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GOVERNMENT OF KERALA

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**REPORT ON THE CROP CUTTING SURVEY
ON
WINTER AND SUMMER CROP OF PADDY
1979**

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1979

FOREWORD

Crop estimation surveys on paddy are being conducted by this department regularly from 1950 onwards separately for each of the crop seasons viz Autumn (Viruppu), Winter (Mundakan) and Summer (Punja). The results of the surveys conducted in an year are being published in two separate reports, one for Autumn season and the other for Winter and Summer seasons together. This report deals with objectives of the survey, area covered, 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 crops of paddy 1978-79.

This report was prepared by the crop cutting survey section Agricultural division of the Directorate of Economics and Statistics.

Trivandrum,
27-1-1981.

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Director,
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REPORT ON CROP CUTTING SURVEY ON WINTER & SUMMER CROP OF PADDY 1978-79

1. Introduction:

Crop cutting surveys on paddy and tapioca were regularly being conducted in the State before the introduction of the Scheme E.A.R.A.S. in Kerala during 1975-76 with the introduction of the scheme survey was extended to other four important crops viz. coconut, arecanut, cashew and pepper. These surveys were further extended to minor crops also from 1977 onwards. But the crop cutting surveys on minor crops are conducted only periodically, covering four crops during each year. The minor crops covered by this time are banana, plantain, jack and sesamum during 1977-78, mango, turmeric, sweet, potato and ginger during 1978-79.

As far as paddy is concerned crop cutting experiments are conducted during the crop seasons viz. Autumn, Winter and Summer. Usually the results of crop cutting surveys on paddy are prepared and published in two parts, one for the Kharif season (autumn crop) and the other for the Rabi Season (for Winter & Summer crops). This report deals with the results of experiments conducted during Winter and Summer 1978-79.

2.1 *Objective of the Survey.*—The main objects of the survey were :

- (1) To estimate the productivity of dry paddy at the taluk, district and the state levels for each season with reasonable level of accuracy.
- (2) To estimate the total production of rice in the state during each crop seasons.
- (3) To estimate the productivity of high yielding varieties of paddy at the district level.
- (4) To study the cultivation practices of paddy.

2.2 *Period of the survey.*—The harvesting period of winter paddy is from November to February and that of summer crop is from March to June. (The agricultural year is divided into three seasons of equal duration of four months each). The field work relating to winter season was completed in February 1979 and that of summer in April 1979.

2.3 *Coverage and sample design.*—The survey was conducted in all the taluks where the crop is grown during the seasons. During winter 1979 the survey covered all taluks except cochin and during summer 47 taluks. The taluks where summer paddy were not raised to any considerable extent and hence crop cutting experiments not conducted were Pathanapuram in Quilon District, Sherthalai in Alleppey District, Vaikom, Meenachil and Kanjirappally Taluks in Kottayam District, all the four taluks in Idukki District and Cochin in Ernakulam District.

The selection of plots for crop cutting experiments on paddy for each taluk was confined to revenue villages selected for the TRS for the year. The number of experiments to be conducted during each season was fixed considering the area under the crop in the taluk and work load of the Investigators. The total number of experiments to be conducted in a taluk during each season was however limited to 30. But at the same time particular care was taken to have a minimum of two experiments to be conducted in a village. If the number of experiments allotted to the taluk are not available in the selected villages of the taluk, the deficiency was made good from the non TRS villages in the taluk.

2.4 Sampling design.—A stratified multistage random sampling design was adopted for the survey. Taluk was taken as the stratum revenue village as the first stage unit, the survey sub division numbers as the second stage units a kandom as the third stage unit and a square plot of 5 x 5 metre as the ultimate sample unit. The selection of villages were done at the headquarters in the beginning of the agricultural year (they being the same as those selected for TRS). The number of experiment to be conducted in each investigator unit were fixed by the Deputy Director in consultation with the District Statistical Officers and the Statistical Inspectors. In each of the investigator units the required number of experimental plots 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 and will be harvested in the season.

In the selected survey subdivision was found to be having more than one kandom, one kandom was randomly selected and a square plot of side 5 metre 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 grams were collected at the time of harvests 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 offices within 24 hrs. for conducting drriage experiments. These samples were dried and weights taken on alternative days till two consecutive weights were the same.

2.5 Sample selection.—The selection of plots (survey subdivisions) in each investigator unit was done by the taluk statistical Inspector. The selection of kandom if the number of Kandom 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 N.S.S.O. Trivandrum and also 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 on the T.R.S. under the immediate supervision of the Taluk Statistical Inspector. The D.S.Os were responsible for the proper and timely conduct and supervision of the field work of the survey. Additional 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 in the State during winter and summer '79 were 1427 & 1148 respectively. The percentage response was about 98% for winter and 96% for summer. During the previous year the per centage responses were 92 and 96 for winter and summer respectively. The districtwise percentage response during the two seasons are presented separately in table 3.1 for winter and in table 6.1 for summer in the appendix. The reasons for the non-response for the two seasons are presented in table 3.2 and 6.2 in the appendix. The reason for the loss of experiments in every large number of cases was due to prior harvest in the experimental plots by the cultivators (ie harvesting the crop in the experimental plots before the fixed date and time of harvest without informing the investigator in advance).

Even though it was expected to allot the field work to 800 investigator^s during both winter and summer 1979 it had to be reallocated to 788 investigators during winter 1979 and 651 investigators during summer 1979 due to the non-availability of the crop during the season in certain villages. But only 715 investigators in winter and 544 investigators in summer had actually conducted the experiment. It was found that 23 investigators each during winter and summer 79 had to conduct 5 experiments & more. The average number of experiments conducted by an investigator was about 2 during winter and summer 1979. These investigators had also conducted crop cutting experiments on other crops like tapioca, coconut, arcanut, cashew, pepper, mango, ginger, turmeric and sweet potatoes. The allocation of field work to investigators in the districts according to the number of experiments during winter and summer 1979 is given in table 3.3 and table 6.3 respectively in the appendix. The distribution of investigators according to the number of experiments actually conducted by them in the various districts during winter & summer 1979 is presented in table 3.4 & 6.4 respectively in the appendix. One schedule (Form VIA) was prescribed for the survey. The investigators were instructed to fill up the 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 stage by the Statistical Inspectors, District Statistical Officers and Additional District Statistical Officers. Targets had been fixed for the supervisory officials for the conduct of inspection at the harvest stage. District Level Officers had been instructed to conduct harvest stage inspection at the rate of one experiment in each taluk. The Statistical Inspectors/Additional Statistical Inspectors were asked to conduct harvest stage inspection at least one randomly selected plot in each investigator unit

subject to a minimum of six experiments in a taluk. (These six experiments were inclusive of experiments inspected at harvest stage under the parallel supervision scheme). At about 46% of the number of experiments analysed were inspected at harvest stage during winter 1979 and 36% in summer 1979. The percentage of pre harvest inspection was about 14% during winter 8% during summer 1979. The number of experiments inspected at the three stages together with their percentages in all the districts and the state during winter & summer seasons are given in table 3.5 and table 6.5 respectively in the appendix.

2.7 *Analysis.*—The data collected through the survey was consolidated in the three Regional Tabulation Centres. The estimation and analysis of the data were done by the Agricultural Statistics Division of the Directorate.

2.8 *Procedure of estimation.*—1. Mean yield—Taluk wise mean yield of dry paddy and the standard error were estimated using the following formula.

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

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 i.e. $\frac{1}{400}$ of a hect

$$\text{Meal yield of dry paddy in kg./hect} = \frac{\sum_{i=1}^k \sum_{j=1}^{n_i} x_{ij}}{\sum_{i=1}^k n_i} \times 400 \times d$$

where d is the drriage ratio of dry paddy to wet paddy.

Standard error of taluk mean yield:

$$\text{Variance of taluk mean yield} = \frac{A}{N} + \frac{B - A \bar{x}}{m} \frac{\sum_{i=1}^k n_i^2}{N^2}$$

where A —Mean square within village

B —Mean square between village

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

n_i —Number of experiments conducted in the i th village.

$$m = \frac{N^2 - \sum ni^2}{N(ki - 1)} \quad \text{and}$$

k = number of villages selected in the taluk

The standard error (S.F) in the square root of the variance. The standard error in kg. per hect. is obtained by multiplying this root of variance with 400.

3. 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 of i th taluk.

The data on area under paddy in each taluk estimated through the Timely Reporting Survey have been utilised to compute the productivity of rice.

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

3.1 *Results of the Survey.*—The estimated production of rice in the state during the three seasons of the year 1978-79 is given below.

Autumn—1978	544754 tonnes
Winter—1979	530004 „
Summer—1979	198558 „
Total	1273316

The production of rice in the state was less by about 21 thousands tonnes during the year 1978-79 than that of 1977-78. This was mainly due to the decrease in area under paddy during Autumn and winter season. The estimated gross area under paddy during the year comes only to 95% of the provisions year. The cultivators preference for crop other than paddy due to the low price and high cost of cultivation of paddy was one of the important reasons for the decrease in area in many districts. Damages due to flood and cyclone had been reported during winter from many parts. The decrease in the extent of High yielding varieties was another reason for the decrease in production. However the yield rate for the year was better than that of the previous year. A statement showing the season wise area, mean yield and production in each district during 1978-79 is presented in the appendix as 7.2. For a comparative study, season wise area, mean yield and production of rice for the last 9 years from 1970-71 is added in table 7.4 in the appendix.

The estimated area, mean yield of dry paddy and the production of rice together with the number of cropcutting experiments analysed for each taluk during winter and summer 1979 are given in table 1.1 and 4.1 respectively of the appendix. The average yield ranges from 1851 kgs. of dry paddy per hect. in Alleppey district to 2837kg./Hect. in Idikki during winter 1979. During summer 1979 the average yield ranges from 1035 kg/hect. in Quilon District to 4031 kg/Hect. in Alleppey District.

To facilitate comparison, the data on area mean yield and production of rice during the corresponding seasons of 1977-78 are presented in table 1.2 & 4.2 respectively of the appendix. Table 1.2 shows that the productivity of winter 1979 has increased in all district except Alleppey, Kottayam, Palghat and Cannanore when compared to that of winter 1978. The decrease in productivity was maximum in Alleppey District. The reason for the fall in productivity was reported to be the heavy rain and flood after sowing. Complete damage of the crop due to flood and pest attack was reported from many parts of the Districts. In Cannanore District scarcity of water during the flowering stage was reported to have affected the paddy crops.

During summer 1979 the yield rate of paddy was better than that of the previous year in all districts except Ernakulam and Trichur. Scarcity of green manure and decrease in consumption of Chemical fertilizers due to high cost were some of the reasons.

Crop cutting experiments under I.A.D.P. series were conducted in both the I.A.D.P. District of Alleppey and Palghat during winter 1978 during summer 1978 the experiments under I. A. D. P. series were not done in Palghat District as the area under the crop during the season was very small. It is seen that the estimates of mean yield of paddy obtained from the state series and I. A. D. P. series of experiments conducted in these districts were not poolable since the estimates of average yield were statistically significant. The details of both series of experiments conducted in Alleppey and Palghat districts are presented in the table I (page 10).

Analysis of variance of plot yield for winter and summer seasons is given in table 1.3 & 4.3 respectively of the appendix. In both cases the yield rate of paddy was found to be significant between taluks. Significant variation was also found in the yield rates from village to village even within taluk. In other words there was significant variation in the yield rates between taluks and villages.

Table-1

DETAILS OF EXPERIMENTS PLANNED AND CONDUCTED UNDER I. A. D. P. AND STATE SERIES DURING WINTER AND SUMMER 1979

Series	Alleppey		Palghat		Stand-ard error	Mean yield of dry paddy kg./hect.	Stand-ard error	Mean yield of dry paddy kg./hect.
	No. of experiment Planned	Analysed	No. of experiment Planned	Analysed				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Winter 1979								
I. A. D. P. series	132	132	2018	84	200	200	3412	86
State series	154	148	1851	171	148	148	2887	102
Summer 1979								
I. A. D. P. series	159	159	4135	111	—	—	—	—
State series	134	127	4031	300	—	—	—	—

The frequency distribution of plot yields obtained through the survey in each District as well as the state during winter and summer 1979 are provided in table 1.4 & 4.4. respectively of the appendix using the wet weight of paddy of the experimental plots. The highest yield rate of 4100 kg. of wet paddy per hect. was obtained from 14% of the experimental plots both during winter and summer 1979. Zero or near zero yield rate (ie. below 500 kgs of wet paddy per hect.) was obtained from 3% of the experimental plots during winter. This was 7% during summer 1979. The major part of the entries in this class interval falls in Alleppey District during winter and in Quilon and Trivandrum Districts during summer.

With a view to find out the driage ratio of dry paddy to wet paddy experiments were conducted in the taluk statistical offices. Three driage experiments were conducted each from a taluk for each season. The first sample was collected at the beginning of the second towards the middle and third towards the end of the harvesting season. During winter 1979, 163 driage experiments were conducted. The no. of such expts. conducted during summer 1979 was 152. The driage ratio for each district and the state are given in Table 1.5 & 4.5 of the appendix for winter & summer respectively.

Based on the data obtained from the harvest stage inspection reports of the Statistical Inspectors and District Statistical Officers, independent estimates of mean yield of paddy (simple average) both as wet and dry for the District and the State were framed. These estimates are furnished in Table 1.6 & 4.6 of the Appendix for winter and summer respectively. About 92% of the experiments planned for harvestage inspection was conducted during winter by the Statistical Inspectors and District Statistical Officers. The percentage was 70 during summer. Changes in the dates of harvest, without intimation to the statistical staff was the main reason for the short fall in the achievements of the targets in full. About 46% of the total no. of experimental plots was brought under inspection during winter and 36% during summer.

The estimated mean yield of dry paddy relating to winter and summer seasons for taluks, districts and the state for the last six years (1974 to 79) are given in table 1.7 and 4:7 respectively of the appendix.

3.2 *High yielding varieties*:—The estimated area, mean yield and production of high yielding varieties and other varieties of paddy in each District and in the state during winter and summer 1979 are furnished in table 2.1 and 5.1 respectively of the appendix. The estimates show that 22.5% of area under paddy during winter 52.14% during summer 1979 were brought under High Yielding varieties.

The State level productivity of the high yielding strains during winter 1979 was found 13.3% above the productivity of all varieties and 17.8% above that of other variety. It was also estimated that 25.5% of the total out turn of rice was from High Yielding varieties during winter. The district level yield rate of High Yield varieties of paddy was found lower than

that of other varieties in the districts of Trivandrum, Kottayam, Ernakulam and Kozhikode during winter. It was reported that the cultivators did not apply the required quantity of chemical Fertilizers and organic manure. During summer, the productivity was 19.5% over all varieties and 61.5% over other varieties, 62.2% of the production of rice during the season was from High Yield varieties.

It is seen from the comparative tables (table 3.2 and 5.2 of the appendix) of area, mean yield and production of rice during the respective seasons of 78 & 79, that the area under high yielding varieties of paddy has decreased by about 13% during winter 79 and about 8% during summer 79. The area under high yielding strains of paddy has decreased during winter in the districts of Alleppey, Idukki, Ernakulam, Trichur, Kozhikode and Cannanore. During summer the decrease in area is noted in the districts of Trivandrum, Kottayam, Trichur & Cannanore.

Compared to winter 1978 the productivity of the state has decreased by about 7% during winter 1979. The decreasing trend is noted in the productivity in all districts except Idukki, Trichur and Malappuram. But during summer it showed remarkable increase in all districts except Trichur.

The Distribution of experimental plots with high yielding varieties of paddy according to the variety raised in each district and the state during winter and summer 1979 are given in table 2.3 & 5.3 respectively of the appendix. It is found that about 19% and 55% of the experimental plots covered by the survey were grown with high yielding strains of paddy during winter and summer 1979 respectively. It can reasonably be concluded from these tables that the order of cultivators preferences of high yielding strain are Jyothi Mashori, H4 and Bharathy during winter and Triveni, Jyothi, Jaya, and Annapurna during summer 1979.

The average yield (simple average) of various strains at district and state level are presented in table 2.4 and 5.4 for winter and summer 1979 respectively of the appendix. The highest state average yield of 2915 kg. per hect. was obtained from Mashori followed by 2675 kg. per hect. by H4 during winter 1979. During summer 1979 the highest State average of 3283 kg. per hect. was obtained from Jaya. The second highest yield rate of 3121 kg. per Hect. was obtained from IR 20.

The names of high yielding strains of paddy which corresponds to the highest District average yield together with the highest mean yield and the number of experimental plots where the crop was raised in each district during winter 1979 are indicated in the table below.

Table : 2

HIGH YIELDING VARIETIES CORRESPONDING TO THE HIGHEST DISTRICT
AVERAGE YIELD DURING WINTER 1979.

Sl. No.	District	HYV correspond to the highest district average yield	Highest average yield of dry paddy (Kg./Hect.)	No. of experimental plots where HYV in col. (3) raised
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	H4	2343	1
2	Quilon	H4	2719	2
3	Alleppey	Bharathy	3836	4
4	Kottayam	I R 8	3296	2
5	Idukki	H4	3047	10
6	Ernakulam	Jaya	2484	4
7	Trichur	I R 8	2414	1
8	Palghat	Triveni	3707	1
9	Malappuram	H4	2324	2
10	Kozhikode	I R 20	2462	1
11	Cannanore	Mashori	2689	1

The highest district average yield was obtained for Bharathy in Alleppey District closely followed by Thriveni in Palghat District. H4 has attained the highest district average in four districts. Though Jyothi was found to be the widely adopted strain during winter 1979 did not gain the highest district average in any of the Districts. 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 during summer 1979 has given in table 3 below.

Table : 3

HIGH YIELDING VARIETY CORRESPONDING THE HIGHEST DISTRICT
AVERAGE YIELD DURING SUMMER 1979

Sl. No.	District	HYV corresponding to the highest district average yield	Highest average yield of dry paddy per Hect.	No. of experimental plots where HYV (given in col. 3) raised
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	Jaya	1494	10
2	Quilon	Sabari	2588	1
3	Alleppey	Bharathy	5029	16
4	Kottayam	Jaya	4489	1
5	Idukki			..
6	Ernakulam	I R 8	3523	4
7	Trichur	H4	2884	1
8	Palghat	I R 20	4977	1
9	Malappuram	I R 20	5399	1
10	Kozhikode	Mashori	3203	1
11	Cannanore	I R 5	3013	1

I R 20 recorded the highest district average in Malappuram District followed by Bharathy in Alleppey District. I R 20 has got the highest district average in Palghat District also. Triveni, the most widely adopted strain of the season, has not attained the highest district average in any of the district.

3.3 Cultivation Practices.—It was found that about 38% & 79% of the experimental plots covered by the survey received irrigation during winter and summer 79 respectively. These percentages were 31 and 75 respectively during the corresponding seasons of the previous year. Out of the irrigation plots, while about 83% during winter 79 & 86% during summer were applied with chemical fertilizers, another 14% & 13% during winter and summer 79 respectively were found to have been applied with other manures like farm yard manure, Greenmannure, Cowdung etc. Thus it is seen that about 2% and 1% of the irrigated plot covered by the survey were left unmanured during winter and summer 1979 respectively.

As far as unirrigated plots were concerned, 70% of the plots were found to have been applied with chemical fertilizers and another 24% with other types of manures like farm yard manure cow dung etc., during winter 1979. During summer these percentages came about 84 and 14 respectively.

It was reported that crops in 46% of the experimental plots during winter and 69% during summer were treated with insecticides and pesticides. Severe pest attack were not reported from any district during winter. Timely application of Insecticides and pesticides prevented the crop from the severe attack of pests and disease. Severe pest attack reported from certain parts of Quilon, Palghat and Cannanore during summer were also checked considerably by the timely application of insecticides and pesticides.

In the case of the experimental plots, where HYV were raised, it was found that 56% & 74% of them received irrigation during winter and summer 1979 respectively. Chemical fertilizers were found to have been applied in about 96% of the irrigated plots with the HYV during winter 1979. The above percentage during summer 79 was 93 with regards to the unirrigated plot with High yielding varieties, 92% were brought under chemical fertilizers during winter and 94% during summer 1979.

Insecticides and pesticides were found to have been applied to about 75% of the experimental plots with high yielding strains during winter 1979 and to about 80% during summer 1979.

The estimated average yield of dry paddy per hect. for the high yielding and other varieties in irrigated unirrigated plots, manured and unmanured plots and in plots treated and not treated with insecticides and pesticides together with the number of experiment, as obtained from the crop cutting survey, under each of the category in respect of winter and summer 1979 are given in table 2.5 and 5.5 respectively of the appendix.

The estimated area, mean yield and production of high yielding varieties of paddy in each district during the three seasons viz. Autumn, winter and summer 1978-79 are given in table 7.1 of the appendix to facilitate comparison. Similarly a statement is given for all varieties of paddy in table 7.2 of the appendix. The estimated area mean yield and production of high yielding varieties of paddy in the State for the last four years from 1975-76 are given separately for each season in table 7.3 of the appendix. A similar statement for all varieties of paddy for the last 9 years from 1970-71 are given in Table 7.4 of the appendix.

Table 1.1

ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF PADDY WINTER, 1979

Taluk and District	No. of expts.	Area in Hects.	Mean yield of dry paddy kg./hect	Standard error	Production of rice in tonnes.
(1)	(2)	(3)	(4)	(5)	(6)
1. Neyyattinkara	30	4066	1981	131	5292
2. Trivandrum	24	3625	2257	134	5375
3. Nedumangad	30	4060	2238	217	5970
4. Chirayinkil	29	4300	2569	191	7258
TRIVANDRUM DISTRICT	113	16051	2266	87	23895

	(1)	(2)	(3)	(4)	(5)	(6)
5. Quilon		24	3785	2509	130	6239
6. Kottarakkara		30	6117	2859	175	11490
7. Kunnathur		28	4526	2289	215	6807
8. Pathanapuram		24	3968	2678	236	6981
9. Pathanamthitta		20	2449	2103	192	3384
10. Karunagappally		23	4519	2302	193	6835
QUILON DISTRICT		149	25364	2504	81	41736
11. Karthigappally		24	4187	2012	159	5535
12. Mavelikkara		30	4917	1761	356	5689
13. Chengannur		22	2158	1795	816	2545
14. Thiruvalla		20	969	2951	186	1879
15. Kuttanad		10	1380	3496	559	3170
16. Ambalapuzha		12	896	732	..	431
17. Sherthalai		30	2347	808	200	1246
ALLEPPEY DISTRICT		148	16854	1851	171	20495
18. Changanacherry		17	554	2583	184	940
19. Kanjirappally		9	16	2247	..	24
20. Kottayam		29	2899	2081	280	3964
21. Vaikom		21	7064	2039	423	9463
22. Meenachil		24	2771	2545	309	4633
KOTTAYAM DISTRICT		100	13304	2176	242	19024
23. Peermade		4	22	2263	..	33
24. Devikulam		12	1174	2712	303	2092
25. Udumbanchola		12	1325	3297	675	2870
26. Thdoupuzha		29	2875	2681	232	5064
IDIKKI DISTRICT		57	5396	2837	218	10059
27. Kothamangalam		30	3634	2147	115	5126
28. Muvathupzha		29	7009	2575	104	11858
29. Cochin	
30. Kanayannur		30	3562	1750	411	4095
31. Kunnathunad		26	11220	2258	169	16645
32. Alwaye		30	9619	2344	626	14813
33. Parur		30	3884	2357	377	6015
ERNAKULAM DISTRICT		175	38928	2289	172	58552

	(1)	(2)	(3)	(4)	(5)	(6)
34.	Cranganore	20	2144	1470	389	2071
35.	Mukundapuram	30	16797	2048	236	22601
36.	Trichur	29	12640	2227	176	18494
37.	Thalappally	28	15761	2179	102	22563
38.	Chowghat	29	4075	911	285	2439
	TRICHUR DISTRICT	136	51117	2018	98	68168
39.	Chittur	29	17324	3043	262	34635
40.	Alathur	29	22178	3163	268	46088
41.	Palghat	30	17509	3481	152	40043
42.	Ottappalam	30	18766	2114	144	26064
43.	Mannarghat	30	7442	2252	158	11011
	PALGHAT DISTRICT	148	83219	2887	102	157841
44.	Perinthalmanna	30	6518	2185	130	9357
45.	Ponnani	24	3841	1902	207	4800
46.	Tirur	29	9971	1595	179	10449
47.	Ernad	29	16052	2222	98	23434
	MALAPPURAM DISTRICT	112	36382	2010	73	48040
48.	Kozhikode	30	6822	1762	74	7897
49.	Quilandy	30	5606	1490	168	5488
50.	Badagara	22	3097	1151	212	2342
51.	South Wynad	12	15251	2886	325	28917
	KOZHIKODE DISTRICT	94	30776	2208	166	44644
52.	North Wynad	12	9122	1905	331	11417
53.	Tellicherry	30	4479	1643	171	4835
54.	Cannanore	30	2818	1194	163	2211
55.	Taliparamba	29	3969	1551	173	4044
56.	Hosdurg	30	2407	1896	202	2998
57.	Kasargode	30	5241	2298	236	12045
	CANNANORE DISTRICT	161	28036	2038	124	37550
	STATE	1393	345727	2333	42	530004

Table : 1.2

ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF RICE RELATING
TO WINTER CROP OF PADDY 1978-79

Sl. No.	District	Area in Hectares		Mean yield dry paddy in Kg./Hect.		Production of rice in tonnes	
		1978	1979	1978	1979	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	16048	16051	2167	2266	22847	23895
2.	Quilon	25124	25364	2334	2504	38528	41736
3.	Alleppey	31750	16854	2458	1851	51285	20495
4.	Kottayam	14393	13304	2323	2176	21970	19024
5.	Idukki	6840	5396	2803	2837	12598	10059
6.	Ernakulam	39537	38928	1986	2289	51602	58552
7.	Trichur	56299	51417	1822	2018	67408	68168
8.	Palghat	81089	83219	2994	2887	159538	157841
9.	Malappuram	40516	36382	1961	2010	52203	48040
10.	Kozhikode	29920	30776	2083	2208	40956	44644
11.	Cannanore	29343	28036	2088	2038	40255	37550
STATE		370859	345727	2295	2333	559190	530004

Table : 1.3

Winter crop of Paddy 1979

ANALYSIS OF VARIANCE OF PLOT YIELD POLLED FOR THE STATE
IN KG./PLOT OF 1/400 OF HECTARE

Source of variation	Sum of squares	Degrees of freedom	Mean sum of square (variance)	Variance ratio (Calculated)
(1)	(2)	(3)	(4)	(5)
Between Taluk	3627.64	55	65.96	17.68*
Between Village within Taluk	1641.63	203	8.09	2.17*
Within Village within Taluk	4223.96	1134	3.73	
All	9503.23	1392		

* Significant at one per cent level.

Table: 1.4
FREQUENCY DISTRIBUTION OF PLOT YIELD (WET PADDY)—WINTER 1979

Sl. No.	Class/Interval/ kg./hect. of wet paddy	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	State
			Trivandrum	Quilon	Alleppey	Kottayam	Idukki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore		
1.	Below 500		..	..	16	..	1	2	9	2	2	2	10	44	
2.	500—699		..	..	10	3	..	2	6	2	1	3	3	30	
3.	700—899		1	3	5	4	..	1	9	1	1	6	7	38	
4.	900—1099		1	2	16	2	1	2	3	2	3	7	6	45	
5.	1100—1299		3	1	10	5	..	5	7	3	5	8	10	57	
6.	1300—1499		5	6	6	4	2	7	8	2	8	9	16	73	
7.	1500—1699		6	3	6	5	1	7	12	6	12	9	17	84	
8.	1700—1899		5	5	12	3	1	10	7	9	8	10	13	83	
9.	1900—2099		10	3	5	9	..	11	11	8	9	7	18	91	
10.	2100—2299		6	5	7	5	3	13	5	10	13	10	17	94	
11.	2300—2499		6	16	8	6	3	23	6	7	12	4	8	99	
12.	2500—2699		16	20	6	7	2	22	17	3	8	5	10	121	
13.	2700—2899		10	15	8	9	10	25	15	7	8	2	6	115	
14.	2900—3099		9	19	2	7	6	16	5	6	12	3	8	93	
15.	3100—3299		13	17	7	9	7	11	5	10	6	3	4	92	
16.	3300—3499		11	10	4	5	3	9	3	9	2	2	3	58	
17.	3500—3699		3	8	1	7	1	5	4	8	2	..	2	41	
18.	3700—3899		4	3	5	4	3	3	1	10	..	2	..	34	
19.	3900—4099		1	5	2	3	3	1	1	12	..	2	1	31	
20.	4100—& above		3	8	12	3	11	3	2	26	..	..	2	70	
	All		113	149	148	100	57	175	136	148	112	94	161	1393	

Table: 1.5

THE RESULTS OF DRIAGE EXPERIMENTS WINTER PADDY 1979

Sl. No.	District	No. of driage experiments		Total yield collected for driage expts(kg.)	Total yield after driage operation (kg.)	Driage ratio (per-centage)
		Planned	Analysed			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Trivandrum	12	12	3.000	2.566	85.5
2.	Quilon	18	17	4.250	3.746	88.1
3.	Alleppey	21	20	5.000	4.556	91.1
4.	Kottayam	15	15	3.750	3.379	90.1
5.	Idukki	10	10	2.500	2.183	87.3
6.	Ernakulam	18	18	4.500	4.070	90.4
7.	Trichur	15	14	3.500	3.104	88.7
8.	Palghat	15	15	3.750	3.443	91.8
9.	Malappuram	12	12	3.000	2.720	90.6
10.	Kozhikode	12	12	3.000	2.711	90.4
11.	Cannanore	18	18	4.500	4.062	90.2
State		166	163	40.750	36.540	89.7

Table: 1.6

INDEPENDENT ESTIMATE OF MEAN YIELD OF PADDY BASED ON
HARVEST STAGE INSPECTION WINTER 1979

Sl. No.	District	No. of Experiments		Mean yield of paddy (kg./hect)		Driage ratio 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	57	2612	2223	0.855
2.	Quilon	88	88	2808	2474	0.881
3.	Alleppey	80	78	2388	2175	0.911
4.	Kottayam	66	62	2592	2335	0.901
5.	Idukki	30	27	3372	2944	0.873
6.	Ernakulam	78	60	2160	1953	0.904
7.	Trichur	62	59	1925	1707	0.887
8.	Palghat	68	68	2584	2372	0.918
9.	Malappuram	50	42	2116	1917	0.906
10.	Kozhikode	50	55	1436	1298	0.904
11.	Cannanore	76	49	2084	1880	0.902
State		704	645	2362	2119	0.897

Table: 1.7

ESTIMATED MEAN YIELD OF DRY PADDY (KG./HECT.)
DURING WINTER SEASON FROM 1974 TO 1979

Taluk and District	1974	1975	1976	1977	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Neyyattinkara	2164	2130	2759	2453	2052	1981
2. Trivandrum	2058	2548	2272	2086	2044	2257
3. Nedumangad	2010	2450	2578	2156	2027	2238
4. Chirayinkil	2289	2732	2703	2434	2524	2569
TRIVANDRUM DISTRICT.	2131	2444	2595	2280	2167	2266

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
5.	Quilon	2657	2230	2165	2571	2288	2509
6.	Kottarakkara	2720	2497	2872	2837	2482	2859
7.	Kunnathur	2245	2712	2376	2669	2369	2289
8.	Pathanapuram	2844	2788	3085	2842	2924	2678
9.	Pathanamthitta	2604	2732	2865	2858	2485	2103
10.	Karunagappally	2319	2039	2147	2080	1570	2302
	QUILON DISTRICT	2568	2488	2585	2628	2334	2504
11.	Karthigappally	1258	1705	1682	1803	1207	2012
12.	Mavelikkara	1493	2878	1715	2096	2101	1761
13.	Chengannur	2345	3043	2569	3008	2244	1795
14.	Thiruvalla	2056	2849	2668	2840	2839	2951
15.	Kuttanad	..	..	..	3782	3874	3496
16.	Ambalapuzha	1094	1205	2383	2151	1943	732
17.	Sherthalai	618	565	1013	785	979	808
	ALLEPPEY DISTRICT	1407	2007	1848	2820	2458	1851
18.	Changanacherry	2070	3031	2558	3191	2670	2583
19.	Kanjirappally	2327	1951	2062	1911	2372	2247
20.	Kottayam	1821	2499	2334	2590	2529	2081
21.	Vaikom	1892	1992	1997	1916	1921	2039
22.	Meenachal	2101	2582	2485	2547	2675	2545
	KOTTAYAM DISTRICT	1918	2358	2244	2344	2323	2176
23.	Peermade	3835	2643	3008	3198†	3107	2263
24.	Devikulam	1829	2624	2524	2362*	3943	2712
25.	Udumbanchola	2831	2473	2881	2077	2382	3297
26.	Thodupuzha	2265	2890	2389	2403	2428	2681
	IDUKKI DISTRICT	2179	2694	2544	2338	2803	2837
27.	Kothamangalam	2296	2734	2374	2697	2118	2147
28.	Muvattupuzha	..	2673	2009	2100	2215	2575
29.	Cochin	..	..	..	..	..	..
30.	Kanayannur	1381	1984	1833	1088	1826	1750
31.	Kunnathunad	2007	2402	2023	2009	1962	2258
32.	Alwaye	1726	2420	2159	2227	1781	2344
33.	Parur	1820	2338	2159	2204	2218	2357
	ERNAKULAM DISTRICT	1903	2441	2079	2102	1986	2289

† Conventional Estimates

* Pooled Estimates

(1)	(2)	(3)	(4)	(5)	(6)	(7)
34. Cranganore	1082	1060	1255	1309	1213	1470
35. Mukundapuram	1738	1743	1677	1853	1742	2048
36. Trichur	1365	2306	2316	2363	2033	2227
37. Thalappally	2020	2381	2453	2248	1992	2179
38. Chowghat	1050	2240	1165	1330	1211	911
TRICHUR DISTRICT	1587	2140	1995	2037	1822	2018
39. Chittur	2042	3858	3458	3188	3090	3043
40. Alathur	2675	3420	3387	3035	3476	3163
41. Palghat	2637	2889	2913	2894	3451	3481
42. Ottappalam	2020	2445	2553	2226	2322	2114
43. Mannarghat	2537	2675	2451	2481	2129	2252
PALGHAT DISTRICT	2336	3175	3050*	2783	2994	2887
44. Perinthalmanna	1769	2242	2362	2285	2286	2185
45. Ponnani	2894	2161	2120	2135	1732	1902
46. Tirur	2288	1811	1785	1960	1879	1595
47. Ernad	1946	1467	2165	1890	1958	2222
MALAPPURAM DISTRICT	2185	1812	2080	2006	1961	2010
48. Kozhikode	1506	1970	1772	1639	1784	1762
49. Quilandy	1339	1377	1107	1349	1163	1490
50. Badagara	1150	1440	1299	1356	1506	1151
51. South Wynad	2696	2171	2482	2296	2762	2886
KOZHIKODE DISTRICT	1959	1900	1911	1847	2083	2208
52. North Wynad	2738	2139	2235	2474	2526	1905
53. Tellicherry	1564	1597	1693	1902	1718	1643
54. Cannanore	1572	1117	1713	1608	1653	1194
55. Taliparamba	1662	1734	2010	1981	1981	1551
56. Hosdurg	1611	2068	2381	2239	2025	1896
57. Kasargode	2284	2122	2107	2649	2148	2298
CANNANORE DISTRICT	2083	1924	2101	2243	2088	2038
STATE	2028	2382	2332	2344	2295	2333

* Pooled estimates

Table : 2.1

ESTIMATED AREA, MEAN YIELD & PRODUCTION OF HIGH YIELDING & OTHER VARIETIES OF PADDY WINTER 1979

Sl. No.	District	High yielding varieties					Other varieties			All varieties		
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		
(1)	(2)	Area in (Hect.)	Mean yield of paddy Kg./Hect.	Production (tonnes)	Area in (Hect)	Mean yield of paddy Kg./Hect	Production (tonnes)	Area (Hect)	Mean yield dry paddy Kg. per Hect.	Production tonnes.		
	Trivandrum	1058	2156	1499	14993	2274	22396	16051	2266	23895		
	Quilon	1509	2510	2488	23855	2504	39248	25364	2504	41736		
	Alleppey	3262	3001	6433	13592	1575	14062	16834	1351	20495		
	Kottayam	10404	2024	13838	2900	2722	5186	13304	2176	19024		
	Idikki	1292	2931	2488	4104	2808	7571	5396	2837	10059		
	Ernakulam	2715	1889	3369	36213	2319	55183	38928	2289	58552		
	Trichur	6678	2281	10007	44739	1979	58161	51417	2018	68168		
	Palghat	39488	3079	79881	43731	2713	77960	83219	2887	157841		
	Malappuram	7583	2162	10773	28799	1970	37267	36382	2010	48040		
	Kozhikode	2017	1321	1751	28759	2270	42893	30776	2208	44644		
	Cannanore	1903	2220	2776	26133	2025	34774	28036	2038	37550		
	State	77909	2643	135303	267818	2243	394701	345727	2333	530064		

Table No. 2.2.

ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF HIGH YIELDING VARIETIES
OF PADDY DURING WINTER 1978—79

Sl. No.	District	Area in hectares		Mean yield of dry Paddy in Kg./Hect.		Production of rice in tonnes	
		1978	1979	1978	1979	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Trivandrum	1053	1058	2257	2156	1561	1499
2.	Quilon	804	1509	2340	2510	1236	2488
3.	Alleppey	11424	3262	3716	3001	27891	6433
4.	Kottayam	9133	10404	2536	2024	15217	13838
5.	Idikki	1621	1292	1466	2931	1562	2488
6.	Ernakulam	4220	2715	1949	1889	5404	3369
7.	Trichur	8648	6678	1739	2281	9880	10007
8.	Palghat	38498	39488	3310	3079	82383	79881
9.	Malappuram	5711	7583	1820	2162	6829	10773
10.	Kozhikode	2686	2017	2745	1321	4844	1751
11.	Cannanore	5141	1903	2706	2220	9140	2776
	State	88939	77909	2839	2643	165947	135303

Table No. 2:3

DISTRIBUTION OF FIELDS WITH HIGH YIELDING VARIETIES OF PADDY ACCORDING TO THE VARIETIES RAISED DURING WINTER 1979

SL. No.	District	High Yielding Varieties	No. of experiments conducted	Total	Percentage of H.Y.V. Expts. to total Expts.	Triveni	Bharathy	Jyothi	Jaya	Aswathy	Sabiri	Rohini	Annapurna (Culture-28)	IR 29	IR 8	H 4	Mashori	IR 5	Taichung	Pankaj
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
1	Trivandrum	6	113	5	1	1	1	1	1	..	..	..	..	..	1	1	..	..	..	..
2	Quilon	3	149	5	..	3	3	..	..	..	..	..	..	..	..	2	..	..	..	..
3	Alleppey	32	148	22	1	4	15	5	..	..	..	..	1	3	1	2	..	..	..	..
4	Kottayam	65	100	65	..	6	37	..	1	..	..	..	2	1	2	16	..	..	..	..
5	Idukki	15	57	26	..	2	3	..	..	..	..	..	..	..	..	10	..	..	..	..
6	Ernakulam	15	175	20	3	1	4	2	..	..	..	..	3	..	2	2	..	..	..	..
7	Trichur	17	136	13	3	..	1	..	..	..	1	..	1	..	1	2	7	..	..	..
8	Palghat	64	148	43	1	..	1	5	1	..	1	..	..	5	..	..	50	..	..	..
9	Malappuram	15	112	13	6	..	..	..	..	..	..	..	1	..	..	..	5	..	..	..
10	Kozhikode	7	94	7	1	..	1	..	..	..	..	..	2	1	..	..	2	..	..	..
11	Cannanore	16	161	10	1	..	5	1	1	..	..	..	..	4	1	3	1	..	..	..
State		260	1393	19	17	17	71	15	2	2	..	10	14	6	40	65	..	..	..	..

Table 2.4

DISTRICT AVERAGE YIELD OF HIGH YIELDING VARIETIES WINTER CROP OF PADDY 1979
(DRY PADDY IN Kg./HECT.)

Sl. No.	District	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
				Triveni	Bharathy	Jyothi	Jaya	Aswathy	Sabari	Rohini	Annappurna (Culture 28)	IR 20	IR 8	H 4	Mashori	IR 5	Taichung	Pankaj	
1.	Trivandrum	1135	1300	1197	3745	..	..	..	..	..	..	..	1666	2343	..	..	..	..
2.	Quilon	..	2220	2330	..	..	..	..	..	..	..	..	..	2719	..	..	..	..
3.	Alleppey	2246	3836	2777	3130	..	..	..	..	..	1638	2694	..	3294	..	..	..	..
4.	Kottayam	..	2057	2154	..	1224	..	..	..	..	614	1728	3296	2671	..	..	..	..
5.	Idukki	..	2242	2911	..	..	..	..	..	..	..	..	..	3047	..	..	..	..
6.	Ernakulam	1856	1029	1827	2484	..	..	..	..	..	1798	..	..	1993	..	..	..	..
7.	Trichur	2247	..	710	..	..	..	1633	..	..	1331	2837	2414	2293	1953	..	..	3213
8.	Palghat	3707	..	2521	2529	881	2679	..	..	..	..	..	..	..	3244	..	..	..
9.	Malappuram	2056	..	..	2100	..	..	..	..	..	1738	2462	..	2324	2263	..	..	..
10.	Kozhikode	959	..	652	..	..	..	..	..	..	1839	2585	1166	..	1636	..	..	..
11.	Cannanore	2094	..	2415	903	..	..	..	..	..	..	..	1166	1812	2689	..	..	..
	State	2036	2423	2265	2642	1041	2136	..	1493	2592	1985	2675	2915	3213

Table 2.5

DISTRICTWISE* YIELD RATE FOR HIGH YIELDING AND OTHER VARIETIES OF PADDY
ACCORDING TO CULTURAL PRACTICE DURING WINTER 1979 (MEANYIELD—
DRY PADDY IN KG/HECT.)

District	Variety	No. of expt.	Irrigated			Total yield rate (kg.)				
			CM	OM	NM					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Trivandrum	H	1		2343					1	2343
	V	24		2062	2	2404			26	2090
	All	25		2073	2	2404			27	2096
Quilon	H	3		2710					3	2710
	V	30		2464					30	2464
	All	33		2485					33	2485
Alleppey	H	15		3181			1	000	16	2985
	V	7		2446			1	1001	8	2268
	All	22		2948			2	501	24	2745
Kottayam	H	20		2639					20	2639
	V	4		2621					4	2621
	All	24		2635					24	2635
Idukki	H	5		3277	1	2638			6	3169
	V	5		2949	5	3249	2	2038	12	2921
	All	10		3113	6	3148	2	2038	18	3005
Ernakulam	H	10		1888					10	1888
	V	99		2375	6	2422	4	2556	109	2386
	All	109		2332	6	2422	4	2556	119	2343

G. M. Chemically Manured.
O. M. Other Manured.
N. M. Not Manured.

Table 2.5 (Contd.)

District	Variety	Unirrigated			NM	Yield rate (kg.)	Total Yield rate (kg.)	Treated pesticides		With no pesticides yield rate			
		CM	OM	Yield rate (kg.)				Yield rate (kg.)	(20)		(21)	(22)	(23)
		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Trivandrum	H	4	1963	1	1197			5	1809	4	1495	2	2705
	V	77	2363	3	1860	1	2035	81	2339	37	2274	70	2274
	All	81	2343	4	1696	1	2035	86	2309	41	2196	72	2295
Quilon	H	5	2193					5	2193	4	2471	4	2302
	V	99	2531	11	2214	1	1584	111	2489	30	2415	111	2503
	All	104	2513	11	2214	1	1584	116	2478	34	2422	115	2496
Alleppey	H	15	2672	1	3403			16	2715	29	3079	3	621
	V	72	1791	29	935	7	320	108	1465	27	2093	89	1347
	All	87	1940	30	1019	7	320	124	1627	56	2606	92	1321
Kottayam	H	45	2063					45	2063	58	2282	7	1890
	V	29	2293	1	3348	1	2520	31	2333	30	2462	5	1789
	All	74	2153	1	3348	1	2520	76	2171	88	2344	12	1847
Idukki	H	8	2834					9	2740	11	3141	4	2286
	V	23	2656	7	2729	1	2007	30	2673	21	2823	21	2663
	All	31	2703	7	2729	1	2007	39	2687	32	2932	25	2604
Ernakulam	H	5	1877					5	1877	11	1837	4	200
	V	32	2293	9	1949	10	1209	51	2018	124	2380	36	188
	All	87	2238	9	1949	10	1209	56	2007	135	2336	40	189

Table 2.5 (Contd.)

District	Variety	No. of expt.	Irrigated			Yield rate (kg.)	OM Yield rate (kg.)	NM Yield rate (kg.)	Yield rate (kg.)	Total Yield rate (kg.)
			CM	Yield rate (kg.)	Yield rate (kg.)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	
Trichur	H	9		2024				9	2024	
	V	28		2031	10	2038		38	2031	
	All	37		2027	10	2038		47	2031	
Palghat	H	59		3200	1	605	2	1897	3116	
	V	33		3215	7	2481		40	3086	
	All	92		3204	8	2246	2	1897	3104	
Malappuram	H	10		2150				10	2150	
	V	30		2266	15	1745	2	1535	2067	
	All	40		2237	15	1745	2	1535	2082	
Kozhikode	H	1		1824				1	1824	
	V	1		3453				1	3453	
	All	2		2639				2	2639	
Cannanore	H	7		2718	1	758		8	2476	
	V	39		1942	28	1596		67	1798	
	All	46		2061	29	1567		75	1870	
STATE	H	140		2797	3	1353	3	1235	146	
	V	300		2369	73	1975	9	2043	382	
	All	440		2506	76	1949	12	1842	528	

* Simple Average.

Table 2.5 (Contd.)

District	Variety	Unirrigated			NM	Yield rate (kg.)	Total Yield rate (kg.)	Treated pesticides yield rate (kg.)	With on pesticides yield rate				
		CM	OM	Yield rate (kg.)									
		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Trichur	H	7	1981	1	2201			8	2009	12	2112	5	178
	V	32	2162	39	1456	10	543	81	1622	52	2144	68	145
	All	39	2130	40	1473	10	543	89	1658	63	2137	73	148
Palghat	H	2	2775					2	2775	36	3197	28	299
	V	22	2191	21	2074	1	1395	44	2118	17	3288	67	239
	All	24	2239	21	2074	1	1395	46	2147	53	3226	95	257
Malappuram	H	4	2103	14	2208			5	2125	12	2328	3	140
	V	36	1890	14	1752			50	1850	38	2074	59	187
	All	40	1911	15	1781			55	1875	50	2136	62	185
Kozhikode	H	3	1560	2	1205	1	2210	6	1531	5	1520	2	171
	V	40	1901	38	1452	8	1481	86	1662	15	1908	74	161
	All	43	1375	40	1441	9	1549	92	1654	20	1908	74	161
Cannanore	H	7	1924			1	1444	8	1863	12	2332	4	168
	V	40	1715	33	1476	5	1202	78	1581	59	1899	86	153
	All	47	1744	33	1476	6	1242	86	1605	71	1971	90	153
STATE	H	105	2190	6	1903	3	1863	114	2165	194	2542	66	2312
	V	502	2197	205	1587	44	1049	751	1964	449	2298	684	1924
	All	607	2197	211	1598	47	1077	865	1989	643	2373	750	1960

Table : 3.1

RESPONSE PERCENTAGE WINTER PADDY 1979

Sl. No.	District	No. of experiments		Percentage Response
		Planned	Analysed	
1	2	3	4	5
1	Trivandrum	114	113	99.12
2	Quilon	152	149	98.03
3	Alleppey	154	148	96.10
4	Kottayam	107	100	93.46
5	Idukki	58	57	93.28
6	Ernakulam	180	175	97.22
7	Trichur	140	136	97.14
8	Palghat	150	148	98.67
9	Malappuram	114	112	98.25
10	Kozhikode	96	94	97.92
11	Cannanore	162	161	99.38
State		1427	1393	97.62

Table : 3.2
DETAILS OF NON-RESPONSE—WINTER PADDY 1979

Sl. No.	Districts	No. of experiments		No. of experiments lost due to			Reasons not specified
		Planned	Analysed	Primary workers absence (leaves transfer etc.)	prior harvest by cultivator	Rejected at the analysis stage	
1	2	3	4	5	6	7	8
1	Trivandrum	114	113	..	1	..	..
2	Quilon	152	149	..	3	..	..
3	Alleppey	154	148	2	4	..	..
4	Kottayam	107	100	..	7	..	..
5	Idukki	58	57	..	1	..	..
6	Ernakulam	180	175	..	5	..	..
7	Trichur	140	136	..	4	..	..
8	Palghat	150	148	..	2	..	..
9	Malappuram	114	112	..	2	..	..
10	Kozhikode	96	94	..	2	..	..
11	Cannanore	162	161	..	1	..	..
State		1427	1393	2	32	..	..

Table : 3.3
WORK LOAD OF PRIMARY WORKERS—DISTRICT WISE
ALLOCATION—WINTER 1979

Sl. No.	District	No. of primary workers			Total
		4 experiments or less	5 to 8 experiments	More than 8 experiments	
1	2	3	4	5	6
1	Trivandrum	64	..	..	64
2	Quilon	70	..	..	70
3	Alleppey	45	13	..	58
4	Kottayam	62	..	..	62
5	Idukki	25	..	..	25
6	Ernakulam	49	6	..	55
7	Trichur	72	..	..	72
8	Palghat	85	..	..	85
9	Malappuram	76	4	..	80
10	Kozhikode	84	..	..	84
11	Cannanore	133	..	..	133
State		765	23	..	788

Table : 3.4

WORK LOAD OF PRIMARY WORKERS ACCORDING TO PERFORMANCE
DURING WINTER 1979

Sl. No.	District	No. of Primary Workers			Total
		4 experiments or less	5 to 8 experiments	More than 8 experiments	
1	2	3	4	5	6
1	Trivandrum	64	..	..	64
2	Quilon	72	..	..	72
3	Alleppey	32	12	1	45
4	Kottayam	62	..	..	62
5	Idukki	25	..	..	25
6	Ernakulam	48	5	1	54
7	Trichur	72	..	..	72
8	Palghat	81	..	..	81
9	Malappuram	56	4	..	60
10	Kozhikode	70	..	..	70
11	Cannanore	110	..	..	110
	State	692	21	2	715

Table 3.5

NUMBER OF EXPERIMENTS INSPECTED DURING WINTER 1979

Sl. No.	District	No. of experiments analysed	Number of experiments inspected by					Percentage of experiments inspected			
			Harvest Stage by D.S.O.	Pre-Stage by S.I.	Stage by D.S.O.	Post Stage by S.I.	Harvest stage	Pre-harvest	Post harvest		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Trivandrum	113	7	50	..	25	1	..	50.4	22.1	.9
2	Quilon	149	6	82	..	8	..	..	59.1	5.4	..
3	Alleppey	148	14	64	..	32	..	..	52.7	21.6	..
4	Kottayam	100	10	52	..	6	..	5	62.0	6.00	5.0
5	Idukki	57	1	26	2	2	..	3	47.4	7.00	5.2
6	Ernakulam	175	3	57	..	22	..	1	34.3	12.6	.6
7	Trichur	136	9	50	1	45	2	4	43.4	33.8	4.4
8	Palghat	148	7	61	..	11	2	..	45.9	7.4	1.4
9	Malappuram	112	2	40	..	26	2	1	37.5	23.2	2.7
10	Kozhikode	94	8	47	..	10	..	..	58.5	10.6	..
11	Cannanore	161	6	43	..	4	..	9	30.4	2.5	5.6
Total		1393	73	572	3	191	7	23	46.3	13.9	2.2

D.S.O. District Statistical Officer and Additional District Statistical Officer.
S.I. Taluk Statistical Inspector.

Table 4.1
ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF RICE
SUMMER PADDY—1979

Taluk and District	No. of expts	Area in hecets	Mean yield of dry paddy in kg./hect.	Standard error	Production of rice in tonne
(1)	(2)	(3)	(4)	(5)	(6)
1. Neyyattinkara	24	407	1184	227	317
2. Trivandrum	24	349	1565	300	359
3. Nedumangad	20	594	1186	188	463
4. Chirayinkil	24	144	945	194	89
TRIVANDRUM DISTRICT	92	1494	1251	121	1228
5. Quilon	17	227	1387	424	207
6. Kottarakara	24	105	1524	484	105
7. Kunnathur	22	105	1432	177	99
8. Pathanapuram	..	14	2087*	..	19
9. Pathanamthitta	6	55	2087	728	75
10. Karunagappally	15	334	304	..	67
QUILON DISTRICT	84	840	1035	238	572
11. Karthigappally	24	4278	4655	718	13084
12. Mavelikara	24	2440	3625	506	5811
13. Chengannur	23	1793	4041	650	4760
14. Thiruvalla	22	3302	3899	379	8459
15. Kuttanad	22	16755	3950	460	43482
16. Ambalapuzha	12	1008	4116	..	2726
17. Sherthalai	..	..	..	..	..
ALLEPPEY DISTRICT	127	29576	4031	300	78322
18. Changanacherry	15	2439	5140	507	8136
19. Kanjirappally	..	..	..	..	..
20. Kottayam	24	7767	2719	311	13875
21. Vaikom	..	..	..	..	..
22. Meenachill	..	..	..	..	..
KOTTAYAM DISTRICT	39	10206	3297	266	22111
23. Peermade	..	22	1806†	..	26
24. Devikulam	..	252	1806†	..	299
25. Udumbanchala	..	..	..	..	..
26. Thodupuzha	..	..	..	..	..
IDIKKI DISTRICT	..	274	1806†	..	325

*Yield rate of Pathanamthitta Taluk is adopted.

†Yield rate of Muvattupuzha Taluk is adopted.

	(1)	(2)	(3)	(4)	(5)	(6)
27.	Koathamangalam	19	792	1805	232	939
28.	Muvathupuzha	20	761	1806	421	903
29.	Cochin	..	..	..	..	..
30.	Kanayannur	25	591	2048	..	795
31.	Kunnathunad	20	6659	1809	227	7914
32.	Alwaye	22	7722	2003	1523	10162
33.	Parur	20	2923	2201	..	4227
	ERNAKULAM DISTRICT	126	19448	1952	745	24940
34.	Granganore	24	49	1498	144	48
35.	Mukundapuram	40	9739	2176	226	13923
36.	Irichur	27	8120	2262	251	12067
37.	Thalappally	23	3230	2133	196	4526
38.	Chowghat	24	791	2369	245	1231
	TRICHUR DISTRICT	138	21929	2207	140	31795
39.	Chittur	24	1066	2542	218	1780
40.	Alathur	20	51	2327	463	78
41.	Palghat	22	580	3040	644	1158
42.	Ottappalam	31	1184	2014	224	1567
43.	Mannarghat	32	595	1164	172	455
	PALGHAT DISTRICT	129	3476	2206	151	5038
44.	Perintalmanna	24	652	2528	322	1083
45.	Ponnani	24	1436	2669	864	2518
46.	Tirur	24	2830	3097	321	5758
47.	Ernad	30	726	1611	159	768
	MALAPPURAM DISTRICT	102	5644	2731	276	10127
48.	Kozhikode	27	1006	1872	235	1237
49.	Quilandy	19	1938	1441	224	1835
50.	Badagara	30	279	2020	590	370
51.	South Wynad	20	4192	2522	334	7316
	KOZHIKODE DISTRICT	96	7415	2208	201	10758
52.	North Wynad	20	2208	3395	638	4925
53.	Tellicherry	30	586	1650	182	635
54.	Cannanore	30	29	1608	..	31
55.	Taliparamba	30	288	2183	122	413
56.	Hosdurg	30	1169	2962	195	2275
57.	Kasarigode	30	2102	3666	226	5063
	CANNANORE DISTRICT	170	6382	3182	237	13342
	STATE	1103	106684	2832	152	198558

Table 4.2

ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF RICE RELATING
TO SUMMER CROP OF PADDY 1978 AND 1979

Sl. No.	District	Area in Hectares		Mean yield of dry paddy in kg/hect.		Production of rice	
		1978	1979	1978	1979	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	1985	1494	791	1251	1032	1228
2	Quilon	1013	840	896	1035	597	572
3	Alleppey	27454	29576	3662	4032	66063	78322
4	Kottayam	13554	10206	2660	3297	23689	22111
5	Idukki	381	274	1315	1806@	330	325
6	Ernakulam	17377	19448	2236	1952	25530	24940
7	Trichur	18990	21929	2577	2297	32159	31795
8	Palghat	4118	3476	2166	2206	5861	5038
9	Malappuram	5780	5644	2295	2731	8719	10127
10	Kozhikode	6638	7415	1856	2208	8096	10758
11	Cannanore	7114	6382	2476	2450	11577	13342
State		104404	106684	2677	2832	183653	198658

@ Yield rate of Muvattupuzha Taluk is applied.

Table 4.3

(Summer crop of paddy 1979)

ANALYSIS OF VARIANCE OF PLOT YIELD POOLED FOR THE STATE
IN KG/PLOT OF 1/400TH OF AN HECTARE

Source of variation	Sum of squares	Degrees of freedom	Mean sum of square (variance)	Variance ratio (calculated)
(1)	(2)	(3)	(4)	(5)
Between taluk	7186.43	46	156.23	25.53*
Between villages within taluk	1928.91	153	12.60	2.06*
Within villages within taluk	5524.12	903	6.12	
Total	14639.46	1102		

Significant at 1% level

Table 4.4

FREQUENCY DISTRIBUTION OF PLOT YIELD (WET PADDY) SUMMER 1979

Sl. No.	Class interval Kg/hect. of wet paddy	Trivandrum	Quilon	Alleppey	Kottayam	Idukki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore	State
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Below 500	15	18	..	..	..	1	7	12	2	4	9	73
2	500—699	5	6	..	..	..	1	3	6	3	5	9	38
3	700—899	5	8	..	..	..	..	..	1	..	7	5	26
4	900—1099	16	6	1	..	..	3	1	6	2	5	6	46
5	1100—1299	5	5	1	1	..	7	1	5	5	7	13	50
6	1300—1499	7	5	1	1	..	8	11	9	1	5	13	61
7	1500—1699	3	6	1	2	..	11	10	7	11	3	13	67
8	1700—1899	7	7	2	2	..	16	12	5	8	13	14	86
9	1900—2099	3	4	1	2	..	8	9	8	5	5	13	59
10	2100—2299	5	3	2	1	..	16	10	13	9	5	5	69
11	2300—2499	8	2	..	1	..	18	11	5	3	5	12	67
12	2500—2699	5	3	2	1	..	13	18	6	9	2	12	72
13	2700—2899	6	2	3	3	..	8	8	10	8	2	10	62
14	2900—3099	2	2	5	2	..	2	6	7	6	5	5	42
15	3100—3299	..	1	6	2	..	4	7	1	7	7	9	45
16	3300—3499	..	1	3	..	..	2	6	7	4	3	4	31
17	3500—3699	..	..	6	2	..	4	6	2	1	1	2	25
18	3700—3899	..	..	6	1	..	..	..	4	..	2	4	17
19	3900—4099	..	..	1	..	..	1	6	3	3	2	3	29
20	4100—and above	..	5	77	18	..	3	6	12	15	8	9	153
	All	92	84	127	39	..	126	138	129	102	96	170	1103

Table 4.5

THE RESULTS OF DRIAGE EXPERIMENTS SUMMER PADDY 1979

Sl. No.	District	No. of driage experiments		Total yield collected for driage expts (kg.)	Total yield after driage operation (kg.)	Driage ratio (percentage)
		Planned	Analy-sed			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Trivandrum	12	12	3.000	2.561	85.4
2	Quilon	15	14	3.500	3.022	86.3
3	Alleppey	18	24	6.000	5.412	90.2
4	Kottayam	6	11	2.750	2.549	92.7
5	Idukki	..	..	..	..	..
6	Ernakulam	18	19	4.750	4.245	89.4
7	Trichur	15	15	3.750	3.288	87.7
8	Palghat	15	15	3.750	3.465	92.4
9	Malappuram	12	12	3.000	2.751	91.7
10	Kozhikode	12	12	3.000	2.732	91.1
11	Cannanore	18	18	4.500	4.189	93.1
State		141	152	38.000	34.214	90.0

Table 4.6

INDEPENDENT ESTIMATE OF MEAN YIELD OF PADDY BASED ON HARVEST STAGE DURING SUMMER 1979

Sl. No.	District	No. of experiment		Mean yield of paddy(kg./hect.)		Driage ratio 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	23	1344	1148	0.854
2	Quilon	52	46	1568	1353	0.863
3	Alleppey	66	65	4312	3889	0.902
4	Kottayam	36	34	3744	3471	0.927
5	Idukki	..	..	..	..	..
6	Ernakulam	72	49	1568	1402	0.894
7	Trichur	60	44	2136	1873	0.877
8	Palghat	64	28	2360	2181	0.924
9	Malappuram	28	20	3248	2978	0.917
10	Kozhikode	50	43	2053	1873	0.911
11	Cannanore	78	44	2048	1907	0.931
		562	396	2564	2308	0.900

Table-4.7

ESTIMATED MEAN YIELD OF DRY PADDY (KG./HECT.) DURING SUMMER
SEASON FOR EACH TALUK FOR SIX YEARS FROM 1974-79

Taluk and District	1974	1975	1976	1977	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Neyyattinkara	1988	2211	1914	1581	874	1184
2. Trivandrum	1895	2109	1877	1273	458	1565
3. Nedumangad	1585	1764	1496	1158	894	1186
4. Chirayinkil	999	1789	1225	738	854	945
TRIVANDRUM DISTRICT	1521	1975	1599	1262	791	1251
5. Quilon	1647	1141	1259	1322	1070	1387
6. Kottarakara	752	1385	1754	1147	827	1524
7. Kunnathur	1306	1749	1891	1521	434	1432
8. Pathanapuram	..	..	..	929	683	2087
9. Pathanamthitta	1819	2779	1928	1316	683	2087
10. Karunagappally	1561	1865	2166	1018	923	304
QUILON DISTRICT	1480	1660	1818	1250	896	1035
11. Karthigappally	2577	3233	3738	3717	4357	4655
12. Mavelikkara	2845	3077	3634	3016	3619	3625
13. Chengannur	2205	3384	3344	3535	2893	4041
14. Thiruvalla	2102	3151	3333	3293	4350	3899
15. Kuttanad	2682	3495	3049	3046	3650	3950
16. Ambalapuzha	2260	2685	2650	3046	1773	4116
17. Sherthalai	..	..	..	..	..	..
ALLEPPEY DISTRICT	2580	3327	3068	3300	3662	4031
18. Changanacherry	3174	4850	4182	3304	2930	5140
19. Kanjirappally	..	..	..	..	..	..
20. Kottayam	1425	3199	3333	2536	2601	2719
21. Vaikom	1340	2342	2680	1600	2106	..
22. Meenachil	1859	2300	2902	2585	3670	..
KOTTAYAM DISTRICT	1846	3409	3429	2594	2660	3297
23. Peermade	1165	1974	3053	1836	1315	1806
24. Devikulam	..	..	..	1836	1315	1806
25. Udumbanchola	..	..	..	1836	..	..
26. Thodupuzha	..	..	..	..	1315	..

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	IDUKKI DISTRICT	1165	1974	3053	1836	1315	1806
27.	Kothamangalam	1506	1977	1523	1620	1548	1805
28.	Muvattupuzha	..	2037	2108	1836	1315	1806
29.	Cochin						
30.	Kanayannur	791	1739	2070	1770	2090	2048
31.	Kunnathunad	1725	1899	1755	1609	1881	1809
32.	Alwaye	1878	1984	2310	2250	2421	2003
33.	Parur	1768	2508	1798	2465	2853	2201
	ERNAKULAM DISTRICT	1747	2162	1983	2042	2236	1952
34.	Crauganore	1435	1750	1817	1568	2096	1498
35.	Mukundapuram	2052	1974	2134	2361	2380	2176
36.	Trichur	1689	2484	2061	2309	2987	2262
37.	Thalappally	2398	3235	3087	2440	2309	2133
38.	Chowghat	1419	2069	3302	3507	2067	2369
	TRICHUR DISTRICT	1841	2329	2317	2446	2577	2207
39.	Chittur	2553	3186	2081	1647	2196	2542
40.	Alathur	2375	3489	3461	2839	2337	2327
41.	Palghat	1817	3510	3644	3318	2872	3040
42.	Ottappalam	2290	2021	2261	1811	2450	2014
43.	Mainarghat	1749	2461	2095	1677	1436	1164
	PALGHAT DISTRICT	2212	2547	2465	2123	2166	2206
44.	Perinthalmanna	1816	1832	3022	2465	2335	2528
45.	Ponnani	1753	3677	2468	3733	2408	2669
36.	Tirur	2568	3244	2994	2000	2516	3097
47.	Ernad	1615	1929	1948	1572	1582	1611
	MALAPPURAM DISTRICT	1981	3215	2614	2782	2295	2731
48.	Kozhikode	2423	2412	2165	1337	1602	1872
49.	Quilandy	2775	2136	1648	1579	1475	1441
50.	Bada ara	2661	3381	2471	1293	1377	2021
51.	South Wynad	2180	1789	2593	1897	2057	2522
	KOZHIKODE DISTRICT	2286	1983	2429	1754	1856	2208
52.	North Wynad	1906	2243	2518	2195	3292	3395
53.	Tellicherry	1779	1618	1900	1176	1636	1650
54.	Cannanore	2100	2005	1482	2180	1476	1608
55.	Taliparamba	2200	1402	1632	1379	2129	2183
56.	Hosdurg	2195	2394	2083	3098	2211	2962
57.	Kasargode	1887	2370	2660	2476	2245	3666
	CANNANORE DISTRICT	1940	2271	2477	2405	2476	3182
	STATE	2168	2936	2794	2497	2677	2832

Table 5.1
ESTIMATES OF AREA, MEAN YIELD & PRODUCTION OF HIGH YIELDING & OTHER
VARIETIES OF PADDY SUMMER 1979

District	High yielding						Other varieties			All varieties		
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Area	Mean yield	Production	Area	Mean yield	Production	Area	Mean yield	Production	Area	Mean yield	Production
1 Trivandrum	854	1180	662	640	1339	566	1494	1251	1228	1494	1251	1228
2 Quilon	176	1938	224	664	791	348	840	1035	572	840	1035	572
3 Alleppey	24998	4202	69018	4578	3090	9304	29576	4031	78322	29576	4031	78322
4 Kottayam	8856	3360	19548	1350	2880	2563	10206	3297	22111	10206	3297	22111
5 Idukki	..	..	..	274	1086	325	274	1806	325	274	1806	325
6 Ernakulam	4314	2068	5863	15134	1918	19077	19448	1952	24940	19448	1952	24940
7 Trichur	5854	2432	9356	16075	2131	22439	21929	2207	31795	21929	2207	31795
8 Palghat	2018	2673	3543	1458	1568	1495	3476	2206	5038	3476	2206	5038
9 Malappuram	3174	2993	6244	2470	2390	3883	5644	2731	10127	5644	2731	10127
10 Kozhikode	4444	2589	7560	2971	1644	3198	7415	2208	10758	7415	2208	10758
11 Cannanore	940	2721	1681	5442	3257	11661	6382	3182	13342	6382	3182	13342
State	55628	3384	123699	51056	2232	74859	106684	2832	198558	106684	2832	198558

Table 5.2

ESTIMATED AREA, MEAN YIELD AND PRODUCTION OF HIGH YIELDING VARIETIES OF PADDY DURING SUMMER 1978-1979

Sl. No.	District	Area in hectares			Mean yield of dry paddy-kg./hect.			Production of rice in tonnes	
		1978	1979	(4)	1978	1979	(6)	1978	1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)	
1	Trivandrum	1738	854	784	1180	895	662	662	
2	Quilon	158	176	827	1938	86	224	224	
3	Alleppey	19416	24998	3994	4202	50948	69018	69018	
4	Kottayam	12587	9644	3012	3534	24908	22393	22393	
5	Idukki	..	..	..	..	..	..	..
6	Ernakulam	4196	4314	1959	2968	5400	5863	5863	
7	Trichur	9582	5854	2743	2432	17268	9356	9356	
8	Palghat	1908	2018	2901	2673	3637	3543	3543	
9	Malappuram	2991	3174	2589	2993	5088	6244	6244	
10	Kozhikode	3434	4444	2339	2589	5277	7560	7560	
11	Cannanore	5589	940	2595	2721	9529	1681	1681	
	State	61599	56416	3039	3414	123036	126544	126544	

Table 5.3

DISTRIBUTION OF YIELDS WITH HIGH YIELDING VARIETIES OF PADDY ACCORDING TO THE VARIETIES RAISED DURING SUMMER 1979

Sl. No.	District	No. of Experiments conducted		Percentage of HYV experiments to total No. of Experiments.	Number of Experimental plots under different HYV																
		HYV	Total		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	Trivandrum	59	92	64.1	27	6	10	10	..	..	1	1	..	2	1	..	2	1	1	..	..
2	Quilon	39	84	46.4	3	20	11	2	..	1	..	2	..	..	..	..	..	..	..	..	..
3	Alleppey	100	127	78.7	7	16	71	3	..	..	..	..	..	2	1	..	..	..	..	..	..
4	Kottayam	28	39	71.8	1	2	24	1	..	..	..	..	..	..	..	..	..	..	..	..	..
5	Idukki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam	59	126	46.8	13	1	16	4	..	..	..	12	2	4	..	..	4	..	7	..	..
7	Trichur	68	138	49.3	36	1	6	2	..	..	..	21	..	1	1	..	..	1	..	..	..
8	Palghat	84	129	65.1	33	1	2	22	1	..	..	3	1	3	..	..	3	..	18	..	..
9	Malappuram	55	102	53.9	27	1	9	7	..	..	..	7	1	3	..	..	3	..	..	..	..
10	Kozhikode	47	96	49.0	16	..	1	14	..	..	..	6	..	6	3	1	..	6	3	1	..
11	Cannanore	71	170	41.8	13	1	7	18	..	..	1	15	1	9	5	..	1	9	5	..	1
	State	610	1103	55.3	176	49	157	83	1	1	2	67	5	30	11	27	1	30	11	27	1

Table 5.4

DISTRICT AVERAGE YIELD OF HIGH YIELDING VARIETIES SUMMER CROP OF
PADDY 1979 (DRY PADDY IN KG/HECT)

Sl. No.	District	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
		Triveni	Bharathy	Jyothi	Jaya	Aswathy	Sabari	Robini	Annapurna (Culture-28)	IR-20	IR-8	H4	Mashori	IR-5		
1	Trivandrum	1238	1057	1064	1494	..	..	904	1187	..	1480	1367	1671	..	..	..
2	Quilon	1035	1659	1452	355	..	2588	..	1680	..	..	..	..	..	..	..
3	Alleppey	3892	5029	4307	4170	..	..	..	..	..	3765	3718	..	..	..	..
4	Kottayam	4081	4248	3920	4489	..	..	..	..	..	..	..	..	..	..	..
5	Idukki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam	2334	834	1894	2273	..	..	..	1983	1249	3523	..	2173	..	..	..
7	Trichur	2261	514	2587	2233	..	..	..	2240	..	2128	2884	..	..	..	..
8	Palghat	2416	514	1499	2205	56	..	..	2483	4977	3767	..	2801	..	..	..
9	Malappuram	2441	4404	2661	2595	..	..	..	3120	5399	2642	..	..	..	..	..
10	Kozhikode	2606	..	1747	2664	..	..	..	1969	..	1867	2730	3203	..	..	..
11	Cannanore	2120	2381	2418	2753	..	..	2474	2180	3050	2701	2176	..	3013	..	..
	State	2228	2664	3283	2372	56	2588	1674	2236	3121	2678	2758	2567	3013	..	..

Table 5.5

DISTRICT-WISE YIELD RATE FOR HIGH YIELDING AND OTHER VARIETIES OF PADDY ACCORDING TO CULTURAL PRACTICE DURING SUMMER 1979.

District	Irrigated										
	Chemically manured					Other manured					Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
	Variety	No. of Expts.	Mean yield of paddy (in kg./hect.)	No. of expts.	Mean yield of paddy in kg./hect.	No. of expts.	Mean yield of paddy in kg./hect.	No. of expts.	Mean yield of paddy in kg./hect.	No. of expts.	Mean yield of paddy in kg./hect.
Trivandrum	H	50	1268	..	..	..	..	50	1268	50	1268
	O	26	1153	..	..	..	..	26	1153	26	1153
	T	76	1228	..	..	..	..	76	1228	76	1228
Quilon	H	10	2549	5	998	..	..	10	2549	10	2549
	O	12	1529	5	998	..	..	17	1373	17	1373
	T	22	1993	5	998	..	..	27	1809	27	1809
Alleppey	H	70	4399	..	..	..	..	70	4399	70	4399
	O	10	2516	..	..	1	2455	11	2511	11	2511
	T	80	4164	..	..	1	2455	81	4143	81	4143
Kottayam	H	11	5001	..	..	..	..	11	5001	11	5001
	O	6	3887	..	..	..	..	6	3887	6	3887
	T	17	4608	..	..	..	..	17	4608	17	4608

Table 5.5 (Contd.)

District	Unirrigated						Treated with/not treated						
	Chemically manured		Other manured		Not manured		Total		Pesticides		Pesticides		
Variety	No. of Expts.	Mean yield of paddy in kg./ht.	No. of Expts.	Mean yield of paddy in kg./ht.	No. of Expts.	Mean yield of paddy in kg./ht.	No. of Expts.	Mean yield of paddy in kg./ht.	No. of Expts.	Mean yield of paddy in kg./ht.	No. of Expts.	Mean yield of paddy in kg./ht.	
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Trivandrum	H	9	1111	..	..	..	..	9	1111	47	1248	12	1224
	O	6	1504	..	..	..	000	7	1289	27	1300	6	651
	T	15	1268	..	..	1	000	16	1189	74	1267	18	1033
Quilon	H	29	1154	..	..	..	..	29	1154	28	1864	11	616
	O	25	1019	3	324	..	..	28	945	25	1348	20	802
	T	54	1091	3	324	..	..	57	1052	53	1621	31	737
Alleppey	H	30	3979	..	..	..	..	30	3979	98	4269	2	4480
	O	16	3677	..	..	..	..	16	3677	25	3230	2	2843
	T	46	3874	..	..	..	..	46	3874	123	4058	4	3662
Kottayam	H	17	3044	..	..	..	..	17	3044	28	3813	..	..
	O	5	2452	..	..	..	..	5	2452	11	3235	..	..
	T	22	2910	..	..	..	..	22	2910	39	3650	..	..

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Idukki	H O T	59	2150					59	2150
Ernakulam	H	62	1829	4	1475			66	1808
	O	121	1985	4	1475			125	1969
	T								
Trichur	H	63	2312	5	1775			68	2272
	O	60	2007	9	1581	1	0	70	1923
	T	123	2163	14	1650	1	0	138	2095
Palghat	H	66	2715	8	1410	4	1668	78	2527
	O	17	2185	14	1107	1	2720	32	1730
	T	83	2607	22	1217	5	1878	110	2296
Malappuram	H	45	2864	3	2566	1	1439	49	2817
	O	29	2541	13	1456			42	2206
	T	74	2738	16	1663	1	1439	91	2535
Kozhikode	H	21	2598	7	2308			28	2526
	O	10	1355	13	1593	3	977	26	1431
	T	31	2199	20	1842	3	977	54	1998
Cannanore	H	56	2597	5	1798			61	2533
	O	61	1723	25	1422	2	1428	88	1629
	T	117	2139	30	1488	2	1428	149	1998
State	H	451	2722	28	1868	5	1580	484	2660
	O	293	1912	83	1455	8	1346	384	1786
	T	744	2401	111	1555	13	1436	868	2272

(1)	(2) (11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Idukki	H											
	O											
	T											
Ernakulam	H	1	3308				1	3308	54	2194	5	1673
	O								58	1803	9	2007
	T	1	3308				1	3308	112	1991	14	1888
Trichur	H								65	2313	3	1386
	O								41	2042	29	1756
	T								106	2208	32	1721
Palghat	H	3	2036	3	894		6	1465	56	2826	28	1704
	O	3	897	8	786	2	13	990	11	2459	34	1211
	T	6	1466	11	816	2	19	1340	67	2766	62	1434
Malappuram	H	6	1590				6	1590	46	2753	91	2327
	O	1	1376	4	1443		5	1430	25	2551	22	1639
	T	7	1560	4	1443		11	1518	71	2682	31	1839
Kozhikode	H	18	2402			1	19	2333	29	2448	18	2450
	O	16	1824	6	907	1	23	1580	9	1963	40	1396
	T	34	2129	6	907	2	42	1922	38	2333	58	1722
Cannanore	H	7	2075	2	2083	1	10	1879	35	2895	36	1997
	O	5	1641	6	1483		11	1555	47	1739	52	1515
	T	12	1893	8	1633	1	21	1707	82	2232	88	1711
State	H	119	2412	5	1328	2	590	2340	486	2794	124	1786
	O	78	1933	27	994	4	1400	1678	279	2023	214	410
	T	197	2221	32	1044	6	1105	2034	765	2513	338	1555

Table 6.1

RESPONSE PERCENTAGE SUMMER PADDY 1979

Sl. No.	District	No. of experiments		Percentage response
		Planned	Analysed	
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	92	92	100
2.	Quilon	91	84	92.31
3.	Alleppey	134	127	94.78
4.	Kottayam	54	39	72.22
5.	Idukki	—	—	—
6.	Ernakulam	127	126	99.21
7.	Trichur	145	138	95.17
8.	Palghat	133	129	96.99
9.	Malappuram	102	102	100
10.	Kozhikode	100	96	96
11.	Cannanore	170	170	100
State		1148	1103	96.08

Table 6.2

DETAILS OF NON-RESPONSE—SUMMER PADDY 1979

Sl. No.	District	No. of experiments			No. of experiments last due			
		Planned	Analysed	Primary worker's absence (leave transfer etc.)	Prior harvest by cultivators	Rejected at the analysis stage	Other reasons	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1	Trivandrum	92	92	..	..	..	..
2	Quilon	91	84	..	..	5	2
3	Al eppey	134	127	..	6	..	1	
4	Kottayam	54	39	..	4	11	..	
5	Idukki	..	..	..	..	..	..
6	Ernakulam	127	126	..	1	..	..
7	Trichur	145	138	1	6	..	..
8	Palghat	133	129	..	4	..	..
9	Malappuram	102	102	..	..	..	..
10	Kozhikode	100	96	..	4	..	..
11	Cannanore	170	170	..	..	—	..
	State	1148	1103	1	25	16	3	

Table 6.3

WORK-LOAD OF PRIMARY WORKERS—DISTRICT-WISE ALLOCATION
SUMMER 1979

Sl. No.	District	No. of Primary Workers			Total
		4 experiments or less	5 to 8 experiments	More than 8 experiments	
(1)	(2)	(3)	(4)	(5)	(6)
1	Trivandrum	58	..	..	58
2	Quilon	44	..	..	44
3	Alleppey	39	9	..	48
4	Kottayam	33	..	..	33
5	Idukki	—	..	..	—
6	Ernakulam	53	..	..	53
7	Trichur	64	4	..	68
8	Palghat	80	..	..	80
9	Malappuram	80	..	..	80
10	Kozhikode	73	..	..	73
11	Cannanore	114	..	..	114
State		638	13		651

Table 6.4

WORK-LOAD OF PRIMARY WORKERS ACCORDING TO PERFORMANCE
DURING SUMMER 1979

Sl. No.	District	Number of Primary Workers			Total
		4 experiments or less	5 to 8 experiments	More than 8 experiments	
(1)	(2)	(3)	(4)	(5)	(6)
1	Trivandrum	58	..	..	58
2	Quilon	44	..	..	44
3	Alleppey	33	9	..	42
4	Kottayam	33	..	..	33
5	Idukki	—	..	..	—
6	Ernakulam	53	..	..	53
7	Trichur	50	6	1	57
8	Palghat	55	1	1	57
9	Malappuram	49	..	..	49
10	Kozhikode	52	1	2	55
11	Cannanore	94	2	..	96
State		521	19	4	544

Table 6.5

NUMBER OF EXPERIMENTS INSPECTED DURING SUMMER 1979

Sl.No.	District	No. of experiments analysed	No. of experiments inspected at				Percentage of experiments inspected at				
			Harvest stage by D.S.O. S.I.		Pre-harvest stage by D.S.O. S.I.		Harvest stage		Pre-harvest stage		
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.	Trivandrum	92	4	19	..	10	..	..	25.0	10.8	..
2.	Quilon	84	5	41	..	9	1	..	54.8	10.7	3.6
3.	Alleppey	127	11	54	..	23	..	2	51.1	18.1	1.6
4.	Kottayam	39	6	28	..	3	..	4	87.2	7.7	10.3
5.	Idukki	..	..	..	..	..	..	..	..	..	..
6.	Ernakulam	126	..	49	..	11	..	3	38.9	8.7	2.4
7.	Trichur	138	6	38	..	12	..	1	31.9	8.7	0.7
8.	Palghat	129	1	27	..	4	..	4	21.7	3.1	3.1
9.	Malappuram	102	2	18	1	6	3	3	19.6	6.9	5.9
10.	Kozhikode	96	8	35	..	2	..	3	44.8	2.1	3.1
11.	Cannanore	170	..	44	..	3	..	2	25.9	1.8	1.2
	State	1103	43	353	1	83	4	24	35.9	7.6	2.5

D. S. O. : District Statistical Officer, and Additional Statistical Officer.

S. I. : Statistical Inspector.

Table 7.1

SEASON-WISE AREA, MEAN YIELD AND PRODUCTION OF HIGH YIELDING VARIETIES OF PADDY DURING 1978-79

Sl.No.	District	Area under HYV (hect.)			Total 1978-79	Mean yield of HYV (dry paddy kg./hect.)	
		Autumn 1978	Winter 1979	Summer 1979		Autumn 1978	Winter 1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	2079	1058	854	3991	2739	2156
2	Quilon	6102	1509	176	7787	2932	2510
3	Alleppey	13255	3262	24998	41515	2111	3001
4	Kottayam	10447	10404	9644	30495	2800	2024
5	Idukki	2424	1292	..	3716	2655	2931
6	Ernakulam	22105	2715	4314	29134	2511	1889
7	Trichur	11471	6678	5854	24003	2356	2281
8	Palghat	59179	39488	2018	100685	3899	3079
9	Malappuram	10732	7583	3174	21489	2823	2162
10	Kozhikode	1982	2017	4444	8443	1389	1321
11	Cannanore	5133	1903	940	7976	2031	2220
	State	144909	77909	56416	279234	3063	2643

Table 7.1 (contd.)

Sl.No.	District	Production of rice (in tonnes)					
		Mean yield of HYV (dry paddy kg./hect.)		Production of rice (in tonnes)			
		Summer 1979	Annual Average 1978-79	Autumn 1978	Winter 1979	Summer 1979	Total 1978-79
(9)	(10)	(11)	(12)	(13)	(14)		
1	Trivandrum	1180	2251	3651	1499	662	5812
2	Quilon	1938	2828	11755	2488	224	14467
3	Alleppey	4202	3440	18385	6433	69018	93836
4	Kottayam	3534	2767	19217	13838	22393	55448
5	Idukki	..	2751	4228	2488	..	6716
6	Ernakulam	2068	2387	36467	3369	5863	45699
7	Trichur	2432	2354	17759	10007	9356	37122
8	Palghat	2673	3553	151578	79881	3543	235002
9	Malappuram	2993	2615	19906	10773	6244	36923
10	Kozhikode	2589	2004	1809	1751	7560	11120
11	Cannanore	2721	2157	6849	2776	1681	11306
	State	3414	3017	291604	135303	126544	553451

Table 7.2

SEASON-WISE AREA, MEAN YIELD AND PRODUCTION OF RICE IN EACH DISTRICT DURING 1978-79

Sl.No.	District	Area (hect.)			Total	Mean yield (dry paddy in kg./hect.)	
		Autumn 1978	Winter 1979	Summer 1979		Autumn 1978	Winter 1979
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	1535	16051	1494	33080	2481	2266
2	Quilon	24611	25364	840	50815	2424	2504
3	Alleppey	29071	16854	29576	75501	1954	1851
4	Kottayam	13939	13304	10206	37449	2678	2176
5	Idukki	3162	5396	274	8832	2599	2837
6	Ernakulam	41789	38928	19448	100165	2437	2289
7	Trichur	42441	51417	21929	115787	1903	2018
8	Palghat	87718	83219	3476	174413	3235	2887
9	Malappuram	39436	36382	5644	81462	2103	2010
10	Kozhikode	10718	30776	7415	48909	1142	2208
11	Cannanore	38407	28036	6382	72825	1744	2038
	State	346827	345727	106684	799238	2391	2333

Table 7.2 (contd.)

Sl.No.	District	Mean yield (dry paddy in kg./hect.)		Production of rice (tonnes)				
		Summer 1979	Annual average	Autumn 1978	Winter 1979	Summer 1979	Total	
		(9)	(10)	(11)	(12)	(13)	(14)	
1	Trivandrum	1251	2321	25326	23895	1228	50449	
2	Quilon	1035	2441	39191	41736	572	81499	
3	Alleppey	4031	2744	37327	20495	78322	136144	
4	Kottayam	3297	2668	24528	19024	22111	65663	
5	Idukki	1806	2720	5400	10059	325	15784	
6	Ernakulam	1952	2285	66922	58552	24940	150414	
7	Trichur	2207	2012	53070	68168	31795	153033	
8	Palghat	2206	3048	186447	157841	5038	349326	
9	Malappuram	2731	2105	54503	48040	10127	112670	
10	Kozhikode	2208	1974	8041	44644	10758	63343	
11	Cannanore	3182	1983	43999	37550	13342	94891	
	State	2832	2425	544754	530004	198558	1273316	

Table 7.3

SEASON-WISE AREA, MEAN YIELD AND PRODUCTION OF HYV OF RICE IN KERALA

Agricultural Year	Autumn			Winter			Summer			Total		
	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
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1975-1976	100364	2763	182228	82255	2590	139960	77014	2996	151587	259633	2777	473775
1976-1977	115764	2443	185784	74803	2777	136488	73407	2907	140183	263974	2666	462455
1977-1978	142129	3081	287710	89565	2831	166549	61599	3039	123036	293293	2996	577295
1978-1979	144909	3063	291604	77909	2643	135303	56416	3414	126544	279234	3017	553451

Table 7.4

SEASON-WISE AREA, MEAN YIELD AND PRODUCTION OF RICE IN KERALA FROM 1970-79

Agricultural Year	Autumn				Winter				Summer				Total		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
														Area (hect.)	Mean yield of dry paddy kg./hect.
1970-1971	394798	2077	538886	381971	2259	566934	98061	2984	192185	874830	2259	1298005*			
1971-1972	395298	2126	552246	381971	2378	596808	97888	3151	202684	875157	2361	1351738*			
1972-1973	391900	2237	576192	382171	2426	609234	99623	2918	190941	873694	2527	1376367*			
1973-1974	392765	2347	605595	380980	2028	507755	100930	2168	143719	874675	2187	1257069*			
1974-1975	394927	2064	535545	384836	2382	602186	101703	2936	196200	881466	2303	1333931			
1975-1976	375043	2241	552332	396392	2296	597975	104587	2632	180894	876022	2313	1331191			
1976-1977	363822	2040	487647	381678	2344	587737	108874	2497	178619	854374	2234	1254003			
1977-1978	365111	2300	561792	370859	2295	559190	104404	2677	183653	840374	2345	1294635			
1978-1979	346827	2391	544754	346727	2333	530004	106684	2832	198558	799238	2425	1273316			

* Pooled estimates of State Series and IADP Series of Experiments.

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