

## DIURNAL AND SEASONAL FLUCTUATIONS OF NUTRIENTS IN FOLIAR TISSUES OF COCONUT

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Foliar analysis could be used for a dual purpose, either for *direct diagnostic use* to decide which nutrient or nutrients are causing poor growth or for *predictive use* to decide how much response could be expected from the application of fertilizers.

However, before using foliar analysis for interpretive purposes, rigid standardization of sampling procedure is necessary; the physiological age of the leaflet analysed, the position along the length of the frond, the season and even the time of day at which sampling is carried out, have all been found to cause fluctuations of nutrients in the leaf. It is therefore necessary to minimise these interfering effects.

A study was conducted on 30 healthy adult typical palms that have reached the production phase. Samples were taken from leaflets confined to the midregion of the 14th leaf. For the study of diurnal fluctuations in nutrients, sampling commenced at 0600 hours and was repeated at 3 hourly intervals upto 1800 hours. The seasonal fluctuations were studied by sampling at monthly intervals, covering both the rainy and dry months, for a full one year period.

Statistical analyses of the data for the major nutrients N, P, K, Ca and Mg showed that there was no significant fluctuations in nutrient concentration diurnally but all elements showed significant seasonal fluctuations, except P which showed an interaction between diurnal and seasonal fluctuations.

The study revealed that leaf sampling could be done at any time of the day and the ideal time of sampling during the year covered the period August to September when nutrient fluctuations were minimal.