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**“ANALYSIS OF BIOGAS PRODUCTION FROM A MIXED
PRODUCT OF COW DUNG WITH TOFU DREGS AS AN
ALTERNATIVE FUEL”**

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ABSTRACT

Apart from controlling Covid19, Indonesia's biggest problem is waste management. As a result, many waste treatment plants in Indonesia are unable to manage waste. Meanwhile, the current demand for energy is increasing, while the availability of energy is decreasing due to energy scarcity. Therefore, it is necessary to use energy, one of which is biogas. Biogas is an alternative energy derived from livestock manure that can be used as a renewable energy source. Alternative energy which usually a mixture of organic waste and animal waste. Biogas is produced from the fermentation of organic matter by microorganisms in an anaerobic airtight digester. The purpose of this study was to determine the effect of digester temperature ambient temperature on biogas production, obtain gas mass values, and obtain gas pressure values produced during biogas production. Cow dung and tofu dregs. This research was conducted with 3 variations of the ratio of different materials between cow dung and tofu dregs, namely (40%: 40%) (35%: 45%) and (45%: 35%) with 20% water for each variation. knowing which composition is best to get maximum biogas yield. Data retrieval was carried out during the test in the form of temperature data, biogas pressure and biogas mass. Through this research, the color of the flame on the biogas stove will be tested. The results showed that the average daily temperature digester d1 of 25.993°C, d2 of 25.716°C, d3 of 24.79°C, and the average daily ambient temperature of 23.966°C. Meanwhile, at 18.00 the average temperature of d1 is 28.7°C, d2 is 28.083°C, d3 is 27.45°C and the average ambient temperature is 27.3°C. Then the data. From the results of mass measurements obtained at 06.00 with 3 different comparison variations with the results that have been added up, the digester results d1 of 54.6 grams, d2 of 49.1 grams and d3 of 37.7 grams. The highest mass is found in digester d1 with a substrate ratio of 45%: 35%: 20%. At 18.00 it was found that d1 was 47.6 grams, d2 was 41 grams, d3 was 35 grams. The highest biogas pressure occurred on the 10th day of data collection at 06.00 at 0.00539 bar. Testing the color of the flame on the biogas stove shows a blue color although there is still a slight reddish color.

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Keywords: Tofu Dregs, Biogas, Digester, Methane Gas, Cow Manure.