**ANALYSIS OF BIOGAS PRODUCTION FROM BIODEGRADABLE WASTE OF (COW DUNG) BY INDIGENOUS MICROBIAL CONSORTIA**

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**ABSTRACT**

This study is on production of biogas from waste (cow dung) by indigenous microbial consortia. 32Litres of bioreactors were used for the study. The study lasted for 30 days and it was carried out at the National Centre for Energy Research and Development, University of Nigeria, Nsukka. Slurry was prepared in bioreactors. The substrates in the bioreactors were water and cow dung (intestinal and abdominal waste). The pH, the total solids (TS), volatile solids (VS) and total volatile fatty acid (VFA) characteristics of the substrate before and after digestion were determined using standard method. Quantitative and qualitative analysis of biogas production was by liquid displacement and gas Analyzer methods respectively. The bacterial identification of the substrate was carried out using spread plate method. The results of the TS, VS and VFA were 400 mg/l, 92mg/l and 16.7 mg/l respectively in the predigested samples and 92 mg/l, 17.4mg/l and 28.3mg/l respectively in the post digested samples. The quantity of biogas produced at the first week was 8.5liters, 7.5litre and 6.1liter from the 4th day, 5th day and 8th days. The qualitative analysis showed that the prominent biogas produced was methane. The cultural morphology revealed different Gram reactions. The average bacterial count at the end of each week for a period of 30 days were 2.7x102cfu/ml, 5.4 x102cfu/ml and 3.0x102cfu/ml. High quantity of biogas can be produced using cow dung.

**Keywords:** Cow dung, Biogas, Bioreactor, and Renewable energy