ABSTRAK

UJI EFEKTIVITAS MESIN PENCETAK BRIKET ARANG MENGGUNAKAN SISTEM PENCETAK *SCREW* TERHADAP KUALITAS BRIKET ARANG

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Briket arang merupakan bahan bakar padat dengan nilai kalor tinggi dan emisi rendah. Kualitas produk dipengaruhi oleh mesin pencetak, salah satunya sistem screw atau ulir. Penelitian ini menggunakan metode kuantitatif untuk menguji efektivitas mesin pencetak tersebut dengan menganalisis kualitas briket, kadar air, nilai kalor, dan laju pembakaran. Tiga sampel digunakan dengan perbedaan komposisi serbuk arang dan tepung tapioka. Setelah melalui proses penepungan, pencampuran, pencetakan, dan penjemuran 1–2 hari, dilakukan pengujian. Hasil menunjukkan sampel 1 memiliki nilai kalor 5936,4493; kadar air 0,12; laju pembakaran 02:11. Sampel 2: nilai kalor 6198,9725; kadar air 0,96; laju pembakaran 02:24. Sampel 3: nilai kalor 6445,5930; kadar air 0,69; laju pembakaran 02:35. Kesimpulannya, sampel 3 memiliki kualitas terbaik, meski semua sampel masih memenuhi standar SNI (nilai kalor ≥ 5000 dan kadar air ≤ 8%).
Kata Kunci: Briket Arang, Kadar Air, Nilai Kalor, Uji Efektivitas, Mesin Pencetak.

ABSTRACT

EFFECTIVENESS TEST OF CHARCOAL BRIQUETTE PRINTING MACHINE USING SCREW PRINTING SYSTEM ON CHARCOAL BRIQUETTE QUALITY

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Charcoal briquettes are solid fuels with high calorific value and low emissions. Product quality is influenced by the molding machine, one of which is the screw system. This study uses a quantitative method to test the effectiveness of the molding machine by analyzing briquette quality, moisture content, calorific value, and combustion rate. Three samples were used with different compositions of charcoal powder and tapioca flour. After going through the flouring, mixing, molding, and drying process for 1–2 days, the test was carried out. The results showed that sample 1 had a calorific value of 5936.4493; moisture content of 0.12; combustion rate of 02:11. Sample 2: calorific value of 6198.9725; moisture content of 0.96; combustion rate of 02:24. Sample 3: calorific value of 6445.5930; moisture content of 0.69; combustion rate of 02:35. In conclusion, sample 3 has the best quality, although all samples still meet SNI standards (calorific value ≥ 5000 and water content ≤ 8%).
Keywords: Charcoal Briquettes, Moisture Content, Calorific Value, Effectiveness Test, Printing Machine.