ABSTRACT

Bella Sungkawa Zanuar Ryanti. 24020120140051. ***The Effect of Differences in Growing Locations and Environmental Quality on the Morphoanatomy of Rhizophora mucronata Lamk Leaves and Roots. at the Mangunharjo Conservation Location, Semarang***. *Biology Laboratory of Plant Structure and Function, Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of* Erma Prihastanti and Sri Haryanti.

Rhizophora mucronata Lamk. is a type of mangrove that is tolerant to environmental stress. Adaptation to different locations and environmental qualities causes changes in the morphonomic structure of leaves and roots. Morphological adaptation is shown in smaller leaf size and shorter root length, while anatomical adaptation is the size of the leaf structure and thicker cortex in stressful environmental conditions. This research aims to examine the influence of differences in location and environmental quality on the morphoanatomical structure of the leaves and roots of Rhizophora mucronata Lamk. as a form of adaptation in the Mangunharjo Mangrove. The method used is a Completely Randomized Design (CRD) with 3 treatments, namely station I (≤ 200 m from the coastline close to the sea, affected by sea tides, and open zone), station II is ≤ 400 m from the coastline (coastal zone central area which is not affected by sea tides and open zone), and station III is ≥ 600 m from the coastline (near settlements, not directly affected by sea tides, and closed zone) 3 repetitions each. The parameters used are the quality of the aquatic environment, chemical content of sediment, leaf morphoanatomy, pore length/width ratio, stomata density, length and number of roots, lenticels, epidermis thickness and cortex. Data were analyzed using the ANOVA test followed by DMRT and Pearson correlation test. The results showed that the parameters salinity, water temperature, air temperature, DO, P levels, leaf anatomy, stomatal pore length/width ratio, and root epidermis thickness at station I had the highest measurements, while for the pH parameters, levels of C, N, and K, leaf morphology, length, number, root lenticels, and cortex thickness at station III had the highest measurements. The correlation test shows that there is a very significant relationship at p≤0.01 between environmental quality and leaf morphoanatomy, but there is no significant relationship between root anatomy. The differences between the three stations, the quality of the water environment, the chemical content of the sediment, influence the morphoanatomical structure of the leaves and roots of Rhizophora mucronata Lamk. in the Mangunharjo Mangrove, Semarang.

Keywords: *Rhizophora mucronata Lamk., quality of all three stations, morphoanatomical of leaves and roots*