



**Co-digestion of Water Hyacinth  
(*Eichhorniacrassipes*) mixed with Cow Manure to enhance  
Biogas Production**

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**Abstract:** The objectives of the study was to determine composition of water hyacinth and cow manure, and pretreatment of water hyacinth effect on digestion to produce biogas. The batch experiment were carried out by mixed water hyacinth and cow manure with ratio 90:10; 70:30 and 50:50. Water hyacinth pretreatment prepared by heating in 5% H<sub>2</sub>SO<sub>4</sub> for 60 minute at 100°C. Experiment set for water hyacinth pretreatment and non pretreatment mixed with cow manure by using anaerobic digester. Research conducted for 30 days. The results of this study showed that pretreatment with a composition of 70:30% (w/w) water hyacinth and cow manure produced the highest volume of biogas as 395 mL, and without pretreatment with a composition of 70:30% (w/w) produced the highest volume of biogas as 438 mL. The concentration of methane gas generated by pretreatment on the composition of 70:30% (w/w) is 15.56% and the highest points of methane gas produced without pretreatment on the composition of 70:30% (w/w) is 11.48%, which achieved on 30<sup>th</sup> day

**Keywords:** anaerobic, cow manure, digestion, pretreatment, water hyacinth.

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