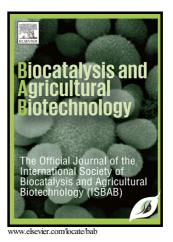
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Role of silver nitrate in plant regeneration from cotyledonary nodal segment explants of *Prosopis cineraria* (L.) Druce.: A recalcitrant medicinal leguminous tree

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ABSTRACT

An efficient protocol for *in vitro* plant regeneration from cotyledonary nodal segment explants of Prosopis cineraria (L.) Druce., a multipurpose leguminous tree, was established. Nodal explants were excised from 5-day-old seedlings and cultured on Murashige and Skoog (MS) medium fortified with different concentrations of BAP (0.44-2.22 µmol/l) alone for shoot bud regeneration. Highest percent of shoot bud regeneration (87.66%) was noticed on MS medium supplemented with 2.22 µmol/l BAP. The nodal segments derived from seedlings were placed on MS medium with different concentrations of BAP (0.44–2.22 µmol/l) in combination with 0.46 µmol/l for shoot bud multiplication. The highest percent of shoot bud multiplication (93.50 %) with 3.5 shoots/explant was recorded on MS medium containing 2.22 µmol/l BAP and 0.46 umol/l KIN combination. The number of multiple shoots was further increased to 12.0 shoots/culture when the combination of 2.22 µmol/l BAP, 0.46 µmol/l KIN and 0.59 µmol/l AgNO₃ was used. For rooting, the elongated shoots (>2 cm) were cultured on MS medium augmented with various concentrations of NAA (0.53–2.68 µmol/l) along with 0.46 µmol/l KIN and 0.59 µmol/l AgNO₃. Among the combinations tested, the highest percent of root formation (87.66 %) with 4 roots/shoot was observed in the medium containing 0.53 µmol/l NAA, 0.46 µmol/l KIN and 0.59 µmol/l AgNO₃ combination. Rooted plantlets were successfully transferred into plastic cups and acclimatized under greenhouse conditions. Subsequently, they were established in the field and grew normally.

Keywords: Cotyledonary nodal explants, Growth hormones, Multiple shoot bud induction, *Prosopis cineraria*, Silver nitrate.

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