

**PENGARUH KONSENTRASI KATALIS ABU LIMBAH
CANGKANG SIPUT LOLA (*Trochus niloticus*, Linn) PADA
PEMBUATAN BODIESEL DARI MINYAK JELANTAH
MELALUI REAKSI TRANSESTERIFIKASI**

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The Effect of Catalyst Concentration Lola Shells Snail Waste ash (Trochus niloticus) on Biodiesel from Used Cooking Oil Through Transesterification Reaction

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ABSTRACT

This research study was to determine the effect of the use of waste ash lola snail shells as a catalyst to the quality biodiesel and determine the amount of the percentage of ash waste catalyst lola snail shell that can produce biodiesel with the best quality. This study used a completely randomized design with 5 treatments and 3 repetitions concentration of catalys (3%, 4%, 5%, 6% and 7%). The observations made on used cooking oil biodiesel include its density, moisture content, yield, kinematic viscosity, flash point, acid number, free fatty acid content, free glycerol content, total glycerol content and methyl ester content. The results showed that the difference in the amount of waste ash use of trochus shell snail affect the used cooking oil biodiesel. Best biodiesel product obtained in treatment E with the addition of 7% ash waste lola snail shell. The results of analysis performed on the product E obtained density of 0.9 g/cm³; the moisture content of 1.665%, the yield of 89%, the kinematic viscosity of 8.6 mm²/s, a flash point 152°C, acid number 0.598 mg KOH/g, free fatty acid content of 0.27%, free glycerol content 0.01% by mass, total glycerol content 0.25% by mass and methyl ester content of 96.16% by mass

Keyword - Biodiesel, Used of Cooking Oil, Catalyst, Snail



Pengaruh Konsentrasi Katalis Abu Limbah Cangkang Siput Lola (*Trochus niloticus*) pada Pembuatan Biodiesel dari Minyak Jelantah Melalui Reaksi Transesterifikasi

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ABSTRAK

Tujuan penelitian ini adalah untuk mengetahui pengaruh penggunaan abu limbah cangkang siput lola sebagai katalis terhadap kualitas biodiesel dan menentukan jumlah persentase penggunaan katalis abu limbah cangkang siput lola yang dapat menghasilkan biodiesel dengan mutu terbaik. Rancangan penelitian ini adalah Rancangan Acak Lengkap dengan 5 perlakuan dan 3 kali ulangan konsentrasi penggunaan abu limbah cangkang siput lola (3%, 4%, 5%, 6% dan 7% dari jumlah minyak jelantah). Pengamatan yang dilakukan pada biodiesel minyak jelantah meliputi densitas, kadar air, rendemen, viskositas kinematik, titik nyala, bilangan asam, kadar asam lemak bebas, kadar gliserol bebas, kadar gliserol total dan kadar metil ester. Hasil penelitian menunjukkan bahwa perbedaan jumlah penggunaan abu limbah cangkang siput lola berpengaruh terhadap biodiesel minyak jelantah. Produk biodiesel terbaik didapatkan pada perlakuan E dengan penambahan 7% abu limbah cangkang siput lola. Hasil analisis yang dilakukan pada produk E didapatkan densitas 0,9 g/cm³; kadar air 1,665%, rendemen 89%, viskositas kinematik 8,6 mm²/s, titik nyala 152°C, bilangan asam 0,598 mgKOH/g, kadar asam lemak bebas 0,27%, kadar gliserol bebas 0,01% massa, kadar gliserol total 0,25% massa dan kadar metil ester 96,16% massa.

Kata kunci - Biodiesel, Minyak Jelantah, Katalis, Siput