

INFLUENCE OF ALKALINITY ADDITION ON BIOMETHANIZATION OF FRUIT AND VEGETABLE WASTE AND SEWAGE SLUDGE PERFORMANCE. BATCH STUDY.

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Abstract

Fruit and vegetable wastes (FVW) are generated in large quantities around the world. This kind of residue constitutes a source of nuisance in municipal landfills because of its high biodegradability. Their high moisture and large biodegradable organic matter content facilitates their treatment by biological techniques among which the anaerobic digestion presents increasing attention. This alternative allows the recovery of energy and a solid product that can be used as an amendment for soils.

In this work, we study the possibility of management of Fruit and Vegetable Wastes (FVW) through their simultaneous digestion with the primary sludge of Municipal Wastewater Treatment plants. Results indicate that feed to inoculum ratios and the pH control are the main variables determining the methane yields. The results for a ratio of 50% sludge together with 10 g NaHCO₃/kg of residue are among the best obtained, with a methane yield of about 90 L per kg of volatile solids, and a methane concentration of 40% (v/v) of the biogas.

Keywords: Biomethanization; fruit and vegetable wastes (FVW); sewage sludge alkalinity addition; waste management