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GOVERNMENT OF KERALA

REPORT ON CROP CUTTING SURVEY  
ON WINTER AND SUMMER  
CROP OF PADDY

1978

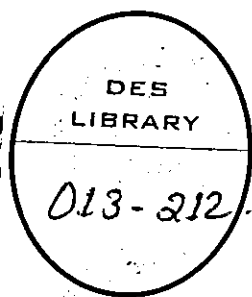
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GOVERNMENT OF KERALA

1978

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REPORT ON CROP CUTTING SURVEY  
ON WINTER AND SUMMER  
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## FOREWORD

Crop estimation surveys on Paddy are being conducted by this Department regularly from 1950 onwards, separately for each season viz., Autumn (Viruppu) Winter (Mundakan) and Summer (Punja). The results of these surveys are usually published in two separate reports, one for Autumn and the other for Winter and Summer together. This report deals with the object, area covered by the survey the sampling technique adopted, the results of the analysis of the data and the reliability of the results obtained from the survey on Winter and Summer crop of paddy 1977-78.

This report was prepared by the Agriculture Division of the Bureau of Economics and Statistics.

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# CROP CUTTING SURVEY ON WINTER AND SUMMER CROP OF PADDY 1978

## 1. Introduction

The Bureau of Economics and Statistics is regularly conducting annual crop estimation surveys on two important food crops of the State viz. Paddy and Tapioca. In the case of Paddy the experiments are conducted separately for each of the three seasons namely autumn, winter and summer. With the introduction of the Timely Reporting Scheme during 1975-76 crop cutting experiments were extended to coconut, arecanut, cashew and pepper. During the year under report, crop cutting experiments on 4 minor crops viz. jack sesamum, banana and plantain were also conducted. The main objectives of these sample surveys were to estimate productivity as well as the total production of the crop in the State.

Usually the results of crop cutting surveys on paddy are prepared and published in two parts, one for autumn crop and the other for winter and summer crops. The report for autumn crop of paddy 1977-1978 has already been published. The present report deals with the results of experiments conducted on winter and summer crop of Paddy.

### 2.1 Objectives of the Survey

The main objectives of the survey were (1) To estimate the average yield of paddy per hectare for each taluk, (2) to estimate the average yield per hectare for each district and the State and (3) to estimate the total production of rice in the State during the season.

It was also intended to frame estimates of productivity of high yielding varieties of paddy as well as of different cultivation practices like the application of chemical fertilisers, adoption of irrigation etc. at the district and the State level.

### 2.2 Period of the Survey

The harvesting period of winter crop is from November to February and that of summer crop is from March to June (four months each). The agricultural year is divided into three seasons with equal duration of four months. The field work relating to winter experiments were completed from November to February 1977-78 and that for summer from March to June 1977-1978.

### 2.3 Coverage and sample size

The survey was conducted in all the taluks (except in Cochin taluk) during winter 1978. During summer the experiments were conducted in 49 out of 57 taluks. The taluks where the experiments were not conducted are Pathanamthitta, Shertalai, Kanjirappally, Peerumade, Devicollur, Udumbanchola, Thodupuzha and Cochin.

As in the previous year, the selection of plots for crop cutting experiments on paddy for each taluk was confined to the revenue villages selected for Timely Reporting Survey. A minimum of two experiments was fixed for each village.

#### 2.4 Sampling design

A stratified multistage random sampling design was adopted for the survey. 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 square plot of side 5 metres as the ultimate sample unit. The selection of revenue villages was done at the headquarters of the Bureau in the beginning of the agricultural year, they being the same as those selected for T. R. S. In each of the investigator units the required number of experimental plots (two or three as the case may be) were selected by simple random sampling method from the frame consisting of the list of wet land survey subdivisions in the unit growing the crop which would be harvested in the season.

If there were no wet land plots having paddy during the season in an Investigator unit in a village, then the number will be made good from other investigator units in the same village.

In survey subdivisions having more than one kandom, one kandom was randomly selected and a square plot of side 5 metres was located at random in the selected kandom. The crop in the square plot was harvested, threshed, winnowed and weighed.

Three samples of the harvested produce each weighing 250 gm. were collected at the time of harvest from a taluk. The first sample was taken at the beginning, the second towards the middle and the third towards the end of the harvesting season in each taluk. The samples collected were sent to the concerned taluk Statistical Officers within 24 hours for conducting drriage experiments.

#### 2.5 Sample selection

The selection of plots (survey subdivision) in each Investigator unit was done by the Taluk Statistical Inspector. The selection of kandom, if the number of kandoms in the selected survey subdivision was more than one and the location of square plot of side 5 metres were done by the Investigators.

The list containing the details of the plots selected for crop cutting experiments were forwarded to the Assistant Director (National Sample Survey Organisation), Trivandrum and also to the District Agricultural Officers for facilitating inspection at harvest stage by their staff.



## 2.6 Field work

The field work of the survey was conducted by the Investigators working in T. R. S. under the immediate supervision of the Taluk Statistical Inspectors. The District Statistical Officers were responsible for the supervision of the field work of the survey. The Additional District Statistical Officers attached to the District Statistical Offices also conducted supervision of the field work of the survey.

The total number of crop cutting experiments planned during winter and summer 1978 in the State were 1452 and 916 respectively. The percentage response was 92 for winter and 96 for summer. 90 cuts were lost (due to N. G. O. strike) during winter, resulting in the low percentage response compared to the previous year. The percentage response (district-wise) during the two seasons separately are presented in table 3.1 (for winter) and table 6.1 (for summer) in appendix. Season-wise non-response for the two seasons are presented in table 3.2 and 6.2 in the appendix. Prior harvest by cultivators was reported to be the main reason for the loss of a number of experiments.

The field work was allotted to 712 Investigators during winter and 488 Investigators during summer. But only 672 Investigators in winter and 469 Investigators in summer had actually conducted the experiment. It was found that 5 experiments or more was done by 27 Investigators in winter, 1978 and 24 Investigators in Summer 1978. The average number of experiments conducted per Investigator came to be 1.98 in winter 1978 and 1.88 in summer 1978. These Investigators had also to conduct crop cutting experiments on four additional crops during the year.

The allocation of field work to the Investigators according to the number of experiments in the different districts during winter and summer 1978 is given in table 3.3 and table 6.3 respectively in appendix. The distribution of Investigators according to the number of experiments actually conducted by them in the various districts in winter and summer 1978 is presented in table 3.4 and 6.4 respectively in appendix. One schedule (Form VI A) was prescribed for the survey. The Investigators were instructed to fill up this schedule at the time of conducting the experiment.

The field work of the survey was inspected at 3 stages viz. pre-harvest, harvest and post-harvest stages by the Statistical Inspectors, District Statistical Officers and Additional District Statistical Officers attached to the District Statistical Offices. Targets had been fixed for the supervisory officials for the conduct of inspection at the harvest stage. The officers at district-level has been instructed to conduct harvest stage inspection at the rate of one experiment in each taluk. The Statistical Inspectors were asked to conduct harvest stage inspections at least in one randomly selected plot in each Investigator unit subject to a maximum of six experiments in a taluk. (These six experiments were inclusive of the experiments inspected at harvest stage under the parallel supervision scheme). About 42% of the number of experiments analysed were inspected at harvest stage during winter 1978.

and 47% in summer 1978. The per-centage of pre-harvest stage inspection was about 12% in winter and 15% in summer season. The post harvest stage inspection conducted was about 3% in winter and 5% in summer 1978. The number of experiments inspected at the three stages together with their percentages in all the districts and State during winter and summer seasons are given in table 3.5 and table 6.5 respectively in the appendix.

## 2.7 Analysis

The tabulation and analysis of the data collected through the survey was done at the headquarters of the Bureau by the Agricultural Statistics Division.

## 2.8 Procedure of Estimation

(i) *Mean yield*:—The taluk-wise mean yield of dry paddy and its standard error were estimated using the following formula.

$$\text{Taluk mean yield} = \frac{\sum_{i=1}^k \sum_{j=1}^{n_i} x_{ij}}{\sum_{i=1}^k n_i}$$

Where  $n_i$  = Number of experiments conducted in the  $i$ th village  
( $i = 1, 2, 3, \dots, k$ )

$k$  = Number of villages selected in the Taluk.

$x_{ij}$  = Weight of paddy obtained from the  $j$ th experiment in the  $i$ th village ( $j = 1, 2, 3, \dots, n_i$ )

Each experiment is taken from 5 metre square ( $\frac{1}{100}$ th of the hectare)

Mean yield of dry paddy in kg. per hectare =  $\bar{X} \times 400 \times d$   
Where  $d$  is the driage ratio of dry paddy to wet paddy.

(ii) *Standard Error of Taluk mean yield*: Variance of taluk

$$\text{mean yield} = \frac{A}{N} + \frac{B-A}{m} \times \frac{\sum_{i=1}^k n_i^2}{N^2}$$

Where  $A$  = Mean square within village.

$B$  = Mean square between village.

$N$  = Total number of experiments conducted in the taluk  $\left( \sum_{i=1}^k n_i \right)$

$n_i$  = Number of experiments conducted in the  $i$ th village

$$m = \frac{N^2 - \sum n_i^2}{N(k-1)}$$

$k$  = Number of villages selected in the taluk.

The standard error (S.E.) is the square root of this variance. The standard error in Kg./per Hectare is obtained by multiplying this root of variance with 400.

(iii) *Standard Error of the State Mean Yield*: The formula adopted for the computation of standard error of the State mean yield is indicated below.

$$\text{Standard error of the State Mean Yield} = \sqrt{\frac{\sum (a_i S_i)^2}{(\sum a_i)^2}}$$

Where  $a_i$  = Area under the crop in the  $i$ th taluk and

$s_i$  = The standard error of the estimate of mean yield in the  $i$ th taluk.

The data on area under paddy in each taluk estimated through the T. R. S. have been utilised to compute the production of rice. The weight of cleaned rice is reckoned as 65.7% of dry paddy.

### 3.1. Result of the Survey

The estimates of production of rice in the State during the different seasons in the year 1977-78 are given below :

Autumn 1977	..	551792	Tonnes
Winter 1978	..	559190	„
Summer 1978	..	183653	„

The production of rice in the State increased considerably during Autumn 1977 (about 64 thousand tonnes) compared to the previous year. It however decreased by about 28 thousand tonnes during winter season compared to corresponding season in the previous year. In summer season the production showed a satisfactory increase. This fall in production in winter season was mainly due to flood damages, water logging and decrease in the use of chemical fertilisers etc. It is also reported (from certain places) that the cultivators were diffident to apply adequate inputs due to low price of paddy. The climatic conditions were favourable during summer as also the incidence of pests was not acute. As a result a better yield rate was obtained during summer. The area under high yielding variety of paddy increased by about 14 thousand hectares and production by 29 thousand tonnes (in winter) though the total area under and production of paddy decreased during the season. In summer season however a decrease was noticed in both area and production of high yielding variety. This was mainly due to the fear of cultivators about the heavier incidence of pest attack on high yielding varieties compared to other varieties.

The estimated area, mean yield and its standard error, production of rice together with the number of crop cutting experiments analysed for each taluk during winter and summer 1978 are given in Table 1.1 and 4.1 respectively in the Appendix.

With a view to facilitate comparison, the data on area, mean yield and production of rice in all districts of the State during the corresponding seasons of 1977-78 are presented along with those of winter and summer 1978 in Table 1.2 and 4.2 respectively in the Appendix. Table 1.2 reveals that the productivity has decreased in all districts except those in Idukki, Palghat and Kozhikode in winter from the level it attained in winter 1977 (which also was in a decreasing trend from 1976). But in summer season the productivity was at an increasing trend in 7 districts out of 11 in the State compared to summer 1977.

Crop cutting experiments under I. A. D. P. series were not conducted in both the I. A. D. P. Districts of Alleppey and Palghat during Winter 1978 as a result of N. G. O. strike in Alleppey and non-co-operation of Village Extension Officers in Palghat.

Usually during summer season crop cutting experiments under I. A. D. P. are not done in Palghat District as the area under summer paddy is comparably small there. In summer season the experiments were conducted in Alleppey, but it was found that the estimates of mean yield of paddy obtained from the State series and I. A. D. P. series of experiments conducted in this District are not poolable as the statistical test for non-significance of means turned out to be highly in-significant.

The analysis of variance of plot yield pooled for the State is given in table 1.3 and 4.3 on the appendix in respect of winter and summer seasons respectively. In both cases the yield rate of paddy was found to be statistically significant between taluks.

The frequency distribution of plot yields obtained through the survey in each District as well as the State during winter and summer seasons are given in table 1.4 and 4.4 respectively in the Appendix. It was found that the yield obtained from about 65% in winter and 54% in summer of the experimental plot was over 2000 K. gm. per hectare. The lowest yield rate of less than 500 K. gm. of dry paddy per hectare was obtained from 2.18% of the experimental plots in winter and 7.83% of the experimental plots in summer.

In order to determine the driage ratio of dry paddy to wet paddy 157 and 140 driage experiments were conducted in Taluk Statistical Offices during winter and summer 1978 respectively. The driage ratios for each District and the State are presented in table 1.5 and 4.5 in the Appendix for winter and summer 1978 respectively. The lowest driage ratio was reported from Trivandrum District in both the season. (0.854 in winter and 0.843 in summer). As in the previous year the highest per centage recovery of dry paddy from wet paddy was recorded in Palghat District (91.4) in winter 93.7 in summer). The driage ratio for the State was estimated as 89.5% in winter 89.8% in summer respectively.

Independent estimates of mean yield of paddy (simple average) both wet and dry for the Districts and the State were framed on the basis of yield obtained from the experimental plots inspected by the Statistical Inspectors, District Statistical Officers and Additional District Statistical Officers and Economic Investigators. In winter harvest stage inspection was done in 41.7% of the plots while in summer it was 46.7%. The changes made by the cultivators in the dates of harvest originally fixed and N.G.O. strike were the main reason for the shortfall in the achievements of the target in full, in this regard.

The estimated mean yield (simple average) for each District and State based on harvest stage inspections are given in table 1.6 for winter and 4.6 for summer in Appendix.

The estimated mean yield of winter and summer paddy for each taluk for the last 6 years from 1973 to 1978 are given in table 1.7 and 4.7 respectively in the Appendix.

### 3.2 High Yielding Varieties

The estimated area mean yield and production of high yielding variety of paddy in each District and in the State during winter and summer 1978 are presented in table 2.1 and table 5.1 respectively in the Appendix. The estimates that showed about 24% of paddy area in winter and 59% in summer were brought under high yielding varieties.

A comparative picture in respect of area, mean yield and production of high yielding varieties in the different Districts and the State in winter and summer seasons is provided in table 2.2 and 5.2 respectively for the years 1977 and 1978.

The area under High Yielding Varieties increased by 19% in winter compared to the previous winter, the trend being accounted by 6 out of the 11 Districts. In summer the area decreased by 16%, the lone exception with an increase in area being Cannanore District. The productivity in winter was higher in 7 District compared to the previous year. The reverse trend was found only in Quilon, Idukki, Trichur and Malappuram Districts. The following Districts namely Trivandrum, Quilon, Malappuram and Cannanore together accounted for the fall in productivity in summer 1979 over the previous year. The production of rice from the high yielding variety of paddy in the State increased by an estimated 22% in winter and came down by 12% in summer 1978 from the level of production in the previous year.

The distribution of experimental plots with high yielding varieties of paddy according to the varieties raised in each District and the State during winter and summer 1978 are given in Table 2.3 and 5.3 respectively in Appendix. It is found that about 19% and about 52% of the experimental plots were under high yielding variety during winter and summer respectively. From this table it can be seen that the cultivators prefer Jyothi, Thriveni and Jaya in summer and Jyothi, H4 and Mashoori in winter seasons. In almost all the Districts Thriveni and Jaya varieties are raised in both seasons. Other newly introduced strains are not so popular

The estimates of average yield (simple average) of various high yielding varieties at the District and the State level are presented in table 2.4 and 5.4 for winter and summer seasons respectively in the Appendix. The highest average yield of 5014 and 5325 K. gms. per hectare were obtained Bharathy in Alleppey District in winter 1978 and summer 1978 respectively. The names of high yielding varieties which correspond to the highest average yield in each District together with the highest average yield and the number of experimental plots where the crop was raised in each District during winter 1978 are indicated in the subjoined table.

TABLE 2

**High Yielding Varieties correspond to the Highest District  
Average Yield Winter 1978**

Sl. No.	District	H. Y. V. correspond to highest average yield	Highest average yield (dry paddy Kg./hect.)	No. of experimental plots where H.Y.V. given in col. (3) raised
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	Jyothi	2770	3
2	Quilon	Bharathy	3035	2
3	Alleppey	do.	5014	1
4	Kottayam	Jaya	3327	3
5	Idukki	do.	4065	1
6	Ernakulam	I R 5	2585	1
7	Trichur	Jaya	2928	1
8	Palghat	Mashoori	3582	32
9	Malappuram	I R 8	2817	2
10	Kozhikode	Mashoori	3121	3
11	Cannanore	I R 20	3244	4

Jaya variety recorded the highest District average in three Districts in winter 1978 while Bharathy variety obtained the highest District average only in two Districts though it recorded the highest yield rate among the Districts in the State.

TABLE 3

### H. Y. V. Correspond to the Highest District Average Yield Summer 1978

Sl. No.	District	H. Y. V. correspond to highest average yield	Highest average yield (dry paddy Kg./ hectare)	No. of experimental plots were H. Y. V. given in col. (3) raised
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	Triveni	979	21
2	Quilon	I R 20	1859	1
3	Alleppey	Bharathy	5325	7
4	Kottayam	Masoori	4901	1
5	Idukki	do.	Nil	Nil
6	Ernakulam	Bharathy	2643	4
7	Trichur	do.	4391	1
8	Palghat	Jaya	3152	24
9	Malappuram	Bharathy	3157	2
10	Kozhikode	Sabari	2777	1
11	Cannanore	I R 8	2759	4

Bharathy recorded the highest district average yield in the State during summer 1978 in Alleppey district. In Ernakulam, Trichur and Malappuram Bharathy recorded the highest district average yield. Masoori in Kottayam recorded the second highest district average in the State. Jyothi and Triveni are found to be the most widely adopted high yielding variety during the season.

### 3.3: Cultivation practices

It was found that about 31% & 75 % of the experimental plots received irrigation during winter and summer 1978 respectively. The corresponding percentages were 35 and 74 respectively during winter and summer seasons during the previous year. About 84 percent of the irrigated plots were found to have applied with chemical fertilizer in winter 1978 while in

summer this percentage was found to be 88 percent. In winter 1978 another 14% of the irrigated plots were reported to be applied with other manures like farm yard manure, green manure etc. This type of manure was also applied to about 12% of the experimental plots in summer 1978. As far as unirrigated plots were concerned about 70% of them were found to have been applied with chemical fertilizers and another 26% received other type of manures like farm yard manure, green manure, compost manure etc. during winter 1978. In summer 1978 these percentages came to 76 and 23 respectively. About 4% and 1% respectively of the unirrigated plots covered by the survey were left unmanured during winter and summer 1978 respectively.

It was reported that crops in about 51% and 70% of the experimental plots were treated with insecticides and pesticides during winter and summer 1978 respectively.

In the case of experimental plots where high yielding varieties were raised, it was found that 44% and 78% of them received irrigation in winter and summer 1978 respectively. About 95% and 94% respectively of the irrigated plots under high yielding varieties in winter and summer 1978 and 91%, 94% of unirrigated plots in those periods were brought under chemical fertilizers.

Insecticides and pesticides were applied to about 81 percent and 80% of the experimental plots under high yielding varieties in winter and summer 1978 respectively.

The estimated average yield of high yielding and other varieties of paddy is given in table 2.5 and 5.5 respectively for winter and summer 1978 in appendix with the break up into the following classes.

- (i) Irrigated and unirrigated.
- (ii) Chemically manured, other manured and not manured.
- (iii) Applied and not applied with pesticides and insecticides.

The estimated area mean yield and production of high yielding varieties of paddy on each district during the three seasons viz. Autumn, Winter and Summer 1977-78 are given in table 7.1 in the Appendix to facilitate comparison. A similar statement for all varieties of paddy is given in Table 7.2 in Appendix. The estimated area mean yield and production of high yielding varieties of paddy in the State for the last 4 years from 1973-74 are given separately for each season in Table 7.3 in the Appendix. A similar statement for all varieties of paddy for the last 9 years from 1969-70 are given in Table 7.4 in the Appendix.



TABLE 1.1

Estimated Area, Mean yield and production of Rice winter crop of Paddy 1978

Taluk and District	No. of Experiments	Area in hect.	Mean yield of dry paddy in kg./hect.	Standard Error	Production of rice in tonnes
(1)	(2)	(3)	(4)	(5)	(6)
1. Neyyattinkara	29	3960	2052	101	5339
2. Trivandrum	23	3584	2044	312	4813
3. Nedumangad	30	4306	2027	137	5734
4. Chirayinkil	29	4198	2524	179	6961
TRIVANDRUM DISTRICT	111	16048	2167	95	22847
5. Quilon	22	3609	2288	363	5425
6. Kottarakara	30	6148	2482	114	10025
7. Kunnathur	29	4760	2369	134	7409
8. Pathanapuram	24	3755	2924	174	7214
9. Pathanamthitta	19	2308	2485	153	3768
10. Karunagappally	24	4544	1570	142	4687
QUILON DISTRICT	148	25124	2334	75	38528
11. Karthigappally	24	4143	1207	414	3285
12. Mavelikara	30	5430	2101	117	7495
13. Chengannur	21	2813	2244	255	4147
14. Thiruvalla	23	1423	2839	184	2654
15. Kuttanad	24	10609	3874	144	27002
16. Ambalapuzha	27	3135	1943	1000	4002
17. Sherthallai	29	4197	979	168	2700
ALLEPPEY DISTRICT	178	31750	2458	128	51285
18. Changanacherry	19	344	2670	1183	603
19. Kanjirappally	5	13	2372	200	20
20. Kottayam	29	6262	2529	294	10405
21. Vaikom	21	5491	1921	643	6930
22. Meenachil	22	2283	2675	123	4012
KOTTAYAM DISTRICT	96	14393	2323	279	21970
23. Peermade	6	47	3107	13	96
24. Devicolam	6	1732	3943	..	4487
25. Udumbanchola	12	1919	2382	270	3003
26. Thodupuzha	29	3142	2428	197	5012
IDUKKI DISTRICT	53	6840	2803	158	12598

TABLE—1.1 (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)
27. Kothamangalam		29	4368	2118	147	6078
28. Muvattupuzha		28	6283	2215	102	9143
29. Cochin		..	..	..	..	..
30. Kanayannur		29	4026	1826	55	4830
31. Kunnathunad		29	11598	1962	58	14950
32. Alwaye		30	9489	1781	226	11103
33. Parur		30	3773	2218	..	5498
ERNAKULAM DISTRICT		175	39537	1986	68	51602
34. Crangannore		20	1497	1213	474	1193
35. Mukundapuram		30	16663	1742	98	19071
36. Trichur		30	15250	2035	164	20389
37. Thalappally		30	16651	1992	73	21792
38. Chowghat		23	6238	1211	124	4963
TRICHUR DISTRICT		133	56299	1822	60	67408
39. Chittur		29	17936	3090	329	36412
40. Alathur		27	18503	3476	398	42256
41. Palghat		26	18476	3451	194	41891
42. Ottappalam		29	18677	2322	142	28493
43. Mannarghat		28	7497	2129	133	10486
PALGHAT DISTRICT		139	81089	2994	129	159538
44. Perinthalmanna		18	7106	2286	229	10673
45. Ponnani		23	5623	1732	332	6399
46. Tirur		29	11837	1879	182	14613
47. Ernad		25	15950	1958	137	20518
MALAPPURAM DISTRICT		95	40516	1961	97	52203
48. Kozhikode		18	7238	1784	135	8484
49. Quilandy		15	5503	1163	195	4205
50. Badagara		11	3522	1506	134	3485
51. South Wynad		12	13657	2762	424	24782
KOZHIKODE DISTRICT		56	29920	2083	200	40956
52. North Wynad		12	7595	2526	860	12605
53. Tellicherry		30	4183	1718	134	4721
54. Cannanore		28	3276	1653	196	3558
55. Taliparamba		23	4703	1981	209	6121
56. Hosdurg		25	3440	2025	336	4577
57. Kasargode		30	6146	2148	102	8673
CANNANORE DISTRICT		148	29343	2088	231	40255
STATE		1332	370859	2295	44	559190

TABLE 1.2

**Estimated Area, meanyield and production of Rice relating  
to Winter crop of paddy 1977-1978**

Sl. No.	District	Area in hectares		Mean yield of dry paddy (in kg./hect.)		Production of rice (tonnes)	
		1977 (2)	1978	1977	1978	1977 (1)	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	17926	16048	2280	2167	26857	22847
2.	Quilon	25074	25124	2628	2334	432942	38528
3.	Alleppey	38809	31750	2820	2458	71894	51285
4.	Kottayam	16204	14393	2344	2323	24955	21970
5.	Idukki	7087	6840	2338	2803	10886	12598
6.	Ernakulam	41886	39537	2102	1986	57853	51602
7.	Trichur	54634	56299	2037	1822	73120	67408
8.	Palghat	78808	81089	2783	2994	44084	159538
9.	Malappuram	40383	40516	2006	1961	53227	52203
10.	Kozhikode	31310	29920	1847	2083	38001	40956
11.	Cannanore	29557	29343	2243	2088	43566	40255
	STATE	381678	370859	2344	2295	587737	559190

TABLE 1.3

*Winter crop of paddy—1978*

**Analysis of variance of plot yield pooled for the State, in  
Kgs./plot of 1/400th of an Hectare**

Source of variation	Sum of squares	Number of Degrees of freedom	Mean sum of squares (variance)	Variance ratio (calculated)
(1)	(2)	(3)	(4)	(5)
Between Taluk	3406.62	55	61.94	15.76
Between Villages within Taluk	1896.04	203	9.34	2.38
Within Villages within Taluk	4212.55	1073	3.93	..
All	9515.21	1331	..	..

TABLE 1.4

## Frequency distribution of Plot Yields

Winter 1978

Crop : Paddy

Limits in Kgs./Hect. (in terms of dry and cleaned produce)		Number of plots	Percentage of frequency
(1)		(2)	(3)
0	100	3	0.23
100	200	3	0.23
200	300	11	0.82
300	400	3	0.23
400	500	9	0.68
500	600	6	0.45
600	700	12	0.90
700	800	18	1.35
800	900	21	1.58
900	1000	18	1.35
1000	1100	27	2.03
1100	1200	31	2.32
1200	1300	25	1.88
1300	1400	27	1.28
1400	1500	28	2.10
1500	1600	38	2.85
1600	1700	55	4.12
1700	1800	41	3.08
1800	1900	57	4.28
1900	2000q	42	3.15
2000 and above		867	65.09
Total		1332	100.00

TABLE 1.5

## The results of driage experiments

Winter Paddy 1978

Sl. No.	District	No. of driage experiments		Total yield collected for driage experiments (Kg.)	Total yield after driage operation (Kgs.)	Driage ratio (%)
		Planned	Analysed			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Trivandrum	12	12	3.000	2.562	85.4
2.	Quilon	18	18	4.500	3.990	88.7
3.	Alleppey	18	20	4.985	4.510	90.5
4.	Kottayam	15	14	3.500	3.161	90.3
5.	Idukki	6	10	2.500	2.163	86.5
6.	Ernakulam	18	18	4.500	4.035	89.7
7.	Trichur	15	14	3.500	3.136	89.6
8.	Palghat	15	12	3.000	2.741	91.4
9.	Malappuram	12	12	3.000	2.702	90.1
10.	Kozhikode	12	10	2.500	2.281	91.2
11.	Cannanore	18	17	4.250	3.822	89.9
	STATE	159	157	39.235	35.103	89.5

TABLE F.6

**Independent Estimate of mean yield of paddy based on harvest stage inspection**

Winter 1978

Sl. No.	District	No. of experiments		Mean yield of Paddy Kg/Hect.		Driag : ratio used for col. 6
		Planned for harvest stage inspection	Inspected at harvest stage	Before driage	After driage	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Trivandrum	56	56	2354	2010	0.854
2	Quilon	84	80	3598	3191	0.887
3	Alleppey	72	94	1990	1801	0.905
4	Kottayam	69	51	3238	2924	0.903
5	Idukki	38	32	3917	3388	0.865
6	Ernakulam	84	62	2654	2381	0.897
7	Trichur	69	65	2450	2195	0.896
8	Palghat	70	45	2535	2317	0.914
9	Malappuram	50	30	2175	1960	0.901
10	Kozhikode	56	24	2306	2103	0.912
11	Cannanore	84	59	2402	2159	0.899
STATE		730	556	2936	2628	0.895

TABLE 1.7

Estimated mean yield of dry paddy (kg./hect.) during  
Winter Season from 1973 to 1978

Taluk and District	1973	1974	1975	1976	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Neyyattinkara	2135	2164	2130	2759	2453	2052
2. Trivandrum	2330	2058	2548	2272	2086	2044
3. Nedumangal	2999	2010	2450	2578	2156	2027
4. Chirayinkil	2477	2289	2732	2703	2434	2524
TRIVANDRUM DISTRICT	2474	2131	2444	2595	2280	2167
5. Quilon	2209	2657	2230	2165	2571	2288
6. Kottarakkara	2420	2720	2497	2872	2837	2482
7. Kunnathur	2510	2245	2712	2376	2669	2369
8. Pathanapuram	3521	2844	2788	3083	2842	2924
9. Pathanamthitta	2204	2604	2732	2865	2558	2485
10. Karunagappally	1991	2319	2039	2147	2080	1570
QUILON DISTRICT	2498	2568	2488	2585	2628	2334
11. Karthigappally	1735	1258	1705	1682	1803	1207
12. Mavelikkara	2072	1493	2878	1715	2096	2101
13. Chengannur	3853	2345	3043	2569	3008	2244
14. Thiruvalla	2425	2056	2849	2668	2840	2839
15. Kuttanad	..	..	..	..	3782	3874
16. Ambalapuzha	1294	1094	1205	2383	2151	1943
17. Sherthallai	938	618	565	1013	785	979
ALLEPPEY DISTRICT	2001*	1407	2007	1848	2820	2458
18. Changanacherry	2199	2070	3031	2558	3191	2670
19. Kanjirappally	2327	2327	1951	2062	1911	2372
20. Kottayam	2894	1821	2499	2334	2590	2529
21. Vaikom	1961	1892	1992	1997	1916	1921
22. Meenachil	2308	2101	2582	2485	2547	2675
KOTTAYAM DISTRICT	2392	1918	2358	2244	2344	2323
23. Peermade	3835	3835	2643	3008	3198@	3107
24. Devikulam	2549	1829	2624	2524	2362@	3943
25. Udumbanchola	2484	2831	2473	2881	2077	2382
26. Thodupuzha	2423	2265	2890	2389	2403	2428
IDUKKI DISTRICT	2498	2179	2694	2544	2338	2803
27. Kothamangalam	2263	2296	2734	2374	2697	2118
28. Muvattupuzha	..	..	2673	2009	2100	2215
29. Cochin	Nil	..	..	..	..	..

TABLE 1.7 (Concl'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
30. Kanayannur	1526	1381	1984	1833	1088	1826
31. Kuthathunad	2112	2007	2402	2023	2009	1962
32. Alwaye	2034	1726	2420	2159	2227	1781
33. Parur	1583	1820	2338	2159	2204	2218
ERNAKULAM DISTRICT	2037	1903	2441	2079	2102	1986
34. Cranganore	1835	1082	1060	1255	1309	1213
35. Mukundapuram	2361	1738	1743	1677	1853	1742
36. Trichur	2127	1365	2306	2316	2363	2035
37. Thalappally	2399	2020	2381	2453	2248	1992
38. Chowghat	2441	1050	2246	1165	1330	1211
TRICHUR DISTRICT	2303	1587	2140	1995	2037	1822
39. Chittur	2634	2042	3858	3458	3188	3090
40. Alathur	3382	2675	3420	3387	3035	3476
41. Palghat	2698	2637	2889	2913	2894	3451
42. Ottapalam	1980	2020	2445	2553	2226	2322
43. Mannarghat	1880	2537	2675	2451	2481	2129
PALGHAT DISTRICT	2786*	2336	3175	3050*	2783	2994
44. Perinthalmanna	2060	1769	2242	2362	2285	2286
45. Ponnani	4436	2894	2161	2120	2135	1732
46. Tirur	4184	2288	1811	1785	1960	1879
47. Ernad	2380	1946	1467	2165	1890	1958
MALAPPURAM DISTRICT	3222	2185	1812	2080	2006	1961
48. Kozhikode	1752	1506	1970	1772	1639	1784
49. Quilandy	1357	1339	1377	1107	1349	1163
50. Badagara	1249	1150	1440	1299	1356	1506
51. South Wynad	2593	2696	2171	2482	2296	2762
KOZHIKODE DISTRICT	1991	1959	1900	1911	1847	2083
52. North Wynad	2332	2738	2139	2235	2474	2526
53. Tellicherry	1456	1564	1597	1693	1902	1718
54. Cannanore	1648	1572	1117	1713	1608	1653
55. Taliparamba	1852	1662	1734	2010	1981	1981
56. Hosdurg	1971	1611	2068	2381	2239	2025
57. Kasargode	2040	2284	2122	2107	2649	2148
CANNANORE DISTRICT	1994	2083	1924	2101	2243	2088
STATE	2426*	2028	2382	2332*	2344	2295

@ Conventional Estimates

\* Pooled Estimates.



TABLE 2.1

Estimated area, mean yield and production of High yielding varieties of Paddy, winter 1978

Sl. No.	District	No. of experiments conducted		Percentage of H. Y. V. expts. to total No. of expts.	High yielding varieties		
		H. Y. V.	Total		Area (Hect.)	Mean yield of dry paddy (Kg./Hect.)	Production of rice in tonnes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	9	111	8.11	1053	2257	1561
2	Quilon	11	148	7.43	804	2340	1236
3	Alleppey	40	178	22.47	11424	3716	27891
4	Kottayam	52	96	54.17	9133	2536	15217
5	Idukki	18	53	33.96	2247	1466*	2164
6	Ernakulam	27	175	15.43	4220	1949*	5404
7	Trichur	15	133	11.28	8648	1739*	9880
8	Palghat	41	139	29.50	38498	3310	82383
9	Malappuram	17	95	17.89	5711	1820*	6829
10	Kozhikode	9	56	16.07	2686	2745	4844
11	Cannanore	20	148	13.51	5141	2706	9140
	STATE	259	1332	19.44	89565	2831	166549

\* Widespread attack of pests and diseases on High Yielding Varieties was reported in these districts.

TABLE 2.2

Estimated area, mean yield and production of high yielding variety Paddy during winter 1977 and 1978

Sl. No.	District	Area in hectares		Mean yield of dry paddy (kg./hect.)		Production of rice in tonnes	
		1977	1978	1977	1978	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	2294	1053	2035	2257	3067	1561
2	Quilon	779	804	2439	2340	1248	1236
3	Alleppey	23976	11424	3679	3716	57952	27891
4	Kottayam	10113	9133	2390	2536	15880	15217
5	Idukki	759	2247	2307	1466*	1150	2164
6	Ernakulam	1965	4220	1421	1949*	1835	5404
7	Trichur	11536	8648	2339	1739*	17728	9880
8	Palghat	12850	38498	2762	3310	23318	82383
9	Malappuram	4360	5711	2192	1820*	6279	6829
10	Kozhikode	2705	2686	2133	2745	3791	4844
11	Cannanore	3466	5141	1862	2706	4240	9140
	STATE	74803	89565	2777	2831	136488	166549

TABLE 2.3

**Distribution of Fields with High Yielding Varieties of Paddy according to the varieties grown during winter 1978**

Sl. No.	District	H. Y. V.	No. of experiments conducted	Total	Percentage of HYV expts. to total No. of expts.	No. of experimental plots under different high yielding variety										
						Thiruvani	Annapoorna (Culture-28)	Jaya	IR-8	Mashoori	H-4	IR-20	IR-5	Jyothi	Bharathy	Rohini
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	Trivandrum	9	111	8.11	1	4	4	1	1	1	1	1	3	2	2	2
2	Quilon	11	148	7.43	..	..	..	..	..	4	4	..	5	2	..	..
3	Alleppey	40	178	22.47	2	1	5	..	..	5	..	1	24	1	1	..
4	Kotrayam	52	96	54.17	..	3	3	1	1	9	..	..	28	6	..	2
5	Idukki	18	53	33.96	..	..	1	1	..	16	..	..	..	..	..	..
6	Pennakulam	27	175	15.43	6	2	..	..	3	10	..	1	3	2	..	..
7	Trichur	15	133	11.28	2	1	1	3	6	1	..	..	..	..	1	..
8	Palghat	41	139	29.50	3	..	2	2	32	..	1	..	1	..	..	..
9	Malappuram	17	95	17.89	6	1	2	2	3	2	..	..	1	..	..	..
10	Kozhikode	9	56	16.07	1	1	1	2	3	1	..	..	..	..	..	..
11	Cannanore	20	148	13.51	1	..	1	4	2	5	4	..	2	..	..	1
	STATE	259	1332	19.44	22	9	20	15	50	53	5	2	67	11	2	3

TABLE 2.4

## District Average Yield of High Yielding Varieties—Winter Crop of Paddy—1978

(Dry Paddy in Kg/Hect.)

Sl. No.	District	Thri- veni	Anna- poorna (Cul- ture 28)	Jaya	I R. 8	Mash- oori	H-4	I. R. 20	I. R. 5	Jyo- thi	Bha- rathy	Rohi- ni	Aswa- thi
1	Trivandrum	1662	..	2256	..	1365	..	..	..	2770	..	..	..
2	Quilon	..	..	..	..	..	2578	..	..	1588	3035	..	..
3	Alleppey	3439	2335	3399	..	..	3100	..	2606	3350	5014	3511	..
4	Kottayam	..	2514	3327	2076	..	2452	..	..	2603	2777	..	2058
5	Idukki	..	..	4065	3114	..	3099	..	..	..	..	..	..
6	Ernakulam	1137	2504	..	..	2539	2328	..	2585	2056	1149	..	..
7	Trichur	1081	1718	2928	1635	1874	2220	..	..	..	..	1504	..
8	Palghat	1995	..	2675	3080	3582	..	4363	..	706	..	..	..
9	Malappuram	1362	1350	2457	2817	1407	1953	..	..	727	..	..	..
10	Kozhikode	266	1770	2957	1719	3121	2132	..	..	..	..	..	..
11	Cannanore	1382	..	1368	2728	1392	2993	3244	..	2407	..	..	1332
	STATE	1540	2032	2826	2453	2183	2539	3803	2596	2026	2994	2507	1695

TABLE No. 2.5

**District-wise yield rate for high yielding and other varieties of paddy according to cultural practices during winter 1978.**

District	Variety	Irrigated												
		Chemically manured					Other manured					Not manured		Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)			
		No. of experi- ments	Mean yield of paddy kgs./hect.	No. of experi- ments	Mean yield of paddy kgs./hect.	No. of experi- ments	Mean yield of paddy kgs./hect.	No. of experi- ments	Mean yield of paddy kgs./hect.	No. of experi- ments	Mean yield of paddy kgs./hect.			
Trivandrum	H			2	1505	..	..	..	..	..	..	2	1505	
	O			25	2059	1	2993	..	..	..	..	26	2095	
	T			27	2018	1	2993	..	..	..	..	28	2053	
Quilon	H			2	2719	..	..	..	..	..	..	2	2719	
	O			8	2229	..	..	..	..	..	..	8	2229	
	T			10	2327	..	..	..	..	..	..	10	2327	
Alleppey	H			14	2817	..	..	..	..	..	..	14	2817	
	O			7	2987	1	1756	..	..	..	..	8	2833	
	T			21	2874	1	1756	..	..	..	..	22	2823	

TABLE 2.5 - (Contd.)

District	Variety	Un-irrigated			Treated with pesticides			Total	No. of experiments	Mean yield of paddy (kg./hect.)	No. of experiments	Mean yield of paddy (kg./hect.)	No. of experiments	Mean yield of paddy (kg./hect.)	No. of experiments	Mean yield of paddy (kg./hect.)
		chemically manured	other manured	Not manured	No. of experiments	Mean yield of paddy (kg./hect.)	No. of experiments									
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)			
Trivandrum	H	6	2615	1	1662	..	..	7	2479	8	2279	1	2131			
	O	65	2232	10	1966	1	923	76	2180	49	2219	53	2102			
	T	71	2264	11	1938	1	923	83	2205	57	2227	54	2103			
Quilon	H	9	2020	..	..	..	..	9	2020	10	2034	1	3270			
	O	110	2441	19	2031	..	..	129	2381	44	2621	93	2254			
	T	119	2404	19	2031	..	..	138	2357	54	2512	94	2265			
Alleppey	H	25	3552	1	5014	..	..	26	3608	39	3375	1	1629			
	O	86	2060	37	1020	7	1065	130	1710	56	2109	82	1548			
	T	111	2661	38	1125	7	1065	156	2026	95	2629	83	1549			

TABLE 2.5 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Kottayam	H	4	1884	..	..	..	..	4	1884
	O	5	2807	..	..	..	..	5	2807
	T	9	2397	..	..	..	..	9	2397
Idukki	H	9	3099	3	3446	1	1498	13	3056
	O	7	2481	3	2386	..	..	10	2453
	T	16	2829	6	2916	1	1498	23	2794
Ernakulam	H	17	2080	1	1465	..	..	18	2045
	O	69	1966	11	1800	2	1795	82	1939
	T	86	1989	12	1772	2	1795	100	1958
Trichur	H	5	2031	1	1128	..	..	6	1881
	O	34	1882	7	1795	1	2506	42	1883
	T	39	1901	8	1712	1	2506	48	1883
Palghat	H	33	3491	..	..	..	..	33	3491
	O	34	3230	5	2655	..	..	39	3156
	T	67	3359	5	2655	..	..	72	3310

TABLE 2.5—(Contd.)

(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Kottayam	H	48	2662	..	..	..	..	48	2662	46	2587	6	2717
	O	30	2479	3	2000	6	898	39	2199	33	2469	11	1665
	T	78	2592	3	2000	6	898	87	2454	79	2538	17	2036
Idukki	H	4	3586	1	2692	..	..	5	3407	14	2961	4	3827
	O	21	2481	3	2472	1	474	25	2400	28	2398	7	2482
	T	25	2658	4	2527	1	474	30	2568	42	2586	11	2971
Ernakulam	H	8	1856	1	2111	..	..	9	1885	23	1981	4	2053
	O	50	2165	10	2106	6	1858	66	2128	100	2020	48	2030
	T	58	2122	11	2106	6	1858	75	2099	123	2013	52	2032
Trichur	H	5	1640	4	1799	..	..	9	1710	9	1910	6	1581
	O	33	1820	34	1445	9	1132	76	1571	45	1993	73	1490
	T	38	1796	38	1482	9	1132	85	1586	54	1979	79	1497
Palghat	H	7	2742	..	..	1	2800	8	2750	27	3171	14	3683
	O	20	2591	39	2257	..	..	59	2370	26	3031	72	2557
	T	27	2630	39	2257	1	2800	67	2415	53	3102	86	2740



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Malappuram	H	9	2040	..	..	..	..	9	2040
	O	12	2150	9	2386	..	..	21	2253
	T	21	2103	9	2386	..	..	30	2188
Kozhikode	H	2	3880	..	..	..	..	2	3880
	O	..	..	..	..	..	..	..	..
	T	2	3880	..	..	..	..	2	3980
Cannanore	H	10	2495	..	..	..	..	10	2495
	O	39	1954	17	1819	1	1836	57	1912
	T	49	2064	17	1819	1	1836	67	1999
STATE	H	107	2758	5	2586	1	1498	113	2739
	O	240	2221	54	2036	4	1983	298	2184
	T	347	2387	59	2083	5	1886	411	2336

H: High Yielding

O: Other variety

T: All varieties.

TABLE 2.5—(Contd.)

(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Malappuram	H	6	1346	1	1908	1	576	8	1320	13	1753	4	1532
	O	80	1835	25	1907	2	1669	57	1861	23	1845	55	2016
	T	36	1754	26	1907	3	1305	65	1794	36	1812	59	1983
Kozhikode	H	6	1719	1	1851	..	..	7	1738	7	2329	2	1810
	O	22	1587	23	1772	2	1830	47	1688	11	1545	35	1732
	T	28	1615	24	1775	2	1830	54	1694	18	1850	38	1736
Cannanore	H	9	2459	1	2934	..	..	10	2506	15	2857	5	1432
	O	44	1895	26	1753	1	828	71	1828	58	2055	70	1708
	T	53	1991	27	1797	1	828	81	1912	73	2220	75	1690
STATE	H	193	2613	11	2306	2	1688	146	2577	211	2659	48	2600
	O	511	2174	229	1754	35	1240	775	2007	473	2199	600	1945
	T	644	2265	240	1779	37	1264	921	2097	684	2341	648	1994

TABLE 3.1

## Response percentage—Winter Paddy 1978

Sl. No.	District	No. of experiments		Percentage response
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	114	111	97
2.	Quilon	152	148	97
3.	Alleppey	186	178	96
4.	Kottayam	104	96	92
5.	Idukki	54	53	98
6.	Ernakulam	180	175	97
7.	Trichur	140	133	95
8.	Palghat	150	139	93
9.	Malappuram	114	95	83
10.	Kozhikode	96	56	58
11.	Cannanore	162	148	91
	STATE	1452	1332	92

TABLE 3.2

## Details of Non-response—Winter Paddy 1978

Sl.No.	District	No. of experiments		No. of experiments lost due to			
		Planned	Analysed	Primary workers' absence (leave transfer strike etc.)	Prior harvest by cultivator	Rejected at the analysis stage	Reason not specified
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	114	111	..	3	..	..
2.	Quilon	152	148	..	4	..	..
3.	Alleppey	186	178	..	8	..	..
4.	Kottayam	104	96	..	8	..	..
5.	Idukki	54	53	1	..	..	..
6.	Ernakulam	180	175	5	..	..	..
7.	Trichur	140	133	7	..	..	..
8.	Palghat	150	139	11	..	..	..
9.	Malappuram	114	95	12	7	..	..
10.	Kozhikode	96	56	40	..	..	1
11.	Cannanore	162	148	14	..	1	1
	STATE	1452	1332	90	30	..	..

TABLE 3.3

Workload of primary workers—according to allocation during winter—1978

Sl. No.	District	No. of primary workers								Total
		1 experiment	2 experiments	3 experiments	4 experiments	5 experiments	6 experiments	7 experiments	8 experiments	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Trivandrum	14	47	2	..	..	..	..	..	63
2.	Quilon	10	44	10	1	4	..	..	..	69
3.	Alleppey	5	20	11	20	2	3	..	..	61
4.	Kottayam	8	32	9	..	1	..	..	..	50
5.	Idukki	1	16	7	..	..	..	..	..	24
6.	Ernakulam	9	16	17	6	9	2	1	..	60
7.	Trichur	25	35	3	6	1	..	..	..	70
8.	Palghat	31	39	11	2	..	..	..	..	83
9.	Malappuram	49	12	6	2	3	..	..	..	72
10.	Kozhikode	12	36	4	..	..	..	..	..	52
11.	Cannanore	65	35	6	1	1	..	..	..	108
	STATE	229	332	86	38	21	5	1	..	712

TABLE 3.4

## Workload of Primary Workers—District-wise Performance Winter 1978

Sl. No.	District	No. of primary workers									Total
		1 experiment	2 experiments	3 experiments	4 experiments	5 experiments	6 experiments	7 experiments	8 experiments		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1.	Trivandrum	15	45	2	..	..	..	..	..	62	
2.	Quilon	10	42	10	1	4	..	..	..	67	
3.	Alleppey	8	20	12	15	2	4	..	..	61	
4.	Kottayam	8	28	9	..	1	..	..	..	46	
5.	Idukki	..	16	7	..	..	..	..	..	23	
6.	Ernakulam	9	16	17	6	8	2	1	..	59	
7.	Trichur	26	35	2	5	1	1	..	..	70	
8.	Palghat	33	34	10	2	..	..	..	..	79	
9.	Malappuram	48	12	..	2	3	..	..	..	65	
10.	Kozhikode	22	11	4	..	..	..	..	..	37	
11.	Cannanore	65	28	6	1	1	..	..	..	101	
	STATE	244	287	79	32	20	7	1	..	670	

TABLE 3.5  
No. of experiments inspected Winter—1978

Sl. No.	District	No. of experiments inspected at				Percentage of experiments inspected at					
		No. of experiments analysed	Harvest stage by	Pre-harvest stage by	Post harvest stage by	Harvest stage	Pre harvest stage	Post harvest stage			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			District level Officers	Statistical Inspectors	District level Officers	Statistical Inspectors	District level Officers	Statistical Inspectors	Harvest stage	Pre harvest stage	Post harvest stage
1.	Trivandrum	111	8	48	..	13	..	1	50.5	11.7	0.9
2.	Quilon	148	8	72	..	18	..	3	54.1	12.1	2.0
3.	Alleppey	178	9	85	..	22	1	6	52.8	12.4	3.9
4.	Kottayam	96	7	44	..	11	1	..	53.1	11.5	1.0
5.	Idukki	53	5	27	2	6	..	..	60.4	15.1	..
6.	Ernakulam	175	7	55	..	11	..	3	35.4	6.3	1.7
7.	Trichur	133	15	50	..	22	2	3	48.9	16.5	3.7
8.	Palghat	139	5	40	..	3	4	1	32.4	2.2	3.6
9.	Malappuram	95	8	22	..	13	1	3	31.6	13.7	4.2
10.	Kozhikode	56	6	18	..	19	2	2	42.9	33.9	7.1
11.	Cannanore	148	19	40	..	14	..	3	39.9	9.5	2.0
	STATE	1332	97	459	2	152	11	25	41.7	11.6	2.7

District level Officer: District Statistical Officer, Additional District Statistical Officer and Economic Investigator.

TABLE 4.1  
**Estimated Area, Mean yield and production of Rice  
 Summer Paddy—1978**

Taluk and District	No. of expts.	Area in (Hect.)	Mean yield dry paddy in kg/hect.	Standard Error	Pro- duction of Rice in tonnes
(1)	(2)	(3)	(4)	(5)	(6)
1. Neyyattinkara	19	528	874	106	303
2. Trivandrum	16	420	458	351	126
3. Nedumangad	20	819	894	118	481
4. Chirayinkil	16	218	854	136	122
<b>TRIVANDRUM DISTRICT</b>	<b>71</b>	<b>1985</b>	<b>791</b>	<b>94</b>	<b>1032</b>
5. Quilon	20	288	1070	182	202
6. Kottarakkara	20	141	827	148	77
7. Kunnathur	6	69	434	134	20
8. Pathanapuram	15	18	683	184	8
9. Pathanamthitta	Nil	73	683@	..	33
10. Karunagappally	9	424	923	..	257
<b>QUILON DISTRICT</b>	<b>70</b>	<b>1013</b>	<b>896</b>	<b>111</b>	<b>597</b>
11. Karthigappally	20	5076	4357	420	14530
12. Mavelikkara	20	1984	3619	518	4717
13. Chengannur	20	1845	2893	379	3507
14. Thiruvalla	18	4191	4350	436	11978
15. Kuttanad	19	11844	3650	131	28403
16. Ambalapuzha	7	2514	1773	..	2928
17. Sherthallai	Nil	..	..	..	..
<b>ALLEPPEY DISTRICT</b>	<b>104</b>	<b>27454</b>	<b>3662</b>	<b>138</b>	<b>66063</b>
18. Changanacherry	8	3789	2930	1383	7294
19. Kanjirappally	Nil	..	..	..	..
20. Kottayam	19	7767	2601	472	13273
21. Vaikom	6	1650	2106	..	2283
22. Meenachil	6	348	3670	..	839
<b>KOTTAYAM DISTRICT</b>	<b>39</b>	<b>13554</b>	<b>2660</b>	<b>553</b>	<b>23689</b>
23. Peermade	..	52	1315@	..	45
24. Devicolam	..	319	1315@	..	276
25. Udumbanchola	..	..	..	..	..
26. Thodupuzha	..	10	1315@	..	9
<b>IDIKKI DISTRICT</b>	<b>..</b>	<b>381</b>	<b>1315@</b>	<b>..</b>	<b>330</b>

@ Mean yield of Pathanapuram is given.



	(1)	(2)	(3)	(4)	(5)	(6)
27. Kothamangalam		15	630	1548	337	641
28. Muvattupuzha		20	760	1315	387	657
29. Cochin		..	..	..	..	..
30. Kanayannur		15	856	2090	242	1175
31. Kunnathunad		20	5224	1881	485	6456
32. Alwaye		15	6930	2421	878	11023
33. Parur		15	2976	2853	..	5578
ERNAKULAM DISTRICT		100	17377	2236	459	25530
34. Cranganore		9	33	2096	..	45
35. Mukundapuram		30	8532	2380	162	13341
36. Trichur		20	7102	2987	239	13937
37. Thalappally		20	2030	2309	232	3080
38. Chowghat		15	1293	2067	708	1756
TRICHUR DISTRICT		94	18990	2577	128	32159
39. Chittur		20	564	2196	341	814
40. Alathur		20	207	2337	339	318
41. Palghat		19	743	2872	479	1402
42. Ottappalam		29	1306	2450	115	2102
43. Mannarghat		20	1298	1436	107	1225
PALGHAT DISTRICT		108	4118	2166	111	5861
44. Perinthalmanna		20	1510	2335	117	2316
45. Ponnani		20	1646	2408	496	2604
46. Tirur		17	1745	2516	237	2885
47. Ernad		26	879	1582	165	914
MALAPPURAM DISTRICT		83	5780	2295	163	8719
48. Kozhikode		25	873	1602	166	919
49. Quilandy		20	1449	1475	238	1404
50. Badagara		24	133	1377	224	120
51. South Wynad		20	4183	2057	166	5653
KOZHIKODE DISTRICT		89	6638	1856	119	8096
52. North Wynad		10	2024	3292	1422	4378
53. Tellicherry		24	500	1636	217	537
54. Cannanore		24	54	1476	236	52
55. Taliparamba		17	562	2129	174	786
56. Hosdrug		24	1677	2211	49	2436
57. Kasargode		24	2297	2245	105	3388
CANNANORE DISTRICT		123	7114	2476	407	11577
STATE		881	104404	2677	110	183653

@ cc experiments not conducted. Mean yield of Muvattupuzha Taluk is used.

TABLE 4.2

Estimated area, mean yield and production of rice relating to summer Crop of paddy  
1977 and 1978

Sl. No.	District	Area (hectares)@		Mean yield of dry paddy (in kgs/hectare)		Production of rice (Tonnes)	
		1977	1978	1977	1978	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	3466	1985	1262	791	2875	1032
2.	Quilon	1393	1013	1250	896	1144	597
3.	Alleppey	23609	27454	3300	3662	51182	66063
4.	Kottayam	16677	13554	2594	2660	28421	23689
5.	Idukki	490	381*	1836	1315*	591	330*
6.	Ernakulam	16214	17377	2042	2236	21753	25530
7.	Trichur	21130	18990	2446	2577	33956	32159
8.	Palghat	4167	4118	2123	2166	5813	5861
9.	Malappuram	7005	5780	2782	2295	12805	8719
10.	Kozhikode	7442	6638	1754	1856	8574	8096
11.	Cannanore	7281	7114	2405	2476	11505	11577
STATE		108874	104404	2497	2677	178619	183653

@ Area is estimated from the TRS

\* C. C. experiments not conducted. Mean yield of Moovattupuzha Taluk is used.

TABLE 4.3  
 Summer Crop of paddy 1978 Analysis of variance of plot yield pooled  
 for the State in kg./plot of 1/400th of an hectare

Source of variance	Sum of squares	Degrees of freedom	Mean sum of square (variance)	Variance ratio (Calculated)
(1)	(2)	(3)	(4)	(5)
Between Taluk	5169.80	48	107.70	15.06
Between Villagés within taluk	1464.82	156	9.39	1.31
Within Villages within taluk	4833.62	676	7.15	∴
All	11468.24	880	∴	∴

TABLE 4.4

**Pro forma for final results of crop estimation surveys**  
**Frequency distribution of plots yield**

State: Kerala Year & Season: 1977-78 Summer Crop: Paddy

Limits in Kgs./hect. (in terms of dry & cleaned produce)		Number of plots	Percentage frequency
(1)		(2)	(3)
0	100	24	2.72
100	200	9	1.02
200	300	12	1.36
300	400	11	1.25
400	500	13	1.48
500	600	16	1.82
600	700	9	1.02
700	800	21	2.38
800	900	25	2.84
900	1000	19	2.16
1000	1100	23	2.61
1100	1200	17	1.93
1200	1300	26	2.95
1300	1400	26	2.95
1400	1500	22	2.50
1500	1600	25	2.84
1600	1700	26	2.95
1700	1800	32	3.63
1800	1900	26	2.95
1900	2000	24	2.72
2000 and above		475	53.92
Total		881	100.00

TABLE 4.5

## The results of driage experiments Summer Paddy—1978

Sl. No.	District	No. of driage experiments		Total yield collected for driage expts (Kg.)	Total yield after driage operation (kg.)	Driage rates (Percentage)
		Planned	Analysed			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Trivandrum	12	9	2,250	1,898	84.3
2.	Quilon	17	15	3,750	3,320	88.5
3.	Alleppey	15	17	4,250	3,879	91.3
4.	Kottayam	12	11	2,750	2,465	89.6
5.	Idukki	..	..	..	..	..
6.	Ernakulam	18	18	4,500	3,986	88.6
7.	Trichur	15	14	3,500	3,124	89.3
8.	Palghat	15	15	3,750	3,515	93.7
9.	Malappuram	12	12	3,000	2,713	90.4
10.	Kozhikode	12	11	2,750	2,449	89.0
11.	Cannanore	18	18	4,490	4,075	90.8
	STATE	146	140	34,990	31,424	89.8

TABLE 4.6

Independent Estimate of Mean yield of paddy based on harvest stage inspection during Summer 1978

Sl. No.	District	No. of experiments			Mean yield of paddy (kgs./hect.)		Driage rates used for column 6
		Planned for harvest stage inspection	Inspected at harvest stage	Before driage	After driage		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	Trivandrum	56	34	1122	947	0.844	
2.	Quilon	45	38	1626	1439	0.885	
3.	Alleppey	48	46	3446	3146	0.913	
4.	Kottayam	36	33	3150	2822	0.896	
5.	Idukki	..	..	..	..	..	
6.	Ernakulam	84	60	2310	2047	0.886	
7.	Trichur	69	54	2944	2629	0.893	
8.	Palghat	70	42	2509	2351	0.937	
9.	Malappuram	50	29	2238	2023	0.904	
10.	Kozhikode	54	36	1706	1520	0.891	
11.	Cannanore	84	40	2278	2068	0.908	
	STATE	596	412	2676	2403	0.898	

TABLE 4.7

**Estimated Mean Yield of dry paddy (Kg./Hect) during  
Summer season from 1973 to 1978**

Taluk and District	1973	1974	1975	1976	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Neyyattinkara	2072	1988	2211	1914	1581	874
2. Trivandrum	1264	1895	2109	1877	1273	458
3. Nedumangad	1441	185	1764	1496	1178	894
4. Chirayinkil	711	999	1789	1225	738	854
TRIVANDRUM DISTRICT	1192	1521	1975	1599	1262	791
5. Quilon	1637	1647	1141	1259	1322	1070
6. Kottarakkara	1036	752	1385	1754	1147	827
7. Kunnathur	2052	1306	1749	1891	1521	434
8. Pathanapuram	..	..	..	..	929	683
9. Pathanamthitta	1305	1819	2779	1928	1316	683*
10. Karunagappally	2195	1561	1865	2166	1118	923
QUILON DISTRICT	1834	1480	1660	1818	1250	895
11. Karthigappally	4286	2577	3233	3738	3717	4357
12. Mavelikkara	2886	2845	3077	2634	3016	3619
13. Chengannur	4609	2205	3384	3344	3535	2893
14. Thiruvalla	2184	2102	3151	3333	3293	4350
15. Kuttanad	3034	2682	3495	3049	3046	3650
16. Ambalapuzha	2712	2260	2635	2650	3046@	1773
17. Sherthallai	..	..	..	..	..	..
ALLEPPEY DISTRICT	2885	2580	3327	3068	3300	3662
18. Changanacherry	4062	3474	4850	4182	3304	2930
19. Manjirappally	..	..	..	..	..	..
20. Kottayam	3267	1425	3199	3333	2536	2601
21. Vaikom	2741	130	2342	2680	1600	2106
22. Meechachil	2779	1859	2300	2902	2585	3670
KOTTAYAM DISTRICT	3351	1846	3409	3429	2594	2660
23. Peermade	1872	1165	1974	3053	1836@	1315@
24. Devicollam	..	..	..	..	1836@	1315@
25. Udumbanchola	..	..	..	..	1836@	..
26. Thodupuzha	..	..	..	..	..	1315
IDUKKI DISTRICT	1872	1165	1974	3053	1836	1315

@Mean yield of Kuttanad Taluk is given

\*Mean yield of Pathanapuram Taluk is given

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
27. Kothamangalam		1483	1506	1977	1523	1620	1548
28. Muvattupuzha		..	..	2037	2108	1836	1315
29. Cochin					..	..	..
30. Kanayannur		1029	791	1739	2070	1770	2090
31. Kunnathunad		1701	1725	1899	1755	1609	1881
32. Alwaye		2218	1878	1984	2310	2250	2421
33. Parur		1719	1768	2508	1798	2465	2853
ERNAKULAM DISTRICT		1855	1747	2162	1983	2042	2236
34. Cranganore		1947	1435	1750	1817	1568	2096
35. Mukundapuram		2384	2052	1974	2134	2361	2380
36. Trichur		3012	1689	2484	2061	2309	2987
37. Thalappally		5163	2398	3235	3087	2440	2309
38. Chowghat		5007	1419	2069	3302	3507	2067
TRICHUR DISTRICT		2857	1841	2329	2317	2446	2577
39. Chittur		2099	2553	3186	2081	1647	2196
40. Alathur		2099	2375	3489	3461	2839	2337
41. Palghat		2099	1817	3510	3644	3318	2872
42. Ottappalam		2099	2290	2021	2261	1811	2450
43. Mannarghat		..	1749	2461	2095	1677	1436
PALGHAT DISTRICT		2099	2212	2547	2465	2123	2166
44. Perinthalmanna		2481	1816	1832	3022	2465	2335
45. Ponnani		6635	1753	3677	2468	3733	2408
46. Tirur		5624	2568	3244	2994	2000	2516
47. Ernad		2212	1615	1929	1948	1572	1582
MALAPPURAM DISTRICT		5494	1981	3215	2614	2782	2295
48. Kozhikode		3036	2423	2412	2165	1337	1602
49. Quilandy		2137	2775	2136	1648	1579	1475
50. Badagara		2130	2661	3381	2471	1293	1377
51. South Wynad		2273	2180	1789	2593	1897	2057
KOZHIKODE DISTRICT		2376	2286	1983	2429	1754	1856
52. North Wynad		2425	1906	2243	2518	2195	3292
53. Tellicherry		2227	1779	1618	1900	1176	1636
54. Cannanore		2215	2100	2005	1482	2180	1476
55. Taliparamba		2215	2200	1402	1632	1379	2129
56. Hosdurg		2119	2195	2394	2083	3098	2211
57. Kasargode		1904	1887	2370	2660	2476	2245
CANNANORE DISTRICT		2097	1940	2271	2477	2405	2476
STATE		2918	2168	2936	2794	2497	2677



TABLE 5.1

Estimated area, mean yield and production of high yielding varieties of paddy during Summer 1978

Sl. No.	District	No. of experi- ments conducted		Percentage of H. Y. V. experiments to total No. of experiments	High yielding varieties		
		H. Y. V.	Total		Area (hect)	Mean yield (dry paddy kg/ hect)	Production of rice (tonnes)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	53	71	74.65	1738	784*	895
2.	Quilon	32	70	45.71	158	827*	86
3.	Alleppey	59	104	70.19	19416	3994	50948
4.	Kottayam	26	39	66.67	12587	3012	24908
5.	Idukki	..	..	..	..	..	..
6.	Ernakulam	46	100	46.00	4196	1959*	5400
7.	Trichur	38	94	40.43	9582	2743	17268
8.	Palghat	60	108	55.56	1908	2901	3637
9.	Malappuram	38	83	45.78	2991	2589	5088
10.	Kozhikode	49	89	55.06	3434	2339	5277
11.	Cannanore	40	123	32.52	5589	2595	9529
	STATE	455	881	51.65	61599	3039	123036

\* Wide spread attack of pests and diseases on high yielding varieties was reported in these districts.

TABLE 5.2

Estimated area, mean yield and production of high yielding varieties of paddy during summer 1977 and 1978

Sl. No.	District	Area in hectares		Mean yield of dry paddy in (kg /hect.)		Production of rice in tonnes	
		1977	1978	1977	1978	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	2322	1738	1367	784	2085	895
2.	Quilon	230	158	1178	827	178	86
3.	Alleppey	21553	19416	3696	3994	52332	50948
4.	Kottayam	14448	12587	2934	3012	27856	24908
5.	Idukki	304	..	1956@	..	391	..
6.	Ernakulam	6705	4196	1943	1959	8560	5400
7.	Trichur	13734	9582	2589	2743	23360	17268
8.	Palghat	2379	1908	2719	2901	4250	3637
9.	Malappuram	5686	2991	3377	2589	12617	5088
10.	Kozhikode	4017	3434	1846	2339	4872	5277
11.	Cannanore	2029	5589	2762	2595	3682	9529
	STATE	73407	61599	2907	3039	140183	123036

@CC experiments not conducted. Average yield of Muvattupuzha Taluk is given.

TABLE 5.3

**Distribution of fields with high yielding varieties of paddy according to the varieties raised during summer 1978**

Sl. No.	District	No. of experiments conducted		Percentage of H. Y. V. experiments to total No. of experiments		No. of experiment plots under different H. Y. Varieties											
		H. Y. V. Total	Total	(5)	(6)	Jyothi	Thiruvani	Mashori	Bharathy	H4	Culture 28	Rohini	Sabari	Aswathy	I. R. 8	I. R. 20	Padma
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1.	Trivandrum	53	71	74.65	5	15	21	..	8	..	..	..	..	..	4	..	..
2.	Quilon	32	70	45.71	2	11	6	..	6	..	5	..	1	..	..	1	..
3.	Alleppey	73	104	70.19	1	54	5	..	7	5	..	..	..	..	1	..	..
4.	Kottayam	26	39	66.67	2	17	1	1	2	..	..	..	..	2	..	1	..
5.	Idukki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6.	Ernakulam	46	100	46.00	1	22	7	..	4	..	8	2	1	..	1	..	..
7.	Trichur	38	94	40.42	7	2	19	1	1	..	7	..	..	..	..	..	1
8.	Palghat	60	108	55.56	24	1	23	5	1	..	3	..	..	1	1	1	..
9.	Malappuram	38	83	45.78	9	2	14	1	2	..	6	..	..	..	4	..	..
10.	Kozhikode	49	89	55.06	7	2	6	3	1	..	15	..	1	..	14	..	..
11.	Cannanore	40	123	32.52	2	6	19	..	..	..	7	..	..	2	4	..	..
	STATE	455	881	51.65	60	132	121	11	32	5	51	2	3	5	29	3	1

TABLE 5.4

**District Average yield of high yielding varieties—Summer Crop of Paddy 1978**  
(Dry paddy in Kg./Hect.)

Sl. No.	District	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
		Jaya	Jyothi	Thiruvani	Mashori	Marathi	H4	Gu. 28	Rohini	Sabari	Aswathi	I.R. 8	I.R. 20	Padma
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1.	Trivandrum	776	658	979	..	815	..	..	..	..	..	592	..	..
2.	Quilon	1496	960	643	..	884	..	453	..	283	..	..	1859	..
3.	Alleppey	3486	3822	2876	..	5325	3993	..	..	..	..	3011	..	..
4.	Kottayam	3294	3082	770	4901	2127	..	..	..	..	2819	..	2896	..
5.	Idukki	..	..	..	..	..	..	..	..	..	..	..	..	..
6.	Ernakulam	690	1761	1217	..	2643	..	1976	1289	2425	..	2283	..	..
7.	Trichur	2988	2053	2376	3088	4391	..	2479	..	..	..	..	..	3570
8.	Palghat	3152	1365	2913	1776	2756	..	2137	..	..	844	450	1106	..
9.	Malappuram	2464	3025	2694	1539	3157	..	2049	..	..	..	..	2620	..
10.	Kozhikode	1829	2410	1316	1378	1460	..	1319	..	2777	..	2063	..	..
11.	Cannanore	2534	1757	1898	..	..	..	2052	..	..	2047	2759	..	..
	STATE	2271	2089	1768	2536	2618	3993	1781	1289	1828	1903	1968	1954	3570





TABLE 5.5—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	H	41	1807	2	1428	..	..	43	1789
	O	41	2185	5	1927	..	..	46	2157
	T	82	1996	7	1784	..	..	89	1979
Trichur	H	32	2558	1	2910	..	..	33	2568
	O	46	2505	8	1485	1	000	55	2311
	T	78	2527	9	1643	1	000	88	2407
Palghat	H	52	2918	4	1671	1	56	57	2780
	O	16	1740	11	1882	..	..	27	1798
	T	68	2641	15	1826	1	56	84	2464
Malappuram	H	33	2646	3	2001	..	..	36	2592
	O	28	1862	11	2004	..	..	39	1902
	T	61	2236	14	2003	..	..	75	2233
Kozhikode	H	33	1737	2	1785	..	..	35	1740
	O	12	1778	3	1736	1	1121	16	1729
	T	45	1748	5	1756	1	1121	51	1737
Cannanore	H	30	2163	7	1663	..	..	37	2068
	O	55	2355	14	1485	..	..	69	2168
	T	85	2287	21	1544	..	..	106	2140
STATE	H	333	2438	21	1734	1	56	355	2389
	O	246	2326	56	1706	2	561	304	2200
	T	579	2390	77	1714	3	393	659	2302

TABLE 5.5—(Contd.)

(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Ernakulam	H	3	1558	..	..	..	..	3	1558	40	1878	6	1080
	O	5	1829	2	2912	1	1837	8	2101	43	2364	11	1307
	T	8	1727	2	2912	1	1837	11	1953	83	2130	17	1227
Trichur	H	5	2762	..	..	..	..	5	2762	27	2786	11	2121
	O	..	..	1	1517	..	..	1	1517	33	2703	23	1715
	T	5	2762	1	1517	..	..	6	2555	60	2740	34	1846
Palghat	H	3	2004	..	..	..	..	3	2004	40	2847	20	2530
	O	4	1371	16	1605	1	825	21	1523	10	1874	38	1626
	T	7	1642	16	1605	1	825	24	1583	50	2652	58	1938
Malappuram	H	2	1629	..	..	..	..	2	1629	33	2506	5	2773
	O	2	706	4	1647	..	..	6	1333	23	1933	22	1714
	T	4	1168	4	1647	..	..	8	1407	56	2271	27	1910
Kozhikode	H	9	1674	5	1315	..	..	14	1546	32	1784	17	1497
	O	13	1850	10	917	1	288	24	1396	20	1590	20	1460
	T	22	1778	15	1050	1	288	38	1451	52	1709	37	1482
Cannanore	H	3	1601	..	..	..	..	3	1601	24	2204	16	1777
	O	9	1323	5	1349	..	..	14	1365	38	2304	45	1819
	T	12	1430	5	1349	..	..	17	1407	62	2265	61	1808
STATE	H	94	1934	6	1140	..	..	100	1883	363	2389	92	1841
	O	75	1485	44	1341	3	983	122	1422	252	2082	174	1519
	T	169	1733	50	1317	3	983	222	1630	615	2263	266	1679

H—High yielding variety

O—Other variety

T—All varieties

N.B.—All mean yields are simple averages



TABLE 6. 1

## Response Percentage—Summer paddy 1978

Sl. No.	District	No. of Experiments		
		Planned	Analysed	Percentage response
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	80	71	89
2.	Quilon	72	70	97
3.	Alleppey	110	104	95
4.	Kottayam	40	39	98
5.	Idikki	..	..	..
6.	Ernakulam	100	100	100
7.	Trichur	94	94	100
8.	Palghat	110	108	98
9.	Malappuram	90	83	92
10.	Kozhikode	90	89	99
11.	Cannanore	130	123	95
	STATE	916	881	96

TABLE 6.2

## Details of non-response—Summer paddy 1978

Sl. No.	District	No. of experiments		No. of experiments lost due to		Rejected at the analysis stage	Other reasons
		Planned	Analysed	Primary workers' absence (leave strike transfer etc.)	Prior harvest by cultivators		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	80	71	..	..	9	..
2.	Quilon	72	70	..	..	2	..
3.	Alleppey	110	104	..	6	..	..
4.	Kottayam	40	39	..	1	..	..
5.	Idukki	..	..	..	..	..	..
6.	Ernakulam	100	100	..	..	..	..
7.	Trichur	94	94	..	..	..	..
8.	Palghat	110	108	..	2	..	..
9.	Malappuram	90	83	..	7	..	..
10.	Kozhikode	90	89	..	1	..	..
11.	Cannanore	130	123	..	7	..	..
	STATE	916	881	..	24	11	..

TABLE 6.3  
Work load of primary workers—District-wise allocation summer 1978

Sl. No.	District	Number of primary workers										Total			
		(1) 1 expts.	(2) 2 expts.	(3) 3 expts.	(4) 4 expts.	(5) 5 expts.	(6) 6 expts.	(7) 7 expts.	(8) 8 expts.	(9) 9 expts.	(10) 10 expts.		(11) 11 expts.		
1	Trivandrum	26	25	..	1	..	..	..	..	..	..	..	..	..	52
2	Quilon	5	15	4	5	1	..	..	..	..	..	..	..	..	30
3	Alleppey	1	6	8	6	2	3	3	..	..	..	..	..	..	29
4	Kottayam	3	5	9	..	..	..	..	..	..	..	..	..	..	17
5	Idukki	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam	14	13	10	1	1	1	1	1	1	1	1	1	1	42
7	Trichur	29	14	4	1	..	1	1	1	1	1	1	1	1	51
8	Palghat	32	17	8	1	2	1	1	..	..	..	..	..	..	61
9	Malappuram	55	8	1	4	..	..	..	..	..	..	..	..	..	68
10	Kozhikode	29	13	5	2	1	1	1	1	1	1	1	1	1	51
11	Cannanore	62	15	3	3	3	3	3	..	..	..	..	..	..	87
		256	132	52	24	10	6	6	6	6	2	2	2	2	488

## Workload of primary workers—District-wise performance summer 1978

Number of primary workers

Sl. No.	District	Number of primary workers										Total
		1 expts.	2 expts.	3 expts.	4 expts.	5 expts.	6 expts.	7 expts.	8 expts.	(9)	(10)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(11)	
1	Trivandrum	21	25	..	..	..	..	..	..	..	46	
2	Quilon	5	14	4	5	1	..	..	..	..	29	
3	Alleppey	1	6	6	6	2	3	3	..	..	27	
4	Kottayam	2	5	9	..	..	..	..	..	..	16	
5	Idukki	..	..	..	..	..	..	..	..	..	..	
6	Ernakulam	14	13	10	1	1	1	1	1	..	42	
7	Trichur	29	14	4	1	1	1	1	1	..	51	
8	Palghat	32	16	8	1	2	1	..	..	..	60	
9	Malappuram	54	5	1	4	..	..	..	..	..	64	
10	Kozhikode	28	13	5	2	1	..	1	..	..	50	
11	Cannanore	62	14	2	3	3	..	..	..	..	84	
	STATE	248	125	49	23	10	6	6	6	2	469	

TABLE 6.5

## Number of experiments inspected—Summer 1978

Sl. No.	District	No. of expts. analysed			No. of Expts Inspected at				Percentage of expts. Inspected at			
		(3)	Harvest stage by		Preharvest stage by	Post harvest stage by	(S. Is)	Dist. level Officers	(S. Is)	Harvest stage	Pre harvest stage	Post harvest stage
			(4)	(5)								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1	Trivandrum	71	4	30	..	10	..	1	47.9	14.0	..	
2	Quilon	70	6	32	..	15	..	6	54.3	21.4	1.4	
3	Alleppey	104	8	38	..	27	..	2	44.2	25.9	5.8	
4	Kottayam	39	8	25	..	10	..	..	84.5	30.7	5.1	
5	Idukki	..	..	..	..	..	..	..	..	..	..	
6	Ernakulam	100	4	56	..	24	1	3	60.0	26.0	4.0	
7	Trichur	94	17	37	..	23	4	8	57.4	24.4	12.8	
8	Palghat	108	2	40	..	2	1	3	38.9	1.8	3.7	
9	Malappuram	83	3	26	..	8	1	5	34.9	9.6	7.2	
10	Kozhikode	89	12	24	..	8	..	3	40.4	8.9	3.4	
11	Cannanore	123	4	36	..	4	3	3	32.5	3.2	4.9	
	STATE	881	68	344	4	131	10	34	46.7	15.3	4.9	

District level officers :—District Statistical Officer. Addl. District Statistical Officer Economic Investigator.



TABLE 7.2  
**Season wise area, Mean Yield and production of Rice in each district during 1977-78**

Sl. No.	District	Area (Hectare)		Mean yield of dry paddy in Kg/hect.				Production of Rice in tonnes					
		Autumn 77	Winter 78	Summer 78	Total (6)	Autumn 77	Winter 78	Summer 78	Annual average (10)	Autumn 77	Winter 78	Summer 78	Total (14)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Trivandrum	16496	16048	1985	34529	2112	2167	791	2062	22386	22847	1032	46765
2	Quilon	24246	25124	1013	50383	2051	2334	896	2169	32671	38528	597	71796
3	Alleppey	31703	31750	27454	90907	2049	2458	3662	2679	42670	51285	66063	160018
4	Kottayam	15581	14393	13554	59109	2286	2323	2660	1778	23401	21970	23689	69060
5	Idukki	6584	6840	381	13805	2285	2803	1315	2515	9885	12598	330	22813
6	Ernakulam	42329	39537	17377	99243	2312	1986	2236	2169	64305	51602	25530	141437
7	Trichur	44479	56299	18990	119768	1526	1822	2577	1832	44590	67408	32159	144157
8	Palghat	86701	81089	4118	171908	3435	2994	2166	3197	195649	159538	5861	361048
9	Malappuram	42104	40516	5780	88400	1939	1961	2295	1972	53639	52203	8719	114561
10	Kozhikode	12822	29920	6638	49380	1156	2083	1856	1812	9736	40956	8096	58788
11	Cannanore	42066	29343	7114	78523	1894	2088	2476	2019	52360	40255	11577	104192
	<b>Total</b>	<b>365111</b>	<b>370859</b>	<b>104404</b>	<b>840374</b>	<b>2300</b>	<b>2295</b>	<b>2677</b>	<b>2345</b>	<b>551792</b>	<b>559190</b>	<b>183653</b>	<b>1294636</b>

TABLE 7.3

Season-wise area, Mean Yield and production of HYV of Rice in Kerala during the period from 1974-75 to 1977-78

Agricultural year	Autumn			Winter			Summer			Total			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Area in Hect.	Mean yield of dry paddy kg./hect.	Production of rice in tonnes	Area in Hect.	Mean yield of dry paddy (kg./hect.)	Production of rice in tonnes	Area in Hect.	Mean yield of dry paddy kg./hect.	Production of rice in tonnes	Area in Hect.	Mean yield of dry paddy kg./hect.	Production of rice in tonnes	
1974-75	77537	2563	130572	50988	2503	83840	39128	3127	80390	167653	2676	294802	
1975-76	100364	2763	182228	82255	2590	139960	77014	2996	151587	259633	2777	473775	
1976-77	115764	2443	185784	74803	2777	136488	73407	2907	140183	263974	2666	462455	
1977-78	142129	3081	287710	89565	2831	166549	61599	3039	123036	293293	2996	577295	



TABLE 7.4

Season-wise area, Mean Yield and production of Rice in Kerala during the period from 1969-70 to 1977-78

Agriculture year	Autumn			Winter			Summer			Total			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Area in (Hectares)	Mean yield of dry Paddy (kg./hect.)	Production of rice in (Tonnes)	Area in (hect.)	Mean yield of dry Paddy (kg./hect.)	Production of rice (Tonnes)	Area in (Hect.)	Mean yield of dry Paddy kg./hect.)	Production of rice in (Tonnes)	Area in (hect.)	Mean yield of dry Paddy (kg./hect.)	Production of rice in (Tonnes)	
1969-70	393747	2016	521443	382171	2097	526570	98141	2767	178400	874059	2136	*1226413	
1970-71	394798	2077	538886	381971	2259	566934	98061	2984	192185	874830	2259	*1298005	
1971-72	395298	2126	552246	381971	2378	596808	97888	3151	202684	875157	2351	*1351738	
1972-73	391900	2237	576192	382171	2426	609234	99623	2918	190941	873694	2527	*1376367	
1973-74	392765	2347	605595	380980	2028	507755	100930	2168	143719	874675	2187	*1257069	
1974-75	394927	2064	535545	384836	2382	602186	101703	2936	196200	881466	2303	1333931	
1975-76	375043	2241	552322	396392	2296	597975	104587	2632	180894	876022	2313	1331191	
1976-77	363822	2040	487647	381678	2344	587737	108874	2497	178619	854374	2234	1254003	
1977-78	365111	2300	551792	370859	2295	559190	104404	2677	183653	840374	2345	1294635	

\* Pooled estimates of State Series and 1 ADP Series of Experiments.

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