



NH Integrated Pest Management Newsletter

June 9, 2006

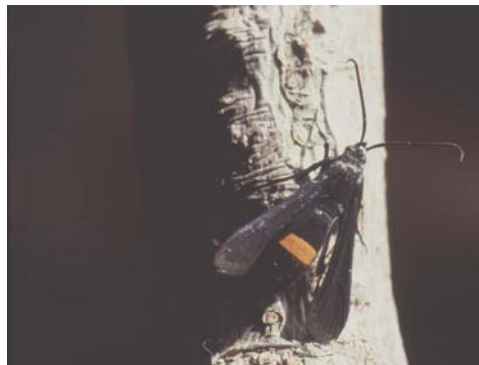
Volume XII

No.5

Borers in Peach Trees

We have two species of moths whose larvae bore in stone fruit, especially peaches. The really serious one is called peach tree borer. It hits the lower trunk. The other is slightly smaller, hits the scaffold limbs and trunk, and is less serious (lesser peach tree borer). Both species are attracted to trees with injuries, and infested trees attract still more borers to lay eggs.

The adults are wasp-like in appearance, and fly during the day. The male (left) is mostly black, with thin silvery lines. The female is black with a bright orange band. Both are flying now, and you



might spot either any time over the next month or so. Preventing injury to your trees really helps reduce the chance of infestation. That includes any kind of mechanical injury. Stone fruit trees respond to injury by

oozing lots of gum from the injured spot. Some people assume that lots of gum coming from the tree means it has been attacked by borers. That **would** be the case if the gum was mixed with bits of frass (looks like sawdust). No frass means the injury is from something else. It could be from extreme temperature, attack by pathogens, or getting hit by your mower.

For commercial growers, there are several insecticides that control borers well. The most effective treatment is a trunk spray (thorough, coarse spray covering the lower 2 feet of trunk) with Lorsban 4E. Don't spray the fruit! This chemical has a strong affinity for the bark, and a single treatment works pretty well, if I remember the data correctly. The optimal timing is about July 20-31.

Thiodan, Asana, and Warrior are also effective, but you need multiple treatments if you use these. Usually the target periods are June 1-10 (that's mostly hitting scaffold limbs & trunk for lesser PTB), and July 7-15, August 1-10 for PTB. To make things more complicated, there is an option to apply the last spray immediately after harvest, especially if Thiodan or Lorsban is the material used. This option is easier for some varieties that are being harvested during the target treatment period. Check the label instructions carefully. Re-entry interval for the Lorsban treatment is 96 hours, I think. The others have a 24-hour re-entry interval.

For backyard growers without restricted use pesticide application licenses, none of options are available. There have been major changes in pesticides that are licensed for backyard growing, and they are less effective than the options listed above. But they are also safer to people, and that is the main point for someone without pesticide application training. I won't go over all the options, but several

treatments may be necessary, from mid-June through early August. For backyard growers, avoiding mechanical injury to the tree is very important.

Black Vine Weevils Due Soon

Black vine weevil is a pest of a number of nursery crops, plus strawberries. The adults begin emerging here about the end of June. Since the adults hide under cover during the day, and feed at night, the first clue to emergence is often the notching of leaf margins. Carefully checking under mulch and other cover will reveal the dark gray adults, about 3/8" long. The adults hang around and feed for about a month before they begin laying eggs. Every individual is a female, so an infestation could begin with only 1 insect. By the way, another odd thing is that the wing covers are fused, so they cannot fly. This means the way they reach your strawberry bed is either to walk there, or be carried (in infested crowns, soil, plants). Larvae of BVW are white grubs with no legs.



Controlling Black Vine Weevil in Strawberries

Controlling BVW can be difficult. Brigade is registered for this. It does kill them, somewhat. But using it can trigger very serious mite problems. It really kills predator mites well, and two-spotted spider mite then builds up to very high numbers. It can take over a year to get things back to normal.

Another option is to use insect-killing nematodes. Mid-May seems to be the ideal time to try this, with early to mid-September almost as good a time. Applying nematodes is not like spraying chemicals. There are several extra steps you need to follow, to make things work. After all, you are trying to apply living nematodes, so that they can actively move through the soil and attack the BVW larvae. Spraying dead nematodes does no good. There are several points to remember, if you do this. I'll list them, then briefly discuss them. **1) use correct species 2) triple rinse sprayer before adding nematodes 3) check viability of nematodes before dumping in tank 4) Use the correct rate 5) remove screens 6) agitation needed 7) use low pressure 8) apply in evening 9) moisten soil!**

The species to use are either *Steinernema feltiae*, *Heterorhabditis bacteriophora* or *H. megidis*. Other species are not good choices, since they behave differently. Check viability of your shipment by placing a small blob of the nematodes in a shallow see-through container, with a little water. You might put just a small pinch of table salt in the small container of water. It helps activate them. What you should see (you'll need a hand lens) is lots of wriggling, curved nematodes. Sometimes it takes a minute or two. If lots of the nematodes are straight, unmoving, then they are dead or nearly so. Call your supplier right away, and negotiate a replacement.

The correct rate for *Steinernema feltiae* (I'll call it SF) is 3 Billion per acre. Yes, Billion. For the other species (HB) 1 billion per acre is the rate. It REALLY helps to shop around for a good rate, and check the internet for sources. Prices vary widely.

Screens & agitation: The fine screens in sprayers are designed to keep larger particles from reaching the nozzles. But spraying tiny pieces of nematodes does no good! so removing all but very coarse screens is important. Some agitation of the tank will ensure that the nematodes won't all settle to the bottom while you spray.

Evening and moist soil: Nematodes that are applied during the sunny daytime, or to a dry soil surface will dry out and die in a short time, even just a few minutes. I suggest applying to a damp soil surface (preferably evening), and then turning on your overhead irrigation system for 2 or 3 minutes.

A **Great** source of information on using insect-killing nematodes is on the web at <http://www.oardc.ohio-state.edu/nematodes/biologyecology.htm> Two suppliers in our area are The Green Spot in Nottingham, NH 603-942-8925 and IPM Laboratories in Locke, NY 315-497-2063. A single properly-done application should do it, and might permanently establish the nematodes in your soil.

Yes, there's a third option to control BVW: scorched earth policy. Disk up an infested bed, and replace it with crops that BVW larvae can't live on. Keep it in this unfavorable crop for over 1 year, before going back to strawberry. Don't forget to control the weeds on the site; several of them are good hosts for BVW larvae. Here's a list of BVW hosts of which I am aware:

Achillea, Adiantum, Asters, Astilbe, Azaleas, Begonia, Bergenia, Blackberry, Calla lilly, Christmas fern, Cinquefoil, Cyclamen, Dandelion, Dock, Epimedium alpine, E. grandiflora, Hemlock, Heuchera, Hosta, Hydrangea, Impatiens, Isoloma, Lily of the Valley, Lythrum, Mountain-Laurel, Phlox, Physostegia, Plantain, Primrose, Raspberry, Rhododendron, Rhubarb, Sedum acre, Strawberry, Sheep sorrel, Wood sorrel, Taxus (yew).

White Grubs in Strawberries and Blueberries: New Species & New Tool

White grubs are the larvae of scarab beetles. There are lots of species (you knew that, right?). For years we have preached that the way to solve white grub problems is to avoid planting strawberries where grass grew last year (actually, for the last two years is better). In both strawberries and blueberries, we emphasized controlling grass in the planting. This was OK when the species we had were primarily May/June beetles and Japanese beetle. Now we are having increasing problems with a relatively new species, Oriental beetle. OB will sometimes lay eggs where there is no grass, but instead there is moist soil under a layer of straw mulch. In that scenario, controlling the grassy weeds doesn't help much. What can we do? Well... there's a new option.

The pesticide Admire 2F is now labeled for controlling white grubs in strawberry and blueberry. In blueberry plantings, the best timing is between June 1st and July 15th. For strawberry, post-harvest is the timing. In both cases, you need to water in the material a bit, so that it gets down to where the grubs are. OB isn't as easily controlled by this chemical as are Japanese beetle and June beetles, but results should be satisfactory if you follow the label directions.

Roundheaded Apple Tree Borer

This striking, longitudinally striped beetle is a very serious pest of apple trees that are grown organically or with minimal chemical insecticide use. The first beetles of the year emerge about now, and they can threaten trees through mid August. Emergence holes are round, about pencil diameter. The reason that they are especially serious on organic trees is that the adults spend a lot of time in the branches and foliage, and are susceptible to many insecticides. The larvae however, are difficult to control. Commercial growers still have the option to apply a chemical called Lorsban to the trunks once a year. (But this pest isn't often a problem in orchards that use chemical insecticides.) Since the insecticide is an artificial chemical, this isn't an option for organic growers. So what options do



we have, for organic and backyard growers? There are several preventative measures. 1) Paint the lower two feet of trunk with white latex paint, mixed 50/50 with water. This deters them somewhat, and also prevents “southwest (winter) injury”. 2) Keep the trunk exposed, without tall weeds or suckers shading it. The borers don’t seem to like well exposed trunks for egg laying. 3) (not very practical, but theoretically possible) Completely surround the lower 2 feet of trunk with insect screening. Don’t **wrap** the trunk with it. Keep it at least a few inches away. Snugly tie off the top, and fit the bottom into the soil, so there are no gaps to let beetles in. You have to keep it there all of June, July, and much of August. 4) Eliminate nearby unmanaged host trees, especially those within 150 yards: apple, crab apple, hawthorn, mountain ash, and shadbush.

Besides the preventative measures above, mechanical “worming” is possible. This is where you take a flexible wire and probe suspected tunnels, to impale the borers. Fall and spring are good times for this. You poke the wire into tiny places out of which the fibrous droppings of the borers are being forced. Yes, it is a lot of work if you have a lot of trees, and it is only partially effective.

Plum Curculio Predicting

We have several tools to help apple growers predict when plum curculio season should end. None are so effective that they should be relied on alone, but collectively they really help. One tool is to measure growing degree days (GDD’s) beginning at petal fall. GDD’s have a base of 50F, remember? The New York model suggests that we maintain insecticide protection through 340 GDD’s after petal fall. Before I go on, I need to explain. Most pesticides we would use for PC (Guthion for example) would give 7 to 10 days of protection, if not washed off by rain. So if we accumulate 10 GDD’s per day, one spray might protect for 70 to 100 GDD’s. As of Thursday morning June 8, we had accumulated 142 GDD’s here in Durham since petal fall on McIntosh. Other tools? Your own experience and block history helps. Some blocks have a pattern of long, extended curculio attack (lots of unmanaged or wild hosts in the vicinity). Others have shorter, more concentrated activity. Three weeks of significant attack is “typical”.

Monitoring plum curculio activity is still an active area of research, and on July 12 we will have a tree fruit twilight meeting that focuses on PC research. Tracey Lesky will be our featured speaker. She completed her Ph.D. work (on plum curculio, of course) under Ron Prokopy’s direction. Tracey is now at the USDA Appalachian Fruit Research Center in West Virginia, so we are really pleased that she agreed to come. That meeting will be at Windy Ridge Orchard in Haverhill, NH. I’ll have details on the fruit pest update telephone (862-3763) as we get closer, but I think starting time will be 5-ish. When you see George Hamilton, thank him for setting up this opportunity!

Predicting Crawler Emergence for San Jose Scale

San Jose scale is sometimes very serious on apple (and plum, peach, pear). For growers with an SJS problem, I recommend several management techniques. One is to prune properly, avoiding dense trees that are difficult for sprays to penetrate. Another is to carefully check sprayer calibration and adjustments. Missing the tops of the trees (or branches on the far side) leaves spots where SJS can thrive. Don’t use wrap-around tree bands, because they provide places for scales to live, where pesticide sprays can’t reach. Applying oil carefully at half-inch green is another option that helps. It is very effective if mixed with Esteem, a new insect growth regulator. The most effective control measure is to apply an effective insecticide just as the crawlers hatch. Crawlers are easy to kill because they are very small, and they move about over sprayed surfaces for the first 24 hours or so after hatching. But hatching isn’t synchronous, and typically is spread out over several weeks. So how do you time things? I suggest 2 methods:

- 1) Measure growing degree days beginning at petal fall. Expect the crawlers to begin at about 350 GDD's after petal fall. This is often roughly 4 or 5 weeks after petal fall.
- 2) At almost 300 GDD's after PF, set out black or blue sticky tapes to check for crawlers. Crawlers are about 1mm long, oval and bright yellow. Wrap electrician's tape snugly around **well-infested branches** and cover them with a very thin layer of Vaseline (to catch the crawlers). Check the tapes every couple of days until crawlers start. When you find your first ones, start spraying (and remove the tapes!).

What and how do you spray? Often it takes two sprays, about 10 days apart. Esteem, Guthion, Imidan and Provado are all effective against crawlers. There may be some new materials as well, but I haven't seen data.

Don't bother with this monitoring or spraying if SJS isn't a problem for you!

Powdery Mildew on Apple This Year?

Powdery mildew is a fungal disease that overwinters as mycelium (strands of fungus). It is quite easily killed by low winter temperatures. This winter didn't really have much **cold** weather, so I'm wondering if there might be some PM out there. Stunted, distorted, off-color young leaves could be signs of PM. Heavy rains (anyone had that this year?) can wash the powdery spores off the leaf surfaces, so they might not look very powdery. Among the most susceptible varieties are Cortland, Gala, Gingergold, Idared, Jonathan, Mutsu, Paulared and Rome. The New England Apple Pest Management Guide (color photo 28 and text pages 26&7) has more information.

June is Rose Chafer Month

It isn't officially recognized on calendars, but mid to late June is when the adults appear. This scarab beetle loves to feed on flowers (roses among them) but also feeds on the foliage of grape, raspberry and blackberry. I seem to find this in spots where soil is relatively sandy. Sometimes they can seriously defoliate plants. If you have a few, don't fret. If you have a LOT, you might consider an insecticide treatment.

Insects on Currants

Since it became possible to get permission to grow currants in NH (a few years ago) increasing numbers of NH growers have a few currants somewhere on the farm. In Connecticut there is one farm with 60 acres of them! My colleague Lorraine Los (U. Conn. Coop. Extension) says that currant borer and four-lined plant bugs are significant pests there. So last week, when I found LOTS of stinkbugs on our currant bushes at UNH, I naturally called Lorraine. She, too had noticed a lot of them recently, and speculated that there were there because currants are one of the earliest things to have fruit. Are they a problem? Well... we don't know. If you find a lot on your currants, it might make sense to consider an insecticide application. This crop is still new to us.

By the way, the most important currant insects seem to be borers and four-lined plant bugs. The former are moths (similar to male peach tree borer shown on page 1) that kill branches and emerge about



now. Four-lined plant bugs overwinter as eggs laid in the stems, and the nymphs hatch in the spring. They are reddish (see my photo at right). The greenish-yellow and black lines that gave them their name become more visible as they get larger. Some should transform into the adult stage by mid or late June. Four-lined plant bug has piercing-sucking mouthparts, and injects toxic saliva as it feeds. This creates a series of dead spots on the foliage, which can be mistaken for a disease.

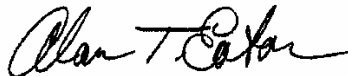
Coming Meetings

Vegetable, and Fruit Twilight Mtg. for Commercial Growers Tues. June 13, 2006 5:00 -7:20PM
Ledgewood Farm, Rt. 171, Moultonborough, NH. Ed Person is our host, and high tunnels and backback sprayer calibration are among the topics we'll cover.

Tree Fruit Twilight Meeting for Commercial Growers Wed. June 14, 2006 Surowiec Farm, 53 Perley Hill Rd, Sanbornton, NH.(just off Rt 93,exit 22) Registration begins 5PM for those needing pesticide applicator training recertification credits. Program begins 5:30 sharp.

High Tunnel Workshop Fri June 30th (please register in advance) UNH Woodman Farm 9:30 – 4:00 \$40/person, checks payable to UNH Coop. Extension. Send to Dr. Becky Grube, Spaulding Hall, 38 College Rd, Durham, NH 03824. Included in cost are The New 2nd Ed. High Tunnel Manual and Implementation of a Biocontrol Program for Insect Control in High Tunnels. Several Penn. State U. staff join us for this workshop. Bring your lunch. More details: 862-3200

Tree Fruit grower Meeting Wed. July 12, 2006. Windy Ridge Farm, North Haverhill, NH. Hosts are Dick, Ann and Sheila Fabrizio. Plum curculio monitoring is a featured topic, with guest Dr. Tracey Lesky of the Kearneysville, WV USDA research lab. Registration for PAT recertification credits starts at 5PM; meeting starts 5:30 sharp.



Alan T. Eaton
Extension Specialist
Integrated Pest Management

UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations, and prohibits discrimination in its programs, activities and employment on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sex, sexual orientation, or veteran's, marital or family status. New Hampshire counties cooperating.