عنوان مقاله:

Application of Partial-Mixed Semi-Continuous Anaerobic Reactor for Treating Palm Oil Mill Effluent (POME) Under Mesophilic Condition

محل انتشار:

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خلاصه مقاله:

Partially mixed semi-continuous reactor was used to examine the effect of organic loading rate (OLR)and hydraulic retention time (HRT) on the mesophilic anaerobic digestion of palm oil mill effluent (POME). Theperformance of the reactor was evaluated with emphasis on biodegradability of POME, methane gas (CH4)production rate and methane yield under different organic loading rates. The OLR of the anaerobic reactorincreased stepwise from 1.0 to 6.0 g COD/L/day and HRT ranged from 13.3 to 80.0 days. The total chemicaloxygen demand (TCOD) utilized was higher than 75% and the CH4 percentage of the biogas was 62.00-63.00%for the OLRs studied. The methane yield coefficient (YCH4) was inversely proportional to the OLR due to the lossof biomass with effluent. The experimental observations proved that partially mixed semi-continuous reactorcould perform similar to complete-mixed reactors.

کلمات کلیدی:

Anaerobic Digestion, Mesophilic, Semi-Continuous, Palm Oil Mill Effluent (POME), Methane Yield