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固液分离对牛粪利用效果的影响

Effect of solid-liquid separation on utilization of dairy manure

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英文关键词: [anaerobic fermentation](#) [biogas](#) [solid-liquid separation](#) [dairy manure](#) [press mounding](#)

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中文摘要:

预处理可以提高牛粪利用的效果, 该文研究了利用螺旋压榨固液分离机对牛粪加水固液分离后固形物和分离液的纤维含量, 固形物的热值、分离液的黏度和碳氮比。利用压块成型机对分离后固形物进行压块, 为沼气发酵增温保温提供燃料, 并将分离液与未分离的原牛粪进行厌氧发酵对比试验, 结果表明, 分离液发酵可提高甲烷产率, 缩短发酵水力停留时间。在(35±2)℃条件下, 原料挥发性固体含量(VS)分别为4.86%和4.98%时, 30%接种量, 分离液的产气率比原牛粪提高32.68%。研究结果对高寒地区牛粪资源化利用具有参考价值。

英文摘要:

Pretreatment may increase the effect of dairy manure utilization, In this paper, dairy manure with water was separated using screw solid-liquid separator, fiber content of solid matter and separated liquid, heat value of solid matter and viscosity coefficient and C/N ratio of separated liquid were investigated. Solid matters were pressed into block by press mounding machine, providing fuel for temperature raising and maintaining in biogas fermentation. Anaerobic fermentation tests were carried and contrasted by using separated liquid and integrated original dairy manure. Results showed that methane-producing rate could be improved and hydraulic retention time decreased for separated liquid fermentation. Gas-producing rate of separated liquid increased by 32.68% than that of original dairy manure when materials VS were 4.86% and 4.98% with 30% inoculums at (35±2)℃, respectively. The results can provide references for reclamation of dairy manure in high-cold areas.

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