

ANALISIS KUALITAS BIOBRIKET KARBONISASI LIMBAH BAMBU DENGAN PEREKAT TEPUNG SINGKONG DAN TEPUNG NASI AKING

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Abstract	<p>The heavy dependence on fossil fuel sources has led to massive exploitation of fossil fuel sources, so it is feared that fossil fuels will run out quickly because they cannot be renewed. It is necessary to find alternative non-fossil fuels so as not to depend on these fuels. Utilization of agricultural waste or industrial waste is an alternative to fossil fuels by turning them into charcoal briquettes. Bamboo waste is included in the category of agricultural waste which is often found in the products of the bamboo industry. This bamboo waste has not been utilized and has the potential to be used to make charcoal briquettes. This study aims to determine the characteristics of waste bamboo charcoal briquettes, determine the effect of the type of adhesive and the percentage of adhesive in the manufacture of waste bamboo charcoal briquettes and determine the right combination of adhesive types and the percentage of adhesive suitable for waste bamboo charcoal briquettes. This study used a Completely Randomized Design (CRD) with a combination of 6 experimental variations. Replications were carried out 4 times to obtain 24 experimental units. The treatment factors used in this study were the type of adhesive (J) and the percentage of adhesive (P). The adhesive type factor (J) consisted of the type of cassava flour adhesive (J0) and rice aking flour (J1) while the adhesive percentage factor consisted of 5% adhesive percentage (P0), 7% adhesive percentage (P1) and 9% adhesive percentage (P2).). The variables observed in this study included moisture content, ash content, volatile matter, fixed carbon, calorific value, density and compressive strength. The data obtained was analyzed using the F test and if it had a significant effect then it was continued with the 5% DMRT test to find out the difference in these factors. The results showed the characteristics of bamboo charcoal briquettes using cassava flour and aking rice flour adhesive, namely water content (5.07-5.16%), ash content (2.74-2.86%), volatile matter (1.17- 1.25%), fixed carbon (90.74-91.02%), calorific value (6078.40-7348.23 cal/g), density (0.45-0.53 g/cm³) and compressive strength (2.32-6.74 kg/cm²). The type of adhesive and the percentage of adhesive have a significant effect on ash content, volatile matter and fixed carbon and compressive strength. The best bamboo waste charcoal briquettes are using cassava flour adhesive with an adhesive percentage of 5%.</p>
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