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JUVENILE GROWTH RESPONSE OF SELECTED WILD AMAZONIAN ACCESSIONS AND HYBRID *HEVEA* CLONES OF WICKHAM ORIGIN IN A DROUGHT STRESSED ENVIRONMENT

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Natural rubber cultivation in India faces adverse effects of drought and cold stresses, especially in the non-traditional rubber growing areas. As the genetically divergent germplasm accessions are an excellent repository of various useful traits including stress tolerance, systematic screening of wild germplasm for drought and cold tolerance with the ultimate objective of developing location-specific clones for non-traditional rubber growing areas holds much importance. With this objective, during the year 2007, a field evaluation of 30 *Hevea* clones comprising Amazonian accessions and Wickham clones was initiated at Regional Research Station (RRS), Dapchari located in the North Konkan region of Maharashtra state in India. This region experiences high temperature (exceeding 40 ^{0}C in April-May), high light intensity and very low soil moisture during the summer months. The check clones in the experiment were RRII 105, RRII 430, RRII 414, RRII 208, RRIM 600 and Tjir 1. Growth parameters along with annual and summer girth increment were worked out. Leaf yellowing and drying were also used as criteria to assess drought susceptibility. Based on this data, the growth response of wild Amazonian clones and hybrid Wickham clones were assessed and compared with that of the check clones. The growth performance of the modern clone, RRII 430 and RRII 414 was assessed for the first time under Dapchari conditions. Clone RRII 430 was found to be more suitable than RRII 414 for establishment in a drought prone region based on juvenile growth performance.

Keywords: Amazonian accessions, Drought tolerance, Wickham clones, Wild germplasm.

INTRODUCTION

Rubber cultivation faces various climatic constraints now-a-days even in traditional rubber growing areas and these constraints are expected to become more serious in future. Soil and atmospheric drought and high temperature are major environmental factors limiting growth and yield in *Hevea*, necessitating the development of drought tolerant clones suitable for such areas. A wide genetic variability within the base material is the primary requirement in breeding programmes aimed at selection for any specific trait. The genetic base of the cultivated *Hevea* species was developed from a minuscule of a genetic stock (Wickham base) and unidirectional selection for yield

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