IN VTRO PROPAGATION OF TEAK (*Tectona grandis* L.)

M.L.W.O.M. Karunaratne[1], S.E. Peries[2] and W.C.P. Egodawatta[1]

[1] *Department of Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura.*
[2] *Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Peradeniya.*

Tectona grandis L. (Teak) is highly sought after for its quality and durability of timber and it is one of the most premier luxury hardwood timbers in the world. The ever-increasing demand for its mellow colour, fine grain and durability has resulted in large-scale plantations, both within and outside its range of natural distribution. Micropropagation of teak was attempted in this study with shoot tip and axillary buds collected from stumps and mature trees as explants. Preliminary studies suggested that tissue contamination and browning were the main problems in *in vitro* establishment of explants from field-grown trees. Nodal explants from field grown trees were sterilized using different concentrations of Clorox™, Bavistin™ and vacuum sterilization. The sterilization based on dipping in 1% Bavistin™ and adding it at 0.05% concentration to culture medium was the most efficient method as it produced 96% of vital explants. Keeping excised explants in running tap water for 1 hour and dipping them in a mixture of 1.5% citric acid and ascorbic acid solution produced 95% browning free cultures. Lowest browning and contamination were obtained from tips and nodes from the stumps. MS (Murashige and Skoog) medium was found to be superior to Woody Plant Medium (WPM), White's, ½ MS and Gamorg (B_5) media for shoot establishment. Shoots were established in different concentrations of Benzyl Amino Purine (BAP), Ga_3 (Glibberlic acid) and Kinetin (KN). Low contamination, browning and high number of shoots were obtained with 1.5 mg l^{-1} BAP and 0.5 mg l^{-1}GA3 treatment. Among 16 treatments, shoot multiplication was found to be better on MS medium supplemented with 9 mg l^{-1} BAP and 2 mg l^{-1} KN. Several shoots were rooted on hormone free MS medium and acclimatized successfully. Leaf explants cultured on MS medium with different combinations of BAP; 2, 4-D, and NAA produced calli with high growth rate. However, regeneration is yet to be observed.

Key words: BAP, Browning, *Tectona grandis*