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IN VITRO PROPAGATION OF *GARCINIA TRAVANCORICA* – AN ENDEMIC AND ENDANGERED TREE SPECIES OF WESTERN GHATS, INDIA

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ABSTRACT: The current study focused on conservation through *in vitro* propagation of *Garcinia travancorica* Bedd., an endemic and endangered tree species of Western Ghats India. Shoots were initiated from nodal explants on Murashige and Skoog (MS) medium supplemented with 4.0 mg/l BAP with major combination of activated charcoal. Multiple shoots and shoot elongation were achieved in MS medium with the combination of 4.0mg/l BAP and 1.0 mg/l of α-Naphthalene acetic acid (NAA). Individual shoots with a minimum of one node were excised and rooted *in vitro* on half strength basal medium supplemented with 0.5-2.5 mg/l of IAA and IBA transferred to the mist house for acclimatization.

Key words: *Garcinia; Agasthyamalai; BAP; hydroxy citric Acid; conservation*

Abbreviations: IAA - Indole acetic acid; Kn - Kinetin; BAP - Benzylaminopurine; IBA -Indole buteric acid; NAA - α - Naphthalene acetic acid.

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The genus *Garcinia* is represented by 35 species in India, many of which are endemic and economically important with immense medicinal properties. *Garcinia travancorica* Bedd. is an endangered tree species locally known as Malampongu belongs to the family Clusiaceae (Guttiferae). This little known tree has been distributed in the restricted patches of high altitude forest areas (2000-2500m asl) of Agasthyamalai Biosphere Reserve of Southern Western Ghats of India. The habitat of the tree is reported as one among the 25 globally identified biodiversity hotspots, recognized as one of the five important centers of plant diversity in India and also as one of the 24 microcenters of endemism in India. In the forest, the tree appears as medium-sized, straight stemmed with horizontal branches. The trees were overexploited for several commercial (gum resin) or medicinal products and very meager number of individuals alone existing in the natural forest areas. Yellow gamboge, a gum-resin obtained from this plant is used as an ointment, as a yellow dye, as an illuminant and in varnishes, water colour preparation etc. (Uphof, 1959). *Garcinia* is also a major source for a natural diet ingredient Hydroxy Citric Acid (HCA) having anti obesity properties. *Gracinia atroviridis, G. dulcis* and *G. cowa* have reported with high concentration of HCA, particularly in the fruits and leaves which has been shown to inhibit ATP dependent citrate lyase, a key enzyme in diverting carbohydrate to fatty acid and for the synthesis of cholesterol (Lewis and Neelakantan, 1965). Other than these compounds the essential oil of leaves of *G. travancorica* contain larger quantities of bioactive compounds like 5,9,13 Pentadecatrien 2 one, 6,10,14 trimethyl, (E,E) and 5,9,13Pentadecatrien2one, and minimal amount of 6,10,14 trimethyl Nerolidyl acetate 1, 6, 10 Dodecatrien3ol, 3,7,11trimethyl, (E) 2,6,10 Dodecatrien1ol, 3,7,11trimethyl in the essential oils (Ramasubbu, 2015- unpublished data).

Since, the trees have polygamo dioecious habit in which male and female flowers developed in two different branches of trees at different time intervals. Therefore, the sexual life between male bisexual and female flowers is not possible in all times and the distribution is also restricted to few square kilometers. The distributional range and number of mature individual particularly trees with female flowers were very low. The