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Improved methane production from corn straw by microaerobic pretreatment with a pure bacteria system

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Abstract: Thermophilic microaerobic pretreatment has been provedto be efficient in improvingmethane production of corn straw in previous studies. In this study, the effect of mesophilic(37℃) microaerobic pretreatmentusing *Bacillus Subtilis* onthe anaerobic digestion of cornstraw was explored.Microaerobic pretreatment with a pure bacteria system wasbeneficial for the anaerobic digestion of corn straw, which obviously improved the methane yield. The maximum methane yield of 270.8 ml/g VS was obtained at the oxygen load of 5ml/g VS, which was 17.35% higher than that of untreated group.Groupswithmesophilic microaerobic pretreatment obtainedhigh glucose and VFAs concentrations, as well as high peroxidase activitiesafter 24 h

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