

ABSTRACT

THE EFFECT OF RUBBER GUM AND TAPIOCA MIXTURE ON THE CHARACTERISTICS OF CORNCOB BRIQUETTES

By

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Corn stover was an abundant agricultural waste that had not been optimally utilized. This study aimed to determine the effect of varying concentrations of rubber gum adhesive and tapioca on the quality of briquettes made from corncob waste, as well as to identify the best formulation. The method used was a Completely Randomized Design (CRD) with six treatments of rubber gum variation (5 g to 30 g) and a fixed tapioca concentration (5 g), with three replications. The observed parameters included density, moisture content, ash content, burning rate, and calorific value. The results showed that the variation in rubber gum adhesive concentration significantly affected all test parameters. The best treatment was P1 (100 g corncob, 5 g tapioca, 5 g rubber gum), which produced the highest density (0.69 g/cm³), lowest moisture content (5.71%), lowest ash content (3.54%), highest burning rate (0.32 g/min), and highest calorific value (6344.67 cal/g). All treatments met the quality standards for briquettes according to SNI 01-6235-2000. Therefore, briquettes made from corncob waste with rubber gum and tapioca adhesives were suitable for use as an environmentally friendly alternative fuel.

Keywords: briquette, corncob, rubber gum, and tapioca.

ABSTRAK

PENGARUH KOMBINASI CAMPURAN GETAH KARET DAN TAPIOKA TERHADAP KARAKTERISTIK BRIKET BONGGOL JAGUNG

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Bonggol jagung merupakan limbah pertanian yang melimpah dan belum termanfaatkan secara optimal. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi perekat getah karet dan tapioka terhadap kualitas briket yang dibuat dari limbah bonggol jagung, serta menentukan formulasi terbaik. Metode yang digunakan adalah Rancangan Acak Lengkap (RAL) dengan enam perlakuan variasi getah karet (5 g hingga 30 g) dan konsentrasi tapioka tetap (5 g), serta tiga kali ulangan. Parameter yang diamati meliputi kerapatan, kadar air, kadar abu, laju pembakaran, dan nilai kalor. Hasil penelitian menunjukkan bahwa variasi konsentrasi perekat getah karet berpengaruh nyata terhadap seluruh parameter uji. Perlakuan terbaik diperoleh pada P1 (100 g bonggol jagung, 5 g tapioka, 5 g getah karet) dengan kerapatan tertinggi (0,69 g/cm³), kadar air terendah (5,71%), kadar abu terendah (3,54%), laju pembakaran tertinggi (0,32 g/menit), dan nilai kalor tertinggi (6344,67 cal/g). Seluruh perlakuan memenuhi standar mutu briket berdasarkan SNI 01-6235-2000. Oleh karena itu, briket dari limbah bonggol jagung dengan perekat getah karet dan tapioka layak digunakan sebagai bahan bakar alternatif yang ramah lingkungan.

Kata Kunci : briket, bonggol jagung, getah karet, dan tapioka.