

**KARBON AKTIF BERBAHAN TEMPURUNG KELAPA
(*Cocos nucifera*) DENGAN AKTIVATOR H₃PO₄
UNTUK PENGOLAHAN LIMBAH CAIR RUMAH MAKAN BAKSO**

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RINGKASAN

Tempurung kelapa merupakan limbah organik yang dapat terurai tetapi karena teksturnya yang cukup keras dibutuhkan waktu untuk menguraikannya secara alamiah. Salah satu potensi dalam pemanfaatan tempurung kelapa adalah pembuatan karbon aktif. Penelitian bertujuan untuk membuat karbon aktif tempurung kelapa, menganalisis karakterisasi karbon aktif, menganalisis efektivitas karbon aktif untuk pengolahan limbah cair rumah makan bakso dan membandingkan karbon aktif produksi penelitian dengan karbon aktif yang dijual di pasaran. Pembuatan karbon aktif tempurung kelapa dilakukan dengan cara proses karbonisasi di *furnace* selama 1 jam pada suhu 400⁰C, menggunakan aktivator H₃PO₄ 3M, hasil rendemen arang aktif sebesar 60% dan kapasitas iod setelah aktivasi yaitu 7,95g/g. Hasil uji karakterisasi karbon aktif tempurung kelapa seperti daya serap iod, kadar air dan kadar abu memenuhi SNI 06-3730-19951. Hasil daya serap iod yang didapatkan sebesar 986,58 mg/g ; kadar air sebesar 1,0348% dan kadar abu sebesar 1,13%. Kemampuan adsorpsi karbon aktif tempurung kelapa produk penelitian pada pengolahan limbah cair rumah makan bakso efektif karena hasil uji setelah proses adsorpsi waktu kontak 5 jam memenuhi Permen LHK RI Nomor P.68/Menlhk/Setjen/Kum.1/8/2016. Persen removal TSS yang didapat sebesar 97%; COD sebesar 94% dan minyak lemak sebesar 94%.

Kata Kunci: limbah domestik, adsorpsi, karbon aktif, tempurung kelapa

**COCONUT SHELL ACTIVE CHARCOAL (*Cocos nucifera*)
WITH H₃PO₄ ACTIVATOR FOR LIQUID WASTE TREATMENT
IN THE MEATBALL RESTAURANT**

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ABSTRACT

Coconut shell is an organic waste that can be decomposed but because of its hard texture it takes time to decompose naturally. One of the potentials in the use of coconut shells is the manufacture of activated carbon. The research aims to make coconut shell activated carbon, analyze the characterization of activated carbon, analyze the effectiveness of activated carbon for processing wastewater from meatball restaurants and compare the activated carbon produced by research with activated carbon sold in the market. The manufacture of coconut shell activated carbon is carried out by means of the carbonization process in the furnace for 1 hour at a temperature of 400°C, using H₃PO₄ 3M activator and the yield of activated charcoal is 60%. The results of the characterization test of coconut shell activated carbon such as iodine absorption, moisture content and ash content met SNI 06-3730-19951. The results of the iodine absorption obtained were 986.58 mg/g; water content is 1.0348% and ash content is 1.13%. The adsorption ability of coconut shell activated carbon of research products in wastewater treatment of meatball restaurants is effective because the test results after the adsorption process of contact time of 5 hours meet the Minister of Environment and Forestry of the Republic of Indonesia Number P.68/Menlhk/Setjen/Kum.1/8/2016. Percent TSS removal obtained is 97%; COD is 94% and fatty oil is 94%.

Keywords: domestic waste, adsorption, activated carbon, coconut shell