PLANT NUTRITION AND FERT

ISSN 1008-505X
CN 11-3996/S

植物营养与肥料学报 » 2009, Vol. 15 » Issue (4) :857-864 DOI:

不同农艺措施下温室土壤酶活性的动态变化及其相关性分析

田永强[1]， 曹之富[1, 2]， 张雪艳[1], 郭文忠[3], 梅秀云 [2], 高丽红[1*]

1中国农业大学农学与生物技术学院，北京 100094；2北京市农业技术推广站，北京100101；3宁夏农林科学院种质资源研究所，银川 750002

Changes of soil enzyme activities under different agricultural treatments in greenhouse and its correlation analysis

TIAN Yong-qiang[1], CAO Zhi-fu[1, 2], ZHANG Xue-yan[1], GUO Wen-zhaong[3], MEI Xiu-yun[2], GAO Li-hong[1*]*

1 College of Agronomy and Biotechnology, China Agricultural University, Beijing 100094, China;
2 Agricultural Technology Extension Unit, Beijing 100101, China;
3 Institution of Germplasm and Resource, Ningxia Academy of Agricultural and Forestry Science, Yinchuan 750002, China

摘要 | 参考文献 | 相关文章

Download: PDF (200KB) HTML 0KB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 针对日光温室随种植年限增加，土壤质量退化的问题，研究了5种不同的农艺处理措施对土壤酶活性的影响。结果表明，食用菊花和番茄轮作、番茄嫁接2个处理对提高不同土壤酶活性的效果显著；夏季石灰氮消毒处理对提高脲酶、磷酸酶和过氧化物酶活性的效果显著；夏季填闲大葱对前季作物土壤酶活性的影响大于后季作物。番茄产量与土壤酶活性的变化趋势基本一致。蔗糖酶、脲酶、磷酸酶、多酚氧化酶和过氧化物酶可以作为设施蔬菜敏感的土壤酶学指标。在难以进行轮作的以番茄生产为主的地区，采取嫁接栽培能有效提高土壤酶活性；在有条件轮作地区，采取食用菊花与番茄轮作，对提高土壤酶活性和栽培效益方面有积极作用。

关键词： 农艺措施 土壤酶活性 相关分析 农艺措施 土壤酶活性 相关分析

Abstract： To solve the problem of soil degradation with the increase of continuous cropping years in the solar greenhouse, changes of soil enzyme activities under five different agricultural treatments were studied. The results suggest that the soil enzyme activities are increased significantly under the rotation between vegetable chrysanthemum and tomato, and grafting tomato treatments. Soil urease, phosphatase and peroxidase activities are increased significantly as well under the calcium cyanamide treatment in summer. Cultivating welsh onion in summer, the soil enzyme activities in autumn are significantly higher than that in spring. The tomato yield coincides with activity variation of soil enzymes, this indicates that sucrase, urease, phosphatase, polyhenoloxidase and peroxidase can be used as sensitive biological indices for vegetable cultivation in greenhouse. In the region in which crop rotation is difficult, grafting cultivation can be used to increase soil enzyme activities, while, the rotation between vegetable chrysanthemum and tomato can play a positive role in maintaining soil enzyme activities and cultivation efficiency when the crop rotation is available.

Keywords：

Received 2008-07-21;

Service
把本文推荐给朋友
加入我的书架
加入引用管理器
Email Alert
RSS
作者相关文章

引用本文:

田永强[1]， 曹之富[1, 2]， 张雪艳[1], 郭文忠[3], 梅秀云 [2], 高丽红[1*].不同农艺措施下温室土壤酶活性的动态变化及其相关性分析
[J] 植物营养与肥料学报, 2009,V15(4): 857-864

TIAN Yong-qiang[1], CAO Zhi-fu[1, 2], ZHANG Xue-yan[1], GUO Wen-zhaong[3], MEI Xiu-yun[2], GAO Li-hong[1*].Changes of soil enzyme activities under different agricultural treatments
in greenhouse and its correlation analysis
[J] Acta Metallurgica Sinica, 2009,V15(4): 857-864