**Characterization of Selected *Hevea brasiliensis* Genotypes at Early Stage of Breeding Cycle Using Morphological and Physiological Parameters**

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Rubber, *Hevea brasiliensis* is a perennial crop grown for latex. The long breeding cycle of rubber 25-30 years is the greatly limiting factor for genetic improvement. The objective of this study was to analyze morphological and physiological parameters to perceive the precise selection of genetically superior genotypes at early stage of the *Hevea* breeding cycle. The research was conducted at Eladuwa Estate, Kalutara. The Estate Collaborative Trial with

2011 hand pollinated progeny. 2011HP 42, 2011HP 202, 2011HP 297, 2011HP 300 and control clone RRISL 2006 were taken as girth, bark thickness, first branching height, photosynthesis rate, leaf chlorophyll content, stomatal conductance and leaf area were measured in 12 randomly selected plants of each genotypes. The principal component analysis and cluster analysis were done to identify the diversity and promising parameters respectively. Three key parameters were identified as promising genotypes. Two genotypes (2011HP42 and RRISL 2006) were significantly different from rest of the other genotypes. These clusters showed over 70% of similarities between the selected genotypes. Accordingly,

30% of variation among the genotypes indicated substantial diversity among the genotype. Precise selection at early stage is supported and confirmed by adding more yield parameters to the evaluation process.

*Keywords: Breeding, Genotypes, Hevea*