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CONSOLIDATED RESULTS OF CROP  
ESTIMATION SURVEYS

1978-79 to 1980-81

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Government of Kerala  
1983

AGRICULTURAL STATISTICS DIVISION  
DIRECTORATE OF ECONOMICS AND STATISTICS  
TRIVANDRUM  
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## FOREWORD

This report on the consolidated results of crop estimation surveys relates to the period 1978-79 to 1980-81. The methodology employed in crop cutting experiments on major crops viz. Paddy, Tapioca, Coconuts, Arecanut, Cashew and Pepper and minor crops selected for the years are briefly described in this. Four minor crops are selected each year and during the period under review the crops taken up for crop cutting experiments were Mango, Ginger, Turmeric and Sweet Potatoe in 1978-79, Tamarind, Pulses, Groundnut and Cotton in 1979-80 and Cocoa, Pappaya, Lemongrass and Cardamom during 1980-81.

The report was prepared by the Agricultural Statistics Division of the Directorate.

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Trivandrum,  
14-10-1983.

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## CONSOLIDATED RESULTS OF CROP ESTIMATION SURVEYS 1978-81

### 1. Introduction :

Crop estimation survey on paddy and tapioca were being conducted regularly in the state even before the introduction of the scheme of Establishment of an Agency for reporting Crop Statistics in Kerala. During 1976-77, these surveys were extended to four other important crops viz, Coconut, Arecanut, Cashew and Pepper and they were being conducted on a regular basis. From 1977-78 onwards, crop cutting experiments on minor crops were being conducted, covering four crops during each year. This report gives a brief review of the crop estimation surveys conducted during 1978-79, 1979-80 and 1980-81.

### 2. Objective, Coverage and Design :

*Objective.*—The primary object of the surveys was to obtain through crop cutting experiments estimates of average yield per hectare of paddy at the taluk level and of other crops at the district level with reasonable precision and to estimate the outturn of these crops in the state.

*Coverage*—The experiment for a crop was limited to the taluk where the area of the crop was sizable. Number of taluks where the surveys were planned and the number where they were actually conducted for the years 1978-79, 1979-80, 1980-81 is given in the Table I appended.

TABLE—1

Crop	1978-79		1979-80		1980-81	
	No. of Taluks where the surveys were		No. of Taluks where the surveys were		No. of Taluks where the surveys were	
	Planned	Conducted	Planned	Conducted	Planned	Conducted
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Paddy						
Autumn	57	53	57	53	57	53
Winter	57	56	57	56	57	56
Summer	49	47	56	50	49	49
2. Tapioca	53	50	53	51	53	51

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
3. Coconut	56	56	54	53	53	53	53
4. Arecanut	44	43	42	42	42	42	42
5. Cashewnut	36	36	36	36	35	34	34
6. Pepper	38	38	44	44	43	43	43
7. Mango	57	56	—	—	—	—	—
8. Ginger	15	15	—	—	—	—	—
9. Turmeric	16	16	—	—	—	—	—
10. Sweet-potatoe	10	10	—	—	—	—	—
11. Tamarind	—	—	33	31	—	—	—
12. Pulses	—	—	30	—	—	—	—
13. Groundnut	—	—	1	1	—	—	—
14. Cotton	—	—	1	1	—	—	—
15. Cocoa	—	—	—	—	24	23	23
16. Pappaya	—	—	—	—	44	44	44
17. Lemongrass	—	—	—	—	7	6	6
18. Cardamom	—	—	—	—	7	7	7

*Design*.—The crop cutting experiment starts with locating and marking of plot of specified size in the case of paddy, tapioca, ginger, turmeric, sweet-potatoe, pulses, groundnut, cotton, lemongrass and cardamom or locating and marking of trees/standards/plants in the case of other crops using random sampling method. The produce at harvest are weighed or counted as the case may be and recorded in the prescribed proforma together with other relevant details.

2.1. *Paddy*.—A stratified multi stage random sampling design is adopted for the survey. Crop cutting experiments on paddy are conducted separately during each season viz. Autumn, winter and summer in the villages selected for T. R. S. in each Taluk. The taluk is treated as stratum, revenue village as first stage unit, survey subdivision number as the second stage unit, and square plot of side 5 metres as the ultimate sampling unit. The produce of the plot was harvested, threshed, winnowed and weight of produce taken. Driage ratio was determined by processing sample grains taken from a sub sample plot.

2.2. *Tapioca*.—The required number of plots are selected from the list of wet & dry plots. The plots are visited to ascertain its suitability for conducting the experiment. If the plot is not suitable for conducting the experiment, next plot is visited till a suitable plot is found. If the selected plot contains more than one patch then one patch is selected by random sampling method. An area of 2 x 2 sq. metres is fixed for conducting the

experiment. All tapioca plants inside the square plot was harvested. The produce were cleaned by removing the soil sticking to the tuber and then weight of the produce recorded.

2.3. *Ginger, turmeric, sweet potatoe, pulses, groundnut, cotton lemongrass and Cardamom.*—The required number of plots were selected from the list of dryland plots in the case of ginger, turmeric, groundnut, cotton, lemongrass and cardamom and in the case of sweet potatoe and pulses the selection of plots was done from the list of wet and dry plots. As in the case of other crops, suitable plot was selected proceeding by the order of plots in the list used for selection. Except for groundnut and cardamom, the selected plots were of size 2 x 2m. A 5x5 m square plot was selected for groundnut and a 10 x 10m. squares plot for cardamom.

The produce in the selected plot was harvested, the cleaned produce weighed and weight recorded.

2.4. *Coconut, Arecanut, Cashew, Pepper, Mango, Tamarind, Cocoa and Pappaya.*—From the list of dry land plots the required number of plots for each crop is selected by simple random method. The plots are visited to ascertain its suitability for conducting the experiment i.e. to see whether it contains the required number of trees/standards. If it is not suitable, the next plot is visited in succession till a suitable plot is obtained. From each selected plot the required number of bearing trees/standards are randomly selected for the experiment. For coconut arecanut, cashew, pepper and cocoa, five trees are selected and for Mango, Tamarind & Pappaya, two trees. The details of produce harvested are recorded in the prescribed proforma.

### 3. Sample size :

The total number of crop cutting experiments planned during the years on 1978-79, 1979-80 and 1980-81 are given below.

Crop		Year		
		1978-79	1979-80	1980-81
(1)		(2)	(3)	(4)
1. Paddy	Autumn	1404	1491	1430
	Winter	1427	1476	1458
	Summer	1148	1192	1081
2. Tapioca		1224	1245	1230
3. Coconut		514	518	518
4. Arecanut		415	400	400
5. Cashew		394	390	390
6. Pepper		381	394	394
7. Mango		255	..	..

(1)	(2)	(3)	(4)
8. Ginger	200	..	..
9. Turmeric	210	..	..
10. Sweet Potatoe	190	..	..
11. Tamarind	..	220	..
12. Pulses	..	210	..
13. Groundnut	..	30	..
14. Cotton	..	30	..
15. Cocoa	..	..	220
16. Pappaya	..	..	220
17. Lemongrass	..	..	68
18. Cardamom	..	..	69

#### 4. *Field work :*

The field work of the surveys comprising of selection of fields, identification of selected field, location and marking of plot or trees for the experiments, recording the weight (number of nuts) of the harvested produce was done by the investigators of the department, under the supervision of the Taluk Statistical Inspectors and District level Officers.

The planning of the survey, and the statistical analysis of the data collected were done at the Directorate. The quality check of the work of the field staff and tabulation in respect of the survey on paddy were done, by the Deputy Director, Regional Tabulation Centres.

#### 5. *Training :*

Training classes were conducted both at regional level and district level. Training was imparted at regional level to the supervisors and at district level to all the Investigators engaged in the primary work of the survey Officers from the head quarters and from National sample survey organisation also participated in the training.

#### 6. *Response :*

The number of experiments, planned analysed and the percentage response in respect of paddy during the three seasons in each district is given in tables 1.1, 1.2 and 1.3 in the appendix. Details regarding number of experiments planned, analysed and mean yield per hectare relating to all crops for the three years 1978-79, 1979-80 and 1980-81 are given in tables 7 to 24.

#### 7. *Supervision :*

The field work of the investigators were supervised by the Statistical Inspectors at taluk level. District level officers and Regional officers also conducted inspections. All inspecting officers at



district level had to conduct harvest stage inspections at the rate of one experiment in each taluk in the case of paddy while the taluk level supervisors had to supervise one randomly selected experiment in each investigator unit subject to a minimum of six experiments in a taluk in each season. As far as tapioca is concerned the district level officers had to conduct inspections at the rate of 3 experiments in a district while the taluk Statistical Inspectors had to inspect 5 experiments or 50% of the experiments planned in a taluk, whichever is less. Over and above this, inspections at preharvest and post harvest stages were done by the Statistical Inspectors and District Statistical Officers.

Independent estimates of average yield of paddy based on the experiments inspected at harvest stage are furnished in table 2 in the appendix.

#### 8. Results :

The estimated meanyield of dry paddy, the percentage sampling error and the total production of rice during the three seasons for the year 1978-79, 1979-80 and 1980-81 are given in tables 3.1 to 3.4 in the appendix.

During the year 1978-79, crop cutting experiments were not conducted in I.A.D.P. series during Autumn 1978 in Alleppey district and Summer 1979 in Palghat district. During the other seasons, crop cutting experiments were conducted in I.A.D.P. series at Palghat & Alleppey. But the results of the state series and I.A.D.P. series in the district were found to be not poolable as the statistical test of significance of means turned out to be highly significant. During the year 1979-80, crop cutting experiments in I.A.D.P. series were conducted only in Alleppey district during Autumn 1979. I.A.D.P. series of experiments has been discontinued from winter 80 onwards.

The yield rates and the production of rice obtained through the two series of experiments during 1978-79 and 1979-80 are given in Table 4.1 and 4.2 in the Appendix. The results of experiments conducted for ascertaining the percentage recovery of dry paddy from harvested produce for 1978-79, 1979-80 and 1980-81 are given in Table 5 in Appendix. The weight of cleaned rice is reckoned as 65.7% of dry paddy.

The statement showing the percentage area under different agricultural practices during the three paddy crop seasons during 1978-79, 1979-80 and 1980-81 as obtained from the experimental plots are given in tables 6.11 to 6.33 in the Appendix. The estimated meanyield rates and the total production of raw tapioca in each district and the state for 1978-79 to 1980-81 are presented in table 7 in the Appendix. Similar statements for Coconut, Arecanut, Cashew, pepper, Sweet potatoe, Ginger, Turmeric Mango, Tamarind, Cotton, Groundnut, Horsegram, Cardamam, Lemengrass, Cocoe and Pappaya are given in the tables 8 to 23 in the Appendix.

TABLE No. 1.1

## Coverage sample size and response

Year—1978-79.

Crop—Paddy

Districts	Autumn			Winter			Summer			Total		
	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments
	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	114	111	97	114	113	99	92	92	100	320	316	99
Quilon	146	145	99	152	149	98	91	84	92	389	378	97
Alleppey	174	168	97	154	148	96	134	127	95	462	443	96
Kottayam	104	100	96	107	100	93	54	39	72	265	239	90
Idukki	36	36	100	58	57	98	..	..	..	94	93	99
Ernakulam	192	190	99	190	175	97	127	126	99	499	491	98
Trichur	140	138	99	140	136	97	145	138	95	425	412	97
Palghat	150	145	97	150	148	99	133	129	97	433	422	97
Malappuram	114	110	96	114	112	98	102	102	100	330	324	98
Kozhikode	84	80	95	96	94	98	100	96	96	280	270	96
Cannanore	150	149	99	162	161	99	170	170	100	482	480	99
<b>TOTAL</b>	<b>1404</b>	<b>1372</b>	<b>98</b>	<b>1427</b>	<b>1393</b>	<b>98</b>	<b>1148</b>	<b>1103</b>	<b>96</b>	<b>3979</b>	<b>3868</b>	<b>97</b>

TABLE No. 1.2

## Coverage sample size and response

Crop—Paddy

Year—1979-80.

Districts	Autumn			Winter			Summer			Total		
	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments	No. of experiments
	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response	Planned	Analysed	Percentage response
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	114	109	96	114	114	100	96	96	100	324	319	98
Quilon	152	148	97	152	151	99	116	67	58	420	366	87
Alleppey	192	186	97	192	184	96	144	136	94	528	506	96
Kottayam	110	104	95	110	107	97	92	51	55	312	262	84
Idukki	66	42	64	66	66	100	..	..	..	132	108	82
Ernakulam	195	195	100	180	180	100	120	116	97	495	491	99
Trichur	140	134	96	140	136	97	126	114	90	406	384	95
Palghat	150	149	99	150	148	99	126	126	100	426	423	99
Malappuram	114	113	99	114	113	99	102	102	100	330	328	99
Kozhikode	96	84	88	96	96	100	100	93	93	292	273	93
Cannanore	162	149	92	162	162	100	170	177	104	494	488	99
<b>TOTAL</b>	<b>1491</b>	<b>1413</b>	<b>95</b>	<b>1476</b>	<b>1457</b>	<b>99</b>	<b>1192</b>	<b>1078</b>	<b>91</b>	<b>4159</b>	<b>3948</b>	<b>95</b>

TABLE No. 1.3

## Coverage sample size and response

Crop—Paddy

Year—1980-81.

Districts	Autumn			Winter			Summer			Total			
	Planned	Analysed	Percentage Response	Planned	Analysed	Percentage Response	Planned	Analysed	Percentage Response		Planned	Analysed	Percentage Response
Trivandrum	114	114	100	114	112	98	96	92	96	324	313	98	
Quilon	152	150	99	152	151	99	45	45	100	349	346	99	
Alleppey	180	174	97	180	176	98	132	128	97	492	478	97	
Kottayam	104	102	98	104	101	97	30	30	100	238	233	98	
Idukki	42	42	100	66	66	100	..	..	..	103	103	100	
Ernakulam	200	194	97	180	180	100	130	128	98	510	502	98	
Trichur	140	139	99	140	137	98	134	130	97	414	406	98	
Palghat	150	142	95	150	147	98	129	124	96	429	413	96	
Malappuram	114	83	77	114	109	96	105	101	96	333	298	89	
Kozhikode	84	83	99	96	96	100	100	96	96	230	275	93	
Cannanore	150	149	99	162	161	99	180	179	99	492	489	99	
<b>TOTAL</b>	<b>1430</b>	<b>1377</b>	<b>96</b>	<b>1458</b>	<b>1436</b>	<b>98</b>	<b>1081</b>	<b>1053</b>	<b>97</b>	<b>3969</b>	<b>3866</b>	<b>97</b>	

TABLE—2.1

**Supervision of field work—Rice—Independent estimate of mean yield of paddy  
based on harvest stage inspection 1978-79**

District/ State	Season	No. of experiments			Meanyield rate of paddy (kg./hect.)		
		Planned for inspection at harvest stage	Inspected at harvest stage	(3)	Before driage stage	After driage	Driage ratio used for columns (5 & 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Trivandrum	Autumn	63	69	2440	2096	0.859	
	Winter	56	57	2612	2223	0.855	
	Summer	56	23	1344	1143	0.854	
Quilon	Autumn	69	69	2996	2533	0.847	
	Winter	38	88	2803	2474	0.881	
	Summer	52	46	1568	1353	0.863	
Alleppey	Autumn	62	81	2304	2004	0.870	
	Winter	80	78	2388	2175	0.911	
	Summer	66	65	4312	3839	0.902	
Kottayam	Autumn	53	62	2912	2551	0.876	
	Winter	66	62	2592	2335	0.901	
	Summer	36	34	3744	3471	0.927	
Idukki	Autumn	19	14	3272	2729	0.834	
	Winter	30	27	3372	2944	0.873	
	Summer	..	..	..	..	..	

TABLE 2.1—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ernakulam	Autumn	70	86	2892	2548	0.881
	Winter	78	60	2160	1953	9.904
	Summer	72	49	1568	1402	0.894
Trichur	Autumn	75	73	2240	1873	0.836
	Winter	62	59	1925	1707	0.887
	Summer	60	44	2136	1873	0.877
Palghat	Autumn	86	69	3480	3139	0.902
	Winter	68	68	2584	2372	0.918
	Summer	64	28	2360	2181	0.924
Malappuram	Autumn	65	39	2572	2287	0.889
	Winter	50	42	2116	1917	0.906
	Summer	28	20	3248	2978	0.917
Kozhikode	Autumn	65	42	1348	1190	0.883
	Winter	50	55	1436	1298	0.904
	Summer	50	43	2053	1873	0.911
Cannanore	Autumn	65	56	2000	1796	0.898
	Winter	76	49	2084	1880	0.902
	Summer	78	44	2048	1907	0.931
STATE	Autumn	702	660	2592	2255	0.870
	Winter	704	645	2362	2119	0.897
	Summer	562	396	2564	2308	0.900

TABLE 2.2

Supervision of field work—Rice—Independent estimate of mean yield of paddy  
based on harvest stage Inspection 1979-80

District/State	Season	No. of experiments			Meanyield rate of paddy (kg. / hect).		
		Planned for inspection at harvest stage	Inspected at harvest stage	(3)	Before driage	After driage	Driage ratio used for colms (5 & 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Trivandrum	Autumn	56	33	2528	2172	0.859	
	Winter	61	65	2384	2069	0.868	
	Summer	96	54	1191	1035	0.869	
Quilon	Autumn	74	74	2568	2173	0.846	
	Winter	82	63	3400	3006	0.884	
	Summer	116	45	1507	1326	0.880	
Alleppey	Autumn	93	65	2532	2167	0.856	
	Winter	103	62	2622	2389	0.911	
	Summer	144	50	4149	3747	0.903	
Kottayam	Autumn	52	62	3492	3062	0.877	
	Winter	60	42	2496	2276	0.912	
	Summer	92	28	3529	3263	0.926	
Idukki	Autumn	20	20	3608	3005	0.833	
	Winter	37	18	3216	2872	0.893	
	Summer	..	..	..	..	..	

TABLE 2.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ernakulam	Autumn	94	77	2672	2266	0.848
	Winter	96	65	2468	2226	0.902
	Summer	120	56	2623	2378	0.905
Trichur	Autumn	67	54	1760	1512	0.859
	Winter	75	45	2274	2042	0.898
	Summer	126	52	3021	2743	0.908
Palghat	Autumn	72	45	4208	3817	0.907
	Winter	80	46	3229	2964	0.918
	Summer	126	63	2788	2526	0.906
Malappuram	Autumn	50	43	2216	1961	0.885
	Winter	61	34	1921	1746	0.909
	Summer	102	51	3731	3388	0.908
Kozhikode	Autumn	48	40	1652	1477	0.894
	Winter	52	17	2216	2023	0.913
	Summer	100	49	1900	1721	0.906
Cannanore	Autumn	75	43	2184	1953	0.894
	Winter	87	40	2364	2170	0.918
	Summer	170	50	2185	2025	0.927
State	Autumn	701	556	2648	2298	0.868
	Winter	794	497	2622	2368	0.903
	Summer	1192	498	2632	2379	0.904



TABLE 2.3  
 Supervision of field work rice—Independent estimate mean yield of paddy  
 based on harvest stage inspection—1980-81

District/State	Seasons	No. of experiments			Mean yield rate of paddy (kg./hect.)		Driage ratio used for cols (5&6)
		Planned for inspection at harvest stage	Inspected at harvest stage	Before drriage	After drriage		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Trivandrum	Autumn	61	52	2549	2207	0.866	
	Winter	61	74	2348	2059	0.877	
	Summer	52	60	1357	1216	0.896	
Quilon	Autumn	82	78	2828	2460	0.870	
	Winter	82	77	2841	2523	0.888	
	Summer	29	27	1604	1432	0.893	
Alleppey	Autumn	97	79	2553	2206	0.864	
	Winter	103	91	2502	2267	0.906	
	Summer	73	74	2868	2616	0.912	
Kottayam	Autumn	57	60	2996	2676	0.893	
	Winter	60	62	2950	2693	0.913	
	Summer	20	15	3157	2891	0.916	
Idukki	Autumn	23	22	2968	2330	0.785	
	Winter	35	34	3122	2792	0.826	
	Summer	..	..	..	..	..	

TABLE 2.3 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ernakulam	Autumn	107	88	2521	2211	0.877
	Winter	106	88	2254	2069	0.918
	Summer	72	76	2046	1858	0.908
Trichur	Autumn	75	60	2067	1840	0.899
	Winter	75	65	1861	1673	0.899
	Summer	72	58	2939	2677	0.911
Palghat	Autumn	80	49	3337	2983	0.894
	Winter	80	59	3094	2819	0.911
	Summer	70	54	2569	2307	0.893
Malappuram	Autumn	61	46	1820	1598	0.878
	Winter	61	58	2239	2037	0.910
	Summer	57	81	2449	2212	0.903
Kozhikode	Autumn	45	42	1522	1338	0.879
	Winter	52	53	1662	1509	0.908
	Summer	54	50	2379	2187	0.919
Cannanore	Autumn	80	34	2233	1998	0.895
	Winter	87	49	2094	1920	0.917
	Summer	96	58	2669	2447	0.917
State	Autumn	768	610	2512	2201	0.876
	Winter	802	710	2439	2207	0.905
	Summer	595	553	2389	2191	0.917

TABLE 3.1

## Yield Estimate—Rice 1978-79

District	Area under crop		No. of experiments				Response %	Estimated yield kg. per hect. of dry paddy	Sampling error%	Total production of rice in tonnes	
	Season	Total	(1)	(2)	(3)	(4)					(5)
Trivandrum	Autumn	15535	114	111	97	2481	4.31	25326			
	Winter	16051	114	113	99	2266	3.84	23895			
	Summer	1494	92	92	100	1251	9.67	1228			
Quilon	Autumn	24611	146	145	99	2424	4.29	39191			
	Winter	25364	152	149	98	2504	3.23	41736			
	Summer	840	91	84	92	1035	23.00	572			
Alleppey	Autumn	29071	174	168	97	1954	6.91	37327			
	Winter	16854	154	148	96	1851	9.24	20495			
	Summer	29576	134	127	95	4031	7.44	78322			
Kottayam	Autumn	13939	104	100	96	2678	10.16	24528			
	Winter	13304	107	100	93	2176	11.12	19024			
	Summer	10206	54	39	72	3297	8.07	22111			
Idukki	Autumn	3162	36	36	100	2599	10.62	5400			
	Winter	5396	58	57	98	2837	7.68	10059			
	Summer	..	..	..	..	1806	..	325			

TABLE 3.1 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	Autumn	41789	100	192	190	99	2437	4.23	66922
	Winter	58928	100	180	175	97	2289	7.51	53552
	Summer	19448	100	127	126	99	1952	38.17	24940
Trichur	Autumn	42441	100	140	138	99	1903	4.78	53070
	Winter	51417	100	140	136	97	2018	4.86	68168
	Summer	21929	100	145	138	95	2207	6.34	31795
Palghat	Autumn	87718	100	150	145	97	3235	4.23	186417
	Winter	83219	100	150	148	99	2887	3.53	157841
	Summer	3476	100	133	129	97	2206	6.84	5038
Malappuram	Autumn	39436	100	114	110	96	2103	4.42	54503
	Winter	36382	100	114	112	98	2010	3.63	48040
	Summer	5644	100	102	102	100	2731	10.11	10127
Kozhikode	Autumn	10718	100	84	80	95	1142	9.89	8041
	Winter	30776	100	96	94	98	2208	7.52	44644
	Summer	4192	100	100	96	96	2522	9.10	7316
Cannanore	Autumn	38407	100	150	149	99	1744	4.01	43999
	Winter	28036	100	162	161	99	2038	6.08	37550
	Summer	6382	100	170	170	100	3182	7.45	13342
State	Autumn	346827	100	1404	1372	98	2391	1.88	544754
	Winter	345727	100	1427	1393	97.62	2333	1.80	530004
	Summer	106684	100	1148	1103	96.08	2832	5.37	198558

TABLE No. 3.2

## Yield Estimate—Rice 1979-80

District	Season	Area under crop, No. of experiments				Planned	Analysed	Response	Estimated yield in kg. per hect. of dry paddy	Sampling error %	Total production of rice in tonnes
		Total	Coverage %	(4)	(5)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
Trivandrum	Autumn	15560	100	114	109	96	2269	4.05	23200		
	Winter	15766	100	114	114	100	2115	4.68	21909		
	Summer	1237	100	96	96	100	1296	12.73	1053		
Quilon	Autumn	23933	100	152	148	97	2224	4.54	34970		
	Winter	25059	100	152	151	99	2741	2.85	45121		
	Summer	903	100	116	67	58	1505	16.35	893		
Alleppey	Autumn	31722	100	192	186	97	2481	5.40	51694		
	Winter	19243	100	192	184	96	1808	6.97	22857		
	Summer	29094	100	144	136	94	4014	5.29	76726		
Kottayam	Autumn	13222	100	110	104	95	2808	9.29	24398		
	Winter	10161	100	110	107	97	2373	7.96	15839		
	Summer	9545	100	92	51	55	3439	20.18	21568		
Idukki	Autumn	3459	100	66	42	64	2899	8.80	6590		
	Winter	4112	100	66	66	100	2974	6.56	8036		
	Summer	255	—	—	—	—	2215	—	371		

TABLE No. 3.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	Autumn	43075	100	195	195	100	2204	3.13	62365
	Winter	38852	100	180	180	100	2102	5.76	53662
	Summer	19228	100	120	116	97	2414	8.29	30492
Trichur	Autumn	40975	100	140	134	96	1860	6.88	50067
	Winter	48420	100	140	136	97	2070	5.02	65849
	Summer	21259	100	126	114	90	2763	7.02	38592
Palghat	Autumn	88981	100	150	149	99	3481	5.43	203505
	Winter	85721	100	150	143	99	3038	3.82	171093
	Summer	4059	100	126	126	100	2611	5.94	6963
Malappuram	Autumn	39445	100	114	113	99	2041	6.96	52909
	Winter	35209	100	114	113	99	1921	4.32	44419
	Summer	5303	100	102	102	100	2775	9.66	10034
Kozhikode	Autumn	9753	100	96	84	88	1329	5.64	8513
	Winter	28673	100	96	96	100	1931	8.80	36400
	Summer	7345	100	100	93	93	1626	12.05	7848
Cannanore	Autumn	38243	100	162	149	52	1970	4.62	49492
	Winter	28392	100	162	162	100	2213	5.38	41276
	Summer	6357	100	170	177	104	2440	5.53	10991
State	Autumn	348373	100	1491	1413	95	2481	2.34	567703
	Winter	339608	100	1476	1457	99	2359	1.88	526461
	Summer	105285	100	1192	1078	91	2971	3.53	205531

TABLE No. 3.3

## Yield Estimate Rice 1980-81

District	Season	Area under crop.			No. of Experiments			Estimate of yield in kg. per hect. of dry paddy	Sampling error %	Total production of rice in tonnes
		Total	Coverage %	Planned	Analysed	Response %				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Trivandrum	Autumn	15361	100	114	114	100	2248	7.38	22685	
	Winter	16115	100	114	112	98	2111	6.68	22352	
	Summer	1107	100	96	92	96	1305	15.56	949	
Quilon	Autumn	24142	100	152	150	99	2506	4.87	39743	
	Winter	25090	100	152	151	99	2539	4.49	41863	
	Summer	823	100	45	45	100	1078	33.00	583	
Alleppey	Autumn	33019	100	180	174	97	2589	5.76	56167	
	Winter	25372	100	180	176	98	2204	4.45	36741	
	Summer	24075	100	132	128	97	3284	4.87	51950	
Kottayam	Autumn	13485	100	104	102	98	2630	3.44	23301	
	Winter	10799	100	104	101	97	2724	6.61	19324	
	Summer	7664	100	30	30	100	3148	—	15853	
Idilki	Autumn	3862	100	42	42	100	2304	10.55	5848	
	Winter	5100	100	66	66	100	2791	3.73	9353	
	Summer	299	100	—	—	—	1536	—	302	

TABLE 3.3 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	Autumn	43174	100	200	194	97	2107	4.60	59764
	Winter	39719	100	180	180	100	2190	5.07	57161
	Summer	19607	100	130	128	98	2148	7.40	27676
Trichur	Autumn	40584	100	140	139	99	1855	5.55	49477
	Winter	49168	100	140	137	98	1931	4.14	62382
	Summer	20562	100	134	130	97	2694	6.00	35712
Palghat	Autumn	89762	100	150	142	95	3232	4.46	190593
	Winter	89550	100	150	147	98	2994	3.91	176176
	Summer	4322	100	129	124	96	2470	9.72	7013
Malappuram	Autumn	38603	100	114	88	77	1898	6.53	48128
	Winter	36012	100	114	109	96	2136	6.09	50547
	Summer	5407	100	105	101	96	2481	5.80	•8813
Kozhikode	Autumn	9826	100	84	83	99	1297	7.32	8372
	Winter	28461	100	96	96	100	1901	10.78	35549
	Summer	7164	100	100	96	96	2172	10.31	10223
Cannanore	Autumn	37425	100	150	149	99	2020	7.13	49670
	Winter	28746	100	162	161	99	1962	4.33	37052
	Summer	7294	100	180	179	99	2220	7.66	10640
State	Autumn	349243	100	1430	1377	96	2413	2.11	553748
	Winter	354132	100	1458	1436	98	2357	1.87	548500
	Summer	98324	100	1081	1053	97	2627	2.78	169714



## Pooled Estimates of Mean Yield and production of rice year 1978-79.

District	Series	Autumn 1978		Winter 1979		Summer 1979		Total 1978-79.	
		Mean yield of rice in kg./Hect.	Production of rice in tonnes.	Mean yield of rice in kg./hect.	Production of rice in tonnes	Mean yield of rice in kg./hect.	Production of rice in tonnes	Mean yield of rice in kg./hect.	Production of rice in tonnes.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Alleppey	State Series	1954	37327	1851	20495	4031	78322	2744	136144
	I. A. D. P	not conducted		2018	22345	4135	80349	3364	102694
	Pooled	..	..	not pooled	not pooled	not pooled	not pooled	..	..
	State Series	3235	186447	2887	157841	2206	5038	3048	349326
Palghat	I. A. D. P	3909	225279	3412	186551	not conducted		3668	411830
	Pooled	found not pooled	not pooled	not pooled					
State	State Series	2391	544754	2333	530004	2832	198558	2425	1273316
	Pooled			found not pooled					

TABLE No. 4.2.

## Pooled Estimates of Mean yield and production of rice year 1979-80

District	Series	Autumn 1979		Winter 1980		Summer 1980		Total 1979-80	
		Mean yield of rice in kg/ hect.	Production of rice in tonnes	Mean yield of rice in kg./hect.	Production of rice in tonnes	Mean yield of rice in kg./hect.	Production of rice in tonnes	Mean yield of rice in kg./hect.	Production of rice in tonnes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Alleppey	State series	2481	51694	1808	22857	4014	76726	2876	151277
	I. A. D. P.	2611	54417	N.A.	N.A.	N.A.	N.A.	2611	54417
	Pooled		Not pooled						
Palghat	State series	3481	203505	3038	171093	2611	6963	3249	381561
	I. A. D. P.	N.A.		N.A.	N.A.			N.A.	
	Pooled								
STATE	State series	2481	567703	2359	526461	2971	205531	2494	1299695

**Data on Driage Percentage Recovery of Final Produce (Dry Paddy) from Harvested Production 1978-79, 1979-80, and 1980-81**

District	Season	Driage experiment						Driage % ratio		
		1978-79			1979-80				1980-81	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		No. Planned	No. Analysed	Driage ratio %	No. Planned	No. Analysed	Driage % ratio	No. Planned	No. Analysed	Driage % ratio
Trivandrum	Autumn	12	11	85.9	12	12	85.9	12	12	86.6
	Winter	12	12	85.5	12	12	86.8	12	12	87.7
	Summer	12	12	85.4	12	12	86.9	12	12	89.6
Quilon	Autumn	18	17	84.7	18	18	84.6	18	18	87.0
	Winter	18	17	88.1	18	18	88.4	18	18	88.8
	Summer	15	14	86.3	18	15	88.0	15	13	89.3
Alleppy	Autumn	21	20	87.0	21	21	85.6	21	21	86.4
	Winter	21	20	91.1	21	21	91.1	21	21	90.6
	Summer	18	24	90.2	18	18	90.3	18	18	91.2
Kottayam	Autumn	15	14	87.6	15	15	87.7	15	15	89.3
	Winter	15	15	90.1	15	15	91.2	15	15	91.3
	Summer	6	11	92.7	12	10	92.6	12	11	91.6

TABLE No. 5 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Idukki	Autumn	6	5	83.4	6	6	83.3	6	6	78.5
	Winter	10	10	87.3	12	12	89.3	12	12	89.6
	Summer	..	..	..	..	..	..	..	..	..
Ernakulam	Autumn	21	20	88.1	21	21	84.8	21	21	87.7
	Winter	18	18	90.4	18	18	90.2	18	18	91.8
	Summer	18	19	89.4	18	18	90.5	18	18	90.8
Trichur	Autumn	15	14	83.6	15	15	85.9	15	15	89.0
	Winter	15	14	88.7	15	15	89.8	15	15	89.9
	Summer	15	15	87.7	15	14	90.8	15	12	91.1
Palghat	Autumn	15	15	90.2	15	15	90.7	15	15	89.4
	Winter	15	15	91.8	15	15	91.8	15	15	91.1
	Summer	15	15	92.4	15	15	90.6	15	15	89.8
Malappuram	Autumn	12	12	88.9	12	12	88.5	12	12	87.8
	Winter	12	12	90.6	12	12	90.9	12	12	91.0
	Summer	12	12	91.7	12	12	90.8	12	12	90.3
Kozhikode	Autumn	9	9	88.3	9	9	89.4	9	9	87.9
	Winter	12	12	90.4	12	12	91.3	12	12	90.8
	Summer	12	12	91.1	12	12	90.6	12	12	91.9
Cannanore	Autumn	15	15	89.8	15	15	89.4	15	15	89.5
	Winter	18	18	90.2	18	18	91.8	18	18	91.7
	Summer	18	18	93.1	18	18	92.7	18	18	91.7

TABLE 6.11

**Crop Estimation Survey 1978-79 Statement Showing the percentage area under different improved agricultural practices**

Crop : Paddy

Autumn : 1978

Percentage area under \*\*

District	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Improved variety	Other variety	Chemical fertilizers	Other manures	Not manures	Treatments of pesticides/insecticides	Untreated with pesticides	Remarks
Trivandrum		27.93	72.07	98.20	0.90	0.90	45.95	54.05	
Quilon		31.03	68.97	88.28	11.72	..	20.69	79.31	
Alleppey		39.29	60.71	70.83	16.07	13.10	23.21	76.79	
Kottayam		76.00	24.00	95.00	5.00	..	69.00	31.00	
Idukki		75.00	25.00	86.11	13.89	..	75.00	25.00	
Ernakulam		49.47	50.53	72.11	10.53	17.37	62.11	37.89	
Trichur		26.09	73.91	54.35	39.13	6.52	35.51	64.49	
Palghat		58.62	41.38	77.93	20.69	1.38	28.97	71.03	
Malappuram		28.18	71.82	55.45	44.55	..	40.00	60.00	
Kozhikode		30.00	70.00	38.75	53.75	7.50	16.25	83.75	
Cannanore		20.13	79.87	52.95	42.28	5.37	25.50	74.50	
State		39.72	60.28	71.21	22.89	5.90	37.90	62.10	

\*\* Based on the number of crop cutting experimental plots.

TABLE 6.12

**Crop Estimation Survey on Principal Crops Statement Showing the percentage of area under different improved agricultural practices**

State : Kerala      Crop : Paddy      Season : Winter      Year : 1979

District	Percentage area under									Remarks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Improved seeds	Local seeds	Chemical fertilizers	Other manures	Manures	Treatment of insecticides	Untreated by pesticides/insecticides			
Trivandrum	5.31	94.69	93.81	5.31	0.88	36.28	63.72			
Quilon	5.37	94.63	91.95	7.38	0.67	22.82	77.18			
Alleppey	21.62	78.35	73.65	20.27	6.08	37.84	62.16			
Kottayam	65.00	35.00	98.00	1.00	1.00	88.00	12.00			
Idukki	26.32	73.68	71.93	22.81	5.26	56.14	43.86			
Ernakulam	8.57	91.43	83.43	8.57	8.00	77.14	22.86			
Trichur	12.50	87.50	55.88	36.76	7.35	46.32	53.68			
Palghat	43.24	56.76	78.38	19.59	2.03	35.81	64.19			
Malappuram	13.39	86.61	71.43	26.79	1.79	41.64	55.36			
Kozhikode	7.45	92.55	47.87	42.56	9.57	21.28	78.72			
Cannanore	9.94	90.06	57.76	38.51	3.73	44.10	55.90			
State	18.66	81.34	75.16	20.60	4.24	46.16	53.84			

TABLE 6.13

**Crop Estimation Surveys on Principal Crops. Statement showing the percentage of area under different improved agricultural practices**

State : Kerala

Crop : Paddy

Year &amp; Season : Summer 1979

Percentage area under

District	Percentage area under									Remarks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Improved seeds	Local seeds	Chemical Fertilizers	Other Manures	Manures	Treatment of insecticides/pesticides	Untreated by insecticides/pesticides			
Trivandrum	64.13	35.87	64.13	34.78	1.09	80.43	19.57			
Quilon	46.43	53.57	90.48	9.52	—	63.10	36.90			
Alleppey	78.74	21.26	99.21	—	0.79	96.85	3.15			
Kottayam	71.79	28.21	100.00	—	—	100.00	—			
Aduki	—	—	—	—	—	—	—			
Ernakulam	46.83	53.17	96.83	3.17	—	88.89	11.11			
Trichur	49.28	50.72	89.14	10.14	0.72	76.81	23.19			
Palghat	65.12	34.88	63.99	25.88	5.43	51.94	48.06			
Malappuram	53.92	46.08	79.41	19.61	0.98	69.61	30.39			
Kozhikode	48.96	51.04	67.71	27.08	5.21	39.58	60.42			
Cannanore	41.76	58.24	75.88	22.35	1.77	43.24	51.76			
State	55.30	44.70	85.31	12.96	1.73	69.36	30.64			

TABLE 6.21

**Crop Estimation Surveys on Principal Crops Statements showing the percentage of area under different improved agricultural practices**

State : Kerala

Crop : Paddy

Autumn : 1979

District	Percentage area under								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Improved seeds	Local seeds	Chemical Fertilizers	Other manures	Human-manures	Treatment of insecticides/pesticides	Untreated by pesti-cides/insecticides	Remarks	
Trivandrum	17.43	82.57	94.50	5.50	—	43.12	56.88		
Quilon	54.05	45.95	85.14	14.19	0.67	18.92	81.08		
Alleppey	35.48	64.52	68.28	24.73	6.99	26.34	73.66		
Kottayam	57.69	42.31	94.23	2.88	2.89	59.62	40.38		
Idukki	85.71	14.29	95.24	4.76	—	78.57	21.43		
Ernakulam	38.46	61.54	60.15	10.77	29.08	37.95	62.05		
Trichur	20.90	79.10	53.73	44.03	2.24	29.85	70.15		
Palghat	72.48	27.52	81.21	16.11	2.68	30.20	69.80		
Malappuram	34.51	65.49	62.83	33.63	3.54	33.63	66.37		
Kozhikode	35.71	64.29	33.33	54.76	11.91	14.29	85.71		
Cannanore	20.81	79.19	51.01	42.28	6.71	14.77	85.23		
State	40.98	59.02	69.36	23.28	7.36	31.85	68.15		



TABLE 6.22

**Crop Estimation Survey on Principal Crops Statement showing the percentage of area under different improved agricultural practices**

District	Percentage area under									Remarks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Trivandrum	2.63	97.37	97.37	97.37	2.63	—	32.46	67.54	67.54	
Quilon	8.61	91.39	88.08	88.08	11.26	0.66	19.87	80.13	80.13	
Alleppey	17.93	82.07	63.04	63.04	31.52	5.44	40.22	59.78	59.78	
Kottayam	47.66	52.34	54.39	54.39	3.74	1.87	76.64	23.36	23.36	
Idukki	30.30	69.70	89.39	89.39	4.55	6.06	89.39	10.61	10.61	
Ernakulam	8.33	91.67	76.11	76.11	12.78	11.11	40.00	60.00	60.00	
Trichur	19.12	80.88	62.50	62.50	35.29	2.21	46.32	53.68	53.68	
Palghat	49.32	50.68	88.51	88.51	9.46	2.03	37.84	62.16	62.16	
Malappuram	19.47	80.53	63.72	63.72	32.74	3.54	40.71	59.29	59.29	
Kozhikode	5.21	94.79	52.08	52.08	42.71	5.21	20.83	79.17	79.17	
Cannanore	11.73	88.27	68.52	68.52	28.40	3.09	49.37	50.63	50.63	
State	19.22	80.78	75.91	75.91	20.18	3.91	42.62	57.38	57.38	

State : Kerala

Crop : Paddy

Year &amp; Season : Winter 1980

TABLE 6.23  
 Crop Estimation Survey 1979-80—Statement showing the percentage area under different improved agricultural practices

Crop : Paddy Summer : 1980

District	Percentage area under**								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Improved Variety	Other Variety	Chemical Fertilizers	Other manures	Not manured	Treatment of pest-icides/insecticides	Untreated with pest-icides	Remarks	
Trivandrum	56.25	43.75	96.88	2.08	1.04	75.00	25.00		
Quilon	52.24	47.76	83.58	7.46	8.96	64.18	35.82		
Alleppey	67.65	32.35	100.00	—	—	99.26	0.74		
Kottayam	52.94	47.06	98.04	—	1.96	96.08	3.92		
Idukki	—	—	—	—	—	—	—		
Ernakulam	43.97	56.03	94.83	3.45	1.72	70.69	29.31		
Trichur	52.63	47.37	88.60	10.53	0.87	77.19	22.81		
Palghat	61.11	38.89	85.71	14.29	—	62.70	37.30		
Malappuram	63.73	36.27	78.43	20.59	0.98	86.27	13.73		
Kozhikode	49.46	50.54	73.12	24.73	2.15	33.33	66.27		
Cannanore	45.20	54.80	81.92	16.95	1.13	62.71	37.29		
State	54.45	45.55	87.85	10.67	1.48	70.32	29.68		

\*\* Based on the No. of crop cutting experimental plots.

TABLE 6.31

**Crop estimation surveys on principal crops—Statement showing the percentage of area under different improved agricultural practices**

State : Kerala  
Crop : Paddy

Autumn : 1980

District	Percentage area under								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Improved seeds	Local seeds	Chemical ferti- zers	Other manures	Un manures	Treatment of insecticides/ pesticides	Unreated by pesticides/in secticides	Remarks	
Trivandrum	11.03	88.97	100.00	..	..	36.84	63.16		
Quilon	51.18	48.82	90.00	..	10.00	18.67	81.33		
Alleppey	48.64	51.36	65.52	25.86	8.62	21.26	78.74		
Kottayam	85.71	14.29	90.00	4.00	6.00	67.00	33.00		
Idukki	66.80	33.20	71.43	28.57	..	64.29	35.71		
Ernakulam	30.39	69.61	60.31	14.95	24.74	43.81	56.19		
Trichur	17.99	82.01	42.45	45.32	12.23	25.90	74.10		
Palghat	69.28	30.72	77.46	21.83	0.71	14.79	85.21		
Malappuram	5.35	94.65	40.91	50.00	9.09	26.14	73.86		
Kozhikode	18.04	81.96	40.96	44.58	14.46	21.69	78.31		
Cannanore	14.81	85.19	44.22	48.93	6.80	6.12	63.88		
STATE	39.01	60.99	65.84	25.64	8.52	28.62	71.38		

TABLE 6.32

Crop estimation surveys on principal crops—Statement showing the percentage of area under different improved agricultural practices

State: Kerala  
Crop: Paddy

Winter: 1981

District	Percentage area under								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Improved seeds	Local seeds	Chemical fertilizers	Other manures	Unmanures	Treatment of insecticides/pesticides	Untreated by pesticides/insecticides	Remarks	
Trivandrum	4.90	95.10	97.32	1.79	0.89	31.25	68.75		
Quilon	4.64	95.36	86.09	12.58	1.33	9.27	90.73		
Alleppey	19.73	80.27	73.86	22.73	3.41	59.09	40.91		
Kottayam	90.74	9.26	98.02	1.98	..	86.14	13.86		
Idukki	37.04	62.96	80.30	3.03	16.67	68.18	31.82		
Ernakulam	10.27	89.73	81.11	16.67	2.22	46.11	53.89		
Trichur	15.82	84.18	56.20	37.96	5.84	34.31	65.69		
Palghat	62.66	37.34	78.23	17.69	4.08	38.78	61.22		
Malappuram	4.15	95.85	62.39	37.61	..	50.46	49.54		
Kozhikode	7.63	92.37	45.83	42.71	11.46	27.08	72.92		
Cannanore	7.31	92.69	77.64	21.74	0.62	48.45	51.55		
STATE	26.09	73.91	76.32	20.20	3.48	43.94	56.06		

TABLE 6.33

**Crop estimation surveys on principal crops statement showing the percentage of area under different improved agricultural practices**

State : Kerala  
Crop : Paddy

Summer : 1981

District	Percentage area under									Remarks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Improved seeds	Local seeds	Chemical fertilizers	Other manures	Un manures	Treatment of insecticides/pesticides	Untreated by pesticides/insecticides			
Trivandrum	41.46	58.54	94.57	3.26	2.17	80.43	19.57			
Quilon	11.42	88.58	82.22	17.78	..	93.33	6.67			
Alleppey	85.87	14.13	100.00	..	..	96.09	3.91			
Kottayam	59.56	40.44	100.00	..	..	100.00	..			
Idukki	28.76	71.24	..	..	..	..	..			
Ernakulam	25.74	74.26	97.66	1.56	0.78	71.88	28.12			
Trichur	48.18	51.82	97.69	0.77	1.54	88.46	11.54			
Palghat	62.17	37.83	83.07	15.32	1.61	47.58	52.42			
Malappuram	34.12	65.88	76.24	22.77	0.99	64.36	35.64			
Kozhikode	60.83	39.17	81.25	16.67	2.08	45.83	54.17			
Cannanore	18.88	81.12	72.07	26.81	1.12	43.02	56.98			
STATE	51.97	48.03	87.46	11.40	1.14	63.47	31.53			

TABLE No. 7  
Yield estimates—Tapioca 1978-81

Sl. No.	Districts	No. of expts.		Mean Yield per Hector (tonnes)	No. of expts.		Mean Yield per Hector (tonnes)	No. of expts.		Estimated Yield per Hector (tonnes)
		1978-79			1979-80			1980-81		
		Planned	Analysed		Planned	Analysed		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Trivandrum	132	130	14.58	126	126	17.23	126	126	17.08
2	Quilon	144	144	14.50	144	144	16.00	144	144	16.75
3	Alleppey	82	79	15.22	99	78	16.10	82	81	13.93
4	Kottayam	106	105	16.62	108	104	20.05	108	106	17.78
5	Idukki	46	46	17.65	54	54	23.23	56	56	21.70
6	Ernakulam	100	100	16.35	100	100	20.60	100	100	19.28
7	Trichur	106	87	13.02	166	104	13.75	106	106	14.95
8	Palghat	90	90	14.90	90	90	15.35	90	90	14.05
9	Malappuram	128	128	12.45	128	128	13.33	128	127	12.63
10	Kozhikode	110	103	10.72	110	110	12.43	110	110	12.80
11	Cannanore	180	180	15.82	180	177	15.35	180	180	18.65
STATE		1224	1192	14.79	1245	1235	16.77	1230	1226	16.58

TABLE No. 8  
Yield Estimates—Coconut 1978-81

District	1978-79				1980-81				1980-81					
	No. of Ex- periments		Average Yield/tree (Nos.)		Estimated mean yield (No. of nuts per hectare)		No. of ex- periments		Average yield/tree (Nos.)		Estimated mean yield (No. of nuts per hectare)		No. of ex- periments	
	Planned	Analysed	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	50	50	37	5076	50	50	35	4767	50	50	36	4800		
Quilon	60	60	29	3970	60	59	31	3936	60	60	34	4205		
Alleppey	50	50	35	5645	45	45	32	5221	45	45	28	4656		
Kottayam	40	39	22	3527	40	40	23	3772	40	40	22	3675		
Idukki	30	25	22	2369	20	20	30	3191	20	20	23	2577		
Ernakulam	42	42	37	5359	40	40	37	5046	40	39	38	5365		
Trichur	40	40	41	6578	45	44	39	6095	45	45	42	6424		
Palghat	31	31	29	3594	28	28	27	3353	28	28	28	3480		
Malappuram	50	50	37	5323	55	55	34	4944	55	55	31	4416		
Kozhikode	60	60	34	5474	75	75	32	4800	75	75	30	4822		
Cannanore	61	61	27	4116	60	60	26	3587	60	60	30	4257		
STATE	514	508	33	4899	518	516	32	4563	518	517	32	4617		

TABLE No. 9  
Yield Estimates Arccanut 1978-81

District	1978-79						1979-80						1980-81					
	No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments		No. of ex- periments	
	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed	Planned	Analysed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)		Estimated mean yield (No. of nuts/hectare)	
	No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree		No. of nuts per bearing tree	
Trivandrum	32	32	68	111541	25	25	62	106396	25	25	58	99354	25	25	58	99354	25	25
Quilon	40	40	96	133155	31	31	81	120661	31	31	81	127251	31	31	81	127251	31	31
Alleppey	27	27	91	124320	21	21	117	157770	21	21	91	127673	21	21	91	127673	21	21
Kottayam	33	33	73	121080	25	25	77	135163	25	25	83	146412	25	25	83	146412	25	25
Idukki	15	10	131	174492	10	10	94	132331	10	10	120	184680	10	10	120	184680	10	10
Ernakulam	41	41	100	148400	52	52	96	175304	52	52	99	178497	52	52	99	178497	52	52
Trichur	50	50	123	204652	50	50	115	213605	50	50	121	223608	50	50	121	223608	50	50
Palghat	15	15	118	159586	16	16	98	144584	16	16	98	150332	16	16	98	150332	16	16
Malappuram	50	50	109	171473	58	58	113	186654	58	58	105	175455	58	58	105	175455	58	58
Kozhikode	40	37	145	233271	40	40	160	272267	40	40	157	268313	40	40	157	268313	40	40
Cannanore	72	72	153	200784	72	72	130	171867	72	72	125	161750	72	72	125	161750	72	72
STATE	415	407	113	175955	400	400	110	174084	400	391	108	176431	400	391	108	176431	400	391



TABLE No. 10  
Yield Estimates—Cashew 1978-81

District/ State	1978-79				1979-80				1980-81				
	No. of Ex- periments		Average yield per bearing tree (Kg.)		No. of Ex- periments		Average yield per bearing tree		No. of Ex- periments		Average yield per bearing tree (Kg.)		
	Planned	Analysed	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
					Estimated mean yield (Kg./hectare)					Estimated mean yield (Kg./hectare)			Estimated mean yield (Kg./hectare)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Trivandrum	25	25	2.28	485	21	21	3.39	509	21	21	2.73	480	
Quilon	31	31	3.28	738	25	25	4.85	835	25	25	4.31	805	
Alleppey	20	20	4.08	865	15	15	2.82	538	15	15	2.82	521	
Kottayam	..	..	1.54	316	5	5	2.53	564	5	5	2.83	544	
Idukki	10	10	1.54	309	5	5	3.56	756	5	5	3.59	725	
Ernakulam	19	19	2.28	615	18	18	2.17	479	18	18	2.45	517	
Trichur	27	10	1.19	275	21	21	1.38	267	21	21	1.28	270	
Palghat	40	35	1.74	361	41	38	1.43	285	41	41	1.69	295	
Malappuram	75	75	2.76	629	75	75	1.56	322	75	75	1.56	324	
Kozhikode	17	17	3.39	854	19	19	2.57	538	19	10	2.90	561	
Cannanore	130	130	2.79	676	145	145	3.13	751	145	140	3.19	733	
STATE	394	372	2.73	617	390	387	2.58	592	390	376	2.58	579	

TABLE No. 11

## Yield Estimates—Pepper 1978-81

District/ State	1978-79				1979-80				1980-81			
	No. of Ex- periments		Average of dry pepper per plant (Kg.)	Estimated mean yield (Kg./hectare)	No. of Ex- periments		Average of dry pe- pper per plant (Kg.)	Estimated mean yield (Kg./hectare)	No. of Ex- periments		Average of dry pepper per plant (Kg.)	Estimated mean yield (Kg./hectare)
	Planned	Analysed			Planned	Analysed			Planned	Analysed		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	23	23	.64	266	23	23	.88	331	23	23	1.01	378
Quilon	25	24	.67	296	30	30	.85	364	30	30	.81	350
Alleppey	23	23	.50	227	20	20	.58	261	20	20	.50	208
Kottayam	49	49	.18	79	35	35	.25	109	35	35	.31	139
Idukki	40	40	.40	138	65	65	.52	207	65	65	.43	151
Ernakulam	26	26	.41	176	27	27	.64	272	27	27	.50	190
Trichur	10	10	.65	277	18	18	.36	148	18	18	.42	172
Palghat	10	9	.60	232	10	10	.49	134	10	10	.40	111
Malappuram	20	19	.48	193	20	20	.71	276	20	20	.73	275
Kozhikode	60	60	.78	319	71	71	.96	366	71	71	.91	373
Cannanore	95	90	.79	339	75	75	.68	288	75	75	.64	288
STATE	381	373	.62	242	394	394	.67	273	394	394	.63	263

TABLE No. 12

## Yield Estimates—Sweet Potatoe—1978-79

Sl. No.	District	Number of Experiments		Estimated mean yield Kg. per/hectare
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	..	..	6037
2	Quilon	..	..	6037
3	Alleppey	..	..	6037
4	Kottayam	..	..	6037
5	Idukki	20	19	6250
6	Ernakulam	..	..	6037
7	Trichur	..	..	6037
8	Palghat	40	40	6365
9	Malappuram	20	20	6730
10	Kozhikode	20	16	6368
11	Cannanore	90	89	6635
	STATE	190	184	6510

TABLE No. 13  
Yield Estimates—Ginger—1978-79

Sl. No.	Districts	No. of Expts.		Estimated mean yield Kg. (Tonnes) per hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	..	..	2441
2.	Quilon	..	..	2892
3.	Alleppey	..	..	2441
4.	Kottayam	70	70	2868
5.	Idukki	20	20	2365
9.	Ernakulam	30	30	2667
7.	Trichur	..	..	1041
8.	Palghat	..	..	1671
9.	Malappuram	20	20	1833
10.	Kozhikode	30	30	2505
11.	Cannanore	30	30	2688
	STATE	200	200	2589

TABLE No. 14  
Yield Estimates—Turmeric—1978-79

Sl. No.	Districts	No. of Expts.		Estimated mean yield Kg. /hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	..	..	1950
2.	Quilon	..	..	1884
3.	Alleppey	..	..	1950
4.	Kottayam	30	30	1866
5.	Idukki	20	20	1772
6.	Ernakulam	60	60	1850
7.	Trichur	..	..	1564
8.	Palghat	40	40	1621
9.	Malappuram	..	..	1560
10.	Kozhikode	30	29	1934
11.	Cannanore	30	30	2081
	STATE	210	209	1849

TABLE No. 15

**Yield Estimated—Mango—1978-79**

Sl. No.	Districts	No. of Expts.		Estimated Mean yield Kg./Hect
		Planned	Analysed	
1.	Trivandrum	20	19	3134
2.	Quilon	30	30	4243
3.	Alleppey	28	28	2016
4.	Kottayam	20	20	6464
5.	Idukki	16	13	1064
6.	Ernakulam	35	35	5242
7.	Trichur	20	19	3765
8.	Palghat	20	20	3049
9.	Malappuram	16	16	8064
10.	Kozhikode	20	20	3234
11.	Cannanore	30	30	5819
	STATE	255	250	4350

TABLE No. 16

**Yield Estimate—Tamarind—1979-80**

Sl. No.	Districts	No. of Expts.		Estimated Mean yield Kg./Hect
		Planned	Analysed	
1.	Trivandrum	20	20	2535
2.	Quilon	20	20	2069
3.	Alleppey	10	5	718
4.	Kottayam	20	5	1126
5.	Idukki	..	..	1241@
6.	Ernakulam	15	15	1355
7.	Trichur	25	25	2089
8.	Palghat	59	58	2608
9.	Malappuram	21	20	1779
10.	Kozhikode	15	15	2414
11.	Cannanore	15	15	1714
	STATE	220	198	1771

@ Average of yield rates of Kottayam and Ernakulam

TABLE NO. 17  
Yield Estimate—Cotton—1979-80

Sl. No.	District	No. of Expts.		Estimated Mean yield (Processed) Kg./Hect.
		Planned	Analysed	
1.	Palghat	30	30	269
	STATE	30	30	269

TABLE—No. 18  
Yield Estimate—Ground Nut—1979-80

Sl. No.	District	No. of expts.		Estimated Mean yield (processed) Kg / Hect.
		Planned	Analysed	
1.	Palghat	30	30	884
	STATE	30	30	884

TABLE—No. 19  
Yield Estimate—Pulses—1979-80

Sl. No.	Districts	No. of Expts.		Estimated Mean yield Kg /Hect. (dry)
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	15	15	239
2.	Quilon	10	10	795
3.	Alleppey	15	15	815
4.	Kottayam	10	..	716
5.	Idukki	20	20	812
6.	Ernakulam	10	10	716
7.	Trichur	30	28	714
8.	Palghat	25	25	617
9.	Malappuram	20	18	742
10.	Kozhikode	10	..	761
11.	Cananore	45	30	780
	STATE	210	171	738

TABLE No. 20

## Yield Estimate—Cardamom—1980-81

Sl No.	District	No. of Expts.		Estimated Mean yield Kg./Hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	..	..	59
2.	Quilon	..	..	59
3.	Alleppey	..	..	..
4.	Kottayam	..	..	59
5.	Idukki	40	40	59
6.	Ernakulam	..	..	..
7.	Trichur	..	..	..
8.	Palghat	..	..	59
9.	Malappuram	..	..	59
10.	Kozhikode	14	14	69
11.	Cannanore	15	15	74
	STATE	69	69	60

Mean yield of Idukki accepted for other Districts

TABLE No. 21  
Yield Estimate—Lemon grass 1980-81

Sl. No.	District	No. of Expts.		Estimated Mean yield Kg. per Hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	..	..	22100
2.	Quilon	..	..	22100
3.	Alleppey	..	..	22100
4.	Kottayam	..	..	22100
5.	Idukki	3	3	22100
6.	Ernakulam	25	10	37375
7.	Trichur	..	..	37375
8.	Palghat	..	..	37375
9.	Malappuram	..	..	9743
10.	Kozhikode	10	2	5360
11.	Cannanore	30	30	9743
	STATE	68	45	14459

Mean yield of Idukki is accepted for southern District and Mean yield of Ernakulam accepted for Trichur and Palghat and Mean yield for Cannanore accepted for Malappuram.



TABLE No. 22  
Yield Estimate—Cocoa—1980-81

Sl. No.	Districts	No. of Expts.		Estimated Mean yield Kg./hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	5	5	84
2.	Quilon	20	20	68
3.	Alleppey	25	25	136
4.	Kottayam	40	40	168
5.	Idukki	15	15	129
6.	Ernakulam	40	40	131
7.	Trichur	20	20	100
8.	Palghat	10	10	42
9.	Malappuram	20	20	77
10.	Kozhikode	10	10	102
11.	Cannanore	15	15	56
	STATE	220	220	128

TABLE No. 23  
Yield Estimate—Pappaya—1980-81

Sl. No.	District	No. of Expts.		Estimated Mean yield Kg. per hect.
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	20	20	19130
2.	Quilon	30	30	9139
3.	Alleppey	25	25	4285
4.	Kottayam	20	20	4840
5.	Idukki	5	5	2049
6.	Ernakulam	25	25	3995
7.	Trichur	15	15	3813
8.	Palghat	20	20	8864
9.	Malappuram	20	20	5723
10.	Kozhikode	15	15	5134
11.	Cannanore	25	25	3552
	STATE	220	220	5803

(A)	(B)	(C)	(D)
100	100	100	100
101	101	101	101
102	102	102	102
103	103	103	103
104	104	104	104
105	105	105	105
106	106	106	106
107	107	107	107
108	108	108	108
109	109	109	109
110	110	110	110
111	111	111	111
112	112	112	112
113	113	113	113
114	114	114	114
115	115	115	115
116	116	116	116
117	117	117	117
118	118	118	118
119	119	119	119
120	120	120	120

(A)	(B)	(C)	(D)
121	121	121	121
122	122	122	122
123	123	123	123
124	124	124	124
125	125	125	125
126	126	126	126
127	127	127	127
128	128	128	128
129	129	129	129
130	130	130	130
131	131	131	131
132	132	132	132
133	133	133	133
134	134	134	134
135	135	135	135
136	136	136	136
137	137	137	137
138	138	138	138
139	139	139	139
140	140	140	140

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