

## ABSTRACT

Anggita Diva Alzena. 2024. **The Effect of Cytokinin Growth Regulators on the Growth of *Phalaenopsis amabilis* (L.) Blume Orchid Plants *In Vivo***. Department of Biology, Faculty of Science and Mathematics, Diponegoro University. Under the guidance of Nintya Setiari and Sri Haryanti.

*Phalaenopsis amabilis* (L.) Blume is an orchid native to Indonesia which is in great demand as a parent in plant breeding to produce superior hybrid varieties. High consumer demand for orchid plants has not been matched by their availability due to their slow growth. One effort to overcome slow orchid growth is by administering a cytokinin solution. The aim of this research is to analyze the effect of giving cytokinin at different concentrations and determine the optimum concentration in stimulating the growth of *P. amabilis* (L.) Blume orchid plants. The research was carried out experimentally using a Completely Randomized Design (CRD) with a single factor in the form of cytokinin concentration with 3 treatment levels, namely 0, 25, and 50 ppm with 5 replications. Cytokinin spraying was carried out on all parts of the plant as much as 15 mL per plant with a spraying duration of once a week for 3 months of observation. The parameters observed were the time new leaves appeared, the number of new leaves, the increase in length and width of old leaves, leaf color, stomata density, the time new roots appeared, and the number of new roots. Data were analyzed using Anova and if significant, continued with the Duncan Multiple Range Test (DMRT) with a level of 95%. The results showed that 25 ppm cytokinin increased the length of old leaves (2.24 cm) and the width of old leaves (0.23 cm) and increased stomata density (33.82/mm<sup>2</sup>). Cytokinin at a concentration of 25 ppm increases the length and width of old leaves and stomatal density.

**Keywords:** *growth regulators, morphology, Phalaenopsis amabilis*