

NH Integrated Pest Management Newsletter

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San Jose Scale in Apples

For those of you with San Jose scale problems, the crawlers are the most vulnerable stage to insecticides, by far. Each crawler moves around for only a day or two after hatching, then it settles in a spot and starts to feed. They are most vulnerable to pesticides before they settle. This is only a day or so for each individual, but crawlers hatch over a period of 3 or more weeks. By applying one insecticide just as the first crawlers hatch, and a second 12 days later or so, we get optimal control.

How do you know when such teeny things hatch? You could just guess by the calendar. That is easy, and works moderately well sometimes. Typically, our SJS crawlers start about 5 weeks after petal fall. For a more accurate timing, you could monitor degree days. You'd have to know daily average temperatures for your orchard from petal fall for the next 4-6 weeks. Research done a few years back in NY predicts that SJS crawlers emerge at 400 to 450 DD after petal fall. The base temperature for figuring SJS DD is 50° F, the same as growing degree days. (Maybe Dot Perkins' growing degree day information would be helpful! 225-5505 Ext.23.)

There is a third way to time crawler emergence, if you don't have reliable weather information. This method requires that you locate a branch or two **that you know are well-infested with SJS**. Four weeks after petal fall, take some black or blue electrician's tape, and snugly wrap it around the infested branch, for a couple of inches. It must be snug (so crawlers won't go underneath) and **the sticky side must be on the outside**. Check this tape every couple of days, starting 4 weeks after PF. You are looking for the crawlers. They are bright yellow, oval, and about 1 mm long. They usually show up well on the dark tape. Some people prefer to wrap with sticky side inside, then place a very thin ring of Vaseline around the center of the tape to trap the crawlers. When the first crawlers are found, it is time to spray.

Be sure to remove the tape after you find crawlers. Leaving it on the branch a long time could damage the branch!

By the way, SJS problems usually arise in situations where pesticides can't reach all parts of the tree well. This could be because of very dense canopy, solid plastic tree guards (not recommended) that block spray from reaching the trunk, or insufficient coverage.

Borers in Peaches

Many NH peach growers have no fruit this year, so aren't worrying much about tarnished plant bug, stink bugs, plum curculio, or oak-hickory plant bugs. Insects that **should** remain on your

worry list are borers. Lorsban EC trunk sprays are quite effective on borers, even when applied early in the year. White paint (mixed with water, as listed in the New England Pest Management Guide) can help deter borers, as can good weed management (keep trunks clear of weeds). Another tool to consider is removal of prunings. Peach bark borer may survive in significant numbers in your prunings, if you just leave them on the orchard floor, or chop them. Burning, burial, or removing them far, far away will help ensure that the tiny oval beetle doesn't build up in your planting.

Thinning

No, I don't know enough to advise you if you still have thinning questions now. We discussed thinning at the May 25 twilight meeting; I hope John Clement's comments there were helpful. You could check Healthy Fruit (Umass fruit newsletter) or Renee Moran's newsletter (U Maine) if you wanted more details on thinning. Renee says they are doing some testing of MaxCel, the new thinning agent, this spring.

What little I remember about thinning was that the weather shortly before thinning REALLY affects effectiveness of the material. In cool, cloudy weather, foliage has thin cuticle, so thinner sprayed on leaves will penetrate much more readily than it would if we had a bit of sunny weather first. The current New England Apple Pest Management Guide has a LOT about thinning on pages 145 to 150.

Is Apple Scab Primary Season Over?

For those of you who have been monitoring apple scab degree days in your orchard, primary scab season should be over after you have passed 900 scab DD and then you've had a daytime rain. For some growers, that point was reached by last Tuesday's twilight meeting. For those of us south of the lakes region, it looks as though primary season is over. We had daytime rain on the 26th, 28th, and June 1st, with sunny weather between. That tells me that primary season is likely over even for many growers in the lakes region. In other words, its done for the vast majority of NH orchards.

That brings up the next point. If you missed protecting leaves for any of the spore infection periods up until now, the lesions are becoming visible. For most of us, checking now would be a good idea. For those sites where primary season JUST ended, you might want to wait a few more days before final checking. (Scab lesions require about 10 days to become visible.) Instructions for counting (and what to do if you have too many lesions) are on pages 16-17 of the New England Apple Pest Management Guide.

The guide also has excellent color photos of scab lesions, including young ones. Color figures 6-13 are of scab, while 1-5 are things that might be confused with scab.

Growing Degree Days

Growing degree days are computed with a base of 50° F. Dot Perkins (Merrimack County Extension Office) has been monitoring GDD. If you are interested in checking, she gives an update each week for several sites in Merrimack county, plus the seacoast. Call anytime. The number is 225-5505, extension 23. She updates the message on Tuesdays.

Potato Leafhopper

I haven't found any yet, but I plan to keep eyes open in the next two weeks or so, as I do field work. Potato leafhopper usually flies into NH some time in July. On apple, adults will be mostly found on shoots and suckers. I'll try to check alfalfa, a favorite crop. No, this insect does not survive NH winters. It moves in from the south, aided by winds and frontal systems. PLH looks yellow-green, and adults (the ones we'll see are adults, since they've just flown in) have white marks on (and just behind) the head. You'll need a hand lens to see these marks. White apple leafhoppers are whitish-green, with no white marks.

Plum Curculio

Yes, plum curculios are quite active now. I found plenty of evidence of them over the weekend. As I write this, cool, cloudy weather is headed here again, and that will slow curculio activity somewhat. With so much cool weather this curculio season, I would not be surprised to see it extending longer than usual. I'll try to keep abreast, and advise you of my findings in the newsletter and the fruit pest update telephone. For now, the insects are active.

Leafminers

If you didn't set out traps for leafminer adults, you have another option to see if there are enough leafminers to warrant an insecticide treatment. Look at the undersides of leaves for the sap-feeding mines. For this first generation, I'd especially look at cluster leaves, since they were the first ones out, when the moths were laying eggs.

If you find 13 or more mines in 100 leaves, that would be enough for me to consider treatment on McIntosh, which is quite sensitive to leafminers. If I were planning on using ReTain on my block, I'd raise the threshold to 26 mines in 100 leaves. For varieties other than McIntosh, I'd follow the 26 mines per leaf threshold.

The critters will be vulnerable to treatment so long as they are in the sap-feeding stage. This is when the mines look slightly silvery. Once they advance to the tissue feeding stage, they are VERY hard to kill. The tissue feeding stage is characterized by puffing out of the mine, and white spots becoming visible on the upper leaf surface, at the site of the mine.

I was planning on checking trees here on Friday, but the orchard had just been sprayed with insecticide. There is still time to count. Pesticide options include Esteem, Provado, Intrepid, Lannate, and Spin-Tor. The latter must be used with a penetrating surfactant, to be effective. I forgot to mention that Assail is also registered for this purpose, but I don't know how effective it is, compared to the others. (I haven't seen any data)

Time to Mow!

Now that primary apple scab season is over, we can mow the grass that is growing tall in response to the monsoon weather we've had. Mowing will help prevent meadow voles from building up too far (exposes them to predators). Keeping the vegetation from shading the lower trunk is also helpful to reduce borer problems.

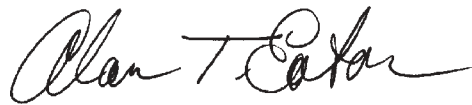
Roundheaded Apple Tree Borer

June is when we expect RHATB's to begin emerging. They can remain active all through July and August, laying eggs. Organic orchards are most vulnerable, especially if there are plenty of wild hosts (apple, hawthorn, shadbush...) nearby. Trees that have trunks partially shaded, hidden by orchard floor vegetation, seem to be highly preferred. The beetles spend a lot of time in the canopy, so when we spray for leafminers, curculio, or some other insects during borer time, we are probably getting some protection from borers as well.

White interior latex paint, thinned 50:50 with water, and sprayed on lower trunk is a deterrent. I think you know that Lorsban EC spray on the trunk is very effective, with only a single treatment.

If borers get past your defenses, you can "hand worm" a little later in the summer, using a flexible wire. It is a bit labor intensive, but it does work.

By the way, did you know that the type of pellets gives a clue to identification of the borers? Tiny orange-brown pellets suggest apple bark borers. Larger, coarse stuff suggests either flatheaded or roundheaded apple tree borer. FHATB especially likes to lay eggs on the sunny side of trunks that are strongly leaning. Well, that's enough for today.



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