In vitro propagation of *Rauvolfia serpentina* (Ekaveriya)

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Rauvolfia serpentina (L.) Benth. ex Kurz is an important medicinal plant belonging to the family Apocynaceae and considered to be on the verge of extinction. A suitable *in vitro* propagation protocol was developed for this species.

About 60% uncontaminated cultures were obtained by surface disinfecting shoot tip and nodal explants in 0.1 % $HgCl_2$. Shoot tips and nodes with axillary buds were cultured in MS medium supplemented with four different growth regulator treatments i.e. control without growth regulators, 2 mg/L BA, 2 mg/L BA with 0.5 mg/L NAA, 0.5 mg/L NAA. Shoot multiplication did not occur in any of the treatments by shoot tip cultures but higher shoot elongation was observed in medium containing 2 mg/L BA (2.08 cm) than the other treatments. In nodal cultures, a higher shoot multiplication was observed in 2 mg/L BA (1.9 shoots per explant) and 2 mg/L BA with 0.5 mg/L NAA (1.8 shoots per explant) than the other treatments (1.05 shoots per explant) (5% LSD = 0.82). Shoot multiplication was also compared in liquid and solid media with 2 mg/L BA using shoot tips and nodes from 3-weeks-old *in vitro* established cultures. A higher shoot multiplication was obtained in liquid medium (4 shoots) than solid medium (3 shoots). Shoot multiplication using higher concentrations of BA or Kinetin (2, 5 & 10 mg/L) was also tested. The highest shoot multiplication was given in medium with 2 mg/L BA (4.5) or 10 mg/L Kinetin (2.3). Multiple shoots were separated and introduced in to four rooting media i.e. combination of two levels of IBA and two levels of activated charcoal (0 & 0.2 mg/L). Callus formation was observed at the base of cuttings. However *In vitro* multiplied shoots failed to produce roots even after 3 weeks of incubation. On the other hand, the *in vitro* grown shoots rooted directly in a potting mixture (1:1:1 of sand: compost: soil) and showed over 90% success in the greenhouse.

About one square cm leaf pieces were introduced to media with combination of three levels of BA (0, 1 & 2 mg/L) and IAA (0, 0.2 & 0.5 mg/l) for shoot regeneration. Only callus formation was observed in medium with 2 mg/L BA with 0.2 or 0.5 mg/L IAA.

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