

Increase Daily Production Rate of Methane Through Pasteurization Cow Dung

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Abstract : This paper presents the results of the experiments to measure the impact of pasteurization cows dung on important parameter of anaerobic digestion (retention time) and measure the effect in daily production rate of biogas, were used local materials in these experiments, two experiments were carried out in two bio-digesters (1 and 2) (18.0 L), volume of the mixture 16.0-litre and the mass of dry matter in the mixture 4.0 Kg of cow dung. Pasteurization process has been conducted on the mixture into the digester 2, and put two digesters under room temperature. Digester (1) produced 268.5 liter of methane in period of 49 days with daily methane production rate 1.37L/Kg/day, and digester (2) produced 302.7-liter of methane in period of 26 days with daily methane production rate 2.91 L/Kg/day. This study concluded that the use of system pasteurization cows dung speed up hydrolysis in anaerobic process, because heat to certain temperature in certain time lead to speed up chemical reactions (transfer Protein to Amino acids, Carbohydrate to Sugars and Fat to Long chain fatty acids), this lead to reduce the retention time an therefore increase the daily methane production rate with 212%.

Keywords : methane, cow dung, daily production, pasteurization, increase

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