

Abstract Details

Title: Plant Regeneration from Encapsulated Adventitious Shoot Buds and Somatic Embryos of Tylophora Indica- An Effective Way of Mass Propagation and Germplasm Exchange

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Abstract: An efficient procedure for plant regeneration from alginate/ chitosan encapsulated adventitious shoot buds and somatic embryos of Tylophora indica- an endangered medicinal plants has been developed. Adventitious shoot buds were induced from mature leaf explants on Murashige and Skoog's (MS) medium supplemented with 6- benzyladenine (22 μ M) and adenine sulphate (1.35 μ M), where 50-60 shoots/explant were formed in 90% of cultures. Embryogenic callus was obtained from leaf explants on MS medium supplemented with 2, 4-dichlorophenoxy acetic acid (9.74 μ M) and 3% sucrose and various stages of embryo development were observed in the cultures. Somatic embryos and shoot buds thus formed in vitro were encapsulated using sodium alginate (2%) or chitosan (0.1%) to form artificial seeds which could be stored at low temperature (4oC) for more than 90 days. The viability of these seeds was checked after different periods of storage and the regenerated plantlets were successfully acclimatized and established in the field conditions with 95% survival rate.

Keywords: Tylophora indica, synthetic seeds, adventitious shoot buds, alginate, somatic embryos.