

Utilization of Peanut Shells into Briquettes With Dragon Fruit Peel Adhesive Using the Method Torrefaction

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ABSTRACT

This study aims to analyze the effect of the torrefaction process on the yield of peanut shells, determine the best composition of dragon fruit peel adhesive on the quality of briquettes using peanut shell as raw material, and determine the characteristics of peanut shell briquettes using dragon fruit peel adhesive. The research was carried out through several stages, namely the preparation of raw materials, the process of torrefaction of peanut shells, making dragon fruit peel adhesives, mixing materials, briquette printing and pressing of briquettes raw materials, drying briquettes, and testing the quality of briquettes. The torrefaction process uses a temperature of 300oC within 3 hours without or little air in the furnace with the addition of elbow modifications. The results showed that the best composition was found in V1 with a ratio of 80% peanut shell charcoal with 20% dragon fruit peel adhesive. The results of the study were V1 with a calorific value of 5208 cal/g, a moisture content value of 7.81%, an ash content of 9,18%, a density of 0.88 g/cm³, a kamba density of 0.52 g/cm³, V2 with a ratio of peanut shell charcoal. 75% with dragon fruit peel adhesive 25% the research results are the calorific value 5195 cal/gr, the water content value is 8,76%, the ash content value is 8,11%, the density is 1 gr/cm³, the kamba density is 0.55 0, 97 gr/cm³. V3 with a ratio of 70% peanut shell charcoal with 30% dragon fruit peel adhesive, the results of the research are the calorific value of 4708 cal/gr, water content 9,82%, ash content 7.90%, density 1,06 gr/cm³, kamba density 0.55 gr/cm³.

Keywords: *briquettes, peanut shells, adhesives, torrefaction, characteristics of briquettes*