

CLONAL NURSERY EVALUATION OF HALF-SIB PROGENIES IN TWO DIFFERENT AGRO-CLIMATIC REGIONS

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Clonal nursery evaluation technique is being successfully adopted in recent years to reduce the time span of breeding in *Hevea*. This paper reports the performance of 48 half-sib progenies in clonal nurseries in two different agro-climatic regions, namely Padiyoor in North Kerala and Chethackal in Central Kerala by evaluating three important juvenile parameters *viz.* girth, yield on test incision and yield on test tap. Clones in general showed 26.7 per cent lower girth and 32 per cent lower yield in Padiyoor compared to Chethackal, indicative of the effect of climatic stress existing in Padiyoor. Out of the 15 top performing clones at Chethackal, nine clones were among the top 15 at Padiyoor also (HS 96/263, HS 96/34, RRII 430, HS 96/145, HS 96/329, HS 89/80, HS 96/274, HS 89/215 and HS 89/78). Hence, these clones can be considered stable and may have the potential for cultivation in varied agro-climatic conditions. Half-sib progenies from PB 255, PB 260, GT 1, RRII 203, PB 28/83 and PB 217 maintained superiority in the clonal population of progenies reconfirming the prepotency of the parent clones. Correlation analysis showed that initial girth up to six months was not correlated with final girth. But, girth from 12th month onwards was highly correlated with girth in subsequent years and hence, clones with good growth potential can be identified from the very first year itself. Yield on test incision was not correlated with girth at any stage in both the locations. But it was highly correlated with test tap yield at 24th month at Chethackal and 24 and 48 months at Padiyoor. Girth recorded in plants from 18th month onwards showed significant correlation with yield at Chethackal and Padiyoor except in the final test tap yield at Padiyoor. Yield on test tapping at 24th month was highly correlated positively with final test tap yield (48 months) in both the locations. Hence, test tap yield at 24th month itself can be used for the identification of a potentially high yielding clone.

Key words: Clonal nursery, Half-sib progeny, *Hevea brasiliensis*, Natural rubber, Test tapping

INTRODUCTION

Crop production potential of *Hevea brasiliensis*, the most important source of natural rubber was improved from less than 300 kg (Panikker *et al.*, 1980) to more than 3500 kg (Licy *et al.*, 1998) per hectare per year by way of conventional breeding programmes.

Owing to the perennial nature of the species, the development of improved clones is a time consuming job, even more laborious when targeting specific objectives and environments. The whole procedure for clonal selection, which includes preliminary evaluation for yield in small-scale trials