

## ABSTRACT

Tiara Monalisa Siregar. 24020120120030. **The Effect of Coconut Water in Vacin and Went (VW) Media on the Growth of *Phalaenopsis amabilis* (L.) Blume Orchid Plantlets in Vitro.** Plant Structure and Function Biology Laboratory, Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of Dr. Nintya Setiari, M.Si. and Dr. Yulita Nurchayati, M.Si.

*Phalaenopsis amabilis* is an orchid species that is often used as a parent to create various hybrid *Phalaenopsis* orchid cultivars. The availability of orchid seeds is naturally not balanced with the high commercial demand, so it is necessary to apply tissue culture methods to increase seed production and add organic supplements in the form of coconut water to the growth medium as a source of exogenous cytokinins and auxins which can stimulate the growth of this orchid. The aim of this research is to examine the effect of adding coconut water in VW media on the growth of *P. amabilis* orchid plantlets and to determine the concentration of coconut water that can stimulate optimal growth of *P. amabilis* orchid plantlets in vitro. The method used is to grow orchid plantlets in Vacin and Went (VW) media with coconut water concentration treatment. The research design used was a Completely Randomized Design (CRD) with a single factor, namely three different concentrations of coconut water (0%, 15%, 30%). Observations were carried out for 2 months with the parameters observed, namely the time when shoots, leaves and roots appeared; number of shoots, leaves, and roots; leaf and root length; as well as the growth rate of leaves and roots. Data were analyzed using the ANOVA test and DMRT further test. The observation results showed that VW media with the addition of 15% coconut water showed the best results in increasing the time to emergence of shoots, leaves and roots (17.33; 10.67; 12 days); number of leaves and roots (3.67; 3.67); leaf and root length (3.44; 16.18 mm); and the growth rate of leaves and roots (0.07; 0.16 mm/day). A 15% concentration of coconut water in VW media stimulates optimal growth of *P. amabilis* orchid plantlets in vitro.

**Keyword:** *Phalaenopsis amabilis*, tissue culture, coconut water, growth

Pembimbing I

Pembimbing II

Dr. Nintya Setiari, M.Si.  
NIP. 197404122003122001

Dr. Yulita Nurchayati, M.Si.  
NIP. 197107111998022001