

***EFFECT OF WHEAT FLOUR BINDER RATIO VARIATION ON
CALORIFIC VALUE AND ASH CONTENT OF COFFEE HUSK
BIOBRIQUETTES***

Reynaldi Akbar Ali, S.Pd., M.T. As *Chief Conselor*

Alditya Threoo Ilmawan
Study Program of Automotive Engineering
Departement of Engineering

ABSTRACT

Coffee husk is an abundant agro-industrial waste with significant potential to be utilized as an alternative energy source in the form of biobriquettes. One of the important factors in biobriquette production is the use of a binder, which affects combustion quality, particularly the calorific value and ash content. This study aims to analyze the effect of variations in wheat flour binder ratios on the calorific value and ash content of coffee husk-based biobriquettes. The research method employed was an experimental method with wheat flour binder ratios of 15%, 20%, and 25% of the total material mass. The biobriquette production process included coffee husk drying, carbonization, size reduction, mixing with binder, molding, and drying. The tests conducted consisted of calorific value testing using a bomb calorimeter and ash content testing in accordance with solid fuel testing standards. The results showed that increasing the wheat flour binder ratio tended to reduce the calorific value and affect the ash content of the biobriquettes. Lower binder ratios produced higher calorific values, while higher binder additions increased combustion residue. Therefore, the use of wheat flour binder needs to be optimized to obtain biobriquettes with good energy quality and ash content that meets the criteria for alternative fuels.

Keywords: *biobriquettes, coffee husk, wheat flour, calorific value, ash content.*