



PC and nematodes

Posted by [Liz Griffith](#)

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[Liz Griffith](#)

[PC and nematodes](#)

July 22, 2016 11:20PM

Hello everyone -

Registered: 7 years ago

Posts: 46

Heard an interesting idea via the IPM institute's "Apptalk" call last week, and thought I'd see if anyone has tried it out on the network here. The guest speaker was Matt Grieshop, Michigan State University Associate Professor of Organic Pest Management. He brought up the use of entomopathogenic nematodes to manage resident PC populations, and further mused that one could brew up a population using ones own native nematodes and wax worms (instead of purchased nematodes) that could then be applied to the soil.

Another grower on the call found this excellent paper on a study of the subject from Cornell: link is [HERE](#).

Looks like some orchards represented in the forum here were used as subjects for the study. I'd love to hear if this has continued to be of use to the orchards in the study, and of course, if anyone else has attempted this, please weigh in. I would also think that this could be applicable for Japanese Beetle control, something that is attractive given their population surge here in Wisconsin this year.

Door Creek Orchard
Zone 5a in Wisconsin

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[Mike Biltonen](#)

[Re: PC and nematodes](#)

July 23, 2016 12:21AM

Registered: 10 years ago

Posts: 298

In the northern US there appears to be only two effective species of nematodes, *S. feltiae* and *carpocapsae*, for this type of control. A third, *S. riobrava*, and the better of the three, doesn't survive well in our northern climates [though with climate change, who knows]. The first issue is getting the nematodes into the soil, propagating and surviving at population levels to do any good. Not impossible, but has yet to turn into a silver bullet. If one was to propagate their own, its easy to do, you just want to make sure you have the correct species. As well, keeping them alive - esp in this drought we're having - is difficult. For Japanese beetles, it could work, but you often get so much immigration into an orchard, that controlling resident populations only lessens the inevitable, but doesn't prevent it. Size of grub or larvae is also an issue. At workshop earlier this week in Geneva, NY, I asked about the use of PN for SWD. But the maggots/pupae are too small. One tactic I read about years ago was actually creating a nematode plaster or poultice and putting it on borer entry points on the trunk or limb of a tree. So if you raised them and applied them to affected areas as the need arose, this might be more effective than broadcast applications. To me, keeping track of your efforts is important - and that's a whole other trick.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[David Maxwell](#)

[Re: PC and nematodes](#)

July 23, 2016 01:06AM

Registered: 11 years ago

Posts: 197

Somewhat related is the research conducted over the past 10 years or so by a fellow in Ottawa dousing the ground with nematodes, (carpocapsae I think) to try to control European Apple Sawfly. It worked - sort of. He got something like a 40% reduction in sawfly population, but absolutely no reduction in levels of fruit damage.

[Broomholm Orchard](#)

Zone 5b in Nova Scotia

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[Mike Biltonen](#)

[Re: PC and nematodes](#)

July 23, 2016 02:15AM

Registered: 10 years ago

Posts: 298

I don't know if anyone has looked at it, but it appears there is very distinct relationship between a pest's potential to immigrate from outside populations and the ability of something like PN to control that specific pest. There will always be some immigration, but for a pest like JB that comes from miles around, I don't think it holds much hope except on large farms. Every little bit helps of course, but this isn't a cheap approach and so each grower needs to weight their own "return" on investment.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Michael Phillips](#)

[Re: PC and nematodes](#)

July 23, 2016 04:44PM

Moderator

Registered: 11 years ago

Posts: 621

Rearing nematodes is good but it helps to have "seed stock" to get the right species going. Another post on [Cross-Species Pest Management with Parasitic Nematodes](#) touches on this . . . and maybe Steve and Jen are due to update us on how this is working out.

Arbico Organics has made the [nematode approach](#) far more economical. Approximately \$40 an acre on a community orchard scale. I've worked with one grower in Maine who has applied the "triple threat combo pack" (all three available species) two summers in a row to five acres of trees. We're not set up to scientifically evaluate the results but there appeared to be less pressure this past season. Could be the year, sure enough. This grower is especially happy about tick numbers going way down . . . which may be motivation enough!

More of us need to explore use of nematodes. I've been strongly recommending to home orchardists to take this route. Not needing to constantly apply that damn white clay is another strong motivation. The key issues are species, conditions, and nematodes getting dibs in on the larval/ early pupae stage when curculio in particular seems more vulnerable. I'm thinking this is an investment made every few years, maybe more in high pressure areas.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

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[Mike Biltonen](#)

[Re: PC and nematodes](#)

July 23, 2016 05:03PM

Registered: 10 years ago

Posts: 298

Having worked with the folks from Cornell (peripherally speaking) its obvious this is not a 'one and done' treatment and does need to be applied every other year or so. Especially after years where we are having such a dry dry summer - the nematodes can't survive or at best go dormant and are not active in the soil. The other interesting thing I've learned is that it seems there is some very good evidence (again from Cornell) that you need to have multiple life stages (or ages) of nematodes to get the most bang for the buck. Commercial preps - due to efficiency of rearing and processing - generally only have a single life stage or age of nematode in their mix. This will likely change as the science becomes clearer and nematode factories catch up. That's not to say that the application of commercially reared nematodes is a bad idea; its just that the practice will likely become even better and more effective in the next few years.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Liz Griffith](#)

[Re: PC and nematodes](#)

July 26, 2016 02:44AM

Registered: 7 years ago

Posts: 46

Thanks for all the info and great discussion, folks. Seems like a yearly, well-timed application would be a worthy experiment, especially for PC. Maybe not for Japanese Beetle because of their mobility. June is generally full of moisture here, so getting the needed action before the rain dries up and the nematodes go dormant is likely. Though, of course, one never knows. Especially these days.

I had, of course, missed that other post in the forum, despite doing a search for "nematodes" before posting this. Darn. Thanks for pointing it out, Michael. Very promising on several fronts. I'm definitely up for raising the applicable species and trying an application next June. If anyone else decides to attempt, please let me know!

Door Creek Orchard

Zone 5a in Wisconsin

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