



**Evaluation of Local Isolates of
Entomopathogenic Nematodes to Control
Black Cutworm, *Agrotis ipsilon***

By

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B. Sc. Environmental Agricultural Sciences
Faculty of Environmental Agricultural Sciences.
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(Economic Entomology)**

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Faculty of Environmental Agricultural Sciences.
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Abstract

The black cutworm, *Agrotis ipsilon* (Hufn) (Lepidoptera: Noctuidae) is the major pest soil, larvae spend most of their life in the soil, has a wide host range. The forth instar larva is the most damaged stage. In this study four strains of Entomopathogenic Nematodes (EPN); *Steinernema carpocapsae* (All) and *Steinernema scaptersci* (S.S), *Heterorhabditis bacterophora* (Hp 88) and *Heterorhabditis indica* (Hi) were tested against the 4th instar larva of *A.ipsilon* at laboratory and semi field experiments. Two types of soil, sandy and clay soil were used in the semi field experiments at two methods as surface and bait trap treatment. Four concentrations of each strain were evaluated against 4th larva instar of *A.ipsilon* to determine which species of EPN is the most effective. The four concentrations were 5, 10, 20 and 40 Infective juveniles / larva in laboratory experiments and it was 100, 200,400 and 800 Ijs / larva in semi field experiments. The result clearly showed that at all treatments *Steinernema carpocapsae* (All) strain induced higher mortality percentage than *Heterorhabditis bacterophora* (Hp 88)at 800Ijs / larva concentration for sandy soil. Also, it can be concluded that, *Steinernema carpocapsae* (All) in sand soil was the most suitable one for EPN activity, followed by clay soil. In semi field experiments four concentrations 100, 200, 400 and 800 Ijs/larva were used on each application; surface sand soil and bait trap in sandy soil. It was observed that, bait trap treatments is the most effect than surface treatment and Ijs/larva concentration for sandy soil where *S.carpocapsae* treatment induced higher mortality percentage at 200 Ijs /larva.

Key words: *Steinernema*, *Heterorhabditis*, biological control, insects

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