GOVERNMENT OF KERALA

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

1977

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

1977

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CROP CUTTING SURVEY ON WINTER AND SUMMER CROP OF PADDY 1977

1. Introduction

The Bureau of Economics and Statistics is regularly conducting crop estimation surveys on two of the most important food crops viz., paddy and tapioca in the State every year. In the year 1976-77, the crop estimation survey was also conducted for coconut, arecanut, cashew and pepper. The main objective of these sample surveys is to estimate productivity as well as the total production of the crop in the State. As far as paddy is concerned the survey is conducted separately during each of the three seasons viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja) in an year. In the case of other crops the survey is conducted only once in an year.

Usually the results of crop cutting surveys on paddy are published in two parts, one for Autumn crop and the other for Winter and Summer crops together. As far as the Agricultural year 1976-77 is concerned the report for Autumn crop of paddy has already been published and the present report deals with Winter and Summer crop of paddy.

2.1 Objective of the survey

The main objectives of the survey conducted during Winter and Summer 1977 were:

(i) to estimate the average yield of paddy per hectare for each taluk

(ii) to estimate the average yield per hectare for each district and the State as a whole and

(iii) to estimate the total production of rice in the State during the season.

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

2.2 Period of the survey

The harvesting period of Winter crop is four months from November to February and that of the Summer crop is also four months from March to June (During the agricultural year 1976-77, the three seasons have been redefined with equal duration of 4 months each from July to June). As a result the field work for the surveys under reference was done from November 1976 to June 1977.

2.3 Coverage and sample-size

The survey was conducted in all the taluks except in Cochin, Peermade and Devikulam during Winter 1977 and 49 out of 57 taluks in Summer 1977.

Unlike in previous years, the selection of plots for crop cutting experiments on paddy from each taluk was made only from the Revenue villages selected for T.R.C. during 1976-77. The number of experiments to be conducted in a taluk was fixed according to the number of Investigator units formed for T.R.S. in the taluk. In taluks where the number of Investigator unit was 8 or more, the number of experiments to be conducted by each Investigator was fixed at two and in the case of other taluks the number was fixed at three per Investigator.

2.4 Sampling design

A stratified multi-stage random sampling design was adopted for the survey. Each taluk was treated as the stratum, Revenue village as the first stage unit, a survey subdivision number as the second stage unit, a kandom as the third stage unit and a square plot of side 5 metres as the ultimate sampling unit. Unlike in the previous years, Revenue villages were selected at the headquarters of the Bureau at the beginning of the Agricultural year for the collection of Agricultural statistics under T.R.S. All the 3 seasons in the year the crop cutting survey on paddy were conducted in the same revenue villages selected under T.R.S. In each of the Investigator unit, the required number of experimental plots. (2 or 3 as the case may be) may be selected by simple random sampling method from the frame consisting of the list of wet land survey subdivisions in the unit.

If there were no wet land plots having paddy during the season in any Investigator unit in a village, then the number will be made good from other Investigator units in the same village, so that the total number of experiments to be conducted in a village remain unaltered.

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

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

2.5 Sample selection

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

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

2.6 Field work

The field work of the survey was attended to by the Investigators under the immediate supervision of the Taluk Statistical Inspectors. The District Statistical Officers were also made responsible for the proper conduct and supervision of the field work of the survey. The Additional District Statistical Officers and Economic Investigators attached to the District Statistical Offices were also instructed to conduct supervision of the field work of the survey.

The total number of crop cutting experiments planned during Winter and Summer 1977 in the State were 1,200 and 1,014 respectively. The percentage response was found to be 96 for Winter and 94 for Summer. The percentage response in each district during the two seasons have been worked out and presented in Table 3.1 for Winter and Table 6.1 for Summer in the Appendix. Season-wise non-response for the two seasons are presented in Table 3.2 and Table 6.2 in the Appendix. About 1 per cent of the experiments was lost due to prior harvest by cultivators (i.e. harvesting the plot before the date fixed for harvest without intimating the actual date of harvest to the Investigators) in Winter 1977. This percentage was found to be about 3 in Summer 1977. This was reported to be the main reason for the loss of experiments.

The field work was allotted to 545 Investigators during Winter and 448 Investigators in Summer. But only 542 Investigators actually conducted the experiments in Winter while all the 448 Investigators attended to the work in Summer season. It was found that 5 experiments or more per head was done by 4 Investigators in Winter and 8 Investigators in Summer. The average number of experiment conducted per Investigator came to 2.12 in Winter and 2.14 in Summer while the average numbers were 5.7 and 6.1 respectively in the previous year. The reduction in work load of Investigators in this respect was mainly due to the increase in the number of Investigators working under T.R.S. These Investigators also have to conduct crop cutting experiments on four more additional crops during the year. The allocation of field work to the Investigators according to the number of experiments in the different districts during Winter and Summer 1977 are 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 in Winter and Summer is presented in Table 3.4 and 6.4 respectively in the Appendix.

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

The field work of the survey was inspected at 3 stages viz., pre-harvest, harvest and post-harvest stages, by the Statistical Inspectors, District Statistical Officers, Additional District

Statistical Officers, Economic Investigators attached to the District Statistical Offices. Targets have been fixed for the supervisory officials for the conduct of inspection of the survey at harvest stage. The Officers at the district level have been instructed to conduct harvest stage inspection at the rate of one experiment in each taluk. The Statistical Inspectors were asked to conduct harvest stage inspections in at least one randomly selected plot in each Investigator unit subject to a maximum of six experiments in a taluk. These six experiments were inclusive of the experiments inspected at harvest stage under the paralled supervision scheme. About 41 per cent of experiments analysed were inspected at harvest stage during Winter 1977 and 35 per cent during Summer 1977. The percentage of pre-harvest stage inspection came to about 14 % in Winter and 11 % in Summer season. The post-havest stage inspection came to about 3 per cent in both Winter and Summer 1977. The number of experiments inspected at the three stages together with their percentages in all the districts and the State during Winter and Summer seasons are given in Table 3.5 and Table 6.5 respectively in the Appendix.

2.7 Analysis

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

2·8 Procedure of estimation

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

$$\text{Taluk mean yield} = X = \sum_{i=1} \sum_{j=1}^{ni} \times ij \Big/ \sum_{i=1}^{k} ni$$

Where ni = number of experiments conducted in the i^{th} village (i = 1, 2, 3 .....k)

k = number of villages selected in the taluk

xij = weight of paddy obtained from the j^{th} experiment in the i^{th} village (j = 1, 2, 3.....ni)

Each experiment is taken from 5 metre square ($\frac{1^{th}}{400}$ of a hectare)

Mean yield of dry paddy in Kg. per hectare $= \bar{X} \times 400 \times d$

Where d is the driage ratio of dry paddy to wet paddy.

(ii) *Standard Error of Taluk mean yield*

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

Where A = Mean square within village

B = Mean square between village

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

ni = No. of experiments conducted in the i^{th} village

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

k = No. of villages selected in the taluk

The standard error (SE) is the square root of this variance. The standard error in Kg. per hectare is obtained by multiplying this root of variance with 400.

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

$$\text{Standard error of the State mean yield} = \sqrt{\frac{\sum (ai\ si)^2}{(\sum ai)^2}}$$

where ai = Area under the crop in the i^{th} taluk and

si = The standard error of the estimate of mean yield in the i^{th} taluk

The data on area under paddy in each taluk estimated through the T.R.S. have been utilised to compute the production of rice.

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

3.1 Results of the survey

The estimated production of rice in the State during the 3 seasons of the year 1976-77 is given below:

Autumn 1976	...	487647 Tonnes
Winter 1977	...	587737 ,,
Summer 1977	...	178619 ,,
Total		1254003 ,,

The production of rice in the State has dwindled by about 77 thousand tonnes during the year compared to the level of production obtained in 1975-76. This was mainly due to the fall in production during Autumn season as a result of the very late arrival of south-west monsoon. Another important factor responsible for the fall in production was the decrease in the extent of area brought under H.Y.V. during Winter and Summer. Compared to the corresponding season of the previous year, the area under H.Y.V. was dwindled by about 7 thousand hectares in Winter 1977 and 4 thousand hectares in Summer 1977. The pest attack (Brown Hopper and rodent) affected the crops in Kuttanad taluk and drought affected the crop in Talappally taluk during Summer season. Application of fertilisers was reported to be declined in some districts.

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 Winter and Summer 1977 are given in Table 1.1 and 4.1 respectively in the Appendix.

With a view to facilitate comparison, the data on area, mean yield and production of rice in all the districts of the State during the corresponding seasons of 1975-76 are presented along with those of Winter and Summer 1977 in Table 1.2 and 4.2 respectively in the Appendix. Table 1.2 reveals that in 5 out of 11 districts the productivity has decreased from the level it attained in Winter 1976. The decrease in productivity is also seen in 7 out of 11 districts in the State in Summer 1977 compared to Summer 1976.

Crop cutting experiments under I.A.D.P. series were conducted in both the I.A.D.P. districts of Alleppey and Palghat during the Winter 1977 and in Summer 1977 it was conducted only in Alleppey district. Usually during Summer season, crop

cutting experiments under I.A.D.P. series are not done in Palghat district, as the area under Summer paddy is comparatively small there. It was found impossible to pool the estimates of mean yield of paddy obtained from the State series and I.A.D.P. series of experiments conducted in both the districts during the two seasons under report, as the statistical test for non-significance of means turned out to be highly significant. The details of both series of experiments conducted in Alleppey and Palghat districts are presented in the table given below:

TABLE 1

Details of Experiments Planned and conducted under I.A.D.P. and State series in Winter and Summer 1977

Series	Alleppey				Palghat			
	No. of experiments		Mean yield dry paddy (kg./hect.)	Standard error	No. of experiments		Mean yield dry paddy (kg./hect.)	Standard error
	Planned	Analysed			Planned	Analysed		
1	2	3	4	5	6	7	8	9
Winter 1977								
I.A.D.P. series ..	150	133	1754	63	250	184	2909	82
State series ..	137	130	2820	243	120	113	2783	94
Summer 1977								
I.A.D.P. series ..	300	165	3186	80	..	..	..	..
State series ..	83	81	3300	539	..	..	..	..

The analysis of variance of plot yield pooled for the State is given in Table 1.3 and 4.3 in the Appendix in respect of Winter and Summer seasons respectively. In both cases the yield rate of paddy was found to be satistically significant between taluks as well as villages within each taluk. In otherwords yield rates were found to be significantly different from taluk to taluk. Besides, significant difference was also found in the yield rates from village to village even within a taluk.

The frequency distribution of plot yields obtained through the survey in each district as well as the State during Winter and Summer seasons are given in Table 1.4 and 4.4 respectively in the Appendix. It was found that the yield obtained from about 48 per cent in Winter and 38 per cent in Summer of the experimental plots was over 2500 kg. of wet paddy per hectare About 10 per cent of the experimental plots in Summer have yielded more than 4,100 kg. of wet paddy per hectare while in Winter this percentage was little over 5. In last year these percentages were 14 and 6 respectively. The lowest yield rate of less than 500 kg. of wet paddy per hectare was obtained from 2 per cent of the experimental plots in Winter and about 6 per cent of plots in Summer 1977.

In order to determine the driage ratio of dry paddy to wet paddy 159 and 146 driage experiments were conducted in Taluk Statistical offices during Winter and Summer 1977 respectively. The driage ratios for each district and the state are presented in Table 1.5 and 4.5 in the Appendix for Winter and Summer respectively. The lowest driage ratio was reported from Trivandrum District in both the seasons (0.838 in Winter and 0.819 in Summer), As in the previous year the highest percentage recovery of dry paddy from wet paddy was recorded in Palghat District (93.5) in Winter and Malappuram District (94.0) in Summer. The driage ratio for the State was estimated to be 89.7 per cent and 89.4 per cent for Winter and Summer respectively.

Independent estimates of mean yield of paddy (simple average) both wet and dry for the districts and the state were framed on the basis of yield obtained from the experimental plots inspected by the Statistical Inspectors, District Statistical Officers. Additional District Statistical Officers and Economic Investigators. In Winter the programme of harvest stage inspection has hit the target while in Summer the achievement was nearly 81 per cent of the target. During the corresponding seasons of the previous year the achievements in this direction were 91 per cent and 78 per cent respectively. The achievement made in this respect during the seasons under report was comparatively good. However it was reported that the changes made by the cultivators in the dates of harvest originally fixed were the main reason for the shortfall in the achievement of the targets in full in this regard. The

estimated average yield (simple average) for each district and the State based oh harvest stage inspections are given in Table 1.6 for Winter and 4.6 for Summer in the Appendix.

The estimated mean yield of Winter and Summer paddy for each taluk for the last 6 years from 1972 to 1977 are given in Table 1.7 and 4.7 respectively in the Appendix.

3.2 High yielding varieties

The estimated area mean yield and production of H.Y.V. of paddy in each district and in the State during Winter and Summer 1977 are presented in Table 2.1 and Table 5.1 respectively in the Appendix. The estimates showed that about 20 per cent of paddy area in Winter and 67 per cent paddy area in Summer were brought under H.Y.V.

Table 2.2 and Table 5.2 in the Appendix provide a comparative picture in respect of area, mean yield and production of H.Y.V: in the different districts and the State in Winter and Summer seasons respectively during the year 1976 and 1977. The area under H.Y.V. has decreased in 8 out of 11 districts in the state in both the seasons. Increase in area under H.Y.V. was seen in the district of Quilon, Malappuram and Cannanore in Winter 1977 and in Alleptpey. Ernakulam and Trichur in Summer 1977. The productivity of H.Y.V. has also declined in 5 districts in Winter and 7 districts in Summer. The estimated production of rice from the H.Y.V: has dwindled by about 7.5 per cent in Winter 1977 and 2.5 per cent in Summer 1977 from the level of production it attained during the corresponding seasons in the previous year.

The distribution of experimental plots with H.Y.V. of paddy according to the varieties raised in each district and the State during Winter and Summer 1977 are given in Table 2.3 and 5.3 respectively in the Appendix. It was found that about 15 per cent and about 50 per cent of the plots selected for the conduct of the survey were brought under H.Y.V. during Winter and Summer respectively. It can reasonably be concluded from this table that the H.Y.V. of paddy in the order of cultivators preference are Jyothi, Triveni, Jaya, I.R. 8. Bharathi and Annapurna etc., during Winter season and Triveni, Jyothi, Jaya, Annapurna, Bharathi, I.R. 8 etc. in Summer season though all of them were not cultivated in all the districts. In almost all the districts Triveni and Jaya varieties

are reported to have been raised in both seasons. Other newly introduced strains have yet to become popular among the ryots in the different districts of our state.

The average yield (simple average) of various H.Y.V. at the district and the state level has been estimated and presented in Table 2.4. and 5.4 for Winter and Summer seasons respectively in the Appendix. The highest average yield of 4577 kg. per hectare was obtained for Jyothi variety in Quilon District in Winter 1977 and Aswathi varietyy tops the list with average yield of 4894 kg. per hectare in Kottayam District in Summer 1977. The names of H.Y.V. which correspond to the highest average yield in each district together with the highest average yield and the number of experimental plots, where the crop was raised in each district during Winter 1977 are indicated in the subjoined table.

TABLE 2

H.Y.V. Correspond to the Highest District Average Yield Winter 1977

Serial number	District	H.Y.V. correspond to highest average yield	Highest average yield (dry paddy kg./ hect.)	No. of experimental plots where H.Y.V. given in column (3) raised
1	2	3	4	5
1	Trivandrum ..	Jyothi	3042	2
2	Quilon ..	Jyothi	4577	1
3	Alleppey ..	Jaya	3331	1
4	Kottayam .	Jaya	3140	5
5	Idikki ..	..	..	..
6	Ernakulam ..	Annapurna	2007	1
7	Trichur ..	Pankaj	3855	1
8	Palghat .	Jaye	3329	6
9	Malappuram ..	Jaya	2708	1
10	Kozhikode .	Triveni	2549	1
11	Cannanore ..	I R-8	2292	4

Jaya variety recorded the highest district average in four districts in Winter 1977 while Jyothi variety obtained the highest district average only in two districts, though it recorded the highest district average in the state.

In the case of Summer season, the names of H.Y.V. which correspond to the highest average yield in each district together with the highest average yield and the number of experimental plots where the crop was raised in each district are given in the following table.

TABLE 3

H.Y.V. Correspond to the Highest District Average Yield-Summer 1977

Serial number	District	H.Y.V. correspond to highest average yield	Highest average yield (dry paddy kg./hect.)	No. of experimental plots wnere H.Y.V. given in column (3) raised
1	Trivandrum ..	Sabari	2545	1
2	Quilon ..	Bharathi	1349	14
3	Alleppey ..	Triveni	4326	8
4	Kottayam ..	Aswathi	4894	1
5	Idikki ..	..	..	..
6	Ernakulam ..	Triveni	2247	21
7	Trichur ..	Bharathi	3652	4
8	Palghat ..	Jaya	2738	21
9	Malappuram ..	Jyothi	3121	4
10	Kozhikode ..	Jaya	2094	2
11	Cannanore ..	Jaya	3900	6

Aswathi recorded the higest district average yield in the state during Summer 1977 in Kottayam District. In Tnichur District also it recorded the highest district average yield. The second highest district average yield in the state was obtained by "Triveni" in Alleppey District. This variety recorded the highest district average yield in Ernakulam District also. "Triveni" is found to be the most widely adopted high yielding

variety during the season. "Aswathi" though recorded the highest district average yield in the State, it has not yet gained adequate momentum as far as its adoption by the ryots are concerned.

3.3 Cultivation practices

It was found that about 35 per cent and 74 per cent of the experimental plots received irrigation during Winter and Summer 1977 respectively. These percentages were 36 and 75 respectively during the corresponding seasons in the previous year. About 87 per cent of the irrigated plots were found to have applied with chemical fertilisers during Winter 1977 while in Summer this percentage was found to be increased to about 90. In Winter 1977 another 5 per cent of the irrigated plots were reported to be applied with other manures like farm yard manure, green manure, compost, manure etc. This type of manure was also applied to about 9 per cent of the experimental plots in Summer 1977. Thus it is seen that about 8 per cent and 1 per cent of the irrigated plots covered by the survey left unmanured during Winter and Summer 1977 respectively.

As far as unirrigated plots were concerned, about 72 per cent of them were found to have been applied with chemical fertilisers and another 3 per cent received other type of manures like farm yard manure, green manure, compost manure, etc. during Winter 1977. In Summer 1977, these percentages came to 79 and 18 respectively. About 25 per cent and 3 per cent respectively of the unirrigated plots were cultivated without any manure in these two seasons.

It was reported that crops in about 51 per cent and 70 per cent of the experimental plots were treated with insecticides and pesticides during Winter and Summer 1977 respectively.

In the case of experimental plots where high yielding varieties were raised, it was found that 44 per cent and 73 per cent of them received irrigation in Winter and Summer 1977 respectively. About 93 per cent and 95 per cent respectively of these irrigated plots were brought under chemical fertilisers during Winter and Summer 1977. About 93 per cent of the unirrigated plots under H.Y.V. in Winter season and 87 per cent of such plots in Summer season were also brought under

chemical fertilisers. In Winter 1977, about 5 per cent of the H.Y.V. plots covered by the survey were found to have left unmanured. This percentage was little less than 1 per cent in Summer 1977.

Insecticides and pesticides were applied to about 83 percent and 77 per cent of the experimental plots under H.Y.V. in Winter and Summer 1977 respectively.

The estimated average yield of high yielding and other varieties of paddy is given in Table 2.5 and 5.5 respectively for Winter and Summer 1977 in the Appendix with the break up into the following classes:

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

The estimated area. mean yield and production of H.Y.V. of paddy in each district during the three seasons viz. Autumn Winter and Summer of 1976-77 are given in Table 7.1 in the Appendix to facilitate comparison. A similar statement for all varieties of paddy is given in Table 7.2 in the Appendix. The estimated area, mean yield and production of H.Y.V. of paddy in the State for the last 4 years from 1973-74 are given separately for each season in Table 7.3 in the Appendix. A similar statement for all varieties of paddy for the last 9 years from 1968-69 are given in Table 7.4 in the Appendix.

APPENDIX

TABLE 1·1

Estimated area mean yield and production of Rice–Winter Paddy 1977

Sl. No.	Taluk and District	Number of Experiments	Area (hect.)	Mean yield of dry paddy in kg./hect.	Standard Error	Production of rice in tonnes
1	2	3	4	5	6	7
1	Neyyattinkara ..	17	4,416	2,453	42	7,117
2	Trivandrum ..	20	4,374	2,086	119	5,995
3	Nedumangad ..	26	4,737	2,156	47	6,710
4	Chirayinkil ..	16	4,399	2,434	115	7,035
	TRIVANDRUM DISTRICT ..	79	17,926	2,280	44	26,857
5	Quilon ..	17	3,372	2,571	62	5,696
6	Kottarakkara ..	26	5,787	2,837	118	10,786
7	Kunnathur ..	18	4,619	2,669	36	8,100
8	Pathanapuram ..	18	4,193	2,842	240	7,829
9	Pathanamthitta ..	20	2,300	2,858	138	4,319
10	Karunagappally ..	21	4,803	2,080	165	6,564
	QUILON DISTRICT ..	120	25,074	2,628	60	43,294
11	Karthigappally ..	21	4,342	1,803	708	5,143
12	Mavelikara ..	19	4,797	2,096	86	6,606
13	Chengannur ..	21	2,747	3,008	463	5,429

TABLE 1·1—(*cont.*)

Sl. No.	Taluk and District	Number of Experiments	Area (hect.)	Mean yield of dry paddy in kg./hect.	Standard Error	Production of rice in tonnes
1	2	3	4	5	6	7
14	Thiruvalla ..	18	1,603	2,840	370	2,991
15	Kuttanad ..	14	16,354	3,782	463	45,606
16	Ambalapuzha ..	20	2,815	2.151	757	3,978
17	Shertallay ..	17	4.151	785	162	2,141
	ALLEPPEY DISTRICT .	130	38,809	2,820	243	71,894
18	Changanacherry ..	17	1,022	3,191	553	2,143
19	Kanjirappally ..	15	31	1,911	378	39
20	Kottayam ..	20	6,156	2,590	133	10,475
21	Vaikom ..	16	6,643	1,916	206	8,362
22	Meenachil ..	21	2,352	2,547	42	3,936
	KOTTAYAM DISTRICT ..	89	16,204	2,344	105	24,955
23	Peermade ..	..	110	3,198*	..	231
24	Devicolam ..	..	1,995	2,362*	..	3,196
25	Udumbanchola ..	8	1,432	2,077	..	1,954
26	Thodupuzha ..	17	3,550	2,403	158	5,605
	IDIKKI DISTRICT ..	25	7,087	2,338	158	10,886

27	Kothamangalam	..	14	4,960	2,697	67	8,789
28	Muvattupuzha	..	22	6,632	2,100	22	9,150
29	Cochin	..	..	..	..	..	..
30	Kanayannur	..	15	3,402	1,088	50	2,432
31	Kunnathunad	..	20	12,606	2,00)	88	16,639
32	Alwaye	..	21	10,354	2,227	49	15,149
33	Parur	..	15	3,932	2,204	179	5,694
	ERNAKULAM DISTRICT	..	107	41,886	2,102	34	57,853
34	Cranganore	..	9	990	1,309	124	851
35	Mukundapuram	..	34	16,823	1,853	162	20,481
36	Trichur	..	24	14,804	2,363	254	22,983
37	Thalappally	..	27	15,862	2,248	128	23,427
38	Chowghat	..	18	6,155	1,330	438	5,378
	TRICHUR DISTRICT	..	112	54,634	2,037	105	73,120
39	Chittur	..	21	16,021	3,188	196	33,556
40	Alathur	..	15	18,593	3,035	302	37,074
41	Palghat	..	19	17,202	2,894	174	32,707
42	Ottappalam	..	38	19,403	2,226	101	28,377
43	Mannarghat	..	20	7,589	2,481	97	12,370
	PALGHAT DISTRICT	..	113	78,808	2,783	94	144,084
44	Perinthalmanna	..	23	6,891	2,285	109	10,345
45	Ponnani	..	18	4,716	2,135	182	6 615
46	Tirur	..	28	11,628	1,960	182	14,974
47	Eranad	..	32	17,148	1,890	70	21,293
	MALAPPURAM DISTRICT	..	101	40,383	2,006	67	53,227

TABLE 1·1—(*cont.*)

Sl. No.	Taluk and District	Number of Experiments	Area (hect.)	Mean yield of dry paddy in kg./hect.	Standard Error	Production of rice in tonnes
1	2	3	4	5	6	7
48	Kozhikode ..	27	6,862	1,639	161	7,389
49	Quilandy ..	25	6,376	1,349	153	5,651
50	Badagara ..	25	3,662	1,356	168	3,262
51	South Wynad ..	24	14,410	2,292	196	21,699
	KOZHIKODE DISTRICT ..	101	31,310	1,847	104	38,001
52	North Wynad ..	18	8,144	2,474	44	13.237
53	Tellicherry ..	34	3,939	1,902	97	4,922
54	Cannanore ..	28	2,784	1,608	177	2,941
55	Taliparamba ..	40	5,287	1,891	215	6,881
56	Hosdurg ..	22	2,894	2,239	296	4,257
57	Kasargode ..	30	6,509	2,649	147	11,328
	CANNANORE DISTRICT ..	172	29,557	2,243	63	43,566
	STATE ..	1,149	381,678	2,344	38	587,737

TABLE 1.2

Estimated area, mean yield and production of rice relating to winter crop of paddy 1976 and 1977

Serial number	District	Area in hectares*		Mean yield of dry paddy in kg./hect.		Production of Rice in tonnes	
		1976	1977	1976	1977	1976	1977
1	2	3	4	5	6	7	8
1	Trivandrum ..	17,500	17,926	2,593	2,280	29,841	26,857
2	Quilon ..	25,858	25,074	2,585	2,628	43,924	43,294
3	Alleppey ..	48,250	38,809	1,848	2,820	58,593	71,894
4	Kottayam ..	15,256	16,204	2,244	2,344	22,493	24,955
5	Idikki .	6,869	7,087	2,544	2,338	11,480	10,886
6	Ernakulam ..	42,071	41,886	2,079	2,102	57,481	57,853
7	Trichur ..	62,182	54,634	1,995	2,037	81,514	73,120
8	Palghat .	79,793	78,808	3,068	2,783	160,862	144,084
9	Malappuram ..	36,275	40,383	2,080	2,006	49,580	53.227
10	Kozhikode ..	30,775	31,310	1,911	1,847	38,636	38,001
11	Cannanore .	31,563	29,557	2,101	2,243	43,571	43,566
	State ..	396,392	381,678	2,296	2,344	597,975	587,737

* Area estimated from TRS.

TABLE 1.3

(Winter crop of Paddy 1977)

Analysis of variance of plot yield polled 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 ..	2,430·47	53	45·858	11·278*
Between villages within taluk .	1,080·87	161	6·713	1·651*
Within villages within taluk ..	3,797·23	934	4·066	..
All ..	7,308·57	1,148	..	..

* Significant at one per cent level.

TABLE 1.4

Frequency distribution of plot yield—Winter 1977

Serial number	Class interval kg./hect. (wet paddy)	Trivandrum	Quilon	Alleppey	Kottayam	Idikki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore	State
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Below 500	..	..	11	3	..	4	2	..	2	3	2	27
2	500— 699	..	..	4	1	..	3	2	..	..	10	1	21
3	700— 899	..	..	4	..	1	2	3	..	2	3	5	20
4	900—1099	..	1	4	..	..	1	5	1	3	4	8	27
5	1100—1299	1	1	6	1	..	..	6	..	3	10	5	33
6	1300—1499	1	1	4	6	1	1	6	1	2	5	8	36
7	1500—1699	4	3	10	4	..	2	12	7	7	8	16	73
8	1700—1899	4	5	5	1	1	9	11	9	15	10	13	83
9	1900—2099	7	8	7	1	4	12	9	12	15	12	16	103
10	2100—2299	5	4	4	4	..	9	10	5	10	10	11	72
11	2300—2499	11	8	4	9	2	14	6	13	9	7	18	101
12	2500—2699	9	13	8	10	3	16	15	12	8	3	14	111
13	2700—2899	7	11	6	13	3	12	5	10	6	1	10	84
14	2900—3099	6	10	9	10	2	5	8	3	11	3	10	77
15	3100—3299	6	10	7	7	2	8	1	10	2	3	11	67
16	3300—3499	6	12	4	4	4	4	2	5	3	2	7	53
17	3500—3699	4	9	5	5	..	2	4	5	1	..	8	43
18	3700—3899	5	9	4	2	1	1	2	5	..	2	4	35
19	3900—4099	2	2	3	2	..	2	1	2	..	4	2	20
20	4100 & above	1	13	21	6	1	..	2	13	2	1	3	63
	All	79	120	130	89	25	107	112	113	101	101	172	1,149

TABLE 1·5

The results of driage experiments—Winter Paddy 1977

Serial number	District	No. of driage experiments		Total yield collected for driage experiments kg.	Total yield after driage operation kg.	Driage ratio (Percentage)
		Planned	Analysed			
1	2	3	4	5	6	7
1	Trivandrum ..	12	10	2·500	2·095	83·8
2	Quilon ..	18	17	4·250	3·758	88·4
3	Alleppey ..	18	18	4·500	4·098	91·1
4	Kottayam ..	15	15	3·750	3·369	89·8
5	Idikki ..	6	6	1·500	1·309	87·3
6	Ernakulam ..	18	17	4·250	3·680	86·6
7	Trichur ..	15	14	3·500	3·165	90·4
8	Palghat ..	15	15	3·750	3·506	93·5
9	Malappuram ..	12	11	2·750	2·537	92·3
10	Kozhikode ..	12	12	3·000	2·679	89·3
11	Cannanore ..	18	18	4·500	4·124	91·6
	State ..	159	153	38·250	34·320	89·7

TABLE 1·6

Independent estimate of mean yield of Paddy based on harvest stage Inspection—Winter 1977

Serial number	District	No. of experiments		Mean yield of Paddy (kg./hect.)		
		Planned for harvest stage Inspectoin	Inspected at harvest stage	Before driage	After driage	Driage ratio used for column 6
1	2	3	4	5	6	7
1	Trivandrum ..	32	36	2,777	2,327	0·838
2	Quilon ..	54	66	2,941	2,600	0·884
3	Alleppey ...	55	65	2,484	2,263	0·911
4	Kottayam ..	45	47	2,570	2,308	0·898
5	Idikki ..	16	16	2,402	2,097	0·873
6	Ernakulam ..	54	53	1,995	1,728	0·866
7	Trichur ..	42	53	1,810	1,636	0·904
8	Palghat ..	40	27	2,496	2,334	0·935
9	Malappuram ..	32	25	2,170	2,003	0·923
10	Kozhikode ..	36	30	1,779	1,589	0·893
11	Cannanore ..	54	51	2,434	2,230	0·916
	State ..	460	469	2,378	2,133	0·897

TABLE No. 1·7

Estimated mean yield of dry paddy (kg./hect.) during winter season from 1972 to 1977

Sl. No.	Taluk and District	1972	1973	1974	1975	1976	1977
1	2	3	4	5	6	7	8
1	N yyattinkara ..	2,224	2,135	2,164	2,130	2,759	2,453
2	Trivandrum ..	2,488	2,330	2,058	2,548	2,272	2,086
3	Nedumangad ..	2,791	2,999	2,010	2,450	2,778	2,156
4	Chirayinkil ..	2,604	2,477	2,289	2,732	2,703	2,434
	TRIVANDRUM DISTRICT ..	2,513	2,474	2,131	2,444	2,595	2,280
5	Quilon ..	2,058	2,209	2,657	2,230	2,165	2,571
6	Kottarakkara ..	2,900	2,420	2,720	2,497	2,872	2,817
7	Kunnathur ..	2,368	2,510	2,245	2,712	2,376	2,669
8	Pathanapuram ..	2,882	3,521	2,844	2,788	3,083	2,812
9	Pathanamthitta ..	2,564	2,204	2,604	2,732	2,865	2,858
10	Karunagappally ..	1,876	1,991	2,319	2,039	2,147	2,080
	QUILON DISTRICT ..	2,458	2,458	2,568	2,488	2,585	2,628
11	Karthigappally ..	1,487	1,735	1,258	1,705	1,682	1,803
12	Mavelikara ..	1,883	2,072	1,493	2,878	1,715	2,096
13	Chengannur ..	3,296	3,853	2,345	3,043	2,569	3,008
14	Thiruvalla .	2,317	2,425	2,056	2,849	2,668	2,840
15	Kuttanad ..	..	..	..	..	..	3,782
16	Ambalapuzha ..	1,794	1,294	1,094	1,235	2,383	2,151
17	Shertallai ..	774	938	618	565	1,013	785
	ALLEPPEY DISTRICT ..	1,778*	2,001*	1,407	2,007	1,848	2,820
18	Changanacherry ..	2,942	2,199	2,070	3,031	2,558	3,191
19	Kanjirappally ..	2,154	2,327	2,327	1,951	2,062	1,911
20	Kottayam ..	2,455	2,894	1,821	2,499	2,334	2,590
21	Vaikom ..	2,180	1,961	1,892	1,992	1,997	1,916
22	Meenachil .	2,810	2,308	2,101	2,582	2,485	2,547
	KOTTAYAM DISTRICT ..	2,440	2,392	1,918	2,358	2,244	2,344

23	Peermade	..	2,671	3,835	3,835	2,643	3,008	3,198@
24	Devicolam	..	2,286	2,549	1,829	2,624	2,524	2,362@
25	Udumbanchola	..	2.895	2,484	2.831	2.473	2,881	2,077
26	Thodupuzha	..	1,933	2,423	2,265	2,890	2,389	2,403
	IDIKKI DISTRICT	..	2,273	2,498	2,179	2,694	2,544	2,338
27	Kothamangalam	..	1,940	2,263	2,296	2 734	2,374	2,697
28	Muvattupuzha	..	..	..	..	2,673	2,009	2,100
29	Cochin	..	..	..	..	..	..	..
30	Kanayannur	..	1,858	1,526	1,381	1,984	1,833	1,088
31	Kunnathunad	..	2.056	2,112	2,007	2,402	2,023	2,009
32	Alwaye	..	2,118	2,034	1,726	2,420	2,159	2,227
33	Parur	..	1,985	1,583	1,820	2.338	2,159	2,204
	ERNAKULAM DISTRICT	..	2,013	2,037	1,903	2,441	2,079	2,102
34	Cranganore	..	1,772	1,835	1,032	1,060	1,255	1,309
35	Mukundapuram	..	2,448	2.361	1,738	1,743	1,677	1,853
36	Trichur	..	2,009	2,127	1,365	2,306	2,316	2,363
37	Thalappally	..	2,474	2,499	2,020	2,381	2,453	2,248
38	Chowghat	..	1,327	2,441	1,000	2,246	1,165	1,330
	TRICHUR DISTRICT	..	2,175	2,303	1,587	2,140	1,995	2,037
39	Chittur	..	2,613	2,634	2,042	3,458	3,458	3,188
40	Alathur	..	3,489	3,382	2,675	3,420	3,387	3,035
41	Palghat	..	3,995	2,698	2,637	2,889	2,913	2,894
42	Ottappalam	..	2,591	1,900	2,020	2,445	2,553	2,226
43	Mannarghat	..	2,107	1,800	2,537	2,675	2,451	2,481
	PALGHAT DISTRICT	..	3,237*	2,786*	2,336	3,175	3,050*	2,783
44	Perinthalmanna	..	2,013	2,060	1,769	2,242	2,362	2,285
45	Ponnani	..	4,591	4,436	2,894	2,161	2,120	2,135
46	Tirur	..	1,696	4,184	2,288	1,811	1,785	1,960
47	Ernad	..	1,867	2,300	1,946	1,467	2,165	1,890
	MALAPPURAM DISTRICT	..	2,347	3,222	2,185	1,812	2,000	2,006

*Conventional estimates

TABLE No. 1·7—*(cont.)*

Sl. No.	Taluk and District	1972	1973	1974	1975	1976	1977
1	2	3	4	5	6	7	8
48	Kozhikode ..	1,322	1,752	1,706	1,970	1,772	1,639
49	Quilandy ..	1,500	1,357	1,339	1,377	1,107	1,359
50	Badagara ..	1,727	1,249	1,150	1,440	1,299	1,253
51	South Wynad ..	2,627	2,593	2,696	2,171	2,482	2,296
	KOZHIKODE DISTRICT ..	1,942	1,991	1,959	1,900	1,911	1,847
52	North Wynad ..	2,108	2,332	2,738	2,139	2,235	2,474
53	Tellicherry ..	1,582	1,456	1,564	1,597	1,693	1,902
54	Cannanore ..	1,420	1,648	1,572	1,117	1,713	1,608
55	Talipparamba ..	1,600	1,852	1,662	1,734	2,010	1,911
56	Hosdurg ..	1,719	1,971	1,611	2,068	2,311	2,239
57	Kasargode ..	2,119	2,040	2,284	2,122	2,107	2,649
	CANNANORE DISTRICT ..	1,847	1,994	2,003	1,924	2,101	2,243
	STATE ..	2,378*	2,426*	2,028	2,382	2,332*	2,344

*Pooled estimates

TABLE 2·1

Estimated area mean yield and production of high yielding varieties of paddy—Winter 1977

Serial number	District	No. of experiments conducted		Percentage of H.Y.V. Expts. to total No. of experiments	High yielding varieties		
		H.Y.V.	Total		Area (hect.)	Mean yield of dry paddy (kg /nect.)	Production of rice in tonnes
1	2	3	4	5	6	7	8
1	Trivandrum ..	11	79	13·92	2,294	2,035	3,067
2	Quilon ..	4	120	3·33	779	2,459	1,248
3	Alleppey ..	40	130	30·77	23,976	3,679	57,952
4	Kottayam ..	37	89	41·57	10,113	2,390	15,880
5	Idikki ..	..	25	..	759	2,307@	1,150
6	Ernakulam ..	5	107	4·67	1.965	1,421	1.835
7	Trichur ..	18	112	16·07	11,536	2,339	17,728
8	Palghat ..	19	113	16·81	12,850	2,762	23,318
9	Malappuram ..	8	101	7·92	4,360	2,192	6,279
10	Kozhikode ..	8	101	7·92	2,705	2,133	3,791
11	Cannanore ..	18	172	10·47	3,466	1,862	4,240
	State	168	1149	14·62	74,803	2,777	136,488

@Three year avera[illegible] N[illegible]perimental plot was brought under H.Y.V. in this District.

TABLE 2·2

Estimated area, mean yield and production of high yielding varieties of paddy during winter 1976 and 1977

Serial number	District	Area in hectares		Mean yield of dry paddy in kg./hect.		Production of rice in tonnes	
		1976	1977	1976	1977	1976	1977
1	2	3	4	5	6	7	8
1	Trivandrum ..	2,650	2,294	2,444	2,035	4,255	3,067
2	Quilon ..	482	779	2,186	2,439	692	1,248
3	Alleppey ..	24,436	23,976	2,841	3,679	45,611	57.952
4	Kottayam ..	12,892	10,113	2,447	2,390	20,726	15,880
5	Idikki ..	1,627	759	1,797	2,307	1,921	1,150
6	Ernakulam ..	5,946	1,065	1,842	1,421	7,196	1,835
7	Trichur ..	12,051	11,536	2,289	2,339	18,123	17,728
8	Palghat ..	12,852	12,850	3,370	2, 62	28,155	23,318
9	Malapparam ..	3,416	4,360	1,965	2,192	4,410	6,279
10	Kozhikode ..	3,097	2,705	2,007	2,133	4,084	3,791
11	Cannanore ..	2,806	3,466	2,434	1,862	4,487	4,240
	State	82,255	74,803	2,590	2,777	139,960	136,483

TABLE 2.3

Distribution of fields with high yielding varieties of paddy according to the varieties grown during winter 1977

Serial number	District	No. of expts. conducted		Percentage of H.Y.V. expts. to total number of expts.	Number of experimental plots under different H.Y.V.													
		H.Y.V.	Total		Triveni	Annapoorna (Culture 28)	Jaya	IR-8	TN-1	Thaichung	H-4	Pankaj	IR-20	IR-5	Jyothi	Bharathy	Rohini	Aswathy
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Trivandrum ..	11	79	13·92	4	1	3	..	..	..	..	..	..	..	2	1	..	..
2	Quilon ..	4	120	3·33	1	..	1	..	..	..	..	..	..	..	1	..	1	..
3	Alleppey ..	40	130	30 77	9	1	1	..	..	..	..	..	..	..	28	1	..	..
4	Kottayam ..	37	89	41·57	1	..	5	..	..	..	..	..	..	..	25	6	..	..
5	Idikki ..	..	25	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
6	Ernakulam ..	5	107	4·67	3	1	..	..	..	..	..	1	1	1	3	..	..	1
7	Trichur ..	18	112	16·07	4	2	2	3	..	..	..	..	..	2	2	..	1	..
8	Palghat ..	19	113	16·81	4	..	6	4	..	..	..	..	..	..	..	..	..	..
9	Malappuram ..	8	101	7·92	6	..	1	1	..	..	..	..	..	..	..	..	..	..
10	Kozhikode ..	8	101	7·92	1	1	1	2	3	..	..	..	..	..	..	..	..	2
11	Cannanore ..	18	172	10·47	7	1	3	4	..	1	..	..	..	..	..	..	..	..
	State ..	168	1149	14·62	40	7	23	14	3	1	..	1	2	3	61	8	2	3

TABLE 2·4

District average yield of high yielding varieties—Winter crop of paddy—1977
(Dry paddy in kg./hect.)

Serial number	District	Triveni	Annapoorna (Culture 28)	Jaya	I.R. 8	Thaichung	T.N.I.	H-4	Pankaj	I.R. 20	I.R. 5	Jyothi	Bharathy	Rohini	Aswathy
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Trivandrum ..	1,788	1,374	1,943	..	..	..	..	..	..	..	3,042	2,586	..	..
2	Quilon ..	956	..	2,832	..	..	..	..	..	..	..	4,577	..	1,894	..
3	Alleppey ..	1,699	2,220	3,331	..	..	..	..	..	..	..	3,101	1,219	..	..
4	Kottayam ..	1,989	..	3,140	..	..	..	..	..	..	..	2,879	2,826	..	..
5	Idikki ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam ..	1,773	2,007	..	..	..	..	..	..	1,419	..	..	..	..	..
7	Trichur ..	983	2,729	1,928	2,324	..	..	..	3,855	1,477	2,425	2,725	..	..	1,810
8	Palghat ..	2,384	..	3,329	2,314	..	..	..	..	..	3,273	2,343	..	2,244	..
9	Malappuram ..	2,316	..	2,708	1,118	..	..	..	..	..	..	..	..	..	..
10	Kozhikode ..	2,549	350	2,106	1,526	..	2,267	..	..	..	..	..	..	..	..
11	Cannanore ..	1,965	725	1,885	2,292	1,519	..	..	..	..	..	..	..	..	1,387
	State average ..	2,840	1,568	2,578	1,915	1,519	2,267	..	3,855	1,448	2,849	3,111	2,210	2,069	1,598

TABLE 2·5

District-wise yield rate for high yielding and other varieties of paddy according to cultural practice during winter 1977

(Mean yield—Dry paddy in kg./hect.)

District	Varieties	Irrigated							
		Chemically manured		Other manured		Not manured		Total	
		Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield
1	2	3	4	5	6	7	8	9	10
Trivandrum ..	H	4	2,320	..	..	..	..	4	2,320
	O	29	2,264	2	1,876	..	..	31	2,231
	T	33	2,271	2	1,876	..	..	35	2,241
Quilon ..	H	1	2,832	..	..	..	..	1	2,832
	O	19	2,894	..	..	..	..	19	2,894
	T	20	2,891	..	..	..	..	20	2,891
Alleppey ..	H	11	2,618	..	..	..	..	11	2,618
	O	5	3,210	..	..	..	..	5	3,210
	T	16	2,803	..	..	..	..	16	2,803
Kottayam ..	H	10	2,572	..	..	..	..	10	2,572
	O	15	2,424	..	..	..	..	15	2,424
	T	25	2,483	..	..	..	..	25	2,483
Idikki ..	H	..	..	..	..	..	..	..	..
	O	8	2,279	1	1,256	..	..	9	2,166
	T	8	2,279	1	1,256	..	..	9	2,166
Ernakulam ..	H	3	1,708	..	..	2	1,810	5	1,749
	O	64	2,225	..	..	3	1,892	67	2,211
	T	67	2,202	..	..	5	1,859	72	2,179
Trichur ..	H	11	2,324	..	..	..	..	11	2,[illegible]
	O	33	2,115	..	..	7	2,016	40	2,[illegible]
	T	44	2,167	..	..	7	2,016	51	2,[illegible]
Palghat ..	H	14	2,762	1	2,150	..	..	15	2,[illegible]
	O	40	3,111	5	2,361	2	2,188	47	2,9[illegible]
	T	54	3,020	6	2,326	2	2,188	62	2,926
Malappuram ..	H	3	2,470	..	..	1	122	4	1,883
	O	18	2,122	10	2,526	7	1,656	35	2,144
	T	21	2,172	10	2,526	8	1,464	39	2,117
Kozhikode ..	H	1	350	..	..	..	..	1	350
	O	4	1,560	..	..	3	1,264	7	1,433
	T	5	1,318	..	..	3	1,264	8	1,298
Cannanore ..	H	11	1,754	..	..	1	2,972	12	1,855
	O	43	2,196	..	..	6	1,928	49	2,163
	T	54	2,106	..	..	7	2,077	61	2,102
State ..	H	69	2,363	1	2,150	4	1,678	74	2,323
	O	278	2,398	18	2,337	28	1,826	324	2,345
	T	347	2,391	19	2,327	32	1,808	398	2,341

H—High Yielding Variety, O—Other Variety and T—All Varieties.

TABLE 2·5—(*cont.*)

District	Varieties	Unirrigated							
		Chemically manured		Other manured		Not manured		Total	
		Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield
		11	12	13	14	15	16	17	18
Trivandrum ..	H	6	2,061	1	1,373	..	..	7	1,963
	O	37	2,330	..	..	..	..	37	2,330
	T	43	2,292	1	1,373	..	..	44	2,272
Quilon ..	H	3	2,476	..	..	..	..	3	2,476
	O	90	2,412	..	..	7	2,179	97	2,601
	T	93	2,414	..	..	7	2,179	100	2,597
Alleppey ..	H	28	2,785	..	..	1	2,122	29	2,762
	O	61	2,618	..	..	24	699	85	2,076
	T	89	2,670	..	..	25	756	114	2,250
Kottayam ..	H	26	3,034	..	..	1	2,032	27	2,996
	O	37	2,050	..	..	..	..	37	2,050
	T	63	2,456	..	..	1	2,032	64	2,449
Idikki ..	H	..	..	..	..	..	..	..	..
	O	15	2,385	..	..	1	2,199	16	2,373
	T	15	2,385	..	..	1	2,199	16	2,373
Ernakulam ..	H	..	..	..	..	..	..	..	..
	O	22	1,988	..	..	13	1,512	35	1,812
	T	22	1,988	..	..	13	1,512	35	1,812
Trichur ..	H	5	2,188	..	..	2	724	7	1,769
	O	29	2,075	..	..	25	1,218	54	1,679
	T	34	2,092	..	..	27	1,181	61	1,689
[illegible]hat ..	H	3	2,911	1	2,655	..	..	4	2,847
	O	23	2,572	15	1,920	9	2,319	47	2,315
	T	26	2,611	16	1,966	9	2,319	51	2,357
[illegible]ppuram ..	H	4	2,548	..	..	..	..	4	2,548
	O	34	2,000	7	2,140	17	1,800	58	1,958
	T	38	2,058	7	2,140	17	1,800	62	1,996
Kozhikode ..	H	6	1,987	..	..	1	2,588	7	2,073
	O	41	1,552	..	..	45	1,741	86	1,651
	T	47	1,608	..	..	46	1,759	93	1,683
Cannanore ..	H	6	1,889	..	..	..	..	6	1,889
	O	61	2,272	1	860	43	1,934	105	2,120
	T	67	2,238	1	860	43	1,934	111	2,108
State ..	H	87	2,641	2	2,014	5	1,638	94	2,574
	O	450	2,240	23	1,941	184	1,616	657	2,085
	T	537	2,305	25	1,947	189	1,617	751	2,146

TABLE 2·5—(*cont.*)

District	Varieties	Treated with pesticides		Not treated with pesticides	
		Number of expts.	Mean yield	Number of expts.	Mean yield
		19	20	21	22
Trivandrum ..	H	7	2,106	4	2,070
	O	31	2,314	37	2,261
	T	38	2,276	41	2,242
	H	2	3,236	2	1,894
Quilon ..	O	20	2,831	96	2,611
	T	22	2,868	98	2,596
	H	35	2,935	5	1,233
Alleppey ..	O	35	2,621	55	1,832
	T	70	2,778	60	1,782
	H	37	2,882	..	..
Kottayam ..	O	46	2,220	6	1,681
	T	83	2,515	6	1,681
	H	..	..	..	..
Idikki ..	O	21	2,252	4	2,544
	T	21	2,252	4	2,544
	H	4	1,818	1	1,470
Ernakulam ..	O	73	2,127	29	1,939
	T	77	2,111	30	1,923
	H	18	2,109	..	..
Trichur ..	O	55	2,001	39	1,653
	T	73	2,028	39	1,653
	H	14	2,822	5	2,539
Palghat ..	O	33	3,115	61	2,404
	T	47	3,028	66	
	H	8	2,215	..	
Malappuram ..	O	50	2,041	43	2,0
	T	58	2,065	43	2,0
	H	4	1,756	4	1,9
Kozikode ..	O	14	1,444	79	1,668
	T	18	1,513	83	1,682
	H	11	2,159	7	1,407
Cannanore ..	O	64	2,199	90	2,087
	T	75	2,193	97	2,038
	H	140	2,599	28	1,789
State ..	O	442	2,264	539	2,094
	T	582	2,345	567	2,079

TABLE 3·1

sponse percentage–Winter paddy 1977

Serial number	District	Number of experiments		Percentage response
		Planned	Analysed	
1	2	3	4	5
1	Trivandrum ..	80	79	99
2	Quilon ..	121	120	99
3	Alleppey ..	137	130	95
4	Kottayam ..	97	89	92
5	Idukki ..	26	25	96
6	Ernakulam ..	114	107	94
7	Trichur ..	113	112	99
8	Palghat ..	120	113	94
9	Malappuram ..	114	101	89
10	Kozhikode ..	106	101	95
11	Cannanore ..	172	172	100
	State ..	1200	1149	96

TABLE 3·2

Details of non-response—Winter paddy 1977

Serial number	District	No. of experiments		No. of experiments lost due to			Reasons not specified
		Planned	Analysed	Primary workers absence (leave transfer, etc.)	Prior harvest by cultivator	Rejected at the analysis stage	
1	2	3	4	5	6	7	8
1	Trivandrum ..	80	79	..	1	..	..
2	Quilon ..	121	120	1	..	..	..
3	Alleppey ..	137	130	..	2	..	5
4	Kottayam ..	97	89	..	2	..	6
5	Idikki ..	26	25	..	..	..	1
6	Ernakulam ..	114	107	..	1	..	6
7	Trichur ..	113	112	..	1	..	..
8	Palghat ..	120	113	..	..	..	7
9	Malappuram ..	114	101	..	3	..	10
10	Kozhikode ..	106	101	..	2	..	3
11	Cannanore ..	172	172	..	..	..	1
	State ..	1200	1149	1	12	..	38

TABLE 3·3

Work load of primary workers—District-wise allocation—Winter 1977

Serial number	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 ..	41	..	..	41
2	Quilon ..	57	..	..	57
3	Alleppey ..	47	1	..	48
4	Kottayam ..	44	..	..	44
5	Idikki ..	13	..	..	13
6	Ernakulam ..	46	..	..	46
7	Trichur ..	55	..	..	55
8	Palghat ..	60	..	..	60
9	Malappuram ..	54	..	..	54
10	Kozhikode ..	51	1	..	52
11	Cannanore ..	73	2	..	75
	State ..	541	4	..	545

TABLE 3·4

Work load of primary workers according to performance during winter 1977

Serial number	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 ..	40	..	..	40
2	Quilon ..	57	..	..	57
3	Alleppey ..	46	1	..	47
4	Kottayam ..	43	..	..	43
5	Idikki ..	13	..	..	13
6	Ernakulam ..	46	..	..	46
7	Trichur ..	55	..	..	55
8	Palghat ..	60	..	..	60
9	Malappuram .	54	..	..	54
10	Kozhikode ..	51	1	..	52
11	Cannanore ..	73	2	..	75
	State ..	538	4	..	542

TABLE 3.5

...er of experiments inspected—Winter 1977

Serial number	District	No. of experiments analysed	Number of experiments inspected at						Percentage of experiments inspected at		
			Harvest stage by		Pre-harvest stage by		Post harvest stage by				
			District level officers	Statistical Inspectors	District level officers	Statistical Inspectors	District level officers	Statistical Inspectors	Harvest stage	Pre-harvest stage	Post harvest stage
1	2	3	4	5	6	7	8	9	10	11	12
1	Trivandrum ..	79	8	28	..	12	..	..	45·6	15·2	..
2	Quilon ..	120	17	49	..	8	..	..	55·0	6·7	..
3	Alleppey ..	130	11	54	6	20	3	1	50·0	20·0	3·1
4	Kottayam ..	89	15	32	..	24	..	7	52·8	27·0	7·9
5	Idikki ..	25	5	11	..	4	..	..	64·0	16·0	..
6	Ernakulam ..	107	18	35	..	4	..	4	49·5	3·7	3·7
7	Trichur ..	112	18	35	5	9	..	4	47·3	12·5	3·6
8	Palghat ..	113	5	22	..	9	..	2	23·9	8·0	1·8
9	Malappuram ..	101	3	22	..	13	1	7	24·8	12·9	7·9
10	Kozhikode ..	101	11	19	4	21	..	..	29·7	24·8	..
11	Cannanore ..	172	15	36	2	21	1	4	29·7	13·4	2·9
	State ..	1149	126	343	17	145	5	29	40·8	14·1	3·0

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

TABLE 4·1

Estimated area mean yield and production of rice—Summer paddy 1977

Serial number	Taluk and district	No. of expts.	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Standard error	Production of rice in tonnes
1	2	3	4	5	6	7
1	Neyyattinkara ..	15	1,028	1,581	104	1,068
2	Trivandrum ..	20	894	1,273	308	748
3	Nedumangad ..	26	1,124	1,158	101	855
4	Chirayinkil ..	16	420	738	144	204
	TRIVANDRUM DISTRICT	77	3,466	1,262	93	2,875
5	Quilon ..	10	582	1,322	384	505
6	Kottarakkara ..	26	228	1,147	166	172
7	Kunnathur ..	17	178	1,521	340	178
8	Pathanapuram ..	12	8	929	196	5
9	Pathanamthitta ..	15	96	1,316	222	83
10	Karunagappally ..	6	301	1,018	341	201
	QUILON DISTRICT	86	1,393	1,250	184	1,144
11	Karthigappally ..	12	5,759	3,717	34	14,064
12	Mavelikara ..	20	2,133	3,016	1,403	4,227
13	Chengannur ..	20	2,164	3,535	599	5,026

TABLE 4·1—(*cont.*)

Serial number	Taluk and district	No. of expts.	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Standard error	Production of rice in tonnes
1	2	3	4	5	6	7
14	Thiruvalla ..	14	4,572	3,293	186	9,892
15	Kuttanad ..	15	5,920	3,016	1,782	11,847
16	Ambalapuzha ..	..	3,051	3,046*	..	6,126
17	Shertallai ..	..	..	..	..	..
	ALLEPPEY DISTRICT	81	23,609	3,300	539	51,182
18	Changanacherry ..	18	3,242	3,304	466	7,038
19	Kanjirappally ..	..	..	..	..	..
20	Kottayam ..	16	11,386	2,536	877	18,971
21	Vaikom ..	18	1,650	1,600	415	1,734
22	Meenachil ..	6	399	2,585	..	678
	KOTTAYAM DISTRICT	58	16,677	2,594	622	28,421
23	Peermade ..	..	110	1,836†	..	133
24	Devicolam ..	..	319	1,836†	..	385
25	Udumbanchola ..	..	..	..	..	..
26	Thodupuzha ..	..	61	1,836†	..	73
	IDIKKI DISTRICT	..	490	1,836	..	591

27	Kothamangalam	..	15	704	1,620	374	749
28	Muvattupuzha	..	21	1,896	1,836	228	2,287
29	Cochin	..	..	..	..	..	..
30	Kanayannur	..	* 14	37	1,770	284	43
31	Kunnathunad	..	19	4,511	1,609	301	4,769
32	Alwaye	..	19	5,504	2,250	96	8,136
33	Parur	..	16	3,562	2,465	184	5,769
	ERNAKULAM DISTRICT		104	16,214	2,042	103	21,753
34	Cranganore	..	8	73	1 568	413	75
35	Mukundapuram	..	33	9,564	2,361	190	14.835
36	Trichur	..	24	7,987	2,309	177	12,116
37	Thalappally	..	27	1,637	2,440	270	2,624
38	Chowghat	..	9	1,869	3,507	1,098	4.306
	TTICHUR DISTRICT		101	21,130	2,446	147	33,956
39	Chittur	..	14	140	1,647	759	151
40	Alathur	..	12	45	2,839	311	84
41	Palghat	..	23	983	3,318	355	2,143
42	Ottappalam	..	38	1,488	1,811	130	1,770
43	Mannarghat	..	20	1,511	1,677	354	1,665
	PALGHAT DISTRICT		107	4,167	2,123	162	5,813
44	Perinthalmanna	..	24	1,768	2,465	441	2,863
45	Ponnani	..	18	2,877	3,733	324	7,056
46	Tirur	..	25	1,594	2,000	226	2,095
47	Ernad	..	31	766	1,572	192	791
	MALAPPURAM DISTRICT		98	7,005	2,782	182	12,805

* Mean yield of Kuttanad Taluk is given.

† Mean yield of Muvattupuzha Taluk is given.

TABLE 4·1—*(cont.)*

Serial number	Taluk and district	No. of expts.	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Standard error	Production of rice in tonnes
1	2	3	4	5	6	7
48	Kozhikode ..	24	951	1,337	183	835
49	Quilandy ..	28	1,505	1,579	172	1,561
50	Badagara ..	15	92	1,293	242	78
51	South Wynad ..	22	4,894	1,897	166	6,100
	KOZHIKODE DISTRICT	89	7,442	1,754	117	8,574
			2,572	2,195	199	3,709
52	North Wynad ..	18				
53	Tellicherry ..	30	427	1,176	138	330
54	Cannanore ..	16	27	2,180	70	39
55	Taliparamba	40	385	1,379	241	349
56	Hosdurg ..	23	1,915	3 098	150	3,898
57	Kasargode ..	30	1,955	2,476	212	3,180
	CANNANORE DISTRICT	157	7,281	2,405	100	11,505
	STATE	958	108,874	2,497	148	178,619

TABLE 4·2

Estimated area, mean yield and production of rice relating to Summer Crop of paddy 1976 and 1977

Serial No.	District	Area in Hectares @		Mean yield of dry Paddy in kg./hect.		Production of rice (Tonnes)	
		1976	1977	1976	1977	1976	1977
1	2	3	4	5	6	7	8
1	Trivandrum ..	2566	3466	1599	1262	2696	2875
2	Quilon ..	2330	1393	1818	1250	2783	1144
3	Alleppey ..	19008	23609	3067	3300	383 7	51182
4	Kottayam ..	16868	16677	3429	2594	38003	28421
5	Idikki ..	4 6	490	3044	1836	912	591
6	Ernakulam ..	10421	16214	1983	2042	13578	21753
7	Trichur ..	17393	21130	2317	2446	26477	339 6
8	Palghat ..	7976	4167	2465	2123	12920	5813
9	Malappuram ..	7555	7005	2613	2782	12973	12805
10	Kozhikode ..	10182	7442	2429	1754	16731	8574
11	Cannanore ..	9532	7281	2477	2405	15514	11505
	State ..	104587	108874	2632	2497	180894	178619

@ Area is estimates of States.

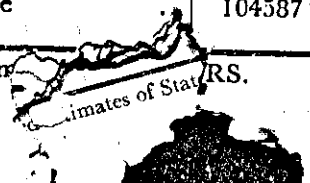

TABLE 4·3

Summer Crop of Paddy 1977

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 ..	3944·35	48	82·174	13·888**
Between villages within taluk ..	2084·18	124	16·808	2·841**
Within villages within taluk ..	4644·65	785	5·917	..
All ..	10673·18	957	..	..

** Significant at 1 % level

TABLE 4·4

Frequency distribution of plot yield—Summer 1977

Serial number	Class interval kg./hect. (Wet paddy)	Trivandrum	Quilon	Alleppey	Kottayam	Idikki	Ernakulam	Trichur	Palghat	Malappuram	Kozhikode	Cannanore	State
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	B-low 500	8	12	2	2	..	1	2	10	4	5	8	54
2	500—699	3	7	1	..	..	2	2	3	2	4	10	34
3	700—899	8	6	2	2	..	4	3	4	3	9	8	49
4	900—1099	7	6	2	4	..	5	1	3	4	3	12	47
5	1100—1299	11	10	1	..	..	8	4	2	4	7	8	55
6	1300—1499	7	7	1	1	..	4	4	4	8	11	8	55
7	1500—1699	7	11	2	5	..	9	7	7	9	11	7	75
8	1700—1899	10	5	2	6	..	9	8	7	4	6	6	63
9	1900—2099	3	6	3	3	..	8	5	4	8	7	14	61
10	2100—2299	2	4	3	4	..	8	3	8	5	5	7	49
11	2300—2499	2	1	2	2	..	8	6	8	5	6	16	56
12	2500—2699	1	3	1	3	..	8	10	6	4	4	4	44
13	2700—2899	1	3	6	3	..	7	5	4	3	1	8	41
14	2900—3099	4	1	1	2	..	8	6	3	4	4	4	37
15	3100—3299	3	1	2	2	..	2	4	6	2	1	9	32
16	3300—3499	..	1	4	1	..	4	7	4	8	1	5	35
17	3500—3699	..	..	8	1	..	2	3	5	3	..	5	27
18	3700—3899	..	1	3	2	..	1	6	9	7	1	3	33
19	3900—4099	..	..	2	2	..	1	4	2	..	..	4	15
20	4100 and above	..	1	33	13	..	5	11	8	11	3	11	96
	All	77	[illegible]	81	58	..	104	101	107	98	89	157	958

TABLE 4·5

The results of driage experiments—Summer Paddy –1977

Sl. number	District	No. of driage experiments		Total yield collected for driage expts. (kg.)	Total yield after driage operation (kg.)	Driage ratio (Percentage)
		Planned	Analysed			
1	2	3	4	5	6	7
1	Trivandrum ..	12	7	1·750	1·431	81·9
2	Quilon ..	17	17	4·250	3·686	86·7
3	Alleppey ..	15	14	3·500	3·178	90·8
4	Kottayam ..	12	12	3·000	2·716	90·5
5	Idukki ..	..	..	..	..	..
6	Ernakulam ..	18	16	4·000	3·468	86·7
7	Trichur ..	15	15	3·750	3·295	87·9
8	Palghat ..	15	13	3·250	3·032	93·3
9	Malappuram ..	12	10	2·500	2·351	94·0
10	Kozhikode ..	12	11	2·750	2·438	88·7
11	Cannanore ..	18	16	4·000	3·697	92·4
	State .	146	131	32·750	29·295	89·4

TABLE 4·6

Independent estimate of mean yield of paddy based on harvest stage inspection—Summer 1977

Serial number	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 ..	32	30	1462	1197	0·819
2	Quilon ..	54	32	1691	1466	0·867
3	Alleppey ..	39	29	3739	3395	0·908
4	Kottayam .	36	31	2854	2583	0·905
5	Idikki ..	..	..	..	..	..
6	Ernakulam ..	54	53	2124	1842	0·867
7	Trichur ..	42	41	2717	2388	0·879
8	Palghat ..	40	33	2152	2008	0·933
9	Malappuram ..	32	20	2472	2324	0·940
10	Kozhikode .	36	33	1724	1529	0·887
11	Cannanore ..	54	36	2266	2094	0·924
	State ..	419	338	2301	2057	0·894

TABLE 4·7

Estimated mean yield of dry paddy (kg./hect.) during summer season from 1972 to 1977

Serial No.	Taluk and District	1972	1973	1974	1975	1976	1977
1	2	3	4	5	6	7	8
1	Neyyattinkara ..	2,380	2,072	1,988	2,211	1,914	1,581
2	Trivandrum ..	1,708	1,264	1,895	2,109	1,877	1,273
3	Nedumangad ..	2,262	1,441	1,595	1,764	1,496	1,158
4	Chirayinkil ..	1,587	711	999	1,789	1,225	738
	TRIVANDRUM DISTRICT ..	1,867	1,192	1,521	1,975	1,599	1,262
5	Quilon ..	1,472	1,637	1,647	1,141	1,259	1,322
6	Kottarakkara ..	962	1,036	752	1,385	1,754	1,147
7	Kunnathur ..	..	2,052	1,306	1,749	1,891	1,521
8	Pathanapuram ..	..	..	..	..	..	929
9	Pathanamthitta ..	1,938	1,305	1,819	2 779	1,928	1,316
10	Karunagappally ..	2,188	2,195	1,561	1,865	2.166	1,018
	QUILON DISTRICT ..	1,765	1,834	1,480	1,660	1,818	1,250
11	Karthigappally ..	2,631	4,286	2,577	3,233	3,738	3,717
12	Mavelikkara ..	3,142	2,886	2,845	3,077	2,634	3,016
13	Chengannur ..	3,834	4,609	2,205	3,384	3,344	3.535
14	Thiruvalla ..	3,084	2,484	2,102	3,151	3.333	3,293
15	Kuttanad ..	4,494	3,034	2,682	3,495	3,049	3.046
16	Ambalapuzha ..	3,059	2,712	2,260	2,685	2,650	3,046@
17	Shertallay ..	..	..	..	..	..	..
	ALLEPPEY DISTRICT .	*3,447	*2,885	2,580	3,327	3,068	3,300
18	Changanacherry ..	4,806	4,062	3,474	4,850	4,182	3,304
19	Kanjirappally ..	2,677	..	..	..	..	..
20	Kottayam ..	3,509	3,267	1,425	3,199	3,333	2,536
21	Vaikom ..	2,663	2,741	1,340	2,342	2,680	1,600
22	Meenachil ..	3,225	2,779	1,859	2,300	2,902	2,585
	KOTTAYAM DISTRICT ..	3,655	3,351	1,846	3,409	3,429	2,594
23	Peermade ..	..	1,872	1,165	1,974	3,053	1,836†
24	Devicolam ..	..	..	..	..	..	1,836†
25	Udumbanchola ..	..	..	..	..	..	..
26	Thodupuzha ..	..	..	..	..	..	1,836†
	IDIKKI DISTRICT ..	..	1,872	1,165	1,974	3,053	1,836

@ Mean yield of Kuttanad Taluk.

† Mean yield of Muvattupuzha Taluk.

* Pooled estimate.

TABLE 4·7—(*cont.*)

Serial No.	Taluk and District	1972	1973	1974	1975	1976	1977
1	2	3	4	5	6	7	8
27	Kothamangalam	2,314	1,483	1,506	1,977	1,523	1,620
28	Muvattupuzha				2,037	2,108	1,836
29	Cochin	..	..	..	..	..	..
30	Kanayannur	3,171	1,029	791	1,739	2,070	1,770
31	Kunnathunad	1,950	1,,01	1,725	1,899	1,755	1,609
32	Alwaye	2,275	2,218	1,878	1,984	2,310	2,250
33	Parur	1,684	1,719	1,768	2,508	1,798	2,465
	ERNAKULAM DISTRICT	2,026	1,855	1,747	2,162	1,983	2,042
34	Cranganore	1,801	1,947	1,435	1,750	1,817	1,568
35	Mukundapuram	2,698	2,384	2,0 2	1,974	2,134	2,361
36	Trichur	2,252	3,012	1,,89	2,484	2,061	2,309
37	Thalappally	3,156	5,163	2,398	3,235	3,087	2,440
38	Chowghat	2,529	2,007	1,419	2,069	3,302	3,507
	TRICHUR DISTRICT	2,538	2,857	1,841	2,329	2 317	2,446
39	Chittur	3,378	2,099	2,553	3,186	2,031	1,647
40	Alathur	3,378	2,099	2,375	3,489	3,461	2,839
41	Palghat	3,378	2,099	1,817	3,510	3,644	3,318
42	Ottappalam	3,378	2,099	2,290	2,021	2,261	1,811
43	Mannarghat	..	..	1,749	2,461	2,095	1,677
	PALGHAT DISTRICT	3,377	2,099	2,212	2,547	2,465	2,123
44	Perinthalmanna	2,219	2,481	1,816	1,832	3,022	2,465
45	Ponnani	5,647	6,635	1,753	3,677	2,468	3,733
46	Tirur	3,399	5,624	2,568	3,244	2,994	2,[illegible]
47	Ernad	2,181	2,212	1,615	1,929	1,948	1,[illegible]
	MALAPPURAM DISTRICT	4,369	5,194	1,981	3,215	2,614	1,[illegible]
48	Kozhikode	3,279	3,036	2,423	2,412	2 165	1,[illegible]
49	Quilandy	2,138	2,137	2,775	2,136	1,648	1,[illegible]
50	Badagara	2,138	2,130	2,661	3,381	2,471	1,[illegible]
51	South Wynad	2,432	2,273	2,180	1,789	2,593	1,[illegible]
	KOZHIKODE DISTRICT	2,526	2,376	2,286	1,983	2,429	1,754
52	North Wynad	1,952	2,425	1,906	2,243	2,518	2,195
53	Tellicherry	2,225	2,227	1,779	1,618	1,900	1,176
54	Cannanore	2,225	2,215	2,100	2,005	1,482	2,180
55	Taliparamba	2,225	2,215	2,200	1,402	1,632	1,379
56	Hosdurg	2,564	2,119	2,195	2,394	2 083	3,098
57	Kasargode	1,977	1,904	1,887	2,370	2,660	2,476
	CANNANORE DISTRICT	2,093	2,097	1,940	2,271	2,477	2,405
	STATE	*3,151	*2,918	2,168	2,936	2,794	2,497

* Pould estimates.

TABLE 5·1

Estimated area, mean ... uction of high yielding varieties of paddy during summer 1977

Serial number	District	No. of experiments conducted		Percentage of H Y.V. experiments to total No. of experiments	High yielding varieties		
		H.Y.V.	Total		Area (hect.)	Mean yield (dry paddy kg./hect.)	Production of rice (tonnes)
1	2	3	4	5	6	7	8
1	Trivandrum ..	53	77	68·83	2322	1367	2085
2	Quilon ..	34	86	39·53	230	1178	178
3	Alleppey ..	45	81	55·56	21553	3696	52332
4	Kottayam ..	35	58	60·34	14448	2934	27856
5	Idikki ..	..	..	..	304	1956@	391
6	Ernakulam ..	46	104	44·23	6705	1943	8560
7	Trichur ..	51	101	50·50	13734	2589	23360
8	Palghat ..	52	107	48·60	2379	2719	4250
9	Malappuram ..	54	98	55·10	5686	3377	12617
10	Kozhikode ..	53	89	59·55	4017	1846	4872
11	Cannanore ..	53	157	33·76	2029	2762	3682
	State ..	476	958	49·69	73407	2907	140183

@ C.C. Experiments not conducted. Average yield of Moovattupuzha taluk is given.

TABLE 5·2

Estimated area, mean yield and production of high yielding variety of paddy during summer 1976 and 1977

Sl. No.	District	Area in hectares		Mean yied of dry paddy in kg./hect.		Production of rice in tonnes	
		1976	1977	1976	1977	1976	1977
1	2	3	4	5	6	7	8
1	Trivandrum ..	2,417	2,322	1,699	1,367	2,698	2,085
2	Quilon ..	1,636	230	2,233	1,178	2,400	178
3	Alleppey ..	18,740	21,553	3,246	3,696	39,965	52,332
4	Kottayam ..	16,578	14,448	3,813	2,934	41,748	27,856
5	Idikki ..	357	304	..	1,956@	..	391
6	Ernakulam ..	4,975	6,705	2,168	1,943	7,086	8,560
7	Trichur ..	11,972	13,734	2,792	2,589	21,961	23,360
8	Palghat ..	5,141	2,379	3,104	2,719	10,484	4,250
9	Malappuram ..	6,429	5,686	2,765	3,377	11,679	12,617
10	Kozhikode ..	6,061	4,017	2,335	1,846	9,298	4,872
11	Cannanore ..	2,708	2,029	2,399	2,762	4,268	3,682
	State ..	77,014	73,407	2,996	2,907	15,1587	1,40183

(a) C. C. Experiment[illegible] erage yield of Muvattupuzha taluk is given

TABLE 5·3

Distribution of fields varieties of paddy according to the varieties raised during summer 1977

Serial number	District	No. of experiments conducted		Percentage of H.Y.V. experiments to total number of experiments	Number of experimental plots under different H.Y.V.										
		H.Y.V.	Total		Triveni	Jaya	Annapurna (cul-28)	I.R.-8	Jyothi	I.R.-20	Aswathi	Bharathy	Rohini	Thychung	Sabari
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Trivandrum ..	53	77	68·83	37	4	1	..	3	..	1	5	1	..	1
2	Quilon ..	34	86	39·53	10	3	1	..	6	..	..	14	..	..	..
3	Alleppey ..	45	81	55·56	8	1	1	..	35	..	..	..	..	..	..
4	Kottayam ..	35	58	60·34	3	..	2	..	25	..	1	4	..	..	..
5	Idikki ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam ..	46	104	44·23	21	5	9	1	3	..	..	7	..	..	..
7	Trichur ..	51	101	50·50	31	3	5	1	5	..	1	4	1	..	..
8	Palghat ..	52	107	48·60	19	21	..	2	9	..	1	..	..	..	..
9	Malappuram ..	54	98	55·10	29	15	1	5	4	..	..	..	..	..	..
10	Kozhikode ..	53	89	59·55	22	2	9	9	..	..	..	2	2	7	..
11	Cannanore ..	53	157	33·76	25	6	11	5	..	..	..	..	..	6	..
	State	476	958	49·69	205	60	40	23	90	..	4	36	4	13	1

TABLE 5·4

District average yield of high yielding varieties summer crop of paddy 1977 (Dry paddy in kg./hect.)

District	Triveni	Jaya	Annapurna (Culture-28)	I.R.-8	Jyothi	I.R.-20	Aswathi	Bharathy	Rohini	Thychung	Sabari
1	2	3	4	5	6	7	8	9	10	11	12
Trivandrum ..	1255	1537	754	..	1017	..	820	813	1627	..	2545
Quilon ..	1030	770	1319	..	1101	..	..	1349	..	..	..
Alleppey ..	4326	2577	3782	..	5866	..	..	..	..	..	..
Kottayam ..	936	..	2809	..	3010	..	4894	3674	..	..	..
Idikki ..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam ..	2247	2117	2030	618	1374	..	..	1432	..	..	..
Trichur ..	2829	2628	2466	2658	2501	..	1373	3652	1971	..	..
Palghat ..	2304	2738	..	2527	2630	..	1268	..	..	..	..
Malappuram ..	2822	2832	1842	2083	3121	..	..	..	..	..	..
Kozhikode ..	1649	2094	1776	1210	..	..	..	1216	1910	1826	..
Cannanore ..	1594	3900	2261	1551	..	..	..	..	..	3037	..
State average	2029	..	2121	1774	2328	..	2089	2023	1836	2432	2545

TABLE 5·5

District-wise yield rate for high yielding and other varieties of paddy according to cultural practices during summer—1977

(Mean yield—Dry paddy in kg./hect.)

District	Variety	Irrigated							
		Chemically manured		Other manured		Not manured		Total	
		Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield
1	2	3	4	5	6	7	8	9	10
Trivandrum	H	25	1,379	..	..	..	..	25	1,379
	O	19	1,230	..	..	..	..	19	1,230
	T	44	1,315	..	..	..	..	44	1,315
Quilon	H	9	1,531	..	..	..	..	9	1,531
	O	17	1,085	2	1,345	..	..	19	1,112
	T	26	1,239	2	1,345	..	..	28	1,247
Alleppey	H	29	3,924	..	..	..	..	29	3,924
	O	24	2,906	..	..	..	..	24	2,906
	T	53	3,463	..	..	..	..	53	3,463
Kottayam	H	23	2,782	..	..	..	..	23	2,782
	O	15	1,926	..	..	..	..	15	1,926
	T	38	2,444	..	..	..	..	38	2,444
Idikki	H	..	..	..	..	..	..	..	..
	O	..	..	..	..	..	..	..	..
	T	..	..	..	..	..	..	..	..
Ernakulam	H	42	1,933	2	1,768	..	..	44	1,926
	O	50	1,974	1	1,464	..	..	51	1,964
	T	92	1,955	3	1,667	..	..	95	1,946
[illegible]ur	H	45	2,780	2	1,067	..	..	47	2,707
	O	38	2,261	8	1,102	..	..	46	2,060
	T	83	2,542	10	1,095	..	..	93	2,387
[illegible]ghat	H	45	2,738	1	932	3	902	49	2,589
	O	26	2,271	16	1,352	..	..	42	1,921
	T	71	2,567	17	1,327	3	902	91	2,281
Malappuram	H	48	2,753	1	4,433	..	..	49	2,787
	O	30	1,845	7	1,711	1	1,782	38	1,819
	T	78	2,404	8	2,031	1	1,782	87	2,364
Kozhikode	H	30	1,749	5	1,185	..	..	35	1,670
	O	15	1,562	3	763	..	..	18	1,428
	T	45	1,617	8	1,027	..	..	53	1,588
Cannanore	H	34	2,301	3	533	..	..	37	2,158
	O	68	2,143	19	1,331	..	..	87	1,965
	T	102	2,196	22	1,222	..	..	124	2,023
State	H	330	2,480	14	1,326	3	902	347	2,420
	O	302	2,015	56	1,324	1	1,782	359	1,907
	T	632	2,258	70	1,324	4	1,122	706	2,159

H—High yielding variety O—Other varieties T—All varieties

TABLE 5·5—(*cont.*)

District	Variety	Unirrigated							
		Chemically manured		Other manured		Not manured		Total	
		Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield	Number of expts.	Mean yield
		11	12	13	14	15	16	17	18
Trivandrum	HOTHOTHOTHOTHOTHOTHOTHOTHOTHOT	25	1,216	2	238	1	820	28	1,105
		4	447	1	492	..	..	5	456
		29	1,110	3	323	1	820	33	1,007
Quilon		20	1,105	5	709	..	..	25	1,026
		28	1,421	4	692	1	2,776	33	1,374
		48	1,289	9	701	1	2,776	58	1,224
Alleppey		16	3,904	..	..	..	..	16	3,904
		12	1,783	..	..	..	..	12	1,783
		28	2,995	..	..	..	..	28	2,995
Kottayam		12	3,275	..	..	..	..	12	3,275
		8	1,525	..	..	..	..	8	1,525
		20	2,575	..	..	..	..	20	2,575
Idikki		..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..
Ernakulam		2	3,265	..	..	..	..	2	3,265
		7	1,277	..	..	..	..	7	1,277
		9	1,719	..	..	..	..	9	1,719
Trichur		3	3,379	..	..	1	3,548	4	[illegible]
		3	2,552	1	0·00	..	..	4	
		6	2,965	1	0·00	1	3,548	8	
Palghat		2	2,365	1	1,996	..	..	3	
		6	2,505	7	930	..	..	13	
		8	2,470	8	1,063	..	..	16	
Malappuram		5	2,497	..	..	..	..	5	
		1	2,184	4	850	1	1,308	6	
		6	2,445	4	850	1	1,308	11	
Kozhikode		15	1,638	2	1,060	1	1,218	18	1,5[illegible]
		12	1,462	5	1,333	1	1,136	18	1,4[illegible]
		27	1,560	7	1,255	2	1,177	36	1,47[illegible]
Cannanore		12	2,082	4	2,317	..	..	16	2,110
		6	1,847	10	1,330	1	888	17	1,487
		18	2,004	14	1,612	1	888	33	1,804
State		112	2,122	14	1,243	3	1,862	129	2,015
		87	1,582	32	1,035	4	1,527	123	1,459
		199	1,886	46	1,098	7	1,671	252	1,744

TABLE 5·5—(*cont.*)

District	Variety	Treated with pesticides		Not treated with pesticides	
		No. of expts.	Mean yield	No. of expts.	Mean yield
		19	20	21	22
Trivandrum	H	47	1,311	6	639
	O	23	1,101	1	662
	T	70	1,242	7	642
Quilon	H	26	1,206	8	1,003
	O	40	1,312	12	1,167
	T	66	1,270	20	1,103
Alleppey	H	45	3,917	..	..
	O	35	2,511	1	3,267
	T	80	3,302	1	3,267
Kottayam	H	34	3,038	1	0000
	O	22	1,786	1	1,803
	T	56	2,546	2	901
Iddikki	H	..	..	..	..
	O	..	..	..	..
	T	..	..	..	..
Ernakulam	H	40	2,011	6	1,802
	O	52	1,901	6	1,712
	T	92	1,949	12	1,757
chur	H	38	2,893	13	2,383
	O	37	2,066	13	1,996
	T	75	2,485	26	2,190
guat	H	38	2,794	14	1,957
	O	12	1,956	43	1,831
	T	50	2,593	57	1,862
alappuram	H	43	2,950	11	2,016
	O	19	2,112	25	1,435
	T	62	2,693	36	1,612
Kozhikode	H	29	1,830	24	1,387
	O	14	1,548	22	1,336
	T	43	1,738	46	1,363
Cannanore	H	28	1,923	25	2,410
	O	52	1,994	52	1,780
	T	80	1,969	77	1,985
State	H	368	2,453	108	1,822
	O	306	1,860	176	1,662
	T	674	2,184	284	1,723

H—High yielding variety O—Other varieties T—All varieties.

TABLE 6·1

Response percentage—Summer paddy—1977

Serial No.	Districts	No. of experiments		Percentage response
		Planned	Analysed	
1	2	3	4	5
1	Trivandrum ..	77	77	100
2	Quilon ..	96	86	90
3	Alleppey ..	83	81	98
4	Kottayam ..	60	58	97
5	Idikki ..	..	..	..
6	Ernakulam ..	114	104	91
7	Trichur ..	107	101	94
8	Palghat ..	120	107	89
9	Malappuram ..	108	98	91
10	Kozhikode ..	91	89	98
11	Cannanore ..	158	157	99
	State	1014	958	94

TABLE 6·2

Details of non-response—Summer paddy—1977

Serial number	Districts	No. of experiments		No. of experiments lost due to			Other reasons
		Planned	Analysed	Primary worker's absence (leave transfer etc.)	Prior harvest by cultivators	Rejected at the analysis stage	
1	2	3	4	5	6	7	8
1	Trivandrum ..	77	77	..	..	..	..
2	Quilon ..	96	86	..	1	..	9
3	Alleppey ..	83	81	..	2	..	..
4	Kottayam ..	60	58	..	2	..	..
5	Idikki ..	..	..	..	..	..	..
6	Ernakulam ..	114	104	..	9	1	..
7	Trichur ..	107	101	..	6	..	..
8	Palghat ..	120	107	..	1	1	11
9	Malappuram ..	108	98	..	7	..	3
10	Kozhikode ..	91	89	..	2	..	..
11	Cannanore ..	158	157	..	1	..	..
	State ..	1014	958	..	31	2	23

TABLE 6·3

Work load of primary workers—District-wise allocation—Summer 1977

Serial number	Districts	No. of primary workers			
		4 experiments or less	5 to 8 experiments	More than 8 experiments	Total
1	2	3	4	5	6
1	Trivandrum ..	38	..	..	38
2	Quilon ..	39	1	..	40
3	Alleppey ..	23	2	..	25
4	Kottayam ..	43	..	..	43
5	Idikki ..	..	..	..	..
6	Ernakulam ..	47	..	..	47
7	Trichur ..	51	..	..	51
8	Palghat ..	42	4	..	46
9	Malappuram ..	52	1	..	53
10	Kozhikode ..	46	..	..	46
11	Cannanore ..	59	..	..	59
	State ..	440	8	..	448

TABLE 6·4

Work load of primary workers according to performance—Summer 1977

Serial number	Districts	No. of primary workers			
		4 experiments or less	5 to 8 experiments	More than 8 experiments	Total
1	2	3	4	5	6
1	Trivandrum ..	38	..	..	38
2	Quilon ..	39	1	..	40
3	Alleppey ..	23	2	..	25
4	Kottayam ..	43	..	..	43
5	Idikki ..	..	..	..	..
6	Ernakulam ..	47	..	..	47
7	Trichur ..	51	..	..	51
8	Palghat ..	42	4	..	46
9	Malappuram ..	52	1	..	53
10	Kozhikode ..	46	..	..	46
11	Cannanore ..	59	..	..	59
	State ..	440	8	..	448

TABLE 6·5

Number of experiments inspected during summer 1977

Serial number	District	Number 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	S.Is.	District level officers	S.Is.	District level officers	S.Is.			
1	2	3	4	5	6	7	8	9	10	11	12
1	Trivandrum ..	77	4	26	..	13	..	1	39·0	16·9	1·3
2	Quilon ..	86	..	32	..	14	..	1	37·2	16·3	1·2
3	Alleppey ..	81	..	29	..	14	..	3	35·8	17·3	3·7
4	Kottayam ..	58	8	23	..	12	5	8	53·4	20·7	22·4
5	Idikki ..	..	..	..	..	..	..	..	..	..	..
6	Ernakulam ..	104	9	44	2	13	2	..	51·0	14·4	1·9
7	Trichur ..	101	15	26	..	23	..	2	40·6	22·8	2·0
8	Palghat ..	107	3	30	..	2	..	5	30·8	1·9	4·7
9	Malappuram ..	98	5	15	..	4	..	1	20·4	4·1	1·0
10	Kozhikode ..	89	10	23	..	..	..	..	37·1	..	..
11	Cannanore ..	157	12	24	..	10	3	1	22·9	6·4	2·5
	State ..	958	66	272	2	105	10	22	35·3	11·2	3·3

District level officers:—District Statistical Officer
Economic Investigator
Ad[illegible] District Statistical Officer
[illegible]stical Inspectors.

TABLE 7.1

Season-wise area, mean yield and production of high yielding varieties of paddy during 1976-77

Serial number	District	Area under H.Y.V. (hect.)				Mean yield of H.Y.V. (dry paddy kg./hect.)				Production of rice (in tonnes)			
		Autumn 1976	Winter 1977	Summer 1977	Total (1976-77)	Autumn 1976	Winter 1977	Summer 1977	Annual average (1976-77)	Autumn 1976	Winter 1977	Summer 1977	Total (1976-77)
1	2	3	4	5	6.	7	8	9	10	11	12	13	14
1	Trivandrum ..	2,120	2,294	2,322	6,736	2,328	2,035	1,367	1,897	3,243	3,067	2,035	8,395
2	Quilon ..	2,226	779	230	3,235	1,368	2,439	1,178	1,612	2,001	1,248	178	3,427
3	Alleppey ..	15,711	23,976	21,553	61,240	2,326	3,679	3,696	3,333	24,009	57,952	52,332	134,293
4	Kottayam ..	11.402	10,113	14,448	35,963	2,580	2,390	2,9 4	2,669	19,327	15,880	27,856	63,063
5	Idikki ..	4,577	759	304	5,640	2,440	2,307	1,956	2,396	7,337	1,150	391	8,878
6	Ernakulam ..	21,453	1,965	6.705	30,123	2,456	1,421	1,943	2,274	34,616	1,835	8,560	45,011
7	Trichur ..	11,672	11,536	13,734	36,942	1,687	2,339	2,589	2,226	12,937	17,728	23,360	54,025
8	Palghat ..	33,510	12,850	2,379	48,739	2,899	2,762	2,719	2,854	63,825	23,318	4,250	91,393
9	Malappuram ..	7,720	4,3:0	5,686	17,766	2,007	2,192	3,377	2,491	10,179	6,279	12,617	29,075
10	Kozhikode ..	1,225	2,705	4,017	7,947	1,264	2,133	1,846	1,854	1,017	3,791	4 872	9,680
11	Cannanore ..	4,148	3,466	2,029	9,643	2,676	1,862	2,762	2,401	7,293	4,240	3,682	15,215
	State ..	115,764	74,803	73,407	263,974	2,443	2,777	2,907	2,666	185,784	136,488	140,183	462,455

TABLE 7.2

Season-wise area, mean yield and production of rice in each district during 1976–77

Serial number	District	Area (hect.)				Mean yield (Dry paddy in (kg./hect.)				Production of rice (tonnes)			
		Autumn 1976	Winter 1977	Summer 1977	Total	Autumn 1976	Winter 1977	Summer 1977	Annual average	Autumn 1976	Winter 1977	Summer 1977	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Trivandrum ..	16,584	17,926	3,466	37,976	2,139	2,280	1,262	2,126	23,304	26,857	2,875	53,036
2	Quilon ..	23,190	25,074	1,393	49,657	1,458	2,628	1,250	2,043	22,211	43,294	1,144	66,649
3	Alleppey ..	26,173	38,809	23,609	88,591	2,265	2,820	3,300	2,784	38,949	71,894	51,182	162,025
4	Kottayam ..	16,366	16,204	16,677	49,247	2,303	2,344	2,594	2,415	24,762	24,955	28,421	78,138
5	Indikki ..	8,147	7,087	490	15,724	2,300	2,338	1,836	2,303	12,311	10,886	591	23,788
6	Ernakulam ..	41,227	41,886	16,214	99,327	2,127	2,102	2,042	2,103	57,607	57,853	21,753	137,213
7	Trichur ..	42,301	54,634	21,130	118,065	1,479	2,037	2,446	1,910	41,056	73,120	33,956	148,172
8	Palghat ..	88,047	78,808	4,167	171,022	2,617	2,783	2,123	2,681	151,411	144,084	5,813	301,308
9	Malappuram ..	44,192	40,383	7,005	91,580	1,516	2,006	2,782	1,829	44,018	53,227	12,805	110,050
10	Kozhikode ..	12,974	31,310	7,442	51,726	987	1,847	1,754	1,618	8,410	38,001	8,574	54,985
11	Cannanore ..	44,621	29,557	7,281	81,459	2,168	2,243	2,405	2,217	63,568	43,566	11,505	118,639
	State ..	363,822	381,678	108,874	854,374	2,040	2,344	2,497	2,234	487,647	587,737	178,619	1,254,003

TABLE 7.3

Season-wise area, [illegible]d production of H.Y.V. of rice in Kerala during the period from 1973-74 to 1976-77

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
1973-74 ..	125,292	2,779	228,749	57,076	2,021	75,795	65,904	2,295	99,376	248,272	2,476	403,920
1974-75 ..	77,537	2,563	130,572	50,988	2,503	83,840	39,128	3,127	80,390	167,653	2,676	294,802
1975-76 ..	100,364	2,763	182,228	82,255	2,590	139 960	77,014	2,996	151,587	259,633	2,777	473,775
1976-77 ..	115,764	2,443	185,784	74,803	2,777	136,488	73,407	2,907	140,183	263,974	2,666	462,455

TABLE 7.4

Season-wise area, [illegible] and production of rice in Kerala from 1968-69

Agricultural year	Autumn			Winter			Summer			Total		
	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Production of rice in tonnes	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Production of rice in tonnes	Area (hect.)	Mean yield of dry paddy (kg./hect.)	Production of rice in tonnes	Area (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
1968-69 ..	394,879	2,009	521,258	380,620	2,286	571,748	98,372	2,450	158,348	873,871	2,179	1,251,354*
1969-70 ..	393,747	2,016	521,443	382,171	2,097	526,570	98,141	2,767	178,400	874,059	2,136	1,226,413*
1970-71 ..	394,798	2,077	538,886	381,971	2,259	566,934	98,061	2,984	192,185	874,830	2,259	1,298,005*
1971-72 ..	395,298	2,126	552,246	381,971	2,378	596,808	97,888	3,151	202,684	875,157	2,351	1,351,738*
1972-73 ..	391,900	2,237	576,192	382,171	2,426	609,234	99,623	2,918	190,941	873,694	2,527	1,376,367*
1973-74 ..	392,765	2,347	605,595	380,980	2,028	507,755	100,930	2,168	143,719	874,675	2,187	1,257,069*
1974-75 ..	394,927	2,064	535,545	384,836	2,382	602,186	101,703	2,936	196,200	881,466	2,303	1,333,931
1975-76 ..	375,043	2,241	552,322	396,392	2,296	597,975	104,587	2,632	180,894	876,022	2,313	1,331,191
1976-77 ..	363,822	2,040	487,647	387,678	2,344	587,737	108,874	2,497	178,619	854,374	2,234	1,254,003

* Pol[illegible]estimates of State series [illegible] A.D.P. series of experiments

TABLE 7.3

area, id production during the period
from