

The Application on Activated Charcoal of Bagasse in Cooking Oil Treatment

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ABSTRACT

Abstract. Bagasse is a remained material of sugarcane extraction. It contains 24.7 wt% of carbon and is potentially as the source of C element for activated carbon synthesis. In this study, bagasse would be converted into activated charcoal then it could be determined the characteristics of activated carbon produced from bagasse synthesis, the effect of mass variation of activated carbon and contact time used to reduce levels of peroxide and free fatty acids in used cooking oil, and the effect of activated carbon adsorbent bagasse on fatty acid content in used cooking oil. Bagasse adsorbent was chemically activated using HCl or H₂SO₄ solution. The determination of the peroxide number was carried out by the iodometric titration method and the determination of the free fatty acid content was carried out by the acid-alkalimetric titration method. The results showed that the bagasse adsorbent after activation met the requirements stipulated by SNI 06-3730-1995, obtained 1.8% moisture content, 6.8% ash content, 21.42% volatile content, and 69.98% bound carbon content. The most effective reduction in the levels of peroxide and free fatty acids was obtained in the mass variation of activated charcoal 0.5 grams and a contact time of 60 minutes, with a peroxide value of 9.88 – 10.6 meq / kg and a free fatty acid content of 0.38% and 0.29%. The levels of peroxide numbers after adsorption with optimum conditions have met the requirements set by SNI 01-3741-2013, while the levels of free fatty acids have not met these standards.

Kata Kunci: *Keywords: activated carbon, bagasse, used cooking oil, peroxide value, free fatty acid.*