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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 proved to be efficient in improving methane production of corn straw in previous studies. In this study, the effect of mesophilic (37°C) microaerobic pretreatment using *Bacillus Subtilis* on the anaerobic digestion of corn straw was explored. Microaerobic pretreatment with a pure bacteria system was beneficial 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 5 ml/g VS, which was 17.35% higher than that of untreated group. Groups with mesophilic microaerobic pretreatment obtained high glucose and VFAs concentrations, as well as high peroxidase activities after 24 h

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