

## YIELD PERFORMANCE OF TREES GROWN FROM POLYCROSS SEEDS OF RUBBER (*HEVEA BRASILIENSIS*) IN A DRY SUBHUMID CLIMATE IN INDIA

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A study was conducted to understand the yield performance of trees grown from polycross seeds of rubber in the North Konkan region of Western India, which has a subhumid type climate with high temperature and soil moisture deficits in summer as the major constraints for the growth and productivity of the crop. Data on rubber yields collected on each tapping day from two blocks of trees formed the basic data from which monthly, seasonal and annual yields were calculated. Population characteristics like frequency distribution of various yield classes and the yield contributions of tree groups categorized on the basis of yield levels were worked out. Monthly block yields increased gradually with the onset of monsoon, peaked after the monsoon, sustained up to December and declined thereafter. Contribution of post-monsoon season to total yield was about 52 to 58% while that of monsoon and dry seasons were almost similar with 21 to 24%. Yield level category tallying classified 68% of the trees as low, 20% as medium and 6% as high yielders. Contribution in yield of the trees to the total was 49, 24, 11 and 16% respectively. Mean annual yield of about 800 kg/ha/annum (with a range of 610 to 998 kg) over seven years of tapping was comparable with that in the traditional region. The study indicated that though North Konkan experiences a long rainless period with more than three months of high temperature and drought conditions, rubber cultivation may be viable under judicious agromanagement practices.

**Key words:** *Hevea brasiliensis*, Non-traditional zone, North Konkan, Polycross seed trees, Rubber, Subhumid climate, Yield

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### INTRODUCTION

In India, rubber (*Hevea brasiliensis*) is traditionally cultivated in the zone lying between 8° 15'N and 12° 52'N latitudes covering the states of Tamil Nadu, Kerala and Karnataka. Most of the area lies to the west of the Western Ghats, where the total rainfall, its distribution and ambient temperatures are suited for the crop. In view of the limited scope for further expansion of area in this zone, cultivation of the crop was extended to less congenial but potential areas (Sethuraj *et al.*, 1989). One of the regions selected was the North Konkan region of western India (15 to 20°N). High temperature and soil moisture deficit in summer are the major constraints curtailing the growth and productivity of the crop in this region

(Sethuraj *et al.*, 1989; Chandrasekhar *et al.*, 1990; 1994; 1996; 1998; Mohankrishna *et al.*, 1991; Vijayakumar *et al.*, 1998).

Generally, *Hevea* plantations are raised from high yielding clonal budgrafts. Plantations raised from seeds are rare because of their high genetic variation in growth and yield that results in low productivity per unit area. Nevertheless, such plants have several advantages such as ease in establishment, vigorous growth and good survival in adverse conditions. These plantations occasionally throw up potential high yielders that may become future clones. Before 1970s, most of the plantations were from either unselected or polyclonal seed populations. But reports on yield performance of seed derived plants from the traditional