ABSTRACT

Faradila Rahmita Andari. 24020120120037. Water Absorption in Mangrove Plants Avicennia marina (Forssk.) Vierh. and The Accumulation of Salt (NaCl) in Sediment at Different Levels of Salinity and Inundation. Supervised by Endah Dwi Hastuti and Erma Prihastanti.

Global warming causes changes in the environmental conditions of A.marina mangroves, such as salinity and inundation. High salinity stress and repeated inundation cause problems with water absorption and accumulation of salt (NaCl) in sediments which affect nutrient transport and metabolism which in turn has an impact on the A.marina mangrove to survive, grow and develop. The research aims to determine the effect of different salinity and inundation on water absorption and salt (NaCl) accumulation in sediments and examine the interaction of salinity and inundation factors which produce the highest water absorption and salt (NaCl) accumulation in A.marina mangrove sediments. This research was carried out by planting A.marina mangroves in sediment and measuring the volume of water absorbed by A.marina mangroves at different salinities and inundation. The research used a Completely Randomized Design (CRD) with 2 factors. The first factor is salinity (15, 20, 25, 30, and 35 ppt) and the second factor is inundation (5, 10, and 15 cm) with 3 repetitions. The parameters observed include water absorption and salt (NaCl) accumulation in the sediment. Supporting parameters include temperature, DO, and pH. Data analysis used the Anova test followed by the DMRT test. The results showed that the salinity level affected the accumulation of salt (NaCl) in A.marina mangrove sediments, but did not affect the water absorption of A.marina mangroves. A salinity of 35 ppt has the highest influence on the accumulation of salt (NaCl) in A.marina mangrove sediments. The level of inundation affects the water absorption of A.marina mangroves, but does not affect the accumulation of salt (NaCl) in A.marina mangrove sediments. Inundation of 15 cm has the highest water absorption effect for A.marina mangroves. The level of salinity and inundation do not interact to influence the water absorption of A.marina mangroves and the accumulation of salt (NaCl) in A.marina mangrove sediments.

Keywords: Avicennia marina, water absorption, salt accumulation, salinity, inundation