

ABSTRACT

Activated carbon is a material that has a high carbon contents. The selection of material activated carbon can be made by organic and inorganic, in condition the materials have a porous structure. In industrial process, activated carbon can be used for reduced heavy metal contents of ground water. Banana peel is being one of materials as an alternative to make activated carbon. Banana peel has a pore size 3,9 nm and can be used as a biadsorbent. In this study, using 10 different of banana peel with two treatment, which is powder and activated carbon. The powder obtained from heating at 100 °C temperature and activated carbon from roasting of 500 °C temperature with activator by HCl 0,2 M for activation time 18 hours. The calibration of Fe and Mn contents using HACH DR2800 Portable spectrophotometer. The adsorption of banana peel powder and activated carbon in reducing Fe and Mn containing in Telkom University ground water was tested by three different mass 50 mg, 100 mg, and 150 mg for each type of banana peel. The results show that activated carbon is more effective in reducing Fe and Mn. The best result is obtained from 50 mg activated carbon made from “nangka banana peel” which the average Fe and Mn reduction are 82,22% and 46,21%, respectively.

Keywords: activated carbon, , banana peel.