

THE PROCEDURE FOR MULTIPLICATION OF GYMNEMA SYLVESTRE (RETZ.) SCHULT BR.EX R USING TISSUE CULTURE TECHNOLOGY

Nguyen Xuan Vu, Tran Ngoc Thanh, Nguyen Van khiem

Summary

Gymnema sylvestre (Retz.) Schult Br.ex R, is one of the valuable medicinal plant species used in treating diabetes. In the present study a tissue culture procedure for multiplication of *G. sylvestre* was established. Plantlets were successfully regenerated for 12 weeks. Apical explants of 2 years old elite plants were collected, surface-sterilized with alcohol 70° for 1 minute, then HgCl₂ (0.1%) for 10 minutes. The sterile explants rate reached to 42.3% frequency. Suitable medium for shoot regeneration was MS + sucrose (30 g/l) + activated charcoal (0.3 g/l). Regenerated shoots were transferred to shoot multiplication medium MS + BA (1.5 mg/l) + kinetin (0.2 mg/l) + α-NAA (0.2 mg/l) + sucrose (30 g/l) + activated charcoal (0.3 g/l). Highest shoot multiplication rate reached to 4.6 (folds) after 4 weeks of culture. For rooting induction, regenerated shoots were cultured on MS/2 medium + IBA (1 mg/l) + sucrose (15 g/l) + activated charcoal (0.3 g/l). Root induced shoot reached to highest frequency of 68.3% after 4 weeks of culture. All cultures were maintained in culture room at a temperature of 26°C, 2000 lux, 16 h light: 8 h dark. Whole plants were planted in sand then in soil pots containing sand and humus ratio (1:1) in the greenhouse. Survival plant frequency reached to 80.5% after 4 weeks.

Key words: Valuable medicinal plants, Gymnema sylvestre, MS, apical culture, tissue culture, propagation.