

ABSTRACT

Elvina Adinda Triansyah. 24020120140166. **Effect of coconut water in *Murashige-Skoog* (MS) media on the growth of *Phalaenopsis amabilis* (L.) Blume orchid plantlets *in vitro*.** Laboratory of Plant Structure and Function Biology, Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of Nintya Setiari and Yulita Nurchayati.

Phalaenopsis amabilis is an orchid native to Indonesia that falls under Appendix II, meaning it is a species that may become endangered if traded freely. Therefore, cultivation and conservation through tissue culture methods are necessary to support the growth of *Phalaenopsis amabilis*. However, the MS medium does not contain growth regulators, so it requires organic supplements in the form of coconut water to support orchid growth. This study aims to determine the effect of adding coconut water to the MS medium and to find the optimal concentration of coconut water that can stimulate the growth of *P. amabilis* orchid plantlets. The method used is subculturing *P. amabilis* orchid plantlets into MS medium supplemented with coconut water. This study uses a Completely Randomized Design (CRD) with a single factor, namely the concentration of coconut water (0%, 15%, 30%) with 5 repetitions. Data were analyzed using Analysis of Variance (ANOVA), and if there were differences, it was followed by DMRT test. Parameters were observed every 2 weeks for 2 months, including time of appearance, length, width, and number of leaves, time of appearance and number of shoots, time of appearance, number of roots, and leaf color. The results showed that 15% coconut water concentration was optimal for the growth of *P. amabilis* plantlets at the subculture stage in MS medium, with new leaf length (8,00 mm), number of shoots (1.66), and number of leaves (1,33), while 0% concentration increased root length (15,91 mm) and the appearance time of shoots (15,3 days) and leaves (21,00 days), and 30% coconut water concentration increased leaf width (3,2 mm). Coconut water at 15% concentration enhanced the growth of new leaves and the number of shoots in *Phalaenopsis amabilis* orchid plantlets

Keywords: *Phalaenopsis amabilis* (L.) Blume., subculture, plantlets, coconut water.