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Influence of palm oil mill effluent as inoculum on anaerobic digestion of cattle manure for biogas
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Abstract: Anaerobic digestion for palm oil mill effluent (POME) is widely known for its potential in biogas production. In this study, the potential of using cattle manure for biogas production in complete mix anaerobic bioreactor was investigated using POME at unregulated pH and temperature. Two identical bioreactors were used in this study; namely R1 and R2 fed with cattle manure without and with POME as inoculum, respectively. Both bioreactors were allowed for five days to run in batch mode followed by semi continuous operations at HRT of 20days. R2 produced 41% methane content compared to 18% produced in R1. A better COD percentage reduction of 45% was found in R2 which was operated with POME as inoculum compared to R1 with 35%. These results indicated that POME as inoculum has an influence on the start-up time and the rate of biogas produced. This findings will help in waste reduction.

Keywords: Biogas; Anaerobic digestion; Cattle manure; POME; Bioreactor