



GOVERNMENT OF KERALA

SEASON AND CROP REPORT
FOR
KERALA STATE
1971-72

Bureau of Economics and Statistics
Trivandrum

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FOREWORD

This report is the 13th 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 pertaining to the year 1971-72. The report consists of four parts as detailed below:

Part	I	Narrative Part
Part	II	Summary Tables
Part	III	Detailed Tables
Part	IV	Appendix

Trivandrum.
-8-1974.

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Director.

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PART I—(Report)

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7. Area under crops
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SEASON AND CROP REPORT FOR 1971-72

1. GENERAL

Kerala is a coastal State lying in the south-west corner of India. It is one of the smallest States in India, occupying only 1.2% of the total area of the country. It lies between $8^{\circ}18'$ and $12^{\circ}48'$ north latitude and $74^{\circ}52'$ and $77^{\circ}22'$ east longitude. Its width varies from 130 kms. in the middle to 32 kms. in the extremities. The State has a coastline of 580 Km.

By virtue of the peculiar topographic features of the State, it presents three district geographical divisions viz., low land, midland, and high land. The low land extends over the sea coast and the high land includes the forests of the western ghats. The land lying in between them is the midland. It is a vast tract with numerous rivers and lakes and a variety of crops.

The high land region is famous for the cultivation of plantation crops like rubber, tea and cardamom whereas paddy and cocoanut are grown abundantly in the low land. The midland is famous for its diversified cropping pattern. The important crops grown in this region are paddy, cocoanut, arecanut, sugarcane, tapioca, banana, ginger etc.

Paddy which is the most important crop of the State is raised thrice in a year. They are autumn (vitippu) winter (mundakan), and summer (punja). Autumn and winter crops of paddy are cultivated extensively in the State whereas the cultivation of summer paddy is conducted on a relatively small scale. Tapioca, banana, plantain, sugarcane and pulses are the other major seasonal crops of the State. Under perennial and semi-perennial crops mention may be made of Cocoanut, Arecanut, Cashew and Pepper in addition to plantation crops like rubber, tea, coffee and cardamom.

The State has a normal annual rainfall of about 3000 mm. Both the south-west and north-east monsoons give good rain to the State. There are 44 rivers flowing through the State of which 41 are west flowing and three are east flowing. The backwaters of the State coupled with a net work of connecting canals provide immense facilities for inland water transport.

In the beginning of the year, the number of districts in the State was 10. A new district by name Idikki district was constituted by Government with effect from 26-1-1972. This new district was formed by carving out portions of Kottayam and Ernakulam districts. Thus at the end of the year there were the following eleven districts in the State, Trivandrum, Quilon, Alleppey, Kottayam,

Idikki, Ernakulam, Trichur, Palghat, Malappuram, Kozhikode and Cannanore. There are 57 taluks in the State including the newly formed Kothamangalam taluk.

2. POPULATION

The population of the State according to the 1971 census is 212.80 lakhs compared with 169.04 lakhs in 1961. The density of population is 545. The district-wise population is given below:—

Distribution of population by districts

TABLE NO. I

District	Population in lakhs	
	1961	1971
Kerala	169.04	212.80
Cannanore	17.80	23.62
Kozhikode	26.17	20.77
Malappuram	..	18.55
Palghat	17.77	16.83
Trichur	16.40	21.26
Ernakulam*	18.60	23.77
Kottayam*	17.33	20.82
Alleppey	18.11	21.19
Quilon	19.41	24.06
Trivandrum	17.45	21.93

* Districts prior to the formation of Idikki District.

The per capita land available for cultivation in the State is 0.12 hectare where as the per capita cultivated area is 0.11 hectare.

In literacy Kerala is the leading State in India. The percentage of literacy is 60.16 as against the All India average of 29.32. The male literacy has gone up from 54.97% in 1961 to 66.54% in 1971 whereas the female literacy has shown a remarkable increase from 38.93 in 1961 to 53.90% in 1971.

3. RAINFALL

The normal rainfall in the State varies between 2001 mm. in Trivandrum district to 3578 mm. in Ernakulam district. The normal and actual rainfall during 1971-72 are furnished in the following table.

Rain fall

TABLE II

<i>District</i>	<i>Normal rainfall (mm.)</i>	<i>Actual rainfall (mm.) 1971-72</i>
Trivandrum	2001	1760
Quilon	2760	2578
Alleppey	3012	2296
Kottayam	3082	2642
Ernakulam	3578	3094
Trichur	3174	2721
Palghat	2398	2102
Malappuram	2900	2519
Kozhikode	3796	3308
Cannanore	3438	2979
STATE	3014	2600

Information on district-wise details of normal and average monthly rainfall has been furnished in Table 1.1 and 1.2 of Part III.

4. SOIL

Different types of soil are seen in the State. They can be classified as shown below:

1. The hilly and forest soil is seen all along the eastern portion of the State.
2. The sandy soil is seen all along the coastal belt.
3. The laterite soil is seen in the mid land.
4. The black soil which occurs as a patch is seen in the eastern border of the Palghat District.
5. The peat or kari soil is seen in Alleppey District.
6. The alluvial soil is seen along the southern and eastern parts of Vembanad lake and in small patches in Trivandrum District.
7. The red soil is found in the extreme tip of Trivandrum taluk.

Statement showing detailed classification of soil is given in appendix 6 of Part IV.

5. COMMUNICATION FACILITIES

The State has got a well developed system of transport and communication. There is a net work of roads connecting the

different parts of the State and the country. Eventhough the interior parts of the State are not served by railways, there is a rail link from Trivandrum in the South to Kasargode and Hosdurg in the north. The change from Broad-gauge to metre-gauge at Ernakulam creates inconvenience in railway transport due to the transshipment involved. When the conversion of the Ernakulam-Trivandrum section of metre-gauge into broad-gauge is completed the present inconvenience is expected to be eliminated. The water transport system of the State is a unique feature in the economy of the Stae. There are 2 aerodromes in the State, one at Cochin and the other at Trivandrum.

6. LAND UTILISATION

The Land Utilisation particulars of the State relating to the period from 1952-53 to 1971-72 have been furnished in Table A of the summary tables and District-wise details for 1971-72 are given in Table 2.1 of the detailed tables. Details of areas under different types of use are given below:

1. Total area of the State.

The total area of the State according to village papers is 3858523 hectares. The district-wise break-up of this area is furnished below:

TABLE III

<i>District</i>	<i>Area in Hectares</i>	<i>Percentage</i>
Trivandrum	216096	5.6
Quilon	469051	12.2
Alleppey	186790	4.8
Kottayam	626225	16.2
Ernakulam	317128	8.2
Trichur	299149	7.8
Palghat	437087	11.3
Malappuram	363045	9.4
Kozhikode	366991	9.5
Cannanore	576661	15.0
STATE	3858523	100.00

2. Forests.

The area under forest during 1971-72 is 1054864 hectares. The district-wise forest area during 1971-72 is furnished in the following table.

TABLE IV

District	Area under forest in
	hectares : 1971-72
Trivandrum	43849
Quilon	210651
Alleppey	513
Kottayam	252919
Ernakulam	55212
Trichur	132369
Palghat	67185
Malappuram	97627
Kozhikode	128607
Cannanore	65932
STATE	1054864

3. Land put to non-agricultural uses.

The area under non-agricultural use during the current year in the State is 276592 hectares. The district-wise details are given in the table below:

TABLE No. V

District	Area under non-agricultural uses (Hectares)	
	1970-71	1971-72
Trivandrum	17423	15507
Quilon	16791	15500
Alleppey	12270	12981
Kottayam	18870	17989
Ernakulam	27325	25828
Trichur	16547	16577
Palghat	48060	46911
Malappuram	11617	13219
Kozhikode	45439	49390
Cannanore	60183	62690
STATE	274525	276592

4. Barren and uncultivable land.

The land under this category during the year is 68655 hectares as against 71646 hectares during the previous year.

5. Permanent pastures and grazing land.

The area under this category of land during the year is 27800 hectares.

6. Land under Miscellaneous tree crops.

Total area under miscellaneous tree crops during the year is found to be 121312 hectares. The corresponding estimate for the previous year was 132176 hectares.

7. Cultivable waste land.

The area under cultivable waste for the year is 77618 as against 79519 hectares for the preceding year. The district-wise estimates are furnished in the following table:

TABLE No. VI

District	Cultivable waste land (hectares)	
	1970-71	1971-72
Trivandrum	560	566
Quilon	2319	1997
Alleppey	882	861
Kottayam	14635	15705
Ernakulam	3620	1849
Trichur	1776	1799
Palghat	4140	4158
Malappuram	23736	23460
Kozhikode	10225	9119
Cannanore	17626	18104
STATE	79519	77618

8. Fallow land other than current fallow.

An area of 21274 hectares is estimated to be under this category during the year. The corresponding figure for the previous year was 22678 hectares. About 66 percentage of the total area under the crop is in Malabar region.

9. Current fallow.

Total area of the State under this category is 23379 hectares. The area during the preceding year was 23633 hectares. The district-wise estimates are furnished in the following table.

TABLE No. VII

District	Current fallow (hectares)	
	1970-71	1971-72
Trivandrum	273	263
Quilon	398	434
Alleppey	568	528
Kottayam	3462	3381
Ernakulam	3229	3189
Trichur	1581	1765
Palghat	2284	2422
Malappuram	4470	4462
Kozhikode	2937	2585
Cannanore	4431	4350
STATE	23633	23379

10. Net area sown.

The net area sown in the State is showing an increasing trend. The area during the year is 2187029 Hect. as compared to 2171682 hectares in the previous year. The District-wise estimates are furnished in the following table.

TABLE No. VIII

District	Net area sown (hectares)	
	1970-71	1971-72
Trivandrum	151560	153409
Quilon	227557	230013
Alleppey	162923	163846
Kottayam	320122	321077
Ernakulam	218516	222530
Trichur	138679	138179
Palghat	204283	287149
Malappuram	209363	210138
Kozhikode	158700	157765
Cannanore	299979	302923
STATE	2171682	2187029

11. Area sown more than once.

The area sown more than once has increased from 760861 hectares in 1970-71 to 771327 hectares in 1971-72. The district-wise estimates are furnished in the following table:

TABLE NO. IX

District	Area sown more than once (hect.)	
	1970-71	1971-72
Trivandrum	91436	96045
Quilon	113724	126296
Alleppey	69233	69321
Kottayam	51937	45885
Ernakulam	58365	62231
Trichur	107062	107118
Palghat	47016	50225
Malappuram	43194	46168
Kozhikode	112668	112278
Cannanore	68226	55760
STATE	760861	771327

The above table shows that the area under multiple cropping is the largest in Quilon district, closely followed by Kozhikode district.

12. Total cropped area.

The total cropped area in the State increased from 2932543 hectares in 1970-71 to 2958356 hectares in 1971-72. A consistently increasing trend is noticed in the cropped area for the past few years. The following table giving district-wise details of both net area and total cropped area throws light on the relative intensity of multiple cropping in the various districts.

TABLE NO. X

District	Net area Sown (Hects.)	Total cropped area (Hects.)	Percentage of total to net area
Trivandrum	153409	249454	163
Quilon	230013	356309	155
Alleppey	163846	233167	142
Kottayam	321077	366962	114
Ernakulam	222530	284761	128
Trichur	138179	245297	178
Palghat	287149	337374	117
Malappuram	210138	256306	122
Kozhikode	157765	270043	171
Cannanore	302923	358683	118
STATE	2187029	2958356	135

7. AREA UNDER CROPS

The details of area under food and non-food crops in the state are given in Table C. of the summary tables and the district-wise area is given in table 3.1 of the detailed tables.

A. Food crops.

The area under food crops during the year is 1846993 hectares as against 1844306 hectares during the previous year. The area under food crops accounts for 62.9% of the total cropped area in the State. The district-wise area under food crops and the percentages to that total cropped area are furnished in the following table.

TABLE NO. XI

<i>District</i>	<i>Total cropped area</i>	<i>Area under food crops</i>	<i>Percentage of area under food crops to total covered by each Dist.</i>	<i>Area under food crops as % to total cropped area</i>
Trivandrum	249454	161163	8.4	64.6
Quilon	356309	211176	12.1	59.3
Alleppey	233167	141584	7.9	60.7
Kottayam	366962	196426	12.4	53.5
Ernakulam	284761	159358	9.6	55.0
Trichur	245297	174428	8.3	71.1
Palghat	337374	262628	11.4	77.9
Malappuram	256306	163047	8.7	63.6
Kozhikode	270043	136330	9.1	50.5
Cannanore	358683	240853	12.1	67.1
STATE	2958356	1846993	100.0	62.4

The position of some of the principal crops in the overall picture of the state food crops is discussed in the following paragraphs.

1. Paddy.

The area under paddy increased from 874830 hectares to 875157 hectares during the year. The inter District variation of the area under the crop can be found out from the following table.

TABLE No. XII

District	Area under paddy (hectares)	
	1970-71	1971-72
Trivandrum	39496	39496
Quilon	51884	51729
Alleppey	85162	85162
Kottayam	50033	50034
Ernakulam	93691	93691
Trichur	115267	115267
Palghat	182621	182597
Malappuram	92897	92892
Kozhikode	65087	65587
Cannanore	98692	98702
STATE	874830	875157

The area under paddy is the largest in Palghat district followed by Trichur district. The district-wise percentage distribution of area under paddy and the percentage of area under paddy to the total area of the district have been presented in the following table.

TABLE No. XIII

District	Area under Paddy (hect.)	Percentage to total covered by each Dist.	Percentage of total cropped area in the the Dist.
Trivandrum	39496	4.5	15.8
Quilon	51729	5.9	14.5
Alleppey	85162	9.8	36.5
Kottayam	50034	5.7	13.6
Ernakulam	93691	10.7	32.9
Trichur	115267	13.2	47.0
Palghat	182597	20.8	54.1
Malapuram	92892	10.6	36.2
Kozhikode	65587	7.5	24.3
Cannanore	98702	11.3	27.5
STATE	875157	100.0	29.6

2. Other cereals and millets.

The area under other cereals and millets for the year is estimated to be 5177 hectares. Besides, Jowar and Ragi were cultivated in an area of 1519 hectares and 5001 hectares respectively.

3. Pulses.

The total area under the crop during the year is 37679 hectares. Nearly one third of the total area under the crop is in Palghat District

4. Sugarcane.

Sugarcane was cultivated in an area of 7579 hectares as against 7652 hectares during the previous year. Alleppey is the major sugarcane producing district in the State.

5. Pepper.

Cannanore and Kozhikode are the leading districts in the State in respect of Pepper cultivation. The total area under cultivation during the year is 116343 hectares as against 117544 hectares in the previous year.

6. Chillies.

During the year an area of 3205 hectares was estimated to be under chillies. This crop is predominantly confined to Malabar region.

7. Ginger.

Kottayam and Kozhikode are the leading districts in ginger cultivation. The total area during the year under the crop is 11873 hectares as against 12170 hectares during the previous year.

8. Turmeric.

The area under turmeric during the year is 4125 hectares.

9. Cardamom.

The total area under the cultivation of the crop is 47490 hectares. About 90% of the area under the crop is in Kottayam District.

10. Arecanut.

The area under the crop during the year was 86659 hectares as against 85818 hectares in the previous year. Malappuram and Cannanore are the leading districts in the State in respect of arecanut cultivation.

11. Mangoes.

The area under the crop is estimated to be 56162 hect. during the year as against 58099 hectares in the previous year. Quilon is seen to be the leading district in the state as far as this crop is concerned.

12. Banana.

The area under the crop shows downward trend. The area under the crop during the year is 9207 hectares as compared to 9542 hectares in the previous year.

13. Other plants.

During the year, the area under the crop decreased to 38681 hectares from 39217 hectares in the previous year. Cannanore is the leading district in the state under this crop.

14. Cashew.

Cannanore is the leading district in Cashew cultivation. Out of the total area of 100661 hectares, Cannanore district accounts for 41596 hectares.

15. Tapioca.

Tapioca is cultivated most extensively in the State. Quilon and Trivandrum are the leading districts in the State under the crop. The area under the crop has increased from 293552 hectares during the previous year to 303262 hectares in the current year.

B. Non-Food Crops

1. Groundnut.

Groundnut is cultivated only in Palghat District. The area under the crop, during the year is 14692 hectares.

2. Sesamum.

The area under the crop during the year is 11781 hectares as against the previous years estimate of 11819 hectares. Quilon and Alleppey are the leading districts in the cultivation of this crop.

3. Coconut.

Coconut is cultivated extensively in the State. The area under the crop is 730260 hectares. The area under Coconut is 66% of the total area under non-food crops. Quilon district tops the list in Coconut cultivation.

4. Cotton.

Cotton cultivation is confined to Palghat District. The area under the crop during the year is 7476 hectares as against 7258 hectares during the previous year.

5. Tobacco.

Tobacco is cultivated only in Cannanore District in the State. The area under the crop during the year is 804 hectares as against 766 hectares during the year.

6. Tea.

This crop is mostly concentrated in Kottayam district. Out of the total area of 37083 hectares, 26903 hectares are in Kottayam District.

7. Coffee.

The area under coffee increased from 31564 hectares in 70-71 to 32855 hectares during the year.

8. Rubber.

The area under rubber during the year 188612 hectares as against 179259 hectares in the previous year. Kottayam, Quilon and Ernakulam are the leading districts in rubber cultivation. Kottayam district accounts for 56412 hectares where as Quilon and Ernakulam districts account for 31543 hectares and 26996 hectares respectively.

8. IRRIGATION

The net area irrigated in the state during the year is 446338 hectares. Whereas the area for the previous year was 431254 hectares. Government canals are the major source of irrigation in the State. The percentage of net area irrigated to net area sown is 19.67.

The gross area irrigated during the year is 622509 hectares. The percentage of gross area irrigated to total cropped area is 25.0. The source-wise and crop-wise irrigated area in the State is given in Table B-1 and B-2 of the summary tables respectively.

9. WEATHER AND CROP CONDITIONS

Trivandrum District.

The rainfall in all the taluks of the District was normal except during the months of January, February and May. Shortage of rain in the months of January and February affected the punja crop of paddy in Chirayinkil taluk in a small measure where as it is the heavy rain in April and May that destroyed crops in some other parts. The extent of crop damage is, however, quite in significant.

Quilon District.

The weather conditions in the District were normal during the year and were generally favourable for the growth of crops, Heavy rains during the month of August adversely affected in varying degrees crops like Paddy, Tapioca and Banana in some parts of Pathanapuram and Pathanamthitta taluks. The severe drought during the period from December to April also slightly damaged standing crops in the above taluks. The quantitative estimate of loss is not, however, high.

Alleppey District.

Normal conditions of weather prevailed in almost all parts of the District. Continuous down pour of rain caused flood and consequent crop destruction during the months of June, July and August. Kuttanad, Ambalapuzha and Karthigapally taluks were the affected regions. There was also severe drought during the period from February to April 1972. This affected considerably the cocconut and arecanut crops thereby decreasing their yield rate.

Kottayam District.

The weather and crop conditions in the District were normal during the year. No serious damages to crops were reported. However, the heavy rain and flood caused slight damages to paddy and banana during the kharif season in Changanacherry and Vaikom taluks, Drought was severe in some taluks and there was damage to crops in varying degrees. In Devicolam and Udumbanchola taluks crops like Cardamom was affected by drought. In other Taluks, it affected perennial crops like Cocanut. The quantitative estimate of loss was quite negligible.

Ernakulam District.

In adequate and untimely rain occurred in the rabi season, and flood in the kharif season in some parts of Alwaye and Parur taluks in Ernakulam district. Barring this, general weather conditions in the district were normal. There was no report of wide spread crop damage. In some drought hit areas of Kunnathunad and Muvattupuzha taluks there was slight damage to paddy crops. A small area in Cochin taluk was also subjected to crop destructions due to drought and untimely rain.

Trichur District.

In spite of occasional heavy rainfall and resultant flood in kharif season coupled with drought in rabi season affecting crops in various parts of the State, the weather and crop conditions were more or less normal in the State. Flood affected regions of the district were parts of Trichur, Talappally, Mukundapuram, Chowghat and Kodungallur taluks. Drought was severe in parts of Kodungallur taluk even though consequent crop damage was negligible.

Palghat District.

During the kharif season weather conditions were normal in most part of the district. In some parts of Chittur taluk, there was slight damage of paddy crop. In rabi season, severe drought adversely affected the paddy crop in Chittoor, Palghat and Mannar-ghat taluks.

Malappuram District.

There was heavy rain and consequent crop damage in low lying regions of the district. Paddy crop in Ponnani and Tirur taluks was subjected to destruction in the kharif season. In Perinthalmanna and Ernad Taluk, rabi paddy was damaged to small extend due to severe drought. In other parts of the district, the weather conditions were favourable for crops.

Kozhikode District.

Normal weather conditions prevailed in the district during the year. Virippu crop of paddy was generally good eventhough the crop in the low-lying regions in Kozhikode, Badagara and Quilandy taluks was slightly damaged. The summer paddy in Kozhikode and S. Wynad taluks was also affected by drought.

Cannanore District.

There was very heavy rain and flood in the district during the year. The low-lying areas in Hosdurg, Kasargode, Cannanore and Taliparamba taluks got flooded and crops in the affected parts got damaged. There was also sea erosion in Trikaripur village, Padna and Udma village of Hosdurg taluk. During the rabi season, the rainfall was moderate and weather conditions favourable for crops.

10. PRODUCTION OF IMPORTANT CROPS

The production trend of important crops in the state for the last few years is given in table D of the summary tables. The district-wise details of production of important crops have been furnished in Table 4.1 of the detailed tables. The production of some of the principal crops is discussed in the following paragraphs.

1. Paddy.

The total production of rice in the State during the year is 1351738 tonnes, as against 1298005 tonnes in the previous year. The district-wise estimates of rice production are furnished in the following table.

TABLE NO. XIV

District	Production of rice (tonnes)	
	1970-71	1971-72
Trivandrum	56868	64182
Quilon	79685	75430
Alleppey	144645	144249
Kottayam	85587	93649
Ernakulam	129210	121145
Trichur	163397	157522
Palghat	315925	366466
Malapuram	120480	145932
Kozhikode	67615	73356
Cannanore	131595	109807
STATE	1298005	1351738

The season wise production estimate of rice for 1971-72 as compared to 1970-71 are furnished below:

TABLE No. XV

Season	Rice Production (tonnes)	
	1970-71	1971-72
Autumn	538886	552246
Winter	566934	596808
Summer	192185	202684
Total	1298005	1351738

There is 4% increase in rice production in the State as compared to that of the previous year.

2. Pulses.

Production of pulses during the year is 13011 tonnes as against 13983 tonnes during the previous year.

3. Sugarcane.

The production of gur during the year is 39110 tonnes whereas the corresponding figure for the previous year is 37633 tonnes.

4. Black Pepper.

The quantity of pepper produced during the year is 25097 tonnes as compared to 25029 tonnes in the previous year.

5. Dry ginger.

The ginger production in the state during the year is estimated to be 23313 tonnes as against 19680 tonnes in the preceding year.

6. Turmeric (cured)

The production of cured turmeric decreased from 5341 tonnes in 1970-71 to 4394 tonnes in the current year.

7. Cardamom.

Cardamom registered an increase in production from 1246 tonnes in the previous year to 1519 tonnes in the current year.

8. Betelnut

The betelnuts produced during the year are estimated to be 12832 millions as against 12738 during the previous year.

9. Banana.

The production estimate of banana for the year is 66900 tonnes as compared to 69523 tonnes in the previous year.

10. Other plantains.

During the year production of other plantains is estimated to be 295369 tonnes which is slightly less than the previous years production estimate of 299461 tonnes. Cannanore and Kottayam are the leading districts in the crop production.

11. Cashewnut.

Cashewnut production during the year has decreased from 115244 tonnes during the previous year to 112943 tonnes in the current year. Cannanore is the most important. Cashewnut producing district in the State.

12. Tapioca.

Quilon is the leading district in tapioca production in the State. The quantity produced in the current year is 5429281 tonnes as against 4617189 tonnes. The district-wise yield rate of tapioca is given below:

TABLE No. XVI

<i>District</i>	<i>Yield rate of tapioca (tonnes/hect.)</i>
Trivandrum	16.79
Quilon	16.94
Alleppey	14.88
Kottayam	24.51
Ernakulam	17.94
Trichur	48.51
Palghat	12.08
Malappuram	18.94
Kozhikode	46.05
Cannanore	22.85
STATE	17.90

13. Groundnut.

This crop is produced only in Palghat district. The quantity produced during the year is 16769 tonnes as against 16088 tonnes in the previous year.

14. Sesamum.

The production of the crop decreased from 3840 tonnes in the previous year to 3746 tonnes in the current year.

15. Coconut.

The estimate of coconut production during the year is 4054 million nuts. This is slightly in excess over the previous year's production of 3981 million nuts.

16. Cotton.

Cotton is produced only in Palghat district in the State. The quantity produced during the year is 7850 bales of 180 Kg. each as against 7177 tonnes in the previous year.

17. Tobacco.

The production of this crop is confined to Cannanore district. The quantity produced during the year is 1713 tonnes as against 1632 tonnes in the previous year.

18. Tea.

The quantity of tea produced during the year is estimated to be 42802 tonnes as against 41449 tonnes in 1970-71.

19. Coffee.

The production of Coffee has increased from 13574 tonnes in 1970-71 to 14106 tonnes in 1971-72.

20. Rubber.

Kottayam is the leading district in Rubber production in the State. About 33% of the total production is contributed by Kottayam district. The quantity produced during the year is 88929 tonnes as against 78731 tonnes in the previous year.

21. Lemongrass Oil.

The total lemongrass production during the year is 1602 tonnes.

11. FARM PRICES OF CERTAIN COMMODITIES

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

12. AGRICULTURAL WAGES

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

13. LIVESTOCK, POULTRY AND AGRICULTURAL IMPLEMENTS

The details regarding these are given in table G of the summary tables and table 7.1 of the detailed tables. The figures relate to 1961 and 1966 Livestock Census.

14. SOWING, HARVESTING AND PEAK MARKETING PERIODS

Information on the above topics has been furnished in table H of the summary tables.

PART II

Summary Tables

- A. Classification of Areas
- 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 seasons.

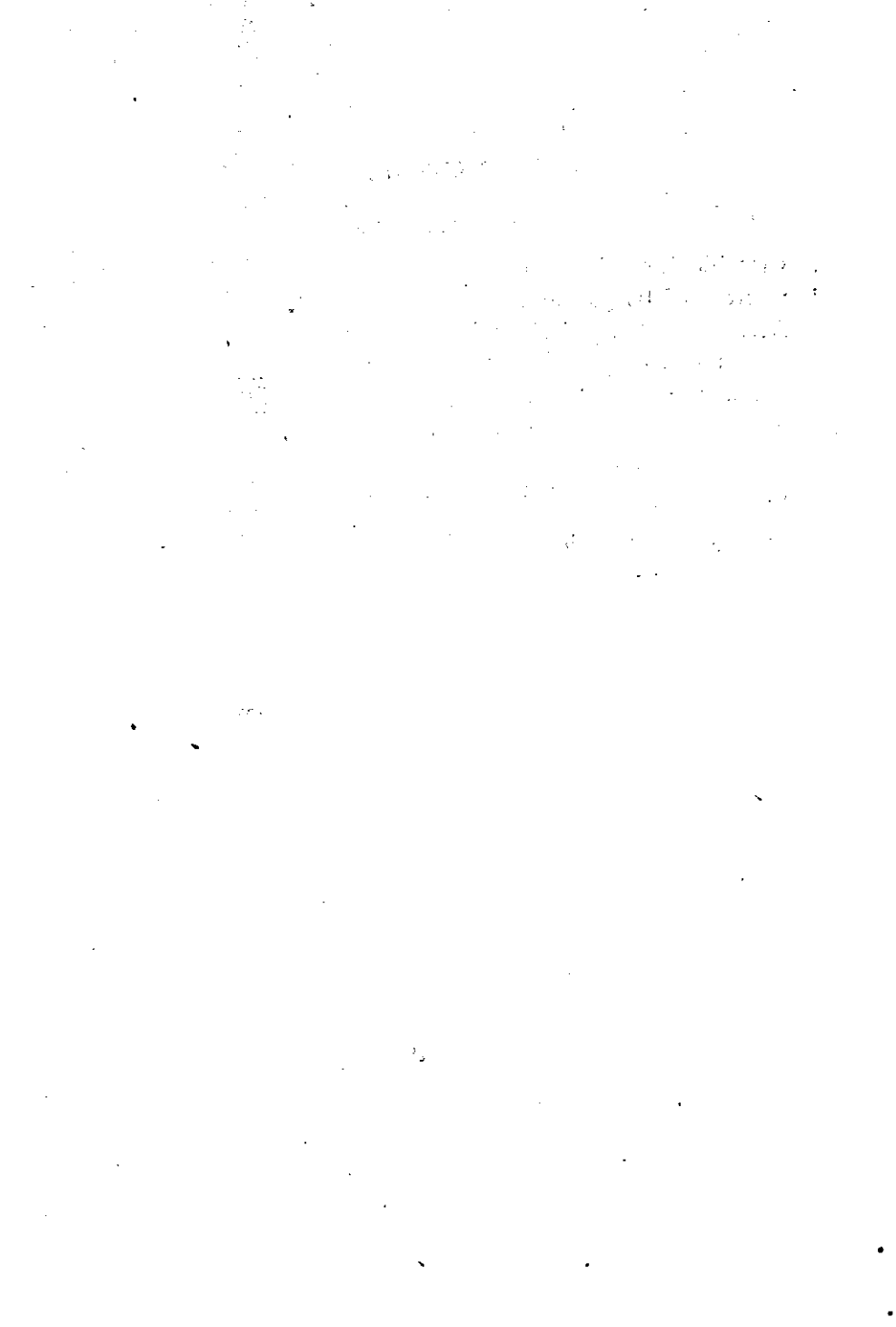


TABLE A

Sl. No.	Head of Classification	Area	Percentage ^e
1.	Total area of the State according to village papers	3858523	1.00
2.	Forests	1054864	27.34
3.	Land put to non-agricultural use	276592	7.17
4.	Barren and uncultivable waste land	68655	1.78
5.	Permanent pastures & grazing land	27800	0.72
6.	Land put under miscellaneous trees and crops not included in net area sown	121312	3.14
7.	Cultivable waste	77618	2.01
8.	Current fallow	21274	0.55
9.	Other fallow	23379	0.61
10.	Net area sown	2187029	56.68
11.	Area sown more than once	771327	19.99
12.	Total cropped area	2958356	76.67

TABLE B 1

Sources of Water Supply and net area Irrigated (Hect.)

Source	1971-72
Net area irrigated by—	
1. Government canals	207097
2. Private canals	10160
3. Tanks	74037
4. Wells	5460
5. Other sources	142103
6. Total	438857
7. Percentage of net area irrigated to net area sown	20.07
8. Area irrigated more than once in an year	771327
9. Total irrigated area	611852
10. Percentage of total irrigated area to total cropped area	20.68

TABLE B 2

Gross Area irrigated in Kerala (Hectares)

Name of Crop	1971-72	
	Area	Percentage
Paddy	499102	81.6
Sugarcane	4290	0.7
Other food crops	55600	9.1
Total food crops	559082	91.4
Total non-food crops	52770	8.6
All crops	611852	100.00

TABLE C
Area under crops in Kerala (Hects.) 1971-72

<i>Name of Crop</i>	<i>Area</i>
Paddy	875157
Jowar	1519
Ragi	5001
Other cereals & millets	5177
Total cereals & millets	886854
Tur	4861
Other pulses	32818
Total pulses	37679
Sugarcane	7579
Palmyrah (others)	8675
Total Sugarcane	16254
Pepper	116343
Chillies	3205
Ginger	11873
Turmeric	4185
Cardamom	47490
Arecanut	86659
Other condiments and spices	19317
Total condiments and spices	289072
Mangoes	56162
Citrus fruits	1959
Banana	9207
Other plantains	38681
Other fresh fruits	68387
Cashewnuts	100661
Other dried fruits	24
Total fruits	275080
Tapioca	303262
Sweet potatoes	5254
Other vegetables	33324
Total vegetables	342054
Total food crops	1846993
Groundnut	14692
Castor	362
Sesamum	11781
Coconut	730260
Other oil seeds	8584
Total oil seeds	765679
Cotton	7476
Other fibres	36
Total fibres	7512
Tobacco	804
Tea	37083
Coffee	32855
Rubber	188612
Other drugs and plantation crops	1406
Total drugs and plantation crops	260760
Fodder crops	574
Green manure crops	19041
Lemongrass	24036
Other non-food crops	57797
Total non-food crops	1111363
Total area under all crops	2958356
Area sown more than once	771327
Net area sown	2187029

TABLE D

Production of Important Crops in Kerala 1971-72

<i>Name of Crops</i>	<i>Unit</i>	<i>Year 1971-72</i>
Rice Paddy)	'000 tonnes	1352
Jowar	tonnes	781
Ragi	"	4769
Tur	"	860
Other pulses	"	12151
Sugarcane (gur)	"	39110
Pepper (Black)	"	25097
Chillies (Dry)	"	2749
Ginger (dry)	"	23313
Turmeric (cured)	"	4394
Cardamom (processed)	"	1519
Arecanut (betelnut)	Million nuts	12832
Banana	Tonne	66900
Other plantains	"	295367
Cashewnut	"	112943
Tapioca (Raw)	'000 Tonnes	5429
Sweet potatoes	Tonne	23645
Groundnut	"	16769
Sesamum	"	3746
Coconut	Million nuts	4054
Cotton	Bales of 180 Kg.	7850
Tobacco	Tonne	1713
Tea	"	42802
Coffee	"	14106
Rubber	"	88929
Lemongrass Oil	"	1602

TABLE E

Average yield per hectare of certain crops

<i>Name of Crop</i>	<i>Unit</i>	1970-71	1971-72
1. Paddy	Kg./Hect.	2258	2351
2. Jowar	"	553	514
3. Ragi	"	971	954
4. Sugarcane (gur)	"	4917	5160
5. Pepper (Black)	"	213	216
6. Ginger (dry)	"	1617	1964
7. Turmeric (cured)	"	1241	1050
8. Cardamom (processed)	"	26	32
9. Arecanut (nuts/hect.)	"	148430	148074
10. Banana	"	7286	7266
11. Other plantain	"	7636	7636
12. Cashewnut	"	1122	1122
13. Tapioca (raw)	"	1095	17902
14. Groundnut	"	1095	1141
15. Sesamum	"	330	318
16. Cocoanut	Nut/Hect.	5536	5551
17. Cotton	Kg./Hect.	178	189
18. Tea	"	1103	1154
19. Coffee	"	430	429
20. Rubber	"	439	471

TABLE F

Average price and total value of production 1971-72

<i>Name of Crop</i>	<i>Unit</i>	<i>Average farm price (Rs.)</i>	<i>Value of production (Rs. in lakhs)</i>
1. Paddy	Tonne	994.50	20460.30
2. Coconut (with husk)	1000 nuts	420.70	17055.18
3. Arecanut (ripe)	"	28.50	3657.12
4. Tapioca (Raw)	Tonne	208.20	11303.76
5. Cashewnut	"	1582.00	1786.76
6. Banana	1000 Nos.	171.40	1146.67
7. Pepper (black)	Tonnes	5409.70	1357.67
8. Ginger (dry)	"	2692.70	627.75
9. Sugarcane	"	782.70	306.11

TABLE G

Number of Livestock, Poultry and Agricultural Machinery

Sl. No.	(1)	(2)	(3)	(4)	(5)
				1961 Census	1966 Census
1	Cattle	Male over three years	(a) Breeding (b) Working (c) Others	29319 515241 21471	19387 491281 8855
			Total	566031	519523
		Female over three years	(a) Breeding— (1) in milk (2) Dry (3) Not calved (b) Working (c) Others	428194 502935 207277 11274 12306	483419 592972 133999 3605 5247
			Total	1161986	1219242
			Young stock	1025148	1117962
			Total cattle	2753165	2856727
2	Buffaloes	Males Over three years	(a) Breeding (b) Working (c) Others	10627 267871 6614	6106 241048 6696
			Total	285112	253850
		Females over three years	(a) Breeding— (1) in milk (2) Dry (3) Not calved (b) Working (c) Others	59542 49341 16846 7266 2188	66705 52777 9119 4589 1580
			Total	135113	194770
			Young stock	64864	82615
			Total Buffaloes	485089	471235
3	Sheep	(a) One year and above (b) Below one year (c) Total		18949 5292 24241	7920 3599 11519
4	Goats	(a) One year and above (b) Below one year Total		869414 442848 1312262	757766 431452 1189218
5	Horse & Ponies	(a) Three years and above (b) Below three years Total		366 42 408	372 54 426

(1)	(2)	(3)	(4)	(5)
6	Mules		31	8
7	Donkeys		377	310
8	Camels		4	4
9	Pigs		122381	111928
	Total livestock		4697954	4641375
10	Poultry	(a) Fowls	8708664	9587286
		(b) Ducks	387072	318751
		(c) Others	..	2950
11	Ploughs	(a) Wooden	562281	475930
		(b) Iron	6641	17179
12	Carts		21037	16309
13	Sugarcane crusters	(a) Power	175	457
		(b) Bullocks	1071	989
14	Oil Engines		3372	6824
15	Electric pumps		2565	4869
16	Tractors		276	418

TABLE H

Sowing, Harvesting and Peak marketing seasons of principal crops in Kerala State

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

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 live-stock, Poultry and Agricultural Machinery and implements
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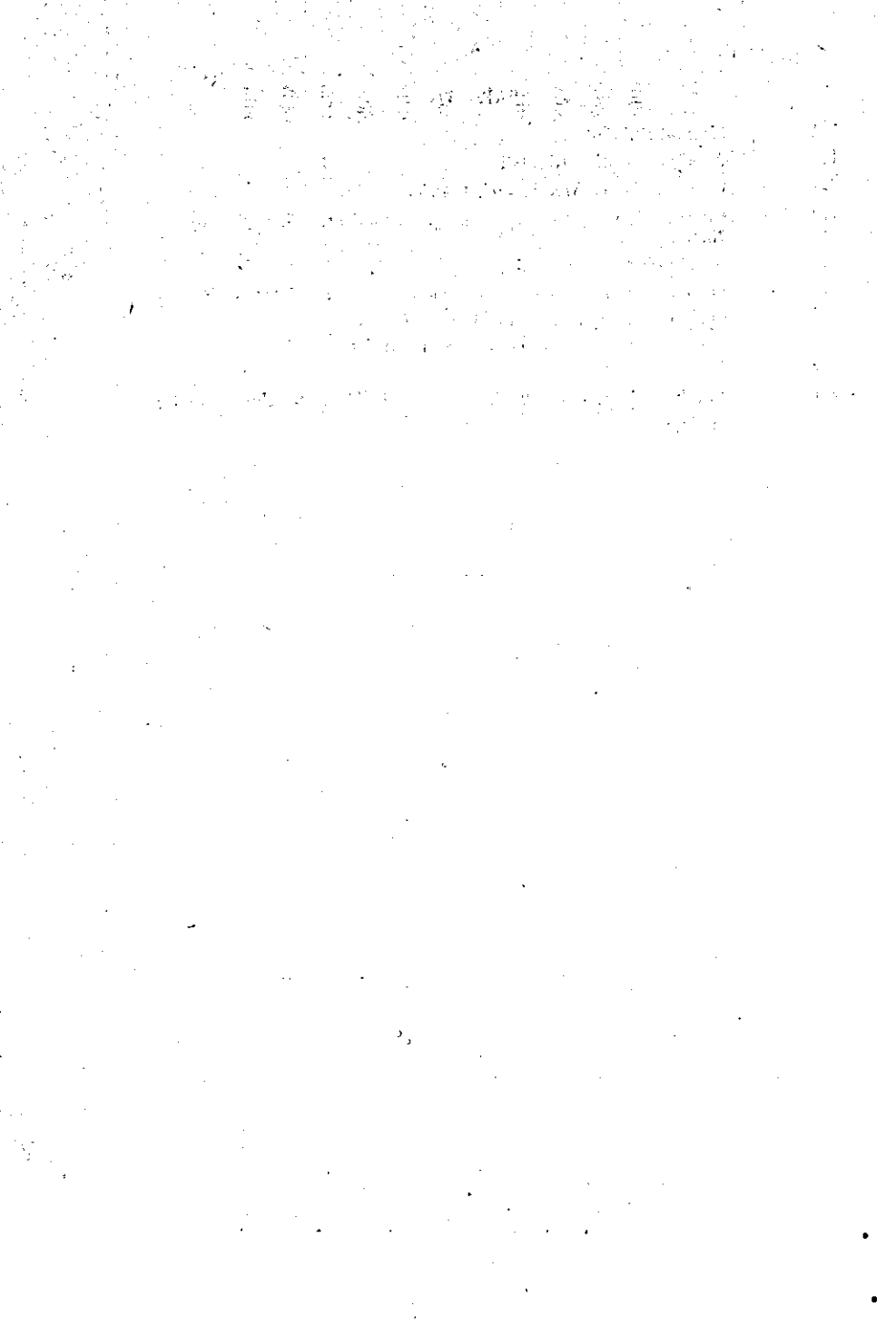


TABLE 1.1

Normal rainfall in Kerala 1971-72 (in mms.)

District	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
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	2001.4
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
Alleppey	552.3	370.3	272.7	390.2	219.4	64.1	25.9	29.3	59.0	133.5	291.5	663.8	3012.0
Kottayam	652.9	429.5	273.2	330.6	212.8	71.7	30.3	26.3	59.8	141.3	244.9	609.3	3082.6
Ernakulam	785.9	523.5	296.6	365.7	216.9	54.6	18.0	23.6	54.4	136.1	310.1	792.1	3577.5
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
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
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
Kozhikode	1117.4	599.2	202.4	290.2	163.7	34.2	10.4	7.6	20.0	92.4	254.0	944.5	3796.0
Cannanore	1063.5	584.8	239.4	218.0	106.0	22.8	5.3	4.8	11.1	58.6	200.6	923.0	3437.9
State average	707.7	425.7	235.8	301.5	183.5	47.3	16.1	16.6	41.1	109.1	241.9	688.0	3014.3

TABLE 1.2

Average monthly rainfall totals for the year 1971-72 (in mms.)

District	July 1971	Aug. 1971	Sept. 1971	Oct. 1971	Nov. 1971	Dec. 1971	Jan. 1972	Feb. 1972	March 1972	April 1972	May 1972	June 1972	Total 1971-72
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	a	(13)
Trivandrum	237.2	79.6	366.2	35.7	119.8	124.6	3.9	Nil	10.3	100.2	444.1	157.9	1736.3
Quilon	450.2	393.9	412.2	212.3	69.9	73.7	2.2	20.0	13.8	209.0	546.2	234.5	2577.9
Alleppey	487.2	350.8	329.6	158.1	33.4	35.2	0.7	47.2	Nil	96.6	449.0	333.5	2296.5
Kottayam	517.5	448.0	434.2	309.2	87.8	120.7	6.2	2.7	Nil	100.8	380.0	254.8	2641.7
Ernakulam	725.0	447.4	418.7	230.2	60.4	73.3	12.3	17.7	3.3	108.1	593.2	402.7	3064.3
Trichur	752.2	401.2	309.9	204.5	28.9	34.1	Nil	1.1	Nil	13.4	491.4	382.3	2721.0
Palghat	561.3	313.5	228.5	298.2	16.5	47.4	Nil	Nil	Nil	56.0	270.3	310.0	2101.7
Malappuram	739.2	331.5	307.9	178.1	21.2	43.2	Nil	Nil	Nil	33.6	447.8	412.5	2519.0
Kozhikode	1079.1	489.3	304.7	192.4	Nil	33.6	Nil	Nil	Nil	68.0	504.3	634.1	3308.0
Canara	874.6	474.6	220.3	200.4	7.2	22.5	Nil	Nil	Nil	46.9	359.2	773.3	2976.0
State average	654.3	367.0	393.2	207.4	42.5	61.5	2.5	8.9	2.7	83.7	446.6	389.6	2999.9

Monthly rainfall in Kerala 1931-35 (in mms.)

TABLE 2.1

Districts	Classification												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Total geographical area according to village panchayats	Forest	Land put to non agricultural uses	Permanent barren uncultivable land	Permanent pastures & other grazing land	Land under miscellaneous tree crops not included in net area sown	Cultivable waste	Fallow land other than current fallow	Current fallow	Net area sown	Area sown more than once	Total cropped area	
Trivandrum	216096	43849	15507	630	550	574	566	748	263	153409	96045	249454	
Quilon	463051	210651	15500	7871	1300	495	1997	790	434	230013	126296	356309	
Alleppey	186790	513	12981	680	250	6202	861	929	528	163846	69321	233167	
Kottayam	626225	252919	17989	6811	3500	3498	15705	1345	3381	321077	45685	366962	
Ernakulam	317428	55212	25828	9888	2000	319	1849	2613	3189	222530	62231	284761	
Trichur	299149	132369	16577	2073	500	5461	1799	426	1765	138179	107118	245297	
Palghat	437087	67185	46911	10746	2810	12577	4158	3029	2422	287149	50225	337374	
Malappuram	363045	97627	13219	4886	2369	6403	23460	481	4462	210138	46168	256306	
Kozhikode	366991	128607	49390	9928	2521	4012	9119	3064	2583	157765	112278	270043	
Cannanore	576661	65932	62690	21142	12000	81671	18104	7849	4950	302923	55760	358683	
STATE	3858323	1054864	276592	68655	27800	121312	77618	21274	23379	2187029	771327	2958356	

TABLE 2.2

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

Classification of area

Districts	Classification of area												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Area according to village papers	Forests	Land put to non agricultural uses	Permanent barren & un-cultivable land	Permanent pastures & other grazing land	Land under misc. tree crops not included in net area sown	Cultivable waste	Fallow land other than current fallow	Current fallow	Net area sown	Area sown more than once	Total cropped area	
Trivandrum	100	20.29	7.18	0.29	0.26	0.27	0.26	0.35	0.12	70.13	44.45	115.44	
Quilon	100	44.91	3.30	1.68	0.28	0.11	0.43	0.17	0.93	49.04	26.92	75.96	
Alleppey	100	0.27	6.95	0.36	0.13	3.32	0.46	0.50	0.28	87.72	27.11	124.83	
Kottayam	100	40.39	2.87	1.09	0.56	0.56	0.25	0.18	0.54	51.27	7.33	58.59	
Idikki	100	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	100	17.39	8.14	1.22	0.63	0.10	0.58	0.82	1.00	70.11	19.60	89.71	
Trichur	100	44.25	5.54	0.69	0.17	0.18	0.60	0.14	0.59	46.19	35.81	81.99	
Palghat	100	15.37	10.73	0.25	0.64	2.90	0.95	0.69	0.55	65.69	11.49	77.19	
Malappuram	100	26.89	3.64	1.95	0.65	1.76	6.46	0.13	1.23	57.88	12.72	70.60	
Kozhikode	100	35.04	13.46	2.71	0.69	1.09	2.48	0.83	0.70	42.99	30.59	73.58	
Cannanore	100	11.43	10.87	3.67	2.08	1.42	3.14	1.36	0.75	52.53	9.66	62.18	
STATE	100	27.34	7.17	1.78	0.72	3.14	2.01	0.55	0.61	56.68	19.99	76.67	

TABLE 3.1

Area under crops in each District of Kerala during the year 1971-72 year ending 30th June 1972
(Area hectares)

District	Food Crops									
	Rice (<i>Oryza Sativa</i>)							Cereals		Pulses
	Autumn (2)	Winter (3)	Summer (4)	Total (5)	Jowar (6)	Ragi (7)	Other cereals & Millets (8)	Total cereals & Millets (9)	Tur (10)	
Trivandrum	18462	20201	833	39496	..	..	..	39496	..
Quilon	21324	29340	1065	51729	..	459	..	52188	..	
Alleppey	20554	22982	41626	85162	..	..	..	85162	..
Kottayam	7898	24679	17457	50034	..	..	594	50628	..
Ernakulam	40993	42394	10904	93691	..	34	..	93725	..	
Trichur	39112	62411	19744	115267	..	1212	..	116479	..	
Palghat	102291	79095	1211	182597	1519	832	4583	189531	4861	
Malappuram	52019	35510	5363	92892	..	..	..	92892	..
Kozhikode	26748	35654	3185	65587	..	1520	..	67107	..	
Cannanore	65897	29705	3100	98702	..	944	..	99646	..	
STATE	395298	381971	97888	875157	1519	5001	5177	886854	4861	

TABLE 3.1—Contd.

District	Food Crops										
	Pulses			Sugar crops			Condiments and spices				
	Other pulses		Total	Total Pulses	Total food grains	Sugar cans (Palmyrah)	Other	Total Pepper	Chillies	Ginger	
	Kharif	Rabi									
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
Trivandrum	1169	1338	2507	2507	42003	..	564	564	10233	..	..
Quilon	4740	2724	7464	7464	59652	904	227	1131	5783	..	210
Alleppey	..	546	546	546	85708	4075	54	4129	1504	..	..
Kottayam	216	120	336	336	50964	1048	551	1599	16689	..	3766
Ernakulam	641	1198	1839	1839	95564	293	641	934	7940	..	1182
Trichur	2450	5497	7947	7947	124426	..	1240	1240	745	..	76
Palghat	3348	4289	7637	12498	202029	926	4713	5639	1625	830	907
Malappuram	..	..	..	..	92892	..	338	338	3250	675	1855
Kozhikode	..	3286	3286	3286	70393	..	185	185	18016	..	3450
Cannanore	..	1256	1256	1256	100902	333	162	495	50558	1700	427
STATE	12564	20254	32818	37679	924533	7579	8675	16254	116343	3205	11873

Food Crops

District	Condiments and spices					Fresh fruits					Total
	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)		(32)
	Turmeric	Cardamom	Beet nut	Others	Total	Mangoes	Citrus fruits	Banana	Other plants	Others	Total
Trivandrum	..	..	4776	4261	19270	6574	..	587	3410	7275	17846
Quilon	..	..	8218	3560	17771	9776	..	1622	3940	5555	20893
Alleppey	..	..	4815	1122	7441	4642	..	687	3049	8922	17300
Kottayam	1107	43093	5065	2351	72071	5912	..	1173	5139	9776	22900
Ernakulam	376	1042	9257	2132	21929	6091	..	708	2926	9261	18986
Trichur	..	..	13573	1894	16288	4715	..	1149	4183	4708	14755
Palghat	1233	1884	3585	2894	12958	5799	..	279	4585	6502	17165
Malappuram	..	..	14412	..	20112	3550	..	526	2148	4447	10671
Kozhikode	1236	1079	7997	902	32660	4672	96	983	3716	4961	14428
Cannanore	233	392	14961	201	68472	4431	1863	1493	5585	6980	20352
STATE	4185	47490	86659	19317	289072	56162	1959	9207	38681	63887	174396

TABLE 3.1.—Contd.

District	Food Crops												
	Dried Fruits						Vegetables						
	Cashew nut	Others	Total	Total fruits	Total Tapioca	Sweet potatoes	Onions	Others	Total	Total fruits and vegetables	Total food crops		
(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)			
Trivandrum	4394	..	4394	22240	76111	41	9	925	77086	99326	161163		
Quilon	8480	..	8480	29373	94745	95	26	8383	103249	132622	211176		
Alleppey	3932	..	3932	21232	19124	106	5	3839	23074	44306	141584		
Kottayam	1355	..	1355	23355	39008	773	41	8595	48437	71792	196426		
Ernakulam	5891	..	5891	24877	13500	128	11	2415	16054	40931	159358		
Trichur	7251	..	7251	22005	8345	189	5	1930	10469	32474	174428		
Palghat	8728	..	8728	25893	11664	2412	72	1961	16109	42002	262628		
Malappuram	13379	..	13379	24050	22959	612	21	1983	25575	49625	163047		
Kozhikode	5655	12	5667	20095	10812	40	12	2113	12977	33072	136330		
Cannanore	41596	12	41608	61960	6994	838	12	1180	9024	70984	240853		
STATE	100661	24	100685	275080	303262	5254	214	33324	342054	617134	1846993		

TABLE 3.1—Contd.

District	Non-food crops										
	Oil Seeds					Fibres			Drugs		
	Groundnut (44)	Caster (45)	Sesamum (46)	Coconut (47)	Others (48)	Total (49)	Cotton (50)	Others (51)	Total (52)	Tobacco (53)	Tea (54)
(1)											
Trivandrum	..	5	31	77326	893	78255	..	..	..	..	1066
Quilon	..	41	3588	104272	103	108004	..	..	..	..	2472
Alleppey	..	38	3683	82139	427	86287	..	..	..	..	..
Kottayam	..	63	52	70120	3220	73455	..	..	..	..	26903
Ernakulam	..	110	890	70352	1794	73146	..	..	..	..	188
Trichur	..	9	1160	54684	1622	57475	..	..	..	..	459
Palghat	14692	57	662	23219	348	38978	7476	..	7476	..	630
Malappuram	..	..	1135	68698	26	69859	..	..	..	..	174
Kozhikode	..	18	270	90875	54	91217	..	..	..	..	3865
Cannanore	..	21	310	88575	97	89003	..	36	36	804	1926*
STATE	14692	362	11781	730260	8584	765679	7476	36	7512	804	37083

TABLE 3.1—Contd.

District	Non-food crops											Net area sown more than once	
	Narcotics and Plantation crops				Fodder crops			Green manure crops		Other non-food crops			Total area sown under all crops
	Coffee	Rubber	Others	Total	Total	Fodder crops	Green manure crops	Other non-food crops	Total non-food crops				
(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)			
Trivandrum	3	7407	..	8476	21	703	836	88291	249454	96045	153409		
Quilon	267	31543	..	34282	111	270	2466	145133	356309	126296	230013		
Alleppey	..	3718	..	3718	151	689	738	91583	233167	69321	163846		
Kottayam	2110	56412	..	85425	14	4030	7612	170536	366962	45885	321077		
Ernakulam	262	26996	..	27446	216	3757	20838	125403	284761	62231	222530		
Trichur	..	8962	..	9421	25	481	3467	70869	245297	107118	138179		
Palghat	3779	6254	372	11035	24	5769	11464	74746	337374	50225	287149		
Malappuram	..	16715	..	16889	..	2089	4422	93259	256306	46168	210138		
Kozhikodé	21722	15946	1034	41967	8	213	308	133713	270043	112278	157765		
Cannanore	4712	15259	..	22101	4	1040	5646	117830	358683	55760	302923		
STATE	32855	188612	1406	260760	574	19041	57797	1111963	2958356	771327	2187029		

TABLE 3.2

Percentage of Area under crops to the total cropped area in each district

District	Total cropped area	Total food crops	Total non food crops	Net area sown	Area sown more than once	Cereals and millets			Total pulses	Total food grains	Sugar
						Rice	Others	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Trivandrum	100	64.61	35.39	61.50	38.50	15.83	..	15.83	1.00	16.84	0.23
Quilon	100	59.27	40.73	64.55	35.45	14.52	0.13	14.65	2.09	16.74	0.32
Alleppey	100	60.72	39.28	70.27	29.73	36.52	..	36.52	0.23	36.76	1.77
Kottayam	100	53.53	46.47	87.50	12.50	13.63	0.17	13.80	0.92	13.89	0.44
Ernakulam	100	55.96	44.03	78.15	21.85	32.90	0.01	32.91	0.65	33.56	0.33
Trichur	100	71.11	28.89	56.33	43.67	46.99	0.49	47.48	3.24	50.72	0.51
Palghat	100	77.84	22.16	85.11	14.89	54.12	2.06	56.18	3.70	59.88	0.17
Malappuram	100	63.61	36.39	81.99	18.01	36.24	..	36.24	..	36.24	0.13
Kozhikode	100	50.48	49.52	58.42	41.58	24.29	0.56	24.85	1.22	26.07	0.07
Cannanore	100	67.15	32.85	84.45	15.55	27.52	0.26	27.78	0.35	28.13	0.14
STATE		62.43	37.57	73.93	26.07	29.58	0.40	29.98	1.27	31.25	0.55

TABLE 3.2—Contd.

District	Condiments and spices										Fresh fruits				Vegetables			
	Pepper		Cardamom		Betel nuts		Others		Total		Mangoes including plantain		Banana		Others		Total	
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Trivandrum	4.10	..	1.91	1.71	7.72	2.64	1.60	2.91	7.15	1.76	8.91	30.51	0.39	30.90				
Quilon	1.62	..	2.31	1.06	4.99	2.74	1.56	1.56	5.86	2.38	8.24	26.59	2.39	28.98				
Alleppey	0.64	..	2.07	0.48	3.19	1.99	1.60	3.83	7.42	1.69	9.11	8.20	1.69	9.89				
Kottayam	4.55	11.74	1.38	1.98	19.63	1.61	1.72	2.66	5.99	0.37	6.36	10.63	2.59	13.20				
Ernakulam	2.79	0.36	3.25	1.30	7.70	2.14	1.28	3.25	6.67	2.07	8.74	4.74	0.90	5.64				
Trichur	0.30	..	5.54	0.80	6.64	1.92	2.17	1.92	6.02	2.95	8.97	3.40	0.87	4.27				
Palghat	0.48	0.56	1.06	1.74	3.84	1.72	1.44	1.93	5.09	2.58	7.67	3.46	1.31	4.77				
Malappuram	1.27	..	5.62	0.97	7.85	1.38	1.04	1.74	4.16	5.22	9.38	8.96	1.02	9.98				
Kozhikode	6.67	0.39	2.96	2.08	12.10	1.73	1.74	1.87	5.34	2.10	7.44	4.00	0.80	4.80				
Cannanore	14.09	0.11	4.17	0.72	19.09	1.24	1.97	2.47	5.68	11.60	17.28	1.95	0.57	2.52				
STATE	3.93	1.61	2.93	1.30	9.77	1.90	1.62	2.38	5.90	3.40	9.30	10.25	1.31	11.56				

TABLE 3.2—Contd.

District	Total food fruits & Vegetables		Oil seeds				Drugs, Narcotics and plantation crops					Total non food crops			
	(27)	(28)	Sesamum	Coconut	Ground-nut	Others	Total	Fibres	Tea	Coffee	Rubber	Others	Total	Total	
															(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
(1)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
Trivandrum	39.82	64.61	0.01	30.99	..	0.36	31.37	..	0.43	0.01	2.95	..	3.39	0.63	35.39
Quilon	37.22	59.27	1.01	29.26	..	0.04	30.31	..	0.70	0.07	8.85	..	9.62	0.80	40.73
Alleppey	19.00	60.72	1.58	35.23	..	0.20	37.01	..	..	..	1.59	..	1.59	0.68	39.28
Kottayam	19.56	53.53	0.02	19.11	..	0.89	20.02	..	7.33	0.57	15.37	..	23.28	3.17	46.47
Ernakulam	14.37	55.96	0.31	24.71	..	0.67	25.69	..	0.07	0.09	9.48	..	9.64	8.71	44.04
Trichur	13.24	41.11	0.47	22.29	..	0.67	23.43	..	0.19	..	3.65	..	3.84	1.62	28.89
Palghat	12.45	77.84	0.20	6.88	4.35	0.12	11.55	2.21	0.19	1.12	1.85	0.11	3.27	5.23	22.16
Malappuram	19.36	63.61	0.44	26.81	..	0.01	27.26	..	0.07	..	6.52	..	6.59	2.54	36.39
Kozhikode	12.25	50.48	0.10	39.65	..	0.03	33.78	..	1.43	8.04	5.68	0.38	15.54	0.20	49.52
Cannanore	19.79	67.15	0.09	24.69	..	0.03	24.81	0.01	0.37	1.32	4.25	0.23	6.17	1.86	32.85
STATE	20.86	62.43	0.40	24.68	0.50	0.30	25.88	0.25	1.25	1.11	6.38	0.07	8.81	2.63	37.57

TABLE 4.1

**District wise production of important crops in Kerala during the year 1971-72
(year ending 30th June, 1972)**

District	Rice (Tonnes)						Other cereals and Millets tonnes	Tur tonnes	Other pulses tonnes	Sugarcane (Cult) tonnes
	Autumn	Winter	Summer	Total	Jowar-tonnes	Ragi-tonnes				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trivandrum	29806	33354	1022	64182	..	..	..	..	911	..
Quilon	26819	47376	1235	75430	..	590	..	..	2328	4468
Alleppey	23132	26847	94270	144249	..	..	..	..	221	18794
Kottayam	12060	39672	41917	93649	..	..	168	..	79	5157
Ernakulam	51553	55875	13717	121145	..	21	..	..	892	1303
Trichur	45463	89171	22888	157522	..	1197	..	..	2964	..
Palghat	195567	168212	2687	366466	781	514	2603	860	2769	8154
Malappuram	75780	54756	15396	145932	..	..	..	..	..	..
Kozhikode	22578	45491	5287	73356	..	1047	..	..	1212	..
Cannanore	69488	36054	4265	109807	..	1400	..	..	775	1234
STATE	552246	596808	202684	1351738	781	4769	2771	860	12151	39110

TABLE 4.1—Contd.

District	Black pepper (Tonnes)	Dry chillies (Tonnes)	Dry ginger (Tonnes)	Cured Turmeric (Tonnes)	Processed Cardamom (Tonnes)	Betal Nuts Million nuts	Banana (Tonnes)	Other plantains (Tonnes)	Cashewnut raw (Tonnes)	Tapioca (Tonnes)
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Trivandrum	3889	..	..	..	..	742	4277	26039	4930	1277904
Quilon	2521	..	345	..	..	1656	11718	30086	9515	1604980
Alleppey	492	..	..	..	..	749	4905	23282	4412	284565
Kottayam	5037 ✓	..	8285 ✓	987 ✓	1268 ✓	508 ✓	8546 ✓	39241 ✓	1520 ✓	956086 ✓
Ernakulam	2199	..	2183	292	46	1119	5158	22343	6610	242190
Trichur	589	..	65	..	..	2019	8391	81941	8136	154466
Palghat	208	287	1491	931	117	452	2033	35011	9793	140901
Malappuram	444	718	2813	..	..	2240	3832	16402	15011	434843
Kozhikode	2495	..	6921	1639	66	1476	7162	28375	6345	173533
Cannanore	7223	1744	1210	545	22	1871	10878	42647	46671	159813
STATE	25097	2749	23313	4394	1519	12832	66900	295367	112943	5429281

TABLE 4.1—Contd.

District	Sweet potatoes (Tonnes)	Ground nut (Tonnes)	Sesamum (Tonnes)	Coconut (Million nuts)	Cotton (Bales of 180 kgs.)	Tobacco (Tonnes)	Tea (Tonnes)	Coffee (Tonnes)	Rubber (Tonnes)	Lemongrass Oil (Tonnes)
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Trivandrum	185	..	15	475	..	..	921	2	3768	1
Quilon	428	..	1102	588	..	..	2296	34	16483	3
Alleppey	477	..	891	549	..	..	..	..	1777	1
Kottayam	3569	..	18	339	..	..	30564	973	27379	107
Ernakulam	576	..	299	412	..	..	280	61	12149	783
Trichur	851	..	767	346	..	..	796	..	6080	43
Palghat	10854	16769	179	91	7850	..	1147	2241	1218	9
Malappuram	2754	..	306	349	..	..	136	..	6778	171
Kozhikode	180	..	80	567	..	..	5326	8856	7983	172
Cannanore	3771	..	95	338	..	1713	1336	1939	5314	312
STATE	23645	16769	3746	4054	7850	1713	42802	14106	88929	1602

TABLE 5.1

Average Farm Price in Rupees for certain Commodities for the year 1971-72

District	Paddy std. para	Coconut 100 Nos.	Arecanut 100 Nos.	Tapioca Qt.	Cashewnut Qt.	Banana 100 Nos.	Pepper Qt.	Ginger Qt.	Sugarcane M.T.
	2	3	4	5	6	7	8	9	10
Trivandrum	8.71	38.21	2.59	19.97	151.87	17.28	455.86	..	..
Quilon	8.51	42.36	3.34	20.35	162.98	19.82	539.69	..	73.70
Alleppey	7.54	44.55	3.49	24.03	157.19	17.72	..	..	..
Kottayam	7.91	45.30	2.89	20.93	152.10	18.39	472.31	222.29	..
Ernakulam	7.76	48.11	2.97	21.16	150.50	16.33	500.25	215.63	..
Trichur	7.19	40.94	3.99	21.65	160.63	19.30	548.96	..	..
Palghat	6.61	40.17	2.79	17.35	166.16	16.83	489.06	239.38	86.25
Kozhikode	6.73	38.53	2.53	17.78	148.23	15.21	542.81	273.44	..
Cannanore	6.61	42.06	2.46	31.20	162.11	16.17	555.63	278.57	..
STATE	7.23	42.07	2.85	20.82	158.20	17.14	540.97	269.27	78.27

TABLE 6.1

Average Daily Wages of Agricultural Labourer's 1971-72

CARPENTER

District	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Average
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum	7.00	7.00	7.00	7.00	7.00	7.00	7.50	7.50	7.50	7.50	7.50	7.50	7.25
Quilon	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56
Alleppey	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.50	8.04
Kottayam	8.38	8.38	8.38	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	8.85
Ernakulam	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.25	8.48
Trichur	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
Palghat	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.50	6.27
Kozhikode	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73	7.73
Cannanore	7.63	7.63	7.63	7.75	7.75	7.75	8.00	8.00	8.00	8.00	8.00	7.75	7.80

1972

TABLE No 6.1—Contd.

District	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Average
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum	7.00	7.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00	7.50
Quilon	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Alleppey	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.50	8.04
Kottayam	8.36	8.36	8.36	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	8.84
Ernakulam	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.25	8.4
Trichur	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90	7.90
Palghat	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.50	6.27
Kozhikode	7.48	7.48	7.48	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.04
Cannanore	7.63	7.63	7.63	7.75	7.75	7.75	8.00	8.00	8.00	8.00	8.00	7.75	7.82

MASON

TABLE No. 7.1
Number of Livestock, Poultry and Agricultural Machinery and implements in Kerala
 (1966 Census)

District	Cattle											
	Males over three years						Females over three years					
	Breeding	Working	Others	Total	In Milk	Breeding dry	Not calbed	Working	Others	Total	Young stock	
0	1	2	3	4	5	6	7	8	9	10	11	12
Trivandrum	1446	16446	381	18273	30385	29310	6305	157	257	66414	63897	148584
Quilon	1850	49302	806	51958	59342	83004	16771	140	489	159746	148507	360211
Alleppey	1150	16614	530	18294	57952	85002	23037	157	723	166861	140938	326093
Kottayam	2443	29888	1230	33561	72778	89466	20446	231	611	183532	165177	382270
Ernakulam	1671	80268	885	82824	44791	52299	11592	559	525	109766	110441	303031
Trichur	815	55245	506	56566	37196	34631	6328	237	310	78702	86576	221844
Falghat	1794	80308	980	83082	55867	57337	9204	1008	421	123837	115980	322899
Kozhikode	4503	95010	1682	101195	57577	78429	20863	608	576	158053	132511	391759
Cannanore	3715	68200	1855	73770	67531	83494	19463	508	1335	172331	153935	400036
STATE	19387	491281	8855	519523	483419	592972	133999	3605	5247	1219242	1117962	2856727

TABLE No. 7.1—Contd.

District	Buffaloes											
	Males over three years						Females over three years					
	Breeding	Working	Others	Total	In Milk	Breeding dry	Not cabled	Working	Others	Total	Young stock	Total
13	14	15	16	17	18	19	20	21	22	23	24	
Trivandrum	818	14358	1049	16225	8746	7035	1309	395	160	17645	8871	42741
Quilon	608	10287	878	11773	4806	4338	714	124	113	10095	5156	27024
Alleppey	218	7908	313	8439	2171	2586	410	40	45	5252	1913	15604
Kottayam	350	4930	519	5799	3872	3063	699	145	132	7911	4500	18210
Ernakulam	179	10387	618	11184	4204	1988	962	189	42	6785	3098	21067
Trichur	393	34087	867	35347	10835	6323	1200	355	236	18949	11743	66039
Palghat	996	113529	1009	115534	13732	10584	1344	1579	305	27544	25199	168277
Kozhikode	1346	28129	935	30510	10459	3948	1694	1448	317	22866	12799	66175
Cannanore	1098	17433	508	19039	7880	7912	1387	314	230	17723	9336	46098
STATE	6106	241048	6696	253850	66705	52777	9119	4589	1580	134770	82615	471235

TABLE No. 7.1—Contd.

District	Sheep										Horse and Ponies										Total livestock							
	One year and above		Below one year		Total		One year and above		Below one year		Total		Three years and above		Below three years		Total		Mules			Donkeys		Camels		Pigs		
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	25	26	27	28	29	30		31	32	33	34	35	36	37	38
Trivandrum	425	302	727	78340	49950	128290	62	2	64	3	5	3	3799	324216														
Qullon	1780	849	2579	84568	52576	137144	10	..	10	..	..	..	598	527566														
Alleppey	685	485	1170	50591	29643	80234	10	1	11	..	2	..	170	423284														
Kottayam	517	296	813	103748	56275	160023	66	12	78	1	118	..	63515	625028														
Ernakulam	360	223	583	89068	54347	143415	19	..	19	..	..	..	37473	505588														
Trichur	79	33	112	72559	43182	115741	16	5	21	..	2	1	1450	405210														
Falghat	3618	1162	4780	108946	49371	158317	121	23	144	..	183	..	369	654969														
Kozhikode	55	53	108	106009	57970	163979	35	3	38	4	..	..	1234	623297														
Cannanore	451	196	647	63937	38138	102075	33	8	41	..	..	..	3320	552217														
STATE	7920	3599	11519	757766	431452	1189218	372	54	426	8	310	4	111928	4641375														

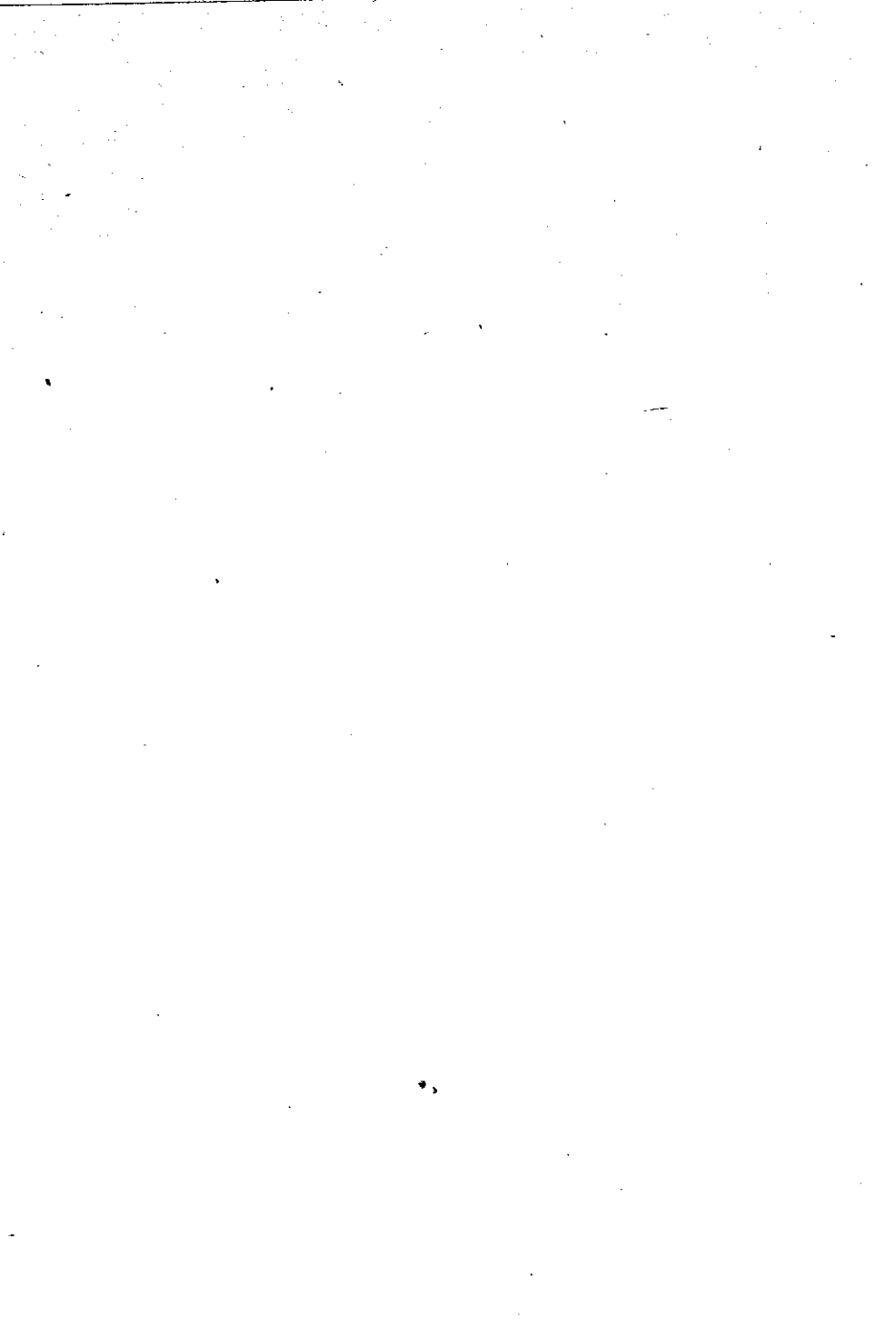
TABLE No. 7. 1—Contd.

District	Poultry			Plough							Sugarcane crushers					Ghanis	
	Fowls	Duck	Others	Total	Wooden	Iron	Carts	Power	Bullocks	Engines	Electric pump	Tractors	More than 5 kg.	Less than 5 kg.			
	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53		
Trivandrum	799963	3778	166	803907	20060	1222	1218	15	41	9	5	7	39	14	39		
Quilon	972924	4606	130	977660	39778	3825	1702	48	94	15	32	23	81	110	358		
Alleppey	971776	58312	219	1140307	18235	3329	911	63	65	441	405	57	127	142	8868		
Kottayam	1307984	59929	690	1368603	24037	660	1012	48	230	124	258	61	28	52	464		
Ernakulam	1250254	54543	1012	1305809	63879	2016	739	38	143	646	1276	35	26	41	473		
Trichur	1000114	21198	224	1021536	49401	1711	2247	62	164	1116	1940	75	56	54	551		
Palghat	941566	2561	207	944337	134976	2069	7440	139	118	1481	789	108	48	31	191		
Kozhikode	1517189	3048	157	1520394	72009	1433	595	25	59	1122	138	26	205	192	36		
Cannanore	825516	773	145	826434	55275	914	445	19	75	1870	76	26	82	52	7		
STATE	9587286	318751	2950	9908987	475930	17179	16309	457	989	6824	4869	418	692	628	10987		

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:
 - (i) Tea
 - (ii) Coffee
 - (iii) Rubber
 - (iv) Cardamom
 - (v) Pepper
 - (vi) Ginger
 - (vii) 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
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1. Working Class cost of Living Indices

The average consumer price index numbers in 13 selected centres of the State during the years 1970-71 and 1971-72 are furnished in the following table.

TABLE—1

Centre	Average cost of living indices	
	1970-71	1971-72
Trivandrum	862	891
Quilon	843	869
Punalur	829	851
Alleppey	846	870
Changanacherry	851	869
Sherattalay	834	891
Kottayam	867	878
Munnar	805	900
Alwaye	851	893
Ernakulam	883	889
Trichur	865	849
Chalakyudy	865	859
Kozhikode	936	981

The month-wise details are given in Table I of the appendix.

II. Parity Index

The Index of Parity between Prices received and paid by the farmers during each month is given below for the years 1970-71 and 1971-72

TABLE—II
Index of Parity

Month	1970-71	1971-72
July	107	94
August	105	93
September	105	89
October	104	86
November	101	80
December	99	81
January	99	82
February	98	83
March	98	84
April	99	85
May	96	84
June	95	87
Average	101	86

Quarterly Retail Prices

The trend of quarterly retail Prices of 12 important commodities is discussed in the following paragraphs. Districtwise quarterly retail Prices of these commodities for the year 1971-72 have become given in table III.

1. *Rice (F. P.)*.—The fair price of rice increased from Rs. 1.04 to Rs. 1.08 during the second quarter of the year and then remained steady for the rest of the year.
2. *Chillies*.—The price varied between Rs. 3.81 per kg. to Rs. 5.38 per kg. The highest price was reported from Trivandrum during the first quarter and the lowest price from Kozhikode in the last quarter of the year.
3. *Tapioca*.—The price of tapioca was the highest Rs. 0.48 per kg. in Cannanore District in the last quarter of the year. The minimum Price of 25 Ps. per kg. was reported from Trivandrum, Quilon and Trichur Districts in different periods of the year.
4. *Blackgram*.—The Price varied from Rs. 2.53 to Rs. 1.84 during the year. The maximum Price was quoted at Trivandrum in the 4th quarter of the year and the minimum at Cannanore in the first quarter of the year.
5. *Tea*.—The Price fluctuated between Rs. 12.27 to Rs. 6.35 per kg.
6. *Coffee*.—The Price of the commodity varied from Rs. 13.90 to Rs. 8.12 per kg.
7. *Sugar*.—The Price of Sugar in the open Market fluctuated between Rs. 1.92 to Rs. 3.06 per kg.
8. *Coconut Oil*.—The maximum Price of Coconut Oil was Rs. 5.83 and the minimum Rs. 4.41 per litre.
9. *Gingelly Oil*.—The Price varied from Rs. 4.79 to Rs. 5.98 per litre.
10. *Coconut*.—The Price of Coconut was maximum at Rs. 67.73 in the first quarter of the year at Kottayam and the minimum price of Rs. 41.41 was reported from Kozhikode during the last quarter of the year.
11. *Tobacco (Jaffna)*.—The Price fluctuated between Rs. 8.00 to Rs. 14.85 per kg.
12. *Tobacco (Ordinary)*.—The highest Price was Rs. 9.16 and the lowest Price was Rs. 5.92. The former was reported from Ernakulam in the fourth quarter and the minimum Price from Quilon in the first quarter.

TABLE—I

Statement showing the consumer price index numbers for selected centres in the state for the year 1971-72

Centre	July 1971	Aug. 1971	Sept. 1971	Oct. 1971	Nov. 1971	Dec. 1971	Jan. 1972	Feb. 1972	March 1972	April 1972	May 1972	June 1972	Average
Trivandrum	866	872	887	892	896	904	893	886	888	893	899	915	891
Quilon	846	852	865	868	872	879	869	862	867	873	880	895	869
Punalur	833	839	850	852	856	864	852	844	845	850	857	874	851
Alleppey	852	856	869	873	876	885	872	863	865	868	873	893	870
Changanacherry	847	851	863	866	871	881	872	865	868	872	879	897	869
Kottayam	868	873	885	890	894	904	892	887	890	894	899	918	891
Alwaye	854*	859	870	875	880	891	879	871	875	881	889	910	878
Ernakulam	876	882	896	899	904	912	900	894	898	902	907	925	900
Trichur	867	872	886	891	894	905	896	891	893	898	904	924	893
Chalakydy	865	870	885	888	891	901	892	882	884	890	897	918	889
Munnar	823	826	838	842	848	860	854	846	853	855	862	880	849
Sherthalai	842	847	858	862	865	873	860	851	854	857	862	877	859
Kozhikode	954	959	973	977	982	995	985	975	979	985	991	1012	981

(Base for Kozhikode is average prices for the year ended June 1936=100)

(Base for other centre is August, 1939=100)

TABLE—II

Parity index numbers between prices received and prices paid by farmers 1971-72

Sl. No.	Index Numbers	July 1971	Aug. 1971	Sept. 1971	Oct. 1971	Nov. 1971	Dec. 1971	Jan. 1972	Feb. 1972	March 1972	April 1972	May 1972	June 1972
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Prices received by farmers	229	228	222	216	208	211	210	211	214	218	216	228
2	Farm Cultivation cost	272	274	280	282	302	296	294	292	291	291	292	294
3	Parity	94	93	89	86	80	81	82	83	84	85	84	87

TABLE—III
Quarterly district average prices for 1971-72

Name of Commodity	Unit	Quarter	Trivan- drum	Quilon	Alleppey	Kottayam	Erna- kulam	Trichur	Palghat	Kozhi- kode	Canna- nore	Mala- puram
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Coconut	100	I	47.36	49.88	51.78	67.73	54.56	48.89	49.25	46.23	51.56	46.75
		II	48.37	48.12	48.74	57.87	51.77	47.65	51.17	41.48	50.20	41.97
		III	47.21	44.95	48.11	57.26	48.39	45.24	46.25	42.38	47.98	49.67
		IV	42.04	43.97	44.11	54.42	47.71	43.25	45.17	41.41	47.33	49.00
2. Coconut Oil	Ltr.	I	5.80	5.83	5.40	5.65	5.63	5.73	5.77	5.56	5.69	5.58
		II	5.43	5.51	5.08	5.29	5.32	5.38	5.60	5.24	5.35	5.22
		III	4.97	4.98	4.64	4.91	4.92	4.95	5.17	4.81	4.89	5.00
		IV	4.57	4.59	4.43	4.52	4.60	4.62	4.68	4.41	4.65	4.56
3. Rice (F.P.)	Kg.	I	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
		II	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		III	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		IV	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
4. Blackgram	Kg.	I	2.33	2.33	2.16	2.34	2.16	2.02	2.25	1.90	1.84	..
		II	2.39	2.38	2.27	2.51	2.31	2.07	2.39	2.17	2.03	..
		III	2.30	2.21	2.16	2.41	2.16	1.98	2.38	2.02	2.11	..
		IV	2.53	2.44	2.36	2.56	2.27	2.21	2.59	2.09	2.14	..

TABLE—III—Contd.

Name of Commodity	Unit	Quarter	Trivandrum	Quilon	Alleppey	Kottayam	Ernakulam	Trichur	Palghat	Kozhikode	Cannore	Malapuram	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
5. Gingelly Oil	Ltr.	I	5.29	5.76	5.18	5.29	5.28	4.84	5.31	5.06	5.28	4.79	
		II	5.23	5.61	4.94	5.22	5.20	4.80	5.44	4.94	5.23	5.03	
		III	5.49	5.72	5.38	5.56	5.89	5.65	5.75	5.35	5.43	5.63	
		IV	5.74	5.75	5.47	5.57	6.17	5.76	5.91	5.70	5.56	5.98	
6. Tapioca	Kg.	I	0.25	0.25	0.32	0.34	0.28	0.28	0.26	0.28	0.45	0.30	
		II	0.25	0.27	0.32	0.34	0.31	0.27	0.28	0.31	0.42	0.30	
		III	0.28	0.27	0.33	0.34	0.30	0.25	0.28	0.28	0.32	0.40	0.30
		IV	0.28	0.32	0.31	0.34	0.33	0.26	0.28	0.28	0.33	0.48	NA
7. Sugar (O.M.)	Kg.	I	1.96	1.98	1.94	1.92	1.96	1.92	1.94	1.93	1.94	1.97	
		II	2.20	2.21	2.18	2.18	2.20	2.16	2.18	2.14	2.14	2.15	
		III	2.85	2.89	2.89	2.86	2.91	2.84	2.88	2.85	2.84	2.83	
		IV	3.05	3.10	3.00	2.99	3.06	2.97	3.01	2.95	2.94	3.00	
8. Chillies	Kg.	I	5.38	4.70	4.57	4.70	5.02	5.19	5.23	4.60	4.64	4.43	
		II	5.15	4.61	4.94	4.80	5.22	5.21	5.35	4.94	4.73	4.55	
		III	5.02	4.59	4.58	4.71	5.05	4.96	5.24	4.42	4.59	4.50	
		IV	4.15	3.94	3.93	3.94	4.20	4.13	4.53	3.81	3.94	4.04	

TABLE—III—Contd.

Name of Commodity	Unit	Quarter	Trivandrum	Quilon	Alleppey	Kottayam	Ernakulam	Trichur	Palghat	Kozhikode	Cannanore	Malapuram	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
9. Coffee Powder	Kg.	I	13.78	9.96	8.37	9.34	8.20	9.79	9.50	8.86	10.83	12.07	
		II	13.90	9.50	8.26	8.81	8.15	9.00	9.50	8.80	10.57	12.00	
		III	13.40	9.50	8.57	9.04	8.12	9.00	9.00	9.53	8.75	10.37	12.00
		IV	12.94	9.67	8.57	9.07	8.12	9.00	9.00	9.86	8.75	10.33	11.60
10. Tea	Kg.	I	12.27	8.73	6.35	7.27	7.22	11.95	8.50	6.70	10.40	7.30	
		II	12.25	8.83	6.44	7.51	7.36	11.95	8.50	9.85	10.40	7.25	
		III	12.02	8.83	6.84	7.56	7.41	11.98	8.52	9.83	10.43	7.25	
		IV	12.10	9.21	7.09	7.70	7.53	12.34	8.75	10.15	10.59	7.25	
11. Tobacco (Jaffna)	Kg.	I	9.03	8.67	8.00	8.75	9.67	13.71	..	..	..	..
		II	9.00	8.75	8.05	8.75	9.67	14.03	..	..	..	..
		III	9.00	8.79	8.39	8.79	10.00	14.33	..	..	..	..
		IV	9.00	9.38	8.79	9.08	10.44	14.85	..	..	..	..
12. Tobacco (Ordinary)	Kg.	I	8.98	5.92	6.00	7.67	8.00	7.46	6.46	7.63	7.55	7.50	
		II	9.00	6.00	6.09	7.33	8.02	7.66	6.68	7.63	7.12	7.50	
		III	8.50	6.03	6.78	7.42	8.41	7.92	7.03	7.70	7.35	7.50	
		IV	8.50	6.38	7.00	7.71	9.16	8.18	8.34	8.79	8.36	7.50	

TABLE—IV

Foreign export from the ports of Kerala for the year 1971-72
(April to March)

<i>Sl. No.</i>	<i>Commodity</i>	<i>Unit</i>	<i>Quantity</i>	<i>Value (Rs. in Lakhs)</i>
1	Cardamom	M.T.	508	172.94
2	Cashew Kernals	"	59961	5559.90
3	Cashew Shell Oil	Litre	5696389	64.89
4	Coffee	M.T.	25075	1299.08
5	Coir and Coir Products	"	43894	1296.18
6	Ginger	"	4110	166.75
7	Lemon grass Oil	Litre	250504	73.00
8	Marine Products including Frog legs	M.T.	22644	3391.82
*9	Oil Cake	"	..	..
10	Pepper	"	19704	1519.07
*11	Rubber Manufactures value		..	..
12	Tea	"	43916	3058.18
13	Wood and Timber	value	..	565.21
14	Sundries	"	..	1263.03
				18430.05

*Items 9 and 11 have been clubbed with item 14.

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% 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 55°F to 95°F 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 pattern 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 ft. 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 south-west Monsoon. Water is essentially needed for the young plants for the first two or three months after planting. Young plants taken from the nursery are preferred to the seeds. Usually these plants are removed from the nursery after 6 to 18 months with great care so that the tap root of the plant is not damaged and planted in the places fixed for the purpose.

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

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

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

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

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

Life of the Plant.—The average life of a Tea plant varies from 60 to 80 years.

From the garden to the market.—The leaves plucked from the 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 a 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 classification of grades. They are leaf grades and broken grades. The former group is mainly divided into Orange Pekoe and Pekoe souchong, Broken Orange Pekoe, Broken Pekow, Broken Souchong. Fannings and Dust are important broken grades. They are then packed category-wise and sent to the market for sale.

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

2. COFFEE

Coffee was first discovered in Africa although the earliest cultivation was begun in southern Arabia. Coffee, an important plantation crop was introduced in India from Arabia. The production of Coffee in India is only 1% 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 and pests and diseases. It is easily distinguishable from Arabica by the size of its leaves and appearance of the berries.

Climate.—Coffee is a tropical plant. It is successfully cultivated in places where the altitude 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 clayloam 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 branches of the trees 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 are pruned at a height of fifteen feet to enable easy plucking of the berries.

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

Manure.—The important manures used for the coffee plants are superphosphate, ammonium sulphate, copper sulphate and urea.

Yield.—Under good climatic conditions a coffee plant yields 1 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. The pulpy skin of the cherries are automatically removed. Then these 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 Belgeum and Ratnagiri in the Bombay State. 94% of the total area under rubber is in the Kerala State. 92% 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% 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 stiff alluvial soil which is neither too steep nor too swampy is suited for cultivating rubber.

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

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

Diseases.—There are two serious leaf diseases of rubber now prevailing in India. They are 'Oidium nevea' and 'Phytophthora 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 Blast 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 portions of the bark.

From the estate to the market.—The latex brought by the tappers is first of all freed from sand, bark and other impurities by straining at the coagulating shed constructed specially for the purpose. In the case of crape rubber coagulation is done by using acetic acid. For changing latex into sheet rubber the latex after being bulked and diluted is put into 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 into black from white. There are three important types of rubber, smoked sheet, late crape and scrap rubber.

Of these the most important one is smoked sheet.

4. CARDAMOM

The important cardamom producing countries are India, Ceylon and Indo-China. India is the largest producer of cardamom in the world. Cardamom is taken from the Plant *Ellettaria cardamom*. Kerala ranks first as the largest producer of cardamom. 80% of the world output of this valuable spice is produced in India. India's

competitors are Ceylon Indo-China and Guatemala. Cardamom possess an aromatic odour and it is commonly used for flavouring and medicines.

Climate.—The best climate suitable for the cardamom cultivation is a warm and humid atmosphere with a temperature ranging between 50°—95°F. It is cultivated in the shades of huge forest trees. Cardamom plants require a fairly well distributed 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 plant.—Nine years is the average life of the plant.

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

Diseases.—The most important disease affecting the cardamom plantations is the vines disease '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 reguing of affected plants. Another menace is that caused by Thrips, mite etc. Dusting the plants with gamazene 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 sun-light 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 produce of green cardamom is 20-28% 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 absorb 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, red loam or sandy loam soils, the first being the most suitable.

Planting.—The crop is propagated vegetatively by means of cuttings. It is a wood climber and requires some support for the vines. Jack and mango trees are commonly used as support for 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.

Picking.—The vines begin to bear after three years of planting. Flowering period is from June to July. The harvesting period is from December to March. When ripe the colour of the berries is orange. The berries are allowed to dry in the sun in mats for a

week till the colour become black. Some times the skin of the ripe berries is removed before drying. This kind of pepper is known as white pepper and is produced only in limited quantities.

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

GINGER DRY

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

Indian Ginger contains more fibre content.

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

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

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

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

Manure.—Usually cattle 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%) for treating the rhizomes sorted as seed is advocated as a preventive measure. Another important disease is known as 'varmicularia'. The leaves become covered with yellowish and brownish spots and gradually dry up. Spraying and Bordezux mirture is suggested in such cases.

From garden to the Market.—Dry ginger as a market produce is prepared as follows:—

Then they are seaked 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 & D) have two fingers and one finger respectively.

The B & 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.

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. 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 area 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 laterite soils are selected for the cultivation. During February-March the site selected is first cleared of all undergrowth of vegetation by burning them. In April-May the land is ploughed and is prepared into long narrow beds for cultivation of lemongrass. Usually in one acre 15 to 20 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 seasons 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 year 2½ dozen bottles of 22 oz. each
- 3rd year 2 dozen bottles of 22 oz. each
- 4th year 2 dozen bottles of 22 oz. each
- 5th year 2 dozen bottles of 22 oz. each

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 copper spiral is allowed to cool down by immersing it in a wooden bucket full of water. The wooden bucket has an opening near the bottom to let off the water, as it becomes hot during the distillation time. The essential oil and water will be collected in the receiver tub. The specific gravity of the essential oil is lower than water. At 30°C specific gravity is 0.878. So naturally the lemongrass oil floats at the top of the receiver tub. Then it is separated from water.

Lemongrass oil is packed in steel drums which has a capacity of 40 to 45 gallons. Lemongrass oil is mainly exported to 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>
1	2	3
Trivandrum	1. Fairly rich brown loam of laterite origin 2. Sandy loam 3. Richest dark brown loam of granite origin	Middle part of the District Western coastal region Eastern hilly part of the District
Quilon	1. Sandy loam 2. Latelite soil 3. Hill and forest soil	Karunagappally and part of Quilon Taluk Kottarakara, Kunnathur and part of Quilon, Pathanapuram and Pathanamthitta Taluks, Part of Pathanapuram and Pathanamthitta Taluk
Alleppey	1. Sandy loam 2. Sandy soil 3. Clay loam with much of acidity 4. Lateric soil	Karthigappally and Mavelikara Taluks Sherthallai and Ambalapuzha Taluks Kuttanad Chengannur and part of Mavelikara
Kottayam	1. Laterite soil 2. Alluvial soil	Peermade and part of Meenachil, Changanacherry and Kottayam Taluks Vaikom parts of Changanacherry and Kottayam, Devikulam and Udumbanchola
Ernakulam	1. Laterite 2. Sandy loam 3. Alluvial	Thodupuzha and Muvattupuzha and part of Kunnathunad Parur, Cochin and Kanayannur Part of Alwaye and Kunnathunad
Trichur	1. Sandy loam 2. Laterite 3. Granite 4. Clay 5. Alluvial soil	Part of Mukundapuram, Trichur and Chowghat Taluks Eastern area of Trichur and Western portion of Talappally Northern part of Talappilly Backwater area in Chowghat and part of Mukundapuram Portion of Chowghat and Kunnathunad Taluk
Palghat	1. Laterite 2. Sandy 3. Black soil	Interior regions of the District Along coastal and reverside areas North-Eastern portion of Chittur Taluk
Kozhikode	1. Laterite 2. Sandy	Major part of the District barring coastal area Coastal strip
Cannanore	1. Laterite 2. Sandy	Major part of barring coastal area Coastal area

7. CONVERSION RATIO BETWEEN THE RAW MATERIALS AND THE PROCESSED PROJECT

Rice	Rice (cleaned) production 2/3 paddy production	
Cotton	Cotton lint production 1/3 of kapas production	
	Cotton seed production 2/3 of kapas production	2 times of cotton lint production
Groundnut	Kernel to nuts in shell	70%
	Oil to nuts in shell	28%
	Oil to kernels crushed	60%
	Cake to kernels crushed	60%
Sesamum	Oil to seeds crushed	40%
	Cake to seeds crushed	60%
Castor seed	Oil seeds crushed	37%
	Cake to seeds crushed	63%
Coconuts	Copra to nuts one ton copra	6775 nuts
	Oil to copra crushed	62%
	Cake to copra crushed	33%
Peanut seed	Oil to Kernel crushed	45 to 50%
	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% of cashewnut
	Butter from mixed milk	6.3%
	Ghee from mixed milk	5.3%

8. Average analysis of important fertilisers

Sl. No.	Name of Fertiliser	Nitrogen (N%)	Phosphate (P ₂ O ₅ %)	Potash (K ₂ O%)
(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	..	18.0	..
11	Super Phosphate—Double	..	35.0	..
12	Super Phosphate	..	45.0	..
13	Rock Phosphate	..	28.3	..
14	Hyper Phosphate	..	27.3	..
15	Sulphate of Potash	..	..	48.0
16	Muriate of Potash	..	..	50.0
17	Groundnut Cake	7.0	1.5	1.3
18	Cast or 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
22	Gingelly cake	6.2	2.0	1.2
23	Cotonut Cake	3.0	1.9	1.8
24	Poultry Manure	1.2—1.5	..	..
25	Sheep Manure	0.8—0.6	..	..
26	Horse Manure	0.8—0.6	..	..
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>	<i>Name of Pest</i>	<i>Nature of damage</i>	<i>Control of measures</i>
(1)	(2)	(3)	(4)
1	Paddy Rice Swarming Cater pillar Spodopiarra Mauritia	Defoliation Plants reduced to stumps nursery and early growing stages attached Cater pillar bores into stem causing 'dead hearts' 'white car heads'	Spray DDT at 1.5 kg. a.i. per Ha. or endrin at 250 gm. a.i. per Ha. Set light traps in the field to catch and destroy moths. Collect egg masses from nursery plants and destroy them spray endrin or parathion at 250 gm. a.i. per Ha. at intervals of 15-20 days starting from 15th day after sowing and upto flowering
2	Rice stem borer Cryporysa (Schoenobius) incertuals	All stages of plants susceptible to attack	Spray endrin or parathion at 250 gm. a.i. per Ha. at intervals of 15-20 days starting from 15th day after sowing and upto flowering
3	Rice bug Leptocoris a acuta	Sucks 'milk' of tender grains leaving them chaffy	Dust BHC or spray endrin or parathion at doses given above
4	Rice Hispa Dieladispa (Hispa) armigera	Adults feed on green matter of leaves and grubs mine leaves	Spray DDT, endrin or parathion at above doses
5	Rices case worm Nymphula depunctalis	Cater pillar in lead-case defoliates	..
6	Paddy gall fly pacy diplosis or Yae	Maggot bores into central shoot and induces infirmation elongated hallice gall called 'silver shoot'	Spray endrin or parathion at 250 gm. a.i. per Ha. 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 stupting of crop	Spray parathion at 250 gm. a.i. per Ha. Phosphamidon (Dinicro 100%) solun at 100 MI, per Ha. or Dimethoate (Rogar at 312 ml. per Ha).
8	Paddy leaf hoppers	Cause weakening of crop by desapping in colonies	Dust BHC
9	Paddy leaf roller Onaphalocrocis medinalis	Cater pillar folds leaves and feeds on green matter. Attacked fields show white patches	Dust BHC or spray DDT at doses given above

List of Centres selected for recording meteorological information in Kerala for the year 1971-72

TRIVANDRUM DISTRICT

1. Ponnudy
2. Varkala
3. Attingal
4. Nedumangad
5. Trivandrum (b)
6. Neyyattinkara
7. Parassala
8. Trivandrum (Aerodrome)
9. Vellayani (AM)

QUILON DISTRICT

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

KOTTAYAM DISTRICT

1. Chinar
2. Marayoor
3. Munnar
4. Devikulam
5. Vandanmattu
6. Vaikom
7. Palai
8. Ettumanoor
9. Kumily
10. Kottayam
11. Peermade (Taluk)
12. Peermade (Rectisincy)
13. Karjirappally
14. Changanacherry
15. Velloor
16. Kottayam (AM)

ALLEPPEY DISTRICT

1. Arukutty
2. Sherthalai
3. Alleppey (b)
4. Ambalapuzha
5. Thiruvalla
6. Chengannoor
7. Haripad
- Mavelikkara
- Kayamkulam

ERNAKULAM DISTRICT

1. Malayattur
2. Parur
3. Perumbavoor
4. Alwaye
5. Neriamangalam
6. Moovattupuzha
7. Karikode
8. Ernakulam
9. Cochin-b
10. Port of Cochin (b)

TRICHUR DISTRICT

1. Cranganore
2. Mukundapuram
3. Trichur
4. Thalappilly
5. Ollukkara (AM)
6. Peechi (AM)

PALGHAT DISTRICT

1. Alathur
2. Palghat
3. Parali
4. Ottappalam
5. Cherplasserry
6. Mannarghat
7. Chittur
8. Pattambi (AM)

MALAPPURAM DISTRICT

1. Perinthalmanna
2. Ponnani
3. Manjeri
4. Tirurangadi
5. Nilambur

KOZHIKODE DISTRICT

1. Kozhikode
2. Vithiri
3. Quilandi
4. Badagara
5. Kuttiyadi

CANNANORE DISTRICT

1. Kasargod
2. Thaliparamba
3. Cannanore
4. Hosdrug
5. Tellicherry
6. Irrikkur
7. Payyannur
8. Mananthody
9. Mahe
10. Kasargod (AM.)

**Non-reporting Raiuage stations,
Schedule I**

Trivandrum District:

1. Aruvikara
2. Vamanapuram
3. Nedumangad

Quilon District:

4. Kulathupuzha
5. Kottarakkara

Kottayam District:

6. Kottayam
7. Pallom
8. Kumarakom

Alleppey District:

9. Alleppey

Ernakulam District:

10. Puthencruz
11. Kuthattukulam
12. Kolani

Trichur District:

13. Pazhayannur

Palghat District:

14. Nemmara
15. Nelliampathy
16. Nattukal

Kozhikode District:

17. Kuttiadi
18. Ambalavayal
19. Kuppady
20. Muthunga
21. Lakkidi
22. Thagarappady

Cannanore District:

23. Manjeswar
24. Vemom (Mananthody)
25. Thirunelli (Mananthody)
26. Konnath
27. Chandanathode
28. Peria
29. Chedloth Range
30. Thaliparamba
31. Cannanore

**Non-reporting railway Raiuage
stations**

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

11. Glossary of English, Botanical and Malayalam

NAMES OF CROPS

Sl. No.	English Name	Malayalam Name	Botanical Name
(1)	(2)	(3)	(4)
CEREALS			
1	Paddy	Nellu	Oryza Sativa
2	Ragi	Koovaraku	Eleusine Coracana
3	Jowar	Cholam	Sorghum Vulgare
4	Bajra	Kambu	Pennisetum Typhodeum
5	Kodamillet	Vargu	Paspalum Scrobiculatum
6	Chama	Chama	Panicum Miliare
7	Wheat	Gothampu	Triticum Vulgare
8	Barley	Barley	Hordeum Vulgare
9	Meize	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	Saccharum Officinatum
2	Palmyrah	Karimpana	Borassus flabellifera
CONDIMENTS & SPICES			
1	Chilly	Mulagu	Capsium Spp
2	Turmeric	Manjal	Curcuma longa
3	Cardamom	Elem	Elettaria Cardamom
4	Coriander	Kothamalli	Coriandrum Sativum
5	Mustard	Kadugu	Brassica Spp
6	Pepper	Kurumulagu	Piper Nigrum
7	Cumin	Jeerakam	Cuminumcyminum
8	Carlic	Veluthulli	Allium Sativum
9	Long pepper	Thippilli	Piperlongum
10	Ginger	Inchi	Zingiber Officinale
11	Nutmeg	Jathi	Myristica Fragrans
12	Cinnamon	Karukappatta	Cinnamomum Zeylanica
13	Clove	Grampu	Eugenia Caryophyllata
14	Cinchona	Cinchona	Cinchona Officinalis
15	Arecanut	Adacka	Areca Catechu
FRUITS			
1	Banana	Vazha	Musa Paradisiaca
2	Plantain	Vazha	Mussepientum
3	Bread fruit	Seemaplavu	Artocarpusincisa
4	Bullacks heart	Malamumthiri	Anonareticulata
5	Cashew	Kasumavu	Anacardium Occidentale
6	Grape vine	Munthiri	Vitis Vinifera
7	Custardapple	Seetha Pazham	Anona squamosa
8	Guava	Pera	Psidium Guajava
9	Jujube	Alantha	Ziz yphus Jujuba
10	Jack fruit	Plavu	Artocarpus Integrifolia

(1)	(2)	(3)	(4)
11	Lemon	Naranga	Citrus Lemon
12	Lime	Naranga	Citrus Aurantifolia
13	Mango	Mavu	Mangifera indica
14	Papaya	Pappakka	Carica Papaya
15	Pineapple	Kaithachakka	Ananas Sativa
16	Pomogramate	Mathalam	Punica Grantum
17	Sapota	Sapota	Achras Sapota
18	Pomello	Bamplimas	Citrus Maxima
19	Orange	Orange	Citrus retiaulate
20	Mangoesteen	Mangoesteen	Garcinia mangosteena

VEGETABLES

1	Tapioca	Maracheeni	Manihot Utilissima
2	Elephantear	Chembu	Colocasia antiquorum
3	Elephant foot	Chena	Amorphophallus Campanulatus
4	Potato	Uralakizhangu	Solanum tuberosum
5	Sweet Potato	Cheenikizhangu	Ipomoea batatas
6	Radish	Mullangi	Raphanus sativus
7	Yam	Kachil	Dioscorea Spp
8	Turnip	Seema Mullangi	Braasica Campestris Varsapa
9	Carrot	Carrot	Daucus Carota
10	Bed pumpkin	Vellarimathan	Cucurbita Maxime
11	Brinjal	Vazhuthana	Solanum Malengena
12	Tomato	Thakkali	Lycopersum esculentum
13	Amaranthus	Cheera	Amaranthus Spp
14	Lady's finger	Venda	Abelmoschus esculentus
15	Bitter gourd	Pavakka	Mamordica Charantia
16	Bottle gourd	Churakka	Lagenaria Siceraria
17	Snake gourd	Padavalanga	Trichosanthes anguina
18	Ridge gourd	Peechanga	Luffa acutangulata
19	Smooth gourd	Chorakka	Luffe Cylindrica
20	Ash gourd	Kumbalanga	Ben measa
21	Little gourd	Kowva	Coccinia cordifolia
22	Cluster bean	Kothavara	Cyamopsis psoralodea
23	Sword bean	Vellaringa	Canavalia eusiformis
24	French bean	Beans	Phaseolus vulgaris
25	Karileaf	Karivappila	Murraya Zoonigari
26	Beet root	Beet root	Beta Vulgaris
27	Cabbage	Muttakose	Brassica Olderracca
28	Gauliflower	Gauliflower	Brassica Cleracca
29	Cucumber	Vellarikka	Cucumis Cleracca
30	Musk Melon	Thaikumbalam	Cucumis melo
31	Pumpkin	Mathanga	Cucurbitapepo
32	Indian Bean	Amara	Dolichos lablab
33	Drum stick	Muringa	Moringa Pierigoaperma
34	Onion	Ulli	Allium Cepa
35	Roseapple	Jampa	Engenia Jamos

(1)	(2)	(3)	(4)
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OIL SEEDS

1	Cocoanut	Thengu (Nalikeram)	Cocos nucifera
2	Groundnut	Nilakkadala	Arachis Hypogea
3	Sesamum	Ellu	Sesamum Spp
4	Mustard	Kadugu	Brassica Spp
5	Castor	Avanakku	Ricinus Communis

FIBRES

1	Cotton	Paruthi	Gossypium Spp
2	Jute	Chanam	Corechoreus capsularis
3	Sunhemp	Kattuchanam	Crotalaric juncca
4	Sisal hemp	Kallarvazha	Agava Spp

DRUGS

1	Tobacco	Pukayila	Nicotiana tobaccum
2	Opium	Karuppu	Palayar somniferum
3	Cocoa	Cocoa	Theobrama cocoa

PLANTATION CROPS

1	Tea	Theyila	Camellia thea
2	Coffee	Coffee	Coffee arabica
3	Rubber	Rubber	Hevea brasiliensis

FODDERS

1	Bermudagrass	Karuka pullu	Cynodom declylom
2	Guinea Grass	Kuthirappullu	Panicum maximum

TIMBER

1	Teak	Thekku	Tectoma grandis
2	Ebony	Karimaram	Diosphyros assimilis
3	Jungle jack	Anjili	Artocarpus hirsuta
4	Poonspar	Kattupunna	Cabophyplum tomentoze
5	Cotton tree	Elavu	Bombax malabaricum
6	Perumaram	Perumaram	Ailanthus excellisa
7	Karimaruthu	Karimaruthu	Calophyslum tomentosam
8	Maruthu	Maruthu	T paniculata
9	Chula maruthu	..	T travancorensis
10	Karanjili	..	Dip terocarpus indices
11	Indian mahegam	Mahagani	Cedrella toona
12	Mangotree	Mavu	Magifera indica
13	Kulamavu	Kulamavu	Buchanania latifoli
14	Iron wood tree	Kadamuram	Kylie dolabrief ormis
15	Puli	Puli	Albizzia oderatima
16	The write sitis tree	Karimthakara	Albizzia proccera
17	Siris tree	Vaga	Lebbek app
18	Venteak	Venthekkku	Lagerstroenia lanceo lata
19	Manja Kadambu	Manja Kadambu	Adina cordifolia
20	Pala	Pala	Alsonia Scholaris
21	Kumbil	Kumbil	Omelina arborea
22	Mull vengai	Mullu venga	Bridelia retush
23	Mahogana	Mahogany	Saictenia mahogani
24	Bombay bag rose wood	Etti	Dalbergia latifolia
25	Jack tree	Plavu	Artecarpus integrifolia
26	Majadi	Manjadi	Adennathera pavonina

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