

no.
749

SEASON AND CROP REPORT 1976-77

FOREWORD

This report is the 18th issue in the series of season and crop reports relating to Kerala State. It deals with the different aspects of the agricultural economy of the State during the year 1976-77. The data relating to land use, area under crops and production of crops are based on the results of the T.R.S. conducted in 15 per cent villages of the State.

The report consists of four parts as detailed below:

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

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CONTENTS

PART I—REPORT

	Page
1. General ..	1
2. Population ..	2
3. Rainfall ..	3
4. Soil ..	3
5. Communication facilities ..	4
6. Land utilisation ..	4
7. Area under crops ..	11
8. Irrigation ..	15
9. Weather and crop conditions ..	15
10. Production of important crops ..	18
11. Farm price of certain commodities ..	21
12. Agricultural wages ..	21
13. Livestock, poultry and agricultural implements ..	21
14. Sowing, harvesting and peak marketing periods ..	21

PART II—SUMMARY TABLES

A. Classification of area ..	25
B. Source of water supply and net area irrigated ..	25
C. Area under crops ..	26
D. Production of important crops ..	27
E. Average yield of certain crops ..	28
F. Average price and value of production ..	29
G. Livestock, poultry and agricultural machinery ..	29
H. Sowing, harvesting and peak marketing seasons of principal crops ..	32

PART III—DETAILED TABLES

1.1 Normal rainfall ..	37
1.2 Monthly rainfall ..	38
2.1. Classification of area in each district ..	39
2.2. Classification of area as percentage of total area according to village papers ..	40

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
12. Agricultural wages
13. Live stock, poultry and agricultural implements
14. Sowing, harvesting and peak marketing periods

SEASON AND CROP REPORT FOR KERALA 1976-77

1. General

Kerala with an area of 38,885 sq. kilometres is one of the smallest States of Indian Union. It lies in the southwest corner of the country between.

8° 18'—12° 48' North latitude

74° 52'—77° 22' East longitude

and occupies 1.2 per cent of the total geographical area. The State has a long coastline of 580 km. and the width varies from 130 km. in the middle to 32 km. in the extremities.

Topographically, the State is divided into three natural regions viz., high land, mid land and low land. The high land includes forests of western ghats and forms as the natural boundary in the east. Low land extends over the seacoast in the west. It is a narrow strip of coastal belt stretching from one end of the State to the other. Mid land region is the land lying between the high land and low land and is a vast tract gifted with numerous rivers, lakes, backwaters and different types of crops.

The high land region is most suited for cultivation of plantation crops like tea, rubber, coffee and cardamom. Paddy and coconuts are grown abundantly in the mid land region which is known for its diversity in cropping pattern. Apart from this, arecanut, sugar cane, tapioca, banana, etc., are also cultivated on an extensive scale in this region.

Paddy and coconuts are the most important crops of the State. Paddy is cultivated during three seasons, viz., Autumn (Virippu) Winter (Mundakan) Summer (Punja) in a year. Though paddy is cultivated in Autumn and Winter seasons on an extensive scale throughout the State, it is raised on a relatively smaller area in summer. Tapioca, groundnut, pulses, tubers, sesamum and ginger are other important seasonal crops, besides, annual crops like banana and plantains, sugar cane and pineapple are also grown. Among the perennial crops mention may be made of the major ones namely coconut, arecanut, cashew and pepper in addition to the plantation crops like tea, coffee, rubber and cardamom. Jack and mango are also grown extensively in the State. Cocoa is brought under larger areas besides eucalyptus and oil palm trees.

The normal rainfall of the State is about 3000 mm. Both the southwest monsoon and the northeast monsoon give good rain to the State. When the southwest monsoon commences by the end of May or at the beginning of June and continues till September, the

northwest monsoon is active in the months of October and November. However the noteworthy features of distribution of rainfall are its progressive increase from the stations on the coast to stations at the foot of the ghats. There are 44 rivers in the State of these 41 are west flowing and the remaining 3 are east flowing. The State has a number of lagoons and backwaters. The backwaters are inter connected with a network of canals and provide facilities for inland navigation.

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

2. Population

The population of the State as per 1971 census is 213.47 lakhs and density of population is 548 per sq. km. The estimates of population for 1976 is 237.37 lakhs. The district-wise distribution of population and density per sq. kms. per 1971 census are given below:

TABLE I

<i>District</i>	<i>Population 1971 census (lakhs)</i>	<i>Density per sq. km. 1971 census</i>
(1)	(2)	(3)
Trivandrum ..	21.99	1003
Quilon ..	24.13	522
Alleppey ..	21.26	1128
Kottayam ..	15.39	679
Idikki ..	7.65	149
Ernakulam ..	21.64	914
Trichur ..	21.29	702
Palghat ..	16.85	383
Malappuram ..	18.56	510
Kozhikode ..	21.06	565
Cannanore ..	23.65	415
Kerala ..	213.47	549

Both the per capita land available for cultivation and the per capita land cultivated are 0.09 hectare each. It points to the fact that all the available land suitable for cultivation has been put to use excluding reserve forests.

3. Rainfall

The average normal rainfall in the State varies from 2001 mm. in Trivandrum District to 3796 mm. in Kozhikode District. The State total is 3017.5 mm. The normal and the actual rainfall for the year are furnished in the following table:

TABLE II

<i>District</i>	<i>Normal rainfall mm.</i>	<i>Actual rainfall mm. 1976-77</i>
(1)	(2)	(3)
Trivandrum ..	2001.6	1482.8
Quilon ..	2760.2	2593.6
Alleppey ..	3012.0	3115.0
Kottayam ..	3462.6	2952.3
Idikki ..	2898.9	2715.5
Ernakulam ..	3548.5	2132.9
Trichur ..	3177.4	2811.8
Palghat ..	2397.7	1964.8
Malappuram ..	2900.1	2713.1
Kozhikode ..	3796.0	3543.2
Cannanore ..	3437.9	3053.8
State average ..	3017.6	2734.5

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

4. Soil

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

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

A statement showing the detailed classification of soil has been furnished as Appendix 6 of Part IV.

5. Communication facilities

The State has a well-knit road transport system coupled with broadgauge railway line between Trivandrum, State capital in the South and Kasargod in the North. It has facilitated easy access to the different parts of India. The neighbouring States are also connected by well-developed roads. Moreover the backwaters with a network of connecting canals provide excellent water transport facilities. Besides the major port of Cochin there are eight more minor ports and 3 intermediary ports in the State. There are two aerodromes one at Trivandrum operating international flights to Gulf countries, Ceylon and Mali Islands and the other at Cochin.

6. Land utilisation

The land utilisation particulars of the State relating to 1976-77 have been furnished in Table A of the summary tables and district-wise details in Table 2.1 of the detailed tables. The particulars of area under different types of use are given below:

(1) *Total area of the State.*—The State has a total area of 38,85,497 hectares according to village papers. The district-wise area of the State is furnished in the table given below:

TABLE III

District-wise area of the State

<i>District</i>	<i>Area in hects. as per village records</i>	<i>Percentage</i>	<i>Area as per 1971 census (hects.)</i>
(1)	(2)		(3)
Trivandrum	218600	5.6	219200
Quilon	474290	12.2	462300
Alleppey	182270	4.7	188400
Kottayam	219550	5.7	219600
Idikki	515048	13.2	508700
Ernakulam	235319	6.1	237700
Trichur	299390	7.7	303200
Palghat	438980	11.3	440000
Malappuram	363230	9.3	363800
Kozhikode	371150	9.6	372900
Cannanore	567670	14.6	570600
State	3885497	100.0	3886400

2. *Forest.*—The forest area in the State is 1,081,509 hectares, i.e., 27.3 per cent of total geographical area. District-wise details for 1975-76 and 1976-77 are given in the Table IV.

TABLE IV
Area under Forests

District (1)	Area under forests (hectares)	
	1975-76 (2)	1976-77 (3)
Trivandrum ..	49,861	49,861
Quilon ..	236,048	236,048
Alleppey ..	518	518
Kottayam ..	8,141	8,141
Idikki ..	260,993	260,993
Ernakulam ..	8,123	8,123
Trichur ..	103,619	103,619
Palghat ..	136,257	136,257
Malappuram ..	103,417	103,417
Kozhikode ..	90,876	90,876
Cannanore ..	83,656	83,656
State ..	1,081,509	1,081,509

3. *Land put to non-agricultural uses.*—The land put to non-agricultural uses during the year is 26,038 hectares whereas the estimate for the previous year was 259,230 hectares. The district-wise break up is furnished in the following Table:

TABLE V

District (1)	Area under non-agricultural uses (hectares)	
	1975-76 (2)	1976-77 (3)
Trivandrum ..	17,293	16,999
Quilon ..	22,229	24,269
Alleppey ..	26,965	27,855
Kottayam ..	17,696	17,686
Idikki ..	13,517	13,411
Ernakulam ..	30,460	29,380
Trichur ..	18,029	18,986
Palghat ..	32,147	81,587
Malappuram ..	13,925	14,157
Kozhikode ..	20,620	21,474
Cannanore ..	46,349	44,584
State ..	359,230	260,388

Cannanore, Palghat and Ernakulam are the districts having a large area under non-agricultural uses.

4. *Barren and uncultivable land.*—The area under this category is 78,837 hectares as against 78,494 hectares in 1975-76. About 2/3 of the area under this category falls in the districts of Idikki, Palghat and Cannanore.

5. *Permanent pastures and grazing land.*—The total area of the State under this class is 16,095. Idikki and Cannanore Districts account for the major portion of the area under this category.

6. *Land under miscellaneous tree crops.*—The area under this category during the year is 72,668 hectares as against 84,250 hectares in the previous year.

7. *Cultivable waste land.*—The estimated area under cultivable waste during the year is 115,726 hectares whereas the area for the previous year was 113,414 hectares. The district-wise break-up is given in the following Table:

TABLE VI

District	Area under cultivable waste land (hectares)	
	1975-76	1976-77
(1)	(2)	(3)
Trivandrum ..	1,208	1,017
Quilon ..	1,557	1,395
Alleppey ..	2,311	2,068
Kottayam ..	2,524	1,947
Idikki ..	33,184	36,384
Ernakulam ..	4,740	5,316
Trichur ..	4,027	4,968
Palghat ..	18,374	18,406
Malappuram ..	12,943	13,157
Kozhikode ..	8,421	6,610
Cannanore ..	24,125	24,458
State ..	113,414	115,726

8. *Fallow land other than current fallow.*—An area of 22,264 hectares is estimated to be under this category as against 22,954 for the previous year.

9. *Current fallow.*—It is estimated that an area of 37,409 hectares is under current fallow in the State during the year. The corresponding estimate for the previous year was 36,559 hectares; The district-wise estimates for the two years are furnished in the following Table:

TABLE VII

District	Current fallow (hectares)	
	1975-76	1976-77
(1)	(2)	(3)
Trivandrum ..	1,304	1,172
Quilon ..	1,313	1,654
Alleppey ..	1,475	2,013
Kottayam ..	1,421	1,856
Idikki ..	2,074	1,318
Ernakulam ..	4,815	4,637
Trichur ..	3,583	4,067
Palghat ..	6,342	6,942
Malappuram ..	5,445	5,621
Kozhikode ..	1,615	1,572
Cannanore ..	7,172	6,557
State ..	36,559	37,409

10. *Net area sown.*—The estimates of the year under net area sown show a slight increase by 0.5 per cent when compared to that of the previous year. The area under this item occupies 56.62 per cent of the total area of the State and 75 per cent of the total cropped area. The district-wise estimates are given in the following Table:

TABLE VIII

District	Net area sown (hectares)	
	1975-76	1976-77
(1)	(2)	(3)
Trivandrum ..	145,473	146,033
Quilon ..	207,565	205,671
Alleppey ..	149,095	148,010
Kottayam ..	183,924	185,012
Idikki ..	156,188	156,499
Ernakulam ..	177,789	181,334
Trichur ..	161,513	160,082
Palghat ..	219,503	220,408
Malappuram ..	213,457	213,425
Kozhikode ..	232,813	235,165
Cannanore ..	341,852	348,962
State ..	2,189,172	2,200,601

11. *Area sown more than once.*—The area sown more than once in the State during 1976-77 is 832,849 hectares whereas in the previous

year it was 792,107 hectares i.e., a decline of 8 per cent over the last year. The district-wise details are presented in Table IX.

TABLE IX

District	Area sown more than once (hectares)	
	1975-76	1976-77
(1)	(2)	(3)
Trivandrum ..	91,575	95,637
Quilon ..	137,784	130,378
Alleppey ..	87,671	76,383
Kottayam ..	63,455	73,332
Idikki ..	10,892	1,222
Ernakulam ..	61,534	56,353
Trichur ..	85,573	72,491
Palghat ..	102,301	88,659
Malappuram ..	63,295	69,812
Kozhikode ..	46,677	45,057
Cannanore ..	41,350	21,525
State ..	792,107	732,849

12. *Total cropped area.*—The total cropped area of the State during the year has shown a slight decline of 1.60 per cent over that of the previous year. It is estimated as 2,933,450 hectares during 1976-77 which forms 75.49 per cent of the total geographical area of the State. District-wise distribution is given in Table X.

TABLE X

District	Total cropped area (hectares)	
	1975-76	1976-77
(1)	(2)	(3)
Trivandrum ..	237,048	241,670
Quilon ..	345,349	336,049
Alleppey ..	236,766	226,393
Kottayam ..	247,379	258,344
Idikki ..	167,080	157,721
Ernakulam ..	239,323	237,687
Trichur ..	247,086	232,573
Palghat ..	321,804	309,067
Malappuram ..	276,752	283,237
Kozhikode ..	279,490	280,222
Cannanore ..	383,202	370,487
State ..	2,981,279	2,933,450

13. *Total cropped area and net area sown.*—District-wise distribution of net area sown and total cropped area in the State during 1976-77 is given in Table XI below:

TABLE XI

<i>District</i>	<i>Net area sown (hectares)</i>	<i>Total cropped area (hectares)</i>	<i>Percentage of total cropped area to net area sown</i>
(1)	(2)	(3)	(4)
Trivandrum ..	146,033	241,670	1.65
Quilon ..	205,671	336,049	1.63
Alleppey ..	148,010	226,393	1.52
Kottayam ..	185,012	258,344	1.39
Idikki ..	156,499	157,721	1.01
Ernakulam ..	181,334	237,687	1.31
Trichur ..	160,082	232,573	1.45
Palghat ..	220,408	309,067	1.40
Malappuram ..	213,425	283,237	1.32
Kozhikode ..	235,165	280,222	1.19
Cannanore ..	348,962	370,487	1.06
State ..	2,200,601	2,933,450	1.33

The percentage of total cropped area to net area sown is highest in Trivandrum District which shows that the intensity of cultivation is minimum in Trivandrum District. And is closely followed by Quilon and Alleppey Districts.

14. *District-wise gross area under seasonal, annual and perennial crops during 1976-77 is provided in Table XII.*

TABLE XII

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

<i>District</i>	<i>Year 1976-77</i>		<i>Area in (hectares)</i>	
	<i>Seasonal crops</i>	<i>Annual crops</i>	<i>Perennial crops</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)
Trivandrum ..	111,091	5,755	124,824	241,670
Quilon ..	150,659	9,192	176,198	336,049
Alleppey ..	131,517	6,422	88,454	226,393
Kottayam ..	102,024	6,634	149,686	258,344

TABLE XII—(cont.)

District	Year 1976-77		Area in (hectares)	
	Seasonal crops	Annual crops	Perennial crops	Total
(1)	(2)	(3)	(4)	(5)
Idikki ..	33,519	5,137	119,065	157,721
Ernakulam ..	126,048	5,626	106,013	237,687
Trichur ..	136,792	6,525	89,256	232,573
Palghat ..	229,825	4,965	74,277	309,067
Malappuram ..	131,740	5,597	145,900	283,237
Kozhikode ..	67,939	5,206	207,077	280,222
Cannanore ..	125,837	7,809	236,841	370,487
State ..	1,346,991	68,868	1,517,591	2,933,450

Of the gross area under cultivation during the year 52 per cent are under perennial crops, 46 per cent under seasonal crops and 2 per cent under annual crops. In the case of perennial and annual crops there is no difference between gross area and net area.

15. The district-wise distribution of the area under single, double and triple crop of paddy during 1976-77 in the State is furnished in Table XIII.

TABLE XIII

District-wise area under single, double and triple crop of paddy for 1976-77

District	Area under paddy (hectares)			Total
	Single crop	Double crop	Triple crop	
(1)	(2)	(3)	(4)	(5)
Trivandrum ..	2,611	13,619	2,709	18,939
Quilon ..	3,503	22,819	172	26,494
Alleppey ..	28,081	30,225	20	58,326
Kottayam ..	21,529	13,556	202	35,287
Idikki ..	2,294	6,613	68	8,975
Ernakulam ..	9,695	22,853	14,642	47,190
Trichur ..	17,822	40,802	6,213	64,837
Palghat ..	12,072	72,953	4,348	89,373
Malappuram ..	17,765	31,086	3,881	52,732
Kozhikode ..	19,188	14,277	1,328	34,793
Cannanore ..	22,001	22,565	4,776	49,342
Total ..	156,561	291,368	38,359	486,288

Single crop paddy is raised in about 1/3 of the area and in the rest 2/3 crop is raised for more than once during year. About half of the single crop paddy land lie in the 3 districts of Alleppey, Kottayam and Cannanore. The three districts of Alleppey, Trichur and Palghat account for more than 44 per cent of the area under paddy in the State and the same 3 districts account for nearly half of the production of rice in the State.

7. Area under crop

Agricultural crops in the State are broadly classified in to food crops and non-food crops. The details of area under food crops in the State have been furnished in Table C of the summary tables and district-wise area in Table 3·1 of the detailed Tables.

A. Food crops

The area under food crops in the State is 1,868,891 hectares whereas the corresponding figures for the previous year was 1,909,205 hectares. The area under food crops in each district and percentage of that to the total cropped area in the district are as follows:

TABLE XIV

<i>Sl. No.</i>	<i>District</i>	<i>Total cropped area (hectares) 1976-77</i>	<i>Area under food crops (hectares) 1976-77</i>	<i>Percentage of area under crops in each district to the state total</i>	<i>Area under food crops as percentage to total cropped area</i>
(1)	(2)	(3)	(4)	(5)	(6)
1.	Trivandrum ..	241,670	151,273	8·09	62·59
2.	Quilon ..	336,049	201,443	10·78	59·94
3.	Alleppey ..	226,393	150,491	8·05	66·473
4.	Kottayam ..	258,344	140,131	7·50	54·24
5.	Idikki ..	157,721	95,946	5·14	60·83
6.	Ernakulam ..	237,687	158,931	8·50	66·86
7.	Trichur ..	232,573	169,778	9·09	72·99
8.	Palghat ..	309,067	246,035	13·16	79·61
9.	Malappuram ..	283,237	190,106	10·17	67·12
10.	Kozhikode ..	280,222	125,853	6·74	44·91
11.	Cannanore ..	370,487	238,904	12·78	64·48
	State ..	2,933,450	1,868,891	100·00	63·70

The area under food crops is maximum in Palghat District followed by Cannanore and Quilon Districts. The percentage of area under food crops to total cropped area is also highest in Palghat District. The relative position of some of the important food crops during 1976-77 to that the 1975-76 is given in the following paragraphs:

1. *Paddy*.—The area under paddy during the year under report is estimated as 854,374 hectares as against 876,022 hectares during 1975-76:

TABLE XV

District	(Area under paddy hectares)	
	1975-76	1976-77
Trivandrum ..	37,447	37,976
Quilon ..	53,053	49,657
Alleppey ..	96,316	88,591
Kottayam ..	44,159	49,247
Idikki ..	15,873	15,724
Ernakulam ..	99,017	99,327
Trichur ..	126,426	118,065
Palghat ..	174,278	171,022
Malappuram ..	88,871	91,580
Kozhikode ..	56,116	51,726
Cannanore ..	84,466	81,459
State ..	876,022	854,374

The area under paddy is largest in Palghat District and smallest in Idikki District. Palghat District above accounts for 1/5 of the total area under paddy. District-wise percentage distribution of area under paddy and the percentage area under paddy to total cropped area are furnished below:

TABLE XVI

Sl. No.	District	Area under paddy (hectares)	Percentage to total	Percentage of area under paddy to total cropped area
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum ..	37,977	4.45	15.71
2.	Quilon ..	49,657	5.81	14.78
3.	Alleppey ..	88,591	10.37	39.13
4.	Kottayam ..	49,247	5.76	19.06
5.	Idikki ..	15,724	1.84	9.97
6.	Ernakulam ..	99,327	11.63	41.79
7.	Trichur ..	118,065	13.82	50.77
8.	Palghat ..	171,022	20.02	55.34
9.	Malappuram ..	91,550	10.72	32.33
10.	Kozhikode ..	51,726	6.05	18.46
11.	Cannanore ..	81,459	9.53	21.99
	State ..	854,374	100.00	29.13

2. *Other cereals and millets.*—Jowar, Ragi, Chama, etc. are cultivated in the State. The area under these crops in 1976-77 comes to 8,189 hectares. Out of this 2,456 hectares were under Jowar was 1,993 hectares under Ragi. Other cereals and millets are cultivated mainly in Palghat District.

3. *Pulses.*—During the year under report the area under pulses is estimated as 36,529 hectares as against 37,485 hectares in 1975-76. During 1976-77 also Palghat District continues the lead in respect of area under pulses.

4. *Sugarcane.*—The area under this crop is estimated as 7,172 hectares as against 7,596 hectares in the previous year. About 1/3 of the total area under the crop is in Idikki. The other sugarcane growing districts are Alleppey, Quilon and Palghat.

5. *Pepper.*—Pepper is cultivated in 108,666 hectares in the State. Compared to the corresponding figures in 1975-76 (1,08,251). There is an increase of area under the crop by 415 hectares. The important pepper the growing districts is Cannanore which occupies 27.96 per cent of the total area under the crop in the State. Kozhikode comes next in the order of importance followed by Kottayam and Quilon.

6. *Chillies.*—This crop is cultivated only in four districts of the State viz., Cannanore, Kozhikode, Malappuram and Palghat. The area under the crop during the year is 2,889 hectares as against 2,782 hectares in 1975-76.

7. *Ginger.*—Ginger is cultivated in an area of 10,347 hectares during the year as against 11,671 hectares in 1975-76. The important ginger growing districts are Kottayam, Kozhikode, Ernakulam and Cannanore.

8. *Turmeric.*—The extent of area under Turmeric during 1976-77 is 2,355 hectares as against 2,477 hectares during 1975-76.

9. *Cardamom.*—The area under cardamom has decreased from 54,004 hectares during 1975-76 to 57,681 hectares during 1976-77. Idikki is the major cardamom producing district.

10. *Arecanut.*—The estimated area under Arecanut for the year is 68,356 hectares as against the previous year's estimate of 76,618 hectares. Cannanore, Malappuram and Kozhikode are the important districts where arecanut is cultivated largely.

11. *Mangoes.*—The area under Mangoes has decreased from 68,215 hectares in 1975-76 to 67,098 hectares in 1976-77.

12. *Banana.*—Banana is cultivated in an area of 11,162 hectares during the year, as against 11,155 hectares during 1975-76.

13. *Other plantains*.—The area under other plantains has decreased from 41,125 hectares in 1975-76 to 40,535 hectares in 1976-77.

14. *Jack*.—Jack is cultivated on a large in all the districts. The area under the crop during the year is 50,652 hectares.

15. *Cashew*.—The upward trend noticed in the area under cashew during 1975-76 has been continued this year also. The total area under cashew during the year is estimated as 113,326 hectares as against 109,057 hectares during 1975-76. The major cashew producing district is Cannanore. About 39 per cent of the total area under the crop is in Cannanore District. Cashew is also reported to be grown in 3,334 hectares in forest land.

16. *Tapioca*.—Tapioca is an important food crop of the State and it is extensively cultivated in all districts. Quilon and Trivandrum Districts occupy about 47 per cent of the total area under the crop. During 1976-77, tapioca is cultivated in an area of 323,278 hectares in the State. The estimate for the previous year was 326,865 hectares.

B. Non-food Crops

The non-food crops cover only 36 per cent of the total cropped area of the State. The total area under non-food crops during 1976-77 is estimated as 1,064,559 as against 1,072,074 hectares during 1975-76. The changes in area under certain crops during 1976-77 compared to that of the previous year are given below:

1. *Groundnut*.—This crop is cultivated only in Palghat District. The area under the crop has decreased from 26,679 to 16,622 hectares during the year.

2. *Sesamum*.—It is mainly cultivated in Alleppey and Quilon Districts. About 40 per cent of the total area under the crop is in Alleppey District. It is estimated that an area of 15,970 hectares are under the crop during the year under report. The corresponding figures during the previous year were 16,785 hectares.

3. *Coconut*.—Coconut is the most important non-food crop of the State. About 64 per cent of the non-food crops and 24 per cent of the total cropped area fall under this category. It is cultivated fairly on a large scale in all Districts. Kozhikode stands first in the extent of area under the crop followed by Quilon and Cannanore Districts. The estimates for the year 1976-77 under coconut is 694,935 hectares which is higher than the previous year's estimate.

4. *Cotton*.—Palghat is the main cotton growing district in the State. It accounts for 7,249 hectares during the year under report as against 7,562 during the previous year.

5. *Tobacco*.—Tobacco is cultivated only in Cannanore District. The area under the crop is estimated as 539 hectares during 1976-77. The area for the previous year was 607 hectares.

6. *Tea*.—The area under the crop during the year under report is estimated to be 36,161 hectares. There was a decrease in area under the crop compared to the previous year. Idikki is the important tea growing district. About 66 per cent of the total area under the crop is in Idikki District.

7. *Coffee*.—Coffee is another plantation crop of the State. Among the Districts Kozhikode occupies the foremost place in the extent of cultivation of coffee. About 60 per cent of the total area under the crop is in Kozhikode District. A slight decrease has been noticed in the area during the current year. During 1975-76 the area under cultivation is 41,778 hectares where as that for the current year is 40,502 hectares.

8. *Rubber*.—Kerala holds a monopoly for rubber cultivation in India. It is cultivated extensively in all districts. The area under the crop has increased from 206,686 during 1975-76 to 209,723 in the current year. Kottayam, Quilon, Cannanore and Ernakulam are the leading districts in rubber cultivation.

8. Irrigation

The net area irrigated in the State during the year is estimated as 221,054 hectares. Government canals are the major source of irrigation. During the year 10 per cent of the net area sown is brought under irrigation.

9. Weather and Crop conditions

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

Trivandrum

During Autumn season rainfall was delayed in all taluks of the district except Trivandrum. But it was very heavy during October resulting in floods in some parts of Trivandrum. Whereas in other taluks widespread drought conditions prevailed and the situation improved by the last week of July. Crop conditions during Khariff season were satisfactory in Trivandrum and Neyyattinkara taluks only. However a good yield was reported for Winter season from the taluks other than Attingal. Summer Paddy was effected by drought and pest attack.

Quilon

There was heavy rain and consequent flood during khariff season in the low-lying areas of the district. This caused slight damage to the crops. However Rabi season witnessed normal conditions except for heavy rains during the months of May and June. As a whole the crop conditions were reported to be satisfactory in the district.

Alleppey

The onset of south-west monsoon was late in the taluks Chengannur, Karthigappally, Shertalai and Kuttanad and Ambalapuzha. Whereas it was very heavy in Mavelikara and Thiruvalla Taluks. As a result drought conditions prevailed in the taluks where the monsoon was late during khariff season. Where the south-west monsoon was erratic. North east monsoon was very active throughout the district. Moderate flood conditions were reported from the district during Rabi season.

Crop conditions were also not favourable to the paddy crop. A poor yield of Autumn crop of paddy was reported due to drought conditions from all taluks except Chengannur and Kuttanad and Ambalapuzha Taluks.

In Rabi season, winter paddy was good except in the case of Shertalai and Karthigappally. Pest attack and salinity were reported from the above two taluks. However a good yield was obtained from summer paddy. Farmers cultivated High Yielding Variety extensively. Timely application of insecticides and pesticides prevented the possible attack of pest and other diseases.

The strong wind reported from Thiruvalla Taluk in June had done extensive damage to the seasonal, annual and perennial crops. Crop losses due to drought from Kuttanad and Ambalapuzha Taluks as also due to flood were reported from Thiruvalla Taluk during Rabi season.

Kottayam

Though the rainfall was normal in the district south-west monsoon was little delayed in Changanassery and Vaikom Taluks. The heavy rains and subsequent drought in Vaikom during khariff season had adversely affected Paddy, Tapioca and Banana. However crop conditions were normal in Meenachil, Kottayam and Kanjirappally. Whereas drought conditions prevailed in Changanacherry and Vaikom.

A bright rabi season with normal rainfall and crop conditions were reported from the district. But heavy rains during the season had affected paddy crop adversely in Vaikom Taluk.

Idikki

Rainfall during khariff and Rabi season was normal in the district. But the drought in August-September and December-January in Udumbanchola, Devikulam Taluks respectively has affected Ginger and Tea crops of those districts adversely. Crop conditions were normal for all other seasonal, annual and perennial crops. Cardamom and Tea crops in Peermedu Taluk has a good yield during the rabi period.

Ernakulam

Late monsoon coupled with heavy rain was the position obtaining in all the taluks during khariff season. North-east monsoon was poor in Parur, Kanayannur and Alwaye Taluks. Flood caused minor damages in the low lying areas of Kothamangalam Taluk in Khariff season. Crops conditions were normal to very good in the district for khariff and rabi season.

Trichur

The late arrival of south-west monsoon has delayed the sowing operations during khariff season in the district. But the subsequent heavy rain move has considerably reduced the yield rate of Autumn paddy. Pest attack was reported from Trichur, Mukundapuram and Talappilly Taluks. The untimely rain at flowering stage and pest attack had caused crop loss at Talappilly, Mukundapuram and in Trichur Taluks. However the conditions of other crops were good during the season.

During Rabi season weather and crop conditions were normal except in the case of Trichur and Thalappilly Taluks. Erratic climatic conditions in those districts during winter season also had resulted in crop loss. However an assured water supply from irrigation channels during summer season had caused for a very good paddy crop. But the progressive reduction in the application and use of HYV seeds and chemical fertilisers had decreased the yield rate of paddy crop. Crop conditions for coconut, pepper and cashewnut were normal in the district as a whole.

Palghat

In both khariff and rabi seasons rainfall and crop conditions were highly favourable for a bumper crops in all taluks of the district. But rainfall was little heavy in Palghat and Ottappalam Taluks during khariff season. Pest attack of mild type was reported from the district. A bumper crop during khariff season was the high light of the district during the year.

Malappuram

During Khariff season heavy rainfall was reported from Ernad, Tirur and Ponnani Taluks of the district. However rabi season witnessed normal rain except in the case of Tirur Taluk where drought conditions prevailed in the middle of summer.

Crop conditions were unfavourable for Autumn crops in the district. Crop loss due to flood and pest attack was reported from all taluks. The damage to paddy crop in Ponnani Taluk was heavy since the continuous heavy rain had reported harvest stage paddy crops. Still yield rate was better in Rabi season. Another district being feature noted in the district during Autumn season was the attack of pest even after the use of pesticides and insecticides.

Kozhikode

Though the rainfall was heavy during khariff season, it was normal throughout the Rabi season. However cyclone and heavy rain were reported from Badagara, South Wynad and Kozhikode Taluks during latter half of the agriculture year. Crop conditions were normal in all taluks. But crop damages were reported from Quilandy and Kozhikode Taluks. A welcome trend to be noted in this district is the increase in area and production of Ginger, Pepper and Turmeric.

Cannanore

There was heavy rain during khariff season followed by flood in many parts of the district. Whereas it was moderate in Rabi season. Crop conditions were reported to be normal in all taluks during the entire agricultural year. Heavy loss of paddy crop was reported from Kasargode, Taliparamba, Cannanore and Tellicherry taluks during Autumn season. Coffee crop was also adversely affected by untimely rain.

10. Production of important crops

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

1. *Paddy*:—The total production of rice in the State during 1976-77 is 1,254,003 tonnes as against 133,191 tonnes in the previous year. Palghat District stands first in the production of rice during this

year also. The district-wise details of production of rice are furnished in the following table:—

TABLE XVII

Sl. No.	District	Production of rice (Tonnes)	
		1975-76	1976-77
1.	Trivandrum	59,060	53,036
2.	Quilon	81,702	66,649
3.	Alleppey	140,881	162,025
4.	Kottayam	76,047	78,138
5.	Idikki	26,148	23,788
6.	Ernakulam	132,534	137,213
7.	Trichur	162,189	148,172
8.	Palghat	349,667	301,308
9.	Malappuram	125,129	110,050
10.	Kozhikode	66,223	54,985
11.	Cannanore	111,611	118,639
	State	1,331,191	1,254,003

The season-wise production of rice for two years is as follows:—

TABLE XVIII

Season	Rice Production (Tonnes)	
	1975-76	1976-77
Autumn	552,322	487,647
Winter	597,975	587,737
Summer	180,897	178,619
State	1,331,191	1,254,003

2. *Pulses*.—The production of pulses has registered an increase of 1,370 tonnes during the year under report compared to 1,169 tonnes in the previous year.

3. *Sugarcane*.—The production of gur is estimated to be 40,460 tonnes during 1976-77 showing a decrease of 1,371 tonnes from the previous year.

4. *Black Pepper*.—The production of black pepper was estimated as 24,497 tonnes during 1976-77. The estimate for the previous year was 24,580 tonnes. Cannanore, Kozhikode and Quilon are the major pepper producing districts.

5. *Dry ginger*.—The production of dry ginger was estimated as 25,447 tonnes during the current year which shows a decrease of 3,393 tonnes from the previous year. About 38 per cent of the total production is concentrated in Kottayam District.

6. *Turmeric (cured)*.—During 1976-77 the production of turmeric was estimated as 2,213 tonnes. The previous year's production was 2,608 tonnes.

7. *Cardamom (Processed)*.—The production of cardamom during 1976-77 was estimated as 1,420 tonnes. There was a reduction of 630 tonnes in production when compared to the previous years estimates. About 83 per cent of the production is from Idikki District which is the major cardamom producing district.

8. *Betal nuts*.—During the year under report of arecanut production is estimated as 272,115 tonnes.

9. *Banana*.—The production of banana in the State during 1976-77 is estimated as 81,326 tonnes. The estimate for the previous year was 81,273 tonnes. Cannanore, Quilon and Kottayam account for about 42 per cent of the production of banana in the State.

10. *Other Plantains*.—The production of plantain has decreased from 313,769 tonnes in 1975-76 to 309,283 tonnes during 1976-77.

11. *Cashewnut*.—During 1976-77 the estimated production of cashewnut was 87,257. This shows a decrease in production to the extent of 35,103 tonnes to that of the previous year. About 43 per cent of the cashewnut are produced in Cannanore District.

12. *Tapioca*.—The production of tapioca was estimated as 5,125,524 tonnes during 1976-77. A slight decrease in production was noticed when compared to the previous year which was estimated at 5,390,217. The production estimates were arrived at using the results of the crop cutting experiments conducted by the Bureau. The major tapioca producing Districts are Quilon and Trivandrum. The District-wise yield rates for 1975-76 and 1976-77 are furnished below:

District	Yield rate of tapioca (tonnes per hectare)	
	1976-77	1975-76
1. Trivandrum	14.20	14.29
2. Quilon	16.48	18.02
3. Alleppey	15.12	16.80
4. Kottayam	20.18	17.98
5. Idikki	18.95	21.54
6. Ernakulam	15.00	18.94
7. Trichur	14.55	13.54
8. Palghat	16.42	14.70
9. Malappuram	11.75	11.92
10. Kozhikode	11.28	18.19
11. Cannanore	18.18	18.30
State	15.85	16.49

13. *Groundnut*.—The production of groundnut for the year is 17,453 tonnes as against 19,471 tonnes during 1975-76.

14. *Sesamum*.—During 1976-77 the production of sesamum was estimated as 4,450 tonnes which shows a slight increase of 179 tonnes when compared to the production for the previous year.

15. *Coconut*.—The quantity of coconut produced during 1976-77 is estimated as 3,348 million nuts. The estimate for the year 1975-76 was 3,439 million nuts.

16. *Cotton*.—The cotton produced during 1976-77 is estimated as 9,806 bales of 170 kg.

17. *Tobacco*.—This crop is cultivated only in Cannanore District. The total production during the year is 1,047 tonnes.

18. *Tea*.—The estimated production of tea for the year is 41,644 tonnes as against 43,264 tonnes in the previous year.

19. *Coffee*.—The production of coffee has increased from 14,395 tonnes in 1975-76 to 15,030 tonnes during 1976-77.

20. *Rubber*.—The production of rubber shows an increase of 10,580 tonnes over the previous year's estimates. The production during 1976-77 was estimated as 139,349 tonnes.

11. Farm price of certain commodities

The average farm price of certain commodities is given in Table F of the summary Tables and 5.1 of the detailed Tables.

12. Agricultural wages

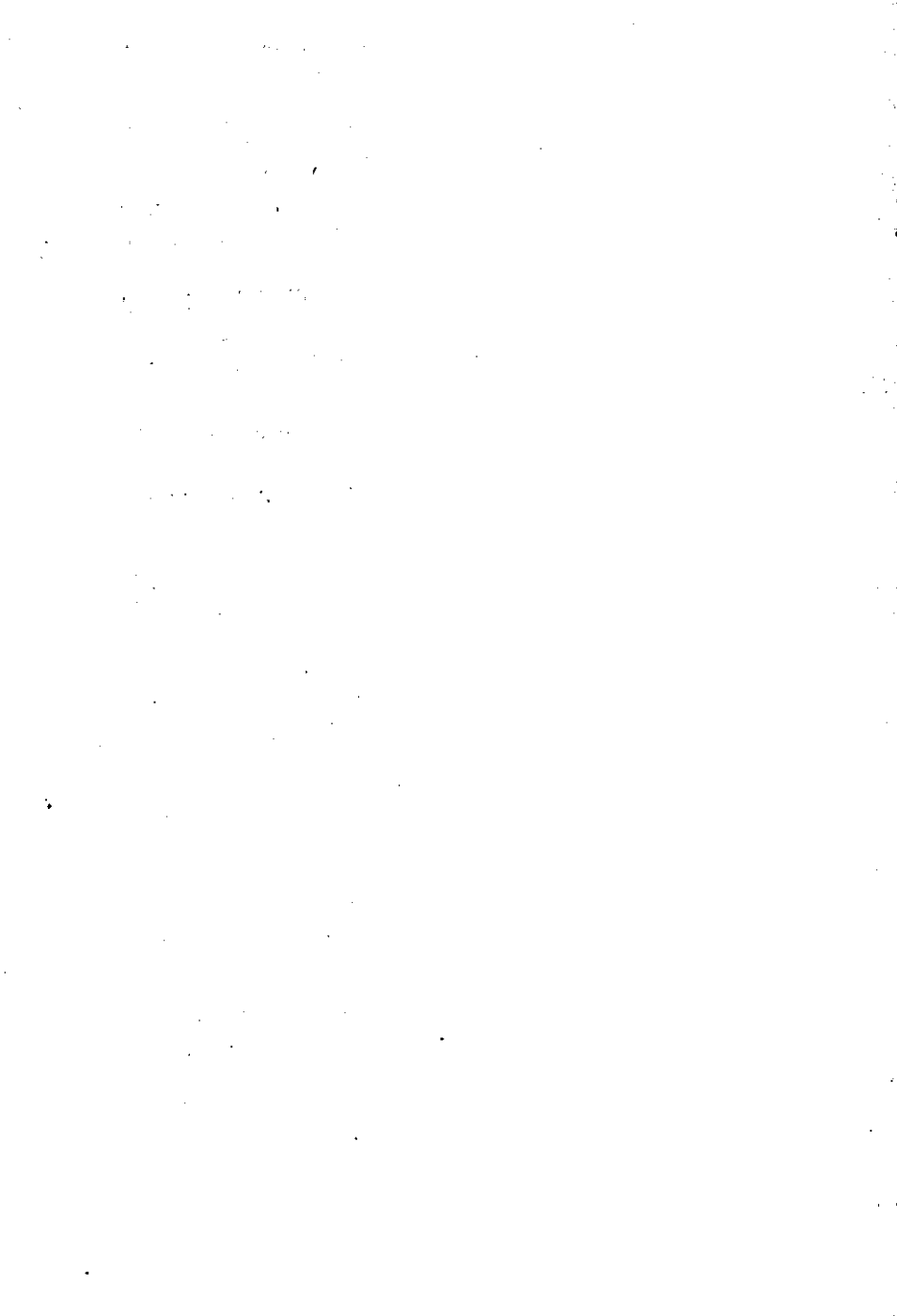
District-wise and class-wise details of agricultural wages are given in Table 6.1.

13. Livestock, poultry and agricultural implements

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

14. Sowing, harvesting and peack marketing periods

The information on these topics has been furnished in Table H of the summary Tables.



PART II
SUMMARY TABLES

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

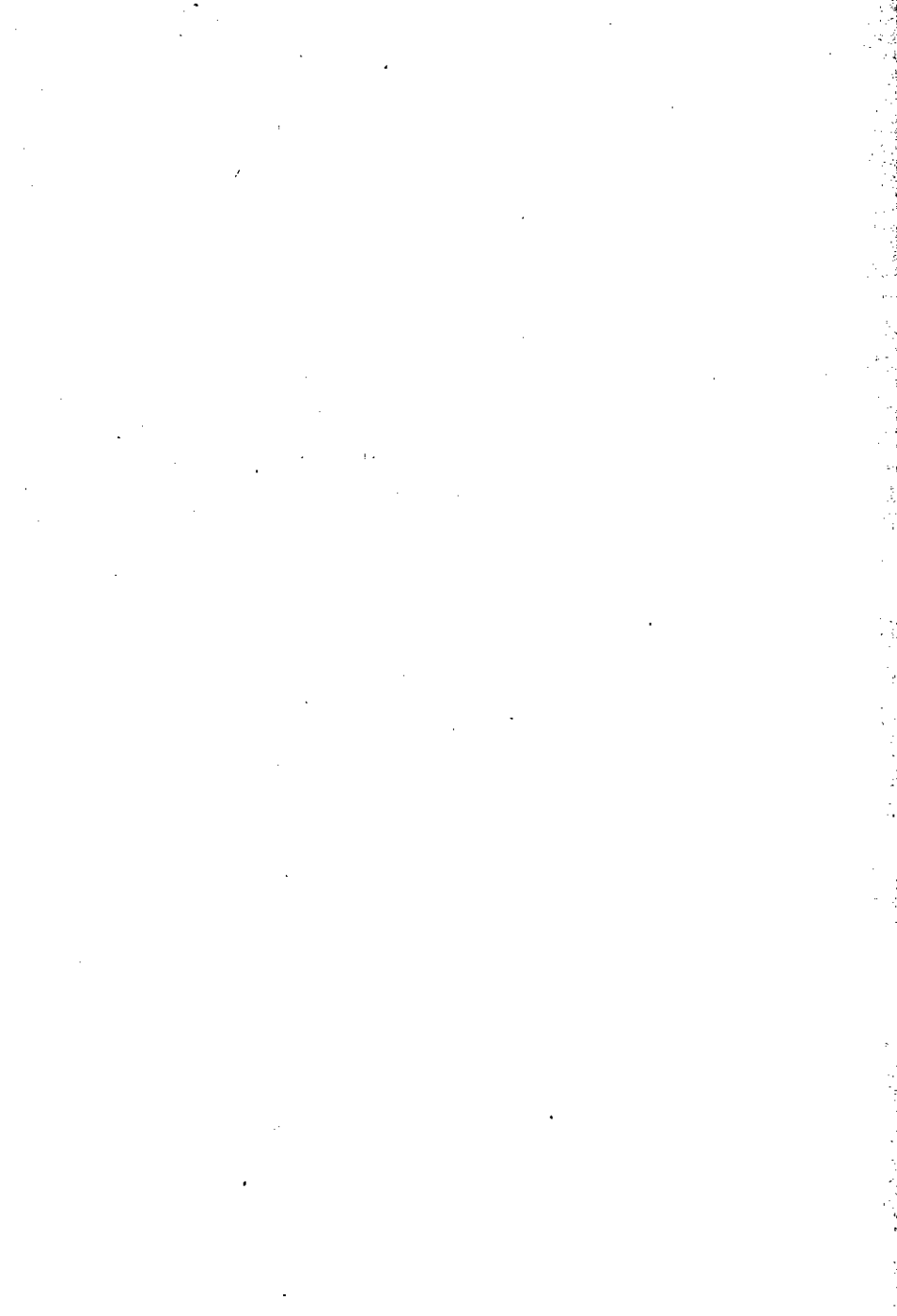


TABLE A

Classification of area (hectare)

<i>Head of classification</i>	<i>Area</i>	<i>Percentage</i>
1. Total area by village papers ..	3,885,497	100·00
2. Forests ..	1,081,509	27·84
3. Land put to non-agricultural uses ..	260,388	6·70
4. Barren and uncultivable land ..	78,837	2·03
5. Permanent pastures and other grazing lands ..	16,095	0·42
6. Land under miscellaneous tree crops ..	72,668	1·87
7. Cultivable waste lands ..	115,726	2·98
8. Current fallow ..	37,409	0·96
9. Other fallows ..	22,264	0·57
10. Net area sown ..	2,200,601	56·63
11. Total cropped area ..	2,933,450	75·49
12. Area sown more than once ..	732,849	18·86

TABLE B

Source of water supply and net area in (hectares) irrigated in 1976-77

Net area irrigated by—

1. Government canals ..	92,125
2. Private canals ..	763
3. Government tanks and wells ..	9,938
4. Private tanks and wells ..	41,424
5. Minor and lift irrigation (Government scheme) ..	46,496
6. Other sources ..	30,308
7. Total ..	221,054
8. Percentage of area irrigated to net area sown ..	10·05

TABLE C

Area under crops in Kerala (hectare) 1976-77

<i>Name of Crop</i> (1)	<i>Area (hectare)</i> (2)
Paddy	854,374
Jowar	1,993
Ragi	2,456
Other cereals and millets	3,740
Total cereals and millets	862,563
Tur	3,020
Other pulses	33,509
Total pulses	36,529
Sugarcane	7,172
Palmyrah	10,922
Total sugar crops	18,094
Pepper	108,666
Chillies	2,889
Ginger	10,347
Turmeric	2,355
Cardamom	51,681
Arecanut	68,356
Other condiments and spices	5,568
Total condiments and spices	249,862
Mango	67,098
Jack	50,652
Banana	11,162
Other plantains	40,535
Pineapple	8,245
Other fruit trees	28,840
Cashew	113,326
Total fruits	319,858
Tapioca	323,278
Sweet potatoes	5,963
Tubers	31,808
Other vegetables	11,034
Total vegetables	372,083
Other food crops (tamarind)	9,902
Total food crops	1,868,891
Coconut	694,985
Sesamum	15,970
Groundnut	16,622
Other oil seeds	2,722
Total oil seeds	730,299
Cotton	7,249
Tobacco	539

TABLE C—(cont.)

<i>Name of crop</i> (1)	<i>Area (hectare)</i> (2)
Tea	36,161
Coffee	40,592
Rubber	209,723
Total	286,925
Fodder grass	985
Green manure crops	15,170
Lemon grass	2,332
Betel leaves	1,754
Other crops	19,845
Total	1,064,559
Total non-food crops	2,933,450
Total area under all crops	732,849
Area sown more than once	2,200,601
Net area sown	

TABLE D

Production of important crops in Kerala 1976-77

<i>Name of crop</i> (1)	<i>Unit</i> (2)	<i>Quantity</i> (3)
1. Rice	Tonnes	1,254,003
2. Paddy	"	1,908,668
3. Jowar	"	892
4. Ragi	"	2,192
5. Tur	"	731
6. Other pulses	"	15,539
7. Sugarcane (Gur)	"	40,460
8. Pepper (Black)	"	24,497
9. Chillies (Dry)	"	2,531
10. Ginger (Dry)	"	25,447
11. Turmeric (Cured)	"	2,213
12. Cardamom (Processed)	"	1,420
13. Arecanut (Betel nuts)	Million nuts	11,303
14. Banana	Tonnes	81,326
15. Other plantain	"	309,283
16. Cashewnuts	"	87,257
17. Tapioca (Raw)	"	5,125,524
18. Sweet potatoes	"	26,837
19. Groundnut	"	17,453
20. Sesamum	"	4,450

TABLE D—(cont.)

	<i>Name of crop</i>	<i>Unit</i>	<i>Quantity</i>
	(1)	(2)	(3)
21.	Coconut	Million nuts	3,348
22.	Cotton	Bales of 170 kg.	9,806
23.	Tobacco	Tonnes	1,047
24.	Coffee	"	15,030
25.	Tea	"	41,644
26.	Rubber	"	139,349

TABLE E

Average yield per hectare of certain crops for the year 1976-77

	<i>Name of crop</i>	<i>Unit</i>	1976-77	1975-76
	(1)	(2)	(3)	(4)
1.	Paddy	kg./hect.	..	2,313
2.	Jowar	"	..	450
3.	Ragi	"	..	1,038
4.	Sugarcane (Gur)	"	..	5,507
5.	Pepper (Black)	"	..	227
6.	Ginger (Dry)	"	..	2,471
7.	Turmeric (Cured)	"	..	1,075
8.	Cardamom (Processed)	"	..	38
9.	Arecanut	Nuts/hect.	..	148,620
10.	Banana	Kg./hect.	..	7,286
11.	Other plantains	"	..	7,630
12.	Cashewnuts	"	..	1,122
13.	Tapioca (Raw)	"	..	16,491
14.	Groundnut	"	..	1,322
15.	Sesamum	"	..	254
16.	Coconut	Nuts/hect.	..	4,963
17.	Cotton	Kg./hect.	..	231
18.	Tea	"	..	1,148
19.	Coffee	"	..	345
20.	Rubber	"	..	623

TABLE F

Average price and total value of production 1976-77

Sl. No.	Name of crop	Unit	Average farm price Rs.	Value of production (Rs. in lakhs)
(1)	(2)	(3)	(4)	(5)
1.	Paddy	Tonnes	1,427.40	27,214.33
2.	Coconut with husk	1000 Nos.	913.00	30,567.24
3.	Arecanut (Ripe)	"	44.10	4,984.62
4.	Tapioca (Raw)	Tonnes	355.70	18,231.49
5.	Cashewnut	"	5,030.70	4,389.64
6.	Banana	1000 Nos.	324.60	1,455.08
7.	Pepper (Black)	Tonnes	15,676.00	3,840.15
8.	Ginger (Dry)	"	13,077.20	3,327.76
9.	Sugarcane	"	120.41	487.18

TABLE G

Number of livestock, poultry and agricultural machinery

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

TABLE G—(cont.)

<i>Sl. No.</i>			1966 Census	1972 Census
(1)	(2)	(3)	(4)	(5)
2.	Buffaloes	(a) Males over 3 years	6,106	2,185
		(b) Working	241,048	211,467
		(c) Others	6,696	12,077
		Total	253,850	225,729
	Females over 3 years	(a) Breeding		
		1. In milk	66,705	83,188
		2. Dry	52,777	53,671
		3. Not calved	9,119	10,495
		(b) Working	4,589	6,066
		(c) Others	1,580	2,360
		Total	134,770	155,780
		Young stock	82,615	90,238
		Total buffaloes	471,235	471,747
3.	Sheep	(a) One year and above	7,920	6,991
		(b) Below one year	3,599	3,330
		Total	11,519	10,321
4.	Goats	(a) One year and above	757,766	839,053
		(b) Below one year	431,452	638,604
		Total	1,189,218	1,467,657
5.	Horse and ponies	(a) 3 years and above	372	333
		(b) Below 3 years	54	118
		Total	426	451
6.	Mules		8	14
7.	Donkeys		310	861
8.	Camels		4	11
9.	Pigs		111,928	129,087
10.	Poultry	Total Livestock	4,641,375	4,936,469
		(a) Fowls	9,587,286	11,844,548
		(b) Ducks	318,751	301,941
		(c) Others	2,950	965

TABLE G—(cont.)

<i>Sl. No.</i>			<i>1966 Census</i>	<i>1972 Census</i>
(1)	(2)	(3)	(4)	(5)
11.	Ploughs	(a) Wooden	475,930	393,714
		(b) Iron	17,179	35,103
12.	Carts		16,809	16,245
13.	Sugarcane crushers			
		(a) Power	457	96
		(b) Bullocks	989	801
14.	Oils Engines		6,824	18,649
15.	Electric pumps		4,869	9,983
16.	Tractors		418	2,752

TABLE H

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

Crop	Sowing		Harvesting		Peak marketing		
	1	2	3	4			
Rice	Autumn Winter Summer	April July October January	July October December March	July November March May	—October —February —April —June	September December March May	—October —February —April —June
Ragi	1st crop 2nd crop	April September	—July —October	August December	—November —January	September December	—November —January
Redgram	1st crop 2nd crop 3rd crop	May August February	—June —November	August November April	—October —January	September December April	—October —January —January
Horsegram	1st crop 2nd crop	August February	—October —March	November April	—January —May	December May	—February —June
Greengram	..	May	—June	August	—September	September	—October
Blackgram	1st crop 2nd crop	May October	—June —November	August January	—September —February	October February	—September —March
Other pulses	..	May	—June	August	—September	August	—September
Cotton	..	August	—September	February	—March	February	—March
Sesamum	1st crop 2nd crop 3rd crop	July December January	—October —February —March	September March May	—February —May —July	October April June	—February —June —August

Sugarcane	1st crop 2nd crop	September November January	—November —January —April	—June	November October December	—January —November —April	January November January	—December —April
Turmeric	..	April	—June	..	December	—February	January	—February
	..	..	..	..	June	—September	September	..
Lemon grass	1st crop	August	—November	..	June	—September	July	—September
	2nd crop	March	—July	..	December	—January	December	—January
	3rd crop	November	—December	..	May	—July	June	—July
Sweet potatoes	1st crop	July	—September	..	October	—July	November	—December
	2nd crop	June	—July	..	May	—July	June	—July
	3rd crop	September November	—October —December	..	September December February	—October —January —March	September December February	—October —January —March
Small millets (Samai)	Kharif	May	..	..	August	—January	August	..
	Rabi	September	—May	..	December	—January	December	..
Ginger (Raw)	..	April	..	..	November	—January	December	—January
	..	..	..	..	November	—January	December	—January
Pepper	..	..	..	..	November	—January	December	—January



PART III

- 1·1 Normal rainfall
- 1·2 Average monthly rainfall
- 2·1 Classification of area in each district
- 2·2 Classification of area as percentage to total area according to village papers
- 3·1 Area under crops in each district
- 3·2 Percentage of area under crops to total cropped area in each district
- 4·1 Outturn 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 mm.)

Serial No.	District	July	August	September	October	November	December	January	February	March	April	May	June	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Trivandrum ..	257.4	204.5	168.9	280.2	210.2	70.1	21.2	18.0	48.0	118.1	213.9	391.1	2001.6
2	Quilon ..	449.6	318.1	226.1	344.9	242.9	64.8	24.1	32.1	83.6	166.3	260.3	547.4	2760.2
3	Alleppey ..	552.3	370.3	272.7	330.2	219.4	64.1	25.9	29.3	59.0	133.5	291.5	663.8	3012.0
4	Kottayam ..	657.7	447.5	296.5	383.8	244.7	73.6	28.8	30.3	85.4	176.9	324.1	713.3	3462.6
5	Idikki ..	655.1	432.9	262.7	304.4	195.8	68.8	31.1	24.1	44.6	111.7	200.9	556.7	2898.8
6	Ernakulam ..	785.3	518.0	293.9	359.7	212.6	54.2	16.8	22.4	51.6	129.5	308.4	796.1	3548.5
7	Trichur ..	761.4	458.6	250.3	307.5	158.3	30.3	9.3	8.8	28.6	86.6	274.3	803.4	3177.4
8	Palghat ..	649.9	363.0	169.5	257.2	140.9	29.7	9.8	9.3	27.0	79.6	158.4	503.4	2397.7
9	Malappuram..	787.0	405.0	198.8	290.0	163.8	30.9	6.7	6.5	19.3	78.7	211.0	702.4	2900.1
10	Kozhikode ..	1117.4	599.2	262.4	290.2	163.7	34.2	10.4	7.6	20.0	92.4	254.0	94.5	3796.0
11	Cannanore ..	1063.5	584.8	239.4	218.0	106.0	22.8	5.3	4.8	11.1	58.6	200.6	923.0	3437.9
	State ..	686.4	422.6	242.0	306.9	190.9	51.2	18.5	19.3	46.4	115.6	245.0	672.8	3017.6

TABLE 1-2
Monthly rainfall statement for 1976-77
(In mm.)

District	July	August	September	October	November	December	January	February	March	April	May	June	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trivandrum	151.2	140.9	46.1	146.6	229.5	33.0	4.1	19.9	33.2	88.2	361.3	228.8	1482.8
Quilon	353.1	259.7	110.7	322.6	362.4	38.1	0.4	44.2	47.7	145.4	497.5	411.8	2593.6
Alleppey	454.6	298.9	99.8	275.9	426.5	33.3	..	13.6	74.8	139.8	599.1	698.7	3115.0
Kottayam	549.2	309.3	106.7	250.3	354.6	42.6	2.2	11.1	67.2	233.7	421.5	605.9	2952.3
Idikki	676.6	424.4	164.2	250.6	253.9	28.0	..	13.0	19.5	145.5	254.6	485.2	2715.5
Ernakulam	680.5	391.5	94.1	327.1	363.1	44.8	..	18.4	44.3	206.0	369.3	595.8	3132.9
Trichur	732.1	440.6	130.2	200.0	217.3	20.6	..	6.7	21.1	47.3	317.1	678.8	2811.8
Palghat	394.8	204.5	74.3	197.5	337.2	10.5	..	6.0	30.2	94.1	143.7	472.0	1964.8
Malappuram	658.8	372.0	75.6	237.5	296.8	37.2	..	..	28.1	82.3	278.3	640.3	2713.1
Kozhikode	974.7	445.8	135.0	212.5	350.2	39.7	..	3.4	10.8	60.1	305.6	1005.4	3543.2
Cannanore	1054.9	429.4	183.2	90.2	209.4	13.5	..	12.4	7.6	30.8	208.0	812.4	3053.8
State	607.3	337.9	111.1	228.3	309.2	31.0	0.6	13.5	35.0	116.3	341.5	602.9	2734.4

TABLE 2.1
Total area and classification of area in each district of Kerala during the year 1976-77
(Area in hectares)

Serial number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
District	Total geographical area according to village papers	Forest	Land put to non-agricultural-wise	Barren and uncultivable land	Permanent pastures and other grazing land	Land under miscellaneous tree crops and groves not included in area seen	Cultivable waste land	Fallow lands other than current fallows	Current fallow	Net area sown	Area sown more than once	Total cropped area		
1	Trivandrum	218600	49861	16999	1466	36	346	1017	1172	146033	95637	241670		
2	Quilon	474290	236048	24269	3302	75	587	1395	1654	205671	130378	336049		
3	Alleppey	182270	518	27855	847	38	287	2068	2013	148010	78393	226393		
4	Kottayam	219550	8141	17686	2212	279	803	2088	1856	185012	73332	258344		
5	Idikki	515048	260993	13411	17346	8219	198303	6394	1318	156499	1222	157721		
6	Ernakulam	235319	8123	29380	1561	476	2432	5316	4637	181334	56353	237687		
7	Trichur	299390	103619	18986	4158	328	1803	4968	4067	160082	72491	232573		
8	Palghat	438980	136257	31587	11273	1577	8297	18406	6942	220408	88659	309067		
9	Malappuram	363230	103417	14157	6930	720	2970	13157	5621	213425	69812	283237		
10	Kozhikode	371150	90876	21474	5023	637	8824	6610	1572	235165	45057	280222		
11	Cannanore	567670	83656	44584	24719	3710	26489	24458	6557	348962	21525	370487		
	State	3885497	1081509	260388	78837	16095	72668	115726	37409	220601	732849	2933450		

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

Serial number	District	3	4	5	6	7	8	9	10	11	12	13	14
		Total geographical area according to village papers	Forest	Land put to non-agricultural-wise	Barren and uncultivable land	Permanent pastures and other grazing land	Land under misc. tree crops and groves not included in net area sown	Cultivable waste land	Fallow lands other than current fallows	Current fallows	Net area sown	Area sown more than once	Total cropped area
1	Trivandrum	100.00	22.81	7.78	0.69	0.02	0.15	0.46	0.76	0.53	66.80	43.74	110.55
2	Quilon	100.00	49.77	5.12	0.69	0.01	0.12	0.29	0.27	0.34	43.36	27.48	70.85
3	Alleppey	100.00	0.28	15.28	0.46	0.02	0.15	1.13	0.34	1.10	81.20	43.00	124.20
4	Kottayam	100.00	3.71	8.05	1.00	0.12	0.36	0.88	0.73	0.84	84.26	33.40	117.66
5	Idikki	100.00	50.67	2.60	3.36	0.13	3.85	7.06	0.20	0.25	30.38	0.23	30.62
6	Ernakulam	100.00	3.45	12.48	0.66	0.20	1.03	2.25	0.46	1.97	77.05	23.94	101.00
7	Trichur	100.00	34.61	6.34	1.38	0.10	0.60	1.65	0.87	1.35	53.46	24.21	77.68
8	Palghat	100.00	31.04	7.19	2.56	0.36	1.89	4.19	0.96	1.58	50.20	20.19	75.50
9	Malappuram	100.00	28.47	3.89	1.90	0.19	0.81	3.62	0.77	1.54	58.75	19.21	77.97
10	Kozhikode	100.00	24.48	5.78	1.35	0.17	2.37	1.78	0.26	0.42	63.36	12.13	75.50
11	Cannanore	100.00	14.74	7.85	4.35	0.65	4.66	4.30	0.79	1.15	61.47	3.79	65.26
	State	100.00	27.84	6.70	2.02	0.41	1.87	2.97	0.57	0.96	56.63	18.86	75.49

TABLE 3.1

Area under crops in each district of Kerala 1976-77
(Area in hectares)

Food Crops Cereals

District	Paddy				Other cereals				Pulses			Total foodgrains
	Autumn	Winter	Summer	Total	Jowar	Ragi	Other cereals and millets	Total cereals and millets	Tur	Other pulses	Total pulses	
						7	8	9		10	11	
1	2	3	4	5	6	7	8	9	10	11	12	13
Trivandrum	16384	17926	3466	37976	..	19	..	37995	..	3263	3263	41258
Quilon	23190	23074	1393	49657	..	14	..	49671	..	3496	3496	53167
Alleppey	26173	33809	23609	88591	..	44	..	88635	..	814	814	89449
Kottayam	16366	16204	16677	49247	..	..	..	49247	..	1750	1750	50997
Idiikki	8147	7037	490	15724	5	79	10	15818	..	2306	2306	18124
Ernakulam	41227	41886	16214	99327	7	..	157	99491	..	1750	1750	101241
Trichur	42301	54634	21130	118065	3	..	100	118179	3020	3391	3391	121570
Palghat	88047	78908	4167	171022	1978	2212	3150	178362	..	6789	9809	88171
Malappuram	44192	40383	7005	91580	..	29	77	91686	..	2419	2419	94105
Kozhikode	12974	31310	7441	51726	..	12	29	51738	..	1854	1854	53592
Cannanore	44621	29557	7281	81459	..	36	246	81741	..	5677	5677	87418
State	363822	381678	108874	854374	1993	2456	3740	862563	3020	33509	36529	89909

TABLE 3.1—(cont.)

District	Sugar crops				Condiments and spices										Total	
	Sugar cane	Others (Palmitrah)	Total sugar crops	14	15	16	Pepper	Chilies	Ginger	Turmeric	Cardamom	Belmuts	Other condiments and spices	23		24
Trivandrum	30	873	903	5630	..	37	17	164	4055	88	9992					
Quilon	1315	100	1415	11696	..	491	93	149	6866	284	19579					
Alleppey	1785	15	1800	5057	..	187	26	..	3156	102	8528					
Kottayam	174	506	680	14504	..	3207	631	..	3285	707	22334					
Idikki	2505	242	2747	8229	..	918	125	43075	1236	177	53760					
Ernakulam	62	365	427	7366	..	1665	541	..	6444	1278	17294					
Trichur	15	938	953	2386	..	38	45	7	9668	230	12374					
Palghat	1255	5053	6308	1430	267	210	244	3455	1936	650	8192					
Malappuram	15	1803	1818	5327	331	765	49	182	10934	145	17733					
Kozhikode	6	838	844	16657	495	1692	339	3384	7781	244	30592					
Cannanore	10	189	199	30384	1796	1137	245	1265	12394	1663	49484					
State	7172	10922	18094	108666	2889	10347	2355	51681	68356	5568	249862					

TABLE 3.1—(cont.)

District	Fresh fruits and dried fruits								Vegetables			
	Mango	Jack	Banana	Other plantain	Cashew	Other fruit trees	Pinapple	Total fruits	Tapoca	Sweet potatoes	Tubers	
	25	26	27	28	29	30	31	32	33	34	35	
Trivandrum	8229	6448	710	4233	5560	2259	541	28030	66633	188	1887	
Quilon	7828	6587	1553	4963	8933	2319	962	33145	85816	101	6292	
Alleppey	4348	2505	827	3236	2867	1457	456	15696	28677	53	4817	
Kottayam	6094	4584	1546	4258	1080	1727	432	19721	40262	179	4425	
Idikki	1636	1400	106	2131	803	2855	380	9311	14334	205	1040	
Ernakulam	5472	3769	1149	3459	3340	1950	847	31728	9225	164	3730	
Trichur	4672	2098	1175	4296	5703	2809	975	29203	7954	452	2050	
Palghat	6689	2972	585	2806	11453	4434	264	42338	29338	881	2635	
Malappuram	6486	4371	1162	3414	24227	2182	496	29424	8574	229	1614	
Kozhikode	8083	8632	738	3201	4440	3102	1228	71876	22706	3400	1678	
Cannanore	7561	7286	1611	4488	44920	4346	1664					
State	67098	50652	11162	40535	113926	28840	8245	319858	323278	5963	31808	

TABLE 3.1—(cont.)
Non-food crops (From Col. 40 onwards)

District	Vegetables		Other food crops (tamarind)	Total food crops	Oil seeds				Fibre		Drugs, narcotics and plantation crops	
	Other vegetables	Total			Coconut	Sesamum	Groundnut	Other oil seeds	Total	Cotton		
	36	37	38	39	40	41	42	43	44	45	46	47
Trivandrum	381	69089	2001	151273	79335	29	..	760	80124	..	..	1070
Quilon	538	92747	1390	201443	93465	3055	..	186	96706	..	..	2021
Alleppey	1183	34730	288	150491	64338	6448	..	316	71102	..	..	2333
Kottayam	1013	75879	520	140131	56535	290	..	389	57154	..	..	24063
Idikki	915	11919	85	95946	14594	406	..	42	15042	..	..	30
Ernakulam	1714	19912	671	158931	53524	1840	..	224	55588	..	..	438
Trichur	717	12143	1010	169778	50030	1555	16822	88	51673	7249	..	662
Palghat	1289	12330	1831	246035	18325	928	..	650	36523	..	..	174
Malappuram	1131	32980	1132	190106	67379	1156	..	28	68563	..	..	3885
Kozhikode	361	10778	623	125853	104885	21	..	20	104926	..	..	1485
Cannanore	1792	29576	351	238904	92575	302	..	19	92896	..	539	..
State	11034	372083	9902	1868891	694985	13970	16622	2722	730299	7249	539	36161

TABLE 3.1—(cont.)

District	Drugs, narcotics and plantation crops				Other non-food crops							Total non-food crops	Total food crops and non-food crops
	Coffee	Rubber	Total		Fodder grass	Green manure	Lemongrass	Betel leaves	Other crops	Total			
			48	49							50			51	52	53	54	55	56	57	58
Trivandrum	15	7907	8992	88	341	..5	191	661	1281	90397	241670		
Quilon	78	33500	35599	116	675	..5	399	1106	2301	134606	336049		
Alleppey	6	3847	3853	65	87	..42	118	677	947	75902	226393		
Kottayam	1305	55291	58929	286	498	..907	224	1080	2130	118213	258344		
Idikki	3546	15618	43223	325	236	..938	15	2027	3510	61775	157721		
Ernakulam	280	20538	20868	20	384	..938	109	849	2300	78756	237687		
Trichur	24	8924	9386	10	212	..9	64	1441	1796	62795	232573		
Palghat	1965	8970	11597	..	3802	..18	55	3804	7661	63032	308067		
Malappuram	..	17569	17743	..	3943	..267	510	2354	6825	93131	283237		
Kezhikode	24339	16984	45208	..	2913	..146	33	1022	4235	154369	280222		
Cannanore	8144	20559	31527	75	2079	..146	36	4824	7160	131583	370487		
State	40502	209723	286925	985	15170	2332	1754	19845	40086	1064559	2933450		

TABLE 3.2
Percentage of area under crops to total cropped area in each district during 1976-77

District	1	2	3	4	5	6	7	Cereals and millets		10	11
								Rice	Others			Total cereals and millets	Total pulses	Total food grain
Trivandrum	..	100	62.59	37.41	60.43	39.57	15.71	0.01	15.72	1.35	17.07
Quilon	..	100	59.94	40.06	61.20	38.80	14.78	0.01	14.78	1.04	15.82
Alleppey	..	100	66.47	33.53	65.38	34.62	39.13	0.02	39.15	0.36	39.51
Kottayam	..	100	54.24	45.76	71.61	28.39	19.06	..	19.06	0.68	19.74
Idikki	..	100	60.83	39.17	99.23	0.77	9.97	0.06	10.03	1.46	11.49
Ernakulam	..	100	66.87	33.13	76.29	23.71	41.79	0.07	41.86	0.74	42.60
Trichur	..	100	73.00	27.00	68.83	31.17	50.76	0.05	50.81	1.46	52.27
Palghat	..	100	79.61	20.39	71.31	28.69	55.33	2.37	57.71	3.17	60.88
Malappuram	..	100	67.12	32.88	75.35	24.65	32.33	0.04	32.37	0.85	33.22
Kozhikode	..	100	44.91	55.09	83.92	16.08	18.46	0.01	18.46	0.66	19.12
Cannanore	..	100	64.48	35.52	94.19	5.81	21.99	0.08	22.06	1.53	23.59
State	..	100	63.71	36.29	75.02	24.99	29.13	0.28	29.40	1.25	30.65

TABLE 3.2—(cont.)

District	Sugar crops				Condiments and spices							Fresh fruits	
	Sugarcane	Others	Total	Pepper	Ginger	Cardamom	Betelnut	Others	Total spices	Mango	Jack		
												12	13	14	15	16	17	18	19	20	21	22
Trivandrum	0.01	0.36	0.37	2.33	0.02	0.07	1.68	0.04	4.14	3.41	2.67		
Quilon	0.39	0.03	0.42	3.48	0.15	0.05	2.04	0.11	5.83	2.33	1.96		
Alleppey	0.79	0.01	0.80	2.23	0.09	..	1.39	0.06	3.77	1.92	1.11		
Kottayam	..	0.20	0.26	5.62	1.24	..	1.27	0.52	8.65	2.36	1.77		
Idikki	1.59	0.15	1.74	5.22	0.58	27.31	0.79	0.19	4.09	1.04	0.89		
Ernakulam	0.03	0.15	0.18	3.10	0.70	..	2.71	0.77	7.28	2.80	1.59		
Trichur	0.01	0.40	0.41	1.03	0.02	..	4.16	0.11	5.32	2.01	0.90		
Palghat	0.41	1.63	2.04	0.46	0.07	1.12	0.63	0.38	2.66	2.16	0.96		
Malappuram	0.01	0.63	0.64	1.88	0.27	0.06	3.86	0.19	6.26	2.29	1.54		
Kozhikode	0.01	0.29	0.30	5.95	0.60	1.21	2.78	0.38	10.92	2.88	3.08		
Cannanore	0.01	0.05	0.06	8.20	0.31	0.34	3.51	1.00	13.36	2.04	1.97		
State	0.25	0.37	0.62	3.70	0.35	1.76	2.33	0.38	8.52	2.29	1.73		

TABLE 3.2—(cont.)

District	Fresh fruits			Dried fruits		Tapioca	Vegetable		Total fruits and vegetables	Total food crops	Non-food crops	
	Banana and others	Pinnapple	Other fruit trees	Cashewnuts	Total fruit		Others	Total			Sesamum	Coconut
						23			24	25			26	27	28	29	30	31	32	33	34
Trivandrum	2.07	0.22	0.93	2.30	11.60	27.57	1.84	29.41	41.01	62.59	0.01	32.83
Quilon	1.94	0.29	0.63	2.66	9.86	25.54	2.48	28.02	37.88	59.94	0.91	27.81
Alleppey	1.79	0.20	0.64	1.27	6.93	12.67	2.80	15.47	22.40	66.47	2.85	28.42
Kottayam	2.25	0.17	0.66	0.42	7.63	15.58	2.38	17.96	25.59	54.24	0.09	21.88
Idikki	1.42	0.24	1.80	0.51	5.90	6.19	1.42	7.61	13.51	60.83	0.26	9.25
Ernakulam	1.94	0.36	0.56	1.41	8.16	6.03	2.63	8.66	16.82	66.87	0.77	22.52
Trichur	2.35	0.42	1.21	2.45	9.34	3.97	1.69	5.66	15.00	73.00	0.67	21.51
Palghat	1.10	0.09	1.43	3.71	9.45	2.57	2.01	4.58	14.03	79.61	0.30	5.93
Malappuram	1.62	0.18	0.77	8.55	14.95	10.36	1.68	12.04	26.99	67.12	0.41	23.79
Kozhikode	1.11	0.44	1.11	1.58	10.50	3.06	1.01	4.07	14.57	44.91	0.01	37.42
Cannanore	1.65	0.45	1.17	12.12	19.40	6.13	1.95	8.08	27.48	64.48	0.08	24.98
State ..	1.76	0.28	0.98	3.86	10.90	11.02	2.00	13.02	23.92	63.71	0.54	23.69

TABLE 3-2—(cont.)

Non-food crops

District	Non-food crops										Total non-food crops
	Oil seeds		Fibres		Drugs, narcotic, plantation crops					Other non-food crops	
	Groundnut	Others	Total	Cotton	Tea	Coffee	Rubber	Others	Total		
35	36	37	38	39	40	41	42	43	44	45	
Trivandrum	..	0.31	33.15	..	0.44	0.01	3.27	..	3.72	0.52	37.41
Quilon	..	0.06	28.78	..	0.60	0.02	9.97	..	10.59	0.67	40.06
Alleppey	..	0.14	31.41	..	..	..	1.70	..	1.70	0.42	33.53
Kottayam	..	0.15	22.12	..	0.90	0.51	21.40	..	22.81	0.83	45.76
Idiikki	..	0.03	9.54	..	15.25	2.25	9.90	..	27.40	2.23	39.17
Ernakulam	..	0.09	23.38	..	0.01	0.12	8.65	..	8.78	0.97	33.13
Trichur	..	0.04	22.22	..	0.19	0.01	3.84	..	4.04	0.74	27.00
Paigat	..	0.21	11.82	2.35	0.21	0.64	2.90	..	3.75	2.47	20.39
Malappuram	5.38	0.01	24.21	..	0.06	..	6.20	..	6.26	2.41	32.88
Kozhikode	..	0.01	37.44	..	1.39	8.69	6.05	..	16.13	1.52	55.09
Cannanore	..	0.01	25.07	..	0.40	2.41	5.55	0.15	8.51	1.94	35.52
State	0.57	0.09	24.89	0.25	1.23	1.38	7.15	0.02	9.78	1.37	36.29

TABLE 4.1
Outturn of important crops

District	Cereals and millets (tonnes)					Pulses (tonnes)						
	Rice					Tur	Other pulses	Sugar cane (Gur) tonnes	8	9	10	11
	Autumn	Winter	Summer	Total	Jowar								Ragi	Other cereals and millets
1	2	3	4	5	6	7	8	9	10	11		
Trivandrum	23,304	26,857	2,875	53,036	..	16	..	..	1,613	148
Quilon	22,211	43,294	1,144	66,649	..	12	..	..	1,609	6,487
Alleppey	39,919	71,894	51,182	1,62,025	..	38	..	..	354	9,098
Kottayam	24,762	24,955	28,421	78,138	..	..	..	..	646	963
Idikki	12,311	10,886	591	23,788	2	63	6	..	1,536	15,376		
Ernakulam	57,607	57,853	21,753	1,37,213	3	..	101	..	718	252		
Trichur	41,096	73,120	33,956	1,48,172	1	10	64	..	1,096	61		
Palghat	1,51,411	1,44,084	5,813	3,01,308	886	1958	2022	731	3,054	7,907		
Malappuram	44,018	53,227	12,805	1,10,050	..	26	49	..	872	95		
Kozhikode	8,410	3,82,001	8,574	54,985	..	11	..	..	603	38
Cannanore	63,568	43,566	11,505	1,18,639	..	53	158	..	3,438	35		
State	4,87,647	5,87,737	1,78,619	12,54,003	892	2192	2400	731	15,539	40,460		

TABLE 4.1—(cont.)

District	Spices and condiments (tonnes)						Fresh fruits and dried fruits		
	Black pepper	Dry chillies	Dry ginger	Cured turmeric	Processed cardamom	Betal nuts (million nuts)	Banana (tonnes)	Other plantain (tonnes)	Cashew nuts (raw) (tonnes)
	12	13	14	15	16	17	18	19	20
Trivandrum	1,295	..	87	17	4	481	5,173	32,679	2,658
Quilon	3,661	..	1,367	109	4	753	11,315	37,868	8,272
Alleppey	657	..	439	26	..	311	6,026	24,691	2,612
Kottayam	2,176	..	9,686	528	..	289	11,264	32,409	410
Idiikki	732	..	2,075	126	1,184	113	772	16,260	643
Ernakulam	1,444	..	4,119	533	..	994	8,372	26,392	3,300
Trichur	525	..	38	36	..	1,883	8,561	32,778	2,469
Palghat	296	235	338	179	95	333	4,262	21,410	7,261
Malappuram	1,199	266	992	39	5	2,293	8,466	26,019	18,631
Kozhikode	5,463	397	3,856	327	93	1,627	5,377	24,424	3,672
Cananore	7,049	1,633	2,450	293	35	2,176	11,738	34,213	37,239
State	24,497	2,531	25,447	2,213	1,420	11,303	81,326	3,09,283	87,257

TABLE 4-1—(cont.)

District	Vegetables		Oil seeds		Cotton bales of 170 kg.		Drugs and narcotics			
	Tapioca (tonnes)	Sweet potatoes (tonnes)	Groundnut	Sesamum (tonnes)	Coconut (million nuts)	Tobacco	Tea	Coffee	Rubber	
	21	22	23	24	25	27	28	29	30	
Trivandrum	9,46,189	846	..	14	402	..	804	3	5,373	
Quilon	14,14,248	455	..	693	391	..	851	16	26,032	
Alleppey	4,33,596	239	..	1657	334	..	..	1	2,468
Kottayam	8,12,487	806	..	83	228	..	664	259	35,340	
Idilki	1,84,933	923	..	138	50	..	34,340	705	10,842	
Ernakulam	2,15,010	738	..	633	251	..	..	55	13,443
Trichur	1,34,224	500	..	788	342	..	913	5	7,833	
Palghat	1,30,605	2,034	17,453	167	67	9,806	1,275	788	4,453	
Malappuram	3,44,722	3,965	..	193	345	..	133	..	10,696	
Kozhikode	96,715	1,031	..	6	575	..	1,214	9,651	11,126	
Cannanore	4,12,795	15,300	..	78	363	1,047	1,450	3,547	11,743	
State	51,25,524	26,837	17,453	4,450	3,348	9,806	41,644	15,030	1,39,349	

TABLE 5.1
Average farm prices (harvest prices) in rupees for certain commodities 1976-77

District	Paddy		Coconut		Arccanut		Tapioca		Cashewnut		Banana		Pepper		Ginger		Sugar cane	
	Qtl.	2	100 Nos.	3	100 Nos.	4	5	6	7	8	9	10 Nos.	Qtl.	8	9	Qtl.	M.T.	
1																		
Trivandrum	..	168.24	83.11	4.49	37.36	495.00	38.52	1488.85	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Quilon	..	155.56	89.79	5.06	29.82	494.33	35.36	1521.11	1403.75	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
Alleppey	..	142.34	95.88	4.74	33.92	482.22	35.56	1555.33	N.A.	112.00	112.00	112.00	112.00	112.00	112.00	112.00	112.00	112.00
Idikki	..	159.29	114.49	4.25	35.70	568.33	30.13	1604.26	1334.72	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Ernakulam	..	155.98	104.86	4.27	34.23	481.67	33.05	1620.16	1329.79	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Trichur	..	140.82	94.18	5.96	43.51	490.00	31.37	1589.35	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Palghat	..	135.45	80.88	4.86	33.34	506.67	31.93	1495.00	1396.43	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00
Malappuram	..	134.21	83.25	4.37	44.79	N.A.	30.08	1575.00	1296.43	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Kozhikode	..	158.87	85.45	3.01	37.85	498.33	27.07	1594.86	1371.06	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Cannanore	..	132.55	89.46	3.88	44.04	510.60	29.58	1572.87	1243.61	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
State average (Wt. average)	..	142.74	91.30	3.41	35.57	503.07	32.46	1567.60	1307.72	120.41	120.41	120.41	120.41	120.41	120.41	120.41	120.41	120.41

TABLE 6.1—(cont.)

District	July	August	September	October	November	December	January	February	March	April	May	June
1	2	3	4	5	6	7	8	9	10	11	12	13
(3) PADDY FIELD LABOUR												
Trivandrum	7.75	7.75	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Quilon	7.50	7.50	7.50	7.50	7.50	7.75	7.75	7.75	8.00	8.00	8.00	8.00
Alleppey	8.25	7.00	7.00	7.00	8.00	8.00	8.50	8.50	8.50	8.00	8.00	8.00
Kottayam	8.25	7.50	7.50	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Ernakulam	9.50	9.50	9.50	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75
Trichur	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50
Palghat	6.00	6.00	6.25	5.63	5.80	6.12	6.12	6.50	6.50	6.50	6.50	6.75
Malappuram	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	9.00	9.00	9.00
Kozhikode	9.25	9.25	9.25	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Cannanore	11.50	11.50	11.50	11.00	11.00	11.00	11.00	11.00	11.00	12.00	12.00	12.00
(4) WOMEN												
Trivandrum	6.50	6.50	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Quilon	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	6.00	6.00	6.00	6.00
Alleppey	6.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.75	5.75	5.75	5.75
Kottayam	5.00	5.00	5.00	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25
Ernakulam	6.25	6.25	6.25	6.50	6.50	6.50	6.25	6.25	6.25	6.25	6.25	6.25
Trichur	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38	5.38
Palghat	4.50	4.50	4.79	4.75	4.90	5.17	5.17	5.07	5.50	5.50	5.50	5.72
Malappuram	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.75	7.00
Kozhikode	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Cannanore	5.75	6.00	5.00	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25

TABLE 7-1
 Number of livestock poultry and agricultural machinery and implements in Kerala (1972 Census)

		Cattle										
Serial number	District	Males over three years				Females over three years						
		Breeding	Working	Others	Total	In milk	Breeding dry	Not calved	Working	Others		
1	2	3	4	5	6	7	8	9	10	11		
1	Trivandrum	150	12,971	891	14,012	43,775	32,622	4,972	272	270		
2	Quilon	525	33,296	1,638	35,459	76,751	85,409	15,344	178	700		
3	Alleppey	265	16,704	811	11,780	81,839	82,041	12,420	120	828		
4	Kottayam	408	11,786	758	12,982	58,768	61,575	11,561	458	225		
5	Idikki	721	10,776	626	12,123	30,568	30,623	3,931	174	269		
6	Ernakulam	459	53,237	1,588	55,284	41,113	43,544	7,887	438	427		
7	Trichur	534	46,032	828	47,394	44,579	34,351	5,170	727	262		
8	Palghat	378	57,066	1,746	59,190	55,536	51,700	8,517	2,297	846		
9	Malappuram	277	45,784	1,575	47,636	36,127	30,305	5,239	1,250	287		
10	Kozhikode	414	30,971	965	32,350	56,680	51,400	11,330	1,378	496		
11	Cannanore	669	59,349	3,396	63,414	70,456	75,257	15,478	354	1,047		
	State	4,800	371,972	14,822	391,594	606,192	578,827	101,849	7,646	5,657		

TABLE 7.1—(cont.)

Serial number	District	Cattle				Buffaloes					
		Females over three years		Males over three years		Working		Others		Total	In milk
		Total	Young stock	Total	Breeding	Working	Others	Total			
12	13	14	15	16	17	18	19				
1	Trivandrum	81,911	70,670	166,593	242	12,872	904	14,018	11,621		
2	Quilon	178,382	167,776	381,617	181	8,880	352	9,413	6,762		
3	Alleppey	177,248	146,962	335,990	87	5,831	238	5,956	2,919		
4	Kottayam	132,587	123,858	269,397	61	1,606	283	1,950	2,707		
5	Idikki	65,565	58,443	136,131	147	1,456	275	1,878	3,771		
6	Ernakulam	103,409	105,731	264,424	120	9,723	639	10,482	5,738		
7	Trichur	83,089	90,198	222,681	252	38,721	1,278	30,528	11,676		
8	Palghat	118,896	101,892	279,978	565	84,499	5,077	90,141	13,816		
9	Malappuram	73,208	58,122	178,966	158	31,215	1,513	32,886	9,492		
10	Kozhikode	121,284	94,771	248,405	160	10,671	646	11,477	6,036		
11	Cannanore	162,592	146,132	372,138	212	15,916	874	17,000	8,650		
	State	1,300,171	1,164,555	2,856,320	2,185	211,467	12,077	225,729	83,188		

TABLE 7.1—(cont.)

Serial number	District	Buffaloes										Sheep			
		Females over three years										Total	One year above	Below one year	Total
		Breeding dry	Not calved	Working	Others	Total	Young stock	Total							
20	21	22	23	24	25	26	27	28	29						
1	Trivandrum	7,306	1,371	428	262	20,988	9,502	44,50	456	489	945				
2	Quilon	5,077	805	107	105	12,856	6,595	28,892	741	333	1,074				
3	Alleppey	2,272	449	75	21	5,736	2,200	13,892	485	355	840				
4	Kottayam	1,619	261	49	46	4,682	1,717	8,349	165	163	328				
5	Idikki	2,419	417	13	73	6,763	3,569	12,210	122	82	204				
6	Ernakulam	1,968	478	300	129	8,613	3,711	22,806	82	65	147				
7	Trichur	6,110	1,130	247	774	19,937	13,564	64,029	32	52	84				
8	Palghat	11,389	2,106	2,322	366	29,999	24,765	144,905	4,728	1,696	6,424				
9	Malappuram	5,774	1,507	1,863	266	18,902	11,382	63,170	21	3	24				
10	Kozhikodej	3,530	663	357	109	10,695	4,844	27,016	46	34	80				
11	Cannanore	6,207	1,308	235	209	16,609	8,389	41,998	113	58	171				
	State	53,671	10,495	6,066	2,360	155,780	90,238	471,747	6,991	3,330	10,321				

TABLE 7.1—(cont.)

Serial number	District	Goats			Horses and ponies			Mules	Donkeys	Camels
		One year and above	Below one year	Total	3 years and above	Below 3 years	Total			
		30	31	32	33	34	35	36	37	38
1	Trivandrum	85,391	63,369	148,760	83	21	104	2	21	2
2	Quilon	100,653	78,239	178,892	37	3	40	..	2	1
3	Alleppey	572,040	42,666	99,906	13	..	13	..	70	..
4	Kottayam	84,692	147,317	147,317	11	1	12	..	157	..
5	Idikki	35,829	25,413	61,242	2	..	2	..	100	..
6	Ernakulam	90,620	72,298	162,918	10	7	10	1	78	7
7	Trichur	79,619	63,785	143,404	20	34	27	10	417	..
8	Palghat	82,787	53,084	135,871	62	..	96	..	10	..
9	Malappuram	79,873	57,335	137,208	28	26	28	1	6	1
10	Kozhikode	77,944	59,582	137,526	60	26	86	..	9	..
11	Cannanore	64,405	50,208	114,613	7	26	33	..	..	..
	State	839,053	628,604	1,467,657	393	118	451	14	861	11

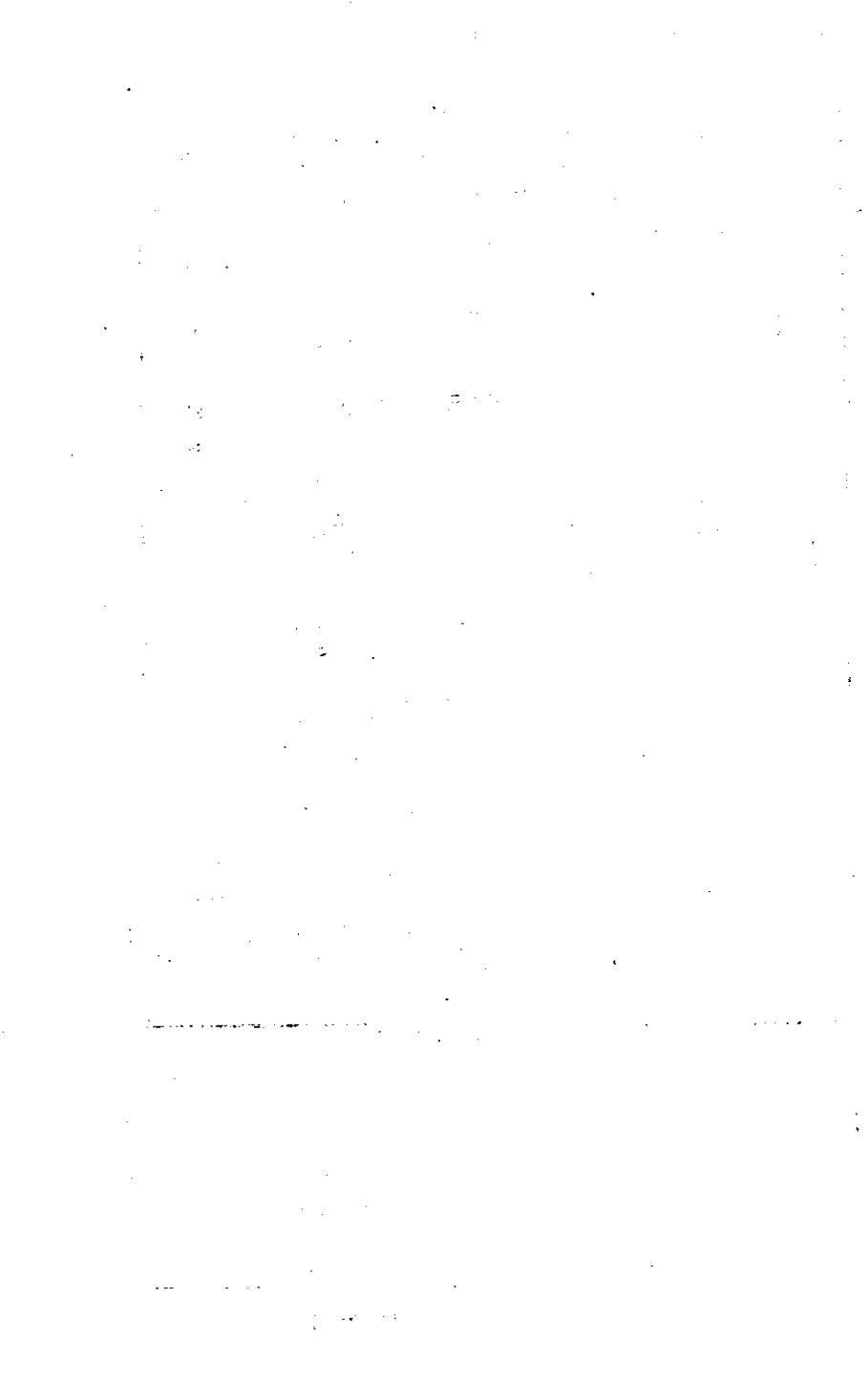
Table 7.1—(cont.)

Serial number	District	Pigs	Total livestock	Poultry				Plough	
				Fowls	Ducks	Others	Total	Wooden	Iron
		39	40	41	42	43	44	45	46
1	Trivandrum	14,001	374,936	1,020,638	4,563	167	1,025,368	17,379	3,164
2	Quilon	964	591,454	1,150,361	9,237	88	1,159,686	29,462	15,594
3	Alleppey	148	450,859	1,462,497	189,431	195	1,652,123	14,250	5,542
4	Kottayam	43,348	468,751	1,027,291	61,651	79	1,089,021	8,005	516
5	Idiikki	25,646	235,612	490,954	3,540	39	464,533	7,156	355
6	Ernakulam	32,246	482,630	1,355,680	51,873	100	1,407,553	51,028	1,482
7	Trichur	2,141	432,473	1,230,931	21,456	28	1,252,415	40,896	2,421
8	Palghat	430	548,131	914,032	78,437	2	922,471	100,750	2,159
9	Malappuram	16	379,492	1,193,504	4,544	48	1,198,096	52,479	834
10	Kozhikode	3,772	416,893	1,028,288	4,064	120	1,032,472	25,963	1,645
11	Cannanore	6,285	535,238	1,000,372	3,145	99	1,003,616	46,346	1,291
	State	129,087	4,936,469	11,844,548	361,941	965	12,207,454	393,714	35,203

TABLE 7.1—(cont.)

Serial number	District	Carts	Power	Sugar cane crushers				Chains		Tractors *	Perian wheels
				Bullocks	Oil engines	Electric pumps	More than 5 kg.	Less than 5 kg.			
1	Trivandrum	1,196	3	19	191	567	47	15	99	147	
2	Quilon	1,695	5	67	327	207	137	114	184	200	
3	Alleppey	634	22	83	1,468	546	181	153	430	578	
4	Kottayam	392	10	170	709	255	40	59	306	1,169	
5	Idikki	119	6	6	153	161	12	33	81	203	
6	Ernakulum	637	14	102	3,417	3,039	57	44	404	529	
7	Trichur	2,467	1	115	1,163	1,849	115	61	293	369	
8	Palghat	8,203	31	127	3,861	2,573	53	32	482	515	
9	Malappuram	365	1	14	1,658	366	38	7	87	215	
10	Kozhikode	259	..	41	906	538	219	135	166	303	
11	Cannanore	278	3	57	4,796	543	93	56	221	404	
..	State	16,245	96	801	18,649	9,983	992	709	2,752	4,632	

* Tractors included all private Government tractors.



PART IV
APPENDICES

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

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text suggests that organizations should implement robust systems to track and report on their operations, ensuring that all data is up-to-date and easily accessible.

2. The second section focuses on the role of leadership in fostering a culture of integrity and ethical behavior. It argues that leaders must set a clear example and communicate the organization's values consistently. By doing so, they can encourage employees to act with honesty and fairness, which ultimately leads to better performance and long-term success. The text also highlights the importance of regular communication and feedback loops to address any issues that may arise.

3. The third part of the document addresses the challenges of managing a diverse workforce. It notes that organizations must take into account the different backgrounds, experiences, and perspectives of their employees. This requires a flexible and inclusive approach to management, where everyone's contributions are valued and leveraged. The text provides several strategies for promoting diversity and inclusion, such as offering training and development opportunities and creating a supportive work environment.

4. The final section discusses the importance of continuous learning and innovation. In a rapidly changing world, organizations must stay ahead of the curve by investing in research and development. This involves encouraging employees to think creatively and experiment with new ideas. The text also emphasizes the need for ongoing education and skill development to ensure that the workforce remains competitive and adaptable to new challenges.

1. Working-class cost of living indices

The Consumer price index for the State was revised with effect from August 1975 with base 1970=100 on the basis of the family budget survey conducted by the Bureau. For the purpose of comparison the cost of living indices for the year were estimated for the old base with the linking fact. The average consumer price index numbers in the selected 10 centres of the State during the year 1975-76 and 1976-77 are given below:

TABLE I

Sl. No.	Centre	Average cost of living indices	
		1975-76 Rs.	1976-77 Rs.
(1)	(2)	(3)	(4)
1.	Trivandrum	1489	1386
2.	Quilon	1479	1385
3.	Punalur	1454	1346
4.	Alleppey	1463	1359
5.	Kottayam	1450	1350
6.	Munnar	1453	1375
7.	Ernakulam	1487	1392
8.	Trichur	1480	1393
9.	Chalakudy	1490	1391
10.	Kozhikode	1643	1547

As comparable figures were not available in respect of the 5 centres. Newly added since August 1975 estimates were made only for the centres. Monthly-wise details of consumer price for the 10 centres for agricultural year 1976-77 is given in Table I of appendix. Statement showing the consumer price index numbers from August 1976 to June 1977 with base 1970=100 is also given in Table 1.1. The average cost of living indices during the year has shown a declining trend when compared with those of the last year.

Parity Index

The index of parity between prices received and prices paid by the farmers during each month of the year 1975-76 and 1976-77 is given in the following table:

TABLE II
Index of parity

Month	1975-76	1976-77
July	89	103
August	89	100
September	88	103
October	89	104
November	93	106
December	92	104
January	91	103
February	92	102
March	95	102
April	98	106
May	97	106
June	100	103
Average	93	104

3. Quarterly retail prices

The trend in quarterly retail prices of 12 important commodities is presented in the following paragraphs. District-wise quarterly retail prices have been given in Table 2.

(1) *Rice*.—The price of rice per kg. was Rs. 1.62 during the first quarter except Idikki District. For other periods it varied from Rs. 1.62 to Rs. 1.66 Idikki showed the maximum rate at Rs. 1.66 per kg.

(2) *Chillies*.—The price for chillies per kg. varied from Rs. 7.08 to Rs. 10.26. The minimum price is reported from Idikki and maximum from Ernakulam and Trichur Districts.

(3) *Tapioca*.—The maximum price of Rs. 0.72 per kg. was reported from Cannanore during the 1st quarter. The minimum price reported was Re. 0.46 from Trichur District during the 3rd and 4th quarters.

(4) *Blackgram*.—The price of blackgram varied from Rs. 2.61 per kg. to Rs. 4.27. The maximum recorded was Idikki District.

(5) *Tea*.—The price of Tea per kg. fluctuated between Rs. 12.64 and Rs. 20.11. The lowest rate is from Idikki and the highest from Quilon.

(6) *Coffee*.—The variation in price is from Rs. 13.93 to Rs. 18.50 per kg. The minimum prices was reported from Idikki and the maximum prices was reported from Ernakulam.

(7) *Sugar*.—The prices of Sugar was reported as Rs. 2.15 per kg. in all Districts during the year.

(8) *Coconut Oil*.—The maximum price per litres reported was Rs. 13.65 and the minimum price was Rs. 8.91.

(9) *Gingelly Oil*.—The price varied from Rs. 8.03 in Kozhikode District to Rs. 11.90 in Trivandrum District.

(10) *Coconut*.—The Price of Coconut per dozen fluctuated between Rs. 9.56 and Rs. 19.22. The maximum price was reported from Idikki and minimum from Trivandrum District.

(11) *Tobacco (Jafna)*.—The price varied from Rs. 10.00 to Rs. 23.87 per kg. The highest price was reported from Idikki District and the lowest price from Trivandrum District.

(12) *Tobacco (Vadakkan)*.—The prices per kg. varied between Rs. 8.00 and Rs. 17.82. The lowest prices reported was from Trivandrum during the IV quarter and the highest price was from Cannanore during 1st quarter.

4. Export of agricultural commodities

The details of foreign export from the ports of Kerala 1975-76 and 1976-77 are furnished in Table 3.

TABLE I
Statement of consumer price index numbers for the agricultural year 1976-77

Serial number	Centre	Year												Average
		July 1976	August 1976	September 1976	October 1976	November 1976	December 1976	January 1977	February 1977	March 1977	April 1977	May 1977	June 1977	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Trivandrum	..	1429	1412	1386	1386	1395	1378	1360	1360	1369	1378	1378	1386
2	Quilon	..	1431	1414	1398	1389	1398	1372	1355	1355	1864	1322	1381	1385
3	Punalur	..	1388	1371	1355	1355	1355	1338	1321	1313	1321	1338	1338	1346
4	Alleppey	..	1413	1387	1371	1362	1371	1362	1337	1328	1382	1337	1345	1357
5	Kottayam	..	1389	1371	1354	1345	1363	1345	1328	1328	1328	1337	1345	1350
6	Ernakulam	..	1437	1410	1393	1393	1402	1384	1367	1367	1375	1384	1393	1392
7	Trichur	..	1451	1425	1408	1399	1408	1382	1364	1364	1364	1373	1382	1393
8	Chalakudy	..	1455	1428	1411	1402	1402	1385	1359	1350	1359	1367	1376	1391
9	Munnar	..	1405	1397	1382	1382	1390	1374	1350	1350	1358	1358	1358	1375
10	Kozhikode	..	1597	1569	1550	1540	1550	1540	1521	1521	1351	1540	1550	1547

TABLE 1.1

Statement showing the Consumer price index numbers from August 1976 to June 1977

Serial number	Centre	August	September	October	November	December	January	February	March	April	May	June
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Trivandrum	164	161	161	162	162	160	158	159	159	160	160
2	Quilon	167	165	164	165	164	162	160	160	161	162	163
3	Punalur	165	163	163	163	163	161	159	158	159	161	161
4	Alleppey	164	162	161	162	162	161	158	157	157	158	159
5	Kottayam	158	156	155	157	157	155	153	153	153	154	155
6	Mundakayam	166	163	162	162	162	160	157	156	156	157	157
7	Munnar	176	174	174	175	175	173	170	170	171	171	171
8	Ernakulam	161	159	159	160	160	158	156	156	157	158	159
9	Chalakudy	164	162	161	161	161	159	156	155	156	157	158
10	Trichur	164	162	161	162	161	159	157	157	157	158	159
11	Palghat	164	162	162	163	163	161	159	158	159	159	161
12	Malappuram	162	160	160	161	161	160	157	157	159	161	161
13	Kozhikode	166	164	163	164	164	163	161	161	162	163	164
14	Meppadi	167	165	164	165	165	163	161	161	163	164	165
15	Cannanore	161	158	157	159	158	156	154	154	155	156	157

TABLE 2
Quarterly average retail price at district headquarters for 1976-77

Commodity	Quarter	Trivandrum	Quilon	Alleppey	Kottayam	Idikki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore
1	2	3	4	5	6	7	8	9	10	11	12	13
Coconut (Per dozen)	I	9.96	12.52	10.86	11.51	15.68	12.50	10.83	10.66	9.87	10.50	9.80
	II	13.70	13.85	13.60	15.61	19.22	17.08	13.93	12.97	11.49	12.49	13.00
	III	11.10	12.15	12.25	15.18	16.80	15.35	12.10	13.60	10.67	13.50	13.00
	IV	9.56	10.49	11.27	13.70	16.04	13.47	11.21	10.29	10.72	11.91	11.92
Coconut oil/ltr.	I	9.68	9.09	9.98	9.00	9.82	9.36	9.52	9.99	9.47	8.91	9.35
	II	13.52	12.49	13.65	11.81	13.21	12.74	12.84	13.26	12.46	12.05	12.69
	III	12.44	11.59	12.76	11.58	12.86	11.70	11.90	12.64	11.95	11.44	12.69
	IV	10.53	9.67	10.72	9.79	10.07	10.04	10.12	10.16	9.78	9.64	10.99
Rice (F.P.)/kg. Medium	I	1.62	1.62	1.62	1.62	1.65	1.62	1.62	1.62	1.62	1.62	1.62
	II	1.62	1.62	1.62	1.62	1.66	1.63	1.62	1.63	1.62	1.64	1.62
	III	1.62	1.63	1.62	1.63	1.65	1.63	1.63	1.64	1.62	1.63	1.63
	IV	1.62	1.64	1.62	1.64	1.65	1.62	1.62	1.64	1.62	1.64	1.62
Black gram/kg.	I	3.78	3.65	3.10	3.65	4.27	3.13	2.85	3.52	3.39	3.52	2.67
	II	3.24	3.28	2.61	3.09	3.84	2.92	2.69	3.02	3.45	3.70	2.71
	III	3.40	3.32	2.65	3.20	3.90	3.20	2.91	3.24	3.27	4.02	2.84
	IV	3.58	3.56	2.86	3.30	3.97	3.40	3.17	3.51	3.35	3.87	2.97
Gingelly oil/ltr.	I	9.34	9.27	9.29	8.58	9.06	9.01	8.83	9.12	8.66	9.03	9.38
	II	10.70	10.05	10.25	9.82	10.02	10.27	10.36	10.55	9.58	9.96	10.16
	III	11.56	10.96	11.03	10.22	10.69	10.70	10.63	10.93	10.59	9.58	11.46
	IV	11.90	11.81	10.97	10.48	10.75	10.83	10.80	10.35	10.30	9.90	11.53
Tapioca/kg.	I	0.53	0.60	0.57	0.56	0.60	0.60	0.48	0.50	0.47	0.53	0.72
	II	0.50	0.50	0.57	0.51	0.56	0.60	0.48	0.50	0.51	0.54	0.70
	III	0.50	0.50	0.49	0.49	0.50	0.60	0.46	0.49	0.55	0.53	0.70
	IV	0.50	0.50	0.51	0.50	0.50	0.57	0.46	0.50	0.56	0.50	0.71

D—Black gram dhali.

TABLE 2—(cont.)

Commodity	Quarter	Trivandrum	Quilon	Alleppey	Kottayam	Idikki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore
1	2	3	4	5	6	7	8	9	10	11	12	13
Sugar (F.P.)/kg.	I	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	II	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	III	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	IV	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Chillies/kg.	I	8.91	8.31	8.29	8.59	8.77	9.06	8.54	8.98	8.18	7.67	8.53
	II	9.16	8.70	8.44	8.42	7.82	8.79	8.86	8.98	7.39	8.38	8.90
	III	9.67	9.18	9.20	9.48	7.08	10.26	9.84	9.58	8.40	9.15	9.49
	IV	9.28	9.10	8.83	9.23	8.50	10.03	10.03	9.40	8.80	8.80	9.21
Coffee powder/kg.	I	16.70	16.70	16.70	16.70	13.93R	17.00	16.70	16.03	16.70	17.00	16.70
	II	16.70	16.70	16.70	16.70	15.00R	17.25	16.70	16.40	16.70	16.77	16.70
	III	17.97	17.90	17.63	18.03	16.00R	18.25	18.03	17.72	17.77	17.77	18.12
	IV	18.30	18.30	18.30	18.30	16.00R	18.50	18.30	18.30	18.49	18.30	18.30
Tea/kg.	I	16.82	17.04	17.12	17.12	12.64P	17.04	17.04	16.82	17.50	18.01	17.04
	II	16.82	17.01	17.12	17.12	12.93P	17.04	17.04	17.03	17.50	17.42	17.04
	III	18.09	18.18	18.03	18.20	13.73P	18.18	18.31	18.01	18.03	17.98	18.03
	IV	19.20	20.11	18.68	19.50	13.88P	49.93	19.52	18.75	19.50	18.56	20.05
Tobacco/kg. (Jaffna)	I	16.00	13.39	14.91	15.33	23.87	17.00	18.50	..	..	..	..
	II	15.00	12.79	13.33	14.87	20.40	16.47	18.40	..	..	..	..
	III	12.33	11.44	12.42	14.96	18.83	15.00	14.02	..	..	..	..
	IV	10.00	11.63	12.23	15.00	14.57	15.00	12.75	..	..	..	..
Tobacco/kg. (Vadakkkan)	I	15.00	10.00	13.94	14.38	17.50	15.00	15.00	16.47	16.00	17.33	17.82
	II	14.00	10.00	11.97	13.23	17.50	14.73	14.93	15.42	15.27	15.53	16.85
	III	11.25	..	10.64	11.63	16.92	14.00	12.83	14.50	14.50	14.08	16.42
	IV	8.00	..	10.62	12.78	13.60	14.00	11.75	13.00	13.48	14.51	15.07

TABLE 3
Foreign export from the Ports of Kerala in 1975-76 and 1976-77
(Value Rs. in lakhs)

Sl. No.	Commodity	Unit	1975-76		1976-77	
			Quantity	Value	Quantity	Value
1	Cardamom	M.T.	439	404.12	207	377.35
2	Cashew Kernels	M.T.	61,507	9,302.52	46,288	11,421.62
3	Cashew shell oil	'000 ltr.	5,567	111.22	3,547	75.27
4	Coffee	M.T.	25,232	2,219.94	12,616	4,548.09
5	Coir and coir products	M.T.	36,913	1,954.11	45,203	2,341.04
6	Ginger	M.T.	2,123	204.39	1,685	250.91
7	Lemongrass oil	'000 ltr.	294	116.62	244	158.35
8	Marine products	M.T.	30,210	7,529.79	29,621	7,231.74
9	Oil cakes	M.T.	..	..	1,036	18.99
10	Pepper	M.T.	17,339	3,187.50	20,191	4,076.79
11	Rubber Manufacture	Value	..	108.02	..	162.42
12	Tea	M.T.	33,260	3,815.08	53,870	8,925.28
13	Wood and timber	Value	..	1,007.99	..	1,576.28
14	Sundries	Value	..	3,536.25	..	6,823.46
	Total	..	..	33,497.55	..	47,987.59

Note:—Figures are provisional.

NOTES ON CERTAIN CROPS IN KERALA

(1) Tea

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

Climate.—A hot moist climate is most suitable for tea plantation, the temperature varying from 55°F to 95°F and an annual rainfall ranging between 100 to 130 inches. Tea is usually cultivated at altitudes ranging from 3000 feet to 5000 feet, above mean sea level.

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

Planting.—After removing the forest growth and providing for roads, drains and building sites the planting is done. The actual spacing of the plants will depend upon the layout of the land used for cultivation. They are usually planted in square rectangular or triangular patterns suitably spaced so that when mature they cover the ground almost completely without overcrowding and providing for a coverage of about 3000 plants per acre. "Hedge Planting" i.e., planting in rows 5' apart with a spacing of 2' between the bushes in a row is also done in new estates. Before planting is done pits of 9" square and 18" deep are taken and the pits filled with the soil best suited for the cultivation of tea.

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

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

Plucking.—Plucking is usually done by women and children. The young and freshly sprouted leaves with "two leaves and a bud" are plucked. Plucking is done throughout the year in several rounds.

The period of one round varies according to the altitude of the land. In the high ranges the plucking rounds cover a period up to fourteen days whereas in the plains the period is only seven or eight days.

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

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

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

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

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

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

The last two processes are grading and packing. There are two important classifications of grade. They are leaf grades and broken grades. The former group is mainly divided into orange pekoe and pekoe souchong; broken orange pekoe, broken pekoe souchong. Fanning and dust are important broken grades. They are then packed category-wise and sent to the market for sale.

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

(2) Coffee

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

Climate.—Coffee is a tropical plant. It is successfully cultivated in places where the altitude is ranging between 1500 and 6000 feet, above mean sea level. The most suitable altitude is between 2500 ft. to 5000 ft. It needs a well distributed rainfall of about 60 to 80 inches per annum and a distinct rainy and dry season with a minimum average temperature of 70°F. A good dry spell from about December to March with a few intermittent showers in March and April and heavy rainfall in July and August constitute ideal condition for the growth of the coffee plant (Report of the Plantation Enquiry Commission of Coffee, 1956, Government of India).

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

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

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

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

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

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

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

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

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

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them and the pulpy skin of the cherries are automatically removed. Then those cherries are put into big tanks for about 24 hours. A jelly like substance known as 'Honey' will be formed by these cherries due to fermentation. This honey is removed by thorough washing (canals). Then these cherries are spread out to dry for 2 to 3 weeks. When these are completely dried they are put through hulling and polishing machines. The coffee prepared by the wet method is called parchment. For preparing parchment coffee only ripe berries can be utilised.

Berries at different stages of maturity have to be converted into cherries. They are then graded and packed. The important grades are arabica, cherry, arabica parchment robusta cherry and robusta parchment.

(3) Rubber

In India, attempts were first made to plant rubber in Belgeum and Ratnagiri in the Bombay State. 94 per cent of the total area under rubber is in the Kerala State. 92 per cent of the total production of rubber in India is also from Kerala. India's place in the world acreage under rubber is comparatively very low. India's production comes to 2.2 per cent of the total world output of natural rubber. Before a tyre factory was established in India in 1938 the raw rubber was exported to the foreign countries. Owing to a record production of rubber on the one hand and the lower off take by the industry on the other, rubber experienced a problem of surplus in the last one or two years. Consequently rubber growers in the country were confronted with a perceptible fall in rubber prices. Even State intervention by way of fixation of a floor price and the entry of the State Trading Corporation into the market could not solve the problem to any considerable extent.

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

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

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

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

Diseases.—There are two serious leaf diseases of rubber now prevailing in India. They are 'ordium hevea' and '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 Best is prevalent in the trees which are used for frequent tapping. The symptom of the disease is the cessation of the latex production by the trees in the affected portion of the bark.

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

Climate.—The best climate suitable for the cardamom cultivation is a warm and humid atmosphere with a temperature ranging between 50°—95°F. It is cultivated in the shades of huge forest trees. Cardamom plants require a fairly well distributed and annual rainfall of 60—80 inches. The best altitude for cardamom planting is between 2500 to 5000 ft.

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

Planting.—During February–March the forest land chosen for planting the cardamom is cleared. But care is taken that big trees providing shades are not cut down. Small pits of 2 ft. squares and one foot deep are dug, the distance between one pit and the next varying from 8 to 10 ft. thus providing for about 700 pits in one acre of land. During the month of May or June when the south-west monsoon sets in, the seeds are sown. Cardamom plants are usually prepared in specialised nurseries. The plants raised from seeds are usually free from any kind of diseases. When these plants attain one year of growth they are transplanted. Usually two plants are planted in one pit. In August–September the stagnant water is allowed to drain off.

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

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

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

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

Diseases.—The most important diseases affecting the cardamom plantations, is the virus diseases 'Katte' which is rampant in most cardamom plantations. The symptom of the diseases is the mottling or curling of the leaves and degeneration of the clumps. The remedy lies in the roguing of affected plants. Another menace is that caused by thrips, mite, etc. Dusting the plants with gamaxene is the remedy.

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

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

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

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

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

(5) Pepper

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

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

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

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

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

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

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

Life of the plant.—The life of the plant ranges between 25 to 30 years. But rarely some varieties have been found to live up to 60 years.

Manure.—The best manures to be used for the pepper gardens are powdered bean-cake, fish 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

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

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

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

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

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

Manure.—Usually cattle manures are used.

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

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

(0.05 per cent) for treating the rhizomes sorted as seed is advocated as preventive measure. Another important disease is known as 'varnicularia'. The leaves become covered with yellowish and brownish spots and gradually dry up. Spraying with Bordezex mixture is suggested in such cases.

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

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

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

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

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

(7) Lemongrass oil

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

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

Soil.—It flourishes in hard laterite soils.

Cultivation.—Fertile hill slopes with hard laterite soils are selected for the cultivation. During February–March the site selected is first cleared of all undergrowth vegetation by burning them. In April–May the land is ploughed and is prepared into long narrow beds for cultivation of lemongrass. Usually in one acre 15 to 20 lbs., of seeds are sown. The seeds are sown broadcast. The crop is also grown by transplanting of seedlings raised in separate nurseries. There are two varieties of lemongrass, red stem and white stem. The former variety gives better quality of oil containing greater quantity of citral.

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

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

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

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

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

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

Lemongrass oil is packed in steel drums which has a capacity of 40 to 45 gallons. Lemongrass oil is mainly exported to U.S.A. and U.K.

6. Classification of soils in Kerala

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

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

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

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

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

8. Average analysis and important fertilisers

Sl. No.	Name of fertiliser	Nitrogen (N. per cent)	Phosphate (P_2O_5)	Potash (K_2O)
(1)	(2)	(3)	(4)	(5)
1.	Ammonium Sulphate Nitrate	26.0	..	..
2.	Ammonium Sulphate	20.5	..	..
3.	Ammonium Nitrate	33.5	..	..
4.	Ammonium Phosphate	16.0	20.0	..
5.	Calcium Ammonium Nitrate	20.5	..	..
6.	Nitrate of Soda	16.5	..	..
7.	Calcium Nitrate	15.3	..	..
8.	Calcium Cyanamide	20.0	..	..
9.	Urea	46.0	..	..
10.	Super Phosphate—Single	..	18.00	..
11.	Super Phosphate—Double	..	35.00	..
12.	Super Phosphate	..	45.00	..
13.	Rock Phosphate	..	28.3	..
14.	Hyper Phosphate	..	27.3	..
15.	Sulphate of Potash	..	..	48.00
16.	Muriate of Potash	..	..	50.00
17.	Groundnut Cake	7.00	1.5	1.3
18.	Castor Cake	4.3	2.0	1.0
19.	Mustard Cake	4.5	1.5	..
20.	Muhua Cake	2.5	0.8	1.8
21.	Neem Cake	5.2	1.0	1.4

<i>Sl. No.</i>	<i>Name of fertiliser</i>	<i>Nitrogen (N. per cent)</i>	<i>Phosphate (P₂O₅)</i>	<i>Potash (K₂O)</i>
(1)	(2)	(3)	(4)	(5)
22.	Gingelly Cake	6.2	2.0	1.2
23.	Coconut Cake	3.0	1.9	1.8
24.	Poultry Manure	1.2—1.5	..	..
25.	Sheep Manure	0.8—6	..	..
26.	Horse Manure	0.8—6	..	..
27.	Farm Yard Manure	0.4	0.3	0.2
28.	Fresh Cow Dung	1.57	0.25	0.18
29.	Compost	0.5	0.25	0.5
30.	Bone Meal	3.5	21.0	..
31.	Fish Meal	4.10	3.0	0.3
32.	Blood (Dried)	11.5	1.5	0.6
33.	Meat Meal	11.0	..	0.6
34.	White Fish Meal	10.0	10.0	1.0

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

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

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

10. List of reporting raingauge stations in Kerala

Trivandrum District

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

Quilon District

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

Alleppey District

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

Kottayam District

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

Idikki District

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

Ernakulam District

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

Trichur District

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

Palghat District

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

Malappuram District

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

Kozhikode District

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

Cannanore District

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

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

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

Quilon District

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

Alleppey District

Alleppey

Kottayam District

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

Ernakulam District

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

Trichur District

Pazhayannur

Palghat District

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

Kozhikode District

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

Cannanore District

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

NON-REPORTING RAILWAY RAINGAUGE STATIONS

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

11. Glossary of English, Botanical and Malayalam names of crops

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

Pulses

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

Sugar

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

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

Fruits

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

Vegetables

1.	Tapioca	Maracheeni	Manihot Utilissima
2.	Elephantear	Chembu	Celocasiantiquorum
3.	Elephant foot	Chena	Amorphophallus
4.	Potato	Uralakizhangu	Solanumtuberosum

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

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List of Publications

1. Annual Administration Report.
2. Basic Statistics relating to Kerala Economy—1956-57 to 1973-74.
3. Demographic Report of Kerala—1901-1961 (with addendum for 1971).
4. Land Reforms Survey of Kerala—1968.
5. The Third Decennial World Census of Agriculture 1970-71—Report for Kerala State Vols. I and II.
6. Statistical Hand Book of Kerala—1972 (latest).
7. Fact Book on Man Power—1976.
8. Planning for Employment—1976.
9. An assessment of the camp performance and the unprotected couples in Palghat District after the mass camp—October 1976.
10. Statistics for Planning—1977.
11. Report on "Timely Reporting Survey" of Agricultural Statistics—1975-76 and 1976-77.
12. Crop Cutting Survey Report—Paddy—Season-wise 1975-76 and 1976-77.

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1. Kerala in Maps—1978.
2. Statistics for Planning—1977.
3. Man Power Studies, Vol. II and III.
4. Statistical Hand Book of Kerala—1979.
5. Fact Book on Man Power—1976.
6. Growth of Factory Employment in Kerala—1961-77.
7. Mini Industrial Estates—1979.
8. Planning for Employment—1976.
9. Report on Timely Reporting Survey of Agricultural Statistics—1976-77.
10. Crop-cutting Survey Reports—Paddy—Season-wise—1976-77.
11. Basic Statistics Relating to Kerala Economy—1956-57—1973-74.
12. Demographic Reports of Kerala—1901-61 (with addendum for 1971).
13. Land Reforms Survey of Kerala—1978.
14. Facts and Figures—Kerala—1979.
15. An assessment of the camp performance and the unprotected couples in Palghat District after mass camp—October 1976.

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