Anaerobic fermentation of woody biomass treated by various methods

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Abstract

Anaerobic fermentation was attempted to produce methane from the wood chip (*Eucalyptus globulus*). By the pretreatment of the wood chip using hot water with high temperature, NaOH, and steam explosion, the production of methane gas was enhanced. The pretreatment using steam explosion resulted in more amount of methane gas produced than the treatment using either hot water or 1% (w/w) NaOH with high temperature, and the steam explosion at a steam pressure of 25 atm and a steaming time of 3 min was the most effective for the methane production. The amount of methane gas produced depended on the ratio of weight of Klason lignin, a high molecular weight lignin, in the treated wood chip.

Keywords

anaerobic fermentationmethane gaspretreatment methodsteam explosionwoody biomass