Sukchai Youngyuen 2014: Potential of Biogas Production using Energy Crops. Master of Engineering (Agriculture Engineering), Major Field: Agricultural Engineering, Department of Agricultural Engineering.
Thesis Advisor: Associate Profesor Prathuang Usaborisut, Ph.D. 68 pages.

This experiment aimed to study the potential of biogas production from six crops: corn, water hyacinth, banana, papaya, sugar cane and Chinese cabbage. Study results can be used for alternative energy production. Parts of selected crops fed to 20 liter digestion tanks were as follows: corn stems and leaves, banana stems and leaves, sugar can stems, ripen papaya fruits, whole Chinese cabbage and whole water hyacinth.

Experiments were performed using anaerobic digestion process under mesophillic conditions at 38 ^{o}C with 30 days retention time. Quantities and gas compositions including CH_4 ,CO_2 and O_2 were recorded during the 30 days experiments.

Results showed that total biogas generated using papaya fruit during 30 days period were 537.02 L_N/kg.ODM which was highest among the others. Biogas production using banana, corn, sugar cane and Chinese cabbage were 385.10, 368.31, 352.07 and 190.54 L_N/kg.ODM respectively. Water hyacinth generated lowest biogas which was 56.62 L_N/kg.ODM.

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