

# Biological Control of Root-knot Nematodes Using *Paecilomyces lilacinus*

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A nematode-pathogenic fungi, *Paecilomyces lilacinus*, was tested for selecting a promising biological control technique against root knot nematodes, *Meloidogyne* spp. We screened eleven strains of *P. lilacinus* originated from Peru, India, and Korea by a petri-dish method. A petri-dish bioassay was constructed by consisting of sterile soil (40g), nematode eggs, testing solution (1ml), and sterile distilled water (3ml) in a 9cm plastic dish. The dish were transferred to 25°C incubator for 10 days, and then recorded by counting the number of hatched larvae. The screening bioassays were conducted on three different species of *M. hapla*, *M. arenaria*, and *M. incognita*. Four strains of *P. lilacinus* (P1, P3, P4, and Pv) were effective to inhibit the nematode egg development. To determine the effective spray concentration of these fungi, 10ml of three different concentrations ( $10^6$ ,  $10^7$ , and  $10^8$  spores/ml) were made and applied on each tomato pot. The most effective spray concentration was  $10^8$  spores/ml, at which more than 80% of control efficacies were recorded. We applied the selected parasitic fungi to cucumber field at 20ml of a concentration of  $10^8$  spores per 1m<sup>2</sup>. Different selected strains of *P. lilacinus* gave significant control efficacies, but varied from 71% to 78%. These results indicate that our selected parasitic fungi, *P. lilacinus*, gave significant control efficacy, but need to be further developed to give a stable control effect.