

# PERFORMANCE EVALUATION OF POTENTIAL DROUGHT TOLERANT HYBRID CLONES OF RUBBER IN A DRY SUB-HUMID REGION

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Developing drought tolerant high yielding clones is the way forward for expanding rubber cultivation to non-traditional areas, including dry sub-humid areas of India. The present study attempted to explore and utilize genetic variability among selected hybrid progenies of the 1996 HP (cross between high yielding (RRII 105) and drought tolerant (PB 280) clones and its reciprocal cross) and thereby to identify drought tolerant high yielding hybrid clones. Performance of the progenies was evaluated under a Clonal Nursery Experiment in a dry sub-humid area in Maharashtra, India. Forty trial clones along with nine control clones were evaluated both in the field as well as in the polybag grown plants. Clones were evaluated for its growth and dry rubber yield during the peak yielding as well as summer seasons. Chlorophyll index and other morphological parameters were also recorded and analyzed. The study identified clones with superior yield as well as drought tolerance. Clones 114, 66, 117, 98, 59, 69, 29 and 78 were found to be promising and were selected for further evaluation.

**Keywords:** Clonal Nursery Evaluation, Drought tolerance, *Hevea*, Hybrids

## INTRODUCTION

*Hevea brasiliensis*, the rubber tree is indigenous to the rain forests of the Amazon basin, situated within 5°N of the equator with a wet equatorial climate (Strahler, 1969). This region is characterized by a mean monthly temperature of 25 to 28°C with ample rainfall and more importantly with no marked dry period round the year (Bradshaw, 1977).

In India, rubber is being commercially cultivated both in traditional and non-traditional areas to produce natural rubber.

Rubber growing areas in Kerala and Tamil Nadu are considered as traditional rubber growing areas that are ideal for rubber cultivation in India (Vijayakumar *et al.*, 1988). Rubber growing areas under Maharashtra (Vijayakumar *et al.*, 1988; Mohankrishna *et al.*, 1991) and Odisha (Gupta *et al.*, 2002; Krishan, 2013; 2017) were classified as drought prone and Karnataka (Vinod *et al.*, 2003) as moderately drought prone non-traditional areas. In spite of the moderate water stress during summer, Kerala and Kanyakumari District of Tamil Nadu are considered most suitable for rubber