

## PERFORMANCE OF SOME *HEVEA* CLONES UNDER THE DRY SUB-HUMID CLIMATE IN ODISHA

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The growth and yield performance of three natural rubber (*Hevea brasiliensis*) clones were evaluated in dry sub-humid climate in Odisha in eastern India. In this region, crop experiences severe drought in summer months. Prolonged high summer temperature and soil moisture stress are the major environmental constraints. Analysis of growth performance of the clones revealed that GT1 had the highest girth and girth increment. Clone RRII 105 ( $32.8 \text{ g t}^{-1} \text{ t}^{-1}$ ) had superior yield over other clones like RRIIM 600 and GT1, over eight years of tapping. Highest yield contribution for all three clones was recorded in winter season. More incidence of tapping panel dryness was noticed in RRIIM 600. Wind damage was the highest in RRII 105. Comparatively higher timber bole volume was estimated in clone GT1 ( $0.09 \text{ m}^3$  per tree). Growth, yield and other secondary characters of three popular *Hevea* clones in the drought prone region are discussed.

**Keywords:** Clone evaluation, Girth, Yield, Stress environment, Odisha

The growth of the Indian rubber plantation industry has been mainly through the expansion of rubber cultivation (Thomas and Panikkar, 2000) and the major area of rubber growing region in India is confined to west coast of the country (8 to  $12^\circ$  North). Growing demand for natural rubber coupled with the limited scope for area expansion in the traditional region has necessitated an increase in production from the non-traditional region of rubber cultivation (Sethuraj *et al.*, 1989). In the dry sub-humid region of Odisha high summer temperature and severe moisture deficits are the major constraints curtailing the growth and productivity of the crop.

Such plantations are being established in an environment grossly different from the traditional rubber growing area to which the species is best adapted. The yield and growth performance of even recommended clones in traditional regions are often different from yield and growth in different locations. Performance evaluation studies in dry sub-humid conditions begin only in early nineties (Sethuraj *et al.*, 1989; Mohankrishna *et al.*, 1991; Sanjeeva Rao and Vijayakumar, 1992; Chandrashekar *et al.*, 1996, 97). Preliminary studies on the performance of *Hevea* clones have also been reported in dry sub-humid climate of Odisha (Meenatoor *et al.*, 2000; Gupta *et al.*, 2001, 2002). The present