

ABSTRACT

Biogas is a flammable gases which is a mixture of methane gases (CH₄), carbon dioxide (CO₂) and other gases obtained from the decomposition of organic material such as animal waste, human waste, organic waste, fruit waste in the digester or reactor. In this study the substrate used is a mixture of jackfruit banana waste substrate and animal waste with a ratio of 3:1. In the biogas process, there are several parameters one of them is pH. In this research, the researcher use pH control were 6.8, 7.0, 7.2, and uncontrolled pH. In setting the pH value, a pH conditioning process is required using NaOH solution. From the research is obtained the amount of gas volume produced every day and the gas content measured on day 7.

The results obtained during the study were when the pH was not conditioned having the maximum daily volume of 1610mL, otherwise the pH was conditioned at pH 7.0, pH 7.2 and pH 6.8 were 1550mL, 1490mL and 1400mL. For Biogas content at pH condition 6.8 for H₂ = 3,11% CH₄ = 25,26%, then at condition pH 7.0 equal to H₂ = 3,58% CH₄ = 68,92%, then at pH condition 7,2 H₂ = 28.69% CH₄ = 8.93% and the pH is not conditioned by H₂= 1.1% CH₄ = 19.8% then the best methane gas content is at the time conditioned pH 7.0.

Keywords: Biogas, a substrate mixture, total volume, pH value