

## FURTHER EVALUATION OF SELECTED WILD *HEVEA* GERMPLASM ACCESSIONS IN INDIA: 1. PERFORMANCE IN THE IMMATURE PHASE

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A set of 22 potential wild *Hevea brasiliensis* accessions selected for juvenile yield, girth and number of laticifer rows on the basis of preliminary nursery studies, was evaluated along with three modern clones, viz. RRII 105, RRIM 600 and RRII 208, for their early performance in the first seven years of growth in a replicated trial planted in 2003 in the traditional rubber growing region of Kerala, India. Highly significant clonal differences were observed for juvenile yield, number of latex vessel rows and all other growth characters, except bole height. The accession AC 2629 had the highest juvenile yield of 7.7 g/t/t followed by AC 4149 (7.5 g/t/t) and AC 716 (5.1 g/t/t) respectively, while that of the controls ranged from 4.0 g/t/t in RRII 208 to 7.5 g/t/t in RRII 105. AC 2629 also had the highest girth, bole volume and bark thickness. The number of latex vessel rows of these three wild accessions ranged from 8.42 to 8.83, while in the controls it ranged from 7.56 (RRII 208) to 10.13 (RRII 105). However, the highest number of latex vessel rows was observed in MT 999 (12.9), the character for which it was originally selected from the nursery. Girth, bark thickness and number of latex vessel rows were also high in AC 626, which had originally been selected on the basis of girth in the nursery. The accessions were ranked for overall performance using seven parameters. AC 2629 and AC 4149 ranked first and second respectively with the maximum number of desirable traits. Correlations worked out between the eight quantitative traits revealed that yield was significantly correlated with girth, bark thickness and number of latex vessel rows.

**Keywords:** Correlations, Crop improvement, *Hevea brasiliensis*, Rank sum, Wild germplasm

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### INTRODUCTION

Natural rubber (*Hevea brasiliensis* Muell. Arg.), with its centre of origin in the Amazon rainforests of Brazil, is a strategic industrial crop cultivated mainly in the South East Asian countries. In view of the narrow genetic base of cultivated rubber in this region (Wycherly, 1969), a huge collection of wild *Hevea* germplasm was made by the IRRDB (Ong *et al.*, 1983) during 1981 from three states in Brazil, viz. Acre (AC),

Rondonia (RO) and Mato Grosso (MT), and distributed to member countries including India. Around 4500 accessions are being conserved in source bush nurseries in India, and are under different stages of evaluation. Preliminary nursery studies in some of these accessions showed indications of promising yield and other yield contributing secondary traits. This has to be confirmed by carrying out further detailed evaluation in various field trials. One such set of wild accessions, selected for juvenile yield, girth and number