Section VI
Biological & Cultural Controls

CONTROL OF BLACK VINE WEEVIL LARVAE BY ENTOMOGENOUS NEMATODES

Carl H. Shanks, Jr.
Washington State University
1919 N.E. 78th Street, Vancouver, WA 98665-9752
Arthur H. Antonelli
Western Washington Research & Extension Center
Puyallup, WA 98371
F. Agudelo-Silva
Biosis
1057 E. Meadow Circle, Palo Alto, CA 94303

The entomogenous nematode, Heterorhabditis heliothidis (Khan, Brooks and Hirschmann), when applied to a cranberry bog, moderately reduced numbers of black vine weevil, Otiorhynchus sulcatus (F.), larvae and pupae in both the spring of application and a year later. Bioassy with greater wax moth larvae, Galleria mellonella (L.), of soil samples taken periodically for 10 months after treatment showed that the nematodes remained infectious for at least 9 months. The bioassays indicated lateral movement of the nematodes at least 1 m into the untreated check plots. A later comparison of the efficacy of H. heliothidis, Heterorhabditis sp. (HP-88, Biosis code), and Neoplectana carpocapsae Weiser (All strain) in a spring application showed all to be efficacious with HP-88 as the best.

All of the above nematode species were tested at 75 nemas/cm^2 one or more times as spring or late summer applications to strawberry or raspberry fields. Rain fell 2-4 days after application in all cases. Soil temperature was ca. 12-13°C. Treatments were evaluated 3-4 weeks later. No reduction in live weevil larvae was observed in any test.