

PERFORMANCE OF CERTAIN HYBRID CLONES OF *HEVEA BRASILIENSIS* UNDER SMALL-SCALE EVALUATION

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The performance of 34 hybrid clones of rubber, *Hevea brasiliensis* (Willd. ex A. Juss.) Muell. Arg., evolved from the 1989 hand pollination programme, was evaluated in a small-scale trial over a period of 12 years (seven years before tapping and five years under tapping). Yield over a period of five years, summer yield depression, girth increment before tapping and on tapping, mean girth at opening and in the fifth year of tapping, bark thickness and number of latex vessel rows at the time of opening the trees for tapping, incidence of major diseases, wind damage and tapping panel dryness were recorded. Five clones recorded significantly higher yield than the control RR11 105 in the first five years of tapping. The mean yield ranged from 10.22 to 62.00 g/t/t. The hybrid clone 89/95 recorded the highest yield (62.00 g/t/t) followed by the clone 89/7 (60.89 g/t/t). Girth at opening ranged from 37.25 cm (89/287) to 62.83 cm (89/27). Girth increment before opening was high in 89/27 and in the mature phase it was high in clone 89/88. Bark thickness was high in 89/27 and the number of latex vessel rows was high in 89/95. Incidence of major diseases and damage caused by wind were comparatively less. Thirteen clones viz. 89/7, 89/27, 89/63, 89/64, 89/79, 89/95, 89/102, 89/124, 89/243, 89/308, 89/309, 89/349 and 89/356 showing high yield and good secondary attributes were selected for the next phase of evaluation.

Keywords: Biotic and abiotic stresses, Dry rubber yield, Girth increment, *Hevea brasiliensis*, Latex vessel rows, Yield depression.

INTRODUCTION

The Rubber Research Institute of India (RR11) has been evolving new clones of rubber (*Hevea brasiliensis*) through breeding and selection since 1955. Selected clones have been used as parents in hybridization which have resulted in some very successful cultivars, of which RR11 105 is the most popular (Nair and Panikkar, 1966; Nair and George 1968; Nair *et al.*, 1975; Nazeer *et al.*, 1986; Mydin *et al.*, 1994). Subsequent hybridization programmes have led to the

release of 200 series (Saraswathyamma *et al.*, 1980), 300 series (Premakumari *et al.*, 1984) and 400 series (Licy *et al.*, 1992; Mydin *et al.*, 2005) clones. Among the 400 series, RR11 414, RR11 417, RR11 422 and RR11 430 are now popular (Saraswathyamma *et al.*, 1990; Licy *et al.*, 1993; Mydin *et al.*, 2005; Varghese *et al.*, 2009). Conventionally, hybrids from the nursery selection are multiplied and evaluated in a phased manner in small-scale trials, large-scale trials and on-farm trials (Tan, 1987). The first report on the evaluation