KARAKTERISTIK KARBON AKTIF DARI BATANG KELAPA SAWIT DENGAN AKTIVATOR NaOH

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh konsentrasi aktivator NaOH terhadap karakteristik karbon aktif yang dihasilkan dan menganalisis daya serap karbon aktif dari batang kelapa sawit terhadap kadar polutan limbah cair usaha tahu. Penelitian ini menggunakan metode Rancangan Acak Lengkap (RAL) dengan 5 perlakuan dan 3 kali pengulangan. Perlakuan dalam penelitian ini adalah perbedaan konsentrasi aktivator NaOH yaitu 1%, 2%, 3%, 4%, 5%. Data yang diperoleh, dianalisis secara statistik dengan *Analysis of Variabel* (ANOVA), jika berbeda nyata maka dilanjutkan dengan *Duncan's New Multiple Range Test* (DNMRT) pada taraf 5%. Karbon aktif dari batang kelapa sawit dengan aktivator NaOH memberikan pengaruh nyata pada taraf 5% terhadap rendemen, kadar air, kadar abu, kadar zat menguap, dan daya serap iodin. Perlakuan terbaik berdasarkan daya serap iodin tertinggi yaitu perlakuan dengan konsentrasi aktivator NaOH 5%. Aplikasi karbon aktif terbaik pada penelitian ini mampu menurunkan kadar COD, BOD, TSS, dan menaikkan pH.

Kata Kunci: karbon aktif; kelapa sawit; limbah cair; NaOH

CHARACTERISTICS OF ACTIVATED CARBON FROM PALM TRUNK WITH NaOH ACTIVATOR

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ABSTRACT

This study aimed to analyze the effect of NaOH activator concentration on the characteristics of activated carbon produced and analyze the absorption capacity of activated carbon from palm trunks to the levels of tofu business liquid waste pollutants. This study used a Completely Randomized Design (CRD) method model of 5 treatments with 3 repetitions. The treatment in this study was the difference in NaOH activator concentration, namely 1%, 2%, 3%, 4%, 5%. The data obtained were statistically analyzed with Analysis of Variables (ANOVA), if significantly different then continued with Duncan's New Multiple Range Test (DNMRT) at the 5% level. Activated carbon from oil palm trunks with NaOH activator gives a significant effect at the 5% level on yield, moisture content, ash content, volatile matter content, and iodine absorbency. The best treatment based on the highest iodine absorbency is treatment 5% NaOH activator concentration. The best activated carbon application in this study was able to reduce COD, BOD, TSS, and pH.

Keywords: activated carbon; NaOH; palm oil; liquid waste