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GOVERNMENT OF KERALA

REPORT ON THE CROP CUTTING SURVEY  
ON  
WINTER AND SUMMER CROP OF PADDY ,  
1969

34

BUREAU OF ECONOMICS AND STATISTICS,  
TRIVANDRUM.

# CROP CUTTING SURVEY ON WINTER AND SUMMER

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## 1. Introduction:

This report deals with the results obtained through crop cutting surveys conducted during the Winter (Mundakan) and Summer (Punja) crops of paddy 1969 in the State. The report regarding the survey on Autumn (Virippu) crop of paddy 1968 has already been published. The important aspects of the survey are explained in the following paragraphs:-

## 2. Object of the Survey:

The object of the survey was to obtain precise estimates of mean yield of dry paddy per hectare in each taluk and also the total production of rice in the State during the Winter and Summer seasons 1969.

## 3. Period of the survey:

The survey on Winter crop was conducted during the months of December 1968 to February 1969 and that on the Summer crop during the months of February to June 1969.

## 4. Coverage:

There are 55 taluks in the State. The Survey on Winter Crop covered 53 taluks and that on Summer Crop 35 taluks. Over and above, information on area and yield rate were collected from 13 taluks where the Summer crop was newly raised.

## 5. Sampling Design:

The method of sampling used for both the surveys was a stratified multi-stage random sampling design. The taluk was taken as the stratum, a census village as the first stage unit, a survey sub-division 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. From each of these selected villages a systematic sample of three survey sub-division numbers was selected from the frame consisting of the cumulative number of the wet land survey sub-division. In survey sub-divisions having more than one kandom, one kandom was selected by the method of simple random sampling for the crop cutting experiments, after the kandom in the survey number were serially numbered beginning from the south-west corner and proceeding anti-clock-wise. 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. A sample of grain from every 6th plot harvested was forwarded to the District Statistical Officer for conducting drriage experiments for estimating the loss due to drriage.

#### 6. Sampling selection:

The selection of villages in each taluk was done by the District Statistical Officer and the list of selected villages was forwarded to the concerned Statistical Inspectors. The selection of plots was done by the Statistical Inspectors. The District Statistical Officer intimates the list of the selected villages to the Head Office and the Regional Office, National Sample Survey, Sasthamangalam, Trivandrum-10.

#### 7. Field Work:

The field work was attended to by the Investigators under the supervision of the Statistical Inspectors and District Statistical Officers.

Eventhough 903 experiments were planned during winter crop, only 819 experiments could be conducted. In summer, 464 experiments were conducted out of 553 experiments planned. The percentages of response were 91 and 84 during winter and summer crops respectively. The loss in the number of experiments was mainly due to the harvest of the selected plot prior to the dates fixed, without intimating the field staff. Inspections were carried out by the Officers of this Department at three stages (viz.) pre-harvest, at harvest and post-harvest stages. During the Winter crop 101 inspections were conducted at the pre-harvest stage 232 at harvest stage and 37 at post-harvest stage. As far as summer crop is concerned 75 inspections were conducted at pre-harvest stage, 150 at harvest stage and 34 at post-harvest stage. The percentage of inspection at harvest stage to total experiments conducted was 28% in summer season, winter and 32% in

#### 8. Result:

The analysis of data was done at the Headquarters Office of the Bureau of Economics and Statistics, Trivandrum. The final estimates are presented in the following tables:

Tables 1 to IV deal with winter crop and V to VIII deal with the summer crop.

(1) Taluk-wise figures relating to the number of experiments conducted, the area under the crop estimated, mean yield of dry paddy per hectare, its standard error and out-turn of cleaned rice for winter and summer crops are given in tables I and V respectively. During the year summer crop (third crop) was raised for the first time in 13 taluks. Crop cutting Survey could not be conducted in all these taluks since it was not possible to prepare a frame of the plots growing summer paddy in those taluks, as the area under the crop was small and was scattered. However an estimate of the area and production was obtained through local enquiry, which is given separately in table 5-A.

Compared to the corresponding seasons of the previous year, the average yield for the State during Winter 1969 and Summer 1969 increased by 2% and 3% respectively. Similarly the production of rice in the State during winter and summer 1969 increased by 14% and 23% respectively when compared to the corresponding seasons of the previous year. The increase in production is mainly on account of the increase in area under the Crop. During the year under review there was substantial increase in area under Mundakan and Punja Crops either by extending cultivation to dry land or by multiple cropping.

There was an increase of 53211 hectares in area under Mundakan (winter) paddy during 1969 compared to that of the previous year. The increase is mainly in Kozhikode, Palghat, Ernakulam and Kottayam Districts. The increase in area is largely due to the dry land cultivation of paddy in about 31,000 hectares, in the State which was not previously taken into account. Similarly there was an increase of 15230 hectares in the area under Punja, (summer) paddy. This increase in area is mainly in Trichur, Ernakulam and Kottayam District on account of multiple cropping.

(ii) During the winter crop 0.12% of experimental plots received irrigation only, 70% received chemical manures, 29.42% received both irrigation and chemical manure, and the remaining 0.48% got neither irrigation nor chemical manure. During summer crop 32.33% of the experimental plots received chemical manures 67.24% received both irrigation and manure and the remaining 0.43% was neither irrigated nor manured. The actual figures are given in tables II and VI.

(iii) Tables III and VII give the frequency distribution of plot yields of winter and summer crops respectively.

(iv) The analysis of variance of yield rates of winter and summer crops is given in tables IV and VIII respectively.

The results of driage experiments conducted during both the seasons are given in Table IX.

The yield rate of paddy in each taluk for the last 5 winter seasons is given in Table X and that during summer seasons is given in table XI for comparison.

9. Procedure of estimation:

(i) Mean yield: The mean yield of dry paddy and its standard error for each taluk are calculated by adopting the following formula:

$n_i$  = Number of cuts taken in the  $i^{th}$  village

( $i = 1, 2, \dots, K$  where  $K$  is the number of villages selected in the taluk)

$x_{ij}$  = Weight of paddy taken from  $j^{th}$  cut in the  $i^{th}$  village/kara.

( $j = 1, 2, \dots, n_i$ )

$$\text{Taluk mean} = \bar{x} = \frac{K}{\sum_{i=1}^K} \frac{n_i}{\sum_{j=1}^{n_i}} \times \frac{\sum_{j=1}^{n_i} x_{ij}}{n_i}$$

Each cut is taken from 1/400<sup>th</sup> of a hectare.

Mean yield of dry paddy in Kgm./Hect. =  $\bar{x} \times 400 \times d$

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

(ii) Standard error: (S.E.) of the taluk mean yield:

A = Mean square within in Kara

B = Mean square between karas

N = Total number of experiments  $\frac{\sum_{i=1}^k n_i}{i=1}$  in the taluk.

$n_i$  = Number of experiments in the  $i^{th}$  village/kara

Let  $m = \frac{N^2 - \sum n_i^2}{N(k-1)}$  where  $k$  is the number of village selected in the taluk. Variance of the taluk mean yield

$$= \frac{A}{N} + \frac{B-A}{m} \times \frac{\sum n_i^2}{N^2}$$

The standard error (S.E.) is the square root of this variance. The Standard Error in Kgms./hectare is obtained by multiplying this root of variance with 400.

(iii) Standard Error of the State mean yield:

If  $a_i$  is the area under the crop in the  $i$ th taluk and  $S_i$  the standard error of the estimate in the taluk. Standard Error for the state Mean Yield

$$\sqrt{\frac{(\sum a_i s_i)^2}{(\sum a_i)^2}}$$

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

11. Both State series and I.A.D.P. Series of experiments were conducted in Alleppey and Palghat Districts during winter season and only in Alleppey District during summer season. Summer paddy is not cultivated in the package area of Palghat District. The results obtained from the two series of experiments were pooled together and the mean yield of dry paddy per hectare was estimated as detailed below:

12. The pooling of the estimate is done using the following method.

(1) If  $y^1 + y^2$  denote the average yield per hectare for the I.A.D.P. and State series with  $V_1$  and  $V_2$  as their sampling variances respectively, then the combined estimates of the average yield will be calculated as:

$$Y = \frac{\frac{1}{V_1} y^1 + \frac{1}{V_2} y^2}{\frac{1}{V_1} + \frac{1}{V_2}} = \frac{v_2 y^1 + v_1 y^2}{v_1 + v_2}$$

(2) Procedure to find out the standard error (S.E.) of the combined estimate:

If  $V_1$  and  $V_2$  denote the sampling variances for the estimates of the average yield for the I.A.D.P. and State series respectively, the standard error for the combined estimate will be

$$\sqrt{\frac{1}{\frac{1}{V_1} + \frac{1}{V_2}}}$$

13. The yield obtained through the two series and the pooled estimate are given below:

District	Mundakan 1969		Punja 1969		
	State series	I.A.D.P. Pooled	State	IADPs	Pooled
Alleppey	1723	1865	1777	2960	303 3026
Palghat	2666	2976	2925	..	.. ..

The production of rice during winter 1969 as per the pooled estimates is 26831 tonnes in Alleppey district and 171921 tonnes in Palghat District. The corresponding figures obtained through State series are 26023 tonnes in Alleppey and 156712 tonnes in Palghat District. The production of rice during summer 1969 as per the pooled estimate is 82911 tonnes in Alleppey District while that for State series is 81100 tonnes.

14. The total production of rice in the State according to the pooled estimate during the agricultural year 1968-69 is 1251354 tonnes as given below:-

Autumn crop 1968	..	521258	tonnes
Winter crop 1969	..	571748	,,
Summer crop 1969	..	158348	,,
		-----	
Total	..	1251354	,,
		-----	

15. For the purpose of comparison the estimates of area under paddy, yield rate and production of cleaned rice during the different seasons of the past five years are given in the Statement 'A'.

Trivandrum,  
31--10--69.

ADDITIONAL DIRECTOR

**STATEMENT A**

Area mean yield and production of rice in Kerala State during 1964-65 to 1968-'69.

(Pooled estimate of state series and I.A.D.P. series of experiments)

Agri-cultural year	Autumn (viripipi) crop			Winter (Mundakan) crop			Summer (Punja) crop			Total		
	2	3	4	5	6	7	8	9	10	11	12	13
	Area in Hectares	Mean yield of dry paddy Kg./Hect.	Production of rice in tonnes	Area in Hectares	Mean yield of dry paddy Kg./Hect.	Production of rice in tonnes	Area in Hectares	Mean yield of dry paddy Kg./Hect.	Production of rice in tonnes	Area in Hectares	Mean yield of dry paddy Kg./Hect.	Production of rice in tonnes
1964-65	395189	1906	494816	329010	2357	509555	76922	2315	117012	801121	2130	1121383
1965-66	398012	1996	521850	327879	1810	389345	76438	1708	85794	802329	1892	997489
1966-67	395093	1913	433163	327190	2192	471114	77175	2264	114788	799438	2064	1084062
1967-68	398993	1987	521023	327409	2185	470101	83142	2431	132773	809544	2113	1123897
1968-69	394879	2009	521258	380620	2286	571748	98372	2450	158348	873871	2179	1251354



Table 1

Winter crop of paddy 1969

Taluk & District	No. of experi- ments	Area in Hect.	Mean yield of dry paddy Kg/H.	S.E. of mean yield	Production of rice in tonnes
1	2	3	4	5	6
1 Neyyattinkara	18	6128	2649	204	10665
2 Trivandrum	18	4392	2275	190	6565
3 Nedumangad	15	5043	1871	284	6199
4 Chirayinkil	15	4717	2068.	193	6409
TRIVANDRUM DISTRICT	66	20280	2239	112	29838
5 Quilon	18	4760	2164	228	6768
6 Kottarakara	18	6766	2360	322	12714
7 Kunnathur	11	5614	3534	359	13035
8 Pathanapuram	18	4795	3068	180	9665
9 Pathanamthitta	16	2453	2805	199	4521
10 Karunagappally	17	4721	2074	143	6433
QUILON DISTRICT	98	29109	2778	156	53136
11 Karthigappally	14	5890	1680	88	6501
12 Mavelikara	14	5498	1897	136	6853
13 Chengannur	15	2464	2212	204	3581
14 Thiruvella	15	2872	2384	205	4498
15 Kuttanad	..	..	..	..	..
16 Ambalapuzha	16	2211	1093	173	1588
17 Sherthallai	15	4047	1129	141	3002
ALLEPPY DISTRICT	89	22982	1723 (1777)	60 (47)	26023* (26831)
18 Changanacherry	18	1488	2573	232	2516
19 Kanjirappally	10	143	1561	331	147
20 Peermade	3	90	3670	..	217
21 Kottayam	18	6742	2280	345	10099
22 Vaikom	16	7175	2194	253	10342
23 Meenachil	15	2825	2546	164	4725
24 Deviculam	9	4325	3037	286	8630
25 Udumbanchola	3	1767	4474	..	5194
KOTTAYAM DISTRICT	92	24555	2595	132	41870
26 Thodupuzha	16	3488	2745	244	6291
27 Moovattupuzha	17	10834	2368	179	16855
28 Cochin	..	..	..	..	..
29 Kanayannur	14	4645	1722	324	5255
30 Kunnathunad	14	11532	2453	364	18585
31 Alwaye	13	9937	2553	213	16667
32 Parur	14	2051	1344	206	1811
ERNAKULAM DISTRICT	88	42487	2345	127	65464

	1	2	3	4	5	6
33. Cranganore	16	1491	1221	313	1196	
34. Mukundapuram	16	16804	-1775	244	19596	
35. Trichur	17	18246	2247	168	27176	
36. Thalappally	18	16843	2296	155	25408	
37. Chowghat	14	8115	1166	77	6217	
TRICHUR DISTRICT	81	61499	1970	94	79593	
38. Chittur	18	21713	2837	420	40471	
39. Alathur	16	18005	3262	598	38587	
40. Palghat	17	15721	2420	362	24996	
41. Ottappalam	14	11495	2261	203	17075	
42. Perinthalmanna	18	11606	2056	171	15677	
43. Ponnani	15	10922	2774	284	19906	
PALGHAT DISTRICT	98	89462	2666 (2925)	177 (71)	156712 (171921)	
44. Tirur	18	13727	1491	289	13447	
45. Ernad	18	13728	1572	196	14178	
46. Kozhikode	18	9406	1720	172	10629	
47. Quilandy	18	6400	1322	134	5559	
48. Badagara	18	3185	1114	140	2331	
49. South Wynad	18	14785	2265	168	22002	
KOZHIKODE DISTRICT	108	61231	1694	93	68146	
50. North Wynad	18	9194	2287	132	13815	
51. Tellicherry	16	3517	1027	118	2273	
52. Cannanore	18	1572	1731	225	11788	
53. Taliparamba	16	5887	1696	236	6589	
54. Hosdurg	14	4254	1706	281	4768	
55. Kasargode	17	4591	1872	161	5646	
CANNANORE DISTRICT	99	29015	1833	82	34949	
STATE	819	380620	2222 (2286)	51 (35)	555731 (571748)	

Final estimates by combining state series and I.A.D.P. series of experiments are given in brackets.

Table II

Winter crop of paddy 1959 in Kerala State

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./Hect.	Number of experiments	Mean yield of dry paddy in Kgs./Hect.	Number of experiments	Mean yield of dry paddy in Kgs./Hect.	Number of experiments	Mean yield of dry paddy in Kgs./Hect.
1	2	3	4	5	6	7	8	9
Trivandrum	..	..	36	2221	30	2261	..	..
Quilon	..	..	94	2727	4	2035	..	..
Alleppey	..	..	77	1685	8	2581	4	637
Kottayam	..	..	56	2363	36	2653	..	..
Ernakulam	..	..	60	2224	28	2167	..	..
Trichur	..	..	49	1548	32	2128	..	..
Palghat	..	..	44	2163	54	2958	..	..
Kozhikode	..	..	77	1548	31	1654	..	..
Cannanore	1	1371	80	1748	18	1723	..	..
STATE	1	1371	573	2028	241	2336	4	637

Table III

Winter crop of paddy 1969  
Frequency distribution of plot yields

Sl. No.	Range of yield of paddy in Kgs./Hect.	Frequency distribution	Percentage
1	2	3	4
1	Below - 500	31	3.73
2	500 - 699	11	1.34
3	700 - 899	27	3.30
4	900 - 1099	38	4.64
5	1100 - 1299	67	8.18
6	1300 - 1499	54	6.59
7	1500 - 1699	78	9.52
8	1700 - 1899	55	6.72
9	1900 - 2099	70	8.55
10	2100 - 2299	62	7.57
11	2300 - 2499	56	6.84
12	2500 - 2699	52	6.35
13	2700 - 2899	58	7.08
14	2900 - 3099	57	6.96
15	3100 - 3299	23	2.81
16	3300 - 3499	22	2.69
17	3500 - 3699	9	1.10
18	3700 - 3899	19	2.32
19	3900 - 4000	12	1.46
20	4100 - Above	28	3.42
	ALL	819	100.00

Table IV

Winter crop of paddy 1969.

Analysis of variance of plot yield pooled for the State in Kgs.<sup>2</sup> plot of 1/400 of an hectare.

Source of variation	Sum of squares	Degrees of freedom	Variance
Between Taluk	2047.42	50	40.95*
Between kara within taluk	1550.48	249	6.23*
Within kara within taluk	1828.88	514	3.56
All	5426.78	813	..

\* Significant at 1% level

Table V

Summer crop of paddy 1969

Sl. No.	Taluk and District	No. of experiments	Area in hect-ares	Mean yield of dry paddy Kg/Hec.	S.E. of mean yield	Production of rice in tonnes
1	2	3	4	5	6	7
1	Trivandrum	5	344	1297	113	293
2	Nedumangad	13	97	1097	285	70
3	Chirayinkil	16	227	956	206	143
	Trivandrum District	34	668	1153	100	506
4.	Quilon	18	384	1640	196	414
5	Kottarakara	2	66	2788	..	121
6	Kunnathur	13	155	1579	207	161
7	Fathanamthitta	4	77	1607	838	81
8	Karunagappally	16	520	1122	140	383
	Quilon District	53	1202	1469	106	1160
9	Karthigappally	14	3543	2016	222	4693
10	Mavelikara	14	4357	2153	148	6177
11	Chengannore	14	2191	2671	270	3845
12	Thiruvella	15	3037	3044	364	6074
13	Kuttanad	15	24700	3378	494	54818
14	Ambalapuzha	14	3876	2157	477	5493
	Alleppey District	86	41704	2960 (3026)	298 (76)	81100 (82911)
15	Chenganacherry	17	3553	3103	430	7239
16	Kottayam	17	11171	2219	347	26286
17	Vaikom	15	2339	2162	348	3322
18	Meenachil	5	440	2023	122	585
	Kottayam District	54	17503	2385	243	27432
19	Moovattupuzha	16	504	1489	142	493
20	Kanayannore	3	367	1718	474	415
21	Kunnathunad	16	1911	1412	291	1773
22	Alwaye	16	3791	2164	220	5390
23	Parur	12	3876	2070	103	5271
	Ernakulam District	63	10449	1943	105	13342
24	Cranganore	4	36	1364	386	32
25	Mukundapuram	17	6267	1628	346	6703
26	Trichur	15	5674	2672	226	9961
27	Thalappally	17	1231	2155	402	1743
28	Chowghat	16	1170	1302	150	1001
	Trichur District	69	14378	2058	179	19440

1	2	3	4	5	6	7
29	Ponnani	17	3203	1234	119	2597
	Palghat District	17	3203	1234	119	2597
30	Trichur	10	1741	1466	179	1677
31	Kozhikode	6	227	2168	919	323
32	South Wynad	18	1487	2815	261	2750
	Kozhikode District	34	3455	2092	156	4750
33	North Wynad	18	494	1436	274	466
34	Hosdurg	18	494	2014	310	654
35	Kasargod	18	1656	1840	291	2002
	Cannanore District	54	2644	1797	198	3122
	STATE	494	95206	2453 (2482)	141 (64)	153449 (155260)

\* Final estimates obtained by continuing State series and I.A.D.P. series experiments are given in bracket.

Table V(A)

Estimated area and production of summer crop of paddy  
1969 in taluks where crop cutting survey was  
not conducted

Sl. No.	Taluk	Area in Hect - ares.	Mean yield of dry paddy in Kgs./Hect.	Production of rice in tonnes
1	2	3	4	5
1	Neyyattinkara	180	1153	137
2	Pathanapuram	150	1469	145
3	Devicolum	15	2385	24
4	Udumbanchola	6	2385	9
5	Chittur	264	1234	214
6	Alathur	88	1234	72
7	Palghat	80	1234	65
8	Ottappalam	409	1234	332
9	Perinthalmanna	1041	1234	844
10	Ernad	523	2092	719
11	Quilandy	161	2092	221
12	Badagara	60	2092	83
13	Tellicherry	189	1797	223
		3166	..	3088

Concerned district yield rates are adopted in taluks where the crop cutting survey was not conducted.



Table VI

Summer crop of paddy 1969 in Kerala State

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

Name of District	Irrigated plots		Chemically manured plots		Irrigated & manured plots		Neither irrigated nor manured plots	
	No. of experiments	Mean yield of dry paddy in Kg./Hect.	No. of experiments	Mean yield of dry paddy in Kg./Hect.	Number of experiments	Mean yield of dry paddy in Kg./Hect.	Number of experiments	Mean yield of dry paddy in Kg./Hect.
1	2	3	4	5	6	7	8	9
Trivandrum	..	..	24	1000	10	1252	..	..
Quilon	..	..	20	1478	33	1555	..	..
Alleppey	..	..	30	2763	56	2489	..	..
Kottayam	..	..	17	2353	37	2520	..	..
Ernakulam	..	..	3	1294	60	1793	..	..
Trichur	..	..	1	4438	68	1869	..	..
Palghat	..	..	..	..	17	1234	..	..
Kozhikode	..	..	15	2553	17	2020	2	2756
Cannanore	..	..	40	1638	14	2109	..	..
STATE	..	..	150	1924	312	1980	2	2756

Table VII

Summer crop of Paddy 1969  
 Frequency distribution of plot yield

Sl. No.	Range of yield of paddy in Kgs./Hect.	Frequency distribution	Percentage
1	Below 500	24	5.17
2	500 - 699	16	3.45
3	700 - 899	26	5.60
4	900 - 1099	20	4.31
5	1100 - 1299	41	8.84
6	1300 - 1499	33	7.11
7	1500 - 1699	50	10.76
8	1700 - 1899	45	9.70
9	1900 - 2099	38	8.19
10	2100 - 2299	38	8.19
11	2300 - 2499	21	4.53
12	2500 - 2699	21	4.53
13	2700 - 2899	23	4.96
14	2900 - 3099	13	2.80
15	3100 - 3299	10	2.16
16	3300 - 3499	13	2.80
17	3500 - 3699	5	1.08
18	3700 - 3899	3	0.65
19	3900 - 4099	2	0.43
20	4100 & above	22	4.74
	All	464	100.00

Table VIII

## Summer crop of Paddy 1969

Analysis of variance of plot yield pooled for the State  
in Kgs.<sup>2</sup> plot of 1/400 of an hectare

Source of variation	Sum of squares	Degrees of freedom	Variance
Between taluk	1140.03	33	34.55*
Between kara within taluk	1284.08	142	9.04 *
Within kara within taluk	1349.99	287	4.70
ALL	3774.10	462	

\* Significant at 1% level

Table IX

The results of driage experiments

Sl. No.	Name of taluk	Winter crop of paddy 1969		Summer crop of paddy 1969	
		No. of experiments	Driage ratio (percentage)	No. of experiments	Driage ratio (percentage)
1	2	3	4	5	6
		3	86.9	..	..
1	Neyyattinkara	3	91.6	1	86.0
2	Trivandrum	3	88.4	3	78.8
3	Nedumangad	3	89.3	3	70.4
4	Chirayinkil	3	94.4	3	8.20
5	Quilon	3	92.5	..	..
6	Kottarakkara	1	94.0	1	81.2
7	Kunnathur	3	94.8	..	..
8	Pathanapuram	3	91.9	1	92.8
9	Pathanamthitta	3	90.5	2	82.0
10	Karunagapally	2	89.0	2	93.0
11	Karthigappalley	2	90.0	2	93.0
12	Mavelikara	2	95.5	2	92.6
13	Changanmur	3	90.7	2	92.8
14	Thiruvalla	-	-	3	91.3
15	Kuttanad	2	92.0	2	93.6
16	Ambalapuzha	3	89.3	..	..
17	Sherthallai	3	88.0	3	91.3
18	Changanacherry	2	89.5	..	..
19	Kanjirappalley	..	..	..	..
20	Peermade	3	88.5	2	91.7
21	Kottayam	3	90.5	3	94.0
22	Vaikom	1	96.0	..	..
23	Devikulam	3	92.5	..	..
24	Meenachil	1	94.0	..	..
25	Udumbanchola	3	90.9	..	..
26	Thodupuzha	3	90.4	2	87.0
27	Muvattupuzha	..	..	..	..
28	Cochin	1	92.0	..	..
29	Kanayannur	3	86.0	3	89.6
30	Kunnathur	2	88.4	3	87.7
31	Alwaye	2	88.2	2	88.0
32	Parur	3	87.7	1	90.0
33	Changanmur	2	91.3	3	85.3
34	Mukundapuram				

1	2	3	4	5	6
			86.0	3	89.3
35 Trichur		3	92.6	3	90.7
36 Thalappally		3	90.0	3	94.6
37 Chowhat		2	92.0	..	..
38 Chittur		3	94.6	..	..
39 Alathur		3	91.0	..	..
40 Palghat		3	93.9	..	..
41 Ottappalam		3	91.3	..	..
42 Perinthalamanna		3	94.1	3	96.4
43 Ponnani		3	94.1	2	94.0
44 Tirur		3	94.0	..	..
45 Ernad		3	93.9	1	96.8
46 Kozhikode		3	94.7	..	..
47 Quilandy		3	94.1	..	..
48 Badagara		3	95.2	3	95.5
49 South Wynaad		3	87.3	3	87.8
50 North Wynaad		3	87.3	..	..
51 Tellicherry		3	88.7	..	..
52 Cannanore		3	88.7	..	..
53 Taliparamba		2	90.0	3	90.7
54 Hosdurg		3	90.7	3	93.3
55 Kasargode					

Table X

Mean yield of dry paddy in Kgs./Hect. during winter paddy

Taluk & District	1965 Winter Kg./Hect.	1966 Winter Kg./Hect.	1967 Winter Kg./Hect.	1968 Winter Kg./Hect.	1969 Winter Kg./Hect.
1	2	3	4	5	6
1 Neyyattinkara	2619	1914	2150	2146	2649
2 Trivandrum	2583	1749	2037	2659	2275
3 Nedumangad	2185	2406	2320	2540	1871
4 Chirayinkil	2494	1552	1871	2348	2078
TRIVANDRUM DISTRICT	2472	1913	2101	2407	2239
5 Quilon	2015	1441	1698	2020	2164
6 Kottarakkara	2401	2000	2689	2975	2860
7 Kunnathur	2973	1720	2287	2448	3534
8 Pathanapuram	2815	2639	2519	3068	3068
9 Pathanamthitta	2891	2678	2781	2710	2805
10 Karunagappally	1913	1630	1924	1587	2074
QUILON DISTRICT	2467	1929	2292	2463	2778
11 Karthigappally	2228	1696	1633	2253	1680
12 Mavelikara	2559	1752	2418	1915	1897
13 Chengannur	2448	2601	2451	1740	2212
14 Thiruvalla	2570	1769	1669	1590	2384
15 Kuttanad	..	..	..	..	..
16 Ambalapuzha	1283	9600	992	1771	1093
17 Sherthallai	977	923	1078	649	1129
ALLEPPEY DISTRICT	2113	1649	1767	1776	1723
18 Changanacherry	1959	1209	2010	2115	2573
19 Kanjirappally	2090	2434	2335	2365	1561
20 Peermada	4048	1785	1840	3291	3570
21 Kottayam	2299	1532	2203	1883	2280
22 Vaikom	2085	1136	2012	1564	2194
23 Meenachil	2127	1581	1440	1858	2546
24 Deviculam	2086	1076	2731	1851	3037
25 Udumbanchola	2594	2707	2878	2614	4474
KOTTAYAM DISTRICT	2163	1334	2062	1783	2595

	1	2	3	4	5	6
26 Thodupuzha		2292	1707	2006	2212	2745
27 Moovattupuzha		2138	1943	2402	2374	2368
28 Cochin						
29 Kanayannur		1669	1516	1553	1780	1722
30 Kunnathunad		2055	1733	2154	1822	2453
31 Alwaye		2362	1875	2164	2142	2553
32 Parur		1868	1284	1849	1803	1344
<b>ERNAKULAM DISTRICT</b>		2109	1760	2116	2051	2345
33 Cranganore		1860	1214	1582	1314	1221
34 Mankundapuram		2055	1638	2115	1943	1775
35 Trichur		2096	2020	2063	2680	2267
36 Thalappally		2345	2012	2080	2148	2296
37 Chowghat		2122	1358	1421	1322	1166
<b>TRICHUR DISTRICT</b>		2152	1806	1984	2122	1970
38 Chittur		2911	2088	2983	2665	2837
39 Alathur		3228	2368	3414	3043	3262
40 Palghat		3185	2669	3215	2828	2420
41 Ottappalam		2554	1914	2434	2286	2261
42 Perinthalmanna		2664	2090	2562	2311	2056
43 Ponnani		2275	1583	1604	1677	2774
<b>PALGHAT DISTRICT</b>		2890	2203	2886	2602	2666
44 Tirur		1658	998	1538	1458	1491
45 Sernad		1639	1772	1832	2251	1572
46 Kozhikode		2303	1573	2110	1551	1720
47 Quilandy		1037	1055	1341	1120	1322
48 Badagara		1513	1037	1221	1194	1114
49 South Wynad		2871	1741	1793	1878	2265
<b>KOZHIKODE DISTRICT</b>		2062	1532	1747	1811	1694
50 North Wynad		1843	1443	1719	2133	2287
51 Tellicherry		1614	1000	1337	1663	1027
52 Cannanore		1217	1163	1282	1726	1731
53 Taliparamba		1529	1254	1679	1603	1696
54 Hosdurg		2225	1368	1723	1578	1706
55 Kasargode		2594	2125	2414	1728	1872
<b>CANNANORE DISTRICT</b>		1870	1433	1758	1791	1833
<b>STATE:</b>		2327	1808	2187	2168	2222

Table XI

Yield of dry paddy in Kilograms/Hectares during summer crop of paddy

Taluk & District	1965 Summer Kg./Hect.	1966 Summer Kg./Hect.	1967 Summer Kg./Hect.	1968 Summer Kg./Hect.	1969 Summer Kg./Hect.
1	2	3	4	5	6
1 Trivandrum	..	..	1226	1454	1297
2 Nedumangad	..	..	..	2423	1097
3 Chirayinkil	..	..	..	1549	966
TRIVANDRUM DISTRICT	..	..	1226	1627	1153
4 Quilon	1849	1659	1725	1955	1640
5 Kottarakkara	2578	1419	2099	2615	2788
6 Kunnathur	2897	2148	2168	2207	1579
7 Pathanamthitta	1389	2126	2023	1678	1607
8 Karunagappally	1771	1785	1311	1459	1122
QUILON DISTRICT	1992	1803	1714	1885	1469
9 Karthigappally	2230	1452	2214	2351	2016
10 Mavelikara	2334	2246	2728	2297	2158
11 Chengannur	2688	1990	2533	1616	1671
12 Thiruvalla	2661	1704	2256	2344	3044
13 Kuttanad	2868	1796	2503	2861	3378
14 Ambalapuzha	1561	1036	1625	2224	2157
ALLEPPEY DISTRICT	2601	1742	2402	2598	2960
15 Changanacherry	2237	1208	2146	2174	3101
16 Kottayam	2160	1467	2196	1824	2219
17 Vaikom	1455	1364	2247	2365	2162
18 Meenachil	2416	832	1638	2066	2023
KOTTAYAM DISTRICT	2149	1395	2181	1930	2385
19 Muvattupuzha	1540	1961	1600	2058	1489
20 Kanayannore	..	..	3713	2252	1718
21 Kunnathnad	2014	1666	1849	1895	1412
22 Alwaye	1864	1524	1858	2225	2164
23 Parur	1714	2312	2063	2075	2070
ERNAKULAM DISTRICT	1776	2090	2093	2054	1943
24 Cranganore	2053	2030	1469	1851	1364
25 Mukundapuram	1927	2215	1670	1967	1628
26 Trichur	1942	1564	2229	2796	2672
27 Thalappally	2671	2832	2175	3395	2155
28 Chowghat	1229	1464	2001	2805	1302
TRICHUR DISTRICT	1940	1938	2008	2605	2058



	1	2	3	4	5	6
29 Ponnani		1809	2094	1674	2254	1234
PALGHAT DISTRICT		1809	2094	1674	2254	1234
30 Tirur		1595	1912	1627	2274	1466
31 Kozhikode		::	::	::	::	2168
32 Wouth Wynai		::	::	::	::	2815
KOZHIKODE DISTRICT		1595	1912	1627	2274	2092
33 North Wynad		1085	987	812	1378	1436
34 Hesdurg		2125	1467	2198	1605	2014
35 Kasargoda		1930	1314	1878	2162	1840
CANNANORE DISTRICT		1556	1314	1546	1503	1797
STATE		2317	1733	2230	2377	2453

1-70/350.

