

PEMANFAATAN ARANG BATOK KELAPA DAN TANAH HUMUS BATURRADEN UNTUK MENURUNKAN KADAR LOGAM KROM (Cr)

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Author Order	6 of 7
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Abstract	<p>Waste containing hazardous and toxic chemical compounds into the environment leads to water pollution, soil and air. These chemical compounds will endanger human life and environment. One type of compound that may pollute the environment is chromium. The metal is commonly found in industrial waste such as from exhaust and industrial wastewater from etal plating company. The purpose of this research is to utilize coconut shell charcoal and soil humus as a low-cost and ready-made alternative material to reduce the concentration chromium (Cr) on wastewater. Humus was taken from Baturraden region and was isolated using NaOH extraction and was furthermore purified using mixtures of HF(aq): HCl(aq). Coconut shell charcoal was produced and was mixed with the humus. Adsorption process was carried out by batch method on variations of charcoal: humus composition, pH, and contact time. Humus soil was identified using infrared spectrophotometry (IR). Determination of chromium concentration was performed using atomic absorption spectroscopy (AAS). The purified humus yielded was 25.92% (w/w), with 34.18% moisture, and ash content of 18.09%. The results showed that the variation of composition ratio of 2:1 charcoal and humus produced the greatest percent reduction of 18.20%, and the optimum pH for the adsorption is 9. For the variation of contacts time, the optimum reaction time is at 180minutes with decreasing concentration of Pb up to 56.07%.</p>
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