

Biological Control

Efficacy of two entomopathogenic nematodes for control of plum curculio in lab and field bioassays

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Abstract: *Steinernema feltiae* and an unidentified nematode species collected from plum curculio-infested field soil were both efficacious in killing plum curculio (PC) prepupae in lab soil bioassays. Percentage mortality of PC prepupae corrected for control mortality increased from 46 to 89% at inoculum concentrations of 250,000 to 4 million *S. feltiae* infective juveniles (IJs) per m² soil. PC pupae and teneral adults were not very susceptible to *S. feltiae* (corrected mortality=6-21% at same nematode concentrations as for prepupae). Delays of 0 to 7 days in adding PC prepupae to nematode treated soil resulted in a decline in corrected mortality from 75 to 51% at 2 million *S. feltiae* IJs per m² soil. Mortality of PC prepupae was the same to slightly greater for the same concentration levels of the field collected nematode species in lab bioassays. Insect cadavers killed by the Utah nematode were red in color suggesting that it may be in the genus *Heterorhabditis*. Mortality of PC prepupae in field microplots was less and more variable than in lab bioassays, likely because of drier and hotter conditions.