

ANALYSIS OF BIOGAS PRODUCTION IN BIOGAS MIXED BEFORE WASTE AND PINEAPPLE SKIN AS ENERGY SOURCES IN BIOGAS RICE COOKER

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ABSTRACT

Biogas is an alternative fuel classified as renewable energy. Biogas is a diversion in reducing fossil energy use. For this reason, the authors conducted a study to utilize unused waste with the aim of analyzing data in order to obtain temperature, mass, and pressure values in the *biodigester* by applying it to the rice cooker performance time. Based on the results of tests that have been carried out for 30 days using 3 variations of the mixture, namely the first mixture variation (C1) is 50% cow dung, 50% pineapple skin, 5 liters of water, then in the second mixture variant (C2) is 70% cow dung, 30% pineapple skin, 5 liter water, and the third mixture variation (3) is 30% cow dung, 70% pineapple skin, 5 liter water. It has been obtained that the highest total pressure value and the most optimal pressure value are obtained from the C3 *digester* using a ratio of 30% cow dung: 70% pineapple skin: 5 liters of water, which is 1,869 bar. Based on the results of measurements that have been made, the total mass of each variation is obtained, namely C1 of 2.9 grams, C2 of 7.3 grams and C3 of 17.4 grams. Based on the results of measurements that have been made, the average temperature value of the biogas C1 is 30.4°C, C2 is 29.9°C, and C3 is 31.8°C. From the data obtained, it is in a mesophilic condition where the mesophilic condition is a condition for the production of microorganisms. From the data obtained, it is in a mesophilic condition where the mesophilic condition is a condition for the production of microorganisms. It has been obtained the test results of the length of time to cook rice using a biogas rice cooker for 14 minutes and 35 seconds and an electric rice cooker for 18 minutes and 55 seconds. It can be seen that the test of cooking biogas rice using a biogas rice cooker is faster than using an electric rice cooker.

Keyword: Biogas, Pineapple Skin, Rice Cooker.