ABSTRACT

Biogas is one of the alternative energy today that can reliably replace existing conventional energy eg replace electric energy that is often used in everyday life. Besides being able to replace conventional energy, biogas is also one of the renewable energy that is friendly to the environment. Biogas is a mixture of gases produced by microorganisms or anaerobic bacteria. Biogas can be obtained from substrates such as agricultural waste, manure, municipal solid waste and food wast . Biogas can be produced by the bacterial life cycle naturally as a byproduct of metabolism. There are two factors that affect the production of biogas which are pH and substrate size. Size of the substrate affects the outcome to be measured is the volume of gas.

The pH value is required at the time of biogas production by anaerobic process. This is because when the pH value during the anaerobic process will naturally decline. This decrease was caused by the process acidogenesis. Acidogenesis is one step in an anaerobic fermentation process that aims to change the short- hydrolysis compound into acetic acid, H_2 and CO_2.

In this research, the production of biogas to influence the size of the substrate which is the result of gas volume. The substrate used is household waste, namely rice. Experiments rice blend is divided into three intervals of 30 seconds, 60 seconds, and 90 seconds with a conditioned pH of 7. From these experiments the longer time the more delicate experiments did the size of the substrate are obtained. This is because the processing time is longer blender can smooth the rice substrate. In addition to the size of the substrate, the other thing that influenced the results of this trial is the volume of the rice. The smaller the size of the substrates, the greater the volume produced. This is because the previous substrate sized and crushed with a blender so it becomes smooth and add volume susbtrat.

Keywords : Biogas ; Gas volume ; substrate size

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