

ABSTRACT

Laili Indah Maulina. 24020122120031. Adaptation and Growth Response of Moon Orchids (Phalaenopsis amabilis L.) with Post-Transplanting PGPR Application. Departement of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of Nintya Setiari and Lailia Nofiana.

The process of transplanting Phalaenopsis amabilis L. from its native habitat to a cultivated habitat causes stress due to the adaptation process. One way to improve the adaptability of adaptation and growth is by utilizing PGPR. This study aims to analyze the adaptation and growth responses and determine the optimal PGPR concentration in supporting the adaptation and growth of P. amabilis L. after transplanting. Phalaenopsis amabilis L. was planted in a growing medium of fern roots and sphagnum moss for 3 months in a semi-open area of the BSFT laboratory of Diponegoro University, Semarang. This study design was carried out using a completely randomized design with one factor, namely the concentration of PGPR. The concentration used were 0 mL/L (P0), 10 mL/L (P1), 20 mL/L (P2), and 30 mL/L (P3). The parameters observed included physiological, anatomical, and morphological, responses related to stress levels. The research data were analyzed statistically using ANOVA, followed by DMRT test. The results of the study showed that PGPR treatment was able to reduce physiological stress indicators and increase the growth of P. amabilis L. A PGPR concentration of 30 mL/L was the optimal treatment, potentially exploiting it as a biological agent to enhance the adaptability and growth of P. amabilis L. after transplanting.

Keywords: P. amabilis, PGPR, adaptation, growth