Making Biobricket of Pine Flowers with Pine Resin

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Abstract. The lack of utilization of pine flower biomass which is quite abundant so it is necessary to conduct a study to utilize this waste into alternative fuel for briquettes using pine resin adhesive. The purpose of this study was to determine what is the best ratio of the use of pine resin adhesive and to determine the characteristics of the effect of briquette grain size on the pine flower biobriquette charcoal produced. The variables observed were the ratio of pine resin adhesive (5%, 10%, and 15%) and the grain size of charcoal, namely 250 m, 425 m, and 850 m. Pyrolysis temperature 400 0C for 3 hours. The results showed that the lowest values of water and ash content were obtained at the grain size of 250 m with a ratio of 5%, namely 2.23%, ash content at 250 m with a ratio of 15%, namely 4.51%. Meanwhile, the highest calorific value was obtained from the size of 850 m with a 15% adhesive ratio, namely 5574.28 cal/gram and the highest flame duration was found in the grain size of 850 m with a 15% ratio of 0.0250 gram/second.

Keyword: biobriquette, pine flower, pine resin, pyrolysis.