

## IMPACT OF ENTOMOPATHOGENIC NEMATODES ON A LARVAL PARASITOID OF THE COLORADO POTATO BEETLE

Tae-Hwan Kim<sup>1</sup>, Christine Armer<sup>1</sup>, Ralph E. Berry<sup>1</sup> and Sang Soo Kim<sup>2</sup>

<sup>1</sup>Department of Entomology, Oregon State University, Corvallis, OR 97331, USA

<sup>2</sup>School of Environmental and Agricultural Science, Sunchon National University, 315 Maegok-dong, Suncheon-si, Jeollanam-do, 540-070 KOREA

The Colorado potato beetle (CPB), *Leptinotarsa decemlineata* (Say), is one of the most destructive insect pests of potatoes in the world and its control relies heavily on chemical pesticides. As insecticide resistance in CPB has become a serious problem, alternative control methods have been sought. More than one biological control agent is often used in IPM programs to better control a pest. However, interactions between biological agents can reduce pest control, as in intraguild predation or through competition for prey or host resources.

*Myiopharus doryphorae* (Riley) (Diptera: Tachinidae) is one of few indigenous larval parasitoids of the Colorado potato beetle in the United States. Entomopathogenic nematodes are obligate parasites of insects and have been used to control the CPB. When *M. doryphorae* and entomopathogenic nematodes are used separately, satisfactory results cannot be guaranteed consistently.

We examined six species of nematodes at a range of concentrations to determine if any species/concentration combination allows successful tachinid development and survival. *Heterorhabditis marelatus* was the only nematode species that did not negatively affect the parasitic fly. All other five nematode species reduced the emergence of the fly as the nematode concentration increased. *Heterorhabditis marelatus* provides high levels of CPB control and can be safely combined with the native tachinid parasite for season-long pest population reduction.