

## Evaluation of *in vitro* seed germination and micropropagation techniques in *Andrographis echinoides* (L.) Nees

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### **ABSTRACT**

*Andrographis echinoides* (L.) Nees (Gopuram thanki) is one of the important medicinal plants which is given importance recently for its excellent medicinal properties. A study was carried out to evaluate the seed germination under open and *in vitro* conditions, *in vitro* response of different explants / media for regeneration and also to standardize the direct regeneration procedure in *Andrographis echinoides*. The earliest seed germination (8.67 days) was recorded in the treatment comprised of MS medium supplemented with BAP (1 mg<sup>l</sup><sup>-1</sup>) under *in vitro* conditions. The germination percentage (67.10 %) of seeds and survival percentage (79.93 %) of seedlings were also recorded high in the same treatment. For direct regeneration, among the various explants, shoot tips responded positively for shoot induction. MS medium fortified with BAP (2.5 mg<sup>l</sup><sup>-1</sup>) was found highly responsive for shoot induction. The multiple shoot induction was achieved in MS medium + BAP (3.0 mg<sup>l</sup><sup>-1</sup>) and for shoot elongation, BAP (2.0 mg<sup>l</sup><sup>-1</sup>) + GA<sub>3</sub> (1.0 mg<sup>l</sup><sup>-1</sup>) was found better. Rooting was best (94.85 %) in ½ MS + IAA 0.5 mg<sup>l</sup><sup>-1</sup> + IBA 1.0 mg<sup>l</sup><sup>-1</sup>. Pot mixture containing vermiculite + red earth + sand (1:1:1) was found optimum for hardening.

**Key words :** *Andrographis echinoides*, Seed germination, Micropropagation, MS medium

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