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DEPARTMENT OF STATISTICS
KERALA

Report on the Crop-cutting survey on
Autumn (Kanni) crop of Paddy 1961

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Statistics Department, Kerala

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Report on the Crop-cutting Survey on Autumn (K) Crop of Paddy 1961

Introduction -

1. Crop-cutting survey on Paddy is one of the regular items of work of this Department and reports on the surveys conducted every year are being published. This is the first report of the agricultural year 1961-62 and it deals with the Crop-cutting experiments carried out on the Autumn crop of paddy 1961. The object of the survey, area covered by the survey, the sampling technique adopted and the reliability of the results arrived at are presented in the following paragraphs.

Object—

2. The object of the survey is to estimate the taluk-wise mean yield per acre of dry paddy and the total out-turn of Rice in the State.

Period of survey—

3. The harvest season of the Autumn crop of paddy in this State is from August to October. The survey commenced in August 1961 and was completed by the end of October 1961.

Coverage—

4. There was no Autumn Crop of Paddy in the five Taluks namely Devicolam, Peermade, Udumbanchola, South Wynad and North Wynad. The remaining fifty Taluks in the State were brought under the purview of the survey.

Sampling design—

5. As usual a stratified multistage random sampling design was adopted for the survey. The Taluk was taken as the stratum, villages as the first stage units, plots as the second stage units and square plot of side 16½' as the last stage units. From each Taluk six villages were selected with equal probability. In each of these selected villages a systematic sample of five paddy fields was chosen. In each field a square plot of side 16½' was located at random. The crop in the square plot was harvested and the produce threshed, winnowed and weighed. As usual a sample of grain from every 10th plot harvested in a Taluk was taken and the initial weight having been noted was despatched to the District Statistical Officer in order to conduct the drriage experiments.

Sample selection—

6 The District Statistical Officers carried out the work relating to the selection of villages in each Taluk under their jurisdiction and the list of selected villages in each Taluk was forwarded to the

concerned Statistical Inspectors. The lists were made available to the Statistical Inspectors by the end of June 1961 itself. The investigators under the supervision of the Statistical Inspectors completed the work relating to selection of plots in each village.

Field work—

7. The field work was attended to by the Investigators of this Department under the supervision of the Statistical Inspectors and District Statistical Officers. Altogether 1500 experiments were planned for this season. But only 1393 experiments were actually conducted. In the remaining plots the harvests were missed. The number of Investigators who attended to this item of work was 106.

Results—

8. The data collected was analysed in the Office of the Director of Statistics. The results are presented in tables I to IV.

(i) In table I, the taluk-wise details of number of experiments analysed, net area harvested, estimated mean yield of dry paddy per acre and its standard error in lbs. per acre, and the total out-turn of rice in tons are given. When compared to the last years district mean yields this year the yield rate has gone down in all the Districts except Kozhikode. The State mean yield is estimated as 1560 lbs. per acre and its standard error is 32 lbs. per acre. Also the net area harvested during this season is 904304 Acres while the net area harvested in Autumn 1960 was 978860 Acres. The decrease in the harvested area in this season is 7.6%. Due to the decrease in the area and lower yield rate the production has gone down during this season by 16%. During Autumn 1960 the total production of Rice was 492466 tons. The main reason for the decrease in area and mean yield is that this year South West Monsoon was very active in this State and consequently there were heavy floods in many parts of the State. This caused substantial damage to the Autumn crop of Paddy.

(ii) In table II separate estimates for irrigated plots, chemically manured plots irrigated and manured plots and neither irrigated nor manured plots are given district-wise. There was no irrigation in 86% of the plots selected for the survey. No chemical manures have been used in 56% of the selected plots.

(iii) In table III the frequency distribution of plot yields in class intervals of 200 lbs. is presented. It is seen that nearly 50% of the plot yields lie in the range 5001-500 lbs. while as in last years corresponding table only 40 of the plot yields lie in the range 500-1500 lbs. Moreover in this table the Medium class is 1300-1499 lbs. while as in the last years table the Medium class is 1500-1699 lbs. The number of experiments conducted is also larger this year. Hence the conclusion is that there is a general decrease in the yield rate of paddy in the State during this season.

(iv) In table IV the analysis of variance of plot yields is given. It is seen that there is significant variation in the yield rates between karas within Taluks and also there is significant variation between taluk yield rates.

(v) The information on the number of crops grown at a time in each plot was also collected. It is seen that in 20% of the plots only one crop is grown at a time and in 80% of the plots more than one crop is grown.

(vi) Total production of rice during this season is 413821 tons. The weight of rice is reckoned as 65.7% of the weight of dry paddy. For the purpose of comparison the area, yield rate and production of rice during the corresponding seasons of the previous years are also given below.

<i>Year and Season</i>	<i>Acreage under Paddy</i>	<i>Average yield of dry paddy (lbs/acre)</i>	<i>Standard Error lbs/acre</i>	<i>Total production of Rice (tons)</i>
(1)	(2)	(3)	(4)	(5)
1958 Autumn	982200	1547	38	445500
1959 „	964600	1696	9	479800
1960 „	978900	1715	28	492500
1961 „	904304	1560	32	413821

(Sd.)

Assistant Director-in-charge.

TABLE I

AUTUMN (KANNI) CROP OF PADDY 1961 IN KERALA STATE

Statement showing the estimated mean yield per acre and the total out-turn of rice in different taluks.

Sl. No.	Taluk and District	No. of experiments	Net area harvested (acres)	Mean yield of dry paddy in lbs/acre	Standard error in lbs/acre	Total out-turn of rice (Tons).
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Neyyattinkara	29	11705	1711	82	5874
2	Trivandrum	28	11257	1462	102	4827
3	Nedumangad	30	11682	2257	171	7733
4	Chirayinkil	30	9079	1762	127	4692
	TRIVANDRUM DISTRICT	117	43723	1803		23126
5	Quilon	30	5638	1723	161	2849
6	Kottarakkara	30	13315	1743	28	6807
7	Kunnathur	30	8089	1224	43	2904
8	Pathanapuram	30	9880	1349	84	3909
9	Pathanamthitta	30	1641	1356	61	653
10	Karunagapally	30	4647	1483	60	2021
	QUILON DISTRICT	180	43210	1510	..	19143
11	Karthigapally	30	12656	1971	227	7316
12	Mavelikkara	26	7650	1440	255	3231
13	Chengannur	30	3019	955	171	846
14	Thiruvalla	26	4646	1034	16	1409

15	Kuttanad	29	3352	1687	83	1659
16	Ambalapuzha	27	1221	1139	106	408
17	Sherthalai	30	15042	1560	107	6852
	ALLEPPEY DISTRICT	198	47586	1558	..	21751
18	Changanacherry	29	2355	2112	103	1459
19	Kanjirapally	14	96	1254	112	36
20	Peermade	..	..	..	..	..
21	Kottayam	..	3255	1970	154	1881
22	Vaikom	30	3002	1154	127	1016
23	Meenachil	30	4250	1329	103	1657
24	Devicollam	..	..	..	..	..
25	Udumbanchola	..	..	..	..	..
	KOTTAYAM DISTRICT	123	12958	1592	..	6049
26	Thodupuzha	30	9364	1793	65	4924
27	Muvattupuzha	30	11467	1853	23	6232
28	Cochin	30	8335	1658	80	4053
29	Kanayannur	30	19230	1045	132	5894
30	Kunnathunad	30	15694	1310	112	6030
31	Alwaye	28	13627	1551	197	6199
32	Parur	30	4677	1194	154	1638
	ERNAKULAM DISTRICT	208	82394	1447	..	34970
33	Cranganore	24	1327	1770	215	689
34	Mukundapuram	26	13176	1117	179	4317
35	Trichur	15	13815	1091	93	4421
36	Thalappilly	27	30812	1724	187	15580
37	Chowghat	14	4594	1198	219	1614

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	TRICHUR DISTRICT					
38	Chittur	106	63724	1424	..	26621
39	Alathur	30	51891	1996	139	30379
40	Palghat	30	50140	2268	89	33354
41	Ottappalam	28	74255	1676	299	36502
42	Perinthalmanna	20	44337	1227	72	15956
43	Ponnani	28	43223	2191	228	27776
		30	30765	1451	48	13093
	PALGHAT DISTRICT					
		166	294611	1818	..	157060
44	Tirur	30	47023	1226	83	16909
45	Ernad	30	52125	1645	63	25149
46	Kozhikode	30	14041	1039	152	4279
47	Quilandy	30	27173	842	74	6711
48	Badagara	30	16103	1547	100	7306
49	South Wynad	..	..	..	..	..
	KOZHIKODE DISTRICT	150	156465	1315	..	60354
50	North Wynad	..	..	..	..	..
51	Tellicherry	30	22378	1499	88	9839
52	Cannanore	30	23498	1358	127	9359
53	Taliparamba	30	25405	1376	54	10253
54	Hosdurg	25	35478	1340	56	13914
55	Kasaragod	30	52874	1377	65	21355
	CANNANORE DISTRICT	145	159633	1383	..	64750
	STATE	1393	904304	1560	32	413824

TABLE II

KANNI (AUTUMN) CROP OF PADDY 1961 IN KERALA STATE

Estimated District-wise yield rate from irrigated, chemically manured combined and control plots.

Districts	Irrigated Plots			Chemically manured plots			Irrigated and manured plots			Neither irrigated nor manured plots		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Number of experiments	Mean yield of dry Paddy in lb/acre	No. of experiments	Mean yield of dry paddy in lb/acre	No. of experiments	Mean yield of dry paddy in lb/acre	No. of experiments	Mean yield of dry paddy in lb/acre	No. of experiments	Mean yield of dry paddy in lb/acre	No. of experiments	Mean yield of dry paddy in lb/acre
TRIVANDRUM	13	1694	66	1806	19	1769	19	1906	19	1567	65	1567
QUILON	1	1126	55	1310	59	1548	65	1567	65	1567	65	1567
ALLEPPEY	..	..	97	1432	..	..	101	1342	101	1342	101	1342
KOTTAYAM	..	..	66	1655	..	..	57	1480	57	1480	57	1480
ERNAKULAM	3	1713	82	1469	48	1787	75	1322	75	1322	75	1322
TRICHUR	4	1485	8	1647	..	..	94	1378	94	1378	94	1378
PALGHAT	28	2148	4	2476	19	1630	115	1768	115	1768	115	1768
KOZHIKODE	..	..	90	1134	..	..	60	1449	60	1449	60	1449
CANNANORE	..	..	6	1965	..	..	139	1366	139	1366	139	1366

ABLE III
FREQUENCY DISTRIBUTION OF PLOT YIELDS

Sl. No.	Range-yield Paddy in lb/acre.	Frequency distribution	Percentage
Below	500	36	2.58
	500-699	55	3.94
	700-899	84	6.03
	900-1099	161	11.56
	1100-1299	161	11.56
	1300-1499	229	16.45
	1500-1699	174	12.49
	1700-1899	185	13.28
	1900-2099	128	9.19
	2100-2299	57	4.09
	2300-2499	49	3.52
	2500-2699	37	2.66
	2700-2899	20	1.44
	2900-3099	8	0.57
	3100-3299	6	0.43
	3300-3499	2	0.14
	3500-3699	1	0.07
	3700-3899	—	—
	3900-4099	—	—
	4100 and above	—	—
	Total	1393	100.00

TABLE IV

KANNI (AUTUMN) CROP OF PADDY 1961

Analysis variance of Plot yields Pooled for the State in (lb) 2 per plot of 1/160 of an acre.

Source	Sum of squares	Degrees of freedom	Variance
Between taluks	7453.14	49	152.10 *
Between Kara within taluks	5414.12	239	22.65 *
Within Kara within taluk	7387.69	1104	6.69
Total	20254.95	1392	

* Significant at 1% level.

