

## 松材线虫与伴生微生物的生态关系

田雪亮<sup>1,2</sup>, 郝振川<sup>2</sup>, 陈国华<sup>2</sup>, 谢丙炎<sup>2\*\*</sup>

1河南科技学院资源环境学院| 河南新乡 453003; 2中国农业科学院蔬菜花卉研究所| 北京 100081

Ecological relationships between *Bursaphelenchus xylophilus* and its companion microorganisms.TIAN Xue-liang<sup>1,2</sup>, MAO Zhen-chuan<sup>2</sup>, CHEN Guo-hua<sup>2</sup>, XIE Bing-yan<sup>2</sup>

1Department of Resource and Environment, College of Henan Institute of Science and Technology, Xinxiang 453003, Henan, China; 2Institute of Vegetables and Flowers, Chinese Academy of Agricultural Sciences, Beijing 100081, China

- 摘要
- 参考文献
- 相关文章

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## 摘要

松材线虫是重要的外来有害生物, 造成松树大量死亡, 带来严重的经济损失和生态破坏. 松材线虫与伴生微生物存在密切的生态关系. 本文综述了松材线虫伴生微生物的种类及其在松材线虫繁殖和致病过程中的重要生态作用, 从微生态系统角度对松材线虫病进行探讨. 伴生真菌能为松材线虫提供食物, 维持松材线虫次生侵染循环, 提高分散型第三龄幼虫在种群中的比例, 利于松材线虫侵染扩散; 伴生细菌能够提高松材线虫致病性, 促进其繁殖, 并有助于松材线虫降解松萜类物质, 从而提高松材线虫的适应性.

关键词: 松材线虫 伴生真菌 伴生细菌 生态互作

## Abstract:

Pine wood nematode *Bursaphelenchus xylophilus* is a notorious invasive species from North America, which can kill a large amount of pine trees and causes economic losses and ecosystem destruction. There is a close relationship and ecological interaction between *B. xylophilus* and its companion microorganisms. This paper listed the species of companion microorganisms, reviewed their important ecological roles in the propagation and pathogenicity of the nematode, and discussed the pine wilt disease from the viewpoint of microecosystem. The companion fungi can supply food for *B. xylophilus*, hold the cycle of second infection of the nematode, increase the proportions of dauer juveniles, and benefit the infection and distribution of *B. xylophilus*. The companion bacteria can enhance the pathogenicity of *B. xylophilus*, promote the propagation of the nematode, benefit the pinene degradation, and thereby, promote the adaptability of the nematode.

Key words: pine wood nematode companion fungi companion bacteria ecological interaction

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