ABSTRACT

EFFECT OF GLUTINOUS RICE FLOUR ADHESIVE CONCENTRATION ON THE PHYSICOCHEMICAL CHARACTERISTICS OF RUBBER SEED SHELL BIOBRIQUETTE

By

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This study aimed to determine the effect of glutinous rice flour adhesive concentration on the physical and chemical characteristics of biobriquette made from rubber seed shells and determine the best adhesive concentration that produced quality biobriquette. The study used a completely randomized design (CRD) with one factor, namely glutinous rice flour adhesive concentration (5%, 7.5%, 10%, 12.5%, 15%, and 17.5%), and three replications. Parameters observed included moisture content, ash content, calorific value, burning rate, and density. The results showed that increasing the adhesive concentration led to an increase in ash content and density, but decreased the burning rate. The treatment with 5% adhesive concentration gave the best results, with ash content of 0.74%, moisture content of 6.02%, density of 0.657 g/cm³, burning rate of 0.163 g/min, and a calorific value of 6,793.02 cal/g. Overall tested of biobriquette had met the standard of SNI 01-6235-2000. Biobriquette made from rubber seed shells with glutinous rice flour adhesive could produce quality biobriquette suitable for use as alternative fuel.

Keywords: *biobriquette, rubber seed shells, glutinous rice flour*.

ABSTRAK

PENGARUH KONSENTRASI PEREKAT TEPUNG BERAS KETAN TERHADAP KARAKTERISTIK FISIKOKIMIA BIOBRIKET CANGKANG BIJI KARET

Oleh

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Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi perekat tepung beras ketan terhadap karakteristik fisik dan kimia biobriket dari cangkang biji karet serta menentukan konsentrasi perekat terbaik yang menghasilkan biobriket berkualitas. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan satu faktor, yaitu konsentrasi perekat tepung beras ketan (5%, 7,5%, 10%, 12,5%, 15%, dan 17,5%) dan tiga kali ulangan. Parameter yang diamati meliputi kadar air, kadar abu, nilai kalor, laju pembakaran, dan kerapatan. Hasil penelitian menunjukkan bahwa peningkatan konsentrasi perekat menyebabkan peningkatan kadar abu dan kerapatan, namun menurunkan laju pembakaran. Perlakuan dengan konsentrasi perekat 5% memberikan hasil terbaik dengan kadar abu (0,74%), kadar air (6,02%), nilai kerapatan (0,657 g/cm^3), laju pembakaran (0,163 g/menit), dan nilai kalor sebesar 6.793,02 kal/g. Uji keseluruhan biobriket telah memenuhi standar SNI 01-6235-2000. Biobriket berbahan dasar cangkang biji karet dengan perekat tepung beras ketan menghasilkan biobriket berkualitas yang layak digunakan sebagai bahan bakar alternatif.

Kata kunci: biobriket, cangkang biji karet, tepung beras ketan.