Karakteristik Briket Biocoal dengan Penambahan Sekam Padi dan Wax

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ABSTRACT

Biocoal made by mixing Sub-Bituminous Tanjung Enim coal with rice skin biomass to make biocoal briquette that will have calorific value suitable for domestic consumption and also have a quicker initial burning time that has been a problem in applying briquette. The rice skin biomass was mixed in 10 gram – 50 gram compositions with 1 gram – 5 gram variations of wax to a fixed weight of 100 gram coal. The size of coal was also studied, which was 50 mesh, 70 mesh, 140 mesh and 220 mesh. The result shown that all briquettes had calorific values (5014 – 5891 cal/gram) that are in range of biocoal standard (5500 – 6000cal/gram)with a quicker initial burning time (2:35 – 16:58 minutes). The sulphur content was reduced because of biomass added (0,21% – 0,31%; standard <0,5 %). The tensile stress test result was 52 - 77 kgF/cm^2 (standard >60 kgF/cm^2). The inherent moisture (%IM) was in range 3,69% – 7,46% (standard <5%); %ash was 13,71% – 17,55% (standard 14 – 18 %); % volatile 13,17% – 23,76% (standard 20 -24%) and % fixed carbon was 57,16% – 61,82% (standard 54 – 60 %). Mixing coal with riceskin biomass and wax produce biocoal that have a suitable calorific value and quicke initial burning time. The best composition was 100 gram coal : 30 gram biomass : 3 gram wax, the finer the particle size the quicker the initial burning time.

Key words : *Biocoal*, rice skin, briquette, wax, calorific value, initial burning time