	"	2,471	2,134
7. Turmeric (Cured)	"	1,075	1,051
8. Cardamom (processed)	"	38	44
9. Arecanut	Nuts/hect.	148,620	148,072
10. Banana	Kg./hect.	7,286	7,286
11. Other plantains	"	7,630	7,630
12. Cashewnuts	"	1,122	1,122
13. Tapioca (Raw)	"	16,491	17,696
14. Groundnut	"	1,322	1,112
15. Sesamum	"	254	227
16. Coconut	Nuts/hect.	4,963	4,971
17. Cotton	Kg./hect.	231	227
18. Tea	"	1,148	1,301
19. Coffee	"	345	431
20. Rubber	"	623	601

TABLE F

## Average price and total value of production 1975-76

Sl. No.	Name of crop	Unit	Average farm price Rs.	Value of production (Rs. in lakhs)
(1)	(2)	(3)	(4)	(5)
1.	Paddy	Tonnes	1,829.80	37,073.08
2.	Coconut with husk	1000 Nos.	668.60	22,993.15
3.	Arecanut (Ripe)	1000 Nos.	38.30	4,361.22
4.	Tapioca (Raw)	Tonnes	402.20	21,679.45
5.	Cashewnut	"	2,440.40	2,986.07
6.	Banana	1000 Nos.	313.50	2,547.91
7.	Pepper (black)	Tonnes	11,687.80	2,989.74
8.	Ginger (dry)	"	7,814.80	2,253.79
9.	Sugarcane	"	1,056.50	441.94

TABLE G

## Number of livestock, poultry and agricultural machinery

Sl. No.			1966 Census	1972 Census
(1)	(2)	(3)	(4)	(5)
1.	Cattle Male over 3 years	(a) Breeding	19,387	4,800
		(b) Working	491,281	371,972
		(c) Others	8,855	14,822
		Total	519,523	391,594
		(a) Breeding		
	Female over 3 years	1. In milk	483,419	606,192
		2. Dry	592,972	578,827
		3. Not calved	133,999	101,849
		(b) Working	3,605	7,646
		(c) Others	5,247	5,657
	Total	1,219,242	1,300,171	
	Young stock	1,117,962	1,164,555	
	Total cattle	2,856,727	2,856,320	
2.	Buffaloes Males over 3 years	(a) Breeding	6,106	2,185
		(b) Working	241,048	211,467
		(c) Others	6,696	12,077
		Total	253,850	225,729

TABLE G—(cont.)

Sl. No.			1966 Census (4)	1972 Census (5)
(1)	(2)	(3)		
	Female over 3 years	(a) Breeding		
		1. In milk	66,705	83,188
		2. Dry	52,777	53,671
		3. Not calved	9,119	10,495
		(b) Working	4,589	6,066
		(c) Others	1,580	2,360
		Total	134,770	155,780
		Young stock	82,615	90,238
		Total Buffaloes	471,235	471,747
3.	Sheep	(a) One year and above	7,920	6,991
		(b) Below one year	3,599	3,330
		Total	11,519	10,321
4.	Goats	(a) One year and above	757,766	839,053
		(b) Below one year	431,452	628,604
		Total	1,189,218	1,467,657
5.	Horse and ponies	(a) 3 years and above	372	333
		(b) Below 3 years	54	118
		Total	426	451
6.	Mules	..	8	14
7.	Donkeys	..	310	861
8.	Camels	..	4	11
9.	Pigs	..	111,928	129,087
10.	Poultry	Total livestock	4,641,375	4,936,469
		(a) Fowls	9,587,286	11,844,548
		(b) Ducks	318,751	301,941
		(c) Others	2,950	965
11.	Ploughs	(a) Wooden	475,930	393,714
		(b) Iron	17,179	35,103
12.	Carts	..	16,809	16,245
13.	Sugarcane crushers	(a) Power	457	96
		(b) Bullocks	989	801
14.	Oil Engines	..	6,824	18,649
15.	Electric pumps	..	4,869	9,983
16.	Tractors	..	418	2,752

TABLE H  
Sowing harvesting and peak marketing seasons of principal crops in Kerala State

Sl. No.	Crop	3	Sowing	Harvesting	Peak marketing
1	2	3	4	5	6
1	Rice	Autumn Winter Summer	April August November January —June —October —December —March	August December February April —October —January —October —January	September January March May —October —February —April —June
2	Ragi	1st crop 2nd crop	April September —July —October	August December —October —January	September December —October —January
3	Small millets (Samai)	Kharif Rabi	May September	August December	August December
4	Red gram	1st crop 2nd crop 3rd crop	May August February —June —October	August November April —September —January	September January April —October
5	Horsegram	1st crop 2nd crop	August February —October —March	November April —January —May	January May —February —June
6	Greengram	..	May —June	August —September	September —October
7	Blackgram	1st crop 2nd crop	May October —June —November	August January —October —February	October February —September
8	Other pulses	..	May —June	August —September	August —September
9	Sugarcane	1st crop 2nd crop	October November January —February —March	December October December —January —February	January November February —December

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



### **PART III**

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

1938

The following is a list of the  
 names of the persons who were  
 present at the meeting held on  
 the 15th day of June, 1938,  
 at the residence of the  
 said persons, at the address  
 of \_\_\_\_\_, in the  
 city of \_\_\_\_\_, State of  
 \_\_\_\_\_, at \_\_\_\_\_ o'clock  
 of the said day.

TABLE 1.1  
Normal rainfall in Kerala  
(In mm.)

Serial No.	District	July	August	September	October	November	December	January	February	March	April	May	June	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Trivandrum ..	257.4	204.5	168.9	280.2	210.2	70.1	21.2	18.0	48.0	118.1	213.9	391.1	2001.6
2	Quilon ..	449.6	318.1	226.1	344.9	242.9	64.8	24.1	32.1	83.6	166.3	260.3	547.4	2760.2
3	Alleppey ..	552.3	370.3	272.7	330.2	219.4	64.1	25.9	29.3	59.0	133.5	291.5	663.8	3012.0
4	Kottayam ..	657.7	447.5	296.5	383.8	244.7	73.6	23.8	30.3	85.4	176.9	324.1	713.3	3462.6
5	Idikki ..	655.1	432.9	262.7	304.4	195.8	68.8	31.1	24.1	44.6	111.7	200.9	556.7	2898.8
6	Ernakulam ..	785.3	518.0	293.9	359.7	212.6	54.2	16.8	22.4	51.6	129.5	308.4	796.1	3548.5
7	Trichur ..	761.4	458.6	250.3	307.5	158.3	30.3	9.3	8.8	28.6	86.6	274.3	803.4	3177.4
8	Palghat ..	649.9	363.0	169.5	257.2	140.9	29.7	9.8	9.3	27.0	79.6	158.4	503.4	2397.7
9	Malappuram ..	787.0	405.0	198.8	290.0	163.8	30.9	6.7	6.5	19.3	78.7	211.0	702.4	2900.1
10	Kozhikode ..	1117.4	599.2	262.4	290.2	163.7	34.2	10.4	7.6	20.0	92.4	254.0	944.5	3796.0
11	Cannanore ..	1063.5	584.3	239.4	218.0	106.0	22.8	5.3	4.8	11.1	58.6	200.6	923.0	3437.9
	State average ..	686.4	422.6	242.0	306.9	190.9	51.2	18.5	19.3	46.4	115.6	245.0	672.8	3017.6

TABLE 1.2  
Monthly rainfall statement for 1975-76  
(In mm.)

District	July	August	September	October	November	December	January	February	March	April	May	June	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum ..	206.8	217.7	178.5	335.6	362.7	33.3	..	..	20.1	57.0	62.8	59.4	1533.9
Quilon ..	396.0	427.4	350.4	411.2	313.1	20.9	0.4	..	37.0	143.9	98.3	155.6	2354.2
Alleppey ..	519.8	622.0	521.8	598.3	235.1	60.3	..	..	33.8	77.0	91.2	181.6	2940.9
Kottayam ..	378.9	535.1	515.8	550.7	319.3	45.1	..	..	22.3	188.5	121.6	209.8	2887.1
Idikki ..	420.2	966.3	507.1	383.7	249.4	31.0	..	..	21.4	224.2	83.2	147.5	3034.0
Ernakulam ..	567.5	678.0	458.3	485.9	243.5	24.5	..	8.7	33.2	159.7	110.2	200.0	2969.5
Trichur ..	574.6	685.7	537.7	431.0	236.7	1.3	..	..	9.6	105.9	84.7	219.3	2936.5
Palghat ..	295.2	610.6	362.7	247.4	148.3	..	..	..	20.0	153.3	62.5	118.1	2218.1
Malappuram ..	510.4	716.5	480.0	341.9	186.2	1.8	..	..	3.4	158.1	41.0	186.3	2625.6
Kozhikode ..	829.4	1032.4	638.6	360.9	143.9	31.3	..	..	10.7	90.0	66.5	218.1	3427.8
Cannanore ..	847.9	835.9	530.7	265.3	89.5	..	..	..	6.3	33.4	66.3	411.1	3086.9
State ..	522.4	666.1	462.0	401.6	234.3	22.7	..	0.8	19.8	126.5	80.8	191.5	2728.6

TABLE 2.1  
Total area and classification of area in each district of Kerala during the year 1975-76  
(Area in hectares)

Serial number	District	Classification													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Trivandrum	218,600	49,861	17,293	1,509	86	578	1,208	1,288	1,304	145,473	91,575	237,048		
2	Quilon	474,290	236,048	22,229	3,939	100	752	1,557	787	1,313	207,565	137,784	345,349		
3	Alleppey	182,270	518	26,965	638	76	457	2,311	735	1,475	149,095	87,671	236,766		
4	Kottayam	219,550	8,141	17,696	2,293	531	1,720	2,524	1,300	1,421	183,924	63,455	247,379		
5	Idikki	515,048	260,993	13,517	17,005	9,861	19,886	33,184	2,340	2,074	156,188	10,892	167,080		
6	Ernakulam	235,319	6,123	30,460	2,020	968	4,005	4,740	2,399	4,815	177,789	61,534	239,323		
7	Trichur	299,390	103,619	18,029	3,957	668	2,401	4,027	1,593	3,583	161,313	85,573	247,086		
8	Palghat	438,980	136,257	32,147	12,236	1,709	8,498	18,374	3,924	6,342	219,303	102,301	321,804		
9	Malappuram	363,230	103,417	13,925	6,756	1,182	3,788	12,943	2,317	5,445	213,457	63,295	276,752		
10	Kozhikode	371,150	90,876	20,620	5,110	1,569	10,143	8,421	983	1,615	232,813	46,677	279,490		
11	Cannanore	567,670	83,656	46,349	23,041	4,165	32,022	24,125	5,288	7,172	341,652	41,350	383,202		
	State	3,885,497	1,081,509	259,230	78,494	19,915	84,250	113,414	22,954	36,559	2,109,172	792,107	2,981,279		

TABLE 2.2  
Classification of area as percentage of total area according to village papers

District	2	3	4	5	6	7	8	9	10	11	12	13
	Total geographical area according to village papers	Forest	Land put to non-agricultural use	Barren and uncultivable land	Permanent pastures and other grazing land	Land under misc. tree crops and groves not included in net area sown	Cultivable waste land	Fallow lands other than current fallows	Current fallow	Net area sown	Area sown more than once	Total cropped area
Trivandrum	100.00	22.81	7.91	.69	.03	.27	.55	.59	.60	66.55	41.89	108.44
Quilon	100.00	49.77	4.69	.83	.02	.16	.33	.16	.28	43.76	29.05	72.81
Alleppey	100.00	.28	14.79	.35	.04	.25	1.27	.41	.81	81.80	48.10	129.90
Kottayam	100.00	50.67	2.63	3.30	1.91	.78	1.15	.59	.65	83.77	28.90	112.67
Idikki	100.00	3.45	12.94	.86	1.91	3.96	6.44	.45	.41	30.33	2.11	32.44
Ernakulam	100.00	34.61	6.02	1.32	.22	1.70	2.01	1.02	2.05	75.56	26.15	101.76
Trichur	100.00	31.04	7.32	2.79	.39	.80	1.35	.53	1.20	53.95	39.69	93.64
Palghat	100.00	28.47	3.83	1.86	.33	1.93	4.19	.89	1.45	50.00	23.30	73.30
Malappuram	100.00	24.48	5.56	1.38	.15	1.04	3.56	.64	1.50	58.77	17.42	76.19
Kozhikode	100.00	14.74	8.17	4.06	.73	2.73	2.27	.26	.44	62.73	12.57	75.30
Cannanore	100.00					5.64	4.25	.93	1.26	60.22	7.28	67.50
State	100.00	27.84	6.67	2.02	.51	2.17	2.92	.59	.94	56.34	20.39	76.73

TABLE 3-1  
Area under crops in each district of Kerala 1975-76  
(Area in hectares)  
Food Crops  
Cereals

District	Paddy			Total	Other Cereals				Pulses			
	Autumn	Winter	Summer		Jowar	Ragi	Other cereals and millets	Total Cereals and millets	Tur	Other Pulses	Total Pulses	Total food grains
1	2	3	4	5	6	7	8	9	10	11	12	13
Trivandrum	17381	17500	2566	37447	..	36	..	37483	..	4040	4040	41523
Quilon	24865	25858	2330	53053	..	88	..	53141	..	3684	3684	56825
Alleppey	29058	48250	19008	96316	..	102	..	96418	..	1058	1058	97476
Kottayam	12035	15256	16868	44159	..	5	..	44164	..	1785	1785	45949
Idikki	8548	6869	456	15873	..	150	..	16083	..	1407	1407	17440
Ernakulam	46525	42071	10421	99017	10	150	..	99033	..	2476	2476	101529
Trichur	46851	62182	17393	126426	..	25	227	126739	..	4019	4019	130788
Palghat	86509	79793	7976	174278	61	25	4150	185765	3020	6974	9994	195759
Malappuram	45041	36275	7555	88871	3125	4212	91	89117	..	2122	2122	91239
Kozhikode	14859	30775	10432	56116	..	25	..	56141	..	1112	1112	57253
Cannanore	43371	31563	9532	84466	..	64	..	84530	..	5758	5758	90288
State	375043	396392	104587	876022	3196	4819	4547	888584	3020	34465	37485	926069

TABLE 3-1—(cont.)

District	Sugar Crops			Condiment and Spices							Total
	14	15	16	17	18	19	20	21	22	23	
	Sugarcane	Others (Palmyrah)	Total Sugar crops	Pepper	Chillies	Ginger	Turmeric	Cardamom	Betel nuts	Other condiments and spices	
Trivandrum	72	482	554	5856	..	28	10	..	4525	150	10569
Quilon	1820	152	1972	8750	..	261	54	..	7844	588	17497
Alleppey	2246	27	2273	5231	..	140	55	..	3552	27	9005
Kottayam	289	478	767	12938	..	3863	326	..	4032	581	21740
Idikki	1948	210	2158	10186	..	1062	159	..	1608	223	63094
Ernakulam	28	261	289	6499	..	1632	679	49856	7242	1420	17472
Trichur	25	1121	1146	1525	..	96	44	..	11350	330	13345
Palghat	1080	4115	5195	851	591	383	376	1449	2454	256	6360
Malappuram	15	1800	1815	5989	625	932	29	..	10982	156	28713
Kozhikode	17	1171	1188	17694	1566	1717	382	1586	8308	167	29864
Cannanore	56	1118	1174	32792	..	1557	353	1113	14721	1331	53373
State	7596	10935	18531	108251	2782	11671	2477	54004	76618	5229	261032



TABLE 3.1—(cont.)

District	Fresh fruits and dried fruits										Vegetables				
	Mango	Jack	Banana	Other plantains	Cashew	Other fruit trees	Pineapple	Total fruits	Tapioca	Sweet potatoes	Tubers				
	25	26	27	28	29	30	31	32	33	34	35				
Trivandrum	6997	5463	625	3274	5291	1934	614	24198	72035	89	3035				
Quilon	8617	5585	1428	4323	8011	2523	1080	31567	88538	233	6292				
Aleppey	4788	1877	674	2910	3216	1834	494	15743	24568	61	2208				
Kottayam	7094	4034	1223	4257	1035	1723	658	20044	35429	33	4994				
Idiki	2497	1361	109	2206	1076	1855	778	9982	9955	472	891				
Ernakulam	4529	2784	1361	3604	3375	1421	583	17657	17091	53	4007				
Trichur	4028	2495	1384	4970	3396	2877	1475	23625	12178	190	3389				
Palghat	7191	3998	587	3483	11253	3643	393	30538	7965	740	3489				
Malappuram	6873	4596	1068	3127	20369	1918	510	38961	28372	662	1919				
Kozhikode	7563	8510	945	3499	3642	3266	1067	28522	9235	379	1791				
Cannanore	8038	9131	1801	4972	45393	4874	1319	75828	21499	2970	2732				
State	68215	50174	11155	41125	109057	27868	8971	316565	326865	5882	34759				

TABLE 3.1—(cont.)  
Non-food Crops (From col. 40 onwards)

District	Vegetables		Other food crops (amarind)	Total food crops	Oil seeds						Fibre	Drugs, narcotics and plantation crops	
	Other vegetables	Total			Coconut	Sesamum	Groundnut	Other oilseeds	Total	Cotton		Tobacco	Tea
	36	37	38	39	40	41	42	43	44	45	46	47	
Trivandrum	415	75574	2031	154449	74074	133	..	975	75182	..	..	35	
Quilon	674	95737	1303	204906	98073	3213	..	217	101503	..	..	2690	
Alleppey	467	27304	313	152114	72824	7127	..	267	80218	..	..	2307	
Kottayam	796	41252	360	130112	58168	285	..	336	58789	..	..	24006	
Idiki	516	11834	64	104472	11472	332	..	81	11885	..	..	45	
Ernakulam	2148	23301	462	160710	50726	1867	..	92	52685	..	..	..	
Trichur	898	16655	1203	186762	50699	903	..	128	51730	..	..	146	
Palghat	1090	13284	1356	252492	16994	1291	26679	594	45558	7562	..	567	
Malappuram	613	31576	1081	183385	70269	1120	..	40	71429	..	..	6917	
Kozhikode	591	11996	547	129370	97448	136	..	40	97624	..	..	985	
Cannanore	2175	29376	394	250433	92198	378	..	119	92695	..	607	..	
State	10383	377889	9119	1909205	692945	16785	26679	2889	739298	7562	607	37698	

TABLE 3-1—(cont.)

District	Drugs, narcotics and plantation crops			Other non-food crops						Total non-food crops	Total food crops and non-food crops
	Coffee	Rubber	Total	Fodder grass	Green manure	Lemon grass	Betel leaves	Other crops	Total		
	48	49	50	51	52	53	54	55	56	57	58
Trivandrum	130	6307	6472	37	384	..	178	346	945	82599	237048
Quilon	428	33995	37113	34	678	..	537	528	1827	140443	345349
Alleppey	91	4029	4120	35	56	..	159	64	314	84652	246766
Kottayam	1848	52600	56755	185	534	75	299	630	1723	117267	247379
Idiki	3849	16369	44224	393	272	1321	25	4888	6499	62608	167080
Ernakulam	1367	23096	24508	18	265	487	152	497	1420	78613	239323
Trichur	10	7785	7795	15	229	..	130	425	799	60324	247086
Palghat	1727	7910	9783	..	4429	..	110	1870	6409	69312	321804
Malappuram	560	15220	16347	..	3940	..	771	880	5591	93367	276752
Kozhikode	23640	17250	47807	..	3646	185	110	748	4689	150120	279190
Cannanore	8128	22125	31845	151	3448	247	121	4262	8229	132769	363202
State	41778	206636	286769	918	17882	2315	2592	14738	38445	1072074	2981279

TABLE 3.2  
Percentage of area under crops to total cropped area in each District during 1975-76

District	2	3	4	5	6	7	Cereals and millets				10	11	
							Rice	Others	Total Cereals and millets	Total pulses			
	Total cropped area	Total food crops	Total Non-food crops	Net area sown	Area sown more than once								Total foodgrains
Trivandrum	100.00	65.16	34.84	61.37	38.63	15.80	.01	15.81	1.71	17.52	11	17.52	
Quilon	100.00	59.33	40.67	60.10	39.90	15.36	.03	15.39	1.06	16.45	10	16.45	
Alleppey	100.00	64.25	35.75	62.97	37.03	40.68	.04	40.72	.45	41.17	10	41.17	
Kottayam	100.00	62.60	37.40	74.35	35.65	17.85	.10	17.95	.72	18.57	10	18.57	
Idikki	100.00	62.53	37.47	73.48	6.52	9.50	.10	9.60	.84	9.44	10	9.44	
Ernakulam	100.00	67.15	32.85	74.29	25.71	41.37	.02	41.39	1.03	42.42	10	42.42	
Trichur	100.00	75.58	24.41	65.37	34.63	51.17	.12	51.29	1.64	52.93	10	52.93	
Palghat	100.00	78.46	21.53	79.32	20.68	54.16	3.57	57.73	3.10	60.83	10	60.83	
Malappuram	100.00	66.26	33.74	77.13	12.87	32.11	.09	32.20	.77	32.97	10	32.97	
Kozhikode	100.00	46.29	53.71	64.10	35.90	20.08	.01	20.09	.39	20.48	10	20.48	
Cannanore	100.00	65.35	34.65	89.21	10.79	22.04	.02	22.06	1.50	23.56	10	23.56	
State	100.00	64.04	35.96	73.43	26.57	29.38	0.43	29.81	1.25	31.06	10	31.06	

TABLE 3.2—(cont.)

District	Sugar crops			Condiments and Spices						Fresh fruits	
	Sugarcane	Others	Total	Pepper	Ginger	Cardamom	Betelnut	Others	Total Spices	Mango	Jack
Trivandrum	.03	.20	.23	2.47	0.1	..	1.91	.07	4.46	2.95	2.31
Quilon	.53	.04	.57	2.53	.07	..	2.27	.20	5.07	2.50	1.62
Alleppey	.95	.01	.96	2.21	0.06	..	1.50	.03	3.80	2.02	.79
Kottayam	.12	.19	.31	5.23	1.56	..	1.63	.37	8.79	2.87	1.64
Idikki	1.17	.12	1.29	6.10	.63	29.84	.96	.23	37.76	1.49	.83
Ermakulam	.01	.11	.12	2.72	.68	..	3.03	.64	7.30	1.89	1.17
Trichur	.45	.45	.46	.62	.04	..	4.59	.15	5.40	1.63	1.01
Palghat	.33	1.28	1.61	.26	.12	0.45	.76	.39	1.98	2.24	1.24
Malappuram	.01	.65	.66	2.16	.34	..	3.97	.29	6.76	1.66	1.01
Kozhikode	.01	.42	.43	6.33	.61	.57	2.97	.21	10.69	2.71	3.06
Cannanore	.02	.29	.31	8.54	.41	.29	3.81	.88	18.93	2.10	2.46
State	.25	37	62	3.63	.39	1.81	2.57	0.36	8.76	2.19	1.68

TABLE 3.2—(cont.)

District	Fresh fruits			Dried fruits		Vegetables			Total fruits and vegetables		Total food crops		Non-food crops	
	Banana and others	Pinnapple	Other fruit trees	Cashewnuts	Total fruits	Tapioca	Others	Total	Total fruits and vegetables	Total food crops	Sesamum	Coconut	Oil seeds	
													23	24
Trivandrum	1.65	.26	.82	2.22	10.21	30.39	2.35	32.74	42.95	65.16	.06	31.25		
Quilon	1.67	.31	.73	2.32	9.14	25.64	2.46	28.10	37.24	59.33	.93	28.40		
Alleppey	1.49	.21	.78	1.36	6.65	10.38	1.28	11.66	18.31	64.25	3.01	30.76		
Kottayam	2.21	.26	.70	.42	8.10	14.32	2.50	16.82	24.92	52.60	.11	23.51		
Idikki	1.39	.47	1.11	.64	5.92	5.96	1.16	7.12	13.04	62.53	.20	6.87		
Ernakulam	2.08	.24	.59	1.41	7.38	7.14	2.79	9.93	17.31	67.15	.78	21.19		
Trichur	2.57	.60	1.16	2.59	9.56	4.93	2.30	7.23	16.79	75.58	.37	20.52		
Palghat	1.26	.12	1.13	3.50	9.49	2.48	2.07	4.55	14.04	78.46	.40	5.28		
Malappuram	1.70	.18	.69	7.37	14.08	10.25	1.55	11.80	25.88	66.26	.40	25.39		
Kozhikode	1.59	.38	1.17	1.30	10.20	3.30	1.19	4.49	14.69	46.29	.05	34.86		
Cannanore	1.77	.34	1.27	11.85	19.79	5.61	2.16	7.77	27.56	65.35	.09	24.06		
State	1.75	.30	.93	3.66	10.62	10.96	2.02	12.98	23.60	64.04	.66	23.24		

TABLE 3-2—(cont.)

District	Non-food crops											
	Oil seeds			Fibers		Drugs, narcotics plantation crops					Other non-food crops	Total non-food crops
	Ground nuts	Others	Total	Cotton	Tea	Coffee	Rubber	Others	Total			
35	36	37	38	39	40	41	42	43	44	45		
Trivandrum	..	.41	31.72	..	.01	.06	2.66	..	2.73	0.39	34.85	
Quilon	..	.06	29.39	..	.78	.12	9.85	..	10.75	0.53	40.67	
Alleppey	..	.11	33.88	..	..	.04	1.70	..	1.74	0.13	35.75	
Kottayam	..	.14	23.76	..	.93	.75	21.26	..	22.94	0.70	47.40	
Idikki	..	.06	7.13	..	14.37	2.30	9.80	..	26.47	3.87	37.47	
Ernakulam	..	.04	22.01	..	.02	.57	9.65	..	10.24	0.60	32.85	
Trichur	..	.05	20.94	..	..	.01	3.15	..	3.16	0.31	24.41	
Palghat	..	.19	14.16	2.35	.04	.54	2.46	..	3.04	1.98	21.53	
Malappuram	..	.02	25.81	..	.20	.20	5.50	..	5.91	2.02	33.74	
Kozhikode	..	.02	34.93	..	2.47	8.46	6.17	..	17.10	1.68	53.71	
Cannanore	..	.04	24.19	..	.26	2.12	5.77	.16	8.31	2.15	34.65	
State	.90	.10	24.80	.25	1.27	1.40	6.93	.02	9.62	1.54	35.96	

TABLE 4-1  
 Outturn of important crops

District	Cereals and Millets (Tonnes)					Pulses (Tonnes)				
	Rice					Other cereals and millets	Tur	Other Pulses	Sugar cane(gur) (Tonnes)	11
	Autumn	Winter	Summer	Total	Jowar					
1	2	3	4	5	6	7	8	9	10	11
Trivandrum	26,523	29,841	2,696	59,060	37	..	..	..	1,733	390
Quilon	34,995	43,924	2,783	81,702	91	..	..	..	467	8,977
Alleppey	43,985	58,593	38,307	140,881	106	..	..	..	443	11,099
Kottayam	15,551	22,493	38,003	76,047	5	..	..	..	511	1,599
Idikki	13,756	11,480	912	26,148	4	..	..	..	723	11,631
Ernakulam	61,475	57,481	13,578	132,534	22	10	..	..	1,256	1,112
Trichur	54,198	81,514	26,477	162,189	27	26	151	..	1,553	135
Palghat	175,885	160,862	12,920	349,667	1,407	4,372	3,033	731	2,675	7,528
Malappuram	62,576	49,580	12,973	125,129	..	94	103	..	841	81
Kozhikode	10,866	38,636	16,731	66,223	..	26	..	..	414	92
Cannanore	52,526	43,571	15,514	111,611	..	66	..	..	3,553	187
State	552,322	597,975	180,894	1,331,191	1,438	5,001	3,297	731	14,169	41,831

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TABLE 4-1—(cont.)

District	Spices and condiments (Tonnes)						Fresh fruits and dried fruits		
	12	13	14	15	16	17	18	19	20
	Black Pepper ✓	Dry Chillies ✓	Dry ginger ✓	Cured turmeric ✓	Processed cardamum ✓	Betal nuts (million nuts)	Banana (Tonnes) ✓	Other Plantain (Tonnes) ✓	Cashew nuts (raw) ✓
Trivandrum	1,248	..	66	10	..	703	4,553	24,979	5,936
Quilon	2,975	..	628	67	..	1,579	10,404	32,983	8,988
Alleppey	737	..	329	54	..	553	4,546	22,202	3,608
Kottayam	3,933	..	11,817	253	..	404	8,910	32,479	1,161
Idikki	2,220	..	2,286	160	1,847	194	794	16,831	1,207
Ernakulam	1,092	..	3,883	669	..	876	9,917	27,497	3,787
Trichur	245	..	99	36	..	1,688	10,083	37,921	7,176
Palghat	146	526	617	276	115	310	4,277	26,575	12,626
Malappuram	1,084	552	1,413	29	..	1,707	7,782	27,672	22,554
Kozhikode	4,157	..	4,129	520	66	1,533	6,885	26,696	4,086
Cannanore	6,743	1,364	3,573	534	22	1,840	13,122	37,934	50,931
State	24,580	2,442	28,840	2,608	2,050*	11,387	81,273	313,769	122,360

\* Commodity Boards figure

TABLE 4-1—(cont.)

District	Vegetables		Oil seeds		Cocunut (Million nuts)	Cotton bales of 170 kg.	Drugs and Narcotics (Tonnes)				
	Tapioca (Tonnes)	Sweet Potatoes (Tonnes)	Groundnut (Tonnes)	Sesamom (Tonnes)			Tobacco	Tea *	Coffee *	Rubber *	
	21	22	23	24	25	26	27	28	29	30	
Trivandrum	1,029,296	400	..	35	428	..	..	826	3	5,223	✓
Quilon	1,595,363	1,049	..	710	485	..	..	1,128	15	23,906	
Alleppey	412,720	275	..	1,703	404	..	..	..	1	2,409	
Kottayam	636,959	148	..	91	288	..	..	527	248	34,021	
Idiuki	215,424	2,124	..	110	61	..	..	31,017	675	10,187	
Ernakulam	323,702	238	..	621	269	..	..	..	53	12,292	
Trichur	164,884	855	..	223	299	..	..	871	5	6,969	
Palghat	112,298	3,330	35,268	422	56	10,273	..	1,175	755	3,966	
Malappuram	338,181	2,979	..	218	311	..	..	148	..	9,332	
Kozhikode	167,970	1,709	..	40	523	..	..	6,346	9,243	10,226	
Cannanore	393,420	13,365	..	98	315	..	1,230	1,226	3,397	10,238	
State	5,390,217	26,472	35,268	4,271	3,439	10,273	1,230	43,264	14,395	128,769	

\* Provisional estimates of the board

TABLE 5-1  
Average farm prices (Harvest price) in Rs. for certain commodities 1975-76

District	1	2	3	4	5	6	7	8	9	10
		Paddy Qtl.	Coconut 100 Nos.	Areca nut 100 Nos.	Tapioca Qtl.	Cashewnut Qtl.	Banana 100 Nos.	Pepper Qtl.	Ginger Qtl.	Sugarcane Qtl.
Trivandrum	..	224.60	61.75	4.36	41.57	233.75	33.63	1128.13	..	..
Quilon	..	204.76	66.55	4.14	38.43	259.50	35.30	1146.49	837.56	102.50
Alleppey	..	184.50	66.70	3.77	45.81	239.00	33.08	1168.42	..	101.50
Kottayam	..	189.32	68.17	4.13	43.50	236.67	31.53	1159.21	788.92	..
Idikki	..	213.99	72.42	3.49	40.39	198.89	26.71	1165.67	764.40	..
Ernakulam	..	196.08	75.44	3.87	32.00	244.19	30.68	1155.95	693.75	..
Trichur	..	181.61	70.08	4.91	40.85	238.17	29.74	1083.37	..	..
Palghat	..	165.21	71.83	3.23	33.88	239.33	29.27	1150.83	691.67	120.00
Malappuram	..	186.57	68.92	3.47	30.00	233.54	..	1130.00	646.25	..
Kozhikode	..	186.71	63.90	3.14	40.08	243.34	28.46	1203.50	850.52	..
Cannanore	..	168.24	61.98	3.29	54.54	250.06	29.81	1195.94	817.64	..
State average	..	182.98	66.86	3.83	40.22	244.04	31.35	1168.78	781.48	105.65

TABLE 6.1  
Paddy field labour—Men agricultural wages 1975-76  
(In Rs.)

District	1	2	3	4	5	6	7	8	9	10	11	12	13
		July	August	September	October	November	December	January	February	March	April	May	June
Trivandrum	...	7.25	7.75	7.75	7.75	7.75	7.75	7.50	7.50	7.50	7.50	7.50	7.50
Quilon	..	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Alleppey	...	8.50	8.50	8.50	8.50	8.25	8.00	8.00	8.25	8.25	8.25	8.25	8.25
Kottayam	..	7.75	7.75	8.25	8.75	8.75	8.75	8.75	8.50	8.50	8.50	8.25	8.25
Ernakulam	..	10.00	10.00	10.00	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50
Trichur	..	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50
Palghat	..	7.55	7.28	7.00	7.00	7.00	7.00	6.50	6.90	6.90	6.90	6.43	6.87
Malappuram	..	7.75	7.75	8.00	8.00	8.00	8.50	8.50	8.50	8.50	8.50	8.50	8.50
Kozhikode	..	9.00	9.00	9.00	9.00	9.00	9.25	9.25	9.25	9.25	9.25	9.25	9.25
Cannanore	..	11.25	11.25	11.25	11.50	12.00	11.25	12.25	11.50	11.25	11.25	11.25	11.25

TABLE 6-1 (b)  
Paddy field labour—Women agricultural wages 1975-76  
(In Rs.)

District	July		August		September		October		November		December		January		February		March		April		May		June	
	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	
Trivandrum	6.00	6.00	6.25	6.25	6.25	6.25	6.25	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.25	6.25
Quilon	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Alleppey	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.88	5.88	5.88	6.17	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25
Kottayam	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Ernakulam	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25
Trichur	5.13	5.13	5.13	5.13	5.13	5.13	5.38	5.38	5.38	5.38	5.38	6.38	6.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38
Palghat	5.28	5.43	5.43	5.43	5.43	5.50	5.50	5.42	5.42	5.42	5.42	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.23	5.23
Malappuram	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	6.00	6.00
Kozhikode	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Cannanore	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.19	5.19	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.75	5.75



TABLE 6-1 (d)  
Mason—Agricultural wages 1975-76  
(In Rs.)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum	12.00	12.00	10.75	10.75	10.75	10.75	10.75	11.13	11.25	11.50	11.50	11.50	11.22
Quilon	13.50	13.50	13.50	13.50	13.50	14.00	14.00	14.00	14.00	14.00	14.00	14.00	13.79
Alleppey	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	13.00	13.50	14.00	14.00	12.88
Kottayam	12.25	12.25	12.25	12.25	12.50	12.25	12.25	12.25	12.25	12.75	14.00	13.25	12.54
Ernakulam	13.00	13.00	13.00	12.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.29
Trichur	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Palghat	9.50	9.75	9.75	10.00	10.00	10.00	10.50	10.50	10.50	10.50	10.50	10.50	10.17
Malappuram	9.75	9.75	9.75	9.75	9.75	10.50	11.00	11.50	11.50	11.50	11.50	12.25	10.71
Kozhikode	13.00	13.00	13.25	13.00	13.00	13.00	13.25	13.25	13.25	13.25	13.25	13.25	13.15
Cananore	13.50	13.50	13.75	14.00	14.50	14.50	14.00	14.00	14.00	14.00	14.00	14.00	13.98

TABLE 7.1  
Number of livestock, poultry and agricultural machinery and implements in Kerala (1972 census)

Sl. number	District	Cattle										
		Males over three years					Females over three years					
		Breeding	Working	Others	Total	In milk	Breeding (dry)	Not calved	Working	Others		
1	2	3	4	5	6	7	8	9	10	11		
1	Trivandrum	150	12,971	891	14,012	43,775	32,622	4,972	272	270		
2	Quilon	525	33,296	1,638	35,459	76,751	33,409	15,344	178	700		
3	Alleppey	265	10,704	811	11,780	81,839	82,041	12,420	120	828		
4	Kottayam	408	11,786	758	12,952	58,768	61,575	11,561	458	225		
5	Idikki	721	10,776	626	12,123	30,568	30,623	3,931	174	269		
6	Ernakulam	459	53,237	1,588	55,284	51,113	43,544	7,887	438	427		
7	Trichur	534	46,032	828	47,394	44,579	34,351	5,170	727	262		
8	Palghat	378	57,065	1,746	59,190	55,536	51,700	8,517	2,297	846		
9	Malappuram	277	45,784	1,575	47,636	36,127	30,305	5,239	1,250	287		
10	Kozhikode	414	30,971	965	32,350	56,680	51,400	11,330	1,378	496		
11	Cananore	669	59,349	3,396	63,414	70,456	75,257	15,478	354	1,047		
	State	4,800	371,972	14,822	391,594	606,192	578,827	101,849	7,646	5,657		



TABLE 7-1—(cont.)

Sl. number	District	Cattle				Buffaloes				
		Females over three years		Young stock	Males over three years					
		Total	12		13	14	15	16	17	18
1	Trivandrum	81,911	70,670	166,593	242	12,872	904	14,018	11,621	
2	Quilon	178,382	167,776	381,617	181	8,880	352	9,413	6,762	
3	Alleppey	177,248	146,962	335,990	87	5,831	238	5,956	2,919	
4	Kottayam	132,587	123,858	269,397	61	1,606	283	1,950	2,707	
5	Idikki	65,565	58,443	136,131	147	1,456	275	1,878	3,771	
6	Ernakulam	109,409	105,731	264,424	120	9,723	639	10,482	5,738	
7	Trichur	85,039	90,198	222,681	252	38,721	1,278	30,528	11,676	
8	Palghat	118,896	101,892	279,978	565	84,499	5,077	90,141	13,816	
9	Malappuram	73,208	58,122	178,966	158	31,215	1,513	32,886	9,492	
10	Kozhikode	121,284	94,771	248,405	160	10,671	646	11,477	6,036	
11	Cannanore	162,592	146,132	372,138	212	15,916	874	17,000	8,650	
	State	1,300,171	1,164,555	2,856,320	2,185	211,467	12,077	225,729	83,188	

TABLE 7-1—(cont.)

Serial number	District	Buffaloes										Sheep			
		Females over three years										Total	One year and above	Below one year	Total
		Breeding (dry)	Not calved	Working	Others	Total	Young stock	Total							
20	21	22	23	24	25	26	27	28	29						
1	Trivandrum	7,306	1,371	428	262	20,988	9,502	44,508	456	489	945				
2	Quilon	5,077	805	107	105	12,856	6,595	28,892	741	333	1,074				
3	Alleppey	2,272	449	75	21	5,736	2,200	13,892	485	355	840				
4	Kottayam	1,619	261	49	46	4,682	1,717	8,349	165	163	328				
5	Idikki	2,419	417	13	73	6,763	3,569	12,210	122	82	204				
6	Ernakulam	1,968	478	300	129	8,613	3,711	22,806	82	65	147				
7	Trichur	6,110	1,130	247	774	19,937	13,564	64,029	32	52	84				
8	Palghat	11,389	2,106	2,322	366	29,999	24,765	144,905	4,728	1,696	6,424				
9	Malappuram	5,774	1,507	1,863	266	18,902	11,382	63,170	21	3	24				
10	Kozhikode	3,530	663	357	109	10,695	4,844	27,016	46	34	80				
11	Cannanore	6,207	1,308	235	209	16,609	8,389	41,998	113	58	171				
	State	53,671	10,495	6,066	2,360	1,55,780	90,238	471,747	6,991	3,330	10,321				

TABLE 7-1—(cont.)

Serial number	District	Cows		Goats		Horses and Ponies			Mules	Donkeys	Camels
		One year and above	Below one year	Total	3 years and above	Below 3 years	Total				
		30	31	32	33	34	35	36	37	38	
1	Trivandrum	85,391	63,369	148,760	83	21	104	2	21	2	
2	Quilon	1,00,653	78,239	178,892	37	3	40	..	2	1	
3	Alleppey	57,240	42,666	99,906	13	..	13	..	70	..	
4	Kottayam	84,692	62,625	147,317	11	1	12	..	..	..	
5	Idikki	35,829	25,413	61,242	2	..	2	..	157	..	
6	Ernakulam	90,620	72,298	162,918	10	..	10	1	78	7	
7	Trichur	79,619	143,785	223,404	20	7	27	10	100	..	
8	Palghat	82,787	53,084	135,871	62	34	96	..	417	..	
9	Malappuram	79,873	57,335	137,208	28	..	28	1	6	1	
10	Kozhikode	77,944	59,582	137,526	60	26	86	..	..	..	
11	Cannanore	64,405	50,208	114,613	7	26	33	..	..	..	
	State	839,053	628,604	1,467,657	333	118	451	14	861	11	

TABLE 7-1—(cont.)

Serial number	District	Total livestock		Poultry			Plough		
		Pigs	Total livestock	Fowls	Ducks	Others	Total	Wooden	Iron
		39	40	41	42	43	44	45	46
1	Trivandrum	14,001	374,936	1,020,638	4,563	167	1,025,368	17,379	3,164
2	Quilon	964	591,454	1,150,361	9,237	88	1,159,686	29,462	15,594
3	Alleppey	148	450,859	1,462,497	189,431	195	1,652,123	14,250	5,542
4	Kottayam	43,348	468,751	1,027,291	61,651	79	1,089,021	8,005	516
5	Idikki	25,666	235,612	460,954	3,540	39	464,533	7,156	355
6	Ernakulam	32,246	482,630	1,355,680	51,873	100	1,407,653	51,028	1,482
7	Trichur	2,141	432,473	1,230,931	21,456	28	1,252,415	40,896	2,421
8	Palghat	430	568,131	914,032	8,437	2	922,471	100,750	2,159
9	Malappuram	86	379,492	1,193,504	4,544	48	1,198,096	52,479	1,834
10	Kozhikode	3,772	416,893	1,028,288	4,064	120	1,032,472	25,963	1,645
11	Cannanore	6,285	535,238	1,000,372	3,145	99	1,003,616	46,346	1,291
	State	129,087	4,936,469	11,844,548	361,941	965	12,207,454	393,714	35,203

TABLE 7.1—(cont.)

Serial number	District	Sugarcane crushers				Tractors*	Chains		Perlan wheel	
		Carts	Power	Bullocks	Oil engines		Electric pumps	More than 5 kg.		Less than 5 kg.
		47	48	49	50	51	52	53	54	55
1	Trivandrum	1,196	3	19	191	567	99	47	15	147
2	Quilon	1,695	5	67	327	114	184	137	114	200
3	Alleppey	634	22	83	1,468	546	430	181	153	578
4	Kottayam	392	10	170	709	255	306	40	59	1,169
5	Idikki	119	6	6	153	161	81	12	33	203
6	Ernakulam	637	14	102	3,417	3,039	404	57	44	529
7	Trichur	2,467	1	115	1,163	1,849	293	115	61	369
8	Palghat	8,203	31	127	3,861	2,373	482	53	32	515
9	Malappuram	365	1	14	1,658	366	87	38	7	215
10	Kozhikode	259	..	41	906	538	166	219	135	303
11	Cannanore	278	3	57	4,796	543	221	93	56	404
	State	16,245	96	801	18,649	9,983	2,752	992	709	4,632

\* Tractors include all private and Government tractors.



**PART—IV**  
**APPENDICES**

1. Working class cost of living indices
2. Parity index
3. Quarterly retail prices
4. Export of agricultural commodities
5. Notes on certain crops—
  1. Tea
  2. Coffee
  3. Rubber
  4. Cardamom
  5. Pepper
  6. Ginger
  7. Lemongrass
6. Classification of soil in Kerala
7. Conversion ratio between the raw materials and the processed products
8. Average analysis of important fertilisers
9. Insect pests affecting paddy crop, their distribution and some practical methods of control
10. List of centres selected for recording meteorological information
11. Glossary of English, Botanical and Malayalam names

14-00001

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### 1. Working class cost of living indices

The consumer price index for the State was revised with effect from August 1975 with base 1970=100 on the basis of a family budget survey conducted by the bureau. For the purpose of comparison the cost of living indices for the year were estimated for the old base with the linking factor. The average consumer price index numbers in the selected 10 centres of the State during the year 1974-75 and 1975-76 are given in the following tables.

TABLE I

Sl. No.	Centre	Average cost of living indices	
		1974-75 Rs.	1975-76 Rs.
1.	Trivandrum	1,580	1,489
2.	Quilon	1,579	1,492
3.	Punalur	1,568	1,454
4.	Alleppey	1,548	1,463
5.	Kottayam	1,577	1,446
6.	Munnar	1,574	1,447
7.	Ernakulam	1,584	1,482
8.	Trichur	1,582	1,475
9.	Chalakydy	1,580	1,486
10.	Kozhikode	1,767	1,636

As comparable figures were not available in respect of the 5 centres newly added since August 1975 estimates were made only for the ten centres. Month-wise details of consumer price for the 10 centres for agricultural year 1975-76 is given in Table I of appendix. Statement showing the consumer price index numbers from August 1975 to June 1976 with base 1970=100 is also given as table 1.1. The indices show a gradual decline during the year.

## 2. Parity index

The index of parity between prices received and prices paid by the farmers during each month of the year 1974-75 and 1975-76 is given below:

TABLE II

### Index of parity

<i>Month</i>	1974-75	1975-76
July	110	89
August	107	89
September	103	88
October	101	89
November	100	93
December	103	92
January	102	91
February	101	92
March	101	95
April	101	98
May	99	97
June	94	100
Average	102	93

## 3. Quarterly retail prices

The trend of quarterly retail prices of 12 important commodities is presented in the following paragraphs. District-wise quarterly retail prices have been given in Table II.

(1) *Rice*.—The price of rice per kg. varied from Rs. 1.61 to Rs. 1.64 during the 1st quarter. During the other periods the price of rice is found fixed at Rs. 1.73 per kg. in all Districts except Idikki, Malappuram and Kozhikode. Idikki showed the maximum rate at Rs. 1.77 per kilogram.

(2) *Chillies*.—The price of chillies fluctuated between Rs. 9.12 and Rs. 18.29 per kg. The maximum price is reported from Trivandrum during second quarter and the minimum price from Quilon during the 4th quarter.

(3) *Tapioca*.—The lowest price of Re. 0·37 per kg. was reported from Palghat. The highest price of Re. 0·90 per kg. was ruled in Cannanore District during 1st and 2nd quarter.

(4) *Blackgram*.—The price of blackgram varied within the range from Rs. 2·17 to Rs. 4·04 per kg. The highest price ruled in Idikki whereas the lowest in Alleppey.

(5) *Tea*.—The highest price of Rs. 18·50 per kg. was reported from Kozhikode and the lowest price of Rs. 11·25 from Idikki.

(6) *Coffee*.—The price of this commodity fluctuated between Rs. 12·09 and Rs. 17 per kg. The highest price was reported from Kozhikode District and the lowest price from Alleppey.

(7) *Sugar*.—The price stood steady at Rs. 2·15 per kg. in all Districts.

(8) *Coconut oil*.—The price varied from Rs. 7·17 per litre at Alleppey to Rs. 9 at Idikki.

(9) *Gingelly oil*.—The highest price of Rs. 10·15 per litre was reported from Trivandrum District during the 1st quarter. The lowest price was reported from Kottayam during the 3rd quarter.

(10) *Coconut*.—The price of coconut per dozen fluctuated between Rs. 7·29 at Trivandrum during the 1st quarter and Rs. 13·40 per dozen at Idikki during the 2nd quarter.

(11) *Tobacco (Jafna)*.—The price varied within Rs. 12 and Rs. 21·33 per kg. The highest price is reported from Alleppey and the lowest from Trivandrum.

(12) *Tobacco (Vadakkan)*.—The highest price quoted was Rs. 18·42 per kg. and the lowest price Rs. 10·42. These were reported from Alleppey and Quilon respectively.

#### 4. Export of agricultural commodities

The details of foreign export from the ports of Kerala 1974-75 and 1975-76 are furnished in Table 3.

TABLE I  
Statement of consumer price index numbers for the agricultural year 1975-76

Serial number	Centre	Average												
		July 1975	August	September	October	November	December	January 1976	February	March	April	May	June	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Trivandrum	..	1558	1558	1541	1550	1507	1490	1429	1412	1412	1403	1403	1489
2	Quilon	..	1542	1550	1533	1533	1491	1465	1414	1406	1414	1398	1406	1492
3	Punalar	..	1537	1537	1521	1512	1463	1438	1388	1371	1371	1355	1355	1454
4	Alleppey	..	1523	1531	1523	1531	1489	1464	1404	1387	1387	1371	1379	1463
5	Kottayam	..	1536	1528	1510	1510	1467	1441	1380	1363	1371	1354	1354	1446
6	Ernakulam	..	1551	1559	1542	1542	1507	1480	1419	1410	1419	1402	1402	1482
7	Trichur	..	1547	1538	1521	1521	1486	1460	1408	1408	1425	1416	1425	1475
8	Chalakudy	..	1550	1542	1524	1533	1498	1472	1428	1428	1446	1428	1428	1486
9	Munnar	..	1524	1517	1493	1501	1461	1437	1390	1374	1390	1374	1382	1447
10	Kozhikode	..	1720	1720	1701	1692	1644	1616	1569	1559	1578	1559	1569	1636

TABLE 1.1  
Statement showing the consumer price index numbers from August 1975 to June 1976

Centre	1	2	3	4	5	6	7	8	9	10	11	12
		August	September	October	November	December	January	February	March	April	May	June
Trivandrum	..	181	181	179	180	175	173	166	164	164	163	163
Quilon	..	182	183	181	181	176	173	167	166	167	165	166
Punalur	..	185	185	183	182	176	173	167	165	165	163	163
Alleppey	..	180	181	180	181	176	173	166	164	164	162	163
Kottayam	..	177	176	174	174	169	166	159	157	158	156	156
Mundakayam	..	185	186	184	185	180	177	170	169	170	167	167
Munnar	..	192	191	188	189	184	181	175	173	175	173	174
Ernakulam	..	177	178	176	176	172	169	162	161	162	160	160
Chalakudy	..	178	177	175	176	172	169	164	164	166	164	164
Trichur	..	178	177	175	175	171	168	162	162	164	163	164
Paighat	..	169	170	171	173	170	168	163	162	164	162	160
Malappuram	..	176	177	174	175	170	168	162	161	162	160	160
Kozhikode	..	182	182	180	179	174	171	166	165	167	165	166
Meppadi	..	185	184	180	180	175	173	169	168	169	166	166
Cannanore	..	176	176	174	174	170	167	161	160	162	160	161

Base 1970=100

TABLE 2  
Quarterly average retail prices at District Headquarters for 1975-76

Commodity	Quarter	3	4	5	6	7	8	9	10	11	12	13
Coconut/doz.	..	7-29	9-43	8-60	9-20	10-50	8-52	9-05	7-70	8-01	9-91	8-24
	I	8-84	9-36	10-33	10-76	13-40	10-60	10-80	10-24	9-25	10-80	8-75
	III	8-42	9-47	9-48	9-84	13-22	10-55	10-10	11-23	9-80	10-75	9-73
	IV	8-07	10-65	9-20	10-18	12-80	10-35	10-35	9-40	10-59	9-76	10-41
Coconut oil/litre	..	7-81	7-21	7-17	7-21	8-15	7-54	7-80	7-64	7-72	7-22	7-90
	I	8-96	8-28	7-91	8-02	9-00	8-43	8-77	8-72	8-42	8-19	8-57
	III	8-33	7-44	7-38	7-46	8-29	8-15	7-88	8-48	7-95	7-63	7-76
	IV	8-21	7-55	8-23	7-48	8-46	8-26	7-89	8-39	7-95	7-58	7-94
Rice (F.P.)/kg.	..	1-61	1-61	1-61	1-61	1-64	1-61	1-61	1-61	1-62	1-61	1-61
	I	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*	1-73*
	III	1-73	1-73	1-73	1-73	1-77	1-73	1-73	1-73	1-74	1-74	1-73
	IV	1-73	1-73	1-74	1-73	1-77	1-73	1-73	1-73	1-74	1-74	1-73
Blackgram/kg.	..	3-36	3-17	3-33	3-01	4-04	2-85	2-93	3-21	3-63	3-30	2-70
	I	3-32	3-13	2-65	2-66	3-77	3-01	2-90	3-00	3-00	3-30	2-53
	III	3-06	2-62	2-17	2-28	3-04	2-46	2-86	2-60	3-03	3-17	2-40
	IV	2-75	2-83	2-44	2-77	3-41	2-66	2-42	2-92	2-82	3-32	2-35
Gingelly oil/litre	..	10-15	9-58	8-55	8-55	9-88	8-65	8-36	8-46	8-67	8-00	8-70
	I	9-06	9-06	7-93	8-03	8-75	8-65	8-95	8-48	8-62	7-99	9-60
	III	8-92	8-67	7-13	7-39	8-06	8-64	8-51	8-00	7-58	7-71	8-50
	IV	9-50	8-88	8-67	7-95	8-58	8-64	8-42	8-53	8-12	7-67	9-25
Tapioca/kg.	..	0-52	0-53	0-62	0-61	0-60	0-50	0-45	0-40	0-52	0-50	0-90
	I	0-60	0-61	0-60	0-64	0-58	0-57	0-46	0-39	0-51	0-55	0-87
	III	0-60	0-58	0-56	0-60	0-60	0-53	0-46	0-37	0-58	0-56	0-87
	IV	0-60	0-60	0-56	0-59	0-60	0-60	0-47	0-45	0-59	0-55	0-83

\* Variety change

TABLE-2—(cont.)

Commodity	Quarter	Trivandrum	Quilon	Alleppey	Kottayam	Idikki	Ernakulam	Trichur	Palghat	Malappu- ram	Kozhikode	Cannanore
1	2	3	4	5	6	7	8	9	10	11	12	13
Sugar (F.P.)/kg.	I	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	II	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	III	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	IV	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Chillies/kg.	I	16.56	15.52	15.76	15.25	16.12	15.47	16.27	15.88	15.80	16.04	16.60
	II	18.29	16.88	17.21	16.64	16.54	17.12	17.66	17.63	17.23	17.23	17.24
	III	11.42	10.27	10.68	10.38	11.28	11.39	10.70	10.57	10.24	9.94	10.75
	IV	9.68	9.12	9.37	9.28	9.80	10.32	10.26	10.12	9.20	9.27	9.26
Coffee powder/kg.	I	16.00	16.00	12.09	16.00	12.50	16.00	16.00	14.71	15.75	16.00	15.00
	II	16.84	16.65	12.39	16.61	12.50	16.93	16.93	16.16	16.61	17.00	16.70
	III	16.70	16.70	16.70	16.70	12.50	17.00	16.72	16.50	16.70	17.00	16.70
	IV	16.70	16.70	16.70	16.70	12.63	17.00	16.70	16.50	16.70	17.00	16.70
Tea/kg.	I	17.46	17.42	18.00	18.50	11.25p	17.30	17.00	17.48	17.50	18.50	16.80
	II	16.99	17.20	18.00	18.50	11.25p	17.30	17.00	17.48	17.50	18.50	16.80
	III	16.82	17.16	17.43	17.28	11.25p	17.30	17.00	17.24	18.00	18.50	16.80
	IV	16.82	17.04	17.12	17.28	11.25p	17.30	17.04	17.07	17.57	18.08	16.80
Tobacco/kg. (Jaffna)	I	12.00	12.17	12.83	13.52	15.00	17.21	17.04	..	..	..	..
	II	15.32	16.77	17.35	16.49	16.67	17.31	17.84	..	..	..	..
	III	18.00	20.14	21.23	20.70	18.00	16.17	18.00	..	..	..	..
	IV	17.50	19.00	19.01	19.33	18.00	17.00	18.43	..	..	..	..
Tobacco/kg. (Vadakkan)	I	11.00	10.42	12.50	11.07	11.62	12.17	14.19	10.56	12.39	12.90	13.37
	II	14.31	13.56	16.15	14.21	13.90	13.67	14.50	12.88	13.85	14.46	15.00
	III	17.00	14.68	18.42	14.13	15.63	15.00	14.93	13.73	15.00	15.82	15.65
	IV	16.50	13.00	16.65	14.33	16.50	15.00	15.00	15.17	15.96	17.78	16.73

P—Pookulam dust

TABLE 3  
Foreign export from the Ports of Kerala 1974-75 and 1975-76  
(Value Rs. in lakhs)

Sl. No.	Commodity	Unit	1974-75		1975-76	
			Quantity	Value	Quantity	Value
1	2	3	4	5	6	7
1	Cardamom	M.T.	537	449.11	439	404.12
2	Cashew kernels	M.T.	56797	10,579.76	61507	9,302.52
3	Cashew shell oil	'000 ltr.	6039	145.67	5567	111.22
4	Coffee	M.T.	31710	2,919.29	25232	2,219.94
5	Coir and coir products	"	38237	1,738.75	36913	1,954.11
6	Ginger	"	3181	242.22	2122	204.39
7	Lemongrass oil	'000 ltr.	244	154.53	294	116.62
8	Marine products	M.T.	26485	4,171.90	30210	7,529.79
9	Oil cake	"	480	5.83	48	0.53
10	Pepper	"	24436	3,270.91	17338	3,187.02
11	Rubber manufacture	Value	..	55.52	..	108.02
12	Tea	M.T.	43065	4,239.21	33260	3,815.08
13	Wood and timber	Value	..	576.79	..	1,007.99
14	Sundries	Value	..	2,467.97	..	3,536.19
	Total	..	..	31,017.46	..	35,497.54

Note: Figures are provisional



## NOTES ON CERTAIN CROPS IN KERALA

## (1) Tea

India continues to be the biggest producer of tea in the world. Tea is one of the principal foreign exchange earners. Tea industry substantially contributes to the national exchequer and also provides employment to a large number of people. India accounts for nearly 46 per cent of the world production of tea. India ranked first among the exporters of tea in the international market but of late, Ceylon has wrested the first rank from India.

*Climate.*—A hot moist climate is most suitable for tea plantation, the temperature varying from 55F to 95F and an annual rainfall ranging between 100 to 130 inches. Tea is usually cultivated at altitudes ranging from 3000 feet to 5000 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 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 3000 plants per acre. "Hedge Planting" i.e., planting in rows 5' apart with a spacing of 2' between the bushes in a row is also done in new estates. Before planting is done pits of 9" square and 18" 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 southwest 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 those 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 up to 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 60 to 80 years.

*From the garden to the market.*—The leaves plucked from tea gardens have 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 rack 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 rolls 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 change 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 classifications of grade. They are leaf grades and broken grades. The former group is mainly divided into orange pekoe and pekoe souchong; broken orange pekoe, broken pekoe 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 small quantity. In this process the fresh leaf is subject to heat treatment by steaming or roasting. The green leaf after the heat treatment is rolled and dried, the process being repeated till the desired degree of dryness is reached.

## (2) Coffee

Coffee was first discovered in Africa although the earliest cultivation was begun in Southern Arabia. Coffee as an important plantation crop was introduced in India from Arabica. The production of coffee in India is only 1 per cent of the world production. There are two main species of coffee grown in India, namely, Arabica and Robusta. Robusta flourishes at lower levels and has more power of resistance against extremes of climate, 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 is ranging between 1500 and 6000 feet, above mean sea level. The most suitable altitude is between 2500 ft. to 5000 ft. It needs a well distributed rainfall of about 60 to 80 inches per annum and a distinct rainy and dry season with a minimum average temperature of 70° F. A good dry spell from about December to March with a few intermittent showers in March and April and heavy rainfall in July and August constitute ideal condition for the growth of the coffee plant (Report of the Plantation Enquiry Commission of 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 through 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 plant is ordinarily eight to nine feet. The plants are manured well and watered frequently.

In the second method of propagation lower branch of the tree are bent down under the earth for atleast four months so as to enable new roots to sprout up from these branches.

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

*Pruning.*—Usually the 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  $\frac{1}{2}$  to 2 lbs. of green coffee in a season. Good yield may be obtained from a plant for a period of 20 to 30 years. Excessive rains or want of rains in the blossoming season will adversely affect the yield.

*Diseases.*—The following diseases are prevalent in the coffee estates. They are (1) coffee stem borer (2) shot hole borer (3) leaf disease (4) root-rot (5) die-back (6) chlorosis and (7) green bug.

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

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them and the pulpy skin of the cherries are automatically removed. Then those cherries are put into big tanks for about 24 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 2 to 3 weeks. When these 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. 94 per cent of the total area under rubber is in the Kerala State. 92 per cent of the total production of rubber in India is also from Kerala. India's place in the world acreage under rubber is comparatively very low. India's production comes to 2.2 per cent of the total world output of natural rubber. Before a tyre factory was established in India in 1938 the raw rubber was exported to the foreign countries. Owing to a record production of rubber on the one hand and the lower off take by the industry on the other, rubber experienced a problem of surplus in the last one or two years. Consequently rubber growers in the country were confronted with a perceptible fall in rubber prices. Even State intervention by way of fixation of a floor price and the entry of the State Trading Corporation into the market could not solve the problem to any considerable extent.

*Climate.*—Rubber usually grows in the tropical belt lying within 15° N and 10° S of the equator and usually at an altitude of 1000 ft. 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 still 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 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 ordium hevea' and phytophers meadi' which cause secondary leaf fall. These diseases affect the growth of the tree and the yield of the tree. Another disease known as Brown Best is prevalent in the trees which are used for frequent tapping. The symptom of the disease is the cessation of the latex production by the trees in the affected portion of the bark.

*From the estate to the market.*—The latex brought by the tappers is first of all freed from sand, bark and other impurities by straining at the coagulating shed constructed specially for the purpose. In the case of crape rubber coagulation is done by using acetic acid. For changing latex into sheet rubber the latex after being bulked and diluted is put into shadow pans. For removing water and for getting a definite shape the coagulam is pressed by hand. Then these sheets are allowed to pass two or three times between smooth rollers. The sheets are usually again passed through a machine for printing the trade mark of the estate. These sheets are washed. Then these sheets are placed in specially constructed houses known as smoke houses and hot air with temperature of 115° to 120° F is allowed to circulate in the room. This is done for 15 days. The colour of the sheet will change from white to black. There are three important types of rubber, smoked sheet, late crape and scraprubber. 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*. Kerala ranks first as the largest producer of cardamom. 80 per cent of the world output of this valuable spice is produced in India. India's competitors are Ceylon, Indo-China and Guatemala. Cardamom possess on 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 and annual rainfall of 60—80 inches. The best altitude for cardamom planting is between 2500 to 5000 ft.

*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 2 ft. squares and one foot deep are dug, the distance between one pit and the next varying from 8 to 10 ft. 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 plants.*—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 *phyllanthus emblica*. A mixture of caster cake bone-meal and potassium chlorate is also considered to be a good manure.

*Diseases.*—The most important diseases affecting the cardamom plantations, is the virus diseases 'Katte' which is rampant in most cardamom plantations. The symptom of the diseases 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, mite, etc., Dusting the plants with gamaxene is the remedy.

*From the estate to the market.*—The capsules of the cardamom are dried in the sun or specially built dry houses by using artificial heat. Usually 3–4 days are taken for drying the cardamom in the sunlight but at the same time 48 hours is only needed for artificial drying. The sub-dried produce retains the mucilaginous coating on

the seeds and possesses characteristic sweet aroma. The dried capsules are then cleaned. The final product of green cardamom is 20 to 28 per cent of the green harvested produce.

Sometimes bleaching is done by exposure to sulphur 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 (1) green cardamom (2) white or bleached cardamom and (3) seeds. The quality of cardamom varies according to place and variety of the seed.

The Middle-East and Sweden absorbed a large quantity of the exports of cardamom from India.

### (5) Pepper

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

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

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

*Planting.*—The crop is propagated vegetatively by means of cuttings. It is a wood climber and requires some support for the vines. Jack and mango trees are commonly used as support for vines. Murukku trees are also used. On a plantation basis they are planted at a distance of 10 ft. apart. The vine is rarely allowed to grow beyond a height of 20 ft. lest the plucking of the pepper berries become difficult.

*Plucking.*—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 become black. Sometimes the skin of the ripe berries is removed before drying. This kind of pepper is known as white pepper and is produced only in limited quantities.

*Yield.*—The yield mainly depends upon the fertility of the soil and the locality. The yield at the first harvest is generally poor. Full yield can be expected from the seventh year. Usually in an acre there

will be 300 to 400 standards where pepper is cultivated on a plantation scale. The average yield per standard varies between  $\frac{1}{4}$  lb. to 2 lbs. of dried produce.

*Life of the plant.*—The life of the plant ranges between 25 to 30 years. But rarely some varieties have been found to live up to 60 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 disease that affects pepper is 'Pollu' by which the pepper berries are rendered hollow.

*From garden to market.*—The dried black pepper is graded and packed. The pepper is generally packed in double gunny bags. Pepper is mainly exported to U.S.A. and U.K.

## (6) Ginger

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

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

*Soil.*—The soils suitable for ginger cultivation are well 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 on slaught of the rain and to serve as manure also. The crop takes nine to ten months to attain maturity. In July-August weeding and manuring is done.

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

*Manure.*—Usually cattle manures are used.

*Yield.*—The yield is generally eight to ten times of the seed rate. Here in Kerala the average yield of ginger is about 1.5 tonnes per hectare.

*Pests and diseases.*—Ginger crop is usually affected by a disease known as soft root. The colour of the green plants are changed into pale yellow and the production goes down. Use of mercuric chloride



(0.05 per cent) for treating the rhizomes sorted as seed is advocated as preventive measure. Another important disease is known as 'varmicularia'. The leaves become covered with yellowish and brownish spots and gradually dry up. Spraying with Bordezex 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 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. The ginger is known as the 'rough' or 'unbleached ginger' of commerce.

There is another variety of ginger known as 'lime ginger' or 'bleached ginger'. The process is a bit different from the above. The green ginger is put in shallow cisterns and they are cleaned by water repeatedly. When they are finally cleaned they are put in a solution containing milk of lime for sometimes after which they are dried in the sun. This process of dipping in lime and drying will be continued a number of times until the rhizomes get a uniform coating of lime.

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

The B and C grades are exported to foreign market. The D grade being small pieces of ginger is mostly consumed internally in India.

Indian ginger is mainly exported to Aden, Arabia and United Kingdom.

### (7) Lemongrass oil

Lemongrass oil which is an important raw material for the perfumery, soap and cosmetic industries is extracted by distilling the leaves of the grass 'cymbopogon, Flexrosus, stapf'. The important lemongrass growing areas are Ceylon, Java, West Indies Malaya Guatemala and India 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, Thaliparamba, 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 lateriate soils are selected for the cultivation. During February–March the site selected is first cleared of all undergrowth 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 lbs., of seeds are sown. The seeds are sown broadcast. The crop is also grown by transplanting of seedlings raised in separate nurseries. 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 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 December.

*Life of the Plant.*—The life of the lemongrass plant is 5 to 8 years.

*Yield:*—The yield of the crop under different years is 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 (oil) receiver and wooden tube.

The raw grass and water are put in the boiler specially made for this purpose. The shape of the boiler is like a retort apparatus. Then the boiler is heated with fire wood. After sometime a mixture of water vapour and essential oil escapes through the copper spiral connected to the retort. This copped 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 tube. 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 tube. 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 U.S.A. and U.K.

## 6. Classification of soils in Kerala

<i>District</i>	<i>Type of soil</i>	<i>Details of distribution</i>
Trivandrum	1. Fairly rich brown loam of laterite origin	Middle part of the District
	2. Sandy loam	Western coastal region
	3. Richest dark brown loam of granite origin	Eastern hilly part of the District
Quilon	1. Sandy loam	Karunagappally and part of Quilon Taluk
	2. Laterite soil	Kottarakkara, Kunnathur and part of Quilon, Pathanapuram and Pathanamthitta Taluks
	3. Hill and forest soil	Part of Pathanapuram and Pathanamthitta Taluks
Alleppey	1. Sandy loam	Karthigappally and Mavelikkara Taluks
	2. Sandy soil	Sherthallai and Ambalappuzha Taluks
	3. Clay loam with much of acidity	Kuttanad
	4. Laterite soil	Chengannur and part of Mavelikkara
Kottayam	1. Laterite soil	Part of Meenachil, Changanacherry and Kottayam Taluks
	2. Alluvial soil	Vaikom parts of Changanacherry and Kottayam
Idikki	1. Laterite soil	Peermade and Thodupuzha Taluks
	2. Alluvial soil	Devicolam and Udumbanchola Taluks
Ernakulam	1. Laterite	Muvattupuzha and part of Kunnathunad
	2. Sandy loam	Parur, Cochin and Kanayannur
	3. Alluvial	Part of Alwaye and Kunnathunad

<i>District</i>	<i>Type of soil</i>	<i>Details of distribution</i>
Trichur	1. Sandy loam	Part of Mukundapuram, Trichur and Chowghat Taluks
	2. Laterite	Eastern area of Trichur, Western portion of Talappally
	3. Granite	Northern part of Talappilly
	4. Clay	Backwater area in Chowghat and part of Mukundapuram
	5. Alluvial soil	Portion of Chowghat and Kunnathunad Taluk
Palghat	1. Laterite	Interior regions of the District
	2. Sandy	Along riverside areas
	3. Black soil	North-eastern portion of Chittur Taluk
Malappuram	1. Laterite soil	Major part of the District barring coastal area
	2. Sandy	Coastal strip
Kozhikode	1. Laterite	Major part of the District barring coastal area
	2. Sandy	Coastal strip
Cannanore	1. Laterite	Major part barring coastal area
	2. Sandy	Coastal area

#### 7. Conversion ratio between the raw materials and the processed product

Rice:	Rice (cleaned) production $\frac{2}{3}$ paddy production	
Cotton:	Cotton lint production $\frac{1}{3}$ of kapas production	
	Cotton seed production $\frac{2}{3}$ of kapas production	2 times of cotton lint production
Groundnut:	Kernel to nuts in shell	70 per cent
	Oil to nuts in shell	28    "
	Oil to kernels crushed	60    "
	Cake to kernels crushed	60    "

Sesamum:	Oil to seeds crushed	40 per cent
	Cake to seeds crushed	60 "
Caster seeds:	Oil seeds crushed	37 "
	Cake to seeds crushed	63 "
Coconuts:	Copra to nuts one ton copra	6775 nuts
	Oil to copra crushed	62 per cent
	Cake to copra crushed	38 "
Neem seed:	Oil to kernel crushed	45 to 50-per cent
	Cake to kernels crushed	50 to 55 "
Sugar:	Gur from cane crushed	10 "
	Crystal sugar from gur refined	62.40 "
	Crystal sugar from cane crushed	9.97 "
	Khandassari sugar from gur refined	37.5 "
	Molasses from cane crushed	3.5 "
Cashewnuts:	Cashew kernels	25 per cent of cashewnut
	Butter from mixed milk	6.3 per cent
	Ghee from mixed milk	5.3 "

### 8. Average analysis and important fertilisers

<i>Sl. No.</i>	<i>Name of fertiliser</i>	<i>Nitrogen (N. per cent)</i>	<i>Phosphate (P<sub>2</sub> O<sub>5</sub>)</i>	<i>Potash (K<sub>2</sub> O)</i>
(1)	(2)	(3)	(4)	(5)
1.	Ammonium Sulphate Nitrate	26.0	..	..
2.	Ammonium Sulphate	20.5	..	..
3.	Ammonium Nitrate	33.5	..	..
4.	Ammonium Phosphate	16.0	20.0	..
5.	Calcium Ammonium Nitrate	20.5	..	..
6.	Nitrate of Soda	16.5	..	..
7.	Calcium Nitrate	15.3	..	..
8.	Calcium Cyanamide	20.0	..	..
9.	Urea	46.0	..	..
10.	Super Phosphate—Single	..	18.00	..
11.	Super Phosphate—Double	..	35.00	..
12.	Super Phosphate	..	45.00	..
13.	Rock Phosphate	..	28.3	..
14.	Hyper Phosphate	..	27.3	..
15.	Sulphate of Potash	..	..	48.00
16.	Muriate of Potash	..	..	50.00
17.	Groundnut Cake	7.00	1.5	1.3
18.	Castor Cake	4.3	2.0	1.0
19.	Mustard Cake	4.5	1.5	..
20.	Muhua Cake	2.5	0.8	1.8
21.	Neem Cake	5.2	1.0	1.4

<i>Sl. No.</i> (1)	<i>Name of fertiliser</i> (2)	<i>Nitrogen</i> ( <i>N. per cent</i> ) (3)	<i>Phosphate</i> ( $P_2O_5$ ) (4)	<i>Potash</i> ( $K_2O$ ) (5)
22.	Gingelly Cake	6.2	2.0	1.2
23.	Coconut Cake	3.0	1.9	1.8
24.	Poultry Manure	1.2—1.5	..	..
25.	Sheep Manure	0.8—6	..	..
26.	Horse Manure	0.8—6	..	..
27.	Farm Yard Manure	0.4	0.3	0.2
28.	Fresh Cow Dung	1.57	0.25	0.18
29.	Compost	0.5	0.25	0.5
30.	Bone Meal	3.5	21.0	..
31.	Fish Meal	4.10	3.0	0.3
32.	Blood (Dried)	11.5	1.5	0.6
33.	Meat Meal	11.0	..	0.6
34.	White Fish Meal	10.0	10.0	1.0

**9. Insect pest affecting paddy crops, their distribution and some practical methods of control**

<i>Sl. No.</i> (1)	<i>Name of pest</i> (2)	<i>Nature of damage</i> (3)	<i>Control measure</i> (4)
1.	Rice Swarming Caterpillar ( <i>Spodoptera mauritia</i> )	Defoliation plants reduced to stumps nursery and early growing stages attached	Spray D.D.T. at 1.5 kg., a.i. per hectare or endrin at 250 gm. a.i. per hectare
2.	Rice stem borer ( <i>Schoenabius cestulus</i> )	Caterpillar bores into stem causing 'dead hearts' and 'white ear heads'	Set light traps in the field to catch and destroy moths. Collect egg masses from nursery plants and destroy them
		All stages of plants susceptible to attack	Spray endrin or parathion at 250 gm. a.i., per hectare at intervals of 15-20 days starting from 15th day after sowing and up to flowering
3.	Rice bug <i>leptocoris</i> <i>acuta</i>	Sucks 'milk' of tender grains leaving them chaffy	Dust B.H.C. or spray endrin or parathion at doses given above

<i>Sl. No.</i>	<i>Name of pest</i>	<i>Nature of damage</i>	<i>Control measure</i>
(1)	(2)	(3)	(4)
4.	Rice Hispa <i>Dicladispa</i> ( <i>Hispa armigera</i> )	Adults feed on the green matter of leaves and grubs mine the leaves	Spray D.D.T, endrin or parathion at above doses
5.	Rices case worm <i>Nymphula depunctalis</i>	Caterpillar in lead-case defoliates	do.
6.	Paddy gall fly ( <i>Diptera</i> )	The maggot bores into central shoot and cause the formation of elongated hallow gall called 'silver shoot'.	Spray endrin or parathion at 250 gm. a.i. per hectare 4 times at weekly intervals from 15th day after transplantation set up light traps
7.	Paddy Mealy bug	Lives within leaf sheaths in colonies sucking sap causing stunting of crop	Spray parathion at 250 gm. a.i. per hectare phosphamidon ( <i>Dimecro 100%</i> ) solun at 100 ml., per hectare or <i>Dimothocate</i> ( <i>Regor</i> at 312 ml. per hectare)
8.	Paddy leaf hoppers and Jaosids	Cause-weaking of crop by desapping in colonies	Dust B H.C.
9.	Paddy leaf roller <i>Cnaphalocrocis medainalis</i> G	Catterpillar folds leaves and feeds on green matter. Attacked fields show white patches	Dust B.H.C. or spray D.D.T. at doses given above

### 10. List of reporting raingauge stations in Kerala

#### Trivandrum District

- |                 |                         |
|-----------------|-------------------------|
| 1. Ponmudi      | 6. Neyyattinkara        |
| 2. Varkala      | 7. Parassala            |
| 3. Attingal     | 8. Trivandrum Aerodrome |
| 4. Nedumangad   | 9. Vellayani (AM)       |
| 5. Trivandrum-B |                         |

**Quilon District**

- |                   |                     |
|-------------------|---------------------|
| 1. Pathanamthitta | 7. Aryankavu        |
| 2. Konni          | 8. Quilon           |
| 3. Adoor          | 9. Nilamel          |
| 4. Karunagappally | 10. Paravoor        |
| 5. Punalur        | 11. Kayamkulam (AM) |
| 6. Kottarakkara   |                     |

**Alleppey District**

- |                |               |
|----------------|---------------|
| 1. Arukutty    | 6. Chengannur |
| 2. Sherthallai | 7. Haripad    |
| 3. Alleppey-B  | 8. Mavelikara |
| 4. Ambalapuzha | 9. Kayamkulam |
| 5. Thiruvalla  |               |

**Kottayam District**

- |               |                   |
|---------------|-------------------|
| 1. Vaikom     | 5. Kanjirappally  |
| 2. Palai      | 6. Changanacherry |
| 3. Ettumanoor | 7. Kottayam (AM)  |
| 4. Kottayam   |                   |

**Idikki District**

- |               |                         |
|---------------|-------------------------|
| 1. Chinar     | 6. Kumily               |
| 2. Marayur    | 7. Pee medu (Taluk)     |
| 3. Munnar     | 8. Peermadu (Residency) |
| 4. Devikulam  | 9. Ve oor               |
| 5. Vandanmedu | 10. Karikode            |

**Ernakulam District**

- |                |                  |
|----------------|------------------|
| 1. Malayattur  | 5. Neriamangalam |
| 2. Parur       | 6. Muvattupuzha  |
| 3. Perumbavoor | 7. Ernakulam     |
| 4. Alwaye      | 8. Ch chin-B     |

**Trichur District**

- |                 |                    |
|-----------------|--------------------|
| 1. Cranganore   | 5. Ollurkkara (AM) |
| 2. Mukundapuram | 6. Peechi (AM)     |
| 3. Trichur      | 7. Chalakudy       |
| 4. Thalappilly  |                    |

**Palghat District**

- |               |                  |
|---------------|------------------|
| 1. Alathur    | 5. Cherplassery  |
| 2. Palghat    | 6. Mannarghat    |
| 3. Parali     | 7. Chittoor      |
| 4. Ottappalam | 8. Pattambi (AM) |



**Malappuram District**

- |                   |                 |
|-------------------|-----------------|
| 1. Perinthalmanna | 4. Thirurangadi |
| 2. Ponnani        | 5. Nilambur     |
| 3. Manjeri        |                 |

**Kozhikode District**

- |              |             |
|--------------|-------------|
| 1. Kozhikode | 4. Badagara |
| 2. Vythiri   | 5. Kuttiadi |
| 3. Quilandy  |             |

**Cannanore District**

- |                |                    |
|----------------|--------------------|
| 1. Kasargode   | 6. Irikkur         |
| 2. Taliparamba | 7. Payyannur       |
| 3. Cannanore   | 8. Mananthody      |
| 4. Hosdrug     | 9. Mahe            |
| 5. Tellicherry | 10. Kasargode (AM) |

**NON-REPORTING RAINGAUGE STATIONS—SCHEDULE I****Trivandrum District**

- |                |               |
|----------------|---------------|
| 1. Aruvikara   | 3. Nedumangad |
| 2. Vamanapuram |               |

**Quilon District**

- |                 |                 |
|-----------------|-----------------|
| 1. Kulathupuzha | 2. Kottarakkara |
|-----------------|-----------------|

**Alleppey District**

Alleppey

**Kottayam District**

- |             |              |
|-------------|--------------|
| 1. Kottayam | 3. Kumarakom |
| 2. Pallom   |              |

**Ernakulam District**

- |                  |           |
|------------------|-----------|
| 1. Puthencruz    | 3. Kolani |
| 2. Kuthattukulam |           |

**Trichur District**

Pazhayannur

**Palghat District**

- |                 |             |
|-----------------|-------------|
| 1. Nenmara      | 3. Nattukal |
| 2. Nelliampathy |             |

**Kozhikode District**

- |                |                 |
|----------------|-----------------|
| 1. Kuttiadi    | 4. Muthunga     |
| 2. Ambalavayal | 5. Lakkidi      |
| 3. Kuppady     | 6. Thagarappady |

**Cannanore District**

- |                            |                   |
|----------------------------|-------------------|
| 1. Manjeswar               | 6. Peria          |
| 2. Vemom (Mananthody)      | 7. Chedloth Range |
| 3. Thirunelli (Mananthody) | 8. Taliparamba    |
| 4. Konnath                 | 9. Cannanore      |
| 5. Chandanathode           |                   |

**NON-REPORTING RAILWAY RAINGAUGE STATIONS**

- |                |                 |
|----------------|-----------------|
| 1. Kollengode  | 7. Calicut      |
| 2. Thenmalai   | 8. Panthalayani |
| 3. Quilon      | 9. Olavakkot    |
| 4. Trichur     | 10. Shoranur    |
| 5. Alwaye      | 11. Cannanore   |
| 6. Angadipuram |                 |

**11. Glossery of English, Botanical and Malayalam names of crops**

<i>Sl. No.</i>	<i>English Name</i>	<i>Malayalam Name</i>	<i>Botanical Name</i>
(1)	(2)	(3)	(4)
1.	Paddy	Nellu	Oryza Sativa
2.	Ragi	Koovaraku	Eleusine Coracana
3.	Jowar	Cholam	Sorghum Valgare
4.	Bajra	Kambu	Pennisetum Typhodum
5.	Kodamillet	Varagu	Paspalum Scrobiculatum
6.	Chama	Chama	Panicum Miliare
7.	Wheat	Gothampu	Triticum Vulgare
8.	Barley	Barley	Hordeum Vulgare
9.	Maize	Mokke Cholam	Zea mays

**Pulses**

1.	Blackgram	Uzhunnu	Phaseolus mungo
2.	Greengram	Cherupayar	Phaseolus Aureus
3.	Horsegram	Muthira	Dolichos Biflorus
4.	Redgram	Thuvara	Cajanus Cajan
5.	Cowpea	Perumpayar	Vigna Sinensis

**Sugar**

1.	Sugarcane	Karimbu	Sacharum Officinarum
2.	Palmyrah	Karimpana	Borassus flabellifera

Sl. No.	English Name	Malayalam Name	Botanical Name
(1)	(2)	(3)	(4)
<b>Condiments and spices</b>			
1.	Chilly	Mulagu	Capsium Spp
2.	Turmeric	Manjal	Cureuma lenga
3.	Cardamom	Elom	Elatteria cardamom
4.	Coriander	Kothamalli	Coriandrum Sativum
5.	Mustard	Kadugu	Brassica spp
6.	Pepper	Kurumulagu	Pipper Nigrum
7.	Cumin	Jeerakam	Ciminumoymium
8.	Garlic	Veluthulli	Allium Sativum
9.	Long pepper	Thippilli	Piperlongum
10.	Ginger	Inchi	Zingiber officinale
11.	Nutmeg	Jathi	Myristica Fragrans
12.	Cinnamom	Karukappatta	Cinnamomum Zoylanica
13.	Clove	Grampu	Eugnnia Caryophyllate
14.	Cinchona	Cinchona	Cinchona Officinalis
15.	Arecanut	Adacka	Areca Catechu

### Fruits

1.	Banana	Vazha	Musa Paradisiaca
2.	Plantain	Vazha	Mussepientium
3.	Bread fruit	Seemaplavu	Artocarpusincisa
4.	Bullocks heart	Malamumthiri	Anonareticulate
5.	Cashew	Kasumavu	Anacardium Occidentale
6.	Grade vine	Munthiri	Vitis Vinifere
7.	Custardapple	Seetha Pazham	Anona Squamosa
8.	Guava	Pera	Psidium Guajava
9.	Jujube	Elantha	Aiz rphus jujuba
10.	Jack fruit	Plavu	Artocarpus Integrifolia
11.	Lemon	Naranga	Citrus Lemon
12.	Lime	Naranga	Citrus Aurantifolia
13.	Mango	Mavu	Mangifer Indica
14.	Papaya	Pappaka	Carica Pappaya
15.	Pineapple	Kaithachakka	Ananas sativa
16.	Pemogramate	Mathalam	Punica Cranatum
17.	Sapota	Sapota	Achras Achras Sapota
18.	Pomello	Bamplimas	Citrus Maxima
19.	Orange	Orange	Citrus retiaulate
20.	Mangosteen	Mangosteen	Garcimia mangesteens

### Vegetables

1.	Tapioca	Maracheni	Manihot Utilissima
2.	Elephantear	Chembu	Celocasi antiquorum
3.	Elephant foot	Chena	Amorphophallus
4.	Potato	Uralakizhangu	Solanumtuberosum

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<i>Sl. No.</i>	<i>English Name</i>	<i>Malayalam Name</i>	<i>Balanical Name</i>
(1)	(2)	(3)	(4)
5.	Sweet potato	Cheenikizhangu	<i>Ipomoea batatas</i>
6.	Radish	Mullangi	<i>Raphanus sativus</i>
7.	Yam	Kachil	<i>Dioscorea Spp</i>
8.	Turnip	Seema Mullangi	<i>Brassica Campestris</i>
9.	Carrot	Carrot	<i>Daucus Carota</i>
10.	Bed pumpkin	Vellarimathan	<i>Cucurbita Maxime</i>
11.	Brinjal	Vazhuthana	<i>Solanum Malengena</i>
12.	Tomato	Thakkali	<i>Ly coperseum esculentum</i>
13.	Amaranthus	Cheera	<i>Amaranthus Spp</i>
14.	Lady's finger	Venda	<i>Abelmoschus esaulenus</i>
15.	Bitter gourd	Pavakka	<i>Mamordica Charantia</i>
16.	Bottle gourd	Churakka	<i>Lagenaria Siceraria</i>
17.	Snake gourd	Padavalanga	<i>Trichosanthese anguina</i>
18.	Ridge gourd	Peechanga	<i>Luffaacutangulata</i>

BUREAU OF ECONOMICS AND STATISTICS,  
TRIVANDRUM, KERALA STATE

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