

YIELD PERFORMANCE OF ELITE POLYCROSS SEEDLINGS OF *HEVEA BRASILIENSIS* GROWN IN A DRY SUB-HUMID CLIMATE OF INDIA

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The performance of ten elite seedling trees of polyclonal origin as evaluated in the region of Odisha State, which has a sub-humid climate with high temperature and low rainfall as the major constraints for the growth and yield. The study revealed that seedling population is highly heterogeneous, and the selected elite genotypes over the years are outstanding performers for latex yield which recorded two to three times higher yield than the mean of a popular clone in the region. Out of the ten elite seedlings, the highest mean dry rubber yield was recorded in O7 (82.3 g t⁻¹ t⁻¹) followed by O8 (80.2 g t⁻¹ t⁻¹) and O1 (73.5 g t⁻¹ t⁻¹) over ten years of tapping. Highest yield contribution was recorded during cold months for all elite seedlings. Highest girth since tapping and girth increment has been recorded in elite seedling O 4. In addition to the yield, the population was assessed for incidence of tapping panel dryness and wind damage. The present study, in dry sub-humid region of Odisha of eastern India, reveals the scope for selection of promising genotypes from poly cross progeny for stressed environment.

Keywords: Breeding, Poly cross seedlings, Selection, Yield

Plantations raised from seeds are having high genetic variation in growth and yield. These polyclonal seedling populations have several advantages such as ease in establishment; vigorous growth and good survival in adverse conditions. Therefore these plants may be the ideal material to circumvent biotic and abiotic stresses. Screening of these plantations helps to identify potential high yielders that may become future clones; and the potential of poly cross population for outstanding genotypes in any new environment have been widely accepted (RRII, 2002). Selection

of promising trees from existing seedling populations and their vegetative multiplication is one of the most important methods adopted for evolving new clones (Marattukalam *et al.*, 1990). Many such clones (GT 1, PB 86, Tjir 1) are still under cultivation in different rubber growing countries (Fernando, 1974). In view of the limited scope for further expansion of area under rubber in traditional zone (8° 15' N and 12° 52' N latitude), cultivation of the crop was extended to less congenial but potential areas (Sethuraj *et al.*, 1989). One of the regions selected was the Odisha state of