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A NOTE ON THE RELATTONSHIP BETWEEN YIELD OF COCONUT AND RAINFALL PATTERN IN THE BACK-WATER REGION OF KERALA

Coconut is often being cultivated as a rainfed crop in most of the coconut growing countries. As it is, rainfall appear to be more important to the growth and development of the coconut palm. Rainfall was reported to show considerable variations, even within short distances. Many workers have studied the relationship between rainfall and yield of coconut in different locations. Balasubramonium (1956) have analysed the rainfall and yield of coconuts in Kasaragode and Pilicode and established existance of correlation between rainfall and yield in these locations. Similar studies were conducted by Lakshmanachar (1963) and has reported that the coconut crop is influenced by rainfall. Informations relating annual yield and rainfall are as yet insufficient for drawing definite conclusions. In order to assess the influence of rainfall on the yield of nuts of coconuts growing under the conditions prevailing in the back water region of Kerala, a preliminary analysis of the rainfall and yield data for ten years recorded at the Coconut Research Station, Kumarakom, Kerala Agricultural University, was undertaken. The results obtained and the tentative conclusions drawn are presented in this paper.

The average yield of nuts per hectare of 168 trees was computed from the total number of regular bearing trees from 1967 to 1976. Data on rainfall pattern was collected for the same period. Observations on the mean yield of nuts, rainfall and number of rainy days-corresponding to each year are presented in Table 1. The yield of nuts and rainfall in the same year, subsequent 2 years was studied for assessing the influence of annual rainfall on the yield of coconuts in the region. The correlation coefficients of rainfall and yield of nuts and the number of rainy days and yield for the same and subsequent two years were worked out.

Results of analysis of the rainfall and yield of nuts during the same year indicated no significant correlation except during 1973. Negative correlation was observed during 1967, 1974 and 1975 which showed that yield of nuts was not increased with corresponding increase in rainfall. The correlation in rainfall and yield observed during 1973 which was significant at 0.05% level can be accidental and spurious. The yield in one year and rainfall in the next year and succeeding years was following the same trend and the data was uncorrelated. Thus contrary to expectations the nut yield and annual rainfall was found to show no significant relationship. As is seen Table 1 maximum yield was recorded during

1972 but no corresponding increase in rainfall was noted during the year or previous two years. Similarly a total annual rainfall of 3233.8 mm was recorded during 1969 with no reasonable enhancement in yield during the subsequent years. The lack of significant relationship between yield and rainfall can be attributed to the reason that coastal areas generally possess better sub soil water supplies within the easy reach of coconut roots and was also kept in constant move by the ebb and flow of the tides of the sea which was considered well suited for luxurious growth of the palms as reported by Menon and Pandalai (1958) and Shanmugam (1973).

Table 1

Effect of **rainfall on the yield** of coconuts

Year	Mean yield No. of nuts/ha	Rainfall (mm)	Number of rainy days
1967	921.3	2424.5	158
1968	953.3	1766.5	145
1969	872.4	3233.8	160
1970	865.3	2669.4	152
1971	929.0	2966.7	157
1972	982.8	2818.0	143
1973	906.7	2848.8	164
1974	719.0	2317.5	147
1975	755.8	2500.6	143
1976	924.8	3505.9	166
Mean	884.2	2805.3	153.5

The influence of the frequency of rainy days on the yield of nuts in the same year of their occurrence and also in the subsequent two years were tested and there were no significant differences excepting for 1972, 1973, and 1974. The existence of a relationship between the rainy days in 1972, 1973 and 1974 with yield of nuts in 1973, 1974, and 1975 respectively was suggested to be not real and can be attributed to chance as in the case of rainfall and yield recorded during 1973. Further the response was negative during many of the periods indicating that yield was not much infuluenced by the frequency of rainy days.

The study has pointed out that yield of coconuts in the backwater region of Kerala was unaffected by the relative pattern of rainfall occurring in the

region. Radha *et al* (1962) also found no correlation between yields and variations in rainfall distribution in different years. Yield of nuts in the zone was considered to be controlled by other individual factors. Marar and Pandalai (1957) suggested that seasonal differences affected the different characters of the palm although with it was not possible to explain their seasonal differences in term of individual weather factor.

സംഗ്രഹം

കേരളത്തിന്റെ കായലോര പ്രദേശങ്ങളിൽ നിലവിലുള്ള പ്രത്യേക സാഹചര്യത്തിൽ അവിടെ അനുഭവപ്പെടുന്ന മഴയുടെ മാതൃക തെങ്ങിൽനിന്നുള്ള നാളികേരത്തിന്റെ എണ്ണവുമായി പരസ്പരബന്ധമുണ്ടോ എന്ന വിശകലനം ചെയ്യുനോക്കിയതിൽ ഈ പ്രദേശത്തു ലഭിക്കുന്ന മഴയുടെ തോതും നാളികേരത്തിന്റെ എണ്ണവും തമ്മിൽ കാര്യമായ ബന്ധമൊന്നുമില്ലെന്നു കണ്ടിരിക്കുന്നു.

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Coconut Research Station,
Kumarakam.

G. MATHAI
K. S. PANICKER

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