

Title	Biogas Production from Wastewater of Vermicelli Plant for Household Using : A Case Study from Ooparat's Vermicelli Plant, Tha Song Khon Sub-district, Muang District, Maha Sarakham Province.
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Abstract

This study aimed to investigate the production processes of biogas, timing and amount of biogas from Wastewater from Vermicelli plant for the household Using, by installing a biogas digester at Ban Ooparat, Tha Song Khon Sub-district, Muang District, Maha Sarakham Province. The researchers used a bag of compost plastic LDPE (Low Density Polyethylene) of 8 cubic meters with a digester. The raw material was 5,100 liters wastewater of vermicelli plant, and filled with the wet cow 1,000 kg into biodegradation anaerobic in the bag fermentation LDPE plastic on the 5th, 10th, 15th day for 15 days Then the biogas was analyzed to determine the composition of the gas, including methane (CH₄), carbon dioxide (CO₂), oxygen. (O₂), hydrogen sulfide (H₂S), using gas analysis brand GAS Data model GFM series, and volumetric biogas occurring in the system by measuring the volume of biogas for three times by replacing the water.

The results showed that the biogas within five days, the components of biogas are methane (CH₄) 49.8%, carbon dioxide (CO₂) 49.0%, oxygen (O₂) 0.0%, hydrogen sulfide (H₂S) 1,250 ppm. The biogas within duration of 10 days has element of methane (CH₄) 51.7%, carbon dioxide (CO₂) 48.0%, oxygen (O₂) 0.0%, hydrogen sulfide (H₂S) 860 ppm for the biogas within 15 days, the composition of the biogas including of methane (CH₄) 51.83%, carbon dioxide (CO₂) 46.96%, oxygen (O₂) 0.0%,

hydrogen sulfide (H_2S) 1,000 ppm. The average composition of biogas for three times are the amount of methane (CH_4) 51.11% carbon dioxide (CO_2) 47.98%, oxygen (O_2) 0.0%, hydrogen sulfide (H_2S) 1,036 ppm. The volumetric biogas within 5,10,15 day period showed a volume of 0.32 m^3 , 0.93 m^3 , 1.79 m^3 , and the average volume of 1.01 m^3 respectively.