

## RESPONSE OF A FEW *HEVEA* CLONES TO PARTIAL IRRIGATION DURING IMMATURE PHASE IN A DRY SUBHUMID CLIMATIC REGION

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Chandrashekar, T.R., Vijayakumar, K.R., George, M.J. and Sethuraj, M.R. (1994). Response of a few *Hevea* clones to partial irrigation during immature phase in a dry subhumid climatic region. *Indian Journal of Natural Rubber Research*, 7 (2) : 114-119.

Response of nine *Hevea* clones to partial irrigation and their growth performance during the immature phase was studied in the North Konkan which is a non-traditional area for rubber. The area has effective annual dry period of six months (December to May) or more, with more pronounced soil moisture stress in the latter half of the dry period. Growth of clones in terms of relative growth rates (RGR) during wet, irrigated dry and unirrigated dry seasons during immature period was studied from June 1986 to February 1991. The mean annual RGR of clones during irrigated and unirrigated years were 842 and 493 g per kg per season respectively. During wet periods clones 'Ijir 1 and RRIM 501 were leading in growth, followed by PB 235, C1 1, RRIM 612 and RRIM 600. The RGRs were 555, 555, 514, 515, 515 and 404 g per kg per season respectively. Except PB 235, response of other clones to irrigation was comparable. In unirrigated dry seasons RGRs of clones RRIM 600, PR 107 and RRIM 612 were significantly higher and the values were 165, 100 and 51 g per kg per season respectively. There was general decline in the mean RGR in the wet season when it succeeded unirrigated dry season. Clones which grew well in wet season did not grow well in unirrigated dry season and vice versa. At the end of eight and a half years, the growth of RRIM 600, RRIM 501 and RRIM 612 were found to be better. The results indicated advantages of irrigation during immature phase.

Key words : *Hevea brasiliensis*, Growth, Partial irrigation, Immature phase, Konkan region, India.

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### INTRODUCTION

Faced with difficulties in getting land for expansion of *Hevea* cultivation in the traditional in India areas steps were taken in the seventies for extending rubber cultivation to less congenial but potential areas outside the traditional belt, primarily to meet the growing internal demand for natural rubber. One of the regions selected for the purpose was the Konkan region of Western India (15 to 20°N).

In this region prolonged soil mois-

ture deficit and high summer temperature are the major environmental constraints for growth and productivity of rubber. Effect of these adverse conditions on growth of plants is now fairly understood (Chandrashekar, 1983; Vijayakumar *et al.*, 1988; Bhaskar *et al.*, 1990; Chandrashekar *et al.*, 1990; Mohankrishna *et al.*, 1991). However, no information is available on clonal variation in (a) relative growth rate in different seasons (wet and dry) of the year and (b) responses to irrigation. The present paper is an effort to study the same.