

ABSTRACT

Biomass energy is a renewable alternative energy source derived from plant waste, industrial waste, or even household waste, which is abundantly available. This study aims to analyze the best composition for making briquettes from cow dung and coffee husks using both the pyrolysis process and without the pyrolysis process, as well as to analyze the characteristics of the briquettes made from cow dung and coffee husks with and without the pyrolysis process. The research method used is the experimental method. The briquette characteristic tests include moisture content, ash content, calorific value, density, bulk density, burning rate, volatile matter, and fixed carbon. The variations in the raw material compositions used in this study are 45% cow dung and 55% coffee husk (V1), 50% cow dung and 50% coffee husk (V2), and 55% cow dung and 45% coffee husk (V3). In this study, two types of briquettes were analyzed, namely pyrolysis briquettes and non-pyrolysis briquettes with the same raw materials. The results of this study showed that the briquette with the best quality, which meets the SNI 01-6235-2000 standard, is the pyrolysis briquette with a composition of 45% cow dung and 55% coffee husk, with the following values: moisture content 5.319%, ash content 2.093%, calorific value 6185.447 cal/g, density 0.751 g/cm³, bulk density 0.336 g/cm³, burning rate 0.005 g/s, volatile matter 1.265%, and fixed carbon 91.323%.

Keywords: Biomass, Briquette, Cow Dung, Coffee Husk