Anaerobic Batch Co-Digestion of Sisal Pulp and Fish Wastes

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Abstract

Co-digestion of various wastes has been shown to improve the digestibility of the materials and biogas yield. Batchwise digestion of sisal pulp and fish waste was studied both with the wastes separately and with mixtures in various proportions. While the highest methane yields from sisal pulp and fish waste alone were 0.32 and 0.39 m^3CH_4/kg volatile solids (VS), respectively, at total solid (TS) of 5%, co-digestion with 33% of fish waste and 67% of sisal pulp representing 16.6% of TS gave a methane yield of 0.62 m^3 CH_4/kg VS added. This is an increase of 59–94% in the methane yield as compared to that obtained from the digestion of pure fractions at 5% TS.

Keywords

Anaerobic co-digestion;
Batch;
Sisal pulp;
Fish waste;
Sisal waste sludge