

## ABSTRACT

Salwa Naili Nisa' Arianti. 24020121120019. **Enhancement of Germination and Growth of Parijotoh Seeds (*Medinilla speciosa* Reinw. ex Blume) Using Plasma Radiation and Cocopeat Germination Medium.** Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the supervision of Prof. Dr. Dra. Erma Prihastanti, M.Si. and Prof. Dr. Dra. Endah Dwi Hastuti, M.Si.

Sexual propagation using seeds produces offspring with low mortality rates and yields more fruit than asexual propagation. Parijotoh seeds undergo two periods of dormancy: physiological dormancy in the embryo and physical dormancy in the seed coat, resulting in slow germination and growth. Plasma radiation can ionize nitrogen and oxygen into ROS and RNS, which enter the seeds and break dormancy. Cocopeat or coconut fiber consists of functional groups that absorb and retain water, has micro-pores to provide oxygen, and has a neutral pH to dissolve the nutrients needed for the germination and growth of *M. speciosa*. The objective of this study was to determine the effect of plasma radiation and seedling media on the germination and growth of *M. speciosa* seeds. This study used a completely randomized design (CRD) with a 3x3 factorial arrangement, with each treatment replicated 10 times. Factor I was the duration of plasma radiation (0 minutes; 10 minutes; 20 minutes), and factor II was the growing medium (cocopeat; alluvial soil; latosol soil). The data obtained from the study were analyzed using ANOVA and followed by DMRT if significant differences were found. The results showed that plasma radiation, growing medium, and their interaction influenced the germination and growth of *M. speciosa* seeds (radicle emergence time, germination percentage, germination rate, percentage of normal seedlings, number of roots, plant height, leaf size, and fresh weight of plants). Plasma radiation, germination medium, and their interaction did not affect the number of leaves. The interaction between 20-minute plasma radiation and cocopeat medium resulted in the highest germination and growth of *M. speciosa*.

Keywords: *M. speciosa* Blume, plasma radiation, cocopeat, latosol soil