

Section III.
Biological & Cultural Control

Development of a Microsporidian for Black Vine Weevil Management

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Microsporidian Characterization

A yet to be described insect pathogen (Microsporidian) was isolated from the black vine weevil (BVW) *Otiorhynchus sulcatus* (Coleoptera: Curculionidae) from a wholesale nursery located in McMinnville, OR. A microsporidian has not been previously described from the BVW and initial diagnostic work suggests that this is a new species of microspora. I am currently working with Dr. Leellen Solter at the Illinois Natural History, a microsporidian expert, to describe and name this organism. Microspora are obligate pathogens and can be costly to produce commercially, however, they have been commercialized and one is currently used for grasshopper control (i.e. NoLo Bait, M & R Durango, Inc. Bayfield, CO). As a group, microspora generally reduce insect fecundity, longevity and overall population growth, however, there are other microspora such as this one that cause acute toxicity to their host. One of the main benefits of implementing microspora in a pest management program is their host specificity. Investigations into the development of a new microbial control agent are necessary in order to provide nursery growers with additional alternatives for managing BVW populations. Laboratory studies have shown that the BVW microsporidian is extremely virulent against 3rd instar BVW (Figure 1). In laboratory studies, 100% of the BVW larvae ingesting 100 or more spores were dead within 12 days. These data suggest that this microsporidian not only has the potential to attenuate BVW populations in the field, but also may be useful to eliminate larval infestations, particularly in containerized production systems.

Figure 1

