구두발표 3

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℃ 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 10^7 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 10^7

spores per 1 m². 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, so we applied the selected P-1 and P-v parasitic fungi to oriental melon field at 2 ℓ of a concentration of 10^5, 10^6 and 10^7 spores per 3m². These results indicate that our selected parasitic fungi, P-1 and P-v gave significant control efficacies, but need to be further developed to give a stable control effect.

Key words: Root-knot nematodes, *Meloidogyne*, *Paecilomyces lilacinus*, Field test