CLONAL VARIATION IN QUANTITATIVE TRAITS OF LATICIFERS IN *HEVEA BRASILIENSIS*

Philipose Omman* and C.P. Reghu

*Department of Botany, Catholicate College, Pathanamthitta- 689 645, Kerala, India
Rubber Research Institute of India, Rubber Board, Kottayam-686 009, Kerala, India

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Latex vessels form a very imperative tissue system in the secondary phloem of *Hevea brasiliensis*. They run in the longitudinal axis of the stem with a specific angle of inclination for a particular *Hevea* clone. Rubber particles are synthesized in the laticiferous system present in the bark tissue and exploited through controlled wounding of the bark called tapping. Most of the laticifer characters have great significance for latex yield in *Hevea*. A detailed investigation on the latex vessel characters of ten clones has been made in the present study. The secondary phloem consisted of soft bark (SB) region devoid of stone cells and inner hard bark (IHB) region with stone cells. Number of latex vessel rows in both the location was higher in PB clones. The distance between laticifer rows exhibited significant clonal variability. About 90 per cent of the latex vessels were running contiguous to phloic rays and only 10 per cent remained non-contiguous to phloic rays. The articulated and anastomosing nature of laticifers were well supported by inter-connections and it was the highest in the clone RRII 105. Significant superiority of PB clones with respect to latex vessel diameter and total cross sectional area of laticifers was also noticed.

Keywords: Latex vessel diameter, Latex vessel rows, Laticifers, Laticifer area index

INTRODUCTION

Latex vessels or laticifers are cylindrical tubes distributed in the form of rows or rings in the secondary phloem and running in the longitudinal axis of the stem with specific angle of inclination (Omman and Reghu, 2008). Laticiferous system has been considered as the site of rubber synthesis in *H. brasiliensis* (Gomez, 1966; Southorn, 1966) and can be well stained by Oil Red O (Omman and Reghu, 2003). The number of laticifer rows has been reported as a quantitative anatomical parameter pertaining to latex yield in *H. brasiliensis* (Bobilioff, 1923; Gomez, 1966). The correlation of this trait with yield in *Hevea* has already been proved (Narayanan *et al.*, 1973; Narayanan *et al.*, 1974). The number of laticifer rows has been identified as a clonal character (Vischer 1921; Sanderson and Sutcliffe, 1929; Gottardi *et al.*, 1995) which varies considerably with tree age (Bryce and Campbell, 1917; Gomez *et al.*, 1972) and height (Sanderson and Sutcliffe, 1929; Gomez *et al.*, 1972) of the tree whereas the variability is not significant at young stages (Costa *et al.*, 2000).

The distance between laticifer rows has been considered as a yield contributing

Correspondence: C.P. Reghu (Email: reghu@rubberboard.org.in)