Growth of Subculture Plantlets of Two Orchid Species *Dendrobium* sp. at Various Doses of *Polyethylene Glycol* (PEG) 6000 *In Vitro*

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ABSTRACT

Dendrobium sp. orchid is one type of orchid that is in demand in the market because of its varied flower colors, perfect flower shape, and its ability to grow continuously. Drought is one of the obstacles in orchid growth activities. One way to develop orchid cultivars that are resistant to drought stress is by selecting in vitro plantlet cultures with PEG 6000. The purpose of this study was to test the effect of various doses of Polyethylene Glycol (PEG) 6000 on the growth of subcultures of plantlets of two species of Dendrobium sp. orchids in vitro. This study was conducted with a laboratory experiment using a Completely Randomized Design (CRD) consisting of 2 factors. Factor I is the species Dendrobium nobile and Dendrobium tuesday delight. Factor II is the concentration of PEG 6000: 0%, 10%, 20%, and 30%. The data were analyzed for diversity using Analysis of Variance (ANOVA) at a significant level of 5% and further testing using the Duncan Multiple Range Test (DMRT) at a level of 5%. The results showed no interaction between Dendrobium sp. species and PEG 6000 concentration on all parameters. Dendrobium nobile orchid species has the potential to tolerate drought stress because it has more leaves and roots and a low stomatal index, at a PEG 6000 concentration of 30%, the plantlets still showed tolerance to drought stress with a low stomatal index.

Keywords: *Dendrobium* sp., PEG 6000, *In Vitro*