Utilization of kapok fruit skin waste (Ceiba pentandra) as an alternative fuel for charcoal briquettes with a mixture of Noni leaf (Morinda citrifolia) adhesive

Lukman Akbar
Renewable Energy Engineering Study Program
Engineering Department

ABSTRACT

The growing number of population in Indonesia which continues to increase every year causes energy consumption to increase, especially in terms of the use of fossil energy which is increasingly depleting so it is necessary to find alternative energy as a replacement. One form of alternative energy that is renewable and environmentally friendly is biomass. Biomass is a source of waste material from agricultural waste that comes from plants that have parts such as kapok rind that are not fully utilized but are used as stove fuel by the community. The calorific value of the result of the burning of the kapok fruit skin is still small, that is 4493 kcal / kg. Therefore it is necessary to increase the calorific value by pyrolysis and then pressing to become a briquette. The purpose of this study was to determine the best composition of making charcoal briquettes from kapok fruit skin waste with a mixture of noni leaf adhesive. The results showed that the kapok fruit briquette briquettes with a mixture of noni leaf adhesive with the ANOVA method based on parameters testing the moisture content, ash content, heating value were in accordance with SNI 1-62235-2000. The best composition is in the variation of KM1 mixing that is 80% kapok fruit skin with 20% Noni leaf adhesive which has a moisture content value of 5.26%, ash content of 6.01%, calorific value of 6315.31872 cal / gram.

Keywords*: Briquettes, Biomass, Kapok rind, Noni leaves.*