

**PEMBUATAN BIOBRIKET DARI LIMBAH KULIT KOPI
MENGUNAKAN CAMPURAN *SLUDGE* BIOGAS DENGAN PEREKAT
MOLASE**

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ABSTRACT

The diminishing fossil energy drives the need for the utilization of new renewable energy, and biobriquettes from agricultural waste can be an effective solution. This research aims to develop biobriquettes as an alternative fuel by utilizing coffee husk waste and biogas sludge as the main materials, with molasses as a binder. This study employs a pyrolysis method, where the raw materials undergo pyrolysis to improve their quality. This research has 3 variations of composition, namely V1 (75% raw material and 25% binder), V2 (70% raw material and 30% binder), and V3 (65% raw material and 35% binder). The parameter tests in this study include moisture content, ash content, calorific value, volatile matter, fixed carbon, combustion rate, density, and fiber density. The results show that the variations in the composition of raw materials and binders affect the characteristics of the resulting biobriquettes. The best composition was produced in sample V2, namely a ratio of 70% raw materials (coffee grounds and biogas sludge) with 30% molasses binder, which resulted in a moisture content of 2.04%, ash content of 6.07%, volatile matter of 55.08%, fixed carbon of 36.80%, combustion rate of 0.0137 g/s, density of 0.89 g/cm³, fiber density of 0.337 g/cm³, and calorific value of 6886.01 Kal/g. The use of biogas sludge as a mixture in biobriquettes provides additional benefits in utilizing industrial waste, while also increasing the energy efficiency produced.

Keywords: *Briquettes, coffee husk, pyrolysis, biogas sludge, molasses*