

ABSTRACT

Dinsa Brilliant Yolandita. 24020119130059. **Anatomy Comparison of Root, Leaf, and Stomata of Mangrove *Rhizophora stylosa* Griff. on Different Salinity Levels.** Biology Laboratory of Plant's Structure and Function, Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of Endah Dwi Hastuti and Sri Haryanti.

Rhizophora stylosa Griff. is a pioneer of mangrove species. The adaptability of this species is quite good, even though the habitat has extreme stress, like salinity. This study aims to compare the root, leaf, and stomata anatomical of *R. stylosa* Griff. with different salinity treatment, also determine anatomical parameters that can be used as indicators of salinity changes. The treatment is carried out for 3 months (December 2022 – February 2023). The method used was a Completely Randomized Design (CRD) with five salinity treatments, namely 15 ppt, 20 ppt, 25 ppt, 30 ppt, and 35 ppt, each treatment has three repetitions. The observed samples were taken from root, leaf, and stomata organ. The parameters in this research are the thickness of hypodermis, thickness of cortex, ratio of hypodermis and cortex thickness, aerenchyma density, aerenchyma area, thickness of leaf, thickness of hypodermis, thickness of palisade, ratio of leaf and hypodermis thickness, ratio of hypodermis and palisade thickness, length and width of stomata, length, and width of porus, and stomatal density. Data analysis using the ANOVA test, followed by the DMRT test. The results of data analysis show that there are differences in the anatomy of root, leaf, stomata on low and high salinity. Mangrove *Rhizophora stylosa* Griff. began to did adaptation of root and leaf anatomy at salinities of 25 and 30 ppt. Tissues in root and leaf that can be used as indicators of changes in salinity are the hypodermis, aerenchyma, palisade, and stomata.

Keywords: *anatomical adaptation, salinity, hypodermis, aerenchyma, palisade*