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IN VITRO CONSERVATION OF *GLYCYRRHIZA GLABRA* BY SLOW GROWTH CULTURE

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ABSTRACT

The aim of the present research work was to develop a protocol for slow growth conservation. Spectacular success was achieved in preserving shoot apices of *Glycyrrhiza glabra* under slow growth conditions. Cultures responded best, when incubated at 10ºC under low light intensity (2.5 µmol m^{-2} s^{-1} quantum flux density) and sealed with polypropylene caps. The optimized nutrient formulation to maintain slow growth of cultures contained 5.0 mgL^{-1} ancymidol and 0.1 mgL^{-1} abscissic acid. The high osmoticum of nutrient medium was achieved by employing 1.0 mgL^{-1} polyethylene glycol where cultures could be conserved upto six months without any subculture. A very low concentration of BA (0.1 mgL^{-1}) and IAA (0.05 mgL^{-1}) was found beneficial for retrieval of the conserved shoots. Among different combinations of osmotic agents (sucrose, sorbitol and mannitol), used for increasing the subculture period, 20 gL^{-1} of mannitol suited best for slow growth conservation with only one subculture in a year. Shoots exhibited 100% survival and complete retrieval after conservation. Half strength modified MS medium with 0.25 mgL^{-1} BA, 1.0 mgL^{-1} IAA and 10 mgL^{-1} B-9 along with 10 mgL^{-1} AdS proved beneficial for shoot growth, foliage development as well as rooting of shoots. The *in vitro* raised plantlets showed 100% transplant success.

KEYWORDS: Growth Retardants, Incubation Temperature, Osmotic Agents, Slow Growth Conservation, *Glycyrrhiza Glabra*