Addition of EMB (Effective Microorganism Bamboo) as a Natural Starter in the Production of Biogas from Cow Dung

Yuli Setianingrum
Renewable Energy Engineering
Engineering Departement

Abstract

Biogas is one of renewable energy in the form of gas formed from fermentation of organic materials in anaerob condition. Biogas consists of ± 60% CH_4 (methane), ± 38% CO_2 (carbon dioxide), ± 2% N_2, O_2, H_2, and H_2S. This study focuses on the addition of a natural starter EMB (Effective Microorganism Bamboo) on the manufacture of biogas from cow dung. Cow dung is very suitable for biogas raw materials because it contains methane-producing bacteria. EMB (Effective Microorganism Bamboo) can't to add total volume of biogas, but it can make biogas production faster than control variable . The results of this study showed that the addition of EMB 1% produced a total volume of 3554.7 ml, with CH4 content of 78.66%, and gas produced on day 3. The addition of 2% EMB resulted in a total volume of 2724 ml, with CH4 content of 75.31%, and gas producing on day 3. The addition of 3% EMB resulted in a total volume of 2471.3 ml, with a CH4 content of 64.4%, and gas producing on day 2. While for control variable (without addition of EMB) yield total volume as much as 18878.5 ml, with content of CH4 equal to 56.98%, and gas produces on day 4.

Keywords *: Biogas, Starter, EMB (Effective Microorganism Bamboo)*