

## **ABSTRACT**

### **THE EFFECT OF ADSORBATE CONCENTRATION ON THE ADSORPTION CAPACITY OF METHYLENE BLUE USING BANANA PEEL (*Musa paradisiaca* Linn.) AS ADSORBENT**

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Methylene blue that commonly used as a dye in textile industry, can contaminate aquatic pollution. Adsorption is one of the methods to reduce the levels of methylene blue in the water. The purpose of this study was to determine the effect of adsorbate concentration on the adsorption capacity of methylene blue. Banana peel adsorbent was used for methylene blue adsorption with various adsorbate concentrations of 5; 10; 20; 30; 50 and 70 ppm. The highest adsorption capacity of methylene blue occurred at a concentration of 70 ppm with an adsorption capacity value of 109.5803 mg/g. The results of the analysis showed that the banana peel of jackfruit has the potential as an adsorbent to adsorb methylene blue and the concentration of the adsorbate affects the adsorption capacity of methylene blue dye.

Keyword: adsorption, banana peel, methylene blue, adsorbate concentration