

## CLONE X ENVIRONMENT INTERACTION DURING EARLY GROWTH PHASE OF *HEVEA BRASILIENSIS* I. CLONAL STABILITY ON GIRTH

J. Rajeswari Meenattoor, K. K. Vinod, A. K. Krishnakumar,  
M. R. Sethuraj, S. N. Potty and R. R. Sinha

Rajeswari Meenattoor, J., Vinod, K.K., Krishnakumar, A.K., Sethuraj, M.R., Potty, S.N. and Sinha, R. R. (1991). Clone X environment interaction during early growth phase of *Hevea brasiliensis* I. Clonal stability on girth. Indian J. Nat. Rubb. Res. 4(1) : 51-54.

A study was carried out to determine the clone X environment interaction during the early growth phase of 15 *Hevea* clones at Taramagar Farm of the Regional Research Station of the Rubber Research Institute of India. The results showed that the rate of increment in girth significantly decreased with increasing age irrespective of seasons (winter/summer). However, there was wide differences between the girth increment during summer and winter months. GE interaction parameters like ecovalence and stability variance showed that clones studied have differential adaptability. The data suggest that clones RRIM 600, PB 86 and GT 1 are widely adapted showing more flexibility and those like RRH 105 are specifically adapted with less flexibility. The results indicate that selection for phenotypic stability can lead to isolation of stress resistant genotypes.

**Key words:-** *Hevea brasiliensis*, Phenotypic stability, Ecovalence, Stability variance, Adaptability, Non-traditional area.

J. Rajeswari Meenattoor (for correspondence), K. K. Vinod, A. K. Krishnakumar, Regional Research Station, Rubber Research Institute of India, Agartala, Tripura-799006; M.R. Sethuraj, S.N. Potty, Rubber Research Institute of India, Kottayam-686 009, and R. R. Sinha, Regional Research Station, Rubber Research Institute of India, Guwahati-781 003.

### INTRODUCTION

Genotypes of almost all cultivated species often exhibit differential reaction to different macroenvironments like agroclimatic zones, management levels, etc (Becker and Leon, 1988). *Hevea brasiliensis* (Willd. ex Ait. de Juss.) Muell. Arg., the natural rubber yielding tropical tree, is no exception to this. Consequently breeding for wider adaptability or phenotypic stability over environments becomes complex because the genotype X environment (GE) interaction makes it difficult to predict how a genotype selected under one

environment will behave in another (Ceccarelli, 1989).

*Hevea*, though genetically adapted to tropical environment, has proved to thrive in subtropical agroclimatic zones such as in North-East India and China. Varied performance of *Hevea* genotypes has also been reported in North-East India where two distinct seasons, summer and winter, prevail (Rubber Research Institute of India, 1989). Information on GE interaction will prove to be of vital importance for successful introduction of this crop, particularly