

餐厨垃圾高温厌氧消化接种物的驯化研究

Domestication of inoculums in treating food waste by thermophilic anaerobic digestion

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作者	单位
马磊	(1983—), 男, 湖北当阳人。广州华南农业大学资源环境学院, 510642。Email: malei1006@tom.com
王德汉	教授, 研究方向为固体废弃物的生物处理及资源化。广州华南农业大学资源环境学院, 510642。Email: dehanwang@scau.edu.cn
杨文杰	华南农业大学资源环境学院, 广州510642
曾彩明	华南农业大学资源环境学院, 广州510642
王梦男	华南农业大学资源环境学院, 广州510642

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中文摘要:

研究不同投料方式对餐厨垃圾高温厌氧消化接种物产气活性的影响, 探求餐厨垃圾高温厌氧消化接种物的最佳驯化方法。在55℃条件下, 采用不同方式对厌氧污泥进行驯化作为餐厨垃圾高温厌氧消化的接种物, 观察了驯化前后污泥中微生物菌群的形态结构, 考察了驯化过程中污泥pH值和VFA(挥发性脂肪酸)浓度的变化, 并且比较了驯化后污泥的产气活性, 结果表明: 污泥经过添加一定量的餐厨垃圾驯化培养后, 其微生物菌群形态由球形演变为单一的杆状菌体, 且分布较分散, 产气活性也有所提高, 其中每日投加餐厨垃圾2.5 g(污泥质量的0.5%), 驯化2

英文摘要:

The effects of different adding quomodos of food waste during domestication on the aerogenical activities of inoculum were studied. The best domesticating means was investigated. The sludge was domesticated by different means at themophilic temperature(55℃) to be the inoculums of thermophilic anaerobic digestion for food waste. The microorganism forms of sludge were observed. The variation of pH value and VFA concentration during domestication were considered. The aerogenical activities of sludge domesticated by different means were compared. The results showed that the microorganism form of sludge treated by adding food waste was changed from sphericity to bacillus and distributed dispersedly. Moreover, the aerogenical activity was enhanced. There into, the aerogenical activity of sludge domesticated with the food waste addition of 2.5 g (0.5percent of sludge's mass)per day and the duration of 20 d was the largest. It was 135.65 mL/(g·d) and significantly larger than any other adding quomodos of food waste during domestication. The microorganism community of sludge was improved by domesticated. The largest aerogenical activities of sludge can be obtained by using the best domesticating means and the gas production can also be enhanced.

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