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GOVERNMENT OF KERALA

DEPARTMENT OF STATISTICS

REPORT

ON THE CROP-CUTTING SURVEY
ON THE AUTUMN CROP OF PADDY
1962

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**REPORT ON THE CROP-CUTTING SURV.
AUTUMN CROP OF PADDY 1962**

The reports on Crop-cutting Survey on Winter and Summer paddy 1962 have already been published by this Department. This report deals with the Paddy Crop-cutting experiments carried out on Autumn crop of paddy, 1962. The aim, the area covered by this Survey, design of the Survey, method of analysis followed and the reliability of the results arrived at are discussed in the following paragraphs.

2. The object of the survey is to estimate the taluk-wise mean yield of dry Paddy per hectare and the total out-turn of rice in the State during the Autumn season.

3. The survey on Autumn crop of paddy 1962 covered 50 out of the 55 taluks in the State where the crop was grown. The harvest season of the Autumn crop was from August to October.

4. The method of sampling adopted for the survey was one of stratified multi-stage random sampling. Taluk was taken as stratum, census village/desom as the first stage unit, survey sub-division as the second stage unit, kandom as the third stage unit and a square plot of side $16\frac{1}{2}'$ as the ultimate sampling unit. With an intension to study the seasonal effects the technique of matched sampling was adopted for the survey. According to this method of sampling, 50% of the villages and plots chosen for the previous years corresponding survey were retained during the present survey. The selected sample in each taluk comprised the following categories:

- (i) 3 villages selected with equal probability from the list of villages chosen for the previous years corresponding survey.
- (ii) Additional villages required to bring the sample size in each taluk to 6 villages.

In the first set of villages experiments were conducted in the same plots selected in connection with the previous years survey. From the other category of villages 5 plots each were selected by adopting the method of systematic random sampling. Where a selected plot has got further sub-plots, a sub-plot (or kandom) was selected with probability proportional to the area of the sub-plots and from each selected plot (or sub-plot) a square plot of side $16\frac{1}{2}'$ was located at random. The crop in the square plot was harvested and the produce threshed, winnowed and weighed. In order to estimate the loss in weight due to driage a sample of grain from every 10th plot harvested, was taken and the initial weight having been noted was despatched to the District Statistical Officer. The reduction due to driage in each taluk was calculated by conducting driage experiments in the District Offices.

5. The sample list of selected villages in each taluk was made available to the concerned Statistical Inspectors by the District Statistical Officers, weeks before the commencement of harvests in these taluks. The field work was done by the Investigators of this Department under the supervision of the Statistical Inspectors and District Statistical Officers.

6. Although 1500 experiments were planned for the survey on the Autumn crop of paddy only 1405 experiments were conducted. In most of the cases the reason given for the loss of cuts was prior harvesting in the selected plots by the Cultivators without intimation to the Investigators.

7.1. The analysis of the data collected was done in the office of the Director of Statistics. The results of the Land Utilisation Survey conducted by this Department have been utilised to frame the area under paddy in each taluk during the season.

7.2. In Table I the taluk-wise figures relating to the number of experiments conducted, the area under Paddy, the average mean yield arrived at the corresponding standard error and the total out-turn of rice are presented. The adjusted taluk mean yield (\bar{x}_a) is calculated by adopting the following formula:

n — Number of experiments repeated.

n^1 — number of fresh experiments for year 2.

\bar{y} — taluk mean yield for year 1 based on repeated experiments (n)

\bar{x} — taluk mean yield for year 2 based on repeated experiments (n)

\bar{x}^1 — taluk mean yield for year 2 based on fresh experiments (n^1)

\bar{Y} — taluk mean yield for year 1 from total sample i.e. ($n+n^1$) experiments.

$$\bar{x}_a = \frac{n(\bar{x} - \bar{y} + \bar{Y}) + n^1 \bar{x}^1}{n + n^1}$$

The ratio of cleaned rice to paddy was taken to be 0.657.

7.3. Separate estimate for irrigated plots, chemically manured plots, both irrigated and chemically manured plots and control plots are presented in Table II.

In Table III the frequency distribution of plot yield is given. The analysis of variance of plot yield is presented in Table IV.

TABLE I

KANNI (AUTUMN) CROP OF PADDY, 1962

STATEMENT SHOWING THE ESTIMATED MEAN YIELD PER HECTARE AND THE TOTAL OUT-TURN OF RICE IN DIFFERENT TALUKS

Sl. No.	Taluk and District	No. of experiments	Net area harvested (hectare)	Mean yield of dry paddy in Kgs./hectare	Standard error (Kgms./hectare)	Production of rice in metric tonnes
1	2	3	4	5	6	7
1	Neyyattinkara	29	5819	1885	229	7207
2	Trivandrum	30	4396	2304	363	6654
3	Nedumangad	30	4820	2603	58	8243
4	Chirayinkil	30	3629	1867	194	4451
	TRIVANDRUM DISTRICT	119	18664	2166	..	26555
5	Quilon	30	3161	1692	153	3514
6	Kottarakkara	30	6061	1698	67	6762
7	Kannathur	29	4172	1480	91	4057
8	Pathanapuram	30	3911	1536	142	3947
9	Pathanamthitta	30	1236	1603	22	1302
10	Karunagappally	30	2700	2004	186	3555
	QUILON DISTRICT	179	21241	1658	..	23137
11	Karthigappally	26	5122	1422	135	4785
12	Mavelikkara	15	3731	1825	298	4474
13	Chengannur	30	2261	2563	85	3807

14	Thiruvalla	29	1816	2519	200	3005
15	Kuttanad	26	2161	1866	113	2649
16	Ambalapuzha	26	921	1237	118	749
17	Shertallai	26	6087	1903	109	7610
		178	22099	1865	..	27079
ALLEPPEY DISTRICT						
18	Changanacherry	29	1148	2347	111	1770
19	Kanjirappally	19	40	1676	160	44
20	Peermede	29	1931	2142	220	2717
21	Kottayam	30	1613	1560	98	1653
22	Vaikom	24	1930	1632	65	2523
23	Mecnachil	..	..	..	..	..
24	Devicofam	..	..	..	..	..
25	Udumbanchola	131	6662	1944	..	8507
KOTTAYAM DISTRICT						
26	Thodupuzha	25	3711	2100	109	5120
27	Muvattupuzha	28	7766	2331	64	11893
28	Cochin	30	3273	2213	135	4759
29	Kanayannur	30	8226	1796	126	9706
30	Kunnathunad	30	8076	1698	33	9009
31	Alwaye	26	7111	1311	71	6125
32	Parur	30	3679	1684	172	4070
		199	41842	1844	..	50682
ERNAKULAM DISTRICT						
33	Cranganore	27	365	1695	223	407
34	Mukundapuram	26	8634	1812	79	10279
35	Trichur	29	9589	1821	151	11472
36	Thalappilly	29	17025	1988	216	22237
37	Chowghat	28	3321	1661	87	3624
		139	38934	1877	..	48019
TRICHUR DISTRICT						

TABLE I—(contd.)

Sl. No.	Taluk and District	No. of experiments	Net area harvested (hectare)	Mean yield of dry paddy in Kgs./hectare	Standard error (K-gms./hectare)	Production of rice in metric tonnes
1	2	3	4	5	6	7
38	Chittur	30	21000	2309	200	31857
39	Alathur	29	20291	2164	78	28849
40	Palghat	30	26358	1900	118	32903
41	Ottappalam	26	17590	2166	79	25032
42	Perinthalmanna	28	17491	2672	163	30706
43	Ponnani	26	13330	1276	189	11175
	PALGHAT DISTRICT	169	116060	2105	..	160522
		30	19434	1897	49	24221
44	Tirur	30	21094	2074	83	28745
45	Ernad	21	7543	1485	97	7359
46	Kozhikode	30	11591	1200	32	9138
47	Quilandy	30	6517	2529	25	10828
48	Badagara	..	..	..	..	..
49	South Wynad	141	66179	1847	..	80289
	KOZHIKODE DISTRICT	..	..	..	..	..
	
50	North Wynad	30	9056	1362	66	8104
51	Tellicherry	30	9647	1717	148	10882
52	Cannanore	30	10281	1928	156	13023
53	Taliparamba	30	14357	1689	148	15932
54	Hosdurg	30	21397	1583	173	22254
55	Kasargod	150	64738	1650	..	70195
	CANNANORE DISTRICT	..	..	..	..	..
		1405	396419	1901	25	494985
	STATE	..	..	..	..	..

TABLE II
KANNI (AUTUMN) CROP OF PADDY 1962 IN KERALA STATE

ESTIMATED DISTRICT-WISE YIELD RATE FROM IRRIGATED, CHEMICALLY MANURED, COMBINED AND CONTROL PLOTS

District	Irrigated Plots		Chemically manured plots		Irrigated and Manured plots		Neither irrigated nor manured plots	
	Number of Experiments	Mean yield of dry paddy in Kgs./Hectare	Number of Experiments	Mean yield of dry paddy in Kgs./Hectares	Number of Experiments	Mean yield of dry paddy in Kgs./Hectares	Number of Experiments	Mean yield of dry paddy in Kgs./Hectare
1	2	3	4	5	6	7	8	9
Trivandrum	22	1954	35	2296	11	2008	51	2040
Quilon	..	..	122	1743	..	..	57	1573
Alleppey	..	..	77	1879	..	..	101	1968
Kottayam	..	..	96	2079	4	2856	31	1686
Ernakulam	30	1809	25	1777	92	1641	52	1823
Trichur	1	1388	2	3120	..	..	136	1789
Palghat	43	2227	1	2645	2	2186	123	1993
Kozhikode	..	..	..	..	..	..	141	1832
Cannanore	..	..	14	1742	..	..	136	1670

TABLE III
AUTUMN CROP OF PADDY 1962 IN KERALA STATE
 FREQUENCY DISTRIBUTION OF PLOT YIELDS.

Sl. No.	Range of yield of paddy in Kgms./hectares	Frequency distribution	Percentage
1	Below 500	9	0.64
2	500—699	18	1.28
3	700—899	26	1.85
4	900—1099	73	5.20
5	1100—1299	102	7.26
6	1300—1499	163	11.60
7	1500—1699	179	12.74
8	1700—1899	168	11.95
9	1900—2099	179	12.74
10	2100—2299	158	11.24
11	2300—2499	120	8.54
12	2500—2699	94	6.69
13	2700—2899	44	3.13
14	2900—3099	25	1.77
15	3100—3299	17	1.21
16	3300—3499	8	0.57
17	3500—3699	7	0.51
18	3700—3899	5	0.36
19	3900—4099	4	0.28
20	4100&above	6	0.44
	TOTAL	1405	100

TABLE IV
KANNI (AUTUMN) CROP OF PADDY—1962

ANALYSIS OF VARIANCE OF PLOT YIELD POOLED FOR THE STATE
 IN (Kgms.)² PER PLOT OF 1/395 OF AN HECTARE.

Source	Sum of squares	Degrees of freedom	Variance
Between Taluks	1327.31	49	27.09*
Between Kara within Taluk	1110.80	244	4.55*
Within Kara within Taluk	1913.98	1111	1.72
TOTAL	4352.09	1404	...

*Significance at 1% level.

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