



Research Article

Rapid *in vitro* Propagation and Efficient Acclimatisation Protocols of *Neolamarckia cadamba*

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Abstract

Background and Objective: *Neolamarckia cadamba* is a fast-growing commercial timber tree species with considerable economic returns to the growers on a rotation period of 4-10 years. The present study was aimed to establish an efficient micropropagation protocol for *N. cadamba* through direct organogenesis by using nodal explants. **Materials and Methods:** The nodal explants from *in vitro*-germinated seedlings were cultured on B5 medium supplemented with various BAP concentrations. The *in vitro* shoots were then rooted in 1/2 B5 medium added with growth regulators such as IBA, NAA and PBZ. Three types of potting media were tested for transplantation efficiency. **Results:** The B5 medium supplemented with 1.0 mg L⁻¹ BAP provided the most suitable medium for shoot induction from nodal explants with a mean of 5.4 shoots per explant. The subculture interval could be shortened by proliferating the regenerated axillary shoots on B5 medium supplemented with 0.8 mg L⁻¹ BAP. Half-strength B5 medium enriched with 0.1 mg L⁻¹ PBZ was able to induce root growth with 100% of root formation and resulted in more than 95% survival during acclimatisation stage. **Conclusion:** This micropropagation protocol could pave the way for mass production of quality *N. cadamba* seedlings for industrial tree plantation development in order to assure the local timber industries to meet the global demand for wood. Therefore, this could reduce the reliance on natural forests for wood production.

Key words: *Neolamarckia cadamba*, direct shoot organogenesis, *in vitro* culture, shoot proliferation, paclobutrazol (PBZ), acclimatisation

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.