

KARBONISASI TONGKOL JAGUNG SEBAGAI BAHAN PEMBUATAN BRIKET

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ABSTRAK

Penelitian karbonisasi tongkol jagung sebagai bahan pembuatan briket telah dilakukan dilaboratorium Daya dan mesin pertanian. Tujuan dari penelitian ini adalah untuk mempelajari sifat fisik arang tongkol jagung dan menentukan nilai kalor tongkol jagung. Penelitian ini dilakukan dengan menggunakan metode eksperimental. Karbonisasi menggunakan kombinasi tipe drum selama 180 menit sampai 300 menit. Parameter dalam penelitian ini adalah laju pembakaran, kadar air, kadar abu, dan nilai kalor. Karbonisasi selama 180 menit dari sampel 11,500 g menghasilkan 1,200 g arang dengan kadar air bahan 10,46%, kadar air arang 6,19%, kadar abu 3,3%, nilai kalor 6652 kal/g, laju pembakaran 33,89 g/menit. Karbonisasi selama 300 menit dari sampel 2200 g menghasilkan 3,900 g dengan kadar air bahan 10,46%, kadar air arang 5,19%, kadar abu 3,9%, nilai kalor 6154 kal/g, laju pembakaran 64 g/menit. Nilai laju pembakaran dan nilai kadar air memenuhi SNI-1995, kadar abu memenuhi SNI 06-3730-1995 dan nilai kalor memenuhi SNI 1-6235-2000.

Kata kunci: arang, karbonisasi, tongkol jagung.

CORNCOBS CARBONIZATION AS BRIQUETTE RAW MATERIAL

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ABSTRACT

Carbonized corn cob research as a material for making briquettes aims to measure the physical properties of corn cobs charcoal and determine the calorific value of corn cobs as a briquette making material. The method used in this research is experimental method. The parameters in this study are the combustion rate, moisture content, ash content, and heating value. Carbonization for 180 minutes produces charcoal and obtained weight of charcoal burning 1200 g, unburnt charcoal 5400 g, combustion rate 33,89 g/min, ash content 3,3%, material moisture content 10,46%, charcoal moisture content 6,19% with a heating value of 6652 cal/g. For 300 minutes it produces charcoal and the weight of burning charcoal is 3900 g, unburnt charcoal is 2800 g, the combustion rate is 64 g/min, ash content is 3,9%, water content is 10,46%, charcoal water content is 5,19% with heating value of 6154 cal/g. Carbonization for 180 minutes to 300 minutes produces the rate of combustion, the value of water content meets SNI-1995, ash content meets SNI 06-3730-1995 and the heating value meets SNI 1-6235-2000 about charcoal.

Keywords: charcoal, carbonization, corncobs.