

BIOLOGICAL CONTROL OF THE ROOT-KNOT NEMATODE, *Meloidogyne javanica* BY FOUR ISOLATES OF *Paecilomyces lilacinus* AND AN ISOLATE OF *Isaria farinosa* ON TOMATO PLANTS *

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Abstract

Antagonistic effects of four isolates of *Paecilomyces lilacinus* and an isolate of *Isaria farinosa* on root-knot nematode *Meloidogyne javanica* were examined under *in vitro* and greenhouse conditions. Root-knot nematode as well as fungal isolates were identified using morphological and species specific primers. Infection ability of different fungal isolates on the eggs of *M. javanica* and effects of fungal culture filtrates on egg hatching and mortality of *M. javanica* juveniles (J₂) were tested *in vitro*. Results indicated that nematode eggs parasitization percent by various fungal isolates and J₂ mortality as well as egg hatching inhibition of the culture filtrate of these fungi have variable effects on target nematode. *P. lilacinus* (isolate P3) showed more efficiency than the other isolates. In greenhouse experiment, effects of *P. lilacinus* and *I. farinosa* on tomato plant growth factors and nematode population were tested. Fungal isolates were propagated on sterilized wheat seed and mixed (0.5% w/w) with autoclaved soil. Four leaf seedlings of tomatoes were transplanted into each pot and inoculated by 4000 eggs and juveniles (J₂) after ten days. Pots were kept in greenhouse for two months. Results showed that *P. lilacinus* isolate P3, P1, P4, and P2 and *I. farinosa* had 65%, 44%, 42%, 29% and 23% nematode control, respectively, indicating a good potential of some isolates in reducing nematode population.

Keywords: Fungus culture filtrate, Plant parasitic nematode, Antagonistic fungi, *Paecilomyces*, *Isaria*.

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