ABSTRACT

THE EFFECT OF GIBBERELLIC ACID (GA₃) AND BENZYLADENINE (BA) ON THE GROWTH AND FLOWERING OF *DENDROBIUM* HYBRID ORCHIDS

By

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Dendrobium is one of the largest orchid genera from the Orchidaceae familly. These orchids are well known for their beauties of the shape, color, and size of the flowers, as well as their frequent flowering and vast life longevity. Under usual condition, however, Dendrobium (hybrid and/or non-hybrid) would take two to five years to reach maturity and flowering. Therefore an effort is necessary to shorten the juvenile phase and accelerate the flowering process. This research was aimed at studying the effect of various concentrations of gibberellic acid (GA₃) and benzyladenine (BA) on the growth and flowering *Dendrobium* hybrids. The experiment was laid out using a randomized completely block design (RCBD) arranged factorially (2x5); two GA₃ concentrations (0 and 25 mg/l) and five BA concentrations (0, 100, 200, 300 and 400 mg/l). The results showed that the application of GA₃ 25 mg/l did not affect the growth and flowering of plants, but reduced the number of leaves in compare to the control. The application of BA increased the percentage of flowering plants from only 10% in the control to 48% in the plants treated with 100 mg/ml BA. Increasing concentrations of BA to 200, 300 and 400 mg/l enhanced the flowering percentage to 66.7%, 54.2% and 68.8% respectively, although these values were not statistically different. The application of BA 200 mg/l resulted in higher number of new shoots and leaves than those of the control and BA 100 mg/l, but the effect of further increase in BA concentrations to 300 and 400 mg/l did not differ from that of the 200 mg/l. There was no interaction between GA₃ and BA for all observed variable on the growth and flowering of *Dendrobium* hybrid.

Keywords : Gibberellic acid (GA₃), benzyladenine (BA), *Dendrobium*, hybrid, flowering.