



NH Integrated Pest Management Newsletter

June 19, 2008

Volume IV

No. 6

Next Issue: July 8th

That's right. Things slow down a bit on fruit, and I have lots to do in other areas. The last issue will be early August. The Fruit Pest Update Telephone continues weekly through this period. 862-3763

San Jose Scale Crawlers



I mentioned in the last issue that there are two periods when these insects are vulnerable to pesticides, and the crawler stage is one. Data from the Woodman Horticulture farm in Durham (as of Tuesday morning, June 17) shows there have been 372 Degree days (base 50F) accumulated since full bloom. We expect crawlers to hatch starting at 310 DD, so they should be out already. If you have a limb that you know is well infested, you could set out sticky tapes to tell when crawlers appear. Some people like that alternative, instead of figuring degree days. I use black or blue electrician's tape. Wrap the tape snugly, sticky side out, around a well infested limb that is easy to see. Then check it every day or two, looking for

tiny (1 millimeter long) oval, yellow crawlers. I usually use either black or blue tape, since yellow shows off well against it. When crawlers appear, it is time to apply an insecticide. Another treatment goes on 10 days later. Most apple orchards don't have SJS problems, but if you do, this should get things under control. If they're just in one area, don't bother to treat the whole block!

Plum Curculio

Earlier I mentioned the New York degree day model that says to maintain insecticide protection for PC through 340DD (base 50) after petal fall. That works for some NH apple growers. At the Woodman Horticulture farm, we had about 212 GDD's when petal fall occurred on McIntosh. As of Tuesday morning June 17, we had 554GDD's. That's 342 since petal fall. So if you're following that model and grow in the Durham area, you shouldn't need to spray more for PC on apples, except in a block that you know has a history of late PC activity.

Borers in Peach Trees

We have two major borers in stone fruit, and peaches are probably the most commonly hit. Cherries and apricots can also be victims, but peaches seem to be the most heavily hit here. The really serious borer is peach tree borer. It hits the lower trunk. The other species is called lesser peach tree borer. It is similar, but slightly smaller, hits the scaffold limbs and trunk, and is less serious than PTB. Both species are attracted to trees with

injuries, and infested trees attract still more borers to lay eggs. 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). Lots of gum but no frass means the injury is from something else. It could be from extreme temperature, attack by pathogens, or getting hit by your mower.

The adults fly (daytime) now and continue for a month (or longer?). 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. More info on our recommendations are on pgs 180-185 of the 2008 New England Tree Fruit Pest Management Guide.

I'm unfamiliar with the pheromone dispensers to control these borers by pheromone confusion, but Kathleen Leahy has had good results using them (with one insecticide, I think) in orchards in MA, NH and VT. Pheromone confusion should work best in a larger, more square-shaped block, rather than one that is very narrow or very small. The idea is to provide so much female borer scent that the males can't find many females, so some don't get mated (and therefore lay unfertile eggs).

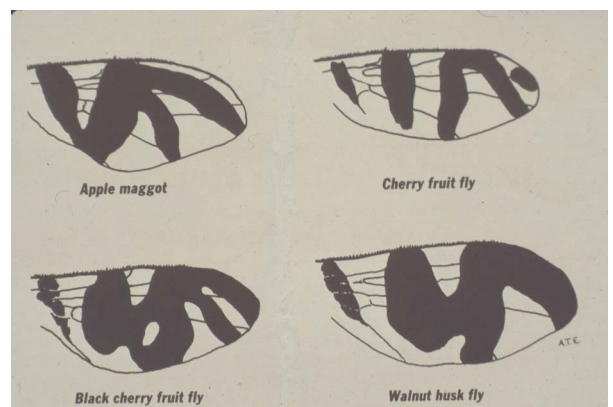
For backyard growers without restricted use pesticide application licenses, none of these options are available. There have been major changes in pesticides that are licensed for backyard growing, and they are less effective than the options listed above. But they are also safer to people, and that is 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.**

Cherry Fruit Flies Should be Out



We have two species of fruit flies that attack cherries. They're very similar in size, shape, and behavior to apple maggots. The differences are 1) they attack cherries, not apples 2) they're out a little earlier and 3) the wing band pattern is different from apple maggot. The drawings show both species:
black cherry fruit

fly and cherry fruit fly. Hang the traps just as you would for apple maggot, but in your cherry trees instead. When the flies appear, you'll know it is time to spray. I expect the heaviest attacks to occur beginning as the fruit start to color up.



Bird Damage in Cherries --- Wow!

Now that we have more sweet cherries in New Hampshire, we are seeing just how much birds like to eat them. **Bird damage on cherries can be severe!** The species mix varies from orchard to orchard, but cedar waxwing, starling, crow and blackbirds are the most common pests. There is an anti-cracking spray called **Vapor Gard** that can be sprayed on cherries here. Growers report significant reduction in bird problems after it is sprayed. It seems likely that this works because it has some taste repellency. The manufacturer is Miller Chemical & Fertilizer Corporation, Hanover PA. The label doesn't say anything about deterring bird problems. I'm guessing that that is because adding such information to the label would change the classification of the material to a pesticide, and would require expensive testing and data to be sent to EPA for approval.

Netting is a theoretical approach, but building netting support scaffolding for trees seems difficult to me. You might be able to drape the netting over the trees, but then it interferes with picking, and you only need it for the fairly short period just before and during harvest. Bird problems should begin when the fruit start to color.

There are various noisemakers that can reduce the problem, but they are most effective when used in combination with other methods, and they can annoy neighbors. Oh, yes. They can be expensive. So I'd recommend trying the Vapor Gard, and possibly a noisemaker if it isn't enough to stop them.

More on Noisemakers for Birds

Noisemakers are poor at stopping a feeding pattern that has become established. If you try them, use them at the beginning of a bird problem. They work best when the noise occurs at random intervals, a mix of sound types is used (rather than just one type), and other methods are used together with noise. All bird species become habituated to noises.

Automatic propane cannons can be effective for up to 10 days, especially if there isn't much vegetation to muffle or block the sound. Be sure there isn't dry vegetation close by (fire hazard). They are controlled by a timer, and can be left unattended. They can really annoy neighbors (and you!). If you plan on investing in such equipment, you may want to check local ordinances before you buy, and let the police know. We had an incident years ago when a police SWAT team was called in, because "someone was shooting". We smile about it now, but it was not funny then. Cannons have been the subject of bitter farmer/neighbor problems, and they get vandalized. Depending on features, you could pay \$350 to \$750 for an automated propane cannon, and more for one with a remote control.

Pyrotechnic devices work best on flocking species, like starlings and blackbirds. They are less effective on cedar waxwings. Some come with special pistols ("launchers") to fire them; others are fired (from the hip) from a 12 gauge shotgun with an open choke. They scare for a short time, and then birds return. They can be expensive, up to \$2 or more per shot. Upon being fired, some travel 100 yards or so, then explode (bangers). Others (screamers) emit a high pitched whine as soon as they leave the gun or launcher. Follow all the manufacturer's precautions, including using eye and ear protection!

There are some NH communities that regulate using pyrotechnic devices and propane cannons. Before making a significant investment, it would be a good idea to check on local laws. Before you can purchase bird-control pyrotechnics, you need to fill out a wildlife control statement. This is an Alcohol, Tobacco and Firearms form that is modified for agricultural users. The form is often accessible through the vendor's website.

Electronic distress calls can be very effective. Some devices can be programmed to play several different species of distress calls. This variability improves their effectiveness, both by delaying birds getting accustomed to them, and by widening the number of bird species they will deter. Some models have multiple speakers con-

nected with long wires, and can randomly rotate the calls to come from different speakers. Many are powered by a car battery, and some have a solar panel to recharge the system. You could pay \$200 to \$3,000, depending on the features. To a degree, any bird distress call will deter a number of species, but species-specific calls can be better. I have more information in a new publication I'm writing on bird management in fruit. I'll have details later this year.

Will You be Ready for Apple Maggot?

Depending on what apple varieties you grow, where you are, and how many apple maggots are flying, your fruit could be vulnerable to apple maggot as early as July 1st, and as late as September 15th. The period of highest vulnerability varies from orchard to orchard. Many years ago, growers handled the problem by simply spraying the trees with protective insecticides for the entire summer! Today I recommend monitoring with traps, and applying insecticides only when the numbers are high enough.

Traps should go up about July 1st. Although there are other options, I prefer the unbaited (i.e. no scent) red sphere traps. Yellow rectangle traps are available, and are inexpensive. They last about 2 weeks before you have to replace them. It is easy to identify apple maggot flies on them, because the black wing bands (see below) contrast well with the yellow color. One disadvantage is that they blow very easily in the wind, and slap their sticky stuff on whatever is in reach. They work fairly well if hung properly.

Red sphere traps last all season (you often have to scrape off the thick layer of insects and re-apply sticking agent halfway through the season). They don't blow around much in the wind, and are very effective if hung properly.

How to Hang AM Traps

Hang them under a branch that is firm enough to take the weight. Place them fairly close to the branch, but not obscured by vegetation, and not deep in the interior of the tree. If you can have some fruit within 18 inches to the side or below, that greatly improves effectiveness. I place them around head height. Placing them higher sometimes results in higher catch, but makes it difficult to check. The most important factors to remember, regarding placement are: 1) traps must be highly visible. 2) traps must be highly visible and 3) the traps must be highly visible. Any questions on that?

I always mark the trees with traps by tying bright plastic flagging nearby. I have learned to keep it far enough away that it can't reach the trap, and get tangled on the sticky surface.

If you controlled AM fairly well last year, keep most traps along the periphery of the orchard, since your AM flies will be coming from outside the orchard. If you did have AM problems last year, you may need to place several traps in the orchard interior. I place traps by variety as well. A trap or two in your earliest variety(ies) is a good idea, since it will attract flies earlier than others, and be susceptible earlier, too. Varieties that I know are very attractive and/or very commonly damaged here in NH include Red Astrachan, Lodi, Cortland and Delicious. The latter two might be more heavily infested than many varieties because some growers stop spraying too soon. In general, early varieties are attractive early in the season, and late varieties are attractive later.

Threshold for Apple Maggot

The point where it is good to spray and insecticide is a cumulative average catch of 1 or more flies per trap. This is for unbaited traps. If you've bought the traps that have little scent capsules, results are much more variable (that's why I don't prefer them for monitoring), but I usually recommend a threshold of 5 to 7 per trap. There's

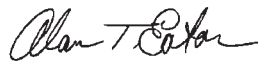
more to consider. If your catch goes over threshold during July, usually I don't consider varieties that ripen with or after McIntosh to be vulnerable then. I think of July as when early varieties are vulnerable. If you have LOTS of flies, then you might need to revise the "not vulnerable now" idea. I suggest you check traps at least once a week, and write down the results. That way, they'll help you in future seasons, as well as this one.

Apple Maggots Have Distinctive Wing Bands

You can confirm identification of apple maggot from two characters. One is that it has a white spot on the back, between the bases of the wings (see photo on the previous page). The second character is that it has characteristically shaped wing bands. All flies in the genus *Rhagoletis* have wing bands, and you can easily tell most species apart. An exception is telling blueberry maggot from apple maggot. The band patterns for these two are identical. If you are trapping in blueberry bushes, assume you're catching BM. If you're trapping in apple, crabapple or hawthorn, assume they are AM. Blueberry maggots are slightly smaller than apple maggots, but there is some size overlap. You can tell males from females by looking at the abdomen. Females have pointy abdomens, with 4 narrow white bands. Males have broad, blunt abdomens, with 3 white bands. See the wing band illustration earlier this issue, under Cherry Fruit Flies.

Some Upcoming Twilight Meetings

Wed. July 9, 2008. 5:30 - 8:00 pm. New Hampshire Tree Fruit Twilight Meeting. Apple Hill Farm, Concord, NH. This meeting was scheduled in response to a request made by Tracy Leskey. Dr. Leskey will have research projects going on at both Poverty Lane Orchard (West Lebanon), and Apple Hill Farm (Concord). Speakers: Dr. Tracy Leskey, Research Entomologist at the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV and Dr. Starker Wright, Support Scientist at the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV. For more information, contact George Hamilton at george.hamilton@unh.edu or 603-641-6060.



Alan T. Eaton
Extension Specialist
Integrated Pest Management