

快速检索

检索 高级检索

首页

稿约信息

编者论坛

编委会

关于本刊

订购本刊

下载中心

研究报告

王丹丹,郭显强,古励,何强,艾海男,严丽丽.餐厨垃圾渗滤液强化城市污泥消化作用研究[J].环境科学学报,2014,34(10):2566-2572

餐厨垃圾渗滤液强化城市污泥消化作用研究

Enhanced anaerobic digestion of urban sludge by adding restaurant garbage leachate

关键词: [餐厨垃圾](#)|[渗滤液](#)|[城市污泥](#)|[厌氧消化](#)|[消化气](#)基金项目: [中央高校基本科研业务费科研项目\(No.CDJZR12210006\)](#)

作者 单位

王丹丹 重庆大学 三峡库区生态环境教育部重点实验室,重庆 400045

郭显强 重庆大学 三峡库区生态环境教育部重点实验室,重庆 400045

古励 重庆大学 三峡库区生态环境教育部重点实验室,重庆 400045

何强 重庆大学 三峡库区生态环境教育部重点实验室,重庆 400045

艾海男 重庆大学 三峡库区生态环境教育部重点实验室,重庆 400045

严丽丽 浙江省衢州市环境卫生管理处,衢州 324000

摘要: 针对城市污水厂污泥热值低、C/N比低,厌氧消化效率低的问题,结合餐厨垃圾渗滤液中有有机物含量高、C/N比高的特点,研究了城市污泥、餐厨垃圾渗滤液共消化过程。结果表明:垃圾渗滤液的添加促进了污泥厌氧消化甲烷气的产生,添加生、熟垃圾渗滤液的消化污泥累计产甲烷量分别为542 mL、2102 mL,是未添加渗滤液(参照样)的污泥消化产气量的1.2倍、4.6倍,甲烷单位产量分别为261(参照样)、675.8、971.0 L·kg⁻¹(以VS计);同污泥单独厌氧消化相比,添加生、熟垃圾渗滤液能强化污泥VS/TS的去除,其去除率分别为15.3%和26.3%;通过共消化,污泥上清液的SCOD去除率均高于90%,出水COD也基本一致,并未因垃圾渗滤液的添加而发生大的波动。污泥与餐厨垃圾渗滤液的共消化能够促进有机物的去除,强化甲烷气的产生,实现了污泥与渗滤液的稳定化、无害化和资源化。

Abstract: Based on the characteristics of high organic matter content and C/N ratio of restaurant garbage leachate in the Chongqing area and low heat value and C/N ratio of sewage sludge, co-digestion of sewage sludge and garbage leachate was investigated to overcome the disadvantages of the treatment of sewage sludge and garbage leachate. The results showed that the addition of restaurant garbage leachate enhanced both the biogas production and the removal rate of VS. After the addition of vegetable biomass waste and decomposed kitchen waste, the cumulative methane production for addition of leachate of vegetable biomass waste and decomposed kitchen waste were 542 and 2102 mL, respectively, and the corresponding yields were 675.8 and 971.0 L·kg⁻¹ VS, 1.2 and 4.6 times the digestion of sludge without leachate (reference sample), respectively. The addition of leachate also enhanced the removal of VS/TS, 15.3% for vegetable waste addition while 26.3% for restaurant garbage leachate addition. The SCOD concentration after digestion varied from 367 mg·L⁻¹ to 408 mg·L⁻¹, and additions of leachates hardly affected the quality of effluent. These results revealed that kitchen waste leachate would be a potential additive in anaerobic digestion to improve the biodegradability of sludge and promote biogas production.

Key words: [restaurant garbage leachate](#)|[municipal sludge](#)|[anaerobic digestion](#)|[biogas](#)

摘要点击次数: 995 全文下载次数: 2343

关闭

下载PDF阅读器

您是第27630511位访问者

主办单位: 中国科学院生态环境研究中心

单位地址: 北京市海淀区双清路18号 邮编: 100085

服务热线: 010-62941073 传真: 010-62941073 Email: hjxxb@rcees.ac.cn

本系统由北京勤云科技发展有限公司设计