

## 不同有机肥对烤烟根际土壤微生物的影响

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## Effects of different organic fertilizers on the microbes in rhizospheric soil of flue-cured tobacco.

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摘要

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摘要

通过田间小区试验,研究了不同有机肥(精制有机肥、生物有机肥)与减量20%化肥配施对烤烟根际微生物、青枯病防效及产量和品质的影响.结果表明:与常规化肥(CF)相比,化肥减量20%配施有机肥(OF)或生物有机肥(BIO)均显著提高了烤烟根际的细菌数量和微生物总量,配施生物有机肥还显著提高了烤烟根际放线菌的数量,比OF增加44.3%,且真菌数量呈下降趋势.与CF处理相比,OF或BIO处理均显著提高了烤烟根际微生物利用碳底物的能力,BIO还显著提高了根际微生物利用酚类碳源的能力.OF和BIO处理均显著降低了烤烟青枯病的发生及危害程度,与CF相比,OF处理的烤烟青枯病发病率和病情指数分别下降了4%和8%,BIO处理的烤烟青枯病发病率和病情指数分别下降了23%和15.9%.OF和BIO处理均显著提高了烤烟的上等烟比例,比CF分别增加了10.5%和9.7%.BIO处理的产量和产值比OF分别提高17.1%和18.9%.

关键词: 有机肥 生物有机肥 烤烟 土壤微生物 青枯病

Abstract:

A field experiment was conducted to study the effects of applying different organic fertilizers (refined organic fertilizer and bio-organic fertilizer) and their combination with 20% reduced chemical fertilizers on the microbes in rhizospheric soil of flue-cured tobacco, the resistance of the tobacco against bacterial wilt, and the tobacco yield and quality. As compared with conventional chemical fertilization (CK), applying refined organic fertilizer (ROF) or bio-organic fertilizer (BIO) in combining with 20% reduced chemical fertilization increased the bacterial number and the total microbial number in the rhizospheric soil significantly. Applying BIO in combining with 20% reduced chemical fertilization also increased the actinomyces number in the rhizospheric soil significantly, with an increment of 44.3% as compared with that under the application of ROF in combining with 20% reduced chemical fertilization, but decreased the fungal number. As compared with CK, the ROF and BIO increased the carbon use capacity of rhizospheric microbes significantly, and the BIO also increased the capacity of rhizospheric microbes in using phenols significantly. Under the application of ROF and BIO, the disease incidence and the disease index of bacterial wilt were decreased by 4% and 8%, and 23% and 15.9%, and the proportions of high grade tobacco leaves increased significantly by 10.5% and 9.7%, respectively, as compared with those in CK. BIO increased the tobacco yield and its output value by 17.1% and 18.9%, respectively, as compared with ROF.

Key words: organic fertilizer bio-organic fertilizer flue-cured tobacco soil microbe bacterial wilt.

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