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GOVERNMENT OF KERALA

SEASON AND CROP REPORT
FOR
KERALA STATE

1970-71



GOVERNMENT OF KERALA
1974

BUREAU OF ECONOMICS AND STATISTICS
TRIVANDRUM

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(1971)

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FOREWORD

This report is the 12th 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 1970-'71. 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,
18-7-1973.

N. GOPALAKRISHNAN NAIR,
Director.

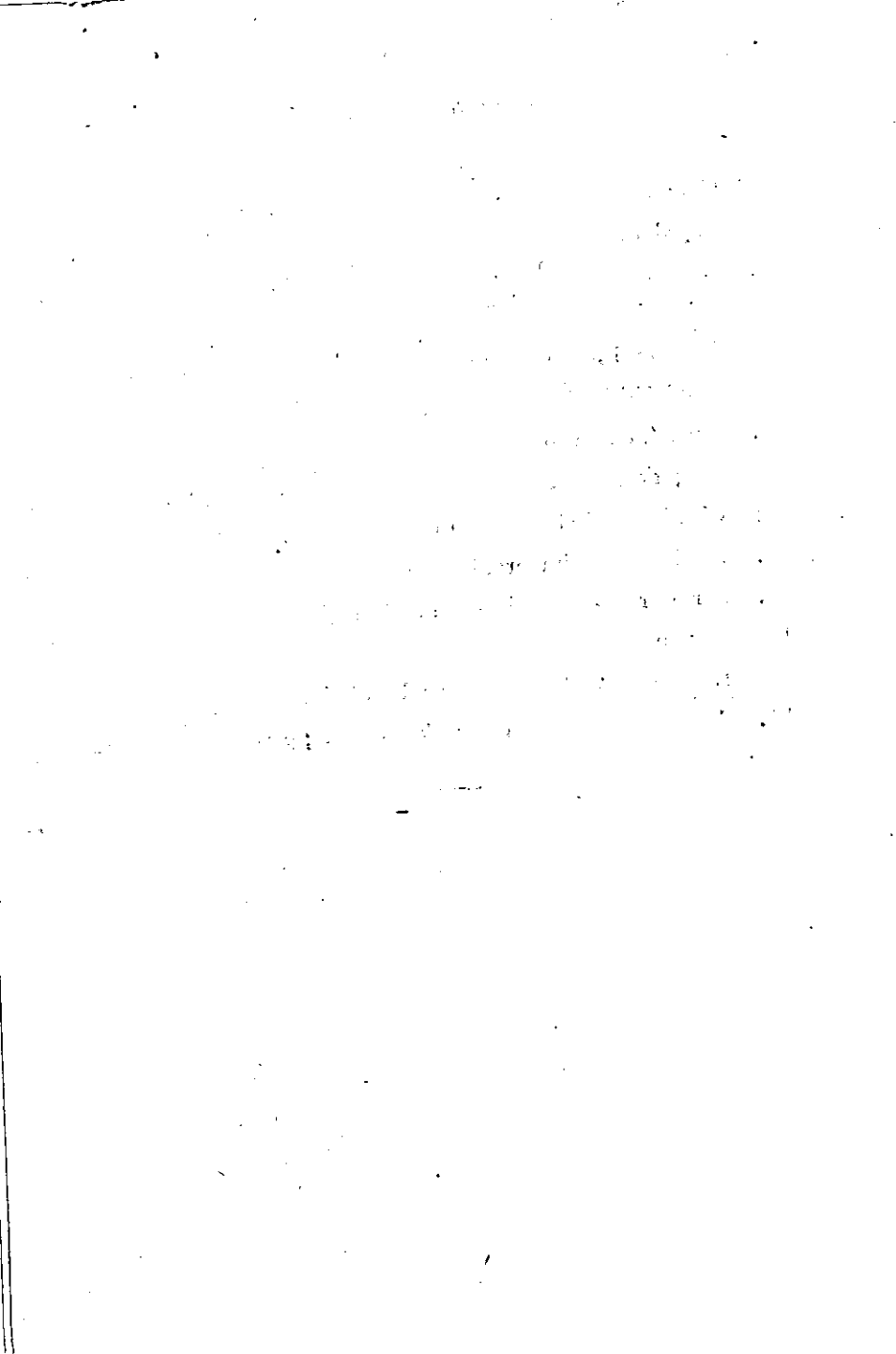
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PART I
REPORT

1. General
 2. Population
 3. Rainfall
 4. Soil
 5. Communication facilities
 6. Land Utilisation
 7. Area under crops
 8. Irrigation
 9. Weather and Crop Condition
 10. Production of important crops
 11. Farm price of certain commodities
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 13. Livestock, poultry and agricultural implements
 14. Sowing, harvesting and peak marketing periods.
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SEASON AND CROP REPORT FOR KERALA STATE 1970-71

1. General:

Kerala State lies in the southwest corner of India between $8^{\circ} 18'$ and $12^{\circ} 48'$ north latitudes and $74^{\circ} 52'$ and $77^{\circ} 22'$ east longitudes. The area of the State is 38855 sq. km which accounts for only 1.3% of the total area of the country. The State is, however, gifted with a long coast line of about 580 km. which is 10% of the coast line of India. The width of the State varies from 130 km. in the middle to 32 km. in the extremities.

The diversified physical features and undulated topography of the State have provided a geographical basis for dividing it into three distinct regions. They are the high land, the midland, and the lowland from east to west in order. The highland which forms the natural boundary of the State in the east includes thick forests and the highranges rich in plantation crops. From the highland the land gradually slopes to the west. The lowland is the narrow strip of coastal belt stretching from one end of the State to the other. In between the two lies the midland region with its numerous rivers and lakes, and a diversified crop-pattern.

The highland region is famous for plantation crops whereas paddy and coconut are the predominant crops grown in the lowland. The midland is famous for numerous crops such as paddy, coconut, arecanut, sugarcane, tapioca, pepper, ginger, etc. This diversity and variety of crops coupled with the resultant heterogeneity in cultivation practices form a unique feature in the agricultural economy of the State. Paddy which is the most important crop of the State is raised thrice an year. They are autumn (Virippu), winter (Mundaka) and summer (Punja) crops. Other seasonal crops cultivated are tapioca, groundnut, cotton, turmeric, ginger pulses, sugarcane, etc. and under perennial and semi-perennial crops, mention may be made of coconut, 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 southwest and the north-east monsoons give good rain to the State. There are 44 rivers, in addition to a much larger number of streams and riverlets,

flowing through the State. 41 rivers are west flowing and the remaining three east flowing. The back-waters of the State coupled with a net work of connecting canals provide great facilities for inland water transport.

The State is divided into 10 Districts and 56 Taluks for administrative purposes. The Districts are, Trivandrum, Quilon, Alleppey, Kottayam, Ernakulam, Trichur, Palghat, Malappuram, Kozhikode and Cannanore. There are 1324 Revenue Villages, 950 Panchayats 28 Municipalities and 3 Corporations in the State.

2. Population:

The population of the State, according to the provisional figures of 1971 census is 212.80 lakhs compared with 169.04 lakhs in 1961. The density of population is 545.

The District-wise distribution of population is given below.

DISTRIBUTION OF POPULATION BY DISTRICTS

TABLE No. 1

Districts	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

The new Malappuram District was formed in 1969 by carving out portions of Kozhikode and Palghat Districts.

The per-capita land available for cultivation is only 0.12 hectare, whereas the per capita cultivated area is 0.11 hectare in the State.

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

3. Rainfall:

The normal rainfall in the State varies between 2002 mm. in Trivandrum District and 3578 mm. in Ernakulam District. The normal and actual rainfall during 1970-71 are furnished in the table below:-

RAINFALL

TABLE No. II

District	Normal rainfall (mm)	Actual rainfall in 1970-71 (mm)
Trivandrum	2,002	2,127
Quilon	2,761	2,708
Alleppey	3,021	2,574
Kottayam	2,995	2,875
Ernakulam	3,578	3,371
Trichur	3,159	3,015
Palghat	2,459	2,780
Malappuram	..	3,293
Kozhikode	3,461	4,261
Cannanore	3,437	3,451
STATE	2,986	3,046

Information on district-wise details of normal and average monthly rainfall has been furnished in Tables 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 midland.
- (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 South to Kasargode and Hosdurg in the North. The change from broad-gauge to metre-gauge at Ernakulam creates great inconvenience for railway transport due to the transhipment involved. The proposed conversion of the Ernakulam—Trivandrum section of the metre-gauge line into broad-gauge is expected to obviate this difficulty. The water transport system of the State is a unique factor and is highly significant in the economy of Kerala. There are 2 aerodromes in the State at Cochin and Trivandrum. The State is connected by air service with Coimbatore, Bangalore, Bombay, Madurai, Trichy, etc.

6. Land Utilisation:

The land utilisation particulars of the State relating to the period from 1952-53 to 1970-71 have been furnished in Table A of the Summary Tables and District-wise details for 1970-71 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 3,858,523 hectares. The district-wise break-up of this area is furnished below.—

TABLE No. III

District	Area in hectares	Percentage
Trivandrum	216,096	5.6
Quilon	469,051	12.2
Alleppey	186,790	4.8
Kottayam	626,225	16.2
Ernakulam	317,428	8.2
Trichur	299,149	7.8
Palghat	437,087	11.3
Malappuram	363,045	9.4
Kozhikode	366,991	9.5
Cannanore	576,661	15.0
STATE	3,858,523	100.0

(2) *Forests*:—The area under forest during 1970-71 is 1055733 hectares. The district-wise forest area during 1969-70 and 1970-71 is furnished in the following table:—

TABLE No. IV

District	Area under forest in hectare	
	1969-70	1970-71
Trivandrum	44,537	43,849
Quilon	210,783	210,651
Alleppey	513	513
Kottayam	252,964	252,919
Ernakulam	55,212	55,212
Trichur	132,373	132,369
Palghat	99,663	67,185
Malappuram	..	97,627
Kozhikode	193,756	128,607
Cannanore	65,932	65,932
Total	1,055,733	1,054,864

(3) *Land put to non-agricultural uses*:—The area under non-agricultural uses during the current year is 274,525 hectares as against 267,665 during the preceding year. The district-wise details are given in the table below:

TABLE No. V

District	Area under non-agricultural uses (Hectares)	
	1969-70	1970-71
Trivandrum	17,081	17,423
Quilon	17,046	16,791
Alleppey	12,913	12,270
Kottayam	17,312	18,870
Ernakulam	26,530	27,325
Trichur	16,305	16,547
Malappuram	..	48,060
Palghat	70,810	11,617
Kozhikode	34,306	45,439
Cannanore	55,362	60,183
State	267,665	274,525

(4) *Barren and uncultivable land*:—The land under this category during the year is 71,646 hectares, the corresponding estimate for the preceding year being 73,805 hectares.

(5) *Permanent pastures and grazing land*:—The area under this category of and during the year is 27,800 hectares.

(6) *Land under miscellaneous tree crops*:—Total area under miscellaneous tree crops during the year is found to be 132,176 hectares whereas the figure for the previous year was 140,235 hectares.

(7) *Cultivable waste land*:—The area under cultivable waste has decreased from 81,275 hectares in 1969-70 to 79,519 hectares in 1970-71. The District-wise estimates of area are furnished in the following table:

TABLE No. VI

District	Cultivable Waste land (hectares)	
	1969-70	1970-71
Trivandrum	567	560
Quilon	2,347	2,319
Alleppey	892	882
Kottayam	16,075	14,635
Ernakulam	3,663	3,620
Trichur	1,797	1,776
Palghat	18,095	4,140
Malappuram	..	23,736
Kozhikode	20,006	10,225
Cannanore	17,833	17,626
STATE	81,275	79,519

The area of cultivable waste land is minimum in Trivandrum District and maximum in Malappuram District.

(8) *Fallow land other than current fallow*:—An area of 22,678 Hectares is estimated to be under this category during the year. The corresponding figure for the previous year was 22,866 hectares. 68% of the total area under this category is in Malabar region.

(9) *Current fallow*:—The total area of the State under current fallow during the year is estimated to be 23,633 hectares. The area during the preceding year was 23,242 hectares. The District-wise area is given in the following table.

TABLE No. VII

District	Current fallow (hectares)	
	1969-70	1970-71
Trivandrum	253	273
Quilon	425	398
Alleppey	458	568
Kottayam	3258	3462
Ernakulam	3204	3229
Trichur	1681	1581
Palghat	4281	2284
Malappuram	..	4470
Kozhikode	5410	2937
Cannanore	4272	4431
STATE	23,242	23,633

10. *Net area sown.*—The net area sown in the State is showing an increasing trend. The area during the year is 2171682 hectares as compared to 2165902 hectares during the previous year. District-wise estimates are furnished in the following table.

TABLE NO. VIII

District	Net area sown (hectares)	
	1969-70	1970-71
Trivandrum	151546	151560
Quilon	225304	227557
Alleppey	167100	162923
Kottayam	321998	320122
Ernakulam	217429	218516
Trichur	137990	138679
Palghat	277117	284283
Malappuram	..	209363
Kozhikode	370409	158700
Cannanore	297009	299979
STATE	2165902	2171682

11. *Area sown more than once.*—The area sown more than once has increased from 750186 hectares in 1969-70 to 760861 hectares in 1970-71. The Table below gives the District-wise area.

TABLE NO. IX

District	Area sown more than once (Hect.)	
	1969-70	1970-71
Trivandrum	84375	91436
Quilon	126759	113724
Alleppey	69065	69233
Kottayam	50475	51937
Ernakulam	63132	58365
Trichur	98415	107062
Palghat	112000	47016
Malappuram	..	43194
Kozhikode	75268	112668
Cannanore	70697	68226
STATE	750186	760861

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 2916088 hectares in 1969-70 to 2932543 hectares in 1970-71. A consistently increasing trend is noted in the cropped area for the past few years.

The following table giving District-wise details of both net area and total cropped area is intended to throw light on the intensity of multiple cropping in the various Districts.

TABLE No. X

District	Net area sown (Hect.)	Total cropped area (Hect.)	Percentage of total cropped area to net area sown
Trivandrum	151560	242996	160
Quilon	227557	341281	149
Alleppey	162923	232156	142
Kottayam	320122	372059	116
Ernakulam	218516	276881	126
Trichur	138679	245741	177
Palghat	284283	331299	117
Malappuram	209363	252557	121
Kozhikode	158700	271368	170
Cannanore	299979	366205	122
STATE	2171682	2932543	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 1844306 hectares as against 1844205 in the previous year. Area under food crops accounts for 62.8% of the total cropped area in the State.

The District-wise area under food crops and the percentages to total cropped area are furnished in the following table.

TABLE No. XI

District	Total cropped area (Hect.)	Area under food crops	Percentage of area under food crops to total	Area under food crops as percentage to total cropped area
Trivandrum	242996	155694	8.5	64.2
Quilon	341281	208479	11.1	60.9
Alleppey	232156	141015	7.5	60.8
Kottayam	372059	196801	10.7	52.9
Ernakulam	276881	159898	8.7	57.5
Trichur	245741	175082	9.5	71.1
Palghat	331299	261095	14.2	78.8
Malappuram	252557	170872	9.3	67.5
Kozhikode	271368	132405	7.3	48.7
Cannanore	366205	242965	13.2	66.4
STATE	2932543	1844306	100.0	62.8

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 to 874830 hectares during the year from 874059 hectares in 1969-1970. The inter-district variation of the area under the crop can be understood from the following table.

TABLE No. XII

District	Area under paddy (Hectares)	
	1969-70	1970-71
Trivandrum	39489	39496
Quilon	51884	51884
Alleppey	85240	85162
Kottayam	50081	50033
Ernakulam	93691	93691
Trichur	113311	115267
Palghat	211326	182621
Malappuram		92397
Kozhikode	130384	65087
Cannanore	98653	98692
STATE	874059	874830

The extent of paddy cultivation is the highest in Palghat District followed by Trichur District.

The district-wise percentage distribution of area under paddy and the percentage of area under paddy to total cropped area of the district have been presented in the following table.

TABLE NO. XIII

District	Area under Paddy (Hec.)	Percentage to total	Percentage of total cropped once in the District
Trivandrum	39496	4.5	16.3
Quilon	51884	5.9	15.2
Alleppey	85162	9.7	36.6
Kottayam	50033	5.8	13.4
Ernakulam	93691	10.7	33.8
Trichur	115267	13.1	46.9
Palghat	182621	20.9	55.1
Malappuram	92897	10.6	36.7
Kozhikode	65087	7.5	23.9
Cannanore	98692	11.3	26.9
STATE	874830	100.0	29.8

2. *Other Cereals and Millets*:—The area under other cereals and millets for the year is estimated to be 5325 hectares. Besides, Jowar, and Ragi were cultivated in an area of 1519 hectares and 5032 hectares respectively.

3. *Pulses*:—An area of 5027 hectares was under pulses during the year as against 42345 hectares in 1969-70. The cultivation of this crop is mostly concentrated in Palghat District.

4. *Sugarcane*:—Sugarcane was cultivated during the year in an area of 7652 hectares as against 7785 hectares during the previous year. Alleppey is the major sugarcane growing 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 117544 hectares out of which about 73000 hectares is in the Malabar region.

6. *Chillies*:—During the year an area of 3192 hectares is estimated to be under the cultivation of chillies. This crop is practically confined to the Malabar region.

7. *Ginger*:—Kottayam and Kozhikode are the leading Districts in the State in Ginger cultivation. The total area under the crop during the year is 12,170 hectares as against 11522 hectares during the preceding year.

8. *Turmeric*:—The area under Turmeric in the State is 4304 during the year.

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 is on the increase. In 1969-70 the area was 83680 hectares. It increased to 85818 hectares during the year. Cannanore, Malappuram and Trichur are the leading Districts of the State in the cultivation of this crop.

11. *Mangoes*:—The area under Mango cultivation is estimated to be 58099 hectares during the year.

12. *Banana*:—The area under Banana cultivation decreased from 10146 hectares in 1969-70 to 9542 hectares during the year.

13. *Other Plantains*:—During the year other plantains are estimated to have been cultivated in an area of 39217 hectares as against 43349 hectares in the preceding year.

14. *Cashew*:—Cannanore is the leading District in Cashew cultivation. Out of the total area of 102713 hectares under the crop during the year, Cannanore accounts for 40361 hectares.

15. *Tapioca*:—Tapioca is cultivated most extensively in the State. Quilon and Trivandrum are the leading Districts with 90965 hectares and 70084 hectares under the crop respectively. The cultivation of the crop is comparatively negligible in Cannanore and Trichur Districts which account for 7136 hectares and 8262 hectares respectively. The total area under the crop during the year is 293552 hectares.

B. NON FOOD CROPS

(1) *Groundnut*:—Groundnut is cultivated only in Palghat District. The area under the crop during the year is 14692 hectares as against 13118 hectares during the previous year.

(2) *Sesamom*:—The area under the crop during the year is 11819 hectares as against 11995 hectares during 1969-70.

(3) *Coconut*:—Coconut is extensively cultivated in Kerala. The area under coconut in the State is 65% of the total area under non-food crops. Cannanore and Kozhikode Districts top the list in coconut cultivation in the State.

(4) *Cotton*:—Cotton cultivation is confined to Palghat District. The area under the crop during the year is 7258 hectares as against 6299 hectares during the previous year.

(5) *Tobacco*:—Tobacco is cultivated only in Cannanore District of the State. The area under tobacco during the year is 766 hectares as against 623 during the preceding year.

(6) *Tea*:—This crop is mostly concentrated in Kottayam District. About 73% of the total area under the crop in the State is in Kottayam District. The area under tea during the year is estimated to be 37593 hectares as against 38295 hectares during 1969-70.

(7) *Coffee*:—The area under Coffee has increased from 26488 hectares in 1969-70 to 31564 hectares during the year. About 2/3 of the total area under the crop is in Kozhikode District.

(8) *Rubber*:—The area under Rubber during the year is 179259 hectares as against 175190 hectares during the previous year. Kottayam, Quilon, and Ernakulam are the leading Districts in rubber cultivation. Kottayam District accounts for 55444 hectares, whereas Quilon and Ernakulam account for 30888 hectares and 26459 hectares respectively.

(8) **Irrigation:**

The net area irrigated in the State during the year is 431254 hectares, whereas the area for the previous year was 422969 hectares. Government canals are the major source of irrigation in the State. The percentage of net area irrigated to net area sown is 19.86.

The gross area irrigated during the year is 601385. The percentage of gross area irrigated to total cropped area is 24.9. The source-wise and crop-wise irrigated area in the State is given in Tables 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 during the year was normal except during the months of October 1970, and June, 1971. During these months the rainfall was heavy in all the Taluks. This affected to a small extent of the Paddy crops in the low lying areas of Trivandrum, Neyyattinkara and Chirayinkil Taluks. In general, the weather and crop conditions during the year were favourable for agricultural operations. No pest attack was reported for paddy crops. Khariff crop was reported to be slightly better than that of the previous year. Weather and crop conditions were also favourable for the cultivation of Tapioca and other seasonal crops during the year.

Quilon District:—During the Khariff season rainfall was more favourable to crops than during the corresponding season of the preceding year. There was heavy rainfall during the months of July and August. There was flood and consequent damage to crops especially in Kunnathur and Pathanamthitta taluks. But the quantitative estimate of damage to crops was comparatively less than that of the last year.

The rainfall was moderate during the Rabi Season. The summer season was characterised by meagre rainfall and the average rainfall was very low except in Pathanamthitta and Kunnathur Taluks. The weather conditions were favourable for almost all crops. There was also considerable increase in the area of high yielding varieties of paddy during the year in the District

Coconut trees in Quilon and Karunagappally Taluks were disease affected. Hence the yield of coconut showed a diminishing trend. Pepper also recorded poor yield due to untimely rain.

Alleppey District:—There was heavy rainfall during the Khariff season. The low-lying lands of Kuttanad, Ambalapuzha, Karthigappally and Mavelikara Taluks were flooded and slight damage to the standing crop of paddy. In Thiruvalla and Chengannur Taluks, the rainfall was favourable to crops. During the Rabi Season, rainfall was generally inadequate. During the second half of the season there was severe drought.

The Khariff crop of paddy in Ambalapuzha, Kuttanad and Shertallay Taluks were affected by flood. The damage caused varied from 5% to 10%. But in Thiruvalla and Chengannur Taluks Khariff crop of paddy was slightly better than that of the previous year. In Rabi season weather conditions were not favourable for paddy crop in Shertallay and Ambalapuzha Taluks. In Mavelikara and Karthigappally Taluks untimely rain affected crops to some extent. In Thiruvalla and Chengannur Taluks, however, the winter paddy was better than that of the previous year in most of the villages. The weather conditions for the summer paddy were generally favourable. The yield of coconut was on the decrease due to the incidence of disease.

Kottayam District:—The rainfall conditions were generally satisfactory in all the Taluks of the District during the Khariff season. Crop conditions were also good in the District except in Vaikom and Changanacherry Taluks where pest attacks were prevalent.

Ernakulam District:—Normal rainfall was reported in the District except in Alwaye and Kunnathunadu taluks where rainfall was inadequate in the Rabi Season. Crops were also generally good except in Kanayannur, Alwaye and Kunnathunadu Taluks where the winter crop of paddy was affected to some extent due to drought.

Trichur District:—During Khariff season there was moderate rain in the beginning and regular, sometimes heavy, rain from July onwards. During Rabi season there was moderate rains towards the end of April and heavy rain during the last week of May 1971.

The weather conditions were favourable for Autumn crop. The autumn paddy was generally better than that of the previous year even though the heavy rains during the harvest season in August caused minor damage to the crop. The winter crop of Paddy was good except in Mukundapuram and Cranganore Taluks where inadequate rain slightly affected the winter paddy. Insufficient rain had its adverse effect on summer crop of paddy as well. There was no considerable loss of crop during the year.

Palghat District:—Weather conditions were favourable for cultivation of various crops in the District. Rainfall was good except in Kozbinjampara firka of Chittur Taluk where paddy and sugarcane were affected by drought. During the Rabi seasons water released from Mangalam, Pothundi, Azhiyar and Malampuzha Dams protected the crops in several parts of the District.

In areas not served by irrigation canals, the winter paddy was affected by drought. The yield rate of Coconut, Arecanut, Tapioca, Pepper, Sugarcane, Groundnut and Cashewnut was normal.

Malappuram District:—Rainfall was adequate and favourable to Autumn paddy and to other crops such as Coconut, Arecanut, Pepper, Banana, Tapioca etc. But winter paddy suffered from insufficient rain. Since the crops were irrigated from wells and tanks, there was no damage due to drought. During the Khariff season, there was also heavy rain and flood with consequent damage to crops in a few parts of the District.

Kozhikode District:—The weather conditions were favourable to almost all crops during the year. There was good and timely rainfall in all the Taluks of the District. There was flood in low lying areas of Badagara and Quilandy taluks during the Khariff Season, and drought in some placet during late Rabi season. But damage to crops due to flood and drought was not very serious.

Cannanore District:—There was heavy rain during the Khariff Season. The low lying regions in several parts of the District were badly affected by flood. The autumn paddy submerged under flood was damaged to some extent. There was sea-erosion at Pallikkara Village in Hosdurg Taluk. During the Rabi season rainfall was moderate and winter paddy was good. The condition of other crops were normal and satisfactory.

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 are given in Table 4.1 of the detailed tables. The position of some of the principal crops is indicated below.

1. *Paddy*:—The total production of rice in the State during 1970-71 is 1298005 tonnes as against 1226413 tonnes during the preceding year. The district-wise estimates of production are as follows:

TABLE No. XIV

District	Production of rice (tonnes)	
	1969-70	1970-71
Trivandrum	56938	56868
Quilon	67321	79685
Alleppey	132542	144645
Kottayam	72867	85587
Ernakulam	109211	129210
Trichur	146417	163397
Palghat	374453	315925
Malappuram	..	120480
Kozhikode	130353	67615
Cannanore	136311	131595
State	1226412	1298005

The season-wise production estimates of rice for 1970-71 as compared to 1969-70 are as follows:

TABLE No. XV

	Rice Production (Tonnes)	
	1969-70	1970-71
Autumn	521443	538886
Winter	526570	566934
Summer	178400	192185
Total	1226413	1298005

There is a 5.6% increase in rice production in the State during the year.

(2) *Pulses*.—Pulses production during the year is 13983 tonnes as against 15955 tonnes during the previous year.

(3) *Sugarcane*.—The production of gur during the year is 37633 tonnes whereas the corresponding figure for the previous year is 50131 tonnes.

(4) *Black Pepper*.—The quantity produced during the year is 25029 tonnes as against 24402 tonnes during 1969-70.

(5) *Dry Ginger*.—In the case of Dry Ginger there is an increase in production. The quantity produced during 1969-70 is 11997 tonnes and the same during 1970-71 is 19680 tonnes.

(6) *Turmeric (Cured)*.—The production of Turmeric has increased from 3530 tonnes in 1969-70 to 5341 tonnes in 1970-71.

(7) *Cardamom*: The production of Cardamom during the year is 1246 tonnes as against 1074 tonnes during the preceding year.

(8) *Betelnuts*.—During the year 12738 million nuts are estimated to have been produced. The previous year's production is 12289 million nuts.

(9) *Banana*.—The production has decreased to 69523 tonnes from 73924 tonnes in the past year. Cannanore and Quilon are the leading banana producing districts of the State.

(10) *Other Plantains*.—The production of other plantains during the year is 299461 tonnes as against 331014 tonnes during the preceding year. Cannanore and Kottayam are the predominant districts in the production of of this crop.

(11) *Cashewnut*.—Cannanore District tops the list in cashewnut production. Malappuram and Quilon are the other prominent Districts in respect of this crop. The total production during the year was 115244 tonnes, 39% of which came from Cannanore District. The total production during the previous year is 111033 tonnes.

(12) *Topioca*.—The quantity produced during the year is estimated to be 4617189 tonnes as against 4665764 tonnes during the previous year.

Quilon is the leading Tapioca producing District in the State. The District-wise yield rate of Tapioca is given below.

TABLE NO. XVI

District	Yield rate of tapioca (tonnes/Hectare)
Trivandrum	11.90
Quilon	18.13
Alleppey	17.82
Kottayam	18.60
Ernakulam	15.36
Trichur	14.64
Palghat	10.18
Malappuram	15.19
Kozhikode	16.38
Cannanore	12.79
State	15.72

(13) *Groundnuts*.—Groundnut is grown only in Palghat District. The quantity produced during the year is 16038 tonnes. The production in the previous year was 19349 tonnes.

(14) *Sesamum*.—The production of sesamum has increased from 3840 tonnes during the previous year to 3900 tonnes during the current year.

(15) *Coconut*.—Coconut production in 1970-71 is estimated to be 3981 million nuts as against 3956 million nuts in 1969-70. Kozhikode and Alleppey are the leading Districts of the State in coconut production.

(16) *Cotton*: The cultivation of this crop is confined to Palghat District. The quantity produced during the year is 7177 bales (of 180 Kg.) as against 5067 bales during the preceding year.

(17) *Tobacco*.—The production of this crop is confined to Cannanore District. The quantity produced during the year is 1632 tonnes whereas the same for 1969-70 was 838 tonnes.

(18) *Tea*.—Tea production has increased from 40200 tonnes in 1969-70 to 41449 tonnes during the year.

(19) *Coffee*.—Coffee production during the year is 13574 tonnes as against 12470 tonnes during the previous year.

(20) *Rubber*.—The rubber production during the year is 78731 tonnes. Kottayam is the predominant rubber producing district of the State. About 1/3 of the total production is contributed by this District. The total production in the State during the previous year was 76897 tonnes.

(21) *Lemongrass oil*.—The total production during the year is 1602 tonnes.

11. Farm prices of certain commodities:

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

12. Agricultural Wages:

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

13. Livestock, Poultry and Agricultural Implements:

The details 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 and Harvestings Peak Marketing Periods:

Relevant information on these topics has been furnished in Table H of the Summary Tables.



SUMMARY TABLES

- A Classification of Area
- B1 Sources of Irrigation
- B2 Area under Crops Irrigated
- C Area under Crops
- D Production of Important crops
- E Average Yield per hectare of Certain Crops
- F Average Price and Value of Production
- G Livestock, Poultry and Agricultural Machinery
- H Sowing, Harvesting and Peak Marketing Seasons

TABLE A
Classification of Area (Area in Hectares)

Head of classification	1952-53		1955-56		1960-61		1965-66	
	Area	Percentage	Area	Percentage	Area	Percentage	Area	Percentage
	2	3	4	5	6	7	8	9
Total area by village papers	3808861	100.00	3808361	100.00	3858523	100.00	3858523	100.00
Forests	947251	24.87	1007624	26.46	1056143	27.37	1055076	27.34
Land put to non-agricultural use	205011	5.38	204971	5.38	209486	5.43	228230	5.92
Barren and uncultivable land	214849	5.64	204328	5.36	146120	3.79	109925	2.85
Permanent pastures and other grazing land	55722	1.46	47080	1.24	4439	1.15	27800	0.72
Land under miscellaneous tree crops	186322	4.89	197011	5.17	202194	5.24	200005	5.18
Cultivable waste	181578	4.77	151602	3.98	140898	3.65	107950	2.80
Current fallow	44016	1.16	56552	1.48	60961	1.58	33220	0.86
Other fallows	197259	5.18	108524	2.85	66409	1.72	31980	0.83
Net area sown	1776859	46.65	1831169	48.08	1931773	50.07	2064337	53.50
Total cropped area	2089109	54.85	2178310	57.19	2341200	60.68	2551344	66.12
Area sown more than once	312249	8.20	347141	9.11	409427	10.61	487007	12.62

TABLE A (Contd.)

Head of classification	1966-67		1967-68		1968-69		1969-70	
	Area	Percentage	Area	Percentage	Area	Percentage	Area	Percentage
	10	11	12	13	14	15	16	17
I								
Total area by village papers	3858523	100.00	3858523	100.00	3858523	100.00	3858523	100.00
Forests	1055832	27.36	1055811	27.36	1055810	27.36	1055733	27.36
Land put to non-agricultural uses	235321	6.10	240830	6.24	250945	6.50	267665	6.94
Barren and uncultivable land	100437	2.60	91830	2.38	79959	2.07	73805	1.91
Permanent pastures and other grazing land	27800	0.72	27800	0.72	27800	0.72	27800	0.72
Land under miscellaneous tree crops	181842	4.71	161862	4.20	150277	3.90	140235	3.64
Cultivable waste	105651	2.74	98556	2.55	89263	2.31	81275	2.11
Current fallow	26446	0.69	23333	0.61	23154	0.60	22866	0.59
Other fallows	33965	0.88	29656	0.77	27630	0.72	23242	0.60
Net area sown	2091229	54.20	2128845	55.17	2153685	55.82	2165902	56.13
Total cropped area	2640500	68.43	2777931	71.99	2873074	74.46	2916088	75.57
Area sown more than once	549271	14.23	649080	16.82	719389	18.64	750186	19.44

TABLE A—(Contd.)

Head of classification	1970-71	
	Area (Hectare)	Percentage
1	18	19
Total area: by village papers	3858523	100.00
Forests	1054864	27.34
Land put to non-agricultural uses	274525	7.11
Barren and uncultivable land	71646	1.86
Permanent pastures and other grazing land	27800	0.72
Land under miscellaneous tree crops	132176	3.43
Cultivable waste	79519	2.06
Current fallow	22678	0.61
Other fallow	23633	0.59
Net area sown	2171682	56.28
Total cropped area	760861	76.50
Area sown more than once	2932543	19.72

TABLE B1

Sources of water supply and net area irrigated (Hect.)

Source	1955-56	1960-61	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1.	2	3	4	5	6	7	8	9
NET AREA IRRIGATED BY								
1. Government canals	67368	133049	168977	179000	182960	189290	193496	200553
2. Private canals	5738	5738	7689	10160	10160	10160	10160	10160
3. Tanks	41598	46952	59736	72280	70500	71360	72031	73113
4. Wells	2032	2032	4030	5460	5460	5460	5460	5460
5. Other sources	130940	130940	121406	126510	141430	141790	141822	141968
6. Total	247676	318711	361838	393410	410510	413060	422969	431254
Percentage of net area irrigated to net area sown	13.53	16.57	17.53	18.81	19.28	19.41	19.53	19.86
Area irrigated more than once in an year	101766	137545	147123	133390	161690	164800	166360	170131
Total irrigated area	349442	456256	508961	526800	572200	582860	589329	601385
Percentage of total irrigated area to total cropped area	16.04	19.42	19.95	20.09	20.75	20.43	20.21	20.50

TABLE B2

Gross area irrigated in Kerala (in hectare)

Name of crop	1955-56		1960-61		1965-66		1966-67	
	Area	%	Area	%	Area	%	Area	%
1	2	3	4	5	6	7	8	9
Paddy	240986	69.0	347799	76.2	405920	79.8	424120	80.5
Sugarcane	2796	0.8	3650	0.8	4306	0.8	4290	0.8
Other food crops	66163	18.9	65310	14.3	56049	11.0	55690	10.6
Total food crops	309945	88.7	416759	91.3	466275	91.6	484100	91.9
Total non-food crops	39497	11.3	39497	8.7	42686	8.4	42700	8.1
All crops	349442	100.0	456256	100.0	508961	100.0	526800	100.0

TABLE B2—(Contd.)

Name of crop	1967-68		1968-69		1969-70		1970-71	
	Area	%	Area*	%	Area	%	Area	%
1	10	11	12	13	14	15	16	17
Paddy	459720	80.4	470110	80.7	476579	80.9	488635	81.3
Sugarcane	4290	0.7	4290	0.7	4290	0.7	4290	0.7
Other food crops	55690	9.7	55690	9.5	55690	9.5	55690	9.3
Total food crops	519700	90.8	530090	90.9	536559	91.1	548615	91.2
Total non-food crops	52500	9.2	52770	9.1	52770	8.9	52770	8.8
All crops	572200	100.0	582860	100.0	589329	100.0	601385	100.0

TABLE C

Area under crops in Kerala (Hectares) 1970-71

<i>Name of crop</i>	<i>Area (Hectares)</i>
Paddy	874830
Jowar	1519
Ragi	5032
Other cereals and millets	5325
Total cereals and millets	886706
Tur	5027
Other pulses	34508
Total pulses	39535
Sugarcane	7652
Palmyrah (others)	8338
Total sugarcane	15990
Pepper	117544
Chillies	3192
Ginger	12170
Turmeric	4304
Cardamom	47490
Arecanut	85818
Other condiments and spices	19317
Total condiments and spices	289835
Mangoes	58099
Citrus fruits	1959
Banana	9542
Other plantains	39217
Other fresh fruits	68469
Cashewnuts	102713
Other dried fruits	24
Total fruits	280023
Tapioca	293552
Sweet potatoes	5425
Other vegetables	33240
Total vegetables	332217
Total food crops	1844306

TABLE C—(contd)

Area under crops in Kerala Hectares 1971—Contd.

<i>Name of Crop</i>	<i>Area (Hectares)</i>
Groundnut	14692
Castor	362
Sesamom	11819
Coconut	719136
Other oil seed	9298
Total oil seeds	755307
Cotton	7258
Other fibres	36
Total fibres	7294
Tobacco	766
Tea	37593
Coffec	31564
Rubber	179259
Other drugs & plantation crops	1406
Total drugs & plantation crops	250588
Fodder crops	474
Green manure crops	20186
Lemongrass	24036
Other non-food crops	54388
Total non-food crops	1188237
Total area under all crops	2932543
Area sown more than once	760861
Net area sown	2171682

TABLE D

Production of important crops in Kerala 1970-1971

<i>Name of crop</i>	<i>Unit</i>	<i>Year 1970-71</i>
Rice	'000 Tones	1298
(Paddy)	"	1976
Jowar	Tonnes	840
Ragi	"	4884
Tur	"	935
Other Pulses	"	13048
Sugarcane (Gur)	"	37633
Pepper (Black)	"	25029
Chillies (Dry)	"	2728

TABLE D—(Contd.)

Name of crop	Unit	Year 1970-71
Ginger (Dry)	Tonnes	19680
Turmeric (Cured)	"	5341
Cardamom (Processed)	"	1246
Arecanut (Betelnut)	Million Nuts	12738
Banana	Tonnes	69523
Other Plantains	"	299461
Cashewnut	"	115244
Tapioca (Raw)	'000 Tonnes	4617189
Sweet Potatoes	Tonnes	26855
Groundnut	"	16088
Sesamom	"	3900
Coconut	Million Nuts	3981
Cotton	Bales of 180 Kg.	7177
Tobacco	Tonnes	1632
Tea	"	41449
Coffee	"	13524
Rubber	"	78731
Lemongrass Oil	"	1602

TABLE—E

Average yield per Hectare of, certain crops

	Unit	1969-70	1970-78
1. Paddy	Kg/Hec.	2136	2258
2. Jowar	"	365	553
3. Ragi	"	1493	971
4. Sugarcane (Gur)	"	6440	4917
5. Pepper (Black)	"	207	213
6. Ginger (Dry)	"	1041	1617
7. Turmeric (Cured)	"	825	1241
8. Cardamom (Processed)	"	23	26
9. Arecanut (Nuts/Hec)	"	151302	148430
10. Banana	"	7286	7286
11. Other Plantain	"	7636	7636
12. Cashewnut	"	1122	1122
13. Tapioca (Raw)	"	15785	15729
14. Groundnut	"	1475	1095
15. Sesamom	"	325	330
16. Coconut	Nuts/Hec.	5589	5536
17. Cotton	Kg/Hec.	145	178
18. Tea	"	1050	1103
19. Coffee	"	432	430
20. Rubber	"	439	439

TABLE F

Average Price and Total value of Production 1970-'71

Name of crop	Unit	Average farm price (Rs.)	Value of production (Rs. in lakhs)
1	2	3	4
1. Paddy	Tonnes	938.57	18546.14
2. Coconut (with husk)	1000 nuts	571.30	22743.45
3. Arecanut (ripe)	,,	37.30	4751.24
4. Tapioca (raw)	Tonne	205.90	9506.40
5. Cashewnut	,,	1399.30	1612.60
6. Banana	1000 Nos.	166.90	643.98
7. Pepper (black)	Tonnes	6162.50	1542.41
8. Ginger (Dry)	,,	5540.00	1090.27
9. Sugarcane	,,	740.30	278.60

TABLE G
Number of Livestock, Poultry and Agricultural Machinery

Sl. No.			1961 Census	1966 Census	
1	2	3	4	5	
1	Cattle	Male over 3 years	(a) Breeding	29319	19387
			(b) Working	515241	491281
			(c) Others	21471	8855
		Total	566031	519523	
	Cattle	Female over 3 years	(a) Breeding	428194	483419
			1. In Milk	502935	592972
			2. Dry	207277	133999
		3. Calved (Not Working)	11274	3605	
		(b) Working	12306	5247	
		(c) Others	1161986	1219242	
	Total	1025148	1117362		
	Young Stock	2753165	2856727		
2	Buffaloes	Males over 3 years	(a) Breeding	10627	6106
			(b) Working	267871	241048
			(c) Others	6614	6696
		Total	285112	253850	
	Buffaloes	Females over 3 years	(a) Breeding	59542	66705
			1. In Milk	49341	52777
			2. Dry	16846	9119
		3. Not Calved	7266	4589	
		(b) Working	2188	1580	
		(c) Others	135113	134770	
	Total	64864	82615		
	Young Stock	485089	471235		
	Total Buffaloes				

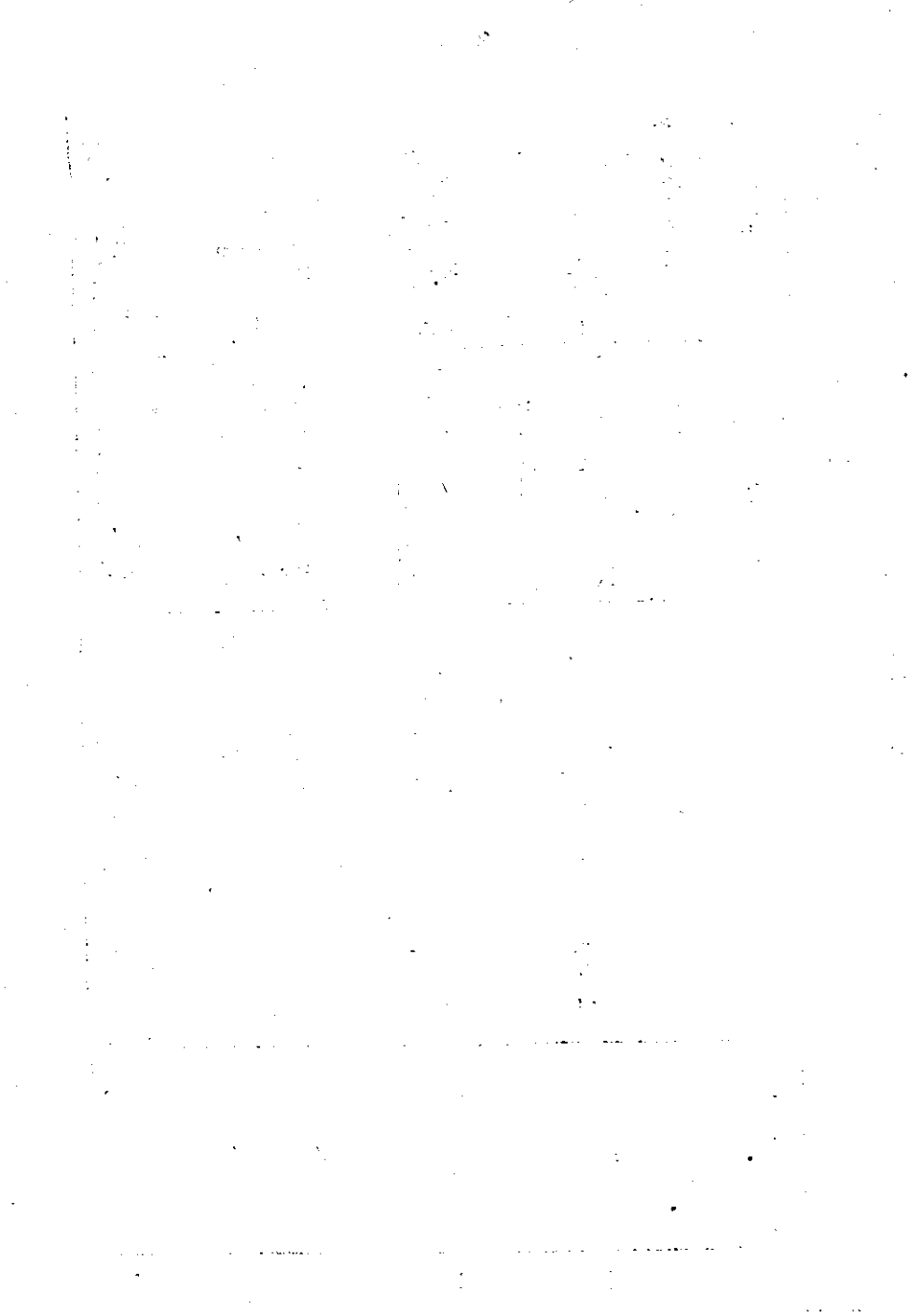
TABLE G—(Contd.)

1	2	3	4	5
3	Sheep	(a) One year and above (b) Below one year 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 and Ponies	(a) Three years and above (b) Below 3 years Total	366 42 408	372 54 426
6	Mules		31	8
7	Donkeys		377	310
8	Camels			4
9	Pigs		122381	111928
10	Poultry	Total Livestock	4697954 8708664 387072	4641375 9587286 318751
11	Ploughs	(a) Fowls (b) Ducks (c) Others (a) Wooden (b) Iron	562281 6441 21037	2950 47930 17179 16309
12	Carts	(a) Power (b) Bullocks	175 1071	457 989
13	Sugarcane Crushers		3372	6824
14	Oil Engines		2565	4869
15	Electric Pumps			418
16	Tractors		276	

TABLE H
Sowing, harvesting and peak marketing seasons of Principal Crops in Kerala State

Sl. No.	Crop	3	Sowing	Harvesting	Peak Marketing
1	2	3	4	5	6
1.	Rice	Autum Winter Summer	April-June August-October November-December	August-October December-February February-March	September-October January-March March-April
2.	Ragi	1st crop 2nd crop	April-June September-October	August-September December-January	August-September December-January
3.	Small Millets (Samai)	Kharif Rabi	May September	August December	August December
4.	Redgram	1st crop	May-June	August-September	September-October
5.	Horsegram	1st crop	September-October	December-January	January-February
6.	Greengram		May-June	August-September	September-October
7.	Blackgram	1st crop	May-June	August-September	September-October
8.	Other pulses	.....	May-June October	August-September December-January	August-September January
9.	Sugarcane	1st crop 2nd crop	December-February March-April	October-February January-February	November-February February-March

1	2	3	4	5	6
10.	Ginger (Raw)	..	April-May	November-January	December-February
11.	Pepper	..	May-July	November-January	December-February
12.	Sesamum	1st crop 2nd crop	December-January May-June	February-March September-October	April-May November-December
13.	Cotton	..	July-August	January-February	January-February
14.	Sweet potatoes	1st crop 2nd crop 3rd crop	June-July September-October November-December	September-October December-January February-March	September-October December-January February-March
15.	Turneris	..	May-June	December-February	December-February
16.	Lemongrass	..	April-May	June-September	September
17.	Tapioca	1st crop 2nd crop	July-September March-May	July-August November-January	July-August December-February



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 the total cropped area in each District.
 - 4.1 Out-turn of important crops in each District.
 - 5.1 Average farm price of certain commodities.
 - 6.1 Agricultural wages.
 - 7.1 Number of Livestock, Poultry and Agricultural machinery and implements.
-

TABLE 1.1
Normal Rainfall in Kerala (In millimetres)

Sl. No	District	July	August	September	October	November	December	January	February	March	April	May	June	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	Trivandrum	257.4	204.5	168.9	280.2	210.2	270	121.2	180.4	118.1	213.9	391.1	2001.6	
2.	Quilon	449.6	318.1	226.1	344.9	242.9	64.8	24.1	132.1	184.6	166.3	260.3	547.4	2761.2
3.	Alleppey	548.1	371.3	272.3	328.1	224.0	64.0	27.6	159.7	134.1	293.7	666.1	13020.6	
4.	Kottayam	628.0	412.4	263.5	330.8	213.6	72.2	31.2	159.5	133.1	237.4	585.8	2994.5	
5.	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	13577.5
6.	Trichur	747.6	441.7	245.5	305.7	163.5	32.8	10.1	228.4	91.1	283.5	800.3	3159.4	
7.	Palghat	657.1	361.9	175.7	257.4	144.3	30.4	9.1	326.6	80.0	175.2	532.2	2459.2	
8.	Kozhikode	1005.9	530.5	239.2	286.6	160.1	133.4	9.0	6.8	18.4	84.0	233.5	853.9	3461.3
9.	Cannanore	1063.5	584.7	239.4	218.0	106.0	22.8	5.3	4.8	11.2	58.6	200.6	923.0	3437.6
	STATE AVERAGE	682.6	416.5	236.4	301.9	186.8	49.4	17.3	18.0	43.4	111.3	245.4	676.9	2985.9

Average monthly Rainfall in Kerala during the year 1970-71 (in millimetres)

District	July-'70	August-'70	September-'70	October-'70	November-'70	December-'70	January-'71	February-'71	March-'71	April-'71	May-'71	June-'71	Total-1970-'71
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum	137.8	204.2	138.0	374.9	107.2	14.4	118.5	20.5	63.2	136.6	264.6	547.5	2127.4
Quilon	262.0	351.7	258.5	374.3	120.9	17.7	58.4	59.3	50.5	195.6	310.1	648.5	2707.5
Alleppey	293.5	319.0	264.9	293.8	48.6	6.2	61.2	30.5	21.3	107.8	418.2	708.6	2573.6
Kottayam	408.7	502.3	214.4	349.5	129.2	12.7	40.9	36.5	28.2	116.3	290.5	745.6	2874.8
Ernakulam	576.0	557.7	264.9	285.6	48.4	Nil	39.0	21.8	29.6	132.5	498.7	917.1	3371.3
Trichur	342.5	548.8	225.5	190.2	44.3	Nil	1.8	4.4	Nil	101.5	348.5	1207.4	3014.9
Palghat	532.1	426.3	142.8	310.5	94.4	Nil	6.9	Nil	1.5	95.7	190.2	979.8	2780.2
Malappuram	764.9	576.7	208.4	249.4	64.1	Nil	Nil	2.4	Nil	112.7	344.9	969.7	3293.2
Kozhikode	953.5	974.6	240.3	209.4	78.2	Nil	Nil	Nil	2.0	121.9	356.9	1324.4	4261.2
Cannanore	745.7	891.6	207.2	161.4	25.9	Nil	Nil	Nil	4.7	40.2	331.5	1043.2	3451.4
STATE AVERAGE	501.7	535.3	216.5	279.9	76.1	5.1	32.7	17.5	20.1	116.1	335.4	909.2	3045.5

TABLE-2.1
Table-1. Total area and Classification of area in each District of Kerala during the year 1970-1971 (year ending 30th June 1971) Area in hectares

District	Classification											Total cropped area
	2	3	4	5	6	7	8	9	10	11	12	
	Total geographical areas according to village papers	Forest	Land put to non-agri-cultural uses	Permanent barren uncultivable land	Permanent pastures & other grazing land	Land under miscellaneuous 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	
1. Trivandrum	216096	43849	17423	598	550	593	560	690	273	151560	91436	242996
2. Quilon	469051	210651	16791	8765	1300	469	2319	301	398	227557	113724	341281
3. Alleppey	186790	513	12270	750	250	7608	882	1026	563	162923	69233	232156
4. Kottayam	262225	252919	18870	7479	3500	3962	14635	1276	346	320122	51937	372059
5. Ernakulam	317428	55212	27325	4345	2010	344	3620	2837	3229	213516	53365	276881
6. Trichur	99149	132369	16547	1937	500	5334	1776	426	1581	138679	107062	245741
7. Palghat	437087	67185	4860	11270	2310	13668	4140	3387	2284	284283	47016	331299
8. Malapuram	363045	97627	11617	5700	2369	7671	23736	492	4476	209353	43194	22577
9. Kozhikode	366991	128607	45139	9660	2521	4837	10225	4065	2937	158700	112668	271368
10. Cannanore	576661	65932	60183	21142	12000	87690	17626	7678	4431	299979	66226	366205
STATE	3853523	1054864	274525	71646	27800	132176	79519	22678	23633	2171682	760861	2932543

TABLE 2.2

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

District	Classification of area												
	Area according to village papers	2	3	4	5	6	7	8	9	10	11	12	13
		Forests	Land put to non-Agric uses	Permanent barren land and uncultivable land	Permanent pastures and other grazing land	Land under Misc. trees 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	
1	100	20.29	8.06	0.28	0.25	0.27	0.26	0.32	0.13	70.14	42.31	112.45	
Trivandrum	100	44.91	3.58	1.87	0.28	0.10	0.49	0.17	0.08	48.51	24.25	72.76	
Quilon	100	0.27	6.57	0.40	0.13	4.07	0.47	0.55	0.30	87.22	37.06	124.29	
Alleppey	100	40.39	3.01	1.19	0.56	0.63	2.34	0.20	0.55	51.12	8.29	59.41	
Kottayam	100	17.39	8.61	1.37	0.63	0.11	1.14	0.89	1.02	68.84	18.39	87.23	
Ernakulam	100	44.25	5.53	0.65	0.17	1.78	0.59	0.14	0.53	46.36	35.79	82.15	
Trichur	100	15.37	11.00	2.57	0.64	3.13	0.95	0.77	0.52	65.04	10.76	75.80	
Palghat	100	26.89	3.20	1.57	0.65	2.11	6.54	0.14	1.23	57.67	11.90	69.57	
Malappuram	100	35.04	12.38	2.63	0.69	1.32	2.79	1.11	0.80	43.24	30.70	73.94	
Kozhikode	100	11.43	10.44	3.67	2.08	15.21	3.05	1.33	0.77	52.02	11.48	63.50	
Cannanore	100	27.34	7.11	1.86	0.72	3.43	2.06	0.59	0.61	56.28	19.72	76.00	
STATE													

TABLE 3.1

Table II—Area under crops in each district of Kerala during the year 1970-1971 year ending 30th June 1971) (Area in hectares)

District	FOOD CROPS										
	Cereals						Pulses				
	Rice (Oryza Sativa)						Jowar	Ragi	Other cereals & millets	Total cereals & millets	Tur
	Autumn	Winter	Summer	Total	5	6						7	8	9	10
I	2	3	4	5	6	7	8	9	10		
Trivandrum	18462	20201	833	39496	..	..	..	39496	..	..
Quilon	21324	29340	1220	51884	..	459	..	52343	..	..
Alleppey	20554	22982	41626	85162	..	..	742	85162	..	..
Kottayam	7898	24679	17456	50033	..	..	..	50775	..	..
Ernakulam	40993	42394	10304	93691	..	34	..	93725	..	..
Trichur	39112	62411	13744	115267	..	1212	..	116479	..	..
Palghat	102291	79095	1235	182621	1519	832	4029	189001	4501	..	
Malappuram	52019	35510	5368	92897	..	1034	554	94485	360	..	
Kozhikode	26248	35654	3185	65087	..	517	..	65604	..	..
Cannanore	65897	29705	3090	98692	..	944	..	99636	..	..
STATE	394798	381971	98061	874830	1519	5032	5325	886706	5027	..	

TABLE 3.1—(Contd.)

District	Food Crops											Condiments & Spices		
	Other pulses				Total food grains	Sugar Crops			Total			Pepper	Chillies	Ginger
	Kharif		Rabi		Total	Total pulses	Total	Sugar-cane	Others (palm-yah)	Total	Total	Pepper	Chillies	Ginger
	11	12	13	14	15	16	17	18	19	20	21			
Trivandrum	1169	1338	2507	2507	42003	..	560	560	560	10233	..	..	..
Qulion	4740	2724	7464	7464	59807	9004	210	210	1114	5783	..	..	208
Alleppey	253	546	546	546	85708	4075	51	51	4126	1504	..	..	..
Kottayam	641	148	401	401	51176	1048	15525	588	1573	16858	..	..	3729
Ernakulam	2450	1198	1839	1839	95564	366	588	588	954	7940	..	..	1159
Trichur	3263	5497	7947	7947	124426	..	1305	1305	1305	745	..	..	76
Palghat	85	3606	6863	11364	200365	926	4446	4446	5372	1625	..	..	907
Malappuram	..	3750	3835	4195	98680	..	328	328	328	3250	..	..	1855
Kozhikode	1625	225	225	225	65829	..	164	164	164	18016	..	..	3791
Cannanore	..	1256	2831	3047	102683	333	161	161	494	51590	..	..	445
STATE	14226	20282	34508	39535	926241	7652	8338	8338	15990	117544	3192	..	12170	

TABLE 3.1—(Contd.)

District	Food Crops											Total
	Condiments & Spices					Fresh fruits						
	22	23	24	25	26	27	28	29	30	31	32	
	Turmeric	Cardamom	Betelnuts	Others	Total	Mangoes	Citrus fruits	Banana	Other	Plantain	Others	
1	22	23	24	25	26	27	28	29	30	31	32	
Trivandrum	..	..	5008	4261	19502	7386	..	579	3162	6663	17990
Quilon	..	..	8408	3560	17959	9584	..	1720	4373	6739	21676
Alleppey	..	..	4560	1122	7186	4259	..	748	2539	9294	16880
Kottayam	1130	43093	5149	2351	72310	6497	..	1268	5048	10100	23213	
Ernakulam	376	1042	9223	2132	21872	5914	..	669	2535	8656	17774	
Trichur	1233	1884	13261	1894	15976	4963	..	1272	4392	4571	15198	
Palghat	96	14435	3646	2894	13019	6443	..	236	4944	5858	17481	
Malappuram	1236	1079	8106	902	19636	3608	96	513	2671	4731	11523	
Kozhikode	233	392	14022	201	33792	4640	1863	1047	3621	4552	13956	
Cannanore	4304	47490	85818	19317	68583	4765	1863	1490	5972	7505	21595	
STATE					289835	58099	1959	9542	39217	68469	177286	

TABLE 3.1—(Contd.)

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District	Food Crops											Total food crops	
	Dried Fruits			Total fruits			Vegetables						Total fruits & vegetables
	Others		Total	Total fruits			Tapioca	Sweet potatoes	Onions	Others	Total		
	Cashewnut												
33	34	35	36	37	38	39	40	41	42	43			
Trivandrum	4610	..	4610	22600	70884	53	9	681	71029	93629	153694		
Quilon	9153	..	9153	30829	90965	88	26	7691	98770	129509	203479		
Alleppey	3350	..	3350	20250	19715	118	15	3917	23765	43995	141015		
Kottayam	1311	..	1311	24524	37120	815	41	9212	47218	71742	196801		
Ernakulam	6618	..	6618	24392	14500	115	11	2490	17116	41508	159808		
Trichur	8056	..	8056	23254	8262	129	7	1723	10121	33375	175082		
Palghat	9515	..	9515	26996	10248	2710	50	2335	15313	42339	261095		
Malappuram	14049	..	14049	25572	24141	626	21	1868	26656	52228	170872		
Kozhikode	5690	12	5702	19658	11381	47	..	1534	12962	32620	132405		
Cannanore	43061	12	43373	61968	7136	722	23	1356	9237	71205	242965		
STATE	102713	24	102737	280023	293552	5425	203	33037	332217	612240	1844106		

TABLE 3.1—(Contd.)

District	Non-Food crops											
	Oil Seeds				Fibres			Drugs		Tea		
	Groundnut	Castor	Sesamum	Coconut	Others	Total	Cotton	Others	Total	Tobacco	Total	
1	44	45	46	47	48	49	50	51	52	53	54	4
Trivandrum	9	33	76515	981	77538							1076
Quilon	34	3588	92512	98	96232							2665
Alleppey	40	3683	81962	427	86112							27212
Kottayam	76	65	74839	3578	78551							2665
Ernakulam	104	899	64637	1850	67540							187
Trichur	11	1160	54851	1802	57834							459
Paigat	70	662	23498	379	39301		7258		7258			618
Malappuram	..	1135	64250	26	65391							174
Kozhikode	..	284	92797	45	95126							3867
Cannanore	..	18	310	93235	112	93675		36	36	766		1335
STATE	14692	362	11819719136	9298	755307	7258	7258	36	7294	766		37593

TABLE 3. 1—(Contd.)

District	Non-Food crops										Total area sown under all crops	Area sown more than once	Net area sown									
	Narcotics & Plantation crops				Fodder crops	Green manure crops	Other non-food crops	Total non-food crops	Total area sown													
	Coffee	Rubber	Others	Total					55	56				57	58	59	60	61	62	63	64	65
1																						
Trivandrum	3	7040	..	8119	21	790	834	87302	242996	91436	151560											
Quilon	267	30388	..	33820	111	273	2466	132802	341281	113724	227557											
Alleppey	..	3584	..	3584	151	556	738	91141	232156	69233	162923											
Kottayam	2091	55444	..	84747	14	4327	7612	175258	372059	51937	320122											
Ernakulam	262	26459	..	26908	216	4040	18279	16983	276881	58365	218516											
Trichur	..	8402	..	8861	25	454	3485	70659	245741	107062	138679											
Palghar	3756	3038	372	7784	24	6203	9634	70204	331299	47016	284283											
Malappuram	..	9522	..	9696	..	2176	4452	81685	252557	43194	209363											
Kozhikode	20550	19803	1034	45254	8	260	315	138963	271368	112668	158700											
Cannanore	4635	15079	..	21815	4	1107	6603	123240	365205	66226	299979											
STATE	31564	179259	1406	250588	474	20186	54388	1008237	2932543	760861	2171682											

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					
						Rice	Others	Total	Total pulses	Total food grains	Sugar
1	2	3	4	5	6	7	8	9	10	11	12
Trivandrum	100	64.07	35.93	62.37	37.63	16.25	..	16.25	1.03	17.29	0.23
Quilon	100	61.09	38.91	66.68	33.32	15.20	0.15	15.34	2.19	17.52	0.32
Alleppey	100	60.74	39.26	70.18	29.82	36.68	..	36.68	0.24	36.92	1.78
Kottayam	100	52.90	47.10	86.04	13.96	13.45	0.20	13.65	0.11	13.75	0.42
Ernakulam	100	57.75	42.25	78.92	21.08	33.84	0.01	33.85	0.66	34.51	0.34
Trichur	100	71.25	28.75	56.43	43.57	46.91	0.05	47.39	3.23	50.63	0.53
Palghat	100	78.81	21.19	85.81	14.19	55.12	1.93	57.05	3.43	60.47	1.62
Malappuram	100	67.66	32.34	82.90	17.10	36.78	0.62	37.41	1.66	39.07	0.13
Kozhikode	100	48.79	51.21	58.48	41.52	23.98	0.12	24.18	0.83	24.26	0.06
Cananore	100	66.35	33.65	81.92	18.08	26.95	0.26	27.21	0.83	28.04	0.13
STATE	100	62.89	37.11	74.05	25.95	29.83	0.40	30.24	1.35	31.58	0.55

TABLE 3.2 (Contd.)

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District	Condiments & spices							Fresh fruits				Dried fruits (cashewnut)	Total fruits	Vegetables		
	Pepper	Cardamom	Betel nut	Others	Total	Mangoes	Banana including plantain	Others	Total	Total	Tapioca			Others	Total	
																13	14	15	16	17	18	19	20	21	22	23	24	25	26
Trivandrum	4.21	..	2.06	1.75	8.03	3.04	1.54	2.82	7.40	1.90	9.30	28.84	0.36	29.23		
Quilon	1.69	..	2.46	1.04	5.26	2.81	1.77	1.77	6.35	2.68	9.99	26.65	2.25	28.94		
Alleppey	0.65	..	1.96	0.48	3.10	1.85	1.42	4.00	7.27	1.44	8.71	8.49	1.69	10.24		
Kottayam	4.53	11.58	1.38	0.63	19.43	1.75	1.70	2.80	6.24	0.35	6.59	9.98	2.48	12.69		
Ernakulam	2.87	0.38	3.33	0.77	7.90	2.14	1.16	3.13	6.42	2.39	8.81	5.24	.90	6.18		
Trichur	0.30	..	5.39	0.77	6.50	2.02	2.30	1.86	6.18	3.28	8.40	3.36	.70	4.12		
Palghat	0.49	0.57	1.10	0.87	3.93	1.94	1.56	1.77	5.28	2.87	8.15	4.06	.70	4.63		
Malappuram	1.29	..	5.72	..	7.77	1.43	1.26	1.87	4.56	5.56	10.12	9.60	.74	10.55		
Kozhikode	6.64	0.40	2.99	0.33	12.45	1.71	1.72	1.68	5.14	2.09	10.92	4.19	.57	4.78		
Cannanore	14.09	0.11	3.83	0.5	18.73	1.30	2.04	2.05	5.90	11.02	16.92	1.94	.37	2.52		
STATE	4.01	1.65	2.93	0.66	9.88	1.98	1.66	2.33	6.04	3.50	9.55	1.00	1.12	11.32		

TABLE : 3.2 (contd)

District	Total fruits & vegetables		Total food crops		Oil seeds						Drugs natcaics & plantain Crops					Other non-food crops		Total non-food crops	
	Total fruits	Vegetables	Sesa-mum	Coco-nut	Ground nut	Others	Total	Fibers (cotton)	Tea	Coffee	Rubber	Others	Total	Other non-food crops	Total non-food crops				
																27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Trivandrum	38.5	64.1	0.01	31.49	..	0.40	31.91	..	0.44	..	2.90	..	3.34	0.38	35.93				
Quilon	37.97	61.1	1.05	27.10	..	0.03	28.20	..	0.78	0.08	9.05	..	9.91	0.72	38.91				
Alleppey	18.95	60.7	1.59	35.30	..	0.18	36.09	..	..	..	1.54	..	1.54	0.32	39.26		
Kottayam	19.28	52.9	0.02	20.11	..	0.10	21.11	..	11.72	0.56	14.90	..	22.77	2.05	47.10				
Ernakulam	14.99	57.7	0.32	23.36	..	0.67	24.39	..	0.05	0.11	9.56	..	9.72	6.60	40.34				
Trichur	19.58	71.2	0.47	22.32	..	0.73	23.53	..	0.17	..	3.42	..	3.61	1.42	28.75				
Palghat	12.78	78.8	0.20	9.30	4.43	0.11	11.86	2.19	0.25	1.13	0.92	0.11	2.35	2.91	21.19				
Malappuram	20.68	67.7	0.45	23.67	..	0.01	25.89	..	0.05	..	3.77	..	3.84	1.75	32.34				
Kozhikode	12.02	48.8	0.10	34.19	..	0.01	34.32	..	1.49	7.57	7.30	0.38	16.68	0.12	51.21				
Cannanore	19.44	66.3	0.11	25.47	..	0.03	25.58	..	0.36	1.27	4.11	..	5.96	1.80	33.65				
STATE	20.88	62.9	0.04	24.52	0.49	0.32	25.76	0.25	1.39	1.08	6.11	0.05	8.54	1.85	34.38				

TABLE 4.1
District-Wise Production of Important Crops in Kerala During the Year 1970-71.
 (YEAR ENDING 30TH JUNE 1971)

District	Rice (tonnes)			4.	5	6	7	8	9	10	11
	Autumn	Winter	Summer									Total
1	2	3	4.	5	6	7	8	9	10	11	
Trivandrum	26177	29630	1061	56868	..	..	..	..	..	..	..
Quilon	26316	51220	2149	79685	..	599	..	..	..	2357	3584
Alleppey	22376	28628	93641	144645	..	..	..	..	..	223	18333
Kottayam	10296	41589	33702	85587	..	..	342	..	..	90	5157
Ernakulam	51848	61029	16333	129210	..	21	..	..	..	935	1673
Trichur	52317	86224	24856	163397	..	1097	..	..	..	2968	..
Palghat	176750	139683	2492	315925	840	581	2359	778	2603	7611	..
Malappuram	67303	45343	7834	120480	..	721	473	63	1441	..	..
Kozhikode	16962	46242	4409	67615	..	349	..	..	..	50	..
Cannanore	88541	37346	5708	131595	..	1516	..	94	1417	1275	..
STATE	538886	566934	192185	1298005	840	4884	3174	935	13048	37633	..

TABLE 4.1—(contd.)

District	12	13	14	15	16	17	18	19	20	21
	Black pepper (tonnes)	Dry chillies (tonnes)	Dry Ginger (tonnes)	Cured Turmeric (tonnes)	Processed cardamom (tonnes)	Betel-nuts (Million on nuts)	Banana (tonnes)	Other plantains (tonnes)	Cashew-nut (raw) (tonnes)	Tapioca (tonnes)
1										
Trivandrum	3776	..	..	..	..	778	4219	24145	5172	834700
Quilon	2521	..	374	..	..	1693	12532	33087	10270	1649195
Alleppey	472	..	..	..	..	710	5450	19388	3759	351321
Kottayam	5088	..	6634	1035	991	517	9239	38547	1471	690432
Ernakulam	2199	..	2141	376	56	1114	4874	19357	7425	222720
Trichur	589	..	58	..	..	1973	9268	33537	9039	120956
Palghat	222	287	1333	1627	117	460	1719	37752	10676	104325
Malappuram	444	..	2813	119	..	2244	3738	20396	15763	365736
Kozhikode	2495	687	5628	1639	60	1496	7628	27650	6384	186535
Cannanore	7223	1754	699	545	22	1753	10856	45602	45285	91269
STATE	25029	2728	19680	5341	1246	12738	69523	299461	115244	4617189

TABLE 4.1 (contd.)

District	22	23	24	25	26	27	28	29	30	31
	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)
1										
Trivandrum	272	..	16	470	..	..	970	2	3523	1
Quilon	436	..	1421	522	..	..	2155	34	14558	3
Alleppey	584	..	902	547	..	..	..	..	1630	1
Kottayam	4034	..	23	362	..	..	29888	965	24487	107
Ernakulam	569	..	298	379	..	..	196	61	9557	783
Trichur	639	..	556	347	..	..	829	..	5152	43
Palghat	13415	16088	186	92	1292	..	969	2227	1488	9
Malappuram	3099	..	319	326	..	..	128	..	4544	171
Kozhikode	233	..	80	579	..	..	5373	8378	9011	172
Cannanore	3574	..	99	357	..	1632	941	1907	4781	312
STATE	26855	16088	3900	3981	1292	1632	41449	13574	78731	1602

TABLE 5.1

Average farm (harvest) price in Rupees for certain commodities for the year 1970-71

Sl. No.	District	Paddy St. para	Cocoanut 100 Nos.	Areca nut 100 Nos.	Tapioca Ql.	Cashewnut Ql.	Banana 100 Nos.	Pepper Ql.	Ginger Ql.	Sugarcane (M.T.)
1	2	3	4	5	6	7	8	9	10	11
1.	Trivandrum	7.98	49.67	3.49	20.43	..	17.73	545.68	..	..
2.	Quilon	8.08	55.55	4.87	21.00	138.13	18.14	629.22	..	73.70
3.	Alleppey	7.00	58.78	4.28	21.56	138.75	17.38	553.75	..	..
4.	Kottayam	6.77	61.16	3.66	20.66	133.88	18.66	599.73	497.89	..
5.	Ernakulam	7.12	66.27	3.85	24.03	128.75	18.70	636.11	496.79	..
6.	Trichur	6.41	58.66	4.58	20.24	143.50	16.29	629.43	..	..
7.	Palghat	5.82	58.59	3.51	17.25	139.92	16.95	612.23	458.19	74.20
8.	Malappuram	6.04	55.11	3.46	16.27	..	16.48	..	..	..
9.	Kozhikode	6.20	54.11	2.35	17.23	134.25	14.32	645.84	653.31	..
10.	Cannanore	6.48	57.26	3.18	29.76	142.46	13.81	649.47	662.40	..
	STATE	6.57	57.13	3.73	20.59	139.93	16.69	616.25	554.00	74.03

Average daily wages of Agricultural Labourers 1970—1971

Carpenter

Sl. No.	District	July 1970	August 1970	September 1970	October 1970	November 1970	December 1970	January 1971	February 1971	March 1971	April 1971	May 1971	June 1971
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Trivandrum	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
2.	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
3.	Alleppey	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
4.	Kottayam	7.38	7.38	7.38	7.38	7.38	7.38	7.88	7.88	7.88	7.88	7.88	7.88
5.	Ernakulam	8.00	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.50
6.	Trichur	7.95	7.95	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
7.	Malappuram	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
8.	Palghat	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.50
9.	Kozhikode	7.25	7.25	7.25	7.25	7.75	7.75	7.75	7.75	8.00	8.00	8.00	8.10
10.	Cannanore	6.88	6.88	6.88	7.13	7.13	7.63	7.63	7.63	7.63	7.63	7.63	7.63

TABLE 6.1 (Contd.)

Field Labour (Paddy field) Men 1970-71

1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Trivandrum	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
2.	Quilon	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47
3.	Alleppey	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.30	5.30	5.30	5.30
4.	Kottayam	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.25	5.25
5.	Ernakulam	5.50	6.00	6.00	6.00	6.00	5.75	5.75	5.75	5.75	6.00	5.75	5.75
6.	Trichur	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.95	5.95	5.95	5.95
7.	Malappuram	4.75	4.75	4.75	4.75	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
8.	Palghat	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.43
9.	Kozhikode	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.50	4.63	4.63
10.	Cannanore	5.40	5.40	5.40	5.40	6.30	6.70	6.70	6.70	6.70	6.70	6.70	6.70

TABLE 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					Young stock	Total
	Breeding	Working	Others	Total	In Milk	Breeding Dry	Net calved	Working	Others	Total		
1	2	3	4	5	6	7	8	9	10	11	12	
0												
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	23027	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
Palghat	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	491381	8855	519523	483419	592972	133999	3605	5247	1219242	1117962	2856727

TABLE 7.1—(Contd.)

Buffaloes

District	Males over three years				Females over three years							Total
	Breeding	Working	Others	Total	In milk	Breeding Dry	Not Calved	Working	Others	Total	Young Stock	
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	362	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	8948	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 7.1—(Contd.)

District	Sheep			Goats			Horse & Ponies			Mules	Donkeys	Camels	Pigs	Total livestock
	One year & above	Below one year	Total	One year & above	Below one year	Total	3 years & above	Below 3 years	Total					
STATE	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
Quilon	1730	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	12	72559	43182	115741	16	5	21	..	2	1	1450	403210
Palghat	3618	1162	4780	108946	79371	158317	121	23	144	..	183	..	369	654963
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 7.1—(Concl'd.)

District	Poultry					Ploughs		Sugarcane crushers		Oil Engines	Electric pump	Tractors	Ghanis		Persian wheel
	Fowls	Ducks	Others	Total	Woden	Iron	Power	Bullocks	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	37978	3825	1702	48	94	15	32	23	81	110	358
Alleppey	971776	168312	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	49481	1711	2247	62	164	1116	1940	75	56	54	551
Palghat	941566	2564	207	944337	134976	2069	7440	139	118	1481	739	108	48	31	191
Kozhikode	1517189	3048	157	1520394	72009	1433	595	25	59	1122	138	26	205	132	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 product.
 8. Average analysis of important fertilisers
 9. Insect pest 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 of Crops.
 12. Graphs and Charts.
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I. Working class cost of living indices:

The average consumer price index numbers in 13 selected centres of the State during the years 1969-70 and 1970-71 are furnished in the following table.

TABLE—I

Centre	Average cost of living indices	
	1969-70	1970-71
Trivandrum	850	862
Quilon	834	843
Punalur	819	829
Alleppey	837	846
Changanacherry	850	851
Shertallay	819	834
Kottayam	856	867
Munnar	780	805
Alwaye	843	851
Ernakulam	863	883
Trichur	851	865
Chalakyudy	863	865
Kozhikode	930	936

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 1969-70 and 1970-71.

TABLE—II

Index of Parity

Month	1969-70	1970-71
July	92	107
August	90	105
September	95	105
October	95	104
November	96	101
December	96	99
January	97	99
February	100	98
March	102	98
April	102	99
May	108	96
June	110	95
Average	99	101

III. Quarterly Retail Prices:

The trend in the quarterly retail prices of 12 important commodities in the State is dealt with in the following paragraphs. District-wise quarterly prices of these commodities for the year 1970-71 have been given in Table III.

(1) *Rice*: The price remained steady during the period at Rs. 1.04.

(2) *Chillies*: The price was maximum during the second quarter and minimum during the fourth quarter. The maximum price of Rs. 6.79 per Kg. is reported from Cannanore and the minimum of Rs. 4.78 from Kozhikode.

(3) *Tapioca*: The price of Tapioca varied between Rs. 0.24 and 0.48 per Kg. The highest price is quoted from Cannanore whereas the lowest price prevailed at Palghat and Trichur.

(4) *Blackgram*: The price varied between Rs. 1.29 per Kg. and Rs. 1.89 per Kg. The lowest price relates to the 1st quarter in the Kozhikode centre whereas the highest price was quoted for the last quarter from Palghat.

(5) *Tea*: The price fluctuated between Rs. 12.28 and Rs. 6.31 per Kg.

(6) *Coffee*: The maximum price of Rs. 14.10 and the minimum of Rs. 8.65 are reported from Trivandrum and Ernakulam.

(7) *Sugar*: The price remained practically steady during the year.

(8) *Coconut Oil*: The price fluctuated from Rs. 8.02 to Rs. 5.33 per litre during the year.

(9) *Gingelly Oil*: The price varied between Rs. 6.61 and Rs. 5.36 per litre. The maximum price is reported from Quilon and the minimum from Kozhikode.

(10) *Coconut*: The price fluctuated between Rs. 48.13 and Rs. 96.38 per 100. The maximum price relates to Kottayam during the second quarter of the year. Whereas the minimum price is reported from Palghat in the fourth quarter.

(11) *Tobacco (Jaff)*: The price varied between Rs. 7.88 and Rs. 14.32 per Kg. during the period. The maximum price is reported from Trichur and the minimum from Trivandrum. The commodity is transacted only in the erstwhile T. C. area of the State comprising the 6 Districts viz. Trivandrum, Quilon, Alleppey, Kottayam, Ernakulam and Trichur.

(12) *Tobacco (Ordinary)*: The highest price of Rs. 8.54 per Kg. was quoted from Trivandrum and the lowest of Rs. 5.75 from Quilon.

TABLE I

Statement showing the consumer price index numbers for selected centres in the state for the year 1970-71

Sl. No.	Centres	1970							
		July	August	September	October	November	December		
1	2	3	4	5	6	7	8		
1.	Trivandrum	859	864	873	869	873	870		
2.	Quilon	844	849	858	853	857	851		
3.	Punahur	830	833	840	834	839	835		
4.	Alleppey	844	851	859	852	856	852		
5.	Changanacherry	858	862	871	863	864	858		
6.	Kottayam	869	875	882	875	876	873		
7.	Alwaye	854	857	864	858	861	857		
8.	Ernakulam	874	880	886	883	886	882		
9.	Trichur	867	871	878	872	874	873		
10.	Chalakudy	869	876	882	875	875	870		
11.	Munnar	800	804	811	804	805	805		
12.	Sherthalai	830	837	847	840	844	840		
13.	Kozhikode	943	949	958	950	954	949		

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

(Base for other centres is August 1939=100)

TABLE 1 (Contd.)
Statement showing the consumer price index numbers for selected centres in the state
for the year 1970-71

Sl. No.	Centre	1971					
		January	February	March	April	May	June
1	2	3	4	5	6	7	8
1.	Trivandrum	861	850	848	851	855	862
2.	Coimbatore	844	831	827	829	834	841
3.	Punalur	831	820	816	819	824	830
4.	Alleppey	848	836	831	835	841	849
5.	Changanacherry	849	836	832	836	840	845
6.	Kottayam	868	854	849	854	858	866
7.	Alwaye	852	839	837	840	844	853
8.	Ernakulam	878	865	860	862	866	875
9.	Thiruvananthapuram	869	854	850	852	858	866
10.	Calicut	866	851	846	849	855	863
11.	Udumalpet	805	788	798	806	810	819
12.	Shenoi	833	822	822	827	832	837
13.	Kozhikode	915	934	930	935	942	949

(Base for Kozhikode is average prices for the year ended June 1936=100)
(Base for other centres is August 1939=100)

TABLE II

Parity Index Numbers between Prices Received and Prices Paid by Farmers 1970-71

Sl. No.	Index numbers on	July 1970	August 1970	September 1970	October 1970	November 1970	December 1970	January 1971	February 1971	March 1971	April 1971	May 1971	June 1971
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Prices received by farmers	258	250	259	256	248	242	239	234	234	238	234	230
2.	Farm cultivation cost	269	279	278	280	276	276	270	265	270	271	276	272
3.	Parity	107	105	105	104	101	99	99	98	98	99	96	95

(Base 52.53 = 100)

TABLE III

Quarterly District Average Prices for 1970-71

Sl. No.	Name of Commodity	Unit	Quarter	Districts											
				5	6	7	8	9	10	11	12	13	14		
1	Coconut	100 Nos.	i	56	65.74	66.35	82.91	73.28	68.15	..	..	74.69	59.66	64.33
ii			64.04	71.88	73.20	96.38	77.20	70.09	..	..	85.54	62.30	66.48	
iii			56.45	60.94	61.73	81.61	67.27	53.97	58.67	58.67	65.57	56.61	64.18	64.18	
iv			49.14	54.13	54.37	71.10	61.29	49.42	52.75	52.75	48.13	48.88	57.00	57.00	
2	Coconut Oil	litres	i	7.31	7.44	6.71	7.12	7.19	7.38	..	..	7.35	7.12	7.53
ii			7.87	8.02	7.23	7.61	7.64	7.89	..	..	7.88	7.40	7.53	
iii			6.44	6.54	6.15	6.34	6.26	6.29	6.24	6.24	6.55	6.31	6.36		
iv			5.70	5.77	5.33	5.56	5.59	5.66	5.52	5.52	5.76	5.52	5.66		
3	Rice (F.P.)	Kg.	i	1.04	1.04	1.04	1.04	1.04	1.04	1.04	..	..	1.04	1.04
ii			1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	..	..	1.04	1.04
iii			1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
iv			1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
4	Blackgram	Kg.	i	1.63	1.53	1.52	1.56	1.54	1.37	..	..	1.57	1.29	1.31
ii			1.58	1.58	1.52	1.56	1.49	1.39	..	..	1.58	1.30	1.33	
iii			1.79	1.74	1.67	1.75	1.64	1.53	..	..	1.74	1.48	1.51	
iv			1.89	1.84	1.82	1.87	1.75	1.68	..	..	1.89	1.65	1.62	

TABLE III—(Contd.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
11	Tobacco (Jaff)	Kg.	i	8.50	8.56	8.19	8.17	9.67	13.00	..	..	..	..
			ii	8.60	8.50	8.01	8.50	9.67	14.32	..	..	..	..
			iii	7.88	8.50	8.00	8.50	9.67	14.17	..	..	..	..
			iv	8.33	8.50	8.00	8.66	9.67	13.71	..	..	..	..
12	Tobacco (ord.)	Kg.	i	6.88	5.96	6.60	7.67	8.00	7.13	..	6.25	6.99	6.37
			ii	6.97	5.75	6.00	7.67	8.00	7.26	..	6.25	7.39	7.80
			iii	8.25	5.75	6.00	8.00	8.00	7.39	7.50	7.50	7.63	8.03
			iv	8.54	5.75	6.00	7.93	8.00	7.40	7.50	7.50	7.63	7.69

TABLE IV
Foreign Exports from the Ports of Kerala for the year 1970-71
(April to March)

Sl. No.	Commodity	Unit	Quantity	Value (Rs. in lakhs)
1	2	3	4	5
1	Cardamom	M. T.	503	336.77
2	Cashew Kernels	"	48745	5073.42
3	Cashew shell oil	Litre	5921777	69.39
4	Coffee	M. T.	15211	1311.94
5	Coir & Coir products	"	42657	1197.84
6	Ginger	"	1416	118.57
7	Lemongrass Oil	Litre	148050	59.96
8	Marine products including frog legs	M. T.	23088	2683.90
9	Oil cake	"	2169	12.57
10	Pepper	"	17491	1534.74
11	Rubber Manufactures	"	--	23.12
12	Tea	M. T.	67061	2489.45
13	Wood and Timber	Value	--	402.42
14	Sundries	"	--	918.43
	Total			6232.52

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 Ft. to 5000 Ft. above mean sea level.

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

Planting:—After removing the forest growth and providing for roads, drains, and building sites the planting is done. The actual spacing of the plants will depend upon the layout of the land used for cultivation. They are usually planted in square, rectangular or triangular patterns suitably spaced so that when mature they cover the ground almost completely without overcrowding and providing for a coverage of about 3000 plants per acre. "Hedge Planting", i.e. planting in rows 5' apart with a spacing of 2 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 southwest Monsoon. Water is essentially needed for the young plants for the first two or three months after planting. Young plants taken from the nursery are preferred to the seeds. Usually 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 up to fourteen days whereas in the plains the period is only seven or eight days.

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

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

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

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 or hessian cloth racks for a period of eighteen hours for eliminating moisture so that it can be rolled easily. The next stage is called rolling. A rolling machine specially made for this purpose with pressure adjustments is used to twist the leaves for breaking the leaf cells so that the leaf juices ooze out. Then the rolled leaves are taken from the 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 in reddish hue of copper. The next process is known as drying. Hot air (200° to 230°) from the drier furnace is forced into the chamber where the leaves are dried.

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

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

2. COFFEE

Coffee was first discovered in Africa although the earliest cultivation was begun in southern Arabia—Coffea, 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 super-phosphate, ammonium sulphate, copper sulphate and urea.

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

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

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

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them. The pulpy skin of the cherries are automatically removed. Then these cherries are put into big tanks for about 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 Blegaum and Ratnagiri in the erstwhile Bombay State. 94% of the total area under rubber is in the Karala State. 92% of the total production of Rubber in India is also from Kerala. India's place in the worked 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 hevea' 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 Bast 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 in to 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 possesses 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 usually 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 caster cake bone-meal and potassium 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 disease 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 gamaxene is the remedy.

From the estate to the market : The capsules of the cardamom are dried in the sun or specially built dry houses by using artificial heat. Usually 3-4 days are taken for drying the cardamom in the 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 product 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 (i) 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.

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

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

Diseases: One of the major disease that affects pepper is 'Pollu' by which the pepper berries are rendered hollow.

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

6. GINGER 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 (under ground stem) are planted. Before planting the ground is ploughed and manured. The seeds are planted in these beds in small pits at a distance of 6-10 inches. After planting the beds are covered with leaves with a view to protect the young shoots from the onslaught of the rain and to serve as manure also. The crop take 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 mixture is suggested in such cases.

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

There is another variety of ginger known as 'lime ginger' or bleached ginger'. The process is a bit different from the above. The green ginger is put in shallow cisterns and they are cleaned by water repeatedly. When they are finally cleaned they are put in a solution containing milk of lime for sometime 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 & B) 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.

7. LEMONGRASS OIL

Lemongrass oil which is an important raw material for the perfumery soap and cosmetic industries is extracted by distilling the leaves of the grass *pcymbopogon '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 areas are Kuruppampadi, Odakkali, Thodupuzha, Muvattupuzha Wynad, Thaliparamba, etc. At Odakkali, there is a lemongrass oil research station.

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

Soil: It flourishes in hard laterite soils.

Cultivation: Fertile hill slopes with hard laterite soils are selected for the ultivation. 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 season ends by December.

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

Yield:—The yield of the crop under ²different years is given below:

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

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

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

District	Type of soil	Details of Distribution
(1)	(2)	(3)
Trivandrum	1. Fairly rich brown loam of laterite origin.	Middle part of the District
	2. Sandy loam.	Western coastal region.
	3. Richest dark brown loam of granite origin	Eastern hilly part of the District

(1)	(2)	(3)
Quilon	1. Sandy loam 2. Laterite 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 & Ambalapuzha Taluks Kuttanad Chengannur and part of Mavelikkara.
Kottayam	1. Laterite soil 2. Alluvial soil	Peermade and part of Meenachil, Changanachery 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 Talapilly. Backwater area in Chowghat and part of Mukundapuram. Portion of Chowghat and Kunnathunad Taluks.
Palghat	1. Laterite 2. Sandy 3. Black soil	Interior regions of the District. Along coastal and river side 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 barring coastal area. Coastal area;

7. Conversion Ratio between the Raw Materials and the Processed Product

Rice	Rice (cleaned) production 2/3 paddy production	
Cotton	Cotton lint production 1/3 of kapas production	
	Gotton 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%
Caster 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	38%
Neem 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%)	Phosphatic (P. 205%)	Potash (K 20%)
(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	20.00	..	..
9.	Urea	46.00	..	..
10.	Super Phosphate-Single	..	18.00	..
11.	Super Phosphate-Double	..	35.00	..
12.	Super Phosphate	..	45.00	..
13.	Rock Phosphate	..	28.3	..
14.	Hyper Phosphate	..	27.3	..
15.	Sulphate of Potash	..	..	48.00
16.	Muriate of Potash	..	..	50.00
17.	Groundnut Cake	7.00	1.5	1.3
18.	Castor Cake	4.3	2.0	1.0
19.	Mustard Cake	4.5	1.5	..
20.	Muhua Cake	2.5	0.8	1.8
21.	Neem Cake	5.2	1.0	1.4
22.	Gingelly Cake	6.2	2.0	1.2
23.	Coconut Cake	3.0	1.9	1.8
24.	Poultry Manure	1.2-1.5	..	..
25.	Sheep Manure	0.8-.6	..	..
26.	Horse Manure	0.8-.6	..	..
27.	Farm Yard Manure	0.4	0.3	0.2
28.	Fresh Cow Dung	1.57	0.25	0.18
29.	Compost	0.5	0.25	0.5
30.	Bone meal	3.5	21.0	..
31.	Fish meal	4.10	3.0	0.3
32.	Blood (dried)	11.5	1.5	0.6
33.	Meat meal	11.0	..	0.6
34.	White fish meal	10.0	10.0	1.0

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

Sl. No.	Name of pest	Nature of damage	control of measures
(1)	(2)	(3)	(4)
1.	Paddy Rice Swarming Caterpillar <i>Spodopiera mauritia</i>	Defoliation of plants reduced to stumps nursery and early growing stages attacked	Spray DDT at 1.5 kg. a. i. per Ha. or endrin at 250 gm a. i. per Ha.
2.	Rice stem borer <i>Cryporysa (Schoenobius) incertualis</i>	All stages of plants susceptible to attack	Set light traps in the field to catch and destroy moths. Collect eggmasses from nursery plants and destroy them.
3.	Rice bug <i>Leptocorisa acuta</i>	Suck 'milk' of tender grains leaving them chaffy.	Spray endrin or parathion at 250 gm. a. i. per Ha. at intervals of 15-20 days starting from 15th day after sowing and up to flowering.
4.	Rice Hispa <i>Diachasma armigera</i>	Adults feed on green matter of leaves and grubs mine leaves.	Dust BHC or spray endrin or parathion at doses given above.
5.	Rice case worm <i>Nymphula depunctalis</i>	Caterpillar in leaf case defoliates	Spray DDT, endrin or parathion at above doses.
6.	Paddy gall fly <i>Pachydictya diplosis</i> or <i>Y3ae</i>	Maggot bores into central shoot and induces formation of elongated 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 stunting of crop.	Spray parathion at 250 gm. a. i. per Ha. Phosphamidon (Dimecron 100%) solun at 100 MI, per Ha. or Dime-thoate (Roger at 312 MI. per Ha).

(1)	(2)	(3)	(4)
8.	Paddy leaf hoppers and jassids.	Cause weakening of crop by desapping in colonies	DUST BHC
9.	Paddy leaf roller Onaphalocrocis medinalis	Catterpillar floods leaves and feeds on green matter. Attacked fields show white patches.	Dust BHC or spray DDT at doses given above.

10. Names of reporting Raingauge Stations for each District in Kerala

District	Sl. No.	Stations
TRIVANDRUM	1.	Ponmudy
	2.	Varkala
	3.	Attingal
	4.	Nedumangad
	5.	Trivandrum (b)
	6.	Neyyattinkara
	7.	Parassala
	8.	Trivandrum (Aerodrome)
	9.	Vellayani (AM)
QUILON	1.	Pathanamthitta
	2.	Konni
	3.	Adoor
	4.	Karunagappally
	5.	Punalur
	6.	Kottarakkara
	7.	Aryankavu
	8.	Quilon
	9.	Nilamel
	10.	Paravur
	11.	Kayamkulam (AM)
KOTTAYAM	1.	Chinnar
	2.	Marayur
	3.	Munnar
	4.	Devicolam
	5.	Vandanmedu
	6.	Vaikom
	7.	Palai
	8.	Ettumanoor
	9.	Kumily
	10.	Kottayam
	11.	Peermade (Taluk)

District	Sl. No.	Stations
	12.	Peermade (Residency)
	13.	Kanjirappally
	14.	Changanachery
	15.	Veloor
	16.	Kottayam (AM)
ALLEPPEY	1.	Arukutty
	2.	Shertally
	3.	Alleppey
	4.	Ambalapuzha
	5.	Thiruvalla
	6.	Chengannur
	7.	Haripad
	8.	Mavelikara
	9.	Kayamkulam
ERNAKULAM	1.	Malayattur
	2.	Parur
	3.	Perumbavoor
	4.	Alwaye
	5.	Neriamangalam
	6.	Muvattupuzha
	7.	Karikode
	8.	Ernakulam
	9.	Cochin (b)
	10.	Cochin Port (b)
TRICHUR	1.	Cranganore
	2.	Mukundapuram
	3.	Trichur
	4.	Thalappally
	5.	Ollukkara (AM)
	6.	Peechi (AM)
PALGHAT	1.	Alathur
	2.	Palghat
	3.	Parali
	4.	Ottappalam
	5.	Cheplassery
	6.	Mannarghat
	7.	Chittoor
	8.	Pattambi (AM)
MALAPPURAM	1.	Perinthalmanna
	2.	Ponnani
	3.	Manjeri
	4.	Thirurangadi
	5.	Nilambur

District	Sl. No.	Stations
KOZHIKODE	1.	Kozhikode
	2.	Vythiri
	3.	Quilandi
	4.	Badagara
	5.	Kuttiadi
CANNANORE	1.	Kassargode
	2.	Thaliparamba
	3.	Cannanore
	4.	Hosdurg
	5.	Tellicherry
	6.	Irikkur
	7.	Payyannur
	8.	Manantoddy
	9.	Mahe
	10.	Kasargode (AM)

11. Glossery of English, Botanical and Malayalam *Names of Crops*

Sl. No.	English Name	Malayalam Name	Botanical Name
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	Gothambu	Triticum Vulgare
8.	Barley	Barley	Hordeum Vulgare
9.	Maize	Mokka Cholam	Zea mays
PULSES			
1.	Blackgram	Uzhunnu	Phaseolus mungo
2.	Greengram	Cherupayar	Phaseolus Zureus
3.	Horsegram	Muthira	Dolichos Biflorus
4.	Redgram	Thuvara	Cajanus Cajan
5.	Cowpea	Perumpayar	Vigna Sinensis
SUGAR			
1.	Sugarcane	Karimbu	Saccharum Officinarum
2.	Palmyrah	Karimpana	Borassus flabellifera

Sl. No.	English name	Malayalam name	Botanical name
CONDIMENTS & SPICES			
1.	Chilly	Mulagu	Capsium Spp.
2.	Turmeric	Manjal	Curcuma longa
3.	Cardamom	Elam	Elatteria Cardamom
4.	Coriander	Kothamalli	Coriandrum Sativum
5.	Mustard	Kadugu	Brassica Spp.
6.	Pepper	Kurumulagu	Piper Nigrum
7.	Cumin	Jeerakam	Cuminumoymium
8.	Garlic	Veluthulli	Allium Sativum
9.	Long Pepper	Thippili	Piperlongum
10.	Ginger	Inchi	Zugiber Officinale
11.	Nutmeg	Jathi	Myristica Fragens
12.	Cinnamon	Karukappatta	Cinnamomum Zeylanica
13.	Clove	Grampu	Eugenia Caryophyllata
14.	Cinchona	Cinchona	Cinchona Officinalis
15.	Areca nut	Adakka	Areca Gatechu

FRUITS

1.	Banana	Vazha	Musa Paradisiaca
2.	Plantain	Vazha	Musasepientum
3.	Bread fruit	Seemaplavu	Artocarpusincisa
4.	Cashew	Kasumavu	Anacardium Occidentale
5.	Grape Vine	Munthiri	Vitis Vinifera
6.	Bullacks heart	Malamunthiri	Anonareticulata
7.	Custardapple	Seetha Pazham	Anona Squamosa
8.	Guava	Pera	Psidium Guajava
9.	Jujube	Elantha	Ziz Yphus Jujuba
10.	Jack fruit	Plavu	Artocarpus Integrifolia
11.	Lemon	Naranga	Cirtus Lemon
12.	Lime	Naranga	Cirtus Aurantifolia
13.	Mango	Mavu	Mangifera indica
14.	Papaya	Pappaka	Carica Papaya
15.	Pineapple	Kaithachakka	Ananas Sativa
16.	Pomegramate	Mathalam	Punica granatum
17.	Sapota	Sapota	Achras Sapota
18.	Pomello	Bamplimas	Citrus Maxima
19.	Orange	Orange	Citrus Retiaulate
20.	Mangoesteen	Manoesteen	Garcimia Mangosteena

VEGETABLES

1.	Tapioca	Maracheeni	Manihot Utilisime
2.	Elephantear	Chembu	Colocasiaantiquorum
3.	Elephant foot	Chena	Amorphophallus Campanulatus
4.	Potato	Urulakizhangu	Solanumtuberosum
5.	Sweet Potato	Cheenikiznangu	Ipomoea batatas
6.	Radish	Mullangi	Raphanus Sativus

Sl. No.	English name	Malayalam name	Botanical name
7.	Yam	Kachil	Dioscorea Spp.
8.	Turnip	Seema Mullangi	Brassica Campestris Varsapa
9.	Carrot	Carrot	Daucus Carota
10.	Red Pumpkin	Vellarimathan	Cucurbita Maxima
11.	Brinjal	Vazhuthana	Solanum Malengena
12.	Tomato	Thakkali	Lycoperseum 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 auguina
18.	Ridge gourd	Peechanga	Luffaacutangulata
19.	Smooth gourd	Chorakka	Luffa Cylindrica
20.	Ash gourd	Kumbalanga	Ben measa
21.	Little gourd	Kowva	Coccinia cordifolia
22.	Cluster bean	Kothavara	Cyamopsis psoralodea
23.	Sword bean	Vellaringa	Canavalia eusifformis
24.	Frenchbean	Beans	Phaseolus vulgaris
25.	Karileaf	Kariveppila	Murraya Zoonigari
26.	Beet root	Beet root	Beta vulgaris
27.	Cabbage	Muttakkose	Brassica Oleracca
28.	Gauliflower	Kauliflower	Brassica Clerakka
29.	Cucumber	Vellarikka	Cucumis Satiuus
30.	Musk Melon	Thaikumbalam	Cucumis melo
31.	Pumpkin	Mathanga	Cucurbitapepo
32.	Indian Bean	Amara	Dolichos Lablab
33.	Drum stick	Muringa	Moringa Pterigosperma
34.	Onion	Ulli	Allium Cepa
35.	Roseapple	Jampa	Engenia Jamos

OIL SEEDS

1.	Coconut	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	Crotalaria Juncea
4.	Sisal Hemp	Kallarvazha	Agave Spp.

Sl. No.	English name	Malayalam name	Botanical name
DRUGS			
1.	Tobacco	Pukayila	Nicotiana tabaccum
2.	Opium	Karuppu	Palayar Somniferum
3.	Cocoa	Cocoa	Theobroma Cocoa

PLANTATION CROPS

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

FODDERS

1.	Bermudagrass	Karukapullu	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 tomentose
5.	Cotton tree	Elavu	Bombax malabaricum
6.	Perumoram	Perumaram	Ailanthus excelsa
7.	Karimaruthu	Karimaruthu	Calophyslum tomentosam
8.	Maruthu	Maruthu	T paniculate
9.	Chula Maruthu	..	T travancorensis
10.	Karanjili	..	Dip terocarpus indices
11.	Indian mahogam	Mahagani	Cedrella toona
12.	Mango tree	Mavu	Magifera indica
13.	Kulamavu	Kulamavu	Buchanania latifoli
14.	Iron wood tree	Kadamuram	Xylia dolabrie formis
15.	Puli	Puli	Albizzia Oderatima
16.	The write sitis tree	Karimthakara	Albizzia procera
17.	Siris tree	Vaga	Lebbek spp.
18.	Venteak	Ven thekku	Lagerstroenia lanceo lata.
19.	Manja Kadambu	Manja kadambu	Adina cordifolla
20.	Pala	Pala	Alsonia scholaris
21.	Kumbil	Kumbil	Gmelina arborea
22.	Mull vengai	Mullu venga	Bridelia retush
23.	Manogana	Mahogany	Saietenia mahogani
24.	Bombay bag rose wood	Eitti	Dalbergia latifolia
25.	Jack tree	Plavu	Artocarpus integrifolia
26.	Majadi	Manjadi	Adennathere pavenina

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