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**Report on the Crop Cutting Survey
on Autumn (Kanni) Crop of Paddy
in Kerala State—1959**

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REPORT ON THE CROP CUTTING SURVEY
AUTUMN (KANNI) CROP OF PADDY
IN KERALA STATE—1959.

1. *Introduction.*—Random Sample. Crop-cutting experiments on Paddy are being conducted by this Department from the year 1951 onwards. This report gives a summary of the conduct of the crop-cutting survey on the autumn (September-October) crop of paddy in Kerala State during 1959, and the results therefrom. The survey covered all the Taluks of the State wherein the reference crop is cultivated.

2. *Sampling design.*—As usual the stratified multistage random sample design was adopted for the survey. The taluks formed the strata, villages the primary unit, fields the secondary unit and a square plot of side $16\frac{1}{2}$ ft. the ultimate unit of sampling. From each taluk a random sample of 6 census villages was selected and from each one of those villages 5 fields were selected at random for experimentation. From each selected fields a square plot of side $16\frac{1}{2}$ ft. was located at random and the crop therefrom was harvested, winnowed and weight of the produce noted correct to the nearest quarter of a pound.

3. *Field work.*—The harvest period of the crop ranges from August-October. The field work of the survey was carried out by the Investigators of the Statistics Department. Their work was supervised by the Statistical Inspectors and District Statistical Officers. In spite of the best efforts, only 1318 experiments could be actually conducted during the season, as against the 1530 originally planned. The driage factor for each taluk was also determined based upon actual driage experiments.

4. *Analysis of the data.*—The Analysis of the data collected was done in the office of the Director of Statistics. The area under paddy in each taluk during the season was estimated from the Land Utilisation Surveys conducted by this Department. The mean yield per acre for the state was calculated by weighting the taluk mean yields with the corresponding acreage under paddy in the Taluks. The standard errors for the taluk mean yields and the state mean yield are also calculated. The frequency distribution of the yield rates into groups of range 200 lbs./acre are also given.

5. *Results and precision.*—The mean yield for the State for the reference crop has been estimated as 1696 lbs of paddy per acre and this has a standard error of less than 1%. From the frequency distribution it is seen that nearly 50% of the plot yields lie between the ranges 1300-2100 lbs. of paddy per acre.

For the purpose of comparison, the area, yield rate and production of the reference crop with those of the corresponding crop in the previous year are given below:—

Year & Crop.	Area (acres.)	Yield of paddy in lbs. /acre.	Total production of Rice in tons.	Percentage.
Autumn 1958	982200	1547	445500	100.0
Autumn 1959	964600	1696	479800	107.7

It has to be pointed out that rice is reckoned as 65.7% of the weight of paddy in the above calculations. It may be concluded that the yield rate has increased from 1547 to 1696 lbs of paddy/acre and the total production has increased by 7.7% from that of the previous year.

(Sd.)

Assistant Director-in-charge.

TABLE I

Autumn (Kanni) Crop of Paddy 1959.

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

Sl.No.	Taluk.	No. of experiments.	Area (acres.)	Mean yield of dry paddy lbs./ acre.	Standard error in lbs.	Total out-turn of Rice (Tons.)
1	2	3	4	5	6	7
1	Neyyattinkara ..	25	12479	2128	147	7789
2	Trivandrum ..	29	10574	1952	110	6054
3	Nedumangad ..	30	11864	2507	122	8724
4	Chirayinkil ..	25	9558	1901	302	5329
	TRIVANDRUM DISTRICT ..	109	44475	2138	..	27896
5	Quilon ..	25	6161	1292	211	2335
6	Kottarakara ..	30	13724	1678	144	6754
7	Pathanapuram ..	30	9550	1791	95	5017
8	Pathanamthitta ..	30	2193	2110	94	1357
9	Kunnathur ..	30	9468	1354	80	3760
10	Karunagapally ..	30	5970	1923	165	3367
	QUILON DISTRICT ..	175	47066	1636	..	22590
11	Karthikapally ..	26	14370	1436	153	6052
12	Mavelikara ..	15	8259	1682	126	4074
13	Chengannore ..	24	3677	1580	199	1704
14	Thiruvella ..	26	5864	1981	74	3407
15	Ambalapuzha ..	30	1628	823	115	393
16	Sherthala ..	30	17551	1144	261	5889
17	Kuttanad ..	30	4999	1818	137	2666
	ALLEPPEY DISTRICT ..	181	56348	1463	..	24185

TABLE I—(contd.)

1	2	3	4	5	6	7
18	Changanacherry ..	22	2361	1610	100	1115
19	Kottayam ..	21	3234	1571	160	1490
20	Kanjirapalli ..	20	95	1781	113	50
21	Peerumade ..	..	..	..	..	..
22	Devikulam ..	..	..	..	..	..
23	Udumbanchola ..	..	..	..	..	..
24	Meenachil ..	27	4045	1793	100	2127
25	Vaikom ..	30	3454	1960	81	1986
	KOTTAYAM DISTRICT ..	120	13189	1750	..	6768
26	Muvattupuzha ..	30	12612	1500	84	5549
27	Thodupuzha ..	30	8963	1760	70	4627
28	Kunnathunad ..	30	16356	1623	56	7786
29	Alwaye ..	26	16927	1539	229	7641
30	Kanayannur ..	25	20161	1921	58	11359
31	Cochin ..	30	8269	1817	91	4407
32	Parur ..	15	7754	1314	124	2988
	ERNAKULAM DISTRICT ..	186	91042	1661	..	44357
33	Cranganore ..	18	1645	1583	121	764
34	Mukundapuram ..	25	19989	1388	218	8853
35	Trichur ..	21	20813	1329	112	8113
36	Talapally ..	9	34152	1362	62	13643
37	Chowghat ..	27	7536	1699	123	3755
	TRICHUR DISTRICT ..	100	84135	1424	..	35128
	TRAVANCORE-COCHIN REGION ..	871	336255	1632	..	160924
38	Chittur ..	30	56173	2164	128	35653
39	Alathur ..	28	50694	2230	271	33157
40	Palghat ..	21	53133	2510	138	39116
41	Ottapalam ..	30	46467	2065	129	28144
42	Perunthalmanna ..	27	47230	1773	120	24561
43	Ponnani ..	20	33069	1108	41	10747
	PALGHAT DISTRICT ..	156	286766	2038	..	171376

TABLE II—(contd.)

1	2	3	4	5	6	7
44	Tirur ..	25	49898	1722	162	25202
45	Ernad ...	29	54979	1853	143	29881
46	Kozhikode ..	30	20454	560	26	3360
47	Quilandy ..	27	32624	951	105	9100
48	Badagara ..	30	17059	761	38	3808
49	S. Wyanad ..	..	1306	1494	..	572
	KOZHIKODE DISTRICT ..	141	176320	1391	..	71923
50	Tellicherry ..	30	23978	1273	76	8953
51	Cannanore ..	30	23329	1313	129	8984
52	Taliparamba ..	30	22188	1150	50	7484
53	N. Wyanad ..	..	..	..	..	..
54	Hosdurg ..	30	37130	1619	104	17631
55	Kasargode ..	30	58681	1891	96	32547
	CANNANORE DISTRICT ..	150	165306	1559	..	75599
	MALABAR REGION ...	447	628392	1730	..	318900
	KERALA STATE ..	1318	964647	1696	9	479824
	Rounded to ..	..	964600	1696	..	479300

TABLE—II

Autumn (Kanni) crop of paddy 1959.

Estimated district-wise area and yield rate from Irrigated, Chemically manured, Combined and control Plots.

District.	Irrigated plots		Chemically Manured plots.		I + M plots		Neither I nor M plots		Total area (Acres)
	%	Area (Acres)	%	Area (Acres)	%	Area (Acres)	%	Area (Acres)	
1	2	3	4	5	6	7	8	9	10
Trivandrum	..	..	53.6	23839	32.7	14543	13.7	6093	44475
Quilon	..	..	62.9	29605	29.8	14026	7.3	3435	47066
Alleppey	..	..	42.2	23779	1.7	958	56.1	31611	56318
Kottayam	..	..	73.5	9694	11.4	1504	15.1	1991	13189
Ernakulam	1.1	1002	55.3	50346	16.4	14931	27.2	24763	91042
Trichur	..	..	31.4	26418	15.6	13125	53.0	44592	84135
Palghat	8.4	24090	49.1	140802	27.5	78860	15.0	43010	286766
Kozhikode	..	..	69.2	122013	10.9	19219	19.9	35088	176320
Cannanore	56.4	93233	41.0	67775	1.8	2976	0.8	1322	165306
State	12.3	118325	51.2	494271	15.2	160142	21.3	191905	964647

TABLE-II

Autumn (Kanni) crop of paddy 1959

Estimated district-wise area and yield rate from Irrigated, Chemically manured, Combined and control Plots.

District	Irrigated plots		Manured plots		I + M plots		Neither I nor M plots	
	No. of Sample experiments.	Mean yield/acre. (Paddy in lbs)	No. of sample experiments	Mean yield/acre (Paddy in lbs)	No. of sample experiments	Mean yield/acre (Paddy in lbs)	No. of sample experiments	Mean yield/acre (Paddy in lbs)
	11	12	13	14	15	16	17	18
Trivandrum	..	..	52	2128	50	2098	7	2392
Quilon	..	..	120	1739	45	1562	10	1362
Alleppey	..	..	106	1533	4	1854	71	1338
Kottayam	..	..	82	1819	25	1623	13	1519
Ernakulam	3	964	114	1706	48	1602	21	1676
Trichur	..	..	36	1439	25	1792	39	1362
Palghat	36	2193	65	1560	34	2311	21	1914
Kozhikode	..	..	88	1189	21	767	32	1328
Cannanore	30	1253	113	1507	4	1732	3	998
State	69	1442	776	1511	256	1910	217	1548

TABLE III.

Autumn (Kanni) crop of paddy 1959 in Kerala State.

Range—yield of dry paddy in lb./acre.	Frequency Distribution.	
	Number.	Percentage.
Below 500 ..	39	2.96
500- 699 ..	56	4.25
700- 899 ..	69	5.24
900-1099 ..	92	6.98
1100-1299 ..	129	9.79
1300-1499 ..	154	11.68
1500-1699 ..	162	12.29
1700-1899 ..	178	13.50
1900-2099 ..	156	11.83
2100-2299 ..	112	8.50
2300-2499 ..	73	5.54
2500-2699 ..	35	2.66
2700-2899 ..	23	1.75
2900-3099 ..	19	1.44
3100-3299 ..	9	0.68
3300-3499 ..	5	0.38
3500-3699 ..	5	0.38
3700-3899 ..	..	..
3900-4099 ..	..	..
4100 & above ..	2	0.15
Total ..	1318	100.00

TABLE IV.

Autumn (Kanni) crop of paddy 1959.

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

Source.	Sum of Squares.	Degrees of Freedom.	Variance.
Between Taluks ..	9760	49	199.2 *
Between Karas within Taluks..	5154	232	22.2 *
Within Karas within Taluk ..	9263	1036	8.9 *
Total ..	24177	1317	

*Denotes significance at 1% level,

TABLE—V
Percentage reduction due to Driage

Serial Number	Taluk	Percentage reduction
1	Neyyattinkara	4.17
2	Trivandrum	4.17
3	Nedumangad	4.55
4	Chirayinkil	4.55
5	Quilon	6.11
9	Kottarakara	5.93
7	Pathanapuram	5.63
8	Pathanamthitta	5.59
9	Kunnathur	6.77
10	Karunagapally	8.12
11	Karthikapally	5.70
12	Mavelikara	9.10
13	Chengannore	12.30
14	Thiruvalla	9.70
15	Kuttanad	9.30
16	Shertalai	4.90
17	Ambalapuzha	8.10
18	Changanacherry	7.00
19	Kottayam	10.00
20	Kanjirapally	7.50
21	Meenachil	8.75
22	Vaikom	5.70
23	Thodupuzha	7.90
24	Moovattupuzha	6.90
25	Kunnathunadu	6.30
26	Alwaye	7.40
27	Kanayannore	8.40
28	Cochin	8.40
29	Parur	5.60
30	Cranganore	4.25
31	Mukundapuram	4.58
32	Trichur	5.27
33	Talapally	3.31
34	Chowghat	4.06
35	Chittur	7.80
36	Alathur	8.30
37	Palghat	8.30
38	Ottapalam	7.60
39	Ponnani	8.30
40	Perinthalmanna	7.60
41	Tirur	6.00
42	Ernad	10.50
43	Kozhikode	13.78
44	Quilandy	6.70
45	Badagara	4.01
46	Tellisery	13.20
47	Cannanore	14.50
48	Taliparamba	11.50
49	Hosdurg	12.00
50	Kasargode	13.50

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