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HIGH YIELD AND PRECOCITY IN THE RRII 400 SERIES HYBRID CLONES OF RUBBER

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Twenty clones comprising 15 of the RRII 400 series, one introduced (Prang Besar) clone, one tetraploid and three clones with normal morphotype (derived from the progeny of the compact canopy type variant) were evaluated in large scale evaluation trials. Mean yield and growth parameters over four years of tapping, clear bole volume, monthly yield trends and early tappability were used as selection parameters. Clones with an overall superior performance were identified based on performance indices. The response to selection for yield was estimated to assess the improvement in yield of selected clones over the high yielding check, RRII 105. Significant variability for the parameters and high heritability for yield helped in identifying four precocious high yielding hybrid clones *viz.*, RRII 430, RRII 422, RRII 414 and RRII 402 of parentage RRII 105 x RRIC 100.

Key words : Clear bole volume, Hybrid clones, Heritability, Performance index, Precocity, Rubber yield.

INTRODUCTION

The major selection parameters in present day *Hevea brasiliensis* breeding include high rubber yield, precocity which constitutes early attainment of tappable girth and timber yield potential (Abdul Aziz, 2002; Mydin *et al.*, 2005), an aspect that has recently gained significance in determining the worth of a rubber clone. Hybridization and clonal selection has resulted in the release of numerous outstanding *H. brasiliensis* clones. The heterogeneous seedling populations produced by hybridization are evaluated in the nursery, following which selected hybrids are cloned and evaluated in a phased manner in small scale trials, large scale trials and on-farm trials (Tan, 1987; Varghese and Mydin, 2000).

In India, crop improvement in rubber was initiated in 1954 with the first hybridization programme which led to the release of the most popular rubber clone RRII 105 (Nair and George, 1968; Nazeer *et al.*, 1986; Mydin *et al.*, 1994). Subsequent hybridization programmes have led to the release of clones of the RRII 200 series (Saraswathyamma *et al.*, 1990) and RRII 300 series (Premakumari *et al.*, 1984). In the attempt to further improve yield levels, RRII 105 was incorporated in crossing programmes from 1982 onwards (Annamma *et al.*, 1989; Licy *et al.*, 1992). A number of high yielding hybrids of the RRII 400 series were produced from the cross RRII 105 x RRIC 100 (Licy *et al.*, 1992) and the heterotic response for yield and related attributes of the limited number of trees in a small scale trial was reported by Licy *et al.* (2003).

The present paper reports on the per-

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