VARIABILITY ASSESSMENT AND PERFORMANCE EVALUATION OF 49 *HEVEA* GENOTYPES IN CLONAL NURSERY WITH SPECIAL REFERENCE TO POLYCLONAL SELECTIONS

M.J. Reju, P.L. Arunima and T. Gireesh

Rubber Research Institute of India, Kottayam-686 009, Kerala, India

Received: 02 September 2025 Accepted: 30 October 2025

Reju, M.J., Arunima, P.L. and Gireesh, T. (2025). Variability assessment and performance evaluation of 49 *Hevea* genotypes in clonal nursery with special reference to polyclonal selections. *Rubber Science*, **38**(2): 203-214.

A clonal nursery population of 49 genotypes involving polyclonal selections, latest introductions and popular RRII clones were evaluated. Height and girth of the young clones, dry rubber yield and incidence of pink disease were recorded. Promising clones were identified based on girth attained by the fifth year after planting and the average yield for three years. The study showed that there exists significant variation among the 49 clones for the traits studied. Maximum plant height was recorded in IRR 5, a recently imported clone from Indonesia compared to RRII 430. Polyclonal selections such as M 1172, C 734, T 1478 and M 612 showed significantly higher values for plant height over RRII 430. After five years of planting, superior girth was recorded in A 1378, T 1458, C 1863, IRR 5 and M 1170 compared to RRII 430. Among the RRII 400 series clones, the highest girth was recorded in RRII 417. In the third tapping year, seven clones *viz*. A 1393, C 1836, T 1458, A 1378, C 1863, A 816 and M 1170 showed superior yield to RRII 430. The average yield over the three years showed that clones A 1393, T 1458, A 1378, C 1836, C 1863, A 816 and D 753 were superior to the check clone RRII 430. Among the RRII 400 series clones, the highest yield was recorded in RRII 417 followed by RRII 430, RRII 422 and RRII 414. Eight clones from the population *viz*. T 1281, M 1170, A 1367, T 1286, D 1317, T 1478, M 590 and C 743 showed yield on par with RRII 430. Coefficient of Variation was lower for growth parameters compared to yield of clones showing more uniformity for growth among clones than for yield. Hierarchical clustering of the 49 clones for girth, dry rubber yield and incidence of pink disease in the population showed that 14 polyclonal selections, RRII 430 and IRR 5 were green to white in the colour scale for all the traits. The third-year yield was a strong contributor to the mean yield. Pink disease was seen as independent of growth and yield from the colour scale. The clones that showed superiority to RRII 430 for yield and also the clones that were on par with RRII 430 will be pipeline clones that may be tested further in large scale trials and on-farm trials for further validation.

Keywords: Clonal nursery, Imported clones, Polyclonal selections, Variability assessment

INTRODUCTION

Hevea brasiliensis (Willd.ex A. Juss.) Muell. Arg., is a domesticated wild forest tree species from the western tropical regions of South America, cultivated in the eastern tropics of Asia. The migration of the species from the wild West to the cultivated East was owing to its enormous commercial

Correspondence: Reju M.J. (Email: reju.rbd@nic.in)