



## NH Integrated Pest Management Newsletter

June 2, 2009

Volume V

No. 6

### Fruit Bud Stages

In Durham, blueberries were still in bloom on Monday May 18. Our tree fruit were all past fruit set, so I won't be showing fruit development for the rest of the year.

### Next Issue is in Early July

This is just a reminder not to look for another newsletter in mid-June. There will be one in early July, and one in early August. The Fruit Pest Update telephone (862-3763) will continue weekly.

### Apple Scab

At 9AM Friday May 29, we reached 1000 apple scab degree days after the biofix, at the Woodman Horticulture farm in Durham. Within an hour, we had a daytime rain, so that should have ended primary apple scab season in Durham. By June 8 in Durham, all of the apple scab lesions resulting from primary (ascospore) releases should be visible. That's a good time to check for lesions and see how you did protecting your orchard. If you've gotten through primary scab season with very few or no lesions, then you can considerably relax scab management for the rest of the season. If there are a lot of lesions, then the strategy shifts to **suppressing conidia development**, to reduce the number of secondary lesions that are produced. I can't explain it as well as the plant pathologists can.

Bill MacHardy taught growers to check 10 extension shoot leaves, and 10 fruit cluster leaves from at least 10 trees per block. He also suggested checking 50 fruitlets per tree on 5 trees per block. If there was ½ a percent or more of leaves or fruitlets showing scab, that suggested a significant risk of secondary scab developing. "Burn out" (conidia suppression) was achieved by applying 2 full-rate captan applications 5-7 days apart, especially if temperatures exceeded 80F in the days following application.

For those of you who rely on multiple information sources, Dan Cooley's or Glen Koehler's newsletter may have more detail. They may have improvements on what I typed above. After all, sciences progresses, new discoveries are made, and new tools become available.

## Plum Curculio

I expected that there would be significant plum curculio activity last week (south of Durham, NH) until the cooler, rainy weather came. Fruit there was developed a bit farther than that here. I checked trees in the Durham area on the 22nd and 26th, and found no damage the first date, and only a little damage on the second date. That makes sense --- our fruit was just barely large enough to get attacked. Then came the cool, rainy weather 27th - 29th, when there should have been little curculio activity in the state. Curculio-favorable temperatures returned on the weekend (70F or higher), and the critters should continue attacking apples for at least another 2 weeks.

There is a degree-day model from New York, predicting how long activity should continue. It probably isn't reliable enough to use totally by itself, but is helpful in making plans, when combined with other inputs, like past history in your block, weather forecasts, etc. Glen Koehler put that model on his orchard radar site, and when he spoke at the NH Fruit Growers' meeting this March, he pointed out that he has NH weather data on the site this year (Nashua and Hancock). Here's that link, again: <http://pronewengland.org/AllModels/DecisionModels.htm>

## San Jose Scale

Full bloom for McIntosh apple at the Woodman Horticulture farm was May 15. That means as of Friday May 29, we had accumulated 110 growing degree days (base 50) since full bloom. We anticipate that eggs of San Jose scale (if there were any in our orchard) start hatching at 310 DD after full bloom. If temperatures stay cool, that will be a while

## Black Vine Weevil & Relatives in Strawberries

Black vine weevil is the largest, and most destructive of three closely related pests in New Hampshire strawberries. The middle sized one (not very abundant) is the rough strawberry weevil. The smallest of the three is the strawberry root weevil. The life cycle for all three is identical. Some strawberry beds can be severely attacked. Currently, the best management techniques are preventative. There are chemical controls, but they come with significant drawbacks. First --- the biology.

The weevils have one generation per year. When they are almost fully grown, they have the potential to eat the most, and do the most damage. That time of heavy damage is **now**, extending through harvest. Heavily infested plantings show some signs of not growing too well, and fruit on badly infested plants can be of poor flavor. When you dig out an infested crown, you'll see white, c-shaped grubs THAT HAVE NO LEGS. They're around the roots, or boring tunnels in the crown. They pupate in June and early July, and usually the first adult weevils emerge about July 4th.

The adults are rarely seen during the daytime. That's when they hide under mulch or soil debris. They come out at night, and chew notches into the edges of the leaves. This makes a visible clue to their presence. They hang around for almost 1 month, and start to lay eggs about August 1st.

## Controlling Root Weevils in Strawberries

This is never fun to write. We really don't have very good options for managing this insect. If you have a heavily infested bed, you can try three things:

- 1) scorched earth policy
- 2) treat with insect-attacking nematodes
- 3) use insecticides

**Scorched earth:** Destroy the old strawberry bed with multiple trips pulling a disc. For the next year, (two is better) do not allow any BVW larval food plants to grow there. This can be tough. There are quite a few weeds & crops that support this species. Do not plant strawberries on that site until two years have passed with no host plants on the list below:

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

If you do plan another bed right away, place it at least 100 yards away from the old one. Farther is better. Any adult weevils walk to a new home, once you disc up the old bed. Adults live a loooooong time if they have protection from the coldest winter weather. Some labs have adults that have lived 8 years! Using winter row covers together with mulch might make it possible for them to survive a mild winter here as adults.

**Insect-attacking nematodes:** If you follow directions carefully, this can work. It can also be very expensive. The proper time to apply nematodes is mid-May or late August. When applying nematodes, it is critical to do so late in the day, and water them in immediately. Avoid hot weather and dry soil, because nematodes die in just a couple of minutes if they dry out. Be sure to really shop around for a supplier, because nematodes are very expensive. It is **critical** to use the correct species. Some species of nematodes go deeply into the soil, while other species tend to stay near the surface. The species you want for root weevil (any of the three species) control are: *Steinernema feltiae*, *Heterorhabditis bacteriophora*, or *Heterorhabditis megidis*.

More important points for using nematodes:

- 1) triple rinse the sprayer first.
- 2) remove the screens from the sprayer.
- 3) moisten the soil first.
- 4) use low pressure.
- 5) you need some agitation, because they tend to settle in the tank.

The correct rate for *Steinernema feltiae* is 3 billion per acre. For the other species, 1 billion per acre is acceptable. That's a lot; 1,000,000,000 per acre, but research shows that high rate is necessary to get success. Theoretically, if you don't nuke your planting with pesticides that are rough on nematodes (like many insecticides), they could create a self-sustaining population, to keep down the weevils in the future.

**Treat with insecticides:** Brigade is registered to control BVW and its relatives in strawberries. It is marginally effective, and sometimes causes serious mite outbreaks (presumably by killing off the predator mites). Because of these problems, I rarely recommend it. Thiamethoxam (Platinum) it is registered to control the smallest of the three species, strawberry root weevil. I don't expect it will help too much for BVW, which is larger, and tougher to kill. To control strawberry root weevil, you'd apply it when the larvae are small, probably about August 20-30th. Last year I discovered that another thiamethoxam product (Actara) might be legal. Cryptically, the label (pg 15) says it is for "weevil adult". I assume it may help control strawberry root weevil, but probably is not much help for black vine weevil.

Jim Dill always inserts here that the strawberry root weevil is the lesser of two weevils...

## Clipper on Strawberries and Brambles

Strawberry bud weevil (clipper) has been hard to find this year. With such low numbers, people who scouted before spraying have saved some money on clipper this year. The vulnerable period ends when there are no more unopened flower buds on our spring-blooming varieties. By mid or late June adults begin to die off, and they are usually hard to find. Clipper has just one generation per year, so it won't be a concern until next spring. That means varieties that bloom in July, August or September are not vulnerable to this pest.

## Pesticide Disposal Program (Announcement from the Pesticide Control Division)

The New Hampshire Division of Pesticide Control has initiated a Pesticide Disposal Program scheduled to occur during the summer of 2010. This program will be available at no cost (other than the transport of materials) to non-homeowner users, or homeowners who inherited agricultural pesticides through real estate transactions, and are in custody of unwanted or unusable pesticides and are seeking disposal options. The Division will soon be soliciting information from potential program participants through a required pre-registration process. Those interested in participating in the Pesticide Disposal Program will find more information in a future e-mail message from the division that will detail the pre-registration process. Hard copies of informational brochures describing the Pesticide Disposal Program will be available from the division as well as at restricted use pesticide dealer locations, feed and grain supply stores and other locations throughout the state.

*“Please note that it is important for participants to understand that the New Hampshire Pesticide Disposal Program is being undertaken as a way to safely dispose of unwanted and unusable pesticides. By doing this, New Hampshire will be reducing the potential threat to its citizens and environment. Any participation in New Hampshire’s Pesticide Disposal Program is greatly appreciated and will not result in any legal action related to past pesticide management practices.”*

If you should have questions in regard to this program please contact the New Hampshire Division of Pesticide Control at (603) 271-3550 or by e-mail at [pesticides@agr.state.nh.us](mailto:pesticides@agr.state.nh.us). Or you can visit their website at: [http://www.nh.gov/agric/divisions/pesticide\\_control/](http://www.nh.gov/agric/divisions/pesticide_control/)

## Grower Twilight Meetings

*Wed June 10, 2009. New Hampshire Tree Fruit Meeting. Cardigan Mountain Orchard, Alexandria, NH. 5:30 - 8:00 pm. Hosts: Nancy, Steve and Steven Bleilor. As always, this twilight meeting is free. There are pesticide recertification credits offered for this session. To get them, you must sign in before 5:30.*

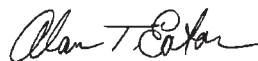
*Saturday June 13, 2009. Putting Oilseeds and Grains into Your Rotation: Organic, No-Till, and Cover Cropping. Durham, NH. 9:30am – 2:30pm. \$20 registration fee for this one. Contact Suzanne Hebert at 862-3200 for details or visit <http://extension.unh.edu/Agric/Docs/Jun13FINALflier.pdf> for registration information, a link to register on-line and the agenda.*

*Tues June 16, 2009. NH Veg & Berry Twilight Meeting. Emery Farm, Rt 4, Durham. 5:00 - 7:30pm. Marketing, production and pest management on vegetables and small fruits will be the focus. For more information visit <http://extension.unh.edu/Agric/Docs/berryveg.pdf>. Or call Geoffrey Njue 749-4455.*

*Thursday July 2, 2009. NH Veg & Berry Twilight Meeting. Picadilly Farm, Winchester, NH. 5:30 - 8:00 pm. We will cover developing integrated pest management plans for organic diversified vegetable growers, CSA marketing, and more. Information & directions from Carl Majewski or call 352-4550.*

*Wed. July 8, 2009. **Tree Fruit twilight meeting** at [Brookdale Fruit Farm](#), Hollis. Featured speakers this time are Dr. Tracy Leskey, Research Entomologist and Starker Wright, Support Scientist, both at the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV. They will be updating us on their current research, which includes work at Brookdale and other NH farms. Brookdale is on Rt 130, just east of the town center. Start time is 5:30 pm.*

*Thursday Aug 20, 2009. **NH Veg & Berry Twilight Meeting.** [Blueberry Bay Farm](#), 38 Depot Rd, Stratham. 6:00 - 8:00pm. The emphasis will be on pesticide-free growing of mixed vegetables, raspberries and blueberries. For more information call Nada Haddad at 679-5616.*



Alan T. Eaton  
Extension Specialist  
Integrated Pest Management