

B-138 Preliminary studies towards developing molecular markers for *Hevea brasiliensis*

K Vivehananthan^{1*}, D P S T G Attanayake², E H Karunanayake¹, J M D T Everard³

¹Dept of Biochemistry and Molecular Biology, Faculty of Medicine, University of Colombo, Colombo 8

²Rubber Research Institute, Agalawatta ³Coconut Research Institute, Lunuwila

It is important to use genetically improved *Hevea* planting material to increase the profitability of the Natural Rubber industry. At present improved clones are produced by conventional breeding methods. A serious limitation for the current breeding programme is the lack of reliable genetic markers to identify the elite clones from the breeding population. The present study investigates the possibility of using RFLP and RAPD DNA markers to detect the genetic differences of *Hevea* genotypes.

For detection of RFLP, 6 DNA probes from previously constructed DNA library were used. These clones have been isolated from a *Hevea* genomic library as putative repetitive DNA sequences. The purified DNA inserts from the phagemids rescued were labelled with ³²P and used to probe genomic blots containing *Eco* R I, *Eco* R V, *Dra* I, *Sac* I and *Alu* I digestions of 5 different genotypes. The probes when pooled, identified the genetic differences of RRIC 102 and GPS 1. Further, clone 42 identified the RRIC 121 and RRIC 102 respectively on *Eco* R V and *Sca* I digests.

RAPD analysis using 12, 10-mer primers showed extremely good results. 6 random primers produced polymorphisms of which the primer OPB4 was found to be the best in detecting the genetic variation among the *Hevea* clones. The RAPD banding pattern produced by this primer differentiated all the rubber genotypes screened.

*This work is part of the M.Sc thesis of K Vivehananthan.