LEAF CHARACTERISTICS AND DRY MATTER PRODUCTION IN COCONUT (WCT AND CDO x T) GROWN UNDER CONDITIONS OF LOW AND HIGH DROUGHT INTENSITIES.

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SUMMARY

Northern Kerala experiences higher intensity of drought as compared to Southern Kerala due to differences in the rainfall pattern and evaporative demands. It is the high intensity of drought, caused by longer duration of dry spells that assumes significance in studies on crop productivity. Though it is generally known that coconut production in the Southern districts is higher than that in the Northern districts (despite the prevalence of root wilt disease in the former), the information on the critical levels of soil moisture that influence the plant characteristics and yield is lacking. In other words, the threshhold level of moisture stress that affects coconut palms has not been understood.

Keeping the above points in view, studies were undertaken in 1984 to evaluate the response of WCT, and CDO x T grown

at Kayamkulam (low intensity drought) and at Kasaragod (high intensity drought). Data were collected on the soil moisture profile, leaf characteristics like stomatal resistance, transpiration rate, epicuticular wax content, leaf water potential components, and dry matter production and nut yield.

The results indicated the differential response of palms to available soil moisture regimes. Soil moisture content at different depths, measured during the same period was relatively low at Kasaragod as compared to that at Kayamkulam, thereby indicating the degree of stress at the two locations. This was reflected on the sensitive parameter like stomatal resistance which was higher in both WCT and CDO x T at Kasaragod than at Kayamkulam. Similarly, the epicuticular wax content also exhibited variations in the two genotypes. Comparison of nut yield in WCT and CDO x T between July 84 and June 85 at Kasaragod and Kayamkulam under rainfed conditions revealed that both the genotypes fared better at Kayamkulam than at Kasaragod. Work is still under progress to determine the critical levels of moisture that adversely affects the palms.