Modification of Media Formulation and Agar Concentration to Improve Pitcher Plant (Nepenthes mirabilis (Lour.) Druce) Micropropagation for Conservation and Microfloriculture Development

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Abstract	The pitcher plant (Nepenthes mirabilis (Lour.) Druce) is a unique plant listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II and is protected in Indonesia. Conventional propagation of N. mirabilis is difficult and takes a longer time. Therefore, in vitro culture method is proposed. This study aimed to determine the best and most economical media formulation and agar concentration for N. mirabilis micropropagation. This research has been carried out experimentally using a completely randomized two-factor factorial design. The first factor was the media formulation (full-strength Murashige and Skoog (MS), half-strength MS, half-strength MS + AB mix, and AB mix) and the second factor was agar concentrations (6, 8, and 10 g l-1). Twelve treatment combinations were obtained and repeated 5 times to produce 60 experimental units. The explants were apical microshoots (1.5 cm long with 5 leaflets). The cultures were incubated at 24 Ã¢Â„Âƒ under continuous light for 16 weeks. The parameters measured included shoot emergence time, number of shoots, number of leaves, and shoot length. The data were analyzed using variance analysis followed by DuncanÃ¢Â€Â™s multiple range test at a 95% confidence level. The results showed that half-strength MS medium resulted in the highest number of shoots and leaves and the longest shoot length, whereas adding 8 g l-1 agar resulted in the fastest shoot emergence time. Half-strength MS medium solidified with 8 g l-1 agar could produce many N. mirabilis (Lour.) Druce microshoots to support both conservation and microfloriculture development.
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