

ABSTRACT

Biogas is one of alternative energy that can be produced from fermentation of organic material by anaerob process. Raw materials in the biogas production process used in this study is, organic waste originating from households. In addition to the availability of abundant materials, also can reduce environmental contamination. But the biggest problem in biogas production process is construction, which in general is permanent. So it needs to be developed for household use. One developed today is the mobile homebiogas. Mobile Homebiogas is a household-scale biogas usage system whose construction is simpler and easier to move freely. Naturally the formation of biogas requires quite a long time in the process of fermentation, therefore it takes the role of activator. Activators used in this study EM4 (Effective microorganisms). This study aims to determine the effect of EM4 concentration on biogas production with raw materials of household organic waste and variations of EM4 addition of 5%, 7% and 9%. The research was conducted using two methods: wet and dry digester. From the results of the research on wet and dry digester method, with the addition of EM4 variations 9% total gas production produced more be compared other variations. While the measurement of methane gas content, which produces the best is the addition of EM4 concentration of 9% with rockwool insulation material of 31% on wet digester method.

Keywords: Biogas, Household organic waste, Homebiogas mobile, EM4 (Effective microorganisms)