

ANALYSIS OF A MIXTURE OF TOFU LIQUID WASTE AND BOVINE RUMEN ON BIOGAS PRODUCTION

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ABSTRACT

This study aims to analyze the effect of a mixture of tofu liquid waste and bovine rumen on biogas production. Tofu liquid waste which is a by-product of the tofu industry and cow rumen as organic waste from the digestive process is used as a basic material for biogas production through anaerobic processes. This analysis uses the ratio of mixture between tofu liquid waste and bovine rumen to determine the optimal ratio that produces the most biogas production. This study measured the volume and pressure of tofu liquid waste and cow rumen in the form of biogas using a 30-liter capacity jerry can using the anaerobic method. The volume and pressure of the biogas produced over a period of 30 days. This study was carried out by making 3 different ratios, namely 1 in the 100% pure tofu liquid waste control system: 0, Treatment 1 with a tofu liquid waste ratio of 45% : cow rumen 55% and treatment 2 with a ratio of tofu liquid waste 65% : bovine rumen 35%. The biogas formation process occurred significantly in the first 2 weeks phase as evidenced by the beginning of the 4th and 8th days, biogas production was seen increasing until the 16th day, The best analysis results were in treatment 1 with a total gas volume of 3,000 liters and an average gas pressure of 4.40 kPa. The final results of biogas were tested with a flame test with a methane content of 50% with a large but not long flame.

Keywords: *Anaerobics, Biogas, Bovine Rumen, Tofu Liquid Waste.*