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GOVERNMENT OF KERALA

**REPORT ON THE CROP CUTTING SURVEY
ON AUTUMN CROP OF PADDY 1978**

**ECONOMICS AND STATISTICS
KERALA TRIVANDRUM**

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**REPORT ON THE CROP CUTTING SURVEY
ON AUTUMN CROP OF PADDY 1978**

**ECONOMIC AND STATISTICS
KERALA TRIVANDRUM**

FOREWORD

Crop estimation surveys on paddy are being conducted in the State by this Department regularly during the three crop seasons viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja). The results of these surveys are published usually in two separate reports every year i.e. one for the Kharif season (ie. for Autumn) and the other for the Rabi Season (ie. Winter & Summer together). This report deals with the object of the survey, the coverage, the sampling technique adopted, the results of the analysis of the data and the reliability of the results obtained from the survey on Autumn crop of paddy 1978.

This report was prepared by the crop cutting unit of the Agriculture Division of this Department.

Dr. P. A. NAIR

CONTENTS

	PAGES
1. Introduction	1
2.1. Objective of the survey	1
2.2. Period of the survey	1
2.3. Coverage and sample size	2
2.4. Sampling design	2
2.5. Sample selection	2
2.6. Field work	4
2.7. Analysis	4
2.8. Procedure of estimation	5
3.1. Results of the survey	7
3.2. High yielding varieties	9
3.3. Cultivation practices	

APPENDIX

- Table 1.1. Area, Mean yield and production of rice in each taluk—Autumn 1978.
- 1.2. Area, Mean yield and production of rice in each district—Autumn 1977, Autumn 1978
- 1.3. Analysis of variance of plot yield—Autumn 1978
- 1.4. Frequency distribution of plot yield—Autumn 1978.
- 1.5. Results of diage experiments—Autumn 1978.
- 1.6. Independent Estimate of mean yield of paddy based on
 ⊙ harvest stage inspection—Autumn 1978.
- 1.7. Mean yield for Autumn season for each taluk for six years from 1973 to 1978.
- 1.8. Season-wise Area, Mean yield and production of all varieties in Kerala from 1969-1970 to 1978-79
- 2.1. Area, Mean yield and production of H.Y.V. & Other varieties and all varieties of paddy—Autumn 1978.
- 2.2. Area, Mean yield and production of H.Y.V.—Autumn 1977 and 1978.
- 2.3. Season-wise Area, Mean yield and production of H.Y.V. in Kerala from 1974-75 to 1978-79
- 2.4. Distribution of Experimental plots with H.Y.V. according to varieties—Autumn 1978.
- 2.5. Variety-wise Mean yield of H.Y.V.—Autumn 1978.
- 2.6. Mean yield of H.Y.V. and other varieties according to cultivation practices—Autumn 1978.
- 3.1. Response percentage—Autumn 1978.
- 3.2. Details of Non response—Autumn 1978.
- 3.3. Work load of primary workers—District-wise allocation—Autumn 1978.
- 3.4. Work load of primary workers according to performance—Autumn 1978.
- 3.5. Experiments inspected—Autumn 1978.
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REPORT ON THE CROP CUTTING SURVEY ON AUTUMN CROP OF PADDY 1978

1. Introduction

The Bureau of Economics & Statistics is regularly conducting crop estimation surveys on Paddy and Tapioca. From 1976-77 onwards crop estimation surveys are being conducted on a regular basis on Coconut, Arecanut, Cashew and Pepper. Minor crops like Ginger, Turmeric were also covered by the Survey on a phased programme.

Crop cutting survey on paddy is conducted regularly during the three crop seasons in the State viz. Autumn (Virippu) Winter (Mundakan) and Summer (Punja). The main objective of this survey is to estimate the average yield per unit area at the state and district levels with reasonable degree of accuracy.

The results of the yield estimation surveys on paddy are usually published in two reports, one for Autumn crop and other for Winter and Summer crops together. This report deals with the survey on Autumn crops 1978.

2.1. Objectives of the Survey

The main objectives of the survey conducted during Autumn 1978 were:

1. To estimate the average yield per hectare for each taluk.
2. to estimate the average yield per hectare for each District and State as a whole.
3. to estimate the total production of rice in the State during the season.

It was also proposed to frame estimates the productivity and production of High Yielding Varieties and to work out the yield rates (simple average) for different cultivation practices like application of chemical fertilizers, adoption of irrigation etc. at the district and state levels.

2.2. Period of the survey

The period of the survey was from July 1978 to October 1978. The paddy crop harvested during the period was treated as Autumn crop of Paddy 1978.

2.3. Coverage & Sample size

The survey was conducted in all taluks except Peermade, Udumbanchola, South Wynad and North Wynad. In these taluks the area under the crops during the season was reported to be negligible.

The selection of plots for crop cutting experiments on paddy from each taluk was made from the villages selected for area enumeration during 1978-79. The maximum number of crop cutting experiments on paddy to be conducted in each taluk was fixed as 30. The number of experiments fixed for a taluk were allotted to the Investigator units in the selected villages of the taluk according to the area under paddy during the season in each unit. The minimum number of experiments to be conducted in a Village was also fixed as two.

2.4. Sampling Design

A stratified multistage random sampling design was adopted for the survey. Taluk was treated as stratum, revenue village as the first stage sampling unit, survey subdivision number as the second stage sampling unit, a kandom as the third stage sampling unit and a square plot of side 5 metre as the last stage unit. The revenue villages were selected as the head headquarters at the beginning of the agricultural year for the conduct of the scheme E. A. R. C. S. in the state. The selected villages were divided into a number of non overlapping units equal in area as the number of Investigators allotted for area enumeration in the village. The required number of plots from each Investigator unit were selected randomly from the frame consisting of wet land survey subdivisions. The survey subdivision having more than one kandom were serially numbered beginning from the south west corner and proceeding in an anticlock-wise direction and one kandom was selected at random and a square plot of side 5 metre was located at random in the selected kandom. The crops in the square plot was harvested threshed winnowed and weighed.

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

2.5. Sample Selection

The selection of plots in each investigator unit was done by 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 metre were done by the Investigator.

The list containing the details of plots selected for crop cutting experiments was forwarded to the Assistant Director (N. S. S. O.), Trivandrum and the district authorities of the Agricultural Department for facilitating their inspections.

2.6 Field Work

The field work was conducted by the Investigators posted under the scheme for E. A. R. C. S. 1978-79 under the immediate supervision of the

Taluk Statistical Inspectors. District Statistical Officers were also made responsible for the proper conduct and supervision. The Additional Statistical Officers also supervised the field work of the survey.

During the season under reference, out of the 1404 experiments planned 1372 experiments were conducted. The percentage response was thus 98%. The No. of experiments planned, analysed and percentage response in each District is given in table 3.1. in the appendix. The details of non response according to reasons are presented in table 3.2. in the appendix. Prior harvest (harvesting the crop in the experimental plot before the date fixed for harvest without prior intimation to the Investigator) accounted for the loss of experiments.

The field work relating to crop cutting experiments was formerly intended to be distributed among the 800 investigators posted in various taluks. But later it was found that crop cutting experiments on Autumn paddy had to be conducted only in 688 Investigator units as the area under the crop during the season in the remaining 112 units were found to be negligible. The statement showing the allocation of work in various districts according to the No. of experiments on paddy is given 3.3. of the appendix. The distribution of Investigators according to the number of experiments actually conducted is given in 3.4 of the appendix. The average No. of experiments conducted per Investigator came to 2.04 when the total number of experiments analysed during the season is taken into account. The Investigators in each unit had to attend in addition to the crop cutting experiments on paddy, area enumeration and crop cutting experiments on other crops also.

One schedule (Form VI. A) was prescribed for the survey. The investigators were instructed to fill up this schedule at the time of conducting crop cutting survey.

The field work of the survey was inspected at the three stages viz. preharvest, harvest and post harvest by the Statistical Inspectors, Addl. Statistical Inspectors, District Statistical Officers and Additional District Statistical Officers. Targets were fixed for the supervisory officials for conducting inspections at harvest stages. The Officers at the district level were instructed to conduct harvest stage inspection at the rate of one experiment in each taluk. The Statistical Inspectors and Additional Statistical Inspectors were to conduct harvest stage inspections in atleast one randomly selected plot in each investigator unit, subject to a minimum of six experiments in a taluk. These six experiments were inclusive of the experiments inspected at harvest stage under the I. C. S. Scheme initiated by the N.S.S.O. During the season under reference about 48% the experiments analysed were inspected at harvest stage. The percentage of inspection at preharvest stage come up to 16% while that at post harvest stage is 2. The number of experiments inspected at the three stages together with their percentage in the various districts during Autumn 1978 are presented in table 3.5 in the appendix.

2.7 Analysis

The 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

(1) Mean yield:

Taluk-wise mean yield of dry paddy and its standard error were estimated using the following formula.

$$\text{Taluk Mean Yield} = \bar{X} = \frac{\sum_{i=1}^k \sum_{j=1}^{n_i} x_{ij}}{\sum_{i=1}^k n_i}$$

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

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

Each cut (experiment), is taken from 5 metre square

$\left(\frac{1}{400} \right)^{\text{th}}$ of a hectare)

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

(2) Standard Error (S.E.) of the Taluk Mean Yield :

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

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

$N^2 - \sum n_i^2$

$m = \frac{N(k-1)}{N(k-1)}$

k = Number of villages selected in the taluk

The standard error (S. E.) is 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 District/State Mean Yield :*

The formula used for this purpose is indicated below :

The 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

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

The area under paddy in each taluk estimated through the T. R. S. has been utilized to compute the production of rice.

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

3.1 Results of the Survey

The total production of rice in the state during Autumn 1978 was estimated to be 511754 Tonnes. This was less by 7038 tonnes when compared to that of Autumn 1977. The main reason for this was the decrease in area under the crop during the season. The estimated area of 365111 Hect. under Autumn paddy 77 had declined to 346827 Hect. during Autumn 1978. But an appreciable increase in the productivity (4%) was noted during Autumn 1978 above that of the corresponding season of the previous year.

The estimated area, mean yield and its standard error, production of rice together with the number of crop cutting experiments analysed in each taluk during Autumn 1978 are given in table 1.1 of the appendix.

For facilitating comparison, estimated area, mean yield and production of rice in all the districts of the State during autumn 1977 and Autumn 1978 are presented in table 1.2 of the appendix. The table reveals that the district level productivity of autumn crop during 1978 has shown an increase in seven out of eleven districts from its position in Autumn 1977. The rate of increase in productivity was high in Kottayam District. The decrease in the productivity of paddy and resultant fall in the out turn of rice was found in Alleppey, Palghat, Kozhikode & Cannanore District. It was reported to be due to the heavy rain both at the sowing and at the flowering stage badly affected the Autumn crop of paddy in almost all taluks in Alleppey District crop damages due to heavy rain and flood was reported from Palghat District also. Continuous heavy rain and subsequent water logging compeled with the attack of weeds in some parts of Kozhikode and Cannanore Districts resulted in crop damages. It is also reported that some cultivators of Kozhikode district switched on to crop other than paddy due to its low price.

The District average yield of dry paddy per hectare ranges from 1142 kg. in Kozhikode District to 3235 kg. in Palghat District. During Autumn 1977 also the lowest district average yield rate of dry paddy was noticed in Kozhikode District (1156 kg.) and the highest rate in Palghat District (3435 kg.)

Crop cutting experiments under I.A.D.P. series were done only in Palghat District during the season under reference. The estimates of mean yield of dry paddy obtained from the State series and I. A. D. P. series of experiments conducted in Palghat District could not be pooled. Since the Statistical test for non significance turned out to be highly significant.

TABLE No. 1

Details of experiments planned & conducted under I.A.D.P. series & State series in Palghat District during Autumn 1978

Series	No. of experiments		Mean yield of dry paddy/ Hect. (Kg.)	Standrad error
	Planned	Conducted		
(1)	(2)	(3)	(4)	(5)
I.A.D P. series	250	194	3903	77
State series	150	145	3235	137

The analysis of variance of plot yields for the state is given in Table 1.3. of the appendix. Significant variation in yield rate was found between taluk as well as between villages with in each taluk. In other words yield rate were found to be significantly different from taluk to taluk and between villages with in each taluk.

The frequency distribution of plot yields obtained through the survey in each district is provided in table 1.4 of the appendix using the wet weight of paddy from the experimental plot. The yield obtained from about 58% of the experimental plots was below 2500 kgs. of wet paddy per hect. Again the lowest yield rate of zero or nearing zero (ie. below 500 k.gram/per hect.) was from 5% of the experimental plots of the State. The lowest yield rate was noticed in 15% of the experimental plots in Trichur District, 14% in Kozhikode District and 12% in Alleppey District. This shows the intensity of crop damages in these areas. About 9% of the experimental plots of the State yielded more than 4100 kgs. of wet paddy per hect. This highest yield rates reported from 30% of the experimental plots in Palghat 17% in Kottayam and 11% in Quilon.

In order to determine the drriage ratio of dry paddy from wet paddy, out of 159 drriage experiments planned 152 experiments were conducted in offices of the Taluk Statistical Inspectors. The percentage response was about 96%. The drriage ratio of each district and the state are worked out and presented in table 1.5. in the appendix. The lowest drriage ratio of 83.4 was obtained for Idakki District closely followed by 83.6 for Trichur. The highest percentage recovery of dry paddy from wet paddy was found in Palghat District (90.2). The drriage ratio for the State was estimated to be 87.00. It was 83.3% during Autumn 77.

Independent estimates of mean yield of paddy per hect. (simple average) both as wet & dry for the districts and the state framed on the basis of yield obtained from the experimental plots inspected by the Statistical Inspectors and the District Statistical Officers at harvest stage, are presented in table 1.6 of the appendix. It was planned to conduct 700 harvest stage inspections during the season but only 660 could be conducted. The percentage response was 94. The dates of harvest originally fixed were changed by the cultivators and that was the main reason reported for the short fall in the achievement of target in full in this regard.

Taluk-wise estimated mean yield of paddy relating to Autumn season in each taluks for the last six years from 1973 to 1978 are given in table 1.7. The productivity of the state is seen to be the highest during 1978 Autumn when compared to that of the last five Autumn seasons.

The estimated area mean yield and production of all varieties of paddy in the state during the different seasons for the last ten years from 1969-70 are given in table 1.8 in the appendix for comparison.

3.2 : High yielding varieties :

The estimated area, mean yield and production of High Yielding Varieties, other varieties including Traditional and improved variety, and all varieties of paddy in each district and the state are presented in table 2.1. It is seen that about 42% of the total area under paddy during the season was brought under high yielding varieties of paddy. This was 39% during Autumn 77. The state level productivity of High yielding Varieties was found 29.2% above the productivity of dry paddy of the state (all variety) and 60.8% over that of other varieties. It was estimated that 53.6% of the total out turn of rice in the State during Autumn 1978 was obtained from the high yielding varieties.

A comparative picture in respect of area mean yield and production of High yielding varieties for Autumn seasons 1977 & 78 are presented in table 2.2 (appendix). It is seen from this table that the area under high yielding variety of paddy in the state has increased by about 2%. But the state level yield rate of the above variety showed a decrease of about 1%. This was mainly due to the low yield rate in the Districts of Alleppey, Ernakulam Kozhikode and Cannanore. The highest district mean yield of High yielding

variety of dry paddy was in Palghat and lowest in Kozhikode. The production from high yielding variety of paddy was 291604 Tonnes during Autumn 78 as against 287728 tonnes during Autumn 1977.

The season wise and annual estimates of area, mean yield and production of High yielding variety of paddy in the state for the last four years are given in 2.3.

Out of the 1372 cropping experiments conducted on Autumn paddy 79, 545 was in High yielding variety. The number of experimental plots under the different high yielding variety of paddy are given in table 2.4. The cultivators preference as revealed from this table in the order are Jyothi; Jaya and Masori. Jaya is found to be the most widely adopted high yielding varieties during the season and is cultivated in all districts. Jyothi is cultivated in all districts except Trichur. Cultivators of Kottayam District prefer Jyothi than the other high yielding variety.

The average yield (simple average) of various high yielding variety for the Districts and state is presented in table 2.5 of the appendix. The highest average yield of 6030 kg. per hect. was obtained for Aswathi in Palghat District followed by I.R. 8 (5940 kg. per hect.) in the same district. The names of High yield variety which corresponds to the highest district average yield and the No. of experimental plots where the crop was raised are given in the table below.

TABLE No. 2

**H.Y.V. Corresponding to the Highest District average
Yield of Autumn paddy 1978**

Sl. No.	District	Name of the HYV.	Average yield of dry paddy per hect.	No. of experiments
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	Bharathy	4042	2
2	Quilon	Jyothi	3298	13
3	Alleppey	Bharathi	3176	8
4	Kottayam	I R 8	3570	2
5	Idukki	Jaya	2991	4
6	Ernakulam	I R 20	3252	1
7	Trichur	Aswathy	4415	1
8	Palghat	Aswathy	6030	1
9	Malappuram	Jaya	3503	4
10	Kozhikode	Bharathi	3212	1
11	Cannanore	H 4.	2590	2

While Bharathy obtained the highest district average in three districts Aswathy and Jaya have the highest district average in two districts each.

3.3. Cultivation Practices

Autumn crop of paddy is considered to be a rainfed crop. All the districts received sufficient rainfall during the season. However 10.3% of the plots selected for crop cutting experiments during the season were found to be irrigated. No experimental plots in Alleppey and in Kozhikode districts was reported to be irrigated during the season. All the irrigated experimental plots in the State except one plot in Ernakulam district and 2 in Trichur district were manured either by chemical manures or other manures. As far as unirrigated plots are concerned 69% of the plots got chemical manures, another 24% got other manures such as farm yard manure, green manure etc. and 7% were left unmanured. Chemical fertilizers were found to be applied in 71% of the experimental plots. This was 69 during Autumn 1977. 38% of the plots were treated with pesticides during the year.

About 85% of the plots for high yielding varieties covered by the survey are reported as unirrigated. Insecticides and pesticides were also not applied in 45% of the high yielding variety of plots.

The estimated mean yield (simple average) of high yielding variety and other varieties of paddy is given in 2.6 in the appendix with the break up into the following classes.

1. Irrigated & unirrigated
2. Chemical manured, other manured and not manured
3. Applied & not applied with pesticides and insecticides

TABLE—1.1

Estimated area, Mean yield and Production of rice—Autumn,
Paddy—1978.

TALUK & 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	27	3958	2759	216	7175
2 Trivandrum	24	3499	2466	192	5669
3 Nedumangad	30	4080	2042	280	5474
4 Chirayinkil	30	3998	2668	136	7008
TRIVANDRUM DISTRICT	111	15535	2481	107	25326
5 Quilon	24	3571	2206	148	5176
6 Kottarakkara	30	5991	2835	212	11158
7 Kunnathur	24	4638	2100	348	6399
8 Pathanapuram	24	3979	2627	264	6868
9 Pathanamthitta	19	2077	2765	252	3773
10 Karunagappally	24	4355	2033	192	5817
QUILON DISTRICT	145	24611	2424	104	39191
11 Karthigappally	24	3012	1735	328	3433
12 Mavelikkara	30	5031	2012	184	6650
13 Chengannur	21	2948	2434	400	4714
14 Thiruvalla	22	1832	1625	352	1956
15 Kuttanad	30	10678	2136	312	14985
16 Ambalapuzha	11	1369	1221	..	1098
17 Sherthallay	30	4201	1627	224	4491

(1)	(2)	(3)	(4)	(5)	(6)
ALLEPPEY DISTRICT	168	29071	1954	143	37327
18 Changanacherry	18	1726	2348	408	2663
19 Kottayam	29	6168	2913	472	11805
20 Kanjirappally	6	26	2701	..	46
21 Vaikom	23	3584	2505	636	5898
22 Meenachil	24	2435	2573	156	4116
KOTTAYAM DISTRICT	100	13939	2678	272	24528
23 Peermade	..	..	..	..	..
24 Devicolam	6	176	2791	..	323
25 Udumbanchola	..	3	2588	..	5
26 Thodupuzha	30	2983	2588	276	5072
IDUKKI DISTRICT	36	3162	2599	276	5400
27 Kothamangalam	30	4018	2189	164	5779
28 Muvattupuzha	30	5171	2434	232	8269
29 Cochin	12	2019	2397	..	3180
30 Kanayannur	30	5276	1882	188	6524
31 Kunnathunad	28	12165	2476	192	19789
32 Alwaye	30	9357	2673	304	16432
33 Parur	30	3783	2796	184	6949
ERNAKULAM DISTRICT	190	41789	2437	103	66922
34 Cranganore	20	825	678	252	367
35 Mukundapuram	30	12840	1907	196	16087
36 Trichur	30	8848	2205	156	12818
37 Thalappally	30	16026	2007	212	21132
38 Chowghat	28	3902	1040	248	2666

(1)	(2)	(3)	(4)	(5)	(6)
TRICHUR DISTRICT	138	42441	1903	91	53070
39 Chittur	26	19632	3893	368	50213
40 Alathur	30	21023	3585	304	49516
41 Palghat	29	19518	3779	300	48459
42 Ottappalam	30	20388	2046	176	27406
43 Mannarghat	30	7157	2308	308	10853
PALGHAT DISTRICT	145	87718	3235	137	186447
44 Perinthalmanna	29	7855	2585	220	13341
45 Ponnani	24	4694	1931	152	5955
46 Tirur	29	9451	1687	220	10475
47 Ernad	28	17436	2159	164	24732
MALAPPURAM DISTRICT	110	39436	2103	93	54503
48 Kozhikode	29	5024	1174	148	3875
49 Quilandy	30	3490	1094	236	2508
50 Badagara	21	2204	1145	224	1658
51 South Wynad	..	..	..	..	..
KOZHIIKODE DISTRICT	80	10718	1142	113	8041
52 North Wynad	..	..	..	..	..
53 Tellicherry	30	6821	1549	136	6942
54 Cannanore	29	7474	1981	204	9727
55 Taliparamba	30	8472	1429	132	7954
56 Hosdurg	30	6927	1635	120	7441
57 Kasargode	30	8713	2035	168	11935
CANNANORE DISTRICT	149	38407	1744	70	43999
STATE	1372	346827	2391	45	544754

TABLE—1.2

**Estimated Area Meanyield and Production of Rice Relating to Autumn
Crop of Paddy — 1977 and 1978.**

District	Area in Hectares		Mean yield of day paddy in kg/Hect:		Production of rice in tonnes	
	1977	1978	1977	1978	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trivandrum	16496	15535	2112	2481	22886	25326
Quilon	24246	24611	2051	2424	32671	39191
Alleppey	31703	29071	2049	1954	42670	37327
Kottayam	15581	13939	2286	2678	23401	24528
Idukki	6584	3162	2285	2599	9885	5400
Ernakulam	42329	41789	2312	2137	61305	66922
Trichur	44479	42441	1526	1903	44590	53070
Palghat	86701	87718	3435	3235	195649	186447
Malappuram	42104	39436	1939	2103	53639	51503
Kozhikode	12822	10718	1156	1142	9736	8041
Cannanore	42066	38407	1894	1744	52360	43999
STATE	365111	346827	2300	2391	551792	544754

TABLE—1.3

**Autumn Crop of Paddy 1978 — Analysis of Variance of Plot Yields for the State in
kgs. Plot of 1/400 of an Hect.**

Source of variation	Sum of squares	Degrees of freedom	Mean sum of squares(varianc)	Variance ratio (calculated)
(1)	(2)	(3)	(4)	(5)
Between taluks	4544.70	52	87.40	14.57**
Between villages within taluks	2014.97	198	10.18	1.70**
Within villages(within taluk)	6729.13	1121	6.00	
ALL	13288.80	1371		

**Significant at 1% level.

TABLE 1.4

Frequency Distribution of Plot Yield (Wet Paddy) Autumn—1978

Sl. No.	Class interval/ kg/hect. (wet paddy)	Trivandrum	Quilon	Alleppey	Kottayam	Idukki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore	State
1	Below 500	1	..	20	2	..	3	21	..	3	11	7	68
2	500—699	..	1	4	1	..	1	6	2	3	9	4	31
3	700—899	..	..	5	1	..	3	4	3	2	3	5	26
4	900—1099	1	..	6	1	..	5	7	1	2	8	7	38
5	1100—1299	2	3	9	3	1	4	9	4	2	12	8	57
6	1300—1499	3	6	12	3	..	5	5	2	5	15	17	73
7	1500—1699	3	6	9	4	2	5	8	7	5	8	14	71
8	1700—1899	5	9	6	3	..	11	8	6	15	..	10	73
9	1900—2099	6	7	15	3	3	15	10	6	8	3	18	94
10	2100—2299	9	8	9	5	4	11	10	4	10	6	18	94
11	2300—2499	10	11	14	4	2	16	6	8	9	..	11	91
12	2500—2699	10	12	8	10	4	15	10	4	8	..	5	86
13	2700—2899	11	15	8	10	2	13	3	10	5	..	8	85
14	2900—3099	6	9	7	7	..	16	4	9	10	1	5	74
15	3100—3299	5	18	6	7	2	12	6	11	4	..	3	74
16	3300—3499	12	5	4	4	4	13	7	3	3	2	4	61
17	3500—3699	6	12	5	3	2	13	1	4	6	2	1	55
18	3700—3899	8	1	8	6	3	5	4	6	2	..	..	43
19	3900—4099	5	5	3	6	..	11	1	11	7	..	..	49
20	4100 & above	8	17	10	17	7	13	8	44	1	..	4	129

ALL 111 145 168 100 36 190 138 145 110 80 149 1372

TABLE No. 1.5

The Results of Driage Experiments Autumn—1978

Sl. No.	District	No. of Experiments		Total yield collected for driage experiments (kg.)	Total yield after driage operations (kg.)	Driage ratio (Percentage)
		Planned	Analysed			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Trivandrum	12	11	2.750	2.362	85.9
2	Quilon	18	17	4.250	3.599	84.7
3	Alleppey	21	20	5.000	4.351	87.0
4	Kottayam	15	14	3.500	3.066	87.6
5	Idukki	6	5	1.250	1.043	83.4
6	Ernakulam	21	20	5.000	4.403	88.1
7	Trichur	15	14	3.500	2.929	83.6
8	Palghat	15	15	3.750	3.381	90.2
9	Malappuram	12	12	3.000	2.666	88.9
10	Kozhikode	9	9	2.250	1.987	88.3
11	Cannanore	15	15	3.750	3.368	89.8
STATE		159	152	38.000	33.155	87.0

TABLE No. 1.6

Independent Estimate of Mean Yield of Paddy Based on Harvest stage during Autumn—1978

Sl. No.	District	No. of Experiments		Mean yield of paddy Kg./Hect.		
		Planned for Harvest stage Inspection	Inspected at harvest stage	Before driage	After driage	Driage ratio used for column 5 and 6
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Trivandrum	68	69	2440	2096	0.859
2	Quilon	69	69	2936	2538	0.847
3	Alleppey	62	81	2304	2004	0.870
4	Kottayam	58	62	2912	2551	0.876
5	Idukki	19	14	3272	2729	0.834
6	Ernakulam	70	86	2892	2548	0.881
7	Trichur	75	73	2240	1873	0.836
8	Palghat	86	69	3480	3139	0.902
9	Malappuram	65	39	2572	2287	0.889
10	Kozhikode	65	42	1348	1190	0.883
11	Cannanore	65	56	2000	1796	0.898
STATE		702	660	2592	2255	0.870

TABLE No. 1.7

**Estimated Mean Yield of Dry paddy (Kg./Hect.) during
Autumn seasons from 1973 to 1978**

Sl. No.	Taluk and District	1973	1974	1975	1976	1977	1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Neyyattinkara	2276	2237	2377	3214	2622	2759
2	Trivandrum	2530	2097	2271	2199	2320	2466
3	Nedumangad	1645	1578	2117	1914	1614	2042
4	Chirayinkal	2266	1941	2575	1246	1960	2668
TRIVANDRUM DISTRICT		2164	1976	2322	2139	2112	2481
5	Quilon	2276	1631	1920	1239	1343	2206
6	Kottarakkara	2024	1579	1968	1540	2256	2835
7	Kunnathur	1707	2365	1758	1632	1948	2100
8	Pathanapuram	2537	2724	2392	1753	2879	2627
9	Pathanamthitta	2068	2009	2994	2304	2458	2765
10	Karunagappally	2404	2326	2618	558	1444	2033
QUILON DISTRICT		2153	2084	2142	1458	2051	2424
11	Karthigappally	2382	2160	2233	2112	1894	1735
12	Mavelikkara	2474	1780	2090	1275	1553	2012
13	Chengannur	2301	1396	2154	2094	2243	2434
14	Thiruvalla	2562	1437	1887	1707	2158	1625
15	Kuttanad	2907	1627	3348	3435	3330	2136
16	Ambalapuzha	2379	1747	2337	2662	1116	1221
17	Sherthallay	1471	1386	1253	1642	690	1627
ALLEPPEY DISTRICT		2304	1673	2304	2265	2049	1954

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
18	Changanacherry	2232	2233	2253	2611	2572	2348
19	Kanjirappally	2093	2593	2248	2156	2726	2701
20	Kottayam	1849	2137	1521	2391	2312	2901
21	Vaikom	2529	1814	1742	1993	1939	2605
22	Meenachil	2670	2408	2436	2293	2729	2573
KOTTAYAM DISTRICT		2259	2174	1967	2303	2286	2678
23	Peermade	..	..	..	..	2285@	..
24	Devicolum	..	..	..	..	2284	2791
25	Udumbanchola	..	..	..	..	2285@	2588
26	Thodupzha	2695	2404	2471	2300	2286	2588
IDUKKI DISTRICT		2713	2359	2449	2300	2285	2599
27	Kothamangalam	2048	2194	2504	2218	2318	2189
28	Moovattupzha		2299	2162	2204	2838	2434
29	Cochin	2112	1619	1885	2149	2972	2397
30	Kanayannur	1836	1459	1844	1705	1668	1882
31	Kunnathunad	2032	2367	2367	2294	2147	2476
32	Alwaye	1768	1858	1748	2140	2576	2673
33	Parur	1788	1427	1597	2077	1671	2796
ERNAKULAM DISTRICT		1927	1886	2011	2127	2312	2437
34	Cranganore	1337	1131	1113	1130	959	678
35	Mukundapuram	1962	1580	1565	1498	1446	1907
36	Trichur	2083	2370	1882	1314	1878	2205
37	Thalappally	2061	1984	1938	1803	1683	2007
38	Chowghat	1721	1553	1221	846	832	1040
TRICHUR DISTRICT		2001	1923	1761	1479	1526	1903

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
39	Chittur	3846	3396	4224	3065	4726	3893
40	Alathur	3371	3232	3589	2634	3552	3585
41	Palghat	2754	3372	3052	3170	3856	3779
42	Oitappalam	2217	1580	2221	1802	2120	2046
43	Mannarghat	2319	2437	2132	2185	2111	2308
PALGHAT DISTRICT		2904	2792	3095	2617	3435	3235
44	Perinthalmanna	2613	1845	2852	2291	2171	2585
45	Ponnani	2433	1295	2542	1281	1740	1931
46	Tirur	2514	1161	1363	1209	2028	1687
47	Ernad	1858	1512	1824	1425	1818	2159
MALAPPURAM DISTRICT		2276	1503	2115	1516	1939	2103
48	Kozhikode	1209	927	1172	818	1035	1174
49	Quilandy	1121	1752	931	1050	1058	1094
50	Badagara	1168	1134	1334	1236	1565	1145
51	South Wynad	..	..	..	..	1156@	..
KOZHIKODE DISTRICT		1161	1335	1112	987	1156	1142
52	North Wynad	..	..	..	..	1894@	..
53	Tellicherry	2079	1624	1580	1958	1695	1549
54	Cannanore	1630	1761	1367	2189	1944	1981
55	Taliparamba	2138	2212	1749	1924	1812	1429
56	Hosdurg	2246	2069	2090	2182	1944	1635
57	Kasargode	2143	2093	2022	2555	2028	2085
CANNANORE DISTRICT		2077	1996	1843	2168	1894	1744
STATE		2271	2064	2242	2040	2300	2397

@ Average yield of the district.

TABLE No. 1.8

Season-wise area, Mean yield and Production of Rice in Kerala
from 1969-70 to 1978-79

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 in kg./Hect.	Production of rice in tonnes	Area (Hect.)	Mean Yield of dry paddy in kg./Hect.	Production of rice in tonnes	Area (Hect.)	Mean Yield of dry paddy in kg./Hect.	Production of rice in tonnes	Area (Hect.)	Mean Yield of dry paddy in 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	393298	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	1267069	@
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	617401	2541	1030571	
1978-79	*356827	2391	544754										

@ Pooled estimates of State series and IADP series of experiments.

* Area estimated from TRS.

TABLE No. 2.1.

Estimated area under Mean Yield & Production of HYV & Other Varieties of Paddy Autumn—1978

District/State	HYV			Other varieties			All varieties			Production of rice (M.T.)
	Area (2)	Mean Yield (dry paddy) kg./Hect. (3)	Production of rice (M.T.) (4)	Area (5)	Mean Yield (dry paddy) kg./Hect. (6)	Production of rice (M.T.) (7)	Area (8)	Mean Yield (dry paddy) kg./Hect. (9)	Production of rice (M.T.) (10)	
Trivandrum	2079	2673	3651	13456	2452	21675	15535	2481	25326	
Quilon	6102	2932	11755	18509	2256	27436	24611	2424	39191	
Alleppey	13255	2111	18385	15816	1823	18942	29071	1954	37327	
Kottayam	10447	2800	19217	3492	2315	5311	13939	2678	24528	
Idukki	2424	2655	4228	738	2417	1172	3162	2599	5400	
Ernakulam	22105	2511	36467	19684	2355	30455	41789	2437	66922	
Trichur	11471	2356	17759	30970	1735	35311	42441	1903	53070	
Palghat	59179	3899	151578	28539	1860	34869	87718	3235	186447	
Malappuram	10732	2823	19906	28704	1834	34597	39436	2103	54503	
Kozhikode	1982	1389	1809	8736	1085	6232	10718	1142	8041	
Cannanore	5133	2031	6849	33274	1699	37150	38407	1744	43999	
STATE	144909	3063	291604	201918	1908	253150	346827	2391	544754	

TABLE No. 2.2

**Estimated area, Mean Yield and Production of High Yielding Varieties of Paddy during
autumn 1977 and 1978**

Sl. No.	District	Area in (Hect.)		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	1536	2079	2503	2673	2526	3651
2	Quilon	3976	6102	2916	2932	7617	11755
3	Alleppey	13361	13255	2708	2111	23771	18385
4	Kottayam	9957	10447	2509	2800	16413	19217
5	Idukki	2073	2424	2331	2655	3175	4228
6	Ernakulam	24238	22105	2705	2511	43075	36467
7	Trichur	11661	11471	1977	2356	15146	17759
8	Palghat	59454	59179	3895	3899	15214	151578
9	Malappuram	6742	10732	2708	2823	11995	19906
10	Kozhikode	2517	1982	1421	1389	2350	1809
11	Cannanore	6623	5133	2187	2031	9516	6849
	STATE	142138	144909	3081	3063	287728	291604

TABLE No. 2.4

Distribution of Fields with High Yielding Varieties of Paddy according to the varieties raised during Autumn—1978

Number of experimental plots under different H. Y. V.

No. of experiment conducted

Percentage of H. Y. V. expts. to total No. of expts.

Sl. No.	District	H. Y. V.	(3)	(4)	(5)	Jyothi	Triveni	Mashori	Annapoorna (Cul. 28)	Aswathy	Bharathy	H 4	Robini	I. R. 8	(16)	(17)	(18)	Sabari
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1	Trivandrum	31	111	27.93	3	1	5	4	..	..	2	9	..	2	1	4	..	2
2	Quilon	45	145	31.03	13	13	..	..	3	..	9	5	..	..	..	..	..	..
3	Alleppey	66	168	39.29	16	33	6	..	2	..	8	1	..	..	..	..	..	..
4	Kottayam	76	100	76.00	12	42	1	..	3	..	11	4	..	2	..	1	..	..
5	Idukki	27	36	75.00	4	9	..	..	3	..	8	..	..	3	..	..	..	..
6	Ernakulam	94	190	49.47	8	23	3	20	14	..	7	..	2	16	1	..	..	..
7	Trichur	36	138	26.09	6	..	14	6	7	1	..	1	..	..	1	..	..	..
8	Palghat	85	145	58.62	31	1	6	43	..	1	..	..	..	1	2	..	..	..
9	Malappuram	31	110	28.18	4	6	5	8	1	1	1	2	..	3	..	..	..	..
10	Kozhikode	24	80	30.00	6	1	2	10	1	..	1	..	..	2	1	..	..	..
11	Cannanore	30	149	20.13	3	2	1	3	..	1	..	2	..	14	4	..	..	..
	STATE	545	1372	39.72	106	131	43	94	34	4	47	24	2	43	10	5	2	2

TABLE No. 2.5

Average Yield of High Yielding Varieties Autumn Crop of Paddy 1978

Dry Paddy in (kg.)

Sl. No.	District	Jaya	Jyothi	Triveni	Mashori	Annampoorna (cul.28)	Aswathi	Bharathy	H 4	Rohini	I.R. 8	I.R. 20	I.R. 5	Sabari
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	Trivandrum	1853	1548	2022	2487	..	..	4041	2901	..	2426	2666	2887	..
2	Quilon	2828	3298	..	..	3236	..	2760	3104	..	..	..	..	2407
3	Alleppey	1916	1973	2501	..	1844	..	3176	3132	..	..	..	..	..
4	Kottayam	2932	2625	2384	..	3356	..	2704	2229	..	3570	..	2100	..
5	Idukki	2991	2415	..	..	2508	..	2968	..	..	2237	..	..	..
6	Ernakulam	2706	2505	1632	2595	2227	..	2677	..	1742	2499	3252	..	..
7	Trichur	2355	..	1985	2799	2170	4415	..	1441	..	..	1655	..	..

8 Palgaht	3576	4932	2104	4015	..	6030	..	..	..	3940	3883	..
9 Malappuram	3503	2868	2748	3084	2172	2474	2759	1684	..	2623	..	..
10 Kozhikode	1436	1123	1802	1292	1041	..	3212	..	..	898	1712	..
11 Cannanore	2268	2314	1921	2483	..	926	..	2590	..	2424	1907	..	
STATE	2579	2560	2122	2679	2319	3461	3037	2440	1742	2828	2512	2493	2407

District-wise Yield Rate for High Yielding and Other Varieties

Irrigated

District	Variety	Chemically manured		Other manured		Not manured		Total	
		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.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trivandrum	H	6	2946	..	..	..	..	6	2946
	O	19	2873	..	..	..	..	19	2873
	T	25	2891	..	..	..	..	25	2891
Quilon	H	3	3315	..	..	..	..	3	3315
	O	1	1695	..	..	..	..	1	1695
	T	4	2910	..	..	..	..	4	2910
Alleppey	H	..	..	-	-	..	..	..	..
	O	-	..	..	..	..	..	..	..
	T	..	..	..	..	-	..	..	..
Kottayam	H	1	2468	..	..	..	..	1	2468
	O	1	4515	..	..	..	..	1	4515
	T	2	3492	..	..	..	..	2	3492
Idukki	H	3	3165	..	..	..	..	3	3165
	O	2	3113	5	2514	..	..	7	2771
	T	5	3264	5	2514	..	..	10	2889

No 2.6

of Paddy according to Cultural Practices during Autumn—1978.

Unirrigated											
Chemical manured		Other manured		Not manured		Total		Treated with pesticides		Not treated with pesticides	
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.	No. of expts.	Mean Yield of paddy in kg./Hect.
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
25	2511	..	..	..	..	25	2511	20	2607	11	2573
59	2316	1	1290	1	2030	61	2294	31	2376	49	2467
84	2374	1	1290	1	2030	86	2357	51	2467	60	2486
40	2997	2	2348	..	..	42	2966	13	2995	32	2987
84	2196	15	2138	..	..	99	2187	17	2103	83	2199
124	2454	17	2163	..	..	141	2419	30	2490	115	2418
54	2368	9	1633	3	157	66	2167	25	2649	41	1823
65	1807	18	1389	19	1562	102	1688	14	1985	88	1641
119	2062	27	1490	22	1370	168	1876	39	2411	129	1715
73	2696	2	3281	..	..	75	2711	59	2710	17	2701
20	2388	3	1391	..	..	23	2258	10	2863	14	1987
93	2630	5	2147	..	..	98	2605	69	2411	31	2379
24	2591	..	..	..	..	24	2591	23	2773	4	1979
2	1650	..	..	..	..	2	1650	4	2532	5	2514
26	2519	..	..	..	..	26	2519	27	2737	9	2276

TABLE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	H	41	2321	2	2308	1	1778	44	2308
	O	14	2191	2	2717	..	..	16	2257
	T	55	2288	4	2513	1	1778	60	2294
Trichur	H	..	..	1	1655	..	..	1	1655
	O	5	1965	..	..	2	504	7	1548
	T	5	1965	1	1655	2	504	8	1561
Palghat	H	22	4146	1	1890	..	..	23	4048
	O	1	4860	..	..	..	..	1	4860
	T	23	4177	1	1890	..	..	24	4082
Malappuram	H	1	3489	1	4183	..	..	2	3838
	O	2	2385	3	775	..	..	5	1419
	T	3	2753	4	1627	..	..	7	2110
Kozhikode	H	..	..	..	..	..	..	..	..
	O	..	..	..	..	..	..	..	..
	T	..	..	..	..	..	..	..	..
Cannanore	H	..	..	..	2635	..	..	..	..
	O	..	..	1	1	..	..	1	2635
	T	..	..	1	2635	..	..	1	2635
STATE	H	77	2980	5	2469	1	1778	83	2935
	O	45	2617	..	2088	2	504	58	2444
	T	122	2846	16	2207	3	929	141	2733

No. 2.6 (Contd.)

(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
41	2610	7	2839	2	1936	50	2616	68	2523	26	2336
41	2587	9	1872	30	2199	80	2361	50	2489	46	2185
82	2599	16	2295	32	2183	130	2459	118	2509	72	2240
28	2443	6	1538	1	2127	35	2279	23	2230	13	2282
42	1860	47	1038	6	1186	95	1411	26	2258	76	1133
70	2093	53	1095	7	1320	130	1645	49	2254	89	1301
60	3692	2	3096	.	..	62	3673	36	3923	49	3665
30	2456	27	1619	2	2961	59	2090	6	2920	54	2049
90	3280	29	1721	2	2961	121	2901	42	3780	103	2818
19	2781	10	2777	..	..	29	2779	16	2616	15	3095
39	1845	35	1813	..	..	74	1829	28	1971	51	1712
58	2152	45	2027	..	..	103	2096	41	2206	66	2026
17	1650	7	852	..	..	24	1417	8	1497	16	1378
14	1161	36	922	6	1243	56	1016	5	1084	51	1010
31	1429	43	911	6	1243	80	1136	13	1338	67	1098
27	2295	2	2396	1	1723	30	2282	9	2283	21	2282
51	1819	60	1467	7	927	118	1587	29	1834	90	1519
78	1984	62	1497	8	1027	148	1728	38	1940	111	1663
408	2719	47	2123	7	1170	462	2635	300	2733	245	2616
447	2077	251	1421	71	1756	769	1833	220	1988	607	1748
855	2383	298	1532	78	1703	1231	2134	520	2418	852	1998

TABLE No. 3.1

Response Percentage—Autumn Paddy—1978

Sl. No.	District	Number of experiments		
		Planned	Analysed	Percentage response
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	114	111	97
2	Quilon	146	145	99
3	Alleppey	174	168	97
4	Kottayam	104	100	96
5	Idukki	36	36	100
6	Ernakulam	192	190	99
7	Trichur	140	138	99
8	Palghat	150	145	97
9	Malappuram	114	110	96
10	Kozhikode	84	80	95
11	Cannanore	150	149	99
STATE		1404	1372	98

TABLE No. 3.2

Details of Non-response- Autumn-1978

Sl. No.	District	No of Experiments		No. of Experiment lost due to			
		Planned	Analysed	Primary workers absence leave etc.	Prior harvest by cultivators	Rejected at the analyse stage	Other Reasons
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Trivandrum	114	111	-	3	-	-
2	Quilon	146	145	-	1	..	..
3	Alleppey	174	168	..	6	..	..
4	Kottayam	104	100	..	4	..	-
5	Idukki	36	36	-	-	-	-
6	Ernakulam	192	190	..	2	..	..
7	Trichur	140	133	..	2	..	..
8	Palghat	150	145	..	5	-	..
9	Mälappuram	114	110	-	4	..	-
10	Kozhikode	84	80	-	4	..	-
11	Cannanore	150	149	..	1	..	-
STATE		1404	1372	-	32	-	-

TABLE No. 3.3

**Work load of Primary Workers—District-wise Allocation
during Autumn—1978**

Sl. No.	District	No. of primary workers with			Total
		4 Experi-ments or less	5 to 8 experi-ments	More than 8 Expts.	
(1)	(2)	(3)	(4)	(5)	(6)
1	Trivandrum	64	..	..	64
2	Quilon	62	1	..	63
3	Alleppey	43	12	..	55
4	Kottayam	53	..	..	53
5	Idukki	17	..	..	17
6	Ernakulam	53	5	1	59
7	Trichur	60	5	..	65
8	Palghat	81	..	..	81
9	Malappuram	57	4	..	61
10	Kozhikode	62	..	..	62
11	Cannanore	108	..	..	108
STATE		660	27	1	688

TABLE No. 3.4

**Work load of Primary Workers according to Performance
during Autumn—1978**

Sl. No.	District	No. of workers with			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	62	1	..	63
3	Alleppey	43	12	..	55
4	Kottayam	53	..	..	53
5	Idukki	17	..	..	17
6	Ernakulam	55	5	1	61
7	Trichur	60	5	..	65
8	Palghat	68	1	..	69
9	Malappuram	57	4	..	61
10	Kozhikode	62	..	..	62
11	Cannanore	102	..	..	102
STATE		643	28	1	672

Number of Experiments Inspected during Autumn—1978

Sl. No.	District	No. of experiments analysed	Number of experiments inspected at						Percentage of experiments inspected at			
			Harvest stage		Pre harvest stage		Post harvest stage		Harvest stage	Pre harvest stage	Post harvest stage	
			District level officers	Statistical Inspectors	District level officers	Statistical Inspectors	District level officers	Statistical Inspectors	Statistical Inspectors	District level officers	Statistical Inspectors	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1	Trivandrum	111	6	63	..	29	..	..	..	62.2	26.1	..
2	Quilon	146	6	63	..	19	..	..	..	47.6	13.1	..
3	Alleppey	168	10	71	..	33	..	..	2	48.2	19.6	1.2
4	Kottayam	100	9	53	..	14	..	..	5	62.0	14.0	5.0
5	Idukki	36	..	14	..	6	1	..	..	38.9	16.7	2.8
6	Ernakulam	190	9	77	..	41	3	..	2	45.3	21.6	2.6
7	Trichur	138	5	68	..	40	..	..	2	52.9	29.0	1.4
8	Palghat	145	6	63	3	2	1	..	4	47.6	3.4	3.4
9	Malappuram	110	4	35	3	7	..	..	2	35.5	9.1	1.8
10	Kozhikode	80	6	36	..	15	..	..	3	52.5	18.8	3.8
11	Cannanore	149	5	51	..	9	2	..	6	37.6	6.0	5.4
	STATE	1372	66	594	6	215	7	26	26	48.1	16.1	2.4

District level officers :—District Statistical Officer
Additional District Statistical Officer

947

~~1481~~

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