

Evaluation of Entomopathogenic Nematodes for Biocontrol of the European Corn Borer, *Ostrinia nubilalis*, on Sweet Corn in Israel

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The potential of entomopathogenic nematodes for biological control of the European corn borer (ECB), *Ostrinia nubilalis* (Hübner), was evaluated under laboratory, screenhouse and field conditions. The 'All' and 'Mexican' strains of *Steinernema carpocapsae* (Weiser) and the 'HP88' strain of *Heterorhabditis bacteriophora* Poinar were compared in both dose response assays (5, 50 and 500 infective juveniles [IJ] per petri dish containing five 5th-instar ECB eggs; 72 h of incubation) and exposure time assays (3, 6 and 9 h of incubation). In the dose response assays the highest rates of ECB killing resulted from infestation with the Mexican strain of *S. carpocapsae*. In the exposure time assays there were no significant differences between the killing rates of the three nematode strains. Sweet corn plants (*Zea mays* var. *saccharata*) grown in a screenhouse, were infested with ECB neonates and 4 days later sprayed with a suspension of the Mexican strain of *S. carpocapsae* (50,000 IJ per plant). The number of ECB larvae found on treated corn plants after one week was significantly ($P=0.05$) lower (3- to 5-fold) than the number found on untreated plants. Similar treatment in the field significantly reduced the rate of economic ear damage from 20% to 5%.

KEY WORDS: Entomopathogenic nematodes; *Heterorhabditis bacteriophora*; *Steinernema carpocapsae*; *Ostrinia nubilalis*; European corn borer; biological control; sweet corn.

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