

日光温室栽培下不同种类有机肥氮素矿化特性研究

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Nitrogen mineralization characters from different types of organic manures in sunlight greenhouse

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摘要

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摘要 采用田间原位培养试验,研究了日光温室栽培季节不同种类有机肥(鸡粪、猪粪及牛粪各2个)的氮素矿化特性。结果表明:培养期间(180 d)供试的6个不同有机肥氮矿化率差异较大,在1.1%~19.09%之间,平均7.5%;不同种类有机肥相比,鸡粪的平均氮矿化量及矿化率最高,其次为牛粪及猪粪,这与鸡粪C/N比相对较高有关。各培养阶段有机肥的氮矿化量与相应阶段的土壤积温间的相关性未达显著水平,但随着春季土壤温度增加,这一阶段有机肥氮素的矿化量呈增加的趋势;培养期间有机肥的氮素累积矿化量与日光温室土壤的积温呈显著的线性关系,说明土壤温度是影响有机肥氮矿化量的重要因素。

关键词: 日光温室 原位培养 有机肥 氮矿化

Abstract: An in-situ experiment was carried out to study the nitrogen mineralization characters of different organic manures (chicken, pig, and cow manure) in the growth season of vegetable crop under sunlight greenhouse. The results showed that there were significant differences in the N mineralization rates among the six organic manures during the incubation period (180 days), which ranged from 1.10 to 19.09 % with average 7.5%. The mineralized nitrogen and N mineralization rate of chicken manures were the highest, followed by cow manures, while pig manures were the lowest. This might results from the higher higher C/N ratio of the chicken manure. Although no significant relationship was found between the mineralized nitrogen and the accumulated temperature of soil in each incubation period, the nitrogen mineralization tended to increase with the rising of soil temperature in Spring. The accumulated N mineralization significantly linearly correlated to the soil accumulated temperature during the whole incubation period, indicating soil temperature is a key factor affecting N mineralization of organic manures.

Keywords: sunlight greenhouse in-situ experiment organic manure nitrogen mineralization

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