

Effect of coconut (*Cocos nucifera* L.) water extracts on adventitious root development in vegetative propagation of *Dracaena purplecompacta* L.

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Abstract

Propagation by softwood canes and cuttings is preferred as a practical system for vegetative reproduction of many ornamental plant species, despite the advances in tissue culture techniques. *Dracaena purplecompacta* L. is a species that has a high demand for exports. Conversely, coconut water (CW) is a rich supplement that naturally contains plant growth regulators such as indole acetic acid (IAA). The objective of this work was to evaluate the potential of CW extracts containing natural IAA, on adventitious root development in vegetative propagation of ornamental plant canes of *D. purplecompacta* L. Five different concentrations (28, 57, 143, 286, 571 μM of natural IAA) of CW extracts were tested. Another set of treatment was carried out with the same concentrations of authentic IAA hormone for comparison purpose. The 143- μM IAA CW extract recorded the best root induction and development. It was found that the root expression was faster (5 weeks) with the use of the novel method. In the conventional method, the canes are propagated by quick dip application of commercial product containing artificial hormone IAA and placing them on coir fiber dust beds. It takes up to 6 weeks for the canes to develop adventitious roots to the desired level. Steeping canes in 143- μM IAA CW extract improved rooting in *D. purplecompacta* L., and it was comparable to the application of 143- μM authentic IAA. The study indicates that adventitious root development, shoot development, and leaf emergence of *D. purplecompacta* L. is promoted by IAA CW extracts.