

ANALISIS KARAKTERISTIK BRIKET BIOMASSA DARI CANGKANG BUAH NYAMPLUNG DENGAN CAMPURAN TEMPURUNG KELAPA

INTISARI

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Potensi tanaman nyamplung di Indonesia sangat besar. Tanaman ini banyak dimanfaatkan minyaknya. Namun akibat dari pengolahan minyak tersebut banyak menimbulkan masalah limbah. Salah satu alternatifnya memanfaatkan limbah cangkang nyamplung menjadi briket. Briket yang sering ditemui dipasaran kebanyakan berbahan tempurung kelapa. Namun, bahan baku tersebut sudah dinilai mahal dan sulit didapatkan karena banyak muncul pabrik briket baru sehingga diperlukan alternatif bahan untuk membuat briket. Penelitian ini bertujuan untuk mengetahui kualitas briket campuran cangkang nyamplung dengan tempurung kelapa, pengaruh campuran tempurung kelapa terhadap kualitas briket, dan mengetahui variasi campuran terbaik. Untuk itu dilakukan variasi campuran antara arang cangkang nyamplung dan tempurung kelapa sebesar 100%:0%, 80%:20%, dan 60%:40%. Parameter uji kualitas briket pada penelitian ini adalah densitas, kadar air, kadar abu, kadar zat terbang, kadar karbon terikat, nilai kalor dan *drop test*. Hasil uji parameter kemudian dibandingkan dengan standar SNI briket biomassa. Dari hasil pengujian briket diperoleh densitas berkisar antara 0,78 g/cm³-0,97 g/cm³, kadar air berkisar antara 5,15%-5,38%, kadar abu yang dihasilkan berkisar antara 4,67%- 7,65%, kadar zat terbang antara 10,75% -14,21%, dan kadar karbon terikat antara 73,13%-79,42%. Nilai kalor yang diperoleh dari percobaan berkisar antara 5188,06 cal/g – 5811,69 cal/g. Dari hasil tersebut dapat disimpulkan bahwa penambahan campuran tempurung kelapa dapat meningkatkan kualitas briket. Penelitian ini menunjukkan bahwa briket alternatif terbaik pengganti briket tempurung kelapa diperoleh pada variasi 60%:40% dan didapatkan nilai kalor sebesar 5811,69 cal/g.

Kata kunci: nyamplung; tempurung kelapa; briket; nilai kalor.

CHARACTERISTICS ANALYSIS OF BIOMASS BRIQUETTES FROM NYAMPLUNG FRUIT SHELL WITH COCONUT SHELL MIXTURE

ABSTRACT

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The potential of nyamplung plants in Indonesia is very large. This plant is widely used for its oil. However, as a result of processing the oil, it causes a lot of waste problems. One alternative is to use nyamplung shell waste into briquettes. Briquettes that are often found in the market are mostly made from coconut shells. However, these raw materials are considered expensive and difficult to obtain because there are many new briquette factories emerging so that alternative materials are needed to make briquettes. This study aims to determine the quality of briquettes, the effect of coconut shell mixture on the quality of briquettes, and to determine the best variation of the mixture. For this reason, variations of the mixture between nyamplung and coconut shell charcoal were carried out by 100%: 0%, 80%: 20%, and 60%: 40%. The parameters of the briquette quality test in this study were density, moisture content, ash content, volatile matter content, bound carbon content, calorific value and drop test. The parameter test results were then compared with the SNI standard for biomass briquettes. From the results of the briquette test, the density ranged from 0.78 g/cm³-0.97 g/cm³, water content ranged from 5.15%-5.38%, the ash content produced ranged from 4.67%-7.65 %, the volatile matter content is between 10.75% -14.21%, and the bound carbon content is between 73.13%-79.42%. The calorific value obtained from the experiment ranged from 5188.06 cal/g – 5811.69 cal/g. From these results it can be concluded that the addition of coconut shell mixture can improve the quality of briquettes. This study showed that the best alternative briquettes to replace coconut shell briquettes was obtained at a variation of 60%: 40% and the calorific value was 5811.69 cal/g.

Keywords: nyamplung; coconut shell; briquettes; calorific value