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IN VITRO PROPAGATION OF *POLYGONATUM VERTICILLATUM* ALL.- AN ENDANGERED MEDICINAL PLANT SPECIES OF KASHMIR HIMALAYA

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ABSTRACT

Medicinal plants are the most important source of life saving drugs for majority of the world's population. The biotechnological tools are important to select, multiply and conserve the critical genotypes of medicinal plants. In vitro regeneration holds tremendous potential for the production of high-quality plant-based medicine. This article discusses an in vitro propagation protocol for Polygonatum verticillatum All. using in vitro raised leaf as source of explant. The leaf explants were inoculated on Murashige and Skoog medium supplemented with varying concentrations of growth regulators such as 2,4-D, IAA, NAA, BAP and Kn. Maximum callus production was obtained on MS medium supplemented with 2,4-D at a concentration of 0.5 mg/l within 38 days with 70% culture response. Rhizome regenerated from callus on MS medium fortified with different PGR's and MS medium supplemented with Kn (4.0 mg/l) proved best where in maximum amount of rhizome regeneration occurred with maximum number of buds within 28 days with 80% culture response. Maximum number of shoots (18.33±0.88) with mean length of 4.61±0.25 was obtained on MS medium augmented with Kn (3mg/l) and IAA (1mg/l) in combination, within 25 days with 80% culture response. These in vitro raised plantlets were successfully acclimatized in vermicompost with 60% survival rate.

Keywords: BAP, IAA, In vitro, Medicinal plants, MS medium.