

Investigation of Sawdust Briquettes as High Grade Fuel

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Abstract

In an earlier work, some biomass materials such as palm kernel shell, charcoal, coconut shell and coconut fibre were mixed with sawdust in various proportions and the calorific values of the derived briquets found. Briquettes of palm kernel shell and sawdust mixture exhibited the highest calorific value. In this work, briquettes were prepared of sawdust mixed with three particle sizes of palm kernel shell (0.3cm, 0.5cm, 0.9cm diameter respectively), each in the ratio of 1:9, 2:8, 3:7, 4:6 and 5:5 of palm kernel shell to sawdust. The bonding materials used were starch and raw cassava glue. The calorific values were then determined using a Bomb Calorimeter. Results show that starch is a better bonding agent than cassava glue and that calorific value increase with decreasing grain size of palm kernel shell. Furthermore, maximum calorific values obtained were for the 3:7 ratio of palm kernel shell to sawdust.