

**BIOGAS PRODUCTION FROM CO-DIGESTION PALM OIL
MILL EFFLUENT (POME) WITH COW MANURE**

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ABSTRACT

BIOGAS PRODUCTION FROM CO-DIGESTION PALM OIL MILL EFFLUENT WITH COW MANURE

Palm oil industry by product such as palm oil mill effluent (POME) can produce biogas as source of renewable energy. The study aim was to analyze the biogas potential from co-digestion of palm oil mill effluent (POME) with cow manure. Three batches anaerobic digesters used for digestion with different mixing ratio. Digester A (90% POME + 10% POME sludge), Digester B(60% POME + 30% Cow manure +10% POME sludge) and Digester C (70% POME + 30% Cow manure).Cumulative biogas production from each anaerobic digester ; 38.84cm³, 52.56cm³ and 66.60cm³ respectively. Maximum cumulative biogas yield in the Digester C (70%POME + 30% Cow manure) due to high water content and low total solid. Water content influence anaerobic digestion because water will help microorganisms dissolve nutrient. Besides, Digester C shown near to optimum pH for anaerobic digestion at pH 6.98. These result suggested that by utilizing POME co-digested with cow manure has the potential to enhance biogas production.