

PENGARUH VARIASI TEKANAN KEMPA DAN PERSENTASE PEREKAT TERHADAP SIFAT FISIKA-KIMIA BRIKET ARANG DARI LIMBAH KULIT BUAH DURIAN (*Durio sp.*)

Oleh :
Erna Prihatna Wati¹
J.P. Gentur Sutapa²

INTISARI

Penelitian ini bertujuan memanfaatkan limbah kulit buah durian untuk dijadikan sebagai bahan dasar pembuatan briket arang dalam rangka mengatasi masalah limbah kulit buah durian pada saat panen raya, mengetahui pengaruh interaksi tekanan kempa dan persentase perekat dan mengetahui kualitas terbaik briket arang yang dihasilkan.

Penelitian ini menggunakan rancangan acak lengkap yang disusun secara faktorial dengan dua faktor yaitu persentase perekat (4%, 6%, dan 8%) dan tekanan kempa (1500 psi, 2000 psi dan 2500 psi) dengan masing-masing perlakuan 5 ulangan. Penelitian dimulai dengan mengumpulkan kulit durian dari pedagang buah durian di Kota Baru dan Jalan Magelang Km 6 Yogyakarta. Kulit buah durian kemudian dipotong berukuran ± 5 cm dan dikeringkan dengan tanur pengering, selanjutnya kulit durian diarangkan menggunakan retort pada suhu 300°C selama ± 3 jam. Arang diserbukkan dan disaring lolos 20 mesh tertahan 45 mesh kemudian dicetak menjadi briket arang menggunakan kempa dingin. Pengujian briket arang meliputi kadar air, berat jenis, nilai kalor, kadar abu, kadar zat mudah menguap dan karbon terikat. Data hasil penelitian dianalisis menggunakan SPSS, dilakukan uji lanjut HSD untuk faktor berbeda nyata dan sangat nyata.

Hasil penelitian menunjukkan kualitas briket arang terbaik diperoleh dari kombinasi perlakuan tekanan kempa 2000 psi dan persentase perekat 6% dengan nilai kadar air 10,397%, berat jenis 0,660, nilai kalor 6.493 kal/gram, kadar zat mudah menguap 27,958%, kadar abu 8,704% dan karbon terikat 52,93%.

Kata kunci : briket arang, kulit buah durian, limbah.

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1. Mahasiwi Jurusan Teknologi Hasil Hutan, Fakultas Kehutanan UGM
 2. Dosen Jurusan Teknologi Hasil Hutan, Fakultas Kehutanan UGM

**EFFECT OF VARIANCE OF PRESS LOADS AND ADHESIVE
PERCENTAGES TO CHARACTER THE PHYSICAL-CHEMICAL
PROPERTIES OF DURIAN'S PEEL WASTE (*Durio sp.*) CHARCOAL
BRIQUETTE**

By:
Erna Prihatna Wati¹
J.P. Gentur Sutapa²

ABSTRACT

The research aims to use the durian's peel waste to be made the charcoal briquette to solve the durian's peel waste problem during the the harvest time, to know the interaction the press load and adhesiveness percentages and to find the best quality product of the briquette its self.

The research uses a set of random sampling that arranges to two major factors, the adhesiveness percentages (4%, 6%, and 8%) and the press loads (1500 psi, 2000 psi, and 2500 psi) with five replications. The research starts by collecting the durian's peel from the durian fruit sellers at Kota Baru and Jalan Magelang Km. 6 Yogyakarta. The peel were cut into ± 5 cm sizes and then dried in the kiln drying. The next step is that the peel were kiln dried into charcoal using the retort at 300°C for about 3 hours. The charcoal were pulverized so we can get the 20 mesh and hold 45 mesh and then were moulded into charcoal briquette using cold pressing. The charcoal briquette test consist of the moister content, specific gravity, heating value, ash content, volatile matter and fixed carbon. The data of the result were analyzed using the SPSS programme, followed by HSD test to get the different factors and factual.

The results shows that the best quality of charcoal briquette yielded from the 2000 psi press load treatment and the 6% adhesiveness percentages, with 10,397% moisture content, 0,660 specific gravity, 6.493 kal/gram heating value, 27,958% volatile matter, 8,704% ash content, and 52,93% fixed carbon.

Key words: charcoal briquette, durian's peel, waste.

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1. The student Tecnology of Forest Product, Forestry Faculty, Gadjah Mada University Yogyakarta.
 2. Lecture Tecnology of Forest Product, Forestry Faculty, Gadjah Mada University Yogyakarta.