

Direct multiple shoot induction and plantlet regeneration in soapnut(*Sapindus emarginatus vahl*)

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Multiple shoot induction in *Sapindus emarginatus vahl* has been achieved by two methods: (1) Direct germination of *Sapindus emarginatus vahl* seeds in 6-benzylaminopurine (3.0mg/ L) supplemented MS liquid medium and supported on a filter-paper bridge and (2) in planta treatment with 6-benzylaminopurine (100 µg on alternate days) of the axillary bud regions of plants germinated and maintained under sterile conditions. While the former method resulted in as many as 7.5±8.6 shoot buds from the cotyledonary node within four weeks, the latter yielded on average approximately 8 shoot buds from each treated node in eight weeks. The cytokinin treatment in planta consisted of placing sterile filter paper moistened with sterile distilled water over the node and adding different concentrations of 6-benzylaminopurine. The shoots elongated and rooted directly in vermiculite after a pulse treatment with IBA (2.5 mg mL⁻¹) for 15 min. Fungus growth, a serious problem in *Sapindus emarginatus vahl* tissue culture, was controlled using a fungicide, Bavistin, along with elimination of organic nutrients from the growth medium.

Biography

M. Venkateshwarlu has completed his Ph.D at the age of 25 years from Kakatiya University under the guideness of Prof B.Mallaiah, Head, Department of Botany, Kakatiya University, Warangal, immediately he was started his committed teaching career as a Lecturer in Botany at University College Kakatiya University Warangal in 2000 and he was appointed as Assistant Professor by University committee. He has published 26 research articles, co-authored 2 books and guided 6 M.Phil theses. He has attended 15 national seminars and 3 international seminars and also attends 4 symposia and workshops. His major fields of teaching and research include Cytology and Cytogenetics, Genetics and Plant Breeding, Molecular Genetics, Mutation Breeding, Plant Tissue Culture and Biotechnology. He successfully applied mutation breeding to Cucumis and tomatoes and developed several agronomically useful varieties. He established clonal multiplication of certain forest trees. He has a patent pending for In Vitro Propagation of Tassar Silk Plant.

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In vitro protocol for rapid micro propagation of *Sapindus emarginatus vahl* using nodal segments

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An efficient regeneration protocol under in vitro conditions has been developed for *Sapindus emarginatus vahl*, an important medicinal plant using nodal segments. Nodal explants of this species were cultured on Murashige and Skoog medium supplemented with various concentrations of auxins and cytokinins individually and in various combinations. BAP was found to be more effective than Kinetin for shoot multiplication. The highest number of shoots (8.0 ± 0.23) was achieved on MS medium augmented with 3.0 mg/l BAP. The medium supplemented with 3.0 mg/l BAP + 1.0 mg/l NAA responded better than all other media combinations. MS half strength medium supplemented with 3.0 mg/l IBA proved better with forty percent rooting after 22 days of implantation. Most of the roots were long and healthy. The micropropagated plantlets were hardened and acclimatized. They were successfully transferred in pots containing sterilized soil and sand mixture (1:1) with 60% survival rate under field conditions.

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