

ABSTRACT

Risarta Audhita Situmorang. 24020222140092. ***Growth Ability Test and Molecular Characterization of Bacterial Isolates from Tanjung Emas Port Waters, Semarang Against Manganese (Mn) Metal*** (under the guidance of Hermin Pancasakti Kusumaningrum and Sekar Pelangi Manik Putri).

Tanjung Emas Port Semarang is an area with high ship, industrial, and residential activities, making it potentially susceptible to heavy metal pollution, such as manganese (Mn). Manganese is an essential metal needed by organisms in small amounts, but at high concentrations, it can be toxic and potentially accumulate in sediments. Anthropogenic activities in the port area can be one of the sources of manganese entering the aquatic environment. However, bacteria capable of growing in Mn exposure are still limited. Therefore, this study aims to identify selected bacteria that can grow in the presence of Mn metal from the waters of Tanjung Emas Port Semarang. The research method was conducted in vitro through the rejuvenation of bacterial isolates, morphological characterization and Gram staining, testing the bacterial growth ability against variations in Mn concentration. Furthermore, OD value measurement, Minimum Inhibitory Concentration (MIC) analysis, and molecular characterization on selected isolates were carried out. The results showed that five bacterial isolates from Tanjung Emas Port Semarang were able to grow on media with Mn addition. Isolate P2 showed a growth percentage of 27.8% and an inhibition percentage of 72.2% and was identified as the genus Priestia, with the highest homology to Priestia megaterium strain SFB7 (97.73%).

Key words: Priestia megaterium, manganese, Tanjung Emas Port Semarang