

## PRELIMINARY FIELD SCREENING OF WILD *HEVEA* GERMPLASM FOR TOLERANCE TO DROUGHT

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Mercy, M. A., Singh, M., Reghu, C. P. and Varghese, Y. A. (2010). Preliminary field screening of wild *Hevea* germplasm for tolerance to drought. *Natural Rubber Research*, 23(1&2): 71-79.

The Rubber Research Institute of India has large collection of wild *Hevea* germplasm received from IRRDB which was collected in the 1981 expedition to the centre of origin of the crop in Brazil, covering the three states of Acre (AC), Rondonia (RO) and Mato Grosso (MT). Wild germplasm, being a rich source of genes conferring tolerance to various biotic and abiotic stresses, has an important role in broadening the existing narrow genetic base of cultivated rubber. For identifying the drought tolerance potential of this germplasm collection, a preliminary field screening of wild accessions along with the check clones RR11 105, RRIM 600 and Tjir 1 was conducted during 2001 and 2002 in the drought-prone area of Dapchari in Maharashtra. Response of these accessions towards drought stress was determined based on growth and drought-related parameters during pre - and post - drought periods. Plant height, girth, number of whorls and number of leaves were the growth parameters studied and senescence and relative water content of leaves were the drought-related parameters measured. Annual and summer period girth increments (as percentage) were also worked out to assess the drought tolerance potential of these accessions. Wide variability was noticed among the accessions for all the characters studied. The proportion of accessions with drought tolerance was more in MT and RO provenances than in AC provenance. Out of 105 accessions evaluated, 14 potential accessions could be identified for further detailed field evaluation.

**Keywords:** Accessions, Drought tolerance, *Hevea* germplasm, Provenance

### INTRODUCTION

The Rubber Research Institute of India has a collection of 4548 wild *Hevea* germplasm accessions, received as part of an expedition conducted by IRRDB jointly with EMBRAPA of Brazil in 1981, in the Amazon forests of Brazil. This venture resulted in the collection of more than 64000 seeds and 194 ortets from three states in Brazil, namely Acre (AC), Rondonia (RO) and Mato Grosso (MT), covering a total of 64 locations in 16 districts (IRRDB, 1982). Acre has an equatorial climate

whereas Rondonia and Mato Grosso states experience a tropical climate with a dry season extending up to four months (Chevallier, 1988). Genetic diversity in this collection is closely related to the geographical provenance of the accessions (RR11, 2002) and considerable genetic variation among the accessions from Acre, Rondonia and Mato Grosso provenances has been reported (Varghese *et al.*, 2002). Hence, this wild germplasm collection has an important role in broadening the existing narrow genetic base of cultivated rubber. The

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