

## IDENTIFICATION OF SUPERIOR GENOTYPES AND PREPOTENT PARENT CLONES OF *HEVEA* IN NORTH EAST INDIA BY HALF-SIB PROGENY ANALYSIS

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Half-sib progeny analysis from selected clones has been successfully utilised for the identification of superior genotypes as well as prepotent parents for future breeding programmes in *Hevea*. The present study was conducted in Tripura in North East India utilising the half-sib progenies collected from nine *Hevea* clones and planted family-wise for seedling nursery evaluation. Girth, yield per unit girth and test tap yield were recorded two and a half year after field planting and analysed in comparison with reference clones for identification of superior genotypes and prepotent parents. Progenies of SCATC 93/114, PB 86 and Haiken 1 were superior in terms of vegetative vigour. Among the progeny families evaluated, RRIM 600 had the highest mean test tap yield ( $13.9 \text{ g t}^{-1}10\text{t}^{-1}$ ) as well as yield per unit girth ( $0.78 \text{ g t}^{-1}10\text{t}^{-1}\text{cm}^{-1}$ ). Test tap yield of the half-sib progenies ranged from  $0.52 \text{ g t}^{-1}10\text{t}^{-1}$  to  $79.62 \text{ g t}^{-1}10\text{t}^{-1}$ , with an overall mean yield of  $12.23 \text{ g t}^{-1}10\text{t}^{-1}$ . Selection of top 20 per cent genotypes based on rank summation index revealed that mean yield of selections from family of PB 86 and SCATC 88/13 were better than the check clone, RRIM 600. Based on the study, 110 selections were made for further evaluation and an improvement of 32.9 per cent and 136 per cent were attained in girth and yield, respectively when compared to unselected population. Based on the superior performance of progenies and higher proportion of superior progenies, PB 86, RRIM 600 and Tjir 1 were identified as prepotent clones which can be utilised in future breeding programmes.

Keywords: Genotypes, Half-sib progeny, Prepotency, Selection

### INTRODUCTION

Scientific breeding programmes coupled with vegetative propagation in *Hevea* have resulted in the development of high yielding clones compared to low yielding unselected seedling plants. This was achieved through various breeding strategies like hybridisation, polycross progeny selection, ortet selection *etc.* Two major considerations in *Hevea* breeding

programmes are high yield and attainment of early tappareability.

Genetic improvement through selection of promising hybrids or half-sib progenies has been employed successfully in the past. But development of hybrids involves the laborious programme of hybridisation and success is often affected by low fruit-set, non-synchronous flowering *etc.* The advantage of collecting seeds from high