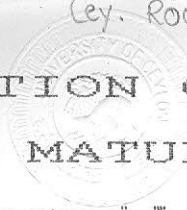


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MICROPROPAGATION OF JUVENILE  
AND MATURE  
*Hevea brasiliensis*

by

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## ABSTRACT

Complete plant regeneration with reasonably high rate of multiplication was achieved by shoot tip culture of juvenile *Mevea brasiliensis* (A.Juss.) Muell.-Arg. Multiplication rate of 4-5 propagules per explant was obtained at each subculture, on MS medium supplemented with 0.5 mg/l BAP, 0.1 mg/l IBA, 0.5 mg/l GA<sub>3</sub> and 0.002 mg/l thidiazuron.

Micropropagated shoot tips were successfully rooted in M<sub>2</sub> solid medium free of growth regulators. Acclimatization of plantlets was carried out in unsterilized sand kept covered with polythene frames inside the glass house. The plantlets were successfully transferred to outdoor environment.

Clonal shoot tips established well in aseptic culture and 4-5 axillary shoots were obtained from each explant. Phenolic browning and severe contamination were problems in the establishment stage. Incorporation of water - insoluble PVP into the culture medium and incubation in low light and low temperature during the establishment period were found to be effective to overcome the problem of phenolic browning.

Shoot apices were found to be easy in establishment and the survival of explants was higher with larger explants (5 cm) than with small explants (3-4 cm). Shoot tips at their stationary state of growth were found to be more suitable for culture establishment than those at the actively growing state. BAP was superior to other cytokinins tested, i.e., kinetin, 2iP and zeatin.

Axillary bud proliferation was rather easy compared to their elongation, which was a very slow process. Strong apical dominance was observed in axillary bud elongation of shoot tip explants. Segmentation of shoot tips into small portions favoured the elongation of axillary buds.

Good callus was obtained when nucellus tissue was cultured on a medium containing 2, 4-D and kinetin. However, the best callus formation occurred in media consisting of 3 ppm 2,4-D and 0.5 - 1.0 ppm kinetin. White globular structures were formed on media having 3 ppm 2, 4-D and 1.00 ppm kinetin, but their further development was not observed.