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GOVERNMENT OF KERALA

**CONSOLIDATED RESULTS  
OF  
CROP ESTIMATION SURVEYS  
1976—1977**

**BUREAU OF ECONOMICS AND STATISTICS  
KERALA  
TRIVANDRUM**

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Government of Kerala  
1978

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## FOREWORD

The present report "Consolidated results of Crop Estimation Surveys 1976-77" is prepared as the State counterpart of the All India Report on the subject and as recommended by the conference of the State Statisticians in charge of crop estimation surveys. This report gives brief descriptions on the methodology and conduct of the crop cutting surveys on Paddy, Tapioca, Coconut, Cashew, Pepper and Arecanut conducted during 1976-77 in the State by the Bureau of Economics and Statistics.

The important results of the survey including the estimated mean yield of paddy and the production of rice during each of the three paddy seasons viz. Autumn, Winter and Summer in each district and the State are given in Table 1 to 7 in the Appendix. The results of the crop cutting surveys conducted on other crops are given in Table 8 to 17 in the Appendix.

Trivandrum  
23-5-1978.

Dr. P.A. NAIR  
ADDL. DIRECTOR-IN-CHARGE.

# CONSOLIDATED RESULTS OF CROP ESTIMATION SURVEYS 1976—1977

## 1. Introduction:

Crop estimation surveys on paddy and tapioca were being conducted in the State by the Bureau of Economics and Statistics. In the agricultural year 1976-77, (the 2nd year of introduction of T. R. S. in the State; the crop estimation surveys were extended to four more important crops viz. coconut, cashew, pepper and arecanut in the State. This report gives a brief review of the crop estimation surveys conducted during 1976-77. The salient features of these surveys are described in this report in a comprehensive manner. The important findings of the surveys such as yield rates, total out turn of produce, area under H.Y.V. of paddy; yield rates of irrigated and unirrigated paddy plots etc. are presented in the tables appended to this report.

## 2. Objective, Coverage and Design:

The primary object of these surveys is to obtain through crop cutting experiments estimates of average yield per hectare for paddy at the taluk level and for other crops at the district level with reasonable precision and to estimate the average yield and total outturn of these crops in the State.

But experiments for a crop is limited to the taluks where the area of that crop is sizable. The number of taluks where the survey was conducted for each crop is listed in the Table given below:—

TABLE—1

Sl. No.	Crop	No. of taluks where the survey was done
(1)	(2)	(3)
1	Paddy	
	a. Autumn	52
	b. Winter	54
	c. Summer	49
2	Tapioca	48
3	Coconut	52
4	Cashew	40
5	Pepper	37
6	Arecanut	42

A crop cutting experiment consists of locating and marking of plot of specified size in the case of paddy and tapioca or locating and marking of trees in the case of other crops by the principle of random sampling in a randomly selected field and harvesting and recording the weight or number of produce obtained from the experimental plot or trees. In the case of paddy in a sub samples of experiments further processing of the harvested produce is done for determining the percentage recovery of dry grain. The designs adopted for the surveys conducted on various crops are discussed below:

### 2.1 Paddy:

A stratified multistage random sampling design is adopted for the survey. Each taluk was treated as the stratum, revenue village as the first stage unit a survey subdivision number as the second stage unit, a kandom as the third stage unit and a square plot of side 5 metres as the ultimate sampling unit. In the case of survey subdivision numbers having more than one kandom/patch, one kandom will be selected and in that kandom a square plot of side 5 metres will be located. The produce of the plot is harvested, threshed and winnowed and the weight of the grain is recorded. Driage ratio is determined by processing sample grains taken from a sub sample of plots harvested.

The number of experiments to be conducted in a taluk is fixed as two experiments per investigator unit in those taluks where there are more than seven investigator units and three experiments per investigator unit in the case of other taluks.

Crop cutting surveys on paddy are conducted separately during each of the three seasons viz. Autumn, Winter and Summer, in the same revenue vilages selected under T.R.S. in every taluk.

### 2.2 Tapioca:

The survey on Tapioca is conducted in 48 taluks where the crop is raised during the year. The villages selected for this purpose are the same vilages selected under T.R.S. in the taluks where the survey was conducted.

From the list of dry land survey subdivision numbers allotted to each Investigator, five dry land survey subdivision numbers are selected by simple random sampling method and the Investigator visits these plots in the order of selection for getting 2 suitable plots where crop cutting experiment on Tapioca can be conducted. It is essential that in each selected plot there should be a minimum area of 2 x 2 metres under Tapioca in one patch. If a selected plot contains more than one patch under Tapioca, satisfying the above requirements, then one patch is selected by simple random sampling method for conducting the experiments.

If the required number of cuts are not obtained from among the first five plots selected, either due to the nonavailability of the crop or due to the unsuitability of conducting crop cutting experiments, another set of five dry land subdivision numbers are selected as before to get the required number of experiments. If necessary, this process is repeated until the plots suitable for conducting the experiment are obtained or all the dry land plots in the unit are exhausted.

In the selected plot a square cut of 2 x 2 metres is selected at random for conducting the experiment. All the Tapioca plants inside the 2x2 metre square are harvested. The produce are cleaned by removing the soil sticking to the tubers and then weighed.

### 2.3 Coconut:

The crop cutting survey on coconut is conducted in all the taluks in the State except in five taluks in the high ranges (Peermadu, Devikulam, Udumbanchola, South Wynad and North Wynad). The villages selected for this purpose are the same villages selected for T.R.S. in those 52 taluks.

One coconut growing plot is selected by simple random sampling method from the list of dry land subdivisions in each Investigator Unit. From each plot selected, five bearing coconut trees are randomly selected for conducting crop cutting experiments. For this purpose the bearing coconut trees in the selected plots are serially numbered starting from the south west corner and proceeding anti clock-wise.

After the selection of trees, the Investigator collects the details of all nuts harvested from the selected trees in each harvest during the agricultural year 1976-77 and record the details in the prescribed form.

### 2.4. Cashew, Pepper and Arecanut:

In the case of crop cutting survey on cashew, pepper and arecanut the procedure for selection of plots and trees (or standards in the case of pepper) is the same as that followed for the crop cutting survey on coconut

### 3. Sample size:

The total number of experiments planned for the survey on paddy during 1976-77 according to seasons are indicated below:

TABLE—2

#### Number of experiments planned for paddy 1976-77

Sl. No.	Season	No. of experiments planned
1	2	3
1.	Autumn 1976	1253
2.	Winter 1977	1200
3.	Summer 1977	1014
Total		3467



Compared to the number of experiments planned in the previous years, that during 1976-77 was more by 700 in the State for the 3 seasons taken together. The district-wise break up of the total number of experiments planned for the crop cutting survey on paddy in the year 1976-77 is given in Table 1 in the Appendix.

The total number of experiments planned in the State in the case of Tapioca, Coconut, Cashew, Pepper and Arecanut together with their district-wise break up is given in the subjoined table.

TABLE—3  
No. of experiments planned—1976-77

Sl. No.	District	No. of experiments planned				
		Tapioca	Coconut	Cashew	Pepper	Arecanut
1	2	3	4	5	6	7
1.	Trivandrum	71	40	40	30	40
2.	Quilon	114	57	57	50	57
3.	Alleppey	48	49	37	24	37
4.	Kottayam	88	44	21	35	44
5.	Idukki	18	9	9	9	9
6.	Ernakulam	94	49	33	39	41
7.	Trichur	104	55	43	43	43
8.	Palghat	120	60	29	29	29
9.	Malappuram	108	54	54	51	54
10.	Kozhikode	82	41	41	41	41
11.	Cannanore	125	76	78	63	47
STATE		972	534	442	414	442

#### 4. Field work:

The field work of the surveys comprising of selection of fields, identification of selected fields, location and marking of cuts or trees for crop cutting experiments, recording the weight (number of nuts) of the harvested produce is carried out by the field staff of the Bureau of Economics and Statistics. The field work relating to the surveys is attended to by the Investigators under the supervision of the Taluk Statistical Inspectors and District Statistical Officers. During the year under review, 575 Investigators attached to the T.R.S have attended to the field work for the crop cutting survey on these 6 crops.

The planning of the survey, quality check of the work of the field staff and the statistical analysis of the data collected are done at the Directorate of the Bureau of Economics and Statistics.

### 5. Training:

Training classes were conducted at the district headquarters to impart training to all the Investigators engaged in the conduct of crop cutting surveys on the crops under reference. Officers from the headquarters of the Bureau also participated in the training programme.

### 6. Response:

The number of experiments planned, analysed and the percentage response in respect of paddy during the three seasons in each district are given in table 2 in the Appendix. Similar information relating to Tapioca, Coconut, Cashew, Pepper and Arecanut is given in Table 8, 10, 12, 14 and 16 respectively in the Appendix.

### 7. Supervision:

The supervision of the field work is done by the Taluk Statistical Inspectors and District Statistical Officers, Additional District Statistical Officers and Economic Investigators. A fixed programme for inspection at the harvest stage in the case of crop cutting experiments on paddy and tapioca has been arranged. According to which all Inspecting Officers at the district level have to conduct harvest stage inspections at the rate of one experiment in each taluk in the case of paddy while the Taluk Statistical Inspectors have to inspect one randomly selected experiment in each Investigator unit subject to minimum of six experiment in a taluk in each season. As far as tapioca is concerned, the district level officers have to conduct inspections at the rate of 3 experiments in a district while the Taluk Statistical Inspectors have to inspect 5 experiments or 50% of the experiments planned in the taluk, which ever is less. Over and above this, inspection at pre-harvest and post-harvest stages have also been done by the Statistical Inspectors and District Statistical Officers.

Number of crop cutting experiments on paddy inspected at the 3 stages in each of the three seasons during 1976-77 in the State are indicated below in percentages:

**TABLE—4**  
**CROP CUTTING SURVEY ON PADDY**  
**Number of experiments inspected (in percentage)**

Sl. No.	Season	Harvest stage	Pre-harvest stage	Post-harvest stage
1	2	3	4	5
1	Autumn 1976	38.7	18.1	2.1
2	Winter 1977	40.8	14.1	3.0
3	Summer 1977	33.3	11.2	3.3

Independent estimates of average yield of paddy based on experiments inspected at harvest stage are given in Table 3 in the Appendix.

## 8. Results:

The estimated mean yield of paddy together with percentage sampling error and the total production of rice during the three seasons of 1976-77 are given in Table 4 in the Appendix.

Usually the result of the State series of experiments and I A D P series of experiments conducted on paddy crop in Alleppey and Palghat districts are pooled for framing combined estimates. But the results of these two series of experiments are found to be not poolable in all the three seasons in Alleppey district and two seasons in Palghat district during the year as the statistical test for non significance of means turned out to be highly significant. In summer season I A D P series of experiments are not conducted in Palghat district. The yield rates and the production of rice obtained through two series of experiments are given in Table 5 in the Appendix.

The results of experiments conducted for ascertaining the percentage recovery of dry paddy (dry grain) from the wet harvested produce are given in Table 6 in the Appendix. The mean yield of dry paddy per hectare estimated for irrigated and unirrigated areas in respect of each district and the State are also given in this table.

The weight of cleaned rice is reckoned as 65.7% of dry paddy.

The Statement showing the percentage of area under different improved agricultural practices during each of the three paddy crop seasons are given in ~~Table 7.1, 7.2, and 7.3~~ in the Appendix.

The estimated yield rate and the total production of raw tapioca in each district and in the State are presented in Table 9 in the Appendix. Similar statements for coconut, cashew, pepper and arecanut are given in Tables, 11, 13, 15 and 17 in the Appendix.

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## APPENDICES

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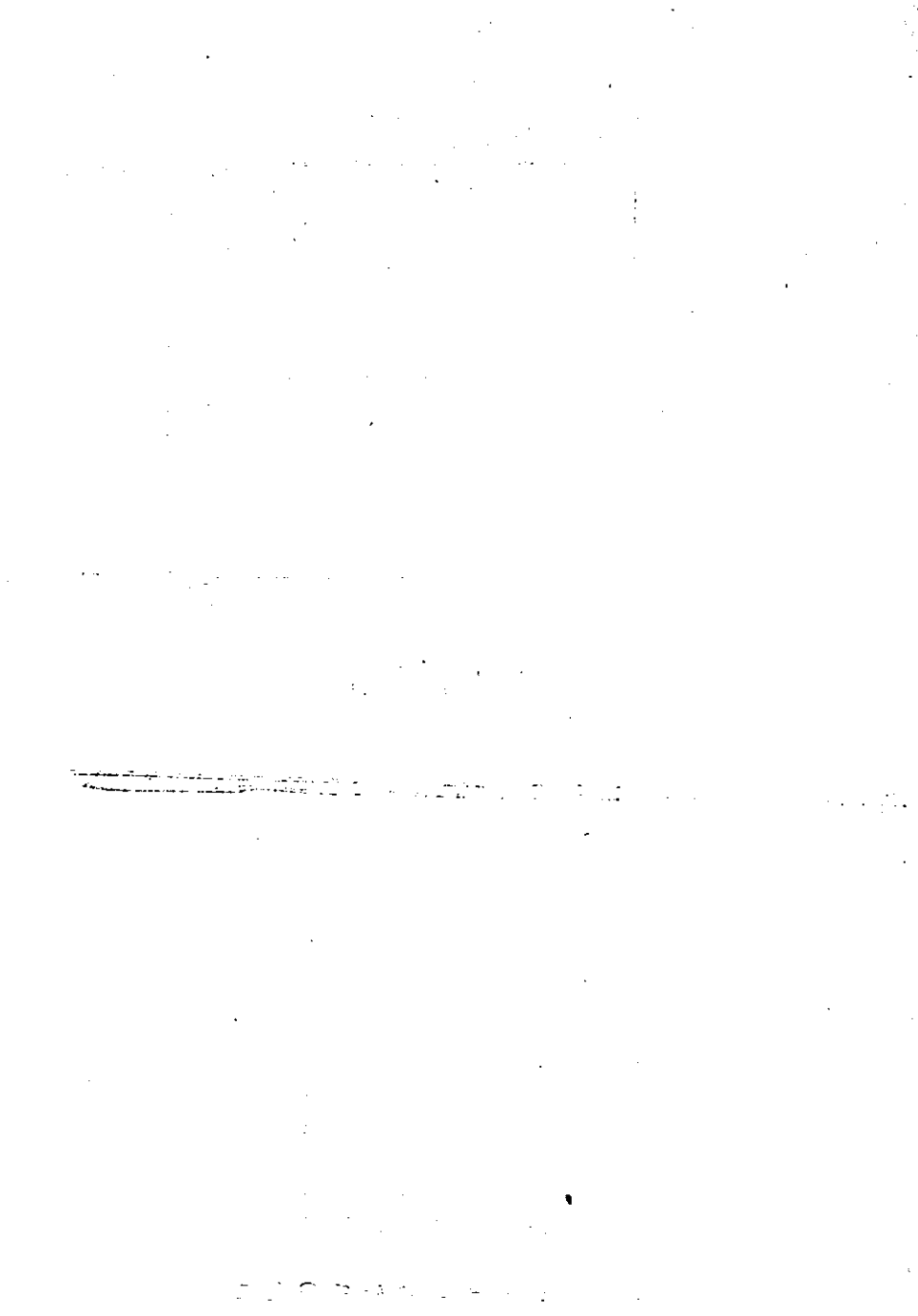


TABLE No. 1

## Crop Coverage and Sample Size—Rice 1976-77

Sl. No.	District	Total number of experiments planned for the year					
		Autumn 1976	Winter 1977	Summer 1977	Total		
1	2	3	4	5	6		
1	Trivandrum	80	80	77	237		
2	Quilon	121	121	96	338		
3	Alleppey	137	137	83	357		
4	Kottayam	100	97	60	257		
5	Idukki	64	26	Nil	90		
6	Ernakulam	120	114	114	348		
7	Trichur	113	113	107	333		
8	Palghat	120	120	120	360		
9	Malappuram	118	114	108	340		
10	Kozhikode	106	106	91	303		
11	Cannanore	174	172	158	504		
	State	1253	1200	1014	3467		

TABLE No. 2

## Response Percentages

Crop : Paddy

Year : 1976-77

District	Autumn			Winter			Summer			Total		
	No. of experiments		Percentage Response	No. of experiments		Percentage Response	No. of experiments		Percentage Response	No. of experiments		Percentage Response
	Planned	Analysed		Planned	Analysed		Planned	Analysed		Planned	Analysed	
1	2	3	4	5	6	7	8	9	10	11	12	13
Trivandrum	80	79	99	89	79	99	77	77	100	237	235	99
Qui on	121	121	100	121	120	99	96	86	90	338	327	97
Alleppey	137	119	87	137	130	95	83	81	98	357	330	92
Kottayam	100	89	89	97	89	92	60	58	97	257	236	92
Idukki	64	15	25	26	25	96	..	..	..	90	41	46
Ernakulam	120	110	92	114	107	94	114	104	91	348	321	92
Trichur	103	113	100	113	112	99	107	101	94	333	326	98
Palghat	120	117	93	120	113	94	120	107	89	360	337	94
Malappuram	118	115	97	114	101	89	103	93	91	340	314	92
Nozhikode	106	81	76	106	101	95	91	89	98	303	271	89
Cannanore	174	155	89	172	172	100	158	157	99	504	484	96
State	1253	1115	89	1200	1149	96	1014	958	94	3467	3222	93

TABLE No. 3

**Supervision of Field Work—Rice—Independent Estimate of Mean Yield of Paddy based on Harvest Stage Inspection — 1976-77**

District	Season	No. of experiments		Mean yield rate of paddy (kg./hectare)		
		Planned for inspection at harvest stage	Inspected at harvest stage	Before drriage	After drriage	Drriage ratio used for columns 5 & 6
1	2	3	4	5	6	7
Trivandrum	Autumn	32	34	2479	2149	0.867
	Winter	32	36	2777	2327	0.838
	Summer	32	30	1462	1197	0.819
Quilon	Autumn	54	56	1605	1343	0.837
	Winter	54	66	2941	2600	0.884
	Summer	54	32	1691	1466	0.867
Alleppey	Autumn	56	58	2249	2020	0.898
	Winter	55	65	2484	2263	0.911
	Summer	39	29	3739	3395	0.908
Kottayam	Autumn	45	39	2382	2089	0.877
	Winter	45	47	2570	2308	0.898
	Summer	36	31	2354	2583	0.905
Idikki	Autumn	8	8	2707	2296	0.848
	Winter	16	16	2402	2097	0.873
	Summer	..	..	..	..	..
Ernakulam	Autumn	60	53	2424	2104	0.868
	Winter	54	53	1995	1728	0.866
	Summer	54	53	2124	1842	0.867
Trichur	Autumn	45	49	1627	1417	0.871
	Winter	42	53	1810	1636	0.914
	Summer	42	41	2717	2388	0.879
Palghat	Autumn	40	32	3005	2723	0.906
	Winter	40	27	2496	2334	0.935
	Summer	40	33	2152	2008	0.933
Malappuram	Autumn	32	22	1631	1419	0.870
	Winter	32	25	2170	2003	0.923
	Summer	32	20	2472	2324	0.940
Kozhikode	Autumn	27	33	841	754	0.897
	Winter	36	30	1779	1589	0.893
	Summer	36	33	1724	1529	0.887
Cannanore	Autumn	45	43	2606	2356	0.904
	Winter	54	51	2434	2230	0.916
	Summer	54	36	2266	2094	0.924
STATE	Autumn	444	427	2106	1849	0.878
	Winter	460	469	2378	2133	0.897
	Summer	419	838	2301	2057	0.894



TABLE No. 4

## Yield Estimate—Rice—1976-77

District	Season	Area under crop (hect)		No. of experiments		Estimated yield in kg/hect. of paddy	Sampling error (percentage)	Total production of rice in tonnes	
		Total	Coverage %	Planned	Analysed				Response %
1	2	3	4	5	6	7	8	9	10
Trivandrum	Autumn	16584	100	80	79	99	2139	5.61	23304
	Winter	17926	100	80	79	99	2280	1.93	26857
	Summer	3466	100	77	77	100	1262	7.37	2375
Quilon	Autumn	23190	100	121	121	100	1458	7.82	22211
	Winter	25074	100	121	120	99	2628	2.28	43294
	Summer	1393	100	96	86	90	1250	14.72	1144
Alleppey	Autumn	26173	100	137	119	87	2265	4.86	38949
	Winter	38309	100	137	130	95	2820	8.62	71894
	Summer	23609	100	83	81	98	3300	16.33	51182
Kottayam	Autumn	16366	100	100	89	89	2303	9.60	24762
	Winter	16204	100	97	89	92	2344	4.48	24955
	Summer	16677	100	60	58	97	2594	23.98	28421
Idikki	Autumn	8147	100	64	16	25	2300	11.04	12311
	Winter	7087	100	26	25	96	2338	6.76	10886
	Summer	490	100	..	..	..	1836	..	591
Ernakulam	Autumn	41227	100	120	110	92	2127	5.36	57607
	Winter	41886	100	114	107	94	2102	1.62	57853
	Summer	16214	100	114	104	91	2042	5.04	21753

Trichur	Autumn	42301	100	113	113	100	1479	7.30	41096
	Winter	54634	100	113	112	99	2037	5.15	73120
	Summer	21130	100	107	101	94	2446	6.01	33956
Palghat	Autumn	88047	100	120	117	98	2617	5.96	151411
	Winter	78808	100	120	113	94	2783	3.38	144084
	Summer	4167	100	120	107	89	2123	7.63	5813
Malappuram	Autumn	44192	100	118	115	97	1516	8.84	44018
	Winter	40383	100	114	101	89	2006	3.34	53227
	Summer	7005	100	108	98	91	2782	6.54	12805
Kozhikode	Autumn	12974	100	106	81	76	987	8.21	8410
	Winter	31310	100	106	101	95	1847	5.63	38001
	Summer	7442	100	91	89	98	1754	6.67	8574
Cannanore	Autumn	44621	100	174	155	89	2168	4.80	63568
	Winter	29557	100	172	172	100	2243	2.81	43566
	Summer	7281	100	158	157	99	2405	4.16	11505
State	Autumn	363822	100	1253	1115	89	2040	2.35	487647
	Winter	381678	100	1200	1149	96	2344	1.62	587737
	Summer	108874	100	1014	958	94	2497	5.93	178619

TABLE No. 5

## Pooled Estimates of Mean Yield and Production of Rice—year—1976-77

District	Series	Autumn 1976		Winter 1977		Summer 1977		Total 1976-77	
		Mean yield of rice in kg./hectare	Production of rice in tonnes	Mean yield of rice in kg./hectare	Production of rice in tonnes	Mean yield of rice in kg./hectare	Production of rice in tonnes	Mean yield of rice in kg./hectare	Production of rice in tonnes
1	2	3	4	5	6	7	8	9	10
Alleppey	State series	1488	38949	1853	71894	2168	51182	1829	162025
	IADP	969	25362	1152	44708	2093	49414	1349	119484
	Pooled			Found not poolable					
Palghat	State series	1719	151411	1828	144084	1395	5813	1761	301308
	IADP	2061	181465	1911	150602	..	..	1990	332067
	Pooled			Found not poolable					
State	State series	1340	487647	1540	587737	1641	178619	1468	1254003
	Pooled			Found not poolable					

TABLE No. 6  
 Data on dridge [percentage recovery of final produce (dry paddy) from harvested produce]  
 and yield from irrigated and unirrigated plots—Rice 1976-77

District	Season	Dridge experiment			Irrigated plots		Unirrigated plots	
		Number planned	Number analysed	Percentage	No.	Mean yield of dry paddy (kg/hectare)	No.	Mean yield of dry paddy (kg/hectare)
1	2	3	4	5	6	7	8	9
Trivandrum	Autumn	12	9	75	38	2501	41	1787
	Winter	12	10	83	35	2241	44	2272
	Summer	12	7	58	44	1315	33	1007
Quilon	Autumn	18	17	94	15	2137	106	1406
	Winter	18	17	94	20	2891	100	2597
	Summer	17	17	100	28	1247	58	1224
Alleppey	Autumn	21	19	90	1	2393	118	2062
	Winter	18	18	100	16	2803	114	2250
	Summer	15	14	93	53	3463	28	2995
Kottayam	Autumn	15	14	93	8	2495	81	2279
	Winter	15	15	100	25	2483	64	2449
	Summer	12	12	100	38	2444	20	2575
Idukki	Autumn	12	3	25	..	..	16	2300
	Winter	6	6	100	9	2166	16	2373
	Summer	..	..	..	..	..	..	..

TABLE No. 6 (Contd.)

1	2	3	4	5	6	7	8	9
Ernakulam	Autumn	21	17	81	69	2172	41	2014
	Winter	18	17	94	72	2179	35	1812
	Summer	18	16	89	95	1946	9	1719
Trichur	Autumn	15	15	100	21	1520	92	1374
	Winter	15	14	93	51	2147	61	1689
	Summer	15	15	100	93	2387	8	2986
Palghat	Autumn	15	14	93	50	3008	67	2081
	Winter	15	15	100	62	2926	51	2357
	Summer	15	13	87	91	2281	16	1767
Malappuram	Autumn	12	11	92	22	2418	93	1325
	Winter	12	11	92	39	2117	62	1996
	Summer	12	10	83	87	2364	11	1762
Kozhikode	Autumn	12	9	75	..	..	81	1028
	Winter	12	12	100	8	1298	93	1683
	Summer	12	11	92	53	1588	36	1479
Cannanore	Autumn	18	14	78	4	3112	151	2114
	Winter	18	18	100	61	2102	111	2108
	Summer	18	16	89	124	2023	33	1804
State	Autumn	171	142	83	228	2400	887	1760
	Winter	159	153	96	398	2341	751	2146
	Summer	146	131	90	706	2159	252	1744

TABLE No. 7.1

## Crop Estimation Survey

STATEMENT SHOWING THE PERCENTAGE AREA UNDER DIFFERENT IMPROVED AGRICULTURAL PRACTICES

Season and year: Autumn 1976

Crop: Paddy

District	Percentage Area under								
	High yielding variety	Other variety	Chemical fertilisers	Other manures	Not Manured	Treatment of insecticides	Untreated by insecticides	Remarks	
1	2	3	4	5	6	7	8	9	
Trivandrum	18.99	81.01	96.20	3.80	..	48.10	51.90		
Quilon	23.14	76.86	87.60	12.40	..	21.49	78.51		
Alleppey	44.54	55.46	81.51	12.61	5.88	46.22	53.78		
Kottayam	56.18	43.82	91.01	7.87	1.12	64.04	35.96		
Idukki	56.25	43.75	100.00	..	..	75.00	25.00		
Ernakulam	36.36	63.64	79.09	16.36	4.55	64.55	35.45		
Trichur	34.51	65.49	65.49	34.51	..	43.36	56.64		
Palghat	23.93	76.07	75.21	22.23	2.56	28.21	71.79		
Malappuram	15.65	84.35	51.30	48.70	..	40.87	59.13		
Kozhikode	18.52	81.48	32.10	65.43	2.47	9.88	90.12		
Cannanore	12.26	87.74	45.16	54.19	0.65	7.10	92.90		
State	28.16	71.84	69.96	28.43	1.61	36.50	63.50		

TABLE No. 7.2

## Crop Estimation Survey

STATEMENT SHOWING THE PERCENTAGE OF AREA UNDER DIFFERENT IMPROVED AGRICULTURAL PRACTICES  
 Crop: Paddy  
 Season and year : Winter 1977

District	Percentage area under									Remarks
	1	2	3	4	5	6	7	8	9	
	High yielding variety	Other varieties	Chemical manure	Other manures	Not manured	Treatment of insecticides	Untreated by insecticides			
Trivandrum	19.92	86.08	96.20	3.80	..	48.10	51.90			
Quilon	3.33	96.67	94.17	..	5.83	18.33	81.67			
Alleppey	30.77	69.23	80.77	..	19.23	53.85	46.15			
Kottayam	41.57	58.43	98.88	..	1.12	93.26	6.74			
Idukki	..	..	92.00	4.00	4.00	84.00	16.00			
Ernakulam	4.67	95.33	83.18	..	16.82	71.96	28.04			
Trichur	16.07	83.93	69.64	..	30.36	65.18	34.82			
Palghat	16.81	83.19	70.80	19.47	9.73	41.59	58.41			
Malappuram	7.92	92.08	58.42	16.83	24.75	57.43	42.57			
Kozhikode	7.92	92.08	51.49	..	48.51	17.82	82.18			
Cannanore	10.47	89.53	70.35	0.58	29.07	43.60	56.40			
State	14.62	85.38	76.94	3.83	19.23	50.65	49.35			

TABLE No. 7.3  
Crop Estimation Survey

STATEMENT SHOWING THE PERCENTAGE AREA UNDER DIFFERENT IMPROVED AGRICULTURAL PRACTICES  
Season and year: Summer 1977

Crop: Paddy

District	Percentage Area under								
	High yielding variety	Other variety	Chemical fertilisers	Other manure	Not manured	Treatment of insecticides	Untreated by insecticides	Remarks	
1	2	3	4	5	6	7	8	9	
Trivandrum	68.83	31.17	94.81	3.89	1.30	90.90	9.10		
Quilon	39.53	60.47	86.05	12.79	1.16	76.74	23.26		
Alleppey	55.56	44.44	100.00	..	..	98.77	1.23		
Kottayam	60.34	39.66	100.00	..	..	96.55	3.45		
Idukki	..	..	..	..	..	..	..		
Ernakulam	44.23	55.77	97.12	2.88	..	88.46	11.54		
Trichur	50.50	49.50	88.12	10.89	0.99	74.26	25.74		
Palghat	48.60	51.40	73.83	23.36	2.81	46.73	53.27		
Malappuram	55.10	44.90	85.72	12.24	2.04	63.27	36.73		
Kozhikode	59.55	40.45	80.90	16.85	2.25	48.31	51.69		
Cannanore	33.76	66.24	76.43	22.93	0.64	50.96	49.04		
State	49.69	50.31	86.74	12.11	1.15	70.35	29.65		



TABLE No. 8

**Response—Crop—Tapioca 1976—77**

Sl. No.	District	No. of experiments		Percentage response
		Planned	Analysed	
1	2	3	4	5
1	Trivandrum	71	71	100
2	Quilon	114	114	100
3	Alleppey	48	46	96
4	Kottayam	88	88	100
5	Idukki	18	18	100
6	Ernakulam	94	94	100
7	Trichur	104	100	96
8	Palghat	120	113	94
9	Malappuram	108	105	97
10	Kozhikode	82	81	99
11	Cannanore	125	120	96
	State	972	950	98

TABLE No. 9

## Yield Estimates—Tapioca 1976-77

District	Area under crop		No. of experiments		Response percentage			Total production of raw tapioca (tonnes)
	Total Area (hectare)	Coverage %	Planned	Analysed	6	7	8	
1	2	3	4	5	6	7	8	
Trivandrum	66633	100	71	71	100	14.20	946189	
Quilon	85816	100	114	114	100	16.48	1414248	
Alleppey	28677	100	48	46	96	15.12	433596	
Kottayam	40262	100	88	88	100	20.13	812487	
Idukki	9759	100	13	18	100	18.95	184933	
Ernakulam	14334	100	94	94	100	15.00	215010	
Trichur	9225	100	104	100	96	14.55	134224	
Palghat	7954	100	120	113	94	16.42	130605	
Malappuram	29338	100	108	105	97	11.75	344722	
Kozhikode	8574	100	82	81	99	11.28	96715	
Cannanore	22706	100	125	120	96	18.18	412795	
State	323278	100	972	950	98	15.85	5125524	

TABLE No. 10

## Crop Cutting Survey on Coconuts 1976—77

RESPONSE PERCENTAGE

District	No. of experiment		Percentage response
	Planned	Analysed	
1	2	3	4
Trivandrum	40	40	100
Quilon	57	55	96
Alleppey	49	49	100
Kottayam	44	44	100
Idikki	9	9	100
Ernakulam	49	49	100
Trichur	55	55	100
Palghat	60	53	88
Malappuram	54	54	100
Kozhikode	41	41	100
Cannanore	76	76	100
State	534	525	98

TABLE No. 11

## Yield Estimates—Coconut 1976-77

District	Area under the crop		No. of experiments		Response percentage	Estimated mean yield (No. of nuts/hectare)	Total production million nuts
	Total area hectare	Coverage %	Planned	Analysed			
1	2	3	4	5	6	7	8
Trivandrum	79335	100	40	40	100	5069	402
Quilon	93465	100	57	55	96	4186	391
Alleppey	64338	100	49	49	100	5197	334
Kottayam	56535	100	44	44	100	4033	228
Idikki	14594	100	9	9	100	3429	50
Ernakulam	53524	100	49	49	100	4696	251
Trichur	50030	100	55	55	100	6844	342
Palghat	18325	100	60	53	88	3639	67
Malappuram	67379	100	54	54	100	5117	345
Kozhikode	104885	100	41	41	100	5481	575
Cannanore	92575	100	76	76	100	3924	363
State	694985	100	534	525	98	4817	3348

TABLE No. 12

**Crop Cutting Survey on Cashew 1976-77**

## RESPONSE PERCENTAGE

District	No. of experiments		Percentage of response
	Planned	Analysed	
1	2	3	4
Trivandrum	40	32	80
Quilon	57	50	88
Alleppey	37	33	89
Kottayam	21	16	76
Idikki	9	8	89
Ernakulam	33	29	88
Trichur	43	40	93
Palghat	29	18	62
Malappuram	54	38	70
Kozhikode	41	35	85
Cannanore	78	47	60
State	442	346	78

TABLE No. 13

## Yield Estimates—Cashew—1976-77

District	Area under the crop		No. of experiments				Estimated mean Total production	
	Total area	Coverage	Planned	Analysed	Response percentage	yield (kg./hect.)	(tonnes)	
1	2	3	4	5	6	7	8	
Trivandrum	5560	100	40	32	80	478	2658	
Quilon	8933	100	57	50	88	926	8272	
Alleppey	2867	100	37	33	89	911	2612	
Kottayam	1080	100	21	16	76	380	410	
Idikki	803	100	9	8	89	801	643	
Ernakulam	3340	100	33	29	88	1015	3390	
Trichur	5703	100	43	40	93	433	2469	
Palghat	11453	100	29	18	62	634	7261	
Malappuram	24227	100	54	38	70	769	18631	
Kozhikode	4440	100	41	35	85	827	9662-3672	
Cannanore	44920	100	78	47	60	829	37239	
State	113326	100	442	346	78	770	87257	

TABLE No. 14

## Crop Cutting Survey on Pepper 1976-77

## RESPONSE PERCENTAGE

District	No. of experiments		Percentage of response
	Planned	Analysed	
1	2	3	4
Trivandrum	30	30	100
Quilon	50	50	100
Alleppey	24	24	100
Kottayam	35	35	100
Idikki	9	9	100
Ernakulam	39	39	100
Trichur	43	42	98
Palghat	29	29	100
Malappuram	51	51	100
Kozhikode	41	40	98
Cannanore	63	57	90
State	414	406	98

TABLE No. 15

## Yield Estimates—Pepper 1976—77

District	Area under the crop		No. of experiments					Estimated mean yield (kg./hect)	Total production (tonnes)
	Total area (hectare)	Coverage	Planned	Analysed	Response percentage	7	8		
Trivandrum	5630	100	30	30	100	230	1295		
Quilon	11696	100	50	50	100	313	3661		
Alleppey	5057	100	24	24	100	130	657		
Kottayam	14504	100	35	35	100	150	2176		
Idikki	8229	100	9	9	100	89	732		
Ernakulam	7366	100	39	39	100	196	1444		
Trichur	2386	100	43	42	98	220	525		
Palghat	1430	100	29	29	100	207	296		
Malappuram	5327	100	51	51	100	225	1199		
Kozhikode	16657	100	41	40	98	328	5463		
Cannanore	30384	100	63	57	90	232	7049		
State	108666	100	414	406	98	225	24497		



TABLE No. 16

## Crop Cutting Survey on Arecanut 1976—77

## RESPONSE PERCENTAGE

District	No. of experiments		Percentage of response
	Planned	Analysed	
1	2	3	4
Trivandrum	40	39	98
Quilon	57	57	100
Alleppey	37	37	100
Kottayam	44	44	100
Idikki	9	9	100
Ernakulam	41	41	100
Trichur	43	43	100
Palghat	29	29	100
Malappuram	54	54	100
Kozhikode	41	41	100
Cannanore	47	47	100
State	442	441	100

TABLE No. 17

## Yield Estimates—Areca nut—1976—77

District	Area under the crop			No. of experiments			Estimated mean yield (No. of nuts/hectare)	Total production (million nuts)
	Total area hect.	Coverage percentage	Planned	Analysed	Response percentage			
1	2	3	4	5	6	7	8	
Trivandrum	4056	100	40	39	98	118524	481	
Quilon	6866	100	57	57	100	109727	753	
Alleppey	3156	100	37	37	100	98431	311	
Kottayam	3285	100	44	44	100	87967	289	
Idikki	1236	100	9	9	100	91130	113	
Ernakulam	6444	100	41	41	100	154190	994	
Trichur	9668	100	43	43	100	194735	1883	
Palghat	1936	100	29	29	100	171906	333	
Malappuram	10934	100	54	54	100	209673	2293	
Kozhikode	7781	100	41	41	100	215570	1677	
Cannanore	12994	100	47	47	100	167492	2176	
State	68356	100	442	441	100	165355	11303	



