Executive Summary

Evaluation of Appropriate Micro-propagation Protocol for *Dillenia indica*

Nora M. Youssef

*Department of Ornamental Plant and Woody Trees, Division of Agricultural and Biological Research, National Research Centre, 33 El Bohouth St. Dokki, P.O. Box 12622, Giza, Egypt*

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**Corresponding Author:**
Nora M. Youssef, Department of Ornamental Plant and Woody Trees, Division of Agricultural and Biological Research, National Research Centre, 33 El Bohouth St. Dokki, P.O. Box 12622, Giza, Egypt

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Dillenia indica is an evergreen tree and is generally known as elephant apple or chulta. This tree is considered a useful component for conventional medicine, because extract of leaf, bark as well as fruit have the ability to cure cancer and diarrhea\textsuperscript{1}. Moreover, the bark of this tree is also employed to produce charcoal\textsuperscript{2}. It is reported that some astonishing properties such as anti-HIV, anti-inflammatory, anti-cancer, anti-malarial, analgesic, anti-diabetic, anti-microbial, anti-bacterial, anti-diabetic, anti-oxidant, anti-diarrheal, cytotoxicity and wound healing are also present in this precious species. These specific characteristics are actually the fruit of some useful components including Betulin and betulinic, which are present in D. indica\textsuperscript{3}.

Micropropagation is an important technique in which development of tissues depends on the composition of used culture medium\textsuperscript{4} as well as types of suitable growth regulators. In this regard, the MS medium\textsuperscript{5} formulation is the most extensively used culture medium\textsuperscript{6}, as it consists of all the nutrients essential for plant growth.

These facts motivated a research team led by Taha et al.\textsuperscript{7} to investigate the factors which impact the in vitro shooting and rooting behaviors of Dillenia indica to achieve an appropriate micro-propagation protocol and to assess the presence of secondary metabolites in the plants. In this study, 3 different types of media were used including MS, WPM as well as B5 by following 3 physical states (Solid, semi-Solid and liquid) of MS medium.

Results showed that the MS medium with 2 mg L\textsuperscript{-1} of BA in case of in vitro propagation was found to be suitable for micropropagation. On the other hand, semi solid MS medium and NAA at 0.6 mg L\textsuperscript{-1} produced the highest number of roots. This experiment will broaden the horizon for further research to develop an appropriate protocol to propagate D. indica effectively.

REFERENCES


