

研究报告

## 杉木连栽土壤微生物多样性的比较研究

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### 摘要

分析了位于湖南会同广坪镇1~4代人工杉木林根际土壤微生物数量变化情况, 结果表明, 随杉木连栽代数的增加, 根际土壤中三大类群微生物数量发生显著变化, 细菌和放线菌数量明显减少, 真菌数量显著增加. 利用PCR和DGGE技术分析了1~4代杉木林根际土壤细菌区系和真菌区系. 结果表明, 细菌生物多样性在不同连栽代数杉木根际土壤中变化不明显, 各代杉木土壤之间细菌的遗传相似性为87%. 而真菌随连栽代数的增加, DGGE图谱带逐渐减少, 真菌生物多样性降低, 各代杉木土壤之间真菌的遗传相似性也较低, 仅为45%. 对各代杉木土壤主要真菌类群的分析表明, 随连栽代数的增加, 病原真菌及产毒真菌增加显著.

关键词 [杉木, 连栽障碍, 土壤微生物, PCR-DGGE, 生物多样性](#)

分类号

## Microbial diversity in continuously planted Chinese fir soil

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### Abstract

The study on the microbial diversity of 1st, 2nd, 3rd and 4th generation Chinese fir soil at Huitong Forest Experimental Station showed that with the increase of generation, the numbers of bacteria and actinomyces decreased markedly, while that of fungi increased evidently. It was found by PCR and DGGE that the bacterial diversity changed slightly and its genetic similarity among different generations reached 87%, but the fungal diversity reduced and its genetic similarity was only 45%. The numbers of pathogenic and deleterious fungi increased markedly with increasing Chinese fir generations.

**Key words** [Chinese fir](#) [Continuous planting](#) [Soil microbes](#) [PCR-DGGE](#) [Biodiversity](#)

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