

ABSTRACT

THE EFFECT OF ADSORBENT DOSAGE OF BANANA PEEL (*Musa paradisiaca* Linn.) ON ADSORPTION OF METHYLENE ORANGE

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Dyes that are commonly used in textile industry if the waste is discharged into the river, it will cause water pollution. One of the synthetic dyes that is often used is methylene orange. Therefore, adsorption technique was used to reduce the levels of methylene orange on water. In this study, the adsorption of methylene orange dye was carried out using an banana peel adsorbent that activated by HCl 0,15 M with a mass variation of the adsorbent 0,025; 0,05; 0,075; 0,1 and 0,2 gram. The principle of this analysis is based on measuring the absorbance of methylene orange dye using UV-Vis spectrophotometer at a wavelength of 465 nm. Standard solutions were prepared with a concentration range of 1; 2; 3; 4; 5 and 6 ppm. The linear regression equation obtained was $y = 0,0867x - 0,0261$ with correlation coefficient value (r) = 0,9904. The results of the analysis showed that the adsorbent from the banana peel was able to adsorb methylene orange dye. The highest adsorption capacity of methylene orange was achieved at dose 0,025 gram, which was 2,8011 g/mg.

Keyword:absorbent,bananapeel, methylene orange, adsorption, spectrophotometer