

RP-34

### CHLOROPHYLL STABILITY INDEX (C.S.I.) IN DIFFERENT VARIETIES AND HYBRIDS OF COCONUT

Heat stability of the chlorophyll pigments has been described as an index of drought tolerance in plants and direct correlation between low C.S.I. values and drought resistance has been reported in pine<sup>1</sup>, rice<sup>2</sup> and sugarcane<sup>3</sup>.

A study was undertaken to determine the chlorophyll stability index in 5 different cultivars of coconut, viz., West Coast Tall, Dwarf Green, Dwarf Orange, Tall × Dwarf and Dwarf × Tall. The sample size was 20 trees in each category and leaf samples were drawn as per the procedure standardised earlier in this Institute for the determination of chlorophyll<sup>4</sup>.

Chlorophyll stability index was determined, following the method described by Murthy and Majumder<sup>5</sup>, with slight modifications. The mean C.S.I. values are found to be significantly higher in the West Coast Tall (20.7) compared to the Tall × Dwarf (13.2), Dwarf × Tall (13.2), Dwarf Green (13.7) and Dwarf Orange (10.6). A point of interest in this study is that the hybrids, which are the high yielders, have recorded low C.S.I. values, indicating, perhaps, their superiority in drought tolerance over the West Coast Tall, which is the common and widely cultivated variety.

However, the lowest C.S.I. values were recorded for the Dwarf Orange variety. In the light of these results, it would be worthwhile to investigate the drought tolerance of the different varieties and hybrids of coconut in the field conditions.

The authors are grateful to Shri K. V. A. Bavappa, Director, for his keen interest in this study.

Central Plantation Crops  
Research Institute,  
Kasaragod-4 (Kerala),  
May 31, 1973.

CHACKO MATHEW.  
A. RAMADASAN.

1. Koleyoreas, S. A., *Plant Physiol.*, 1958, 33, 232.
2. Sahadevan, P. C., *Curr. Sci.*, 1961, 30, 235.
3. Mohan Naidu, K. and Bhagya Lakshmi, K. V., *Annual Report of the Sugarcane Breeding Institute, Coimbatore*, 1966-67, p. 43.
4. Chacko Mathew and Ramadasan, A., *Proceedings of the National Symposium on Plantation Crops*, Trivandrum, December, 1972, p. 43, Abstract.
5. Murthy, K. S. and Majumder, S. K., *Curr. Sci.*, 1962, 31, 470.