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*Abstract*

# Induction of adventitious root in *Andrographis paniculata* Cuttings using Auxin: a Rapid Propagation Technique †

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**Abstract:** Andrographis paniculata possess high demand for its overwhelming pharmacological properties; however, the current agricultural production of A. paniculata is insufficient to meet the commercial need. Developing a rapid and efficient production technique is crucial to meet its increasing demand. This study aims to assess auxins' namely, indole-3-butyric acid (IBA) and indole-3-acetic acid (IAA), effects on adventitious root development in young and old apical shoot cuttings of A. paniculata. This investigation found that adventitious root formation, root number per propagule, and root length were significantly affected by auxins in a concentration-dependent manner ($p<0.05$). We found 3.0 mM IBA comparatively better for achieving rapid (6.33 days) adventitious root in young apical shoot cuttings with a maximum number of roots per cutting (40) and the highest root length (4.11 cm). At field conditions, there was no remarkable deleterious morphology or death observed during this study. Regeneration of A. paniculata plantlets using IBA within a short time suggests that this plant can be propagated on a mass scale by applying this technique. In our opinion, this method could be implemented for commercial production to meet its current demand. Further study for evaluating soaking duration on the adventitious rooting in A. paniculata would be worthy.

**Keywords:** adventitious rooting; cuttings; medicinal plant; node; vegetative propagation human sample; prevalence