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The Final Meeting of COST862: Bacterial Toxins for Insect Control

PROCEEDINGS

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important to use the local isolate which is well-adapted to the ecological conditions as well as preventing the introduction of an alien biological control agent. In the current study, we screened the virulence of four local isolates of entomopathogenic nematodes (*Steinernema carpocapsae* B122, *S. feltiae* B1, *Heterorhabditis bacteriphora* M3 and *H. megidis* P69) against larvae of *M. melolontha* at three different temperature (15, 23 and 28 °C) at laboratory conditions. In bioassays using 6-well plates with sterile sand, insect larvae were exposed to a concentration of 1000 infective juveniles per individual. Maximum larval mortality (91.2%) was recorded from *H. bacteriophora* M3 at 23 °C, 75.7% from *S. feltiae* B1 at 15 °C and 64.6% from *H. bacteriophora* M3 at 28 °C. *S. carpocapsae* did not show any significant mortality against the larvae at any tested temperature. Future work will focus on the determination of the efficiency of the isolates against the pest in field conditions.

Keywords: *Melolontha melolontha*, Entomopathogenic Nematode, Biological Control, *Heterorhabditis bacteriophora*, Turkey

Poster / Nematodes Monday, 14:00 N-09

Control potential of *Heterorhabditis bacteriophora* against a new turf pest, *Dorcadion pseudopreissi* (Coleoptera: Cerambycidae) in turf

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Poster / Nematodes Monday, 14:00 N-10

Biological control potential of an entomopathogenic preperation of *Heterorhabditis bacteriophora* on the white grub, *Polyphylla adspersa*

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The white grub, *Polyphylla adspersa* (Col., Scarabaeidae) is one of the most important Scarabaeid pest of trees in North East of Iran. Long life cycle in three years and cryptic habitat made this pest as a major concern for different control methods. Entomopathogenic nematodes were considered as potential biocontrol agents against such this soil dwelling pest. In this study, a commercial formulation of Heterorhabditis bacteriophora (LARVANEM®) was examined on second and third larval instars and pupae of the white grub collected from urban parks of Mashhad, North East of Iran in 2009. The virulence of *H. bacteriophora* to larvae was assayed by applying 200 µl of distilled water containing 50, 200, 500 or 1000 IJs onto the soil surface of each cup. Control cups received same amount of water only. Larval mortality was assessed at weekly intervals for 4 weeks. Dead larvae were dissected under the stereomicroscope to confirm that the mortality resulted from

nematode infection. The dead larvae were also kept on White traps to observe nematode emergence from nematode-killed insects. Second larvae were significantly more susceptible than third instar to H. bacteriophora. The mean mortality in larval stages was about 42%. Pupal stage of the white grub had high susceptibility to this entomopathogen.When we compared efficacy of other entomopathogenic nematode, *Steinernema feltiae* and *Steinerma carpocapsae*, *H. bacteriophora* had the high efficiency. Larvae of this scarabaeid has evasive behavior with strong grooming. It is concluded that the pathogen, *H. bacteriophora*, has high potential for using in managing white grubs, *P. adspersa*.

Keywords: Susceptibility, Melolonthid, Entomopathogenic nematode, Iran

Poster / Nematodes Monday, 14:00 N-12

Sublethal impacts of Iranian isolates of *S. feltiae* and *H. bacteriophora* on the Colorado potato beetle, *Leptinotarsa decemlineata*

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Two isolates of entomopathogenic nematodes were recovered from 30 soil samples collected from suburbs of Tabriz, north-west of Iran and identified as *Steinernema feltiae* and *Heterorhabditis bacteriophora* based on morphological characters and morphometric data. To determine the LC_{50} values of the two entomopathogenic