UTILIZATION OF AZOLLA TO IMPROVE THE QUALITY OF CAR WASH WASTEWATER

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ABSTRACT

The car washing industry is currently expanding rapidly, but its expansion is not keeping pace with the processing of the wastewater it generates. As a result, wastewater treatment is required to improve the waste's quality so that it can be safely discharged into the river. The purpose of this research is to determine Azolla's ability as a phytoremediator in improving wastewater quality and its ability to grow in car wash wastewater. The study utilized a Completely Randomized Design (CRD) with one factor in the form of a combination of varied waaste concetrations, namely 0% 50% and 100% and different waste water locations with repetition 3 times. The study was carried out in the greenhouse of the Agriculture Faculty of UPN "Veteran" Yogyakarta. The method for cultivating Azolla is by sowing 31.5 grams of Azolla into a container containing planting media in the form of a soil:compost ratio of 1:1 and waste water. The incubation period is 2 weeks of planting. The water quality parameters observed include: pH using the electrometric method, COD using the closed reflux method, BOD using the Winkler titration method, and surfactant using the methylene blue method The research results showed that car wash wastewater had a significant effect on increasing pH parameters, decreasing surfactant, increasing wet weight and increasing dry weight but had no significant effect on BOD and COD parameters. The best surfactant reduction was found in the 100% waste concentration treatment at location 2 with a value of 23.17 mg/L to 0.23 mg/L. The best treatment for Azolla growth is found in the 100% concentration treatment at location 4.

Keywords: Azolla, BOD, COD, Car Wash Water, Surfactant