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Investigating hydrothermal pretreatment of food waste for two-stage fermentative hydrogen and methane co-production

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Abstract

The growing amount of food waste (FW) in China poses great pressure on the environment. Complex solid organics limit the hydrolysis of FW, hence impairing anaerobic digestion. This study employed hydrothermal pretreatment (HTP) to facilitate the solubilization of FW.

When HTP temperature was increased from 100 to 200 °C, soluble carbohydrate content first increased to a peak at 140 °C and then decreased, whereas total carbohydrate content was negatively correlated with increasing temperature due to the enhanced degradation and Maillard reactions. Protein solubilization was dramatically promoted after

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