ABSTRAK

KAJIAN INDUSTRI ARANG DARI KAYU AKASIA (*Acacia mangium*) DI KECAMATAN BUMI NABUNG, KABUPATEN LAMPUNG TENGAH

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Usaha arang kayu merupakan usaha sampingan yang dilakukan petani dengan memanfaatkan sisa limbah mebel dan sisa penebangan pohon. Limbah biomassa tersebut masih memerlukan perlakuan khusus agar nilai energi yang dihasilkan tinggi. Salah satu cara untuk menaikkan nilai energi biomassa tersebut yaitu dengan pirolisis. Tujuan penelitian diantaranya untuk mengetahui proses pembuatan arang dan keragaan industri arang kayu akasia dan karakteristik arang kayu akasia metode konvensional di Kecamatan Bumi Nabung Kabupaten Lampung Tengah. Pengumpulan data didapatkan dari pengukuran dan wawancara langsung dengan pengrajin arang. Parameter yang diamati meliputi rendemen, kerapatan dan *bulk density*, kadar air, kadar abu, daya serap air, dan nilai kalor arang.

Hasil penelitian menunjukkan sistem produksi masih menggunakan cara tradisional mulai dari persiapan bahan baku, penyusunan bahan baku, pemasangan boks, penambahan tanah ke dalam boks, pembakaran, pendinginan menggunakan 2 cara siram dan tanpa siram selanjutnya adalah pemanenan. Karakteristik arang siram menunjukkan kadar air sebesar 5,1%, kadar abu 3,06%, kerapatan 0,3 g/cm^3, *bulk density* 0,26 g/cm^3 dan nilai kalor 30,42 MJ/kg. Sedangkan karakteristik arang tanpa siram adalah kadar air sebesar 3%, kadar abu 2%, kerapatan 0,2 g/cm^3, *bulk density* 0,12 g/cm^3 dan nilai kalor 32,93 MJ/kg. Kualitas arang memenuhi SNI 01-1683-1989 dilihat dari nilai kadar air dan kadar abu. Keuntungan yang diperoleh adalah Rp.382.335,7 untuk arang siram dan arang tanpa siram diperoleh keuntungan Rp.134.177.

Kata kunci : Pirolisis, akasia, arang, rendemen, pendinginan

ABSTRACT

Study on Charcoal Industry from Acacia Wood (*Acacia mangium*) in Bumi Nabung District, Central Lampung Regency

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Wood charcoal business is a side business that farmers do by utilizing the rest of the furniture waste and the rest of the tree felling . The biomass waste still requires special treatment so that the energy value produced is high. One way to increase the energy value of biomass is by pyrolysis. The purpose of the study was to understand the process of making charcoal and determine the characteristics of acacia wood charcoal as well as performance of acacia wood charcoal industry in Bumi Nabung District, Central Lampung Regency. Data collection was obtained from measurements and direct interviews with charcoal industry owners. Parameters tested include yield, density and bulk density, moisture content, ash content, water absorption, and calorific value.

The results showed that the production system is still using the traditional way starting from the preparation of raw materials, preparation of raw materials, installation of boxes, the addition of soil into the box, combustion, cooling using 2 ways flush and without flush next is harvesting. Characteristics of flush charcoal showed water content of 5.1%, ash content of 3.06%, density of 0.3 g/cm^3, bulk density 0,26 g/cm^3 and calorific value of 30.42 MJ/kg. While the characteristics of charcoal without flush are water content of 3%, ash content of 2%, density of 0.2 g/cm^3, 0,12 g/cm3 and calorific value of 32.93 MJ/kg. The quality of charcoal meets SNI 01-1683-1989 seen from the value of water content and ash content. The profit obtained is Rp328.335,3 for flush charcoal and charcoal without flush obtained a profit of Rp134.177.

Keywords: pyrolysis, acacia, charcoal, yield, cooling