

鸡粪堆肥腐熟度参数及波谱的形状研究

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Study on parameters of the maturity and spectrum characteristic of chicken manure composting

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摘要 本研究从农业固体废弃物资源化利用角度出发,设计了以鸡粪、玉米秸秆为原料和填充料的高温堆肥体系,应用物理分析法、化学分析法、波谱分析法和植物生长分析法研究了高温堆肥的腐熟度参数及指标。结果表明,温度是表征高温堆肥腐熟度的最直接参数。随着堆肥进程的进行,C/N、NH₄⁺-N含量呈下降趋势,HA/FA呈上升趋势,它们能较好地反映高温堆肥腐熟程度,可以作为堆肥的腐熟指标。堆肥胡敏酸可见光谱、红外光谱、核磁共振光谱对堆肥有机质结构变化和腐熟度判定具有重要的参考价值;堆肥过程中堆肥腐熟指标变化与种子发芽率变化规律具有一定的相关性。

关键词: 鸡粪 堆肥 腐熟度 参数 指标 鸡粪 堆肥 腐熟度 参数 指标

Abstract: Aiming at full use of solid offal from agriculture,we designed a high temperature compost system choosing chicken manure and corn straw as raw materials and packing materials.The maturity parameters and index were studied using physical analytical method,chemical analytical method and spectrum analytical method.The results showed that temperature was the most immediate parameter characterizing the maturity degree of high temperature compost;Along with the process of compost,C/N and NH₄⁺-N content of pile body showed a downward tendency,while HA/FA showed a upward tendency.Both of these parameters could reflect the maturity degree of high temperature compost well,thus both of them could be used as the index to reflect the extent of compost decomposition.The visible spectrum,infrared spectrum and nuclear magnetic resonance spectrum of humic acid in compost were an important reference to the structure change of organic matter and determination of maturity degree of compost.In the process of compost,the maturity index of compost correlated to the change regularity of germination rate of seed to some extent.

Keywords:

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