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Susceptibility of Different Stages of the Mediterranean Fruit Fly *Ceratitidis capitata*, to Entomopathogenic Fungus *Lecanicillium muscarium*

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Abstract

This study determined the pathogenicity of *L. muscarium* to eggs, larvae and adults of *C. capitata* under laboratory conditions.

Four ml of suspension of *L. muscarium* (4×10^7 conidia ml⁻¹) was applied on sterile filter paper in Petri dishes and water for the control respectively. Eggs were placed on the infected filter paper and incubated at 20°C. After 24 h 10 contaminated eggs were transferred on artificial diet and incubated at 25°C and 70 % R.H (5 replicates).

The entomopathogenic fungus was low pathogenic to the eggs, although the differences in the mortality between the fungus (24 %) and the control (8 %) was significantly.

To evaluate the susceptibility of the old larvae, plastic container (3,8 cm diam. × 2,8 cm high) were filled with 10 g dry soil and sprayed with 1 ml suspension (4.3×10^6 spores cm⁻²) on the soil surface using a small dash bottle. On each container 10 old larvae were transferred on the treated soil in the container. Container were incubated at 25°C and 70 % R.H (5 replicates).

L. muscarium reduced emergence of adult at 46 % in comparison to the control with 74%. In the treatment 54 % were dead but 40 % of those were infected probable with *L. muscarium*.

To evaluate the susceptibility of adults in plastic container (5 cm diam. × 3,5 cm high) were filled a small layer of soil and 15 ripe pupae spread uniformly on the surface. Above it 2 to 3 cm layer of soil were filled again. Three ml suspension (3×10^7 conidia ml⁻¹) was sprayed on the soil surface. Incubation took place (5 replicates) at 25°C, and 70 % RH. All emerged adults were transferred daily to cages with water and dry yeast extract-sucrose. All dead flies were disinfected, placed on water agar in Petri dishes and incubated at 20°C.

The fungus was pathogen to the flies. In course of experiment 65,6 % of flies were dead in comparison to the control with 13,2 %. 40,6 % of emerged flies was moulded.

These results indicate, that *L. muscarium* is pathogenic against *C. capitata*. From all developmental stages the adults are mostly susceptible against this entomopathogenic fungus.

Keywords: *Ceratitidis capitata*, developmental stages, *Lecanicillium muscarium*, mortality