

Xu, F et al., Study on the techniques of sustainable control of pine wood nematode disease (*Bursaphelenchus xylophilus*). In: Schröder, T. (ed.), Pine Wilt Disease Conference 2013, pp. 67, Braunschweig, ISSN: 1866-590X

Study on the techniques of sustainable control of pine wood nematode disease (*Bursaphelenchus xylophilus*)

Xu Fuyuan, Xu Ming, Zheng Huaying, Xie Chunxia, Liu Yunpeng, Gao Yue

Forestry Academy of Jiangsu Province, 211153, dongshanqiao, Nanjing, China

Email: xufuyuan@aliyun.com

ABSTRACT

Pine wood nematode (PWN) is a devastating global forest diseases and its spread is still increasing. According to the situation above we carried out research for more than 30 years. By the results we found that the sustainable control of PWN was the effective way to protect our afforestation and ecological security. Both by lab and field tests the tests results showed as following: 1. By use selected GD₅, GX₂ and GX₃ 3 *Pinus massoniana* provenances resistant to pine wood nematode (PWN), monitoring their resistibility and large area of afforestation, resistant provenances selection provide technical support for breeding resistant stand. 2. Comprehensive development and utilization of the resources of natural enemy to control *Monochamus alternatus*. The technique developed the mass raising 15 million head of *Dastarcus helophoroides*, *Scleroderma guani* annually, and the technique of combined *D. helophoroides* with *S. guani* releasing to control *M. alternatus* larva were studied. Parasite rate to *M. alternatus* larva were more than 74.1%. Pine mortality rate at the beginning of the 25% fell to below 0.3% which were killed by PWN, has significant control effect in the test field.

KEY WORDS:

resistant provenances, the mass raise natural enemy, combined *Dastarcus helophoroides* with *Scleroderma guani* releasing, to control *Monochamus alternatus* larva, parasite rate, control effect