



Effects of Raw Material on Methane Production in Biogas Digester at Royal University of Agriculture

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Opinion

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Opinion

Biogas can be produce from many resources, which were easy to find properly such as agricultural waste, kitchen waste, cow dungs, pig manures, wastewater and other organic waste. In addition, the biogas consumption taken from biogas digester technically reduced the emission of greenhouse to atmosphere and prevented environmental hazards together with an improvement of livelihood in remote area. The biogas composition produced by biogas digester generally had methane content (60%) and carbon dioxide (40%) depended on kinds of substrates. This study aims to analyze physical and chemical appearances in three different substrates compare a methane content of biogas in three different substrates determine the interaction between a methane content of biogas and physical and chemical appearance in three different substrates. According to research methodology, cow dungs, pig manures and kitchen waste were chose to add to two different biogas digesters in daily with a quantity of 10 kg mixed with water. After a week, it was to assess a biogas volume in each substrate through

biogas meter in daily. The floating drum digester was select to do in experimental research. In a result of this, the biogas volume produced from kitchen waste was in average 515.28 l/d whereas, the biogas volume produced from cow dungs and pig manures were in average 414.22 l/d, 243.81 l/d respectively. Besides this, Methane content (CH₄) of cow dungs and pig manures was in average 56% while methane content (CH₄) of kitchen waste was in average 52%. Additionally, the portion of lipid, protein, dry meter (DM) in kitchen waste were 3.21%, 5.6%, 21.89% respectively whereas, the percentage of lipid, protein, dry meter (DM) in cow dungs were 0.2%, 5.3%, 16.27% parallels. The portion of lipid, protein, dry meter (DM) in pig manures were 0.05%, 10.40%, 25.42% steadily.

In conclusion, the biogas volume of kitchen waste was higher than other substrates but the biogas quality of kitchen waste was less than other substrates whereas, dry matter and protein of pig manure had a high portion.

