

PENGARUH BENTUK BAHAN BAKU DAN PERSENTASE PEREKAT TERHADAP KUALITAS BRIKET ARANG LIMBAH PENGGERGAJIAN BATANG KELAPA (*Cocos nucifera* L.)

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INTISARI

Permintaan bahan bakar minyak di Indonesia semakin meningkat akibat adanya usaha-usaha perbaikan ekonomi dan penambahan penduduk. Fenomena tersebut mendorong manusia untuk mencari sumber energi alternatif seperti briket arang. Salah satu bahan baku yang dapat digunakan yaitu limbah penggergajian batang kelapa (*Cocos nucifera* L.).

Penelitian ini bertujuan untuk mengetahui pengaruh bentuk bahan baku dan persentase perekat terhadap kualitas briket arang dari limbah penggergajian batang kelapa. Rancangan penelitian yang digunakan adalah rancangan acak lengkap yang disusun secara faktorial dengan dua faktor, yaitu bentuk bahan baku (serbuk dan sebetan) dan persentase perekat pati (4%, 6%, dan 8%) dengan masing-masing perlakuan 5 ulangan. Parameter kualitas briket arang meliputi kadar air, berat jenis, nilai kalor, kadar abu, kadar zat mudah menguap, dan kadar karbon terikat.

Hasil penelitian menunjukkan bahwa kualitas briket arang dari limbah penggergajian batang kelapa memiliki kadar air sebesar 6,062 - 8,566 %, berat jenis 0,659 - 0,749, nilai kalor 6159,620 - 6987,951 kal/g, kadar abu 3,751 - 4,988 %, kadar zat mudah menguap 35,229 - 49,228 %, dan kadar karbon terikat 39,919 - 52,712 %. Briket arang dengan kualitas terbaik diperoleh dari kombinasi bahan baku serbuk penggergajian batang kelapa dengan persentase perekat pati 4% dan tekanan 2500 psi, menghasilkan kadar air sebesar 8,436%, berat jenis 0,728, nilai kalor 6987,951 kal/g, kadar abu 3,751%, kadar zat mudah menguap 35,229%, dan kadar karbon terikat 52,712%.

Kata kunci : briket arang, batang kelapa, persentase perekat, serbuk, sebetan

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**THE EFFECT OF RAW MATERIAL FORM AND ADHESIVE
PERCENTAGE OF QUALITY CHARCOAL BRIQUETTES FROM
WASTE COCONUT SAWN (*Cocos nucifera* L.)**

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ABSTRACT

Fuel oil demand in Indonesia increasing due to the efforts of economic improvement and populations. This phenomenon encourages people to find an alternative energy such as charcoal briquettes. One of the raw materials used is waste coconut sawn (*Cocos nucifera* L.)

This research aims to determine the effect of the raw materials and adhesives percentage for quality of charcoal briquettes from waste coconut sawn. This research is conducted with a completely randomized design arranged in a factorial with two factors. The first factor is form of raw materials (sawdust and woody slab) and the second factor is percentage of amyllum adhesive (4%, 6% and 8%) with 5 replications. The quality parameters of charcoal briquettes are moisture content, density, calorific value, ash content, volatile matter, and fixed carbon.

The result shows that charcoal briquettes from waste coconut sawn has moisture content 6.062 - 8.566 percent, density 0.659 - 0.749, calorific value 6159.620 - 6987.951 cal/gram, ash content 3.751 - 4.988 percent, volatile matter 35.229 - 49.228 percent, and fixed carbon 39.919 - 52.712 percent. The best quality of charcoal briquettes obtained from sawdust material with 4 percent amyllum adhesive and 2500 psi pressure that produces moisture content 8.436 percent, density 0.728, calorific value 6987.951 cal/gram, ash content 3.751 percent, volatile matter 35.229 percent, and fixed carbon 52.712 percent.

Keywords: charcoal briquette, waste coconut sawn, the percentage of adhesives, sawdust, woody slab

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