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Effect of Some Leaf Characteristics on Determination of Leaf Chlorophyll Content of *Hevea brasiliensis* with SPAD-502 Chlorophyll Meter

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Chlorophyll meter SPAD-502 is widely used in determining leaf chlorophyll content in field plants as it is non-destructive and less time consuming. Currently, there are about 25 *Hevea* genotypes recommended by the Rubber Research Institute of Sri Lanka. Characteristics of leaves, i.e., leaf thickness, wax and water content varies among the genotypes and also could affect the readings of the SPAD-502 chlorophyll meter. Therefore, this study was carried out to investigate effect of leaf thickness, wax and water content on determination of leaf chlorophyll content of *H. brasiliensis* with SPAD-502 chlorophyll meter.

Most commonly grown *Hevea* genotypes i.e., RRIC 121, RRIC 100, RRISL 203 and RRISL 2001 were selected for the study. Leaf samples of each genotype were collected from the budwood nurseries in Dartonfield Estate, Agalawatta. SPAD value of each leaf sample was measured and subjected to analyse the actual chlorophyll content by acetone extraction method. Leaf thickness, water content and epicuticular wax content of each leaf sample were also measured by using standard test methods.

The highest leaf thickness, wax content and water content were observed in RRIC 100 genotype whilst RRISL 203 genotype gave the lowest values. Leaf chlorophyll content of RRIC 121 genotype was comparatively lower with an average value of 36.51 $\mu g/cm^2$. However, the highest leaf chlorophyll content was observed in RRISL 203 genotype and the average value was 54.28 $\mu g/cm^2$. Despite the genotype average, leaf wax content and water content were 79.75 $\mu g/cm^2$ and 55.79%, respectively whilst leaf thickness was 0.126 mm. Pearson correlation coefficients for leaf thickness, wax content and water content vs. reading of SPAD-502 chlorophyll meter were above 0.05% and revealed that these three parameters did not affect the reading of SPAD-502 chlorophyll meter significantly ($p=0.05$) in determination of leaf chlorophyll content of *H. brasiliensis*.

Keywords: Chlorophyll, Epicuticular wax, *Hevea*, Leaf thickness