

**International Energy Journal, Volume 10, Issue 3, September
2009**

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Utilization of a Vegetable Oil Species Residue for Biogas Production

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Abstract

Bioenergy generation from available biomass to screen and select a plant species as potential biomass candidate that is mainly unexplored is emphasized presently. The study endeavours the scope of producing biogas from by-products of hingan fruit-a potential vegetable oil species considered for biodiesel preparation. The work done in the laboratory is aimed at reducing the cost of vegetable oil by increasing the efficiency of utilization of the species for energy generation. A trial is made to generate biogas using the outer cover of hingan fruit an unutilized component of the fruit. Substantial quantity of biogas can be developed from the biomass using an anaerobic digestion process. The gas yield of 50-54 litres is observed during the trial per kg of biomass fed in the digester. Mixing of cow dung with the biomass will slightly enhance the quality and quantity of gas yield. Each hingan tree has a potential of producing 4200 litres of biogas from the unutilized by-product of the fruit. It is also recorded that the gas yield from the digester is a function of temperature and relative humidity. The gas generated is clean and smokeless and can be effectively used for different energy application. The sludge remaining after the digestion has good manurial value.

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