

COMPARATIVE BARK ANATOMY OF DROUGHT TOLERANT AND SUSCEPTIBLE CLONES OF *HEVEA BRASILIENSIS*

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In the Para rubber tree summer drop in yield is observed in many cultivars. This is a clonal characteristic mediated through latex flow pattern, which in turn is governed by several other factors. As structural parameters have strong bearing on clonal performance, a study was made to compare some drought tolerant and susceptible clones for bark anatomical characters. Six clones, three showing drought susceptibility and the other three drought tolerance, were chosen for the study. Significant clonal differences were recorded for the proportion of soft bast ($P < 0.01$), total number of latex vessel rows ($P < 0.05$), proportion of latex vessel rows in the soft bast region ($P < 0.01$), height of phloic rays ($P < 0.01$), width of phloic rays ($P < 0.01$) and height to width ratio of phloic rays ($P < 0.01$). Significant differences between drought tolerant and susceptible groups of clones were recorded for the proportion of soft bast, proportion of latex vessel rows in the soft bast region, width of phloic rays and height to width ratio of phloic rays. Importance of the orientation of latex vessels and proportion of soft bast as selection parameters for drought tolerance have been discussed in the light of theoretical considerations and functional possibilities.

Key words : *Hevea brasiliensis*, Bark anatomy, Drought tolerance, India.

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INTRODUCTION

Yield in *Hevea* is a clonal characteristic influenced by environmental factors. In India, seasonal variation in yield is considerable with a drop during summer and in this respect clones differ significantly (George *et al.*, 1980; Sethuraj and George, 1976 and Sethuraj, 1977). Bark anatomical traits have good bearing on yield. In the present study variability analysis of certain structural parameters was done to compare a few drought tolerant and susceptible clones. Impor-

tance of these structural features in summer drop of yield is discussed.

MATERIALS AND METHODS

Six clones of *Hevea brasiliensis* (Willd. ex Adr. de Juss.) Muell. Arg. were incorporated in this study. The clones were chosen based on their yield performance in two locations in South India, one in Quilon region and the other in Kanyakumari region (Nair and Marattakalam, 1975). The first three clones (RRIM 501, RRIM 605 and RRIM 609) which showed less yield drop over the first three years of tapping were