ABSTRACTS

Code of project : **7/2559**
Project name : Biogas Production from Food Waste and Vegetable Waste for the Sakaew Temple Community Angthong Province
Researcher name : Asst. Prof. Dr. Kodchasorn Hussaro
Dr. Chanida Jantree
Assoc. Prof. Dr. Issaree Hunsacharoonroj
Asst. Prof. Dr. Pongsakorn Kerdchang

The objective of this research is to fine the method for biogas production from food waste with vegetable waste. To study economic analysis of biogas production and management of residue waste to the renewable energy for the benefit of community life. Including to publishing and technology transfer to the community. For the method in this research were consisted of 4 methods, which is were survey of food waste to the community, design and set up biogas production system, the fermentation experiment to find the optimum condition, and technology transfer to the community.

Biogas production was operated in 200 liter of digester for 40 days. During this research process, the materials for biogas process were mixed in the 5 different ratios of food waste with vegetable waste : chicken dung as following; 1 : 1 (Digester D3), 2 : 1 (Digester D4) , 3 : 1 (Digester D5), 1:0 (Digester D1), and 0 : 1 (Digester D2). From this result, it was found that the ratio of food waste to chicken dung to 1:1 (Digester D3) had provided the highest amount of biogas, which was 18.83 kg and the highest methane content gas were 72 %. The carbon to nitrogen ratio, temperature digester, and pH at digester D3 were 18.83, 29.8 ºC, and 6.87, respectively. After calculating economic internal rate of return, it was found that the payback period was 16.4 days for digester D3. The results of satisfaction evaluation for technology transfer to the Sakaew Temple Community Angthong Province shown that participants have satisfied the most level.

Keywords: Food waste, chicken dung, renewable energy, biogas production, sakaew temple community.

E-mail Address : kanokorn.hus@rmutr.ac.th
Period of project : February 2016 - September 2016