STUDY ON THE POTENTIAL MACROZOOBENTHOS AS BIOINDICATOR HEAVY METAL POLLUTION OF COPPER (Cu) IN MANGROVE ECOSYSTEM WONOREJO EAST COAST AREA OF SURABAYA

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ABSTRACT

An increasing human activities in various sector contribute an impact of increase waste quantity in water and potentially harmfull to an organisms growth. Macrozoobenthos is a part of the macroinvertebrates that lived and can be used as a bio-indicators of water quality because its habitat tend to be settled relatively. This groups dominate mangrove ecosystem such as Mollusca. Molluscs spent their life in sandy or muddy substrate, if their habitat polluted by pollutant its body will be exposed by molluscs and accumulation of pollutants or accumulated. In high or low concentrations Copper (Cu) is dangerous toxic if it is the only element in the solution. An estuary of the East Coast Surabaya comes from two rivers, which are Kali Wonokromo and Kali Wonorejo where these rivers bring solid and liquid waste from industries and households and will be accumulated and polluted the estuaries.

The aims of this study to determine types of macrozoobenthos Phylum Mollusca which potent ial as bio-indicators and determine the level of heavy metal pollution concentrations of copper (Cu) in both sediments and macrozoobenthos of mangrove ecosystems at Wonorejo East Coast area, Surabaya. Sampling was conducted using by random sampling then direct test of benthic animals and sediments were analyzed using by AAS (Atomic Absorption Spectrophotometer) to test the weight of the metal.

The results showed that the macrozoobenthos Phylum Mollusca identified as many as 19 species, consisting 15 class of Gastropoda and 4 class of Bivalvia. Levels of heavy metals copper (Cu) in the body of macrozoobenthos showed the highest accumulation results, that is 17.210 ppm at station I-3 and the lowest, that is 0.836 ppm in station II-2 with the highest accumulated value occured at the second data collection, while levels of heavy metals copper (Cu) in sediments showed the highest accumulation results, that is 9.068 ppm in station III-500 m north and the lowest, that is 4.114 ppm in III-central station with the highest accumulation occurred at the second data collection.

Keywords: macrozoobenthos, bioindicator, heavy metal, copper (Cu), mangrove, Wonorejo
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