

ABSTRACT

Dita Nur Afifah Ariana. 24020119140091. Growth Response of *Avicennia marina* (Forssk.) Mangrove Seedlings to Different Water Level Conditions. (Under the supervision of Prof. Dr. Endah Dwi Hastuti, M.Si., and Prof. Dr. Dra. Erma Prihastanti, M.Si.)

Avicennia marina is a pioneer mangrove species with a high capacity to adapt to coastal environmental conditions, including variations in water level. Water level is one of the environmental factors that can influence the growth and development of mangrove seedlings. This study aims to analyze the growth response of *Avicennia marina* seedlings at different water levels. The study was conducted in March 2023 at the Experimental Garden in Semarang. The study used a Completely Randomized Design (CRD) with three water level treatments—5 cm, 10 cm, and 15 cm—each with three replicates. The observed parameters included stem height increase, stem diameter, number of leaves, number of branches, number of lenticels, number of roots, root length, fresh weight, and dry weight. The data were analyzed using ANOVA and the DMRT post-hoc test. The results showed that the water level had a significant effect on the stem height and stem diameter of *Avicennia marina* seedlings, while the number of leaves, number of branches, number of lenticels, number of roots, root length, fresh weight, and dry weight were not significantly affected. Nevertheless, there was a tendency for the highest growth results to occur in the 15 cm water level treatment. These results indicate that a 15 cm water depth provides more suitable conditions for the growth of *Avicennia marina* seedlings compared to water depths of 5 cm and 10 cm. *Avicennia marina* seedlings demonstrated good adaptability to various water depths; however, more optimal vegetative growth was achieved under the 15 cm water depth treatment.

Keywords: *Avicennia marina*, mangrove seedlings, water depth, growth, analysis of variance.