

## **ABSTRAK**

Biji alpukat mengandung senyawa organik yang memungkinkan untuk digunakan sebagai bahan baku pembuatan karbon aktif. Tujuan penelitian ini adalah untuk mengetahui potensi karbon aktif biji alpukat yang diaktivasi dengan HCl 5% dengan pengujian kadar air, kadar abu, *volatile matter*, *fix carbon* dan daya serap iodium. Biji alpukat diolah menjadi karbon aktif dengan proses dehidrasi, proses karbonasi dan proses aktivasi. Hasil uji kualitas karbon aktif biji alpukat telah memenuhi standar yang dipersyaratkan oleh regulasi SNI No. 06-3730-1995 dimana hasil uji kadar air sebesar 4,55%, uji kadar abu sebesar 3,05%, uji *volatile matter* sebesar 13,90%, uji *fix carbon* sebesar 78,51% dan uji daya serap iodine sebesar 888,07 mg/g. Karbon aktif yang sudah siap digunakan selanjutnya diujikan bobot optimum, waktu kontak optimum dan efektifitasnya sebagai adsorben dalam menurunkan kadar timbal dan kadmium. Kondisi optimum yang diperoleh pada variasi perlakuan pada penurunan kadar timbal berada pada penambahan adsorben sebanyak 3 gram dan waktu kontak selama 90 menit. Sedangkan untuk kondisi optimum yang diperoleh pada variasi perlakuan pada penurunan kadar kadmium berada pada penambahan adsorben 5 gram dan waktu kontak selama 60 menit. Hasil pengujian menunjukkan tingkat persentase efektifitas penurunan kadar timbal pada larutan uji sebesar 98,86% sedangkan penurunan kadar kadmium sebesar 99,34%.

Kata Kunci : Adsorben, Karbon Aktif, Biji Alpukat, Timbal, Kadmium

## **ABSTRACT**

*Avocado seeds contain organic components that make them suitable as raw materials for activated carbon production. The goal of this study was to examine the water content, ash content, volatile matter, fixed carbon, and iodine absorption of avocado seed activated carbon that had been activated with 5% HCl. Avocado seeds go through a dehydration, carbonation, and activation phase before becoming activated carbon. The water content test for avocado seed activated carbon was 4.55 %, the ash content test was 3.05 %, the volatile matter test was 13.90 %, the carbon fix test was 78.51 %, and the iodine absorption test was 888, 07 mg/g, all of which met the standards set forth by SNI regulation No. 06-3730-1995. The weight, contact time, and efficacy of activated carbon as an adsorbent in lowering lead and cadmium levels are all evaluated on ready-to-use activated carbon. The addition of 3 grams of adsorbent and a contact period of 90 minutes were the best circumstances for decreasing lead levels in the treatment variation. The best circumstances for a reduction in cadmium levels in the treatment variation were the addition of 5 grams of adsorbent and a contact period of 60 minutes. The percentage level of efficacy of lowering lead levels in the test solution is 98.86 %, while the reduction in cadmium levels is 99.34 %, according to the test findings.*

*Keywords: Adsorbent, Activated Carbon, Avocado Seed, Lead, Cadmium*