

Municipal Sewage Sludge as Co-Substrate in Anaerobic Digestion of Vegetable Waste and Biogas Yield

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Abstract : Co-digestion is one of the advantages of anaerobic digestion process because; several wastes having complimentary characteristics can be treated in a single process. The anaerobic co-digestion process, which can be defined as the simultaneous treatment of two -or more - organic biodegradable waste streams by anaerobic digestion offers great potential for the proper disposal of the organic fraction of solid waste coming from source or separate collection systems. The results of biogas production for sewage sludge, when used as a single substrate, were low (350ml/d), and also the biodegradation rate was slow. Sewage sludge as a co-substrate did not show much effect on biogas yield. The vegetable substrates (Potato, Carrot, Spinach) with a total charge of 27-36 g VS, with a HRT starting from 3 days and ending with 1 day, shown a considerable increase in biogas yield 3.5-5 l/d.

Keywords : anaerobic digestion, co-digestion, vegetable substrate, sewage sludge

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