CLONAL NURSERY EVALUATION FOR SHORTENING THE BREEDING CYCLE IN *HEVEA BRASILIENSIS*

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Submitted: 18 March 2002 Accepted: 30 July 2004

Mydin, K.K., Licy, J., Varghese, Y.A., John, A., Nair, R.B. and Saraswathyamma, C.K. (2004). Clonal nursery evaluation for shortening the breeding cycle in *Hevea brasiliensis*. *Natural Rubber Research*, 17(1) : 60-66.

Twenty two hybrid clones of rubber (*Hevea brasiliensis* Muell. Arg.) evolved at the Rubber Research Institute of India were evaluated for growth and dry rubber yield in a clonal nursery and in the main field in small-scale trials. Clones with good yield and stable performance in the nursery were selected by a rank-sum method. Juvenile-mature correlations were worked out in an attempt to study the prospects of reducing the time span of clonal selection. Significant positive correlation between juvenile yield in the clonal nursery and initial yield at maturity suggested scope for preliminary evaluation of clones in a nursery.

Key words: Clonal nursery, Early selection, Girth, *Hevea brasiliensis*, Juvenile-mature correlations, Rank-sum, Yield.

INTRODUCTION

Hevea brasiliensis, the most important source of natural rubber, is a perennial tree species amenable to vegetative propagation. Clones thus form the most widely used planting material, which help to maintain homogeneity in plantations. Breeding in *Hevea* aims at evolving clones for specific objectives and environments. The perennial nature of the species poses hindrance to efforts for rapid genetic improvement. Clonal selection, which includes preliminary evaluation for yield in small-scale trials (SST) followed by more elaborate large-scale trials (LST) and on-farm evaluation trials (OFT) takes nearly 30 years before a clone is released for cultivation (Varghese and Mydin, 2000).

Early evaluation techniques are practised in seedling nursery screening of hybrids with considerable success. However, the clonal selection procedure remains to be shortened. Adoption of promotion plot trials (Subramaniam, 1980) is a successful effort at shortening the breeding cycle by 10 years. However, this approach can only be considered as an adjunct to the conventional procedure since the precision of the early prediction is relatively low (Ong *et al.*, 1986). Nair (1999) has suggested a scheme for evaluation of *Hevea* clones which involves conducting large-scale and on-farm trials concurrently using clones selected from small-scale trials based on data for the first five years of tapping, thus saving seven years in the evaluation process.

In an effort to study the prospects of further reducing the time span of the clonal selection procedure, a clonal nursery evaluation was attempted on the lines followed by Ho *et al.* (1973). This paper reports the performance of clones in the clonal nursery

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