

用于液体肥料的堆肥浸提液提取工艺参数

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Technology of extraction of compost extracts to make liquid fertilizer

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摘要 堆肥浸提液是一种很好的液体肥料和生防剂。为了获得用于液体肥料的堆肥浸提液提取工艺参数, 以腐熟猪粪堆肥为原料, 采用正交试验研究了水和0.5 mol/L硫酸钾溶液为浸提剂, 在好氧和厌氧条件下不同浸提比例(分别为1:10、1:8、1:6.67、1:5和1:4)和浸提时间(12~144 h)对堆肥浸提液中可提取的主要速效养分含量和可浸提主要成分提取率的影响。结果表明, 用水作为提取剂时, 最适工艺参数是通气良好, 浸提比例1:5, 提取时间72 h; 用0.5 mol/L硫酸钾溶液提取时, 最适工艺参数是通气良好, 浸提比例1:5, 提取时间36 h。说明水和0.5 mol/L硫酸钾溶液作提取剂, 在常温下采用合适的提取比例和提取时间都能获得较好的养分提取效果。

关键词: 堆肥 液体肥料 工艺 主要速效养分 可浸提主要成分提取率 堆肥 液体肥料 工艺 主要速效养分 可浸提主要成分提取率

Abstract:

Compost extracts is a good liquid fertilizer and bio-control agents, in order to obtain the extraction process parameters of compost extracts to make liquid fertilizer, 0.5 mol/L potassium sulfate and water (as control) were used to extract nutrient solutions from pig manure compost. The ratios of extracts to compost were designed as 1:10, 1:8, 1:6.67, 1:5 and 1:4, and the extracting time was set from 12 to 144 hours respectively under aerated and nonaerated conditions. Results show in terms of the compost extracts extracted with water, the optimum process parameters were 1:5 of extraction ratio, 72 hours of extraction under the aerated condition, while, those under aerated condition is 1:5 of extraction ratio and 36 hours of extraction for the compost extracts extracted with 0.5 mol/L potassium sulfate solution. We conclude that water and 0.5 mol/L potassium solution as extract reagents, using suitable extraction ratio and extracting time can get better effect of nutrient extraction at ambient temperature.

Keywords:

Received 2008-09-03;

引用本文:

徐大兵, 田亨达, 张丽, 徐阳春, 杨兴明, 沈其荣, 黄启为*. 用于液体肥料的堆肥浸提液提取工艺参数[J] 植物营养与肥料学报, 2009, V15(5): 1189-1195

XU Da-bing, TIAN Heng-da, ZHANG Li, XU Yang-chun, YANG Xing-ming, SHEN Qi-rong, HUANG Qi-wei*. Technology of extraction of compost extracts to make liquid fertilizer[J] Acta Metallurgica Sinica, 2009, V15(5): 1189-1195

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