

研究报告与简报

| 棉田连作对土壤微生物及酶活性的影响

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摘要:

通过对连作5年、10年、15年和20年棉田的土壤微生物数量和土壤酶活性进行了研究,结果表明微生物总数随着连作年限的增加而不断减小;细菌所占百分比呈下降趋势;真菌却由0.45%不断的上升到1.88%,B/F值减小;放线菌、真菌和细菌的变异系数分别为31.67、30.8和56.12;放线菌与速效钾具有正相关性、真菌与速效氮具有负相关性;蔗糖酶、磷酸酶和脲酶的酶活随连作年限的增加呈阶梯式上升,过氧化氢酶无明显变化差异;蔗糖酶、磷酸酶和脲酶与全氮和速效钾均有显著相关性。

关键词: 棉花; 连作; 土壤微生物; 土壤酶

Effect of Continuous Cotton Cropping on the Microbes and Enzyme Activities in Soil

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Abstract:

Soil microbial qualities and soil enzyme activities were studied in cotton field continuous cropped for 5 years, 10 years, 15 years and 20 years. The results showed that the microorganism amount decreased with the increase of cropping years. Bacterial percentage decreased, while fungi percentage increased from 0.45% to 1.88%. The ratio of B and F decreased. Variation coefficient for actinomycetes, fungi and bacteria were 31.67, 30.8 and 56.12 respectively. Actinomycetes was positive correlation with available K and fungi was negative correlation with available N. Sucrase, urease and phosphatase activities rose in steps with the increase of cropping years. Catalase had no significant differences during the changing process. Sucrase, urease and phosphatase had significant correlation with available K and total N.

Keywords: cotton continuous cropping soil microbes soil enzyme

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