# ABSTRACT

*Naufal Zuhdi Imami, 24020119120033.* ***Morphology of the Roots, Leaves, and Flowers of Avicennia marina (Forssk.) Vierh. in Different Zones within the Pasar Banggi's Village of Mangrove Conservation Area, Rembang Regency****. Laboratory of Plant Structure and Function Biology, Department of Biology, Faculty of Science and Mathematics, Diponegoro University, Semarang, under the guidance of Erma Prihastanti and Muhammad Luqman Hakim.*

*The diversity of coastal areas results in the zoning of mangrove ecosystem growth. Each zone has distinct environmental conditions that shape variations in vegetation structure. Avicennia marina, as a pioneer plant, is increasingly adapting to extreme environmental conditions. The distribution of A. marina across various zones within the mangrove conservation area of Pasar Banggi Village raises questions about the adaptation of morphological structure in response to environmental variations. The objective of this study is to examine morphological variations in the roots, leaves, and flowers of A. marina across different mangrove zones as a form of adaptation to differing habitat conditions. The methods used were observation and purposive sampling at three sites representing the front, middle, and rear zones; sampling was conducted manually (handpicked) using specimens of A. marina, including roots, leaves, and flowers; as well as environmental samples of water and sediment, which were further analyzed in the laboratory. The results of the study indicate that leaf morphology (width and area) and flower morphology (corolla petal length) exhibit significant differences across the zonation variations, with the highest values observed at station I. The highest salinity and temperature were recorded at station I. The highest pH, dissolved oxygen (DO), and sediment chemical content were found at station II. Environmental quality, as a representation of the conditions in each mangrove zone, showed no significant relationship with the morphology of A. marina, except for leaf width, leaf area, and the length of the flower petals.*

***Keywords:*** *Avicennia marina, morphology, zonation, environmental quality*