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EVALUATION OF POLYCROSS SEEDLINGS OF PREPOTENT *HEVEA* CLONES POTENTIAL FOR YIELD IMPROVEMENT AND DROUGHT TOLERANCE

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A seedling nursery evaluation of nine sets of half-sib seedlings was conducted at Rubber Research Institute of India. The family-wise performance of the progenies was assessed by considering their juvenile yield on test tapping during peak and summer seasons along with seedling girth. An attempt was also made to study their drought tolerance potential by conducting a pot culture study in the second phase along with one set of seedlings of assorted origin. Growth parameters like plant height, girth and number of leaves were recorded at regular intervals during summer and non-summer periods. Visual scoring leaf yellowing was done in pot culture. From nursery evaluation, 126 potential seedlings out of 397 (31.7 %) could be identified with high summer yield. In pot culture study, the highest number of seedlings with green leaves was in the family of PB 28/83. The performance of the family of assorted seeds was inferior to polycross progenies throughout the period. The progenies of clones PB 28/83 and PB 215 were identified as ideal populations for selection and further detailed studies.

Key words: Drought tolerance, Girth, *Hevea brasiliensis*, Juvenile yield, Polycross seeds

INTRODUCTION

Breeding in *Hevea* aims at evolving clones for specific objectives and environments. The efforts for rapid genetic improvement are often hindered due to the perennial nature of the crop where procedures are often lengthy and laborious (Tan, 1987; Simmonds, 1989; Varghese and Mydin, 2000) and hence early evaluation techniques must be practised in seedling and clonal nursery screening for shortening the breeding cycle in *Hevea*. Seedling morphology is very important in the improvement of perennial crops and seedling vigour gives an indication of the vigour of clones after budding. Good immature vigour is one of the most important attributes associated with yield potential in rubber and is one of the early selection criteria in *Hevea* breeding programmes. Being an outcrossing perennial tree, *Hevea brasiliensis* offers abundant scope for producing natural polycross seeds, which are recommended for planting in marginal lands as the heterogeneity of the seeds becomes advantageous in imparting stability of performance under adverse conditions.

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