

THE EFFICIENCY OF WATER CLOVER (*Marsilea crenata*) IN REDUCING THE CONCENTRATION OF BOD AND TSS IN TOFU WASTEWATER

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ABSTRACT

Tofu industri was one of industri that produces wastewater containing organik matter. The main effect of organik matter when entering the water is decrease dissolved oxygen and increase BOD, COD, and TSS. Processing needs to be done to reduce the pollutant contained in tofu wastewater. One of the processing methods that can be applied was phytoremediation. The purpose of this research was to analyze the efficiency of water clover (*Marsilea crenata*) in reducing BOD and TSS concentrations of tofu wastewater.

The type of this research was a quasi-experimental research with a pretest posttest controlled group design. The data obtained is presented in table and analyzed analytically with the Two Way Anova test with 5% α preceded by a normality test. In this research, the calculation of the efficiency of BOD and TSS was also carried out.

The results of the Two Way Anova test showed a p value > 0.05 which means there was a difference in the average decrease in BOD and TSS concentrations based on variations in residence time and treatment. The most efficient treatment in reducing BOD and TSS concentrations was the treatment of 20 plants with a detention time of 7 days with final concentrations of 104.66 mg / l and 243 mg / l and efficiency of 52,64% and 67,60%. The decrease in the concentration of BOD has met the quality standard, but the decrease in the concentration of TSS still does not meet the quality standard.

Water clover plants are efficient in reducing the concentration of BOD and TSS with an efficiency of 51.11% and 67.60%. For further researchers, it is recommended to increase the number of water clover plants because based on the results of the study, treatment with 20 plants per 20L of wastewater has not been able to reduce the concentration of TSS to the quality standard.

Keywords : BOD, TSS, Phytoremediation, Water Clover