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Research Paper

RAPID ASSESSMENT OF FERTILIZER SUFFICIENCY AND LEAF QUALITY IN MULBERRY USING CHLOROPHYLL METER AND LEAF COLOR CHART

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ABSTRACT

This study explored the possibility of predicting fertilizer sufficiency and leaf nutrient status of V-1 mulberry variety using chlorophyll meter (Soil Plant Analysis Development – SPAD-502) at Central Sericultural Research and Training Institute (CSRTI), Mysuru. The experiment was laid out in randomized block design (RBD) with four replications and five fertilizer treatments and data were recorded 30 to 70 days after pruning (DAP) with 10 days interval. Significant variations were observed in SPAD values, leaf yield, total chlorophyll, leaf nitrogen and carbohydrate contents at different levels of fertilizer treatments. Critical SPAD values under different fertility levels were identified as 30.1 (30 DAP) and 34.9 (40 DAP) for V-1 mulberry variety. Significant and high correlations were obtained between SPAD values and total chlorophyll content, leaf nitrogen and total carbohydrate content at all five growth stages. Based on the critical SPAD values under different levels of fertilizers, efforts were made to develop a leaf color chart (LCC). Further, regression equations were developed for predicting leaf yield under particular fertilizer dosage in field conditions. The present study unravels the utility of SPAD values to assess the status of soil fertility and leaf quality in mulberry instantly without sophisticated laboratory analysis.

Key words: Leaf quality, mulberry, SPAD.