

ABSTRACT

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The integration of entomopathogenic nematodes with pesticides for the control of *Cosmopolites sordidus* Germar

by

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The effectiveness of various species/strains of nematodes was compared for the control of *Cosmopolites sordidus* adults and larvae. The degree of infectivity of each nematode species/strain for *C. sordidus* varied considerably. One *Heterorhabditis* sp. (HT2) was found to be the most infective (60%) for *C. sordidus* adults.

Studies of the toxic effects of several organophosphates and carbamates on the nematodes show that *Heterorhabditis* spp. are more sensitive to the majority of pesticides than *Steinernema* spp. The survival of *S. feltiae* (All) was least affected, but their development was negatively affected by the pesticides. *S. glaseri* (K72) was sensitive to certain organophosphates but the development was not affected after treatment. The survival of *Heterorhabditis* spp. was severely reduced by all pesticides.

There was a significant synergistic effect between a lowered concentration of the carbamate, aldicarb (100 times less the normal concentration used in the field), with *Heterorhabditis* sp. (HT2), and between the organophosphate, pyrimiphos-ethyl, with *S. feltiae* (All) against *C. sordidus* adults both resulting in 100% suppression of the banana weevils within 4 days of the treatment.

The general indications are that it is feasible to integrate entomopathogenic nematodes with chemical control methods for suppression of *C. sordidus* in banana cultivation.

Key Words

Entomopathogenic nematodes, *Steinernema* spp., *Heterorhabditis* spp., *Cosmopolites sordidus*, infectivity, development, pesticides, synergy, control.