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MENT OF KERALA

**“REPORT ON THE TREND  
IN TALUK YIELD RATES  
OF PADDY”**

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STUDY ON THE  
TREND IN TALUK YIELD RATES OF PADDY

DESIGN SURVEYS & STUDIES DIVISION  
DEPARTMENT OF ECONOMICS & STATISTICS  
1984.

P-R-E-F-A-C-E.

The Design, Surveys and Studies Division of the Department conducted an analytical study of the yield rates of paddy in the different taluks of the State over the period from 1972-1981. The findings of the study are given in this report. One of the important findings of the study is that the number of experiments are to be increased in taluks where the standard error is found to be very high. The analysis was done by Sri N.V. George, Joint Director of the Design, Surveys and Studies Division.

Department of Economics and  
Statistics, Trivandrum,

Dated / --9--1984.

N. GEORGE JOHN  
DIRECTOR.

# A STUDY ON THE TREND IN TALUK WISE YIELD

## A STUDY ON THE TREND IN TALUK WISE YIELD RATES OF RATES OF PADDY.

### Introduction:

Crop Cutting Surveys in Paddy are conducted regularly by the Department of Economics and Statistics for the three crop seasons viz. Autumn, Winter and Summer. The yield estimates are prepared on the basis of the results of these Surveys. The production of dry paddy at the taluk, district and State levels are estimated for each season.

In this paper a study of the trend in yield rates of paddy at taluk level is attempted.

### 1. Sampling design.

A stratified multistage random sampling design is adopted for the crop cutting survey. Taluk is treated as the stratum, revenue 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 sample unit. From 1975-76 onwards crop cutting survey is conducted in the villages selected for area estimation surveys. Upto 1975-76, Karas/Census villages were the first stage units which were selected specifically for this purpose.

### 2. Procedure of estimation of mean yield.

The simple average of the yield in various selected plots of a taluk is taken as the taluk mean yield. The yield rate of dry paddy per hectare is worked out by multiplying the taluk mean yield per plot by 400 and the dridge factor. For finding out the dridge factor, dridge experiments are conducted on 3 samples of harvested produce in a taluk.

### 3. Variation in mean yield.

The average yield estimated as given in the previous paragraph is available taluk-wise and season-wise. In this paper, the data for the period 1972-81 have been used. In Table I in the appendix, the state average yield rates are given. From this table, it can be seen that there is an increase in yield rate during Autumn season. In the case of Winter season there was increase only during 1973, from 1974 onwards a declining trend is noticed. In the case of summer season, the yield rates show considerable decline trend compared to 1972. But the summer yield rates are higher compared to the other two seasons in all the years.

The taluks can be classified into two, based on the average yield rate. The first category of taluks consists of those having yield rates higher than the state average yield in most of the years 1972-81. The second category of taluks have yield rates lower than the state average yield. The names of taluks coming in the first category during each season is given below:-

Contd.....

AutumnWinterSummer

1. Neyyattinkara
2. Trivandrum
3. Pathanapuram
4. Pathanamthitta
5. Chengannur
6. Kuttanad
7. Changanacherry
8. Kanjirappally
9. Kottayam
10. Meenachil
11. Devicolum
12. Udumbanchola
13. Thodupuzha
14. Kothamangalam
15. Muvattupuzha
16. Chittur
17. Alathur
18. Palghat
19. Perinthalmanna

1. Kottarakkara
2. Kunnathur
3. Pathanapuram
4. Pathanamthitta
5. Chengannur
6. Thiruvalla
7. Kuttanad
8. Changanacherry
9. Kottayam
10. Meenachil
11. Peermade
12. Devicolum
13. Udumbanchola
14. Thodupuzha
15. Chittur
16. Alathur
17. Palghat
18. South Wynaad

1. Karthigappally
2. Mavelikkara
3. Chengannur
4. Thiruvalla
5. Kuttanad
6. Changanacherry
7. Kottayam
8. Thalappilly
9. Palghat

From the above, it can be seen that only the five taluks of Chengannur, Kuttanad, Changanacherry, Kottayam and Palghat have yield rates higher than the state average during all the three seasons.

The taluk-wise yield rates during the period 1972-81 are given in Tables 2 to 4 for the seasons Autumn, Winter and Summer seasons separately. The figures given in the tables show that the following taluks had yield rates higher than the state yield rates during the years noted against them.

Taluk.	No. of years in which taluk yield rate is higher than state yield rate.		
	Autumn	Winter	Summer
1	2	3	4
1. Neyyattinkara	9	3	Nil
2. Trivandrum	8	3	"
3. Nedumangad	Nil	3	"
4. Chirayinkil	3	8	"
5. Quilon	1	5	"
6. Kottarakkara	3	8	"
7. Kunnathur	3	7	"
8. Pathanapuram	8	10	"
9. Pathanamthitta	6	9	"
10. Karunagappally	4	1	Nil
11. Karthigappally	4	Nil	9
12. Mavelikkara	2	1	7
13. Chengannur	5	8	10
14. Thiruvalla	2	8	7
15. Kuttanad	5	5	10
16. Ambalapuzha	3	1	7
17. Shertallai	1	Nil	Nil

	1	2	3	4
18. Changanacherry	8		8	10
19. Kanjirappally	7		3	Nil
20. Kottayam	6		8	7
21. Vaidikom	3		1	Nil
22. Meenachil	9		9	5
23. Peermade	1		9	1
24. Devicollam	6		5	Nil
25. Udumbanchola	3		10	Nil
26. Thodupuzha	6		5	Nil
27. Kothamangalam	5		3	Nil
28. Muvattupuzha	6		5	Nil
29. Cochin	3		Nil	Nil
30. Kanyakannur	Nil		Nil	1
31. Kunnathunad	5		1	Nil
32. Alwaye	4		2	Nil
33. Parur	2		1	Nil
34. Cranganore	Nil		Nil	1
35. Mukundapuram	"		1	1
36. Trichur	"		1	1
37. Thalappilly	"		2	6
38. Chavakkad	"		1	4
39. Chittur	9		10	4
40. Alsthur	9		10	4
41. Palghat	9		10	8
42. Ottappalamerry	Nil		4	2
43. Mannarghatilly	4		3	Nil
44. Perinthalmanna	3		1	2
45. Ponnani	3		3	6
46. Tirur	2		2	6
47. Ernad	Nil		Nil	Nil
48. Kozhikode	"		"	3
49. Quilandy	"		"	1
50. Badagara	"		"	2
51. South Wynad	"		7	Nil
52. North Wynad	1		4	2
53. Tellicherry	Nil		Nil	Nil
54. Cannanore	1		"	"
55. Taliparamba	2		"	"
56. Hosdurg	2		1	3
57. Kasargode	4		2	1

It is noticed from the above that generally taluks in Trichur, Kozhikode and Cannanore districts have lower yield rates during the Autumn and Winter seasons. During the summer season, taluks in Trivandrum, Quilon, Kottayam, Idukky, Ernakulam and Cannanore districts have lower yield rates. Ernad and Tellicherry taluks have yield rates lower than state average yield rates in all these years in the three seasons. Nedumangad, Shortallai, Kanyakannur, Cranganore, Kozhikode, Quilandy, Badagara, South Wynad, Cannanore and Taliparamba taluks have comparatively low yield rates during two out of the three seasons.

# Index of Variation

4. ~~Table 1~~

The changes in State yield rates compared to the 1972 yield rates are given as index of variation in Table 1. The yield rates of Autumn season has increased by 14% in 1980 compared to 1972 yield rates. In the years 1973 to 1979, the increase was not uniform. There was fall in yield during 1974 and 1976.

The winter yield rates remained more or less steady around the 1972 rate with a decline of 15% during 1974. In 1981 the yield rate was 99% of the yield rate in 1972.

In the summer season, the yield rates showed considerable decline during the period 1973-81. The yield rate of 1981 was only 83% of the 1972 yield rate.

The taluk-wise indices for the 3 seasons are given in tables 5 to 7. The names of taluks which have shown 14 or more percent increase in 1980 over 1972 rate during autumn season are given below:-

- |                   |                 |
|-------------------|-----------------|
| 1. Nedumangad     | 12. Vaikom      |
| 2. Cullon         | 13. Thalappilly |
| 3. Kottarekkara   | 14. Chavakkad   |
| 4. Kunnathur      | 15. Chittur     |
| 5. Pathanapuram   | 16. Palghat     |
| 6. Pathanamthitta | 17. Ottappalam  |
| 7. Karthigappally | 18. Mannarghat  |
| 8. Mavelikkara    | 19. Kozhikode   |
| 9. Kuttanad       | 20. Tellicherry |
| 10. Kanjirappally | 21. Hosdurg     |
| 12. Kottayam      | 22. Kasargoda   |

The following taluks have yield rates not less than the 1972 level during winter season.

- |                   |                    |
|-------------------|--------------------|
| 1. Cullon         | 16. Thodupuzha     |
| 2. Kottarekkara   | 17. Muvattupuzha   |
| 3. Kunnathur      | 18. Kunnathunad    |
| 4. Pathanapuram   | 19. Alwaye         |
| 5. Karunagappally | 20. Chittur        |
| 6. Karthigappally | 21. Mannarghat     |
| 7. Mavelikkara    | 22. Perinthalmanna |
| 8. Thiruvalla     | 23. Tirur          |
| 9. Shertallai     | 24. Ernad          |
| 10. Kanjirappally | 25. Kozhikode      |
| 11. Kottayam      | 26. North Wynaad   |
| 12. Vaikom        | 27. Tellicherry    |
| 13. Peermade      | 28. Cannanore      |
| 14. Devicollam    | 29. Thaliparamba   |
| 15. Udumbanchola  | 30. Hosdurg.       |

During the summer season, the following taluks have yield rates not less than the 1972 yield rates.

Contd.....

1. Kottarakkara
2. Pathanapuram
3. Karthigappally
4. Mavelikkara
5. Chengannur
6. Thiruvalla
7. Kunnathunad
8. Parur
9. Crangannore
10. Mukundapuram
11. Trichur
12. Chavakkad
13. Mannarghat
14. North Wynad
15. Cannanore
16. Kasargode

The taluks included in all the 3 lists given above are the following:-

1. Kottarakkara
2. Pathanapuram
3. Karthigappally
4. Mavelikkara
5. Mannarghat

#### 5. Ranking of taluks according to yield rate.

The rank of taluks in descending order of latest yield rates (1981) are given in Table 8 separately for each season. The taluks which hold the highest 5 ranks in yield rates in the 3 seasons are given below:-

<u>Autumn</u>	<u>Winter</u>	<u>Summer</u>
Kuttanad	Kottayam	Mavelikkara
Kanjirappally	Peermedu	Chengannore
Chittur	Devicolum	Kuttanad
Alathur	Udumbanchola	Changanacherry
Palghat	Palghat	Palghat

Palghat taluk has the distinction of having high yield rates during all the 3 seasons. Kuttanad taluk has also high yield rates during the three seasons having rank less than 5 in Autumn and Summer seasons and rank 6 for winter season.

The taluks having very poor yield rates are the following:-

<u>Autumn</u>	<u>Winter</u>	<u>Summer</u>
Ambalapuzha	Ambalapuzha	Pathanapuram
Sherthallai	Sherthallai	Pathanamthitta
Crangannore	Crangannore	Karunagappally
Kozhikode	Kozhikode	Nedumangad
Quilandy	Chavakkad	Chirayinkil
Badagara	Quilandy	Neyyattinkara
South Wynad	Badagara	Kunnathur

The taluks for the Autumn and Winter seasons are more or less common in the above list. For the summer season, the low yielding taluks are from Trivandrum and Quilon Districts.

Further study on the reasons for the low yield rates and methods to improve the situation are necessary.



6. Standard error of mean yield

The standard error is a measure of the precision of the estimate. The average percentage standard error of the mean yield for each taluk for the three seasons are given in table 9. The lower standard error the more precise will be the estimates. For getting estimates with greater precision it is necessary to increase the sample size. The distribution of taluks according to range of average percentage standard error is given below:-

Range of variation	No. of taluks.		
	Autumn	Winter	Summer
Below 5	..	..	..
5- 9	15	27	3
10-14	25	21	18
15-19	10	6	18
20 and above	3	2	11
Not recorded	4	1	7
Total	57	57	57

The standard error is less than 15 percent in the case of 40 taluks in Autumn season, 48 taluks in winter season and 21 taluks in summer season.

It is necessary to conduct more experiments in taluks where the percentage standard error is high to get more precise estimates.

7. Summary and Conclusion.

The state average yield rates of paddy has shown very little change during the years 1972-81. Only in the case of autumn season a slight increase in yield rate is noticed during the period. The yield rates have declined from 1972 level for winter and summer seasons.

Among the taluks there is considerable variation in yield rates. Some taluks in Kozhikode and Cannanore districts have yield rates less than the state yield rates for all the years studied.

The yield rates in 5 taluks have shown increasing trend in all the three seasons during 1972-81.

Palghat and Kuttanad taluks have the distinction of having high ranks in yield rates.

In a few taluks the percentage standard error is higher than 20 percent. In taluks where the percentage standard error is high, it is necessary to conduct a larger number of experiments to get more precise estimates.

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Table I

Yield rates of paddy in Kerala

(per hectare)

Year	<u>Autumn</u>		<u>winter</u>		<u>summer</u>	
	yield rate (kg./hect.)	Index	yield rate (kg./hect.)	index	yield rate (kg./hect.)	Index
1972	2122	100	2378	100	3151	100
1973	2271	107	2426	102	2918	93
1974	2064	97	2028	85	2168	69
1975	2242	106	2382	100	2936	93
1976	2040	96	2332	98	2794	89
1977	2300	108	2344	99	2497	79
1978	2391	113	2295	97	2677	85
1979	2481	117	2333	98	2832	90
1980	2413	114	2359	99	2971	94
1981	..	..	2357	99	2627	83

*Table 2*  
Taluk wise yield rate of paddy Autumn Season

yield rate kg. per hectare

Taluk	1972	1973	1974	1975	1976	1977	1978	1979	1980
1	2	3	4	5	6	7	8	9	10
1. Neyyattinkara	2797	2273	2237	2377	3214	2622	2759	2594	2172
2. Trivandrum	2633	2530	2097	2271	2199	2320	2466	2409	2335
3. Nedumangad	1633	1645	1578	2117	1914	1614	2042	1938	2150
4. Chirayinkil	2178	2266	1941	2575	1246	1960	2668	2174	2318
5. Quilon	1456	2276	1671	1920	1239	1343	2206	1742	1982
6. Kottarakara	1130	2024	1579	1968	1540	2256	2835	2367	2496
7. Kunnathur	1628	1707	2365	1758	1632	1948	2100	2478	2062
8. Pathanapuram	2730	2537	2724	2392	1753	2879	2627	2436	2960
9. Pathanamthitta	1704	2068	2009	2994	2304	2458	2765	3032	3029
10. Karunagapally	1940	2404	2326	2618	558	1444	2033	1546	2792
11. Karthigappally	1336	2382	2160	2233	1458	1894	1735	2634	2414
12. Mavelikara	1512	2434	1780	2090	2112	1553	2012	2205	2261
13. Chengannur	2882	2301	1396	2054	1275	2243	2434	2591	2640
14. Tiruvalla	2005	2562	1437	1887	2094	2158	1625	1805	1695
15. Kuttanad	2069	2907	1627	3348	1707	3330	2136	3838	4199
16. Ambalapuzha	1152	2379	1747	2337	3435	1116	1221	400	699
17. Sherthalai	1281	1471	1386	1253	2662	690	1627	806	1010
18. Changanacherry	2893	2232	2233	2253	2611	2572	2348	2591	2103
19. Kanjirappally	2216	2093	2593	2248	2156	2726	2913	4001	3643
20. Kottayam	1876	1849	2137	1521	2391	2312	2701	3137	2447
21. Vaikom	1973	2529	1814	1742	1993	1939	2505	2293	3042
22. Meenachil	2679	2670	2408	2431	2293	2729	2573	2864	2794
23. Peermade	..	..	..	..	2300	2285	..	..	2304
24. Devicolam	2932	2948	1766	2142	2300	2284	2791	3434	2389
25. Udumbanchola	..	..	..	..	2300	2285	2588	3434	2304
26. Thodupuzha	2032	2695	2404	2471	2300	2286	2588	2811	2276
27. Kothamangalam	2520	2048	2194	2504	2218	2318	2189	2348	2218
28. Muvattupuzha	..	..	2299	2162	2204	2838	2434	2696	2738
29. Cochin	1485	2112	1619	1885	2149	2972	2397	1830	1676
30. Kanayannur	1945	1836	1459	1844	1705	1668	1882	1883	1863
31. Kunnathunad	2969	2032	2367	2367	2294	2147	2476	2139	1946
32. Alwaye	2477	1768	1853	1748	2140	2576	2673	2307	2039
33. Parur	2686	1788	1427	1597	2077	1671	2796	1899	2288
34. Cranganore	1188	1337	1131	1113	1130	959	678	597	826
35. Mukundapuram	1889	1962	1580	1565	1498	1446	1907	1924	1613
36. Trichur	1944	2083	2370	1882	1314	1878	2205	1804	1673
37. Talapally	1570	2061	1984	1938	1803	1683	2007	1956	2220
38. Chawakad	1068	1721	1553	1221	846	832	1040	1604	1880
39. Chittur	2804	3846	3396	4224	3065	4726	3893	4246	3922
40. Alathur	3632	3371	3232	3589	2634	3552	3585	4036	3426
41. Palghat	2935	2754	3372	3054	3170	3856	3779	3971	3749
42. Ottappalam	1809	2217	1580	2221	1802	2120	2046	2152	2069
43. Mannarghat	2045	2319	2437	2132	2185	2111	2308	2348	2447
44. Perinthalmanna	2293	2613	1845	2852	2291	2171	2885	1997	1935
45. Ponnani	2200	2433	1295	2542	1281	1740	1931	2217	2128

1	2	3	4	5	6	7	8	9	10
46. Tirur	2505	2514	1161	1363	1209	2028	1687	1598	1715
47. Ernad	1946	1858	1512	1824	1425	1818	2159	2295	1941
48. Kozhikode	812	1209	927	1172	818	1035	1174	1433	1222
49. Quilandy	1235	1121	1752	931	1050	1058	1094	1270	1299
50. Badagara	1357	1168	1134	1334	1236	1565	1145	1167	1463
51. South Wynad	..	..	..	..	987	1156	..	1167	1297
52. North Wynad	..	..	..	..	2168	1894	..	1823	1619
53. Tellicherry	1379	2079	1624	1580	1953	1695	1549	1823	1619
54. Cannanore	1866	1630	1761	1367	2189	1944	1981	1737	1768
55. Taliparamba	2140	2138	2212	1749	1924	1812	1429	2001	1991
56. Hosdrug	1800	2246	2069	2090	2182	1944	1635	1916	2116
57. Kasargod	2136	2143	2093	2022	2555	2028	2085	2251	2427

Table 3  
Taluk wise yield rates of paddy

*winter season*

Taluk	Yield rate kg. per hectare									
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9	10	11
1. Neyyattinkara	2224	2135	2164	2130	2759	2453	2052	1981	1816	2162
2. Trivandrum	2488	2330	2058	2548	2272	2086	2044	2257	1904	1841
3. Nedumangad	2791	2990	2010	2450	2578	2156	2027	2238	2207	2078
4. Chirayinkil	2608	2477	2289	2732	2703	2434	2524	2569	2552	2208
5. Quilon	2058	2209	2557	2230	2165	2571	2288	2509	2649	2098
6. Kottarakara	2900	2420	2720	2497	2872	2837	2482	2859	3719	2888
7. Kunnathur	2368	2510	2245	2712	2376	2669	2369	2289	2633	2456
8. Pathanapuram	2882	3521	2844	2788	3083	2842	2924	2678	2993	2576
9. Pathanamthitta	2564	2204	2604	2732	2865	2858	2485	2103	2794	2401
10. Karunagappally	1826	1991	2319	2039	2147	2080	1570	2302	1775	2229
11. Karthigappally	1487	1735	1258	1705	1682	1803	1207	2012	2086	1843
12. Mavelikara	1883	2072	1493	2878	1715	2096	2101	1761	2001	2181
13. Chengannur	3246	3853	2345	3043	2569	3008	2244	1795	2615	3018
14. Tiruvalla	2317	2425	2056	2849	2668	2840	2839	2951	2576	2483
15. Kuttanad	..	..	..	..	..	3782	3874	3496	3506	3298
16. Ambalapuzha	1794	1294	1094	1205	2383	2151	1943	732	630	824
17. Sherthalai	774	938	618	565	1013	785	979	808	621	1169
18. Changanacherry	..	2199	2070	3031	2558	3191	2670	2583	2123	2525
19. Kanjirappally	..	2327	2327	1951	2062	1911	2372	2247	2554	2348
20. Kottayam	..	2894	1821	2499	2334	2590	2529	2081	2801	3108
21. Vaikom	..	1961	1892	1992	1997	1916	1921	2039	2050	2558
22. Meenachil	..	2308	2101	2332	2485	2547	2675	2545	2647	2692
23. Peermade	2571	3835	3835	2343	3008	3198	3107	2263	3392	3865
24. Devicolum	2286	2549	1829	2624	2524	2362	3943	2712	3427	3370
25. Udumbanchola	2845	2484	2831	2473	2881	2877	2382	3297	3072	3302
26. Thodupuzha	1933	2423	2265	2890	2389	2403	2428	2681	2772	2265
27. Kothamangalam	..	..	..	2734	2374	2597	2118	2147	2263	2310
28. Muvattupuzha	1940	2263	2296	2673	2009	2100	2215	2575	2541	2775
29. Cochin	..	..	..	..	..	..	..	..	..	..
30. Kanayannur	1858	1526	1381	1984	1833	1088	1826	1750	1763	1839
31. Kunnathunad	2056	2112	2007	2402	2023	2000	1962	2253	2335	2132
32. Alwaye	2118	2034	1726	2420	2159	2227	1781	2344	1750	2172
33. Parur	1985	1583	1820	2338	2159	2204	2218	2357	1686	1600
34. Cranganore	1772	1835	1082	1060	1255	1309	1213	1470	1142	823
35. Mukundapuram	2448	2361	1738	1743	1677	1853	1742	2048	2064	2117
36. Trichur	2009	2127	1365	2306	2316	2363	2035	2227	2176	1795
37. Talappally	2474	2399	2020	2381	2453	2248	1992	2179	2143	2245
38. Chavakad	1327	2441	1050	2246	1165	1330	1211	911	1942	1063
39. Chittur	2613	2634	2042	3858	3458	3188	3090	3043	3453	3081
40. Alathur	3489	3382	2675	3420	3387	3035	3476	3163	3061	2959
41. Palghat	3995	2698	2637	2889	2913	2894	3451	3481	3754	3465
42. Ottapalam	2591	1980	2020	2445	2553	2226	2322	2114	2242	2136
43. Mannarghat	2107	1880	2537	2675	2451	2481	2129	2252	2228	3798

1	2	3	4	5	6	7	8	9	10	11
44. Perinthalmanna	2013	2060	1769	2242	2362	2285	2286	2135	1998	2158
45. Ponnani	4591	4436	2894	2161	2120	2135	1732	1902	1471	1891
46. Tirur	1696	4184	2298	1811	1785	1960	1879	1595	1565	2070
47. Ernad	1867	2380	1946	1457	2165	1890	1958	2222	2217	2527
48. Kozhikode	1322	1752	1506	1970	1772	1639	1784	1762	1511	1633
49. Quilandy	1500	1357	1339	1377	1107	1349	1163	1490	1032	1383
50. Badagara	1727	1249	1150	1440	1299	1356	1506	1151	1219	1365
51. S. Wynad	2627	2593	2696	2171	2432	2292	2762	2886	2621	2300
52. N. Wynad	2103	2332	2738	2139	2235	2474	2526	1905	2617	2132
53. Tellicherry	1582	1456	1564	1597	1693	1902	1718	1643	1688	1927
54. Cannanore	1420	1648	1572	1117	1713	1608	1653	1194	1710	1783
55. Taliparamba	1600	1852	1662	1734	2010	1891	1981	1551	2290	1688
56. Hosdrug	1719	1971	1611	2068	2381	2239	2025	1896	1828	1916
57. Kasargod	2119	2040	2284	2172	2107	2649	2148	2298	2312	2059

Table 4  
Talukwise yield rates of paddy

*Summer Season*

Taluk	Yield rate kg. per hectare									
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	2	3	4	5	6	7	8	9	10	11
1. Neyyattinkara	2380	2072	1988	2211	1914	1581	874	1184	1636	1423
2. Trivandrum	1708	1264	1895	2109	1877	1273	458	1565	1422	1552
3. Nedumangad	2262	1441	1585	1764	1496	1158	894	1186	1048	1074
4. Chirayinkil	1587	711	999	1789	1225	738	854	945	777	1147
5. Kailon	1472	1637	1646	1141	1259	1322	1070	1387	1447	1174
6. Kottarakara	962	1036	752	1385	1754	1147	827	1524	788	1894
7. Kunnathur	..	2052	1306	1749	1891	1521	434	1432	736	1360
8. Pathanapuram	..	..	..	..	..	929	683	2087	1214	1011
9. Pathanamthitta	1938	1305	1819	2779	1928	1316	683	2087	2777	1011
10. Karunagappally	2188	2195	1561	1865	2166	1018	923	304	1162	750
11. Karthigappally	2631	4286	2577	3233	3738	3717	4357	4655	3089	3005
12. Mavelikara	3142	2886	2845	3077	2674	3016	3619	3625	4166	3618
13. Chengannur	3834	4609	2205	3384	3344	3535	2893	4041	4014	3895
14. Tiruvalla	3084	2484	2102	3151	3333	3293	4350	3899	3025	3188
15. Kuttanad	4494	3034	2682	3405	3049	3046	3650	3950	4328	3268
16. Ambalapuzha	3059	2712	2260	2685	3650	3046	1773	4116	3494	2858
17. Sherthalai	..	..	..	..	..	..	..	..	..	..
18. Changanacherry	4806	4062	3474	4850	4182	3304	2930	5140	3800	3420
Kanjirappally	2677	..	..	..	..	..	..	..	..	..
20. Kottayam	3509	3267	1425	3199	3333	2536	2601	2719	3349	3096
21. Vaikom	2663	2741	1340	2342	2680	1600	2106	..	2616	2389
22. Meenachil	3225	2779	1859	2300	2902	2585	3670	..	3078	2358
23. Peermade	..	1872	1165	1974	3053	1836	1315	1806	2215	..
24. Devicolum	..	..	..	..	..	1836	1315	1806	2215	1536
25. Udumbanchola	..	..	..	..	..	..	..	..	..	1536
26. Thodupuzha	..	..	..	..	..	1836	1315	..	..	1536
27. Kothamangalam	..	..	..	1977	1523	1620	1548	1805	2244	1565
28. Muvattupuzha	2314	1483	1506	2037	2108	1836	1315	1806	2215	1536
29. Cochin	..	..	..	..	..	..	..	..	..	..
30. Kunnathunad	1950	1701	1725	1899	1755	1609	1881	1809	2092	2198
31. Kanayannur	3171	1029	791	1739	2070	1770	2090	2048	1886	2548
32. Alwaye	2275	2218	1878	1984	2310	2250	2421	2003	2708	2103
33. Parur	1684	1719	1768	2508	1795	2465	2852	2201	2816	2594
34. Cranganore	1801	1947	1435	1750	1817	1568	2096	1498	1692	2754
35. Mukundapuram	2698	2384	2052	1974	2134	2361	2380	2176	2795	2725
36. Trichur	2252	3012	1689	2484	2060	2309	2987	2262	2810	2432
37. Talappally	3156	5163	2398	3235	3087	2440	2309	2133	2367	3021
38. Chavakad	2529	2007	1419	2069	3302	3507	2067	2369	3050	2607
39. Chittur	3378	2099	2553	3186	2081	1647	2196	2542	3041	2542
40. Alathur	3378	2099	2375	3489	3461	2839	2337	2327	2827	1852
41. Palghat	3378	2099	1817	3510	3644	3318	2872	3040	2958	3192
42. Ottappalam	3378	2099	2290	2021	2261	1811	2450	2014	2302	2243
43. Mannarghat	..	..	1749	2461	2095	1677	1436	1164	2053	2337
44. Perinthalmanna	2219	2481	1816	1832	3022	2465	2335	2528	2153	1949
45. Ponnani	5647	6635	1753	3677	2468	3733	2408	2669	3650	2891
46. Tirur	3399	5624	2568	3244	2994	2000	2516	3097	2755	2554
47. Ernad	2181	2212	1615	1929	1948	1572	1582	1611	1880	2024

	1	2	3	4	5	6	7	8	9	10	11
48. Kozhikode	3279	3036	2423	2412	2165	1337	1602	1872	2577	1985	
49. Quilandy	2138	2137	2775	2136	1648	1579	1475	1441	1036	2106	
50. Badagara	2432	2130	2661	3381	2471	1293	1377	2020	1285	1381	
51. South Wynad	..	2273	2180	1789	2593	1897	2057	2522	1557	2252	
52. North Wynad	1952	2425	1906	2243	2518	2195	3292	3395	2712	2507	
53. Tellicherry	2225	2227	1779	1618	1900	1176	1636	1650	1400	2007	
54. Cannanore	2225	2215	2100	2005	1482	2180	1476	1608	1584	2574	
55. Taliparamba	2225	2215	2200	1402	1632	1379	2129	2183	2011	1643	
56. Hosdrug	2554	2119	2195	2394	2083	3098	2211	2962	2334	1335	
57. Kasargod	1977	1904	1887	2370	2660	2476	2245	3666	2608	2382	



Table 5

Index of variation in Taluk wise average yield  
rates of paddy

Autumn Season

Taluk	Index of variation									
	1972	1973	1974	1975	1976	1977	1978	1979	1980	
1	2	3	4	5	6	7	8	9	10	
Neyyattinkara	100	81	80	85	115	94	99	93	78	
Trivandrum	100	96	80	86	84	88	94	91	91	
Nedumangad	100	101	97	130	117	99	125	119	132	
Chirayinkil	100	104	89	118	57	90	122	100	106	
Quilon	100	156	115	132	85	92	152	120	136	
Kottarakara	100	179	140	174	136	200	251	209	221	
Kunnathur	100	105	145	108	100	120	129	152	127	
Pathanapuram	100	93	100	88	64	105	96	89	103	
Pathanamthitta	100	121	118	176	135	144	162	178	178	
Karunagappally	100	124	120	135	29	74	105	80	144	
Karthigappally	100	178	162	167	109	142	130	197	181	
Mavelikara	100	161	118	138	140	103	133	146	150	
Chengannur	100	80	48	71	44	78	84	90	92	
Tiruvalla	100	128	72	94	104	108	81	90	85	
Kuttanad	100	141	79	162	83	161	103	186	203	
Ambalapuzha	100	207	152	203	298	97	106	35	61	
Sherthala	100	115	108	98	208	54	127	63	79	
Changanacherry	100	77	77	78	90	89	81	90	73	
Kanjirappally	100	94	117	101	97	123	131	181	164	
Kottayam	100	99	114	81	127	123	144	167	130	
Vaikom	100	128	92	88	101	98	127	116	154	
Meenachil	100	100	90	91	86	102	95	107	104	
Peermade	100	101	60	73	78	78	95	117	81	
Devicoolam	100	101	60	73	78	78	95	117	81	
Udumbanchola	100	133	118	122	113	112	127	138	112	
Thodupuzha	100	81	87	99	88	92	87	93	88	
Kothamangalam	100	81	87	99	88	92	87	93	88	
Muvattupuzha	100	142	109	127	145	200	161	123	113	
Cochin	100	94	75	95	88	86	97	97	96	
Kanayannur	100	68	80	80	77	72	83	72	66	
Kunnathunad	100	71	75	71	86	104	108	93	82	
Alwaye	100	67	53	59	77	62	104	71	85	
Parur	100	113	95	94	95	81	57	50	70	
Cranganore	100	104	84	83	79	77	101	102	85	
Mukundapuram	100	107	122	97	68	97	113	93	86	
Trichur	100	131	126	123	115	107	128	125	141	
Talappally	100	161	145	114	79	78	97	150	176	
Chavakkad	100	137	121	151	109	159	139	151	140	
Chittur	100	93	89	99	73	98	99	111	94	
Alathur	100	94	115	104	108	131	129	135	128	
Palghat	100	123	87	123	100	117	113	119	114	
Ottappalam	100	113	119	104	107	103	113	115	120	
Mannarghat	100	114	80	124	100	95	126	87	84	
Perinthalmanna	100	111	59	116	58	79	88	101	97	
Ponnani	100	111	59	116	58	79	88	101	97	

1	2	3	4	5	6	7	8	9	10
Tirur	100	100	46	54	48	81	67	64	68
Ernad	100	95	78	94	73	93	111	118	100
Kozhikode	100	149	114	144	101	127	145	177	150
Quilandy	100	91	142	75	85	86	89	103	105
Badagara	100	85	83	98	90	114	84	85	107
S. Wynad	..	..	..	..	100	117	..	118	131
N. Wynad	..	..	..	..	100	87	..	84	75
Tellicherry	100	151	118	115	142	123	112	132	117
Cannanore	100	87	94	73	117	104	106	93	95
Taliparamba	100	100	103	82	90	85	67	94	93
Hosdrug	100	125	115	116	121	108	91	106	118
Kasargod	100	100	98	95	120	95	98	105	114

Table 6.

Index of Variation in Taluk wise average yield rates of Paddy in Post season

Taluk	Index of variation									
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9	10	11
Neyyattinkara	100	96	97	96	124	110	92	89	82	97
Trivandrum	100	94	83	102	91	84	82	91	72	78
Nedumangad	100	107	72	88	92	77	73	80	79	74
Chirayinkil	100	95	88	105	104	93	97	99	98	85
Quilon	100	107	129	108	105	125	111	122	129	102
Kottarakara	100	83	94	86	99	98	86	99	118	100
Kunnathur	100	106	95	115	100	113	100	97	111	104
Pathanapuram	100	122	99	97	107	99	101	93	104	103
Pathanamthitta	100	86	102	107	112	111	97	82	109	94
Karunagappally	100	109	127	112	118	114	86	126	97	122
Karthigappally	100	117	85	115	113	121	81	135	140	124
Mavelikara	100	110	79	153	91	111	112	94	106	116
Changanur	100	119	72	94	79	93	69	55	81	93
Tiruvalla	100	105	89	123	115	123	123	127	111	107
Kuttanad	..	..	..	..	..	100	102	92	93	87
Ambalapuzha	100	72	61	67	133	120	108	41	85	46
Sherthala	100	121	80	73	131	101	126	104	80	151
Changanacherry	100	75	70	103	87	108	91	88	72	86
Kanjirappally	100	108	108	91	96	89	110	104	119	132
Kottayam	100	118	74	102	95	103	103	85	118	127
Vaikom	100	90	87	91	92	88	88	94	94	117
Meenachil	100	82	75	92	88	91	95	91	94	96
Peermade	100	144	144	99	113	120	116	85	127	145
Devicoolam	100	112	80	115	110	103	172	119	150	147
Udumbanchola	100	86	98	85	100	72	82	114	106	114
Thodupuzha	100	125	117	150	124	124	126	139	143	117
Kothamangalam	..	..	..	100	87	95	77	79	83	84
Muvattupuzha	100	117	118	138	104	109	114	133	131	143
Cochin	..	..	..	..	..	..	..	..	..	..
Kanayannur	100	82	74	107	99	59	98	94	95	99
Kunnathunad	100	103	98	117	98	97	95	110	114	104
Alwaye	100	196	81	114	102	104	84	111	83	103
Parur	100	80	92	118	109	111	112	119	85	81
Cranganore	100	104	61	60	71	74	68	83	64	46
Mukundapuram	100	196	71	71	69	76	71	84	84	86
Trichur	100	106	68	115	115	118	101	111	108	89
Talappally	100	97	82	96	99	91	81	88	87	91
Chavakad	100	184	79	169	88	100	91	69	146	80
Chittur	100	101	78	148	132	122	118	116	132	118
Alathur	100	97	77	98	97	87	100	91	88	85
Palghat	100	68	66	72	73	72	86	87	94	87
Ottappalam	100	76	78	94	99	86	90	82	87	82
Mannarghat	100	89	120	127	116	118	108	107	106	180
Perinthalmanna	100	102	88	111	117	114	114	109	99	107

1	2	3	4	5	6	7	8	9	10	11
Ponnani	100	97	63	47	46	47	38	41	32	41
Tirur	100	247	135	107	105	116	111	94	92	122
Ernad	100	127	104	79	116	101	105	119	119	119
Kozhikode	100	133	114	149	134	124	135	133	114	127
Quilandy	100	90	89	92	74	90	78	99	71	92
Badagara	100	72	67	83	75	79	87	67	71	79
S. Wynad	100	99	103	83	94	87	105	110	100	88
N. Wynad	100	111	130	101	106	117	120	90	124	101
Tellicherry	100	92	99	101	107	120	109	104	107	122
Cannanore	100	116	111	79	121	113	116	84	120	126
Taliparamba	100	116	104	108	126	118	124	97	143	105
Hosdrug	100	115	94	120	139	130	118	110	106	111
Kasargod	100	96	108	103	99	125	101	108	109	97

1	2	3	4	5	6	7	8	9	10	11
Ponnani	100	97	63	47	46	47	38	41	32	41
Tirur	100	247	135	107	105	116	111	94	92	122
Ernad	100	127	104	79	116	101	105	119	119	119
Kozhikode	100	133	114	149	134	124	135	133	114	127
Quilandy	100	90	89	92	74	90	78	99	71	92
Badagara	100	72	67	83	75	79	87	67	71	79
S. Wynad	100	99	103	83	94	87	105	110	100	88
N. Wynad	100	111	130	101	106	117	120	90	124	101
Tellicherry	100	92	99	101	107	120	109	104	107	122
Cannanore	100	116	111	79	121	113	116	84	120	126
Taliparamba	100	116	104	108	126	118	124	97	143	105
Hosdrug	100	115	94	120	139	130	118	110	106	111
Kasargod	100	96	108	103	99	125	101	108	109	97

Ponnani	100	97	63	47	46	47	38	41	32	41
Tirur	100	247	135	107	105	116	111	94	92	122
Ernad	100	127	104	79	116	101	105	119	119	119
Kozhikode	100	133	114	149	134	124	135	133	114	127
Quilandy	100	90	89	92	74	90	78	99	71	92
Badagara	100	72	67	83	75	79	87	67	71	79
S. Wynad	100	99	103	83	94	87	105	110	100	88
N. Wynad	100	111	130	101	106	117	120	90	124	101
Tellicherry	100	92	99	101	107	120	109	104	107	122
Cannanore	100	116	111	79	121	113	116	84	120	126
Taliparamba	100	116	104	108	126	118	124	97	143	105
Hosdrug	100	115	94	120	139	130	118	110	106	111
Kasargod	100	96	108	103	99	125	101	108	109	97

Table 7

Index of Variation in Taluk wise *average yield index of paddy*  
summer season

Taluk	Index of variation									
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9	10	11
Neyyattinkara	100	87	84	93	80	66	37	50	69	60
Trivandrum	100	74	111	123	110	75	27	92	83	91
Nedumangad	100	64	70	78	66	51	40	52	46	47
Chirayinkil	100	45	63	113	77	47	54	60	49	72
Quilon	100	111	112	78	86	90	73	94	98	80
Kottarakara	100	108	78	144	182	119	86	158	82	197
Kunnathur	..	100	64	85	92	74	21	70	36	66
Pathanapuram	..	..	..	..	..	100	74	225	131	109
Pathanamthitta	100	67	94	143	99	68	35	108	143	52
Karunagappally	100	100	71	85	99	47	42	14	53	34
Karthigappally	100	163	98	123	142	141	166	177	117	114
Mavelikara	100	92	91	98	85	96	115	115	133	115
Chengannur	100	120	58	88	87	92	75	105	105	102
Tiruvalla	100	81	68	102	108	107	141	126	98	103
Kuttanad	100	68	60	76	68	68	81	88	96	73
Ambalapuzha	100	89	74	88	119	100	58	135	114	93
Sherthalai	..	..	..	..	..	..	..	..	..	..
Changanacherry	100	85	72	101	87	69	61	107	79	71
Kanjirappally	100	..	..	..	..	..	..	..	..	..
Kottayam	100	93	41	91	95	72	74	77	95	88
Vaikom	100	103	50	88	101	60	79	..	98	90
Meenachil	100	86	58	71	90	80	114	..	95	73
Peermade	..	100	62	105	163	98	70	96	118	..
Devicolam	..	..	..	..	..	100	72	98	121	84
Udumbanchola	..	..	..	..	..	..	..	..	..	100
Thodupzha	..	..	..	..	..	100	72	..	..	84
Kothamangalam	..	..	..	100	77	82	78	91	114	79
Muvattupuzha	100	64	65	88	91	79	57	78	96	66
Cochin	..	..	..	..	..	..	..	..	..	..
Kanayannur	100	32	25	55	65	56	66	65	59	80
Kunnathunad	100	87	88	97	90	83	96	93	107	113
Alwaye	100	97	83	87	102	99	106	88	119	92
Parur	100	102	105	149	107	146	169	131	167	154
Cranganore	100	108	80	97	101	87	116	83	94	153
Mukundapuram	100	88	76	73	79	88	88	81	104	101
Trichur	100	134	75	110	91	103	133	100	125	108
Talappally	100	164	76	103	98	77	73	68	75	96
Chavakkad	100	79	56	82	131	139	82	94	121	103
Chittur	100	62	76	94	62	49	65	75	90	75
Alathur	100	62	70	103	102	84	69	69	84	55
Palghat	100	62	54	104	108	98	85	90	88	94
Ottappalam	100	62	68	60	67	54	73	60	68	66
Mannarghat	..	..	100	141	120	96	82	67	117	134
Perinthalmanna	100	112	82	83	136	111	105	114	97	88

1	2	3	4	5	6	7	8	9	10	11
Ponnani	100	117	31	65	44	66	43	47	65	51
Tirur	100	165	76	95	88	59	74	91	81	75
Ernad	100	101	74	88	89	72	73	74	86	93
Kozhikode	100	93	74	74	65	41	49	55	79	61
Quilandy	100	100	130	100	77	74	69	67	62	99
Badagara	100	88	109	139	102	53	57	83	53	69
S. Wynad	..	100	96	79	144	83	90	111	68	99
N. Wynad	100	124	98	115	129	112	169	174	139	128
Tellicherry	100	100	80	73	85	53	74	74	63	90
Cannanore	100	100	94	90	67	98	66	72	71	107
Taliparamba	100	100	99	63	73	62	96	98	90	74
Hosdrug	100	80	83	90	78	117	83	112	88	69
Kasargod	100	96	95	120	135	125	114	185	132	120

Table 8  
Ranking of Taluks according to latest mean  
Rainfall Table. Field

Taluks	Autumn 1980	Winter 1981	Summer 1981
1	2	3	4
1. Neyyattinkara	26	30	43
2. Trivandrum	17	39	41
3. Nedumangad	27	36	47
4. Chirayinkil	19	27	46
5. Quilon	35	35	45
6. Kottarakara	13	12	35
7. Kunnathur	32	19	44
8. Pathanapuram	8	10	48
9. Pathanamthitta	7	20	48
10. Karungappally	10	25	49
11. Karthigappally	16	43	9
12. Mavelikara	23	28	2
13. Chengannur	12	9	1
14. Tiruvalla	43	18	6
15. Kuttanad	1	6	4
16. Ambalapuzha	54	54	11
17. Shethalai	52	52	..
18. Changanerry	30	17	3
19. Kollam	4	13	..
20. Kottayam	14	2	7
21. Vaikom	6	16	21
22. Meenachil	9	15	24
23. Peermade	20	1	..
24. Devicoolam	18	4	42
25. Udumbanchola	20	5	42
26. Thodupuzha	22	23	42
27. Kothamangalam	25	21	40
28. Muvattupuzha	11	14	42
29. Cochin	44	..	..
30. Kanayannur	40	44	17
31. Kunnathunad	37	33	28
32. Alwaye	33	29	30
33. Parur	21	49	15
34. Cranganore	53	55	12
35. Mukundapuram	47	34	13
36. Trichur	45	45	20
37. Talappally	24	20	8
38. Chavakad	39	53	14
39. Chittur	2	8	18
40. Alathur	5	11	36
41. Palghat	3	3	5
42. Ottappalam	31	32	27
43. Mannarghat	14	2	25
44. Perinthalmanna	38	31	34
45. Ponnani	28	42	10
46. Tirur	42	37	16
47. Ernad	36	26	31
48. Kozhikode	51	48	33
49. Quilandy	49	50	29
50. Badagara	48	51	38
51. South Wynad	50	22	26
52. North Wynad	46	33	19
53. Tellicherry	46	40	32
54. Cannanore	41	46	23
55. Taliparamba	34	47	39
56. Hosdurg	29	41	37
57. Kasargod	15	38	22



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Table 9  
Average Percentage Standard error of mean yield

Taluk	Average standard error (%)			Taluk	Average standard error (%)		
	Autu- mn	Win- ter	Su- mmer		Autu- mn	Win- ter	summer
1. Neyyattinkara	8	8	13	30. Kanayannur	12	12	15
2. Trivandrum	10	7	27	31. Kunnathunad	9	7	14
3. Nedumangad	12	7	20	32. Alwaye	9	10	23
4. Chirayinkil	9	7	19	33. Parur	19	17	8
5. Quilon	20	10	20	34. Cranganore	22	17	13
6. Kottarakara	10	8	28	35. Mukundapuram	12	8	10
7. Kunnathur	9	8	15	36. Trichur	10	9	14
8. Pathanapuram	7	8	30	37. Talappally	10	5	13
9. Pathanamthitta	8	8	20	38. Chavakad	16	17	17
10. Karunagappally	14	7	23	39. Chittur	6	8	16
11. Karthigappally	12	19	11	40. Alathur	11	9	15
12. Mavelikara	10	10	16	41. Palghat	10	7	16
13. Chengannur	11	18	13	42. Ottappalam	9	7	13
14. Tiruvalla	17	10	10	43. Mannarghat	15	5	15
15. Kuttanad	16	11	17	44. Perinthalamanna	10	9	11
16. Ambalapuzha	19	32	15	45. Ponnani	13	13	17
17. Sherthalai	19	12	..	46. Tirur	13	11	10
18. Changanacherry	11	15	18	47. Ernad	10	8	14
19. Kanjirappally	9	13	..	48. Kozhikode	12	11	21
20. Kottayam	16	12	17	49. Quilnay	17	14	15
21. Vaikom	14	16	17	50. Badagara	13	11	20
22. Meenachil	9	8	14	51. S. Wynad	..	11	10
23. Peermade	..	20	..	52. N. Wynad	..	13	20
24. Devicolam	20	7	..	53. Tellicherry	12	7	12
25. Udumbanchola	..	12	..	54. Cannanore	11	13	13
26. Thodupuzha	10	6	..	55. Taliparamba	9	12	15
27. Kothamangalam	8	6	14	56. Hosdrug	11	14	8
28. Muvattupuzha	8	5	17	57. Kasargod	9	8	9
29. Cochin	19	..	..				

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