

ABSTRACT

Biogas is the final product of digestion or anaerobic degradation of organic matter carried out by anaerobic microorganisms in an air-free or oxygen-free environment. The use of waste as a raw material for this research in the form of livestock manure is cow manure and decomposed potatoes. Biogas has an optimum condition as a benchmark whether the production of biogas in accordance with the criteria or not, one of them about conditioning the degree of acidity (pH).

By using the NaOH solution, the variation of pH values conditioned were 6.8, 7.0, 7.2 and 7.4. From the measurement results, it is know that the duration of gas production (Hydraulic Retention Time) of each pH value is different, with pH 6.8 having HRT value 29 times the measurement. For pH 7.2 has an HRT value of 27 times the measurement, whereas pH 7.0 and pH 7.4 have an HRT value of 26. With a total gas volume of pH 6.8 is 2040 mL, the total gas volume of pH 7.0 is 1880 mL and for total gas volume pH 7.2 and pH 7.4 as large as 1670 mL. For the test results of methane gas content is not very good, with the highest pH 6.8 from the other is 0.002%.

Keywords: *Biogas, Raw Materials, Acidity (pH), HRT, Gas Volume, Gas Content*