**Screening the Molecular Diversity of Selected Interim Clones in Rubber (*Hevea Brasiliensis*) Using SSR Molecular Markers**

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Rubber, *Hevea brasiliensis* gene pool of Sri Lanka has been based on two foundations as Wickham and non-Wickham genetic base. It extensively used the Wickham genetic base for developing the current breeding pool , it is believed that the current genetic diversity of rubber in Sri Lanka, is significantly narrowed hence; seems that reached its threshold level for many economically important characteristics. The expansion of the genetic diversity of the local breeding pool is important. Therefore; the present study was conducted to study the genetic diversity of selected interim (*Hevea brasiliensis)* clones using Simple Sequence Repeats (SSR) molecular markers. Molecular markers can differentiate the genetic variation of a given population. Selected six interim clones MT 11-76 I, MT 11-76 II (Non-Wickham genetic base) HP 91-57, HP 91-58, HP 95-55, and HP 2002-201 (Wickham genetic base) were subjected to this study. DNA extraction was done by the SDS extraction method and the DNA samples which appeared as a single intact band in agarose gel quantification were selected for Polymerase Chain Reaction (PCR) amplification. DNA samples then screened with eleven SSR primers (HB1, HB2, HB4, HB6, HB8, HB11, HB27, HB28, HB29, hmac4 and hmct1). Among those, HB6, HB28, HB29, hmac4, and hmct1 SSR primers produced clear and detectable bands while HB4 and HB8 primers failed to amplify properly. However, all the DNA bands were monomorphic, indicating a higher degree of similarity among the interim clones. This molecular analysis revealed that both Wickham and non-Wickham genetic base that exists in the breeding pool showed narrow genetic diversity. However, further Molecular screening with more number of primers is needed to reveal the genetic diversity of recommended interim clones.

Keywords: *genetic relationship, germplasm, interim clone, polymorphism, SSR markers*