

温度对蔬菜废弃物沼气发酵产气特性的影响 Effects of Temperature on Anaerobic Fermentation for Biogas Production from Cabbage Leaves

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关键词: 蔬菜废弃物 厌氧发酵 沼气 温度

摘要: 运用实验室自行设计的小型沼气发酵装置,以废弃的甘蓝菜叶作为发酵原料,研究了温度对蔬菜废弃物沼气发酵产气特性的影响。结果表明,中温条件((35±1)℃)试验组的挥发酸质量浓度、氨态氮质量浓度以及pH值都在正常范围内,且优于高温((55±1)℃)和室温发酵试验组,可保证系统的顺利运行。产气特性研究表明:中温条件的总产气量比高温条件总产气量高42.5%,最高甲烷含量比高温条件和室温条件下分别高7.6%和19.1%。因此,中温条件适于蔬菜废弃物厌氧发酵产气。The effects of temperature on anaerobic digestion for biogas production were investigated. The tests were carried out in self-made anaerobic fermentation devices, with cabbage leaves as raw materials. Results showed that the value of VFA, NH<sub>4</sub>-N and pH values at mesophilic fermentation ((35±1)℃) was in normal range superior to thermophilic ((55±1)℃) and room temperature. The total yield of biogas at mesophilic fermentation was 42.5% higher than thermophilic fermentation. The CH<sub>4</sub> content at mesophilic fermentation was 7.6% and 19.1% higher than thermophilic and room temperature fermentation, respectively. Therefore, mesophilic fermentation condition is considered suitable for biogas production from cabbage leaves.

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