

NH Integrated Pest Management Newsletter

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Volume X

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Fall Webworms are Here

The first of the webs of fall webworm are visible now. They are quite small now, but will get larger. New webs will keep appearing over the next 3-4 weeks. They hit many tree fruit, also blueberries and many forest trees. If you are an orchardist using an air-blast sprayer, you may find that FWW is hard to control. A coarser spray, more dilute application, and a wetting agent are possible aids to improving effectiveness of your insecticide. Remember that Dipel and other caterpillar-strain B.t. products work fairly well, IF you can cover the foliage the caterpillars eat.

Flagging Fire Blight Strikes

This I mentioned in last week's Fruit Pest Update telephone message, but it is worth repeating. Some fire blight experts think it is best to just mark the strikes with flagging, and remove them later, during the dormant season. Or, some suggest the ugly stub method, where you prune out during the growing season (sterilize after each cut!) and leave an "ugly stub" which you prune again during the dormant season. I'm surprised how many dead stubs I missed during my winter pruning, so I'd definitely benefit from visible markers as reminders.

Keeping Orchard Well Mowed

This really helps prevent buildup of vole populations. Foxes, coyotes, cats, dogs, weasels, skunks, hawks and owls will do the controlling for you, if you make their hunting easier by keeping things mowed. **Keeping vegetation away from the trunk** (so that it is exposed, sunny) is a significant deterrent for roundheaded apple tree borers. Keeping tall weeds from reaching the lower branches is a major deterrent to European corn borer problems in apples (sometimes bore down new shoots). And last but not least, think of the pride in having your orchard look nice enough to show off!!

Apple Maggot Situation

Captures in the Durham area are about what I usually find, so far. At the Kingman Farm, AM flies have been regularly caught since July 7. That site has no recent insecticide use, so the flies emerge from the soil right under the trees where they fed last summer. Numbers are fairly high, start early, and should extend late in the season. My one trap there this year has taken 17 flies as of Saturday, July 31st.

At the Woodman Farm, the first fly appeared in traps on the 26th, and on the 31st counts were well above threshold. We trapped a cumulative total of 2 per trap—high for us.

Over the years, I've discovered that varieties that mature with or after McIntosh can usually get by without treatment until August 1. After that, if AM numbers are above threshold, it is time to treat.

What if I have to Spray? Do I Start Counting AM Again?

Yes. If you use an insecticide that has a long residual action (like Imidan or Guthion), then keep recording the flies you capture, but discount any for the next 12-14 days after treatment. Then start counting toward your threshold (cumulative catch of 1 per unbaited red sphere trap or more) again. If something with short residual activity was your choice (like Sevin), then discount any catches for 7 days after treatment, and then resume counting toward threshold.

It Helps to Keep AM Traps Clean

If AM traps become just covered in insects, the trapping efficiency goes way down. I often clean traps midway in the season, to be sure they are doing their job correctly. I used to use a pot marker stake, but Ron Prokopy showed me that a curved piece from a milk jug works even better. I just scrape off most of the junk, then apply more tangletrap. I use an old junk magazine to hold the wiped off debris.

X Disease Checking Is Easy Now

X disease is a fatal disorder of peach trees, caused by a phytoplasma. The organism is vectored by certain leafhoppers, none of which have common names. The most important is *Scaphytopius acutus* Say. How does it become a carrier? Funny that you should ask. It acquires the phytoplasma by feeding on infected choke cherries.

The primary line of defense for X disease is prevention, and the most important aspect of prevention is finding and eliminating all infected choke cherries within 500 feet of your peaches.

Choke cherries that are infected by the X disease phytoplasma stand out in late July and very early August. They are almost the only shrubs/trees with yellow-green or bronze foliage now. You can check out a good tree identification guide if you are unsure as to how to identify choke cherry. I'll give you a couple of characters that help distinguish it from black cherry, which is not an X disease source.

Black cherry (*Prunus serotina*) leaves have teeth at the leaf edge that are rounded off. Black cherry also gets to be a large tree. The fruit have an expanded cup at the point where stem meets fruit, so they look a but like tiny eggplant fruit.

Choke cherry (*Prunus pensylvanica*) is a shrub, rarely getting to be a small tree. The edge of the leaf has fine, pointed teeth. And the fruit don't have that cup where they join the stem — they look just like cherries.

While it might be a good idea to eliminate any choke cherries within 500 feet of your peaches, you might get by just eliminating the infected ones. By the way, X disease does not spread from peach to peach.

Leafminers on Apple

It is too late now to get effective control of spotted tentiform leafminers or apple blotch leafminers in NH apples. The larvae are susceptible to insecticides while they are in the young (sap-feeding) stage. Now, most of them have advanced past that point. There will be a third generation that flies in late August and September, but we never recommend treatment then for two reasons. One is that it is too

late then to stop injury that could result in fruit drop. A second is that the last generation is usually heavily parasitized, something we want to encourage. If you have had significant leafminer problems this year, mark your calendar in February to buy a few leafminer traps, to make decision-making easier next year.

Other Apple Leafminers

I don't want to confuse things too much, but there are two other common leafminers that we see on NH apples. It is rare for one to be a problem. One is apple leaf trumpet leafminer. The mines start as narrow, sinuous trails, and then expand into a blotch that turns brown. The other is apple leafminer, which restricts itself to leaves on shoots and suckers. When done feeding, the larva spins its case in a hammock of silk that is attached to the underside of a leaf. Don't bother to spray for either of these, unless you are really inundated. Let the parasites do the work.

Potato Leafhopper Injury

Many UNH apple trees show some PLH injury on shoots and suckers now, but the insects themselves are hard to find. That is typical. The injury stays visible for a long time, while the adults are mobile. Honeycrisp foliage often shows a yellowing that you might mistake for PLH injury. Don't make the mistake of spraying for a pest that isn't there!

Mites on Apple

Cheryl will include this month's mite sampling chart on the last page, in case you want to carry it into the field. The instructions haven't changed. It really does help to follow the counting procedure, when considering a mite spray. I'm a bit surprised to find more mite injury at this point in the season than I would have expected, based on the weather. It has been so cool, why have we got mite hotspots? Well, I don't know!! I do wonder if the very cold early winter temperatures may have killed a higher than average number of our predator mites. This year, for the first time in my memory, we have had to spray a miticide in the apple IPM block. (I suppose that could just show how poor my memory is!)

Plum Curculios Soon

No, this isn't a joke. No, you shouldn't need to spray. In mid or late August, the new adults of plum curculio emerge from the soil. They may do a little bit of feeding on fruit, before moving to overwintering sites in September. If some curculios got through your defenses this June, you might see an adult or two in August.

Pith Moth Larvae Susceptible Now

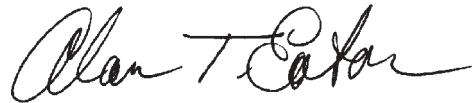
There aren't many of you who have significant numbers of apple pith moth, but for those who do, the first few days of August (roughly 1 week?) are when many eggs hatch and the larvae bore into the new shoots (before they get too woody). Once inside, they are pretty much untouchable by insecticide. A few emerge to the surface, to feed on new shoots at about the pink stage, which is a second vulnerable time. There is just one generation of pith moth a year.

Aphid Predators Abundant

Mid summer is usually when our aphid predators are usually the most abundant in orchards. We have many. The bright orange maggots that are feeding in aphid colonies are larvae of Cecidomyids. The adults are very tiny, delicate flies that find the aphid colonies by smell. Cecidomyids are very susceptible to most insecticides. Syrphid fly maggots are also present. They have a mottled appearance, and can be yellow, tan, brown, or green. There are several species, and the adults are called hover flies. They feed on nectar and honeydew. Chamaemyid larvae are also present. They are usually yellow, and you need some magnification to tell them apart from syrphid fly larvae. They are called "silver flies".

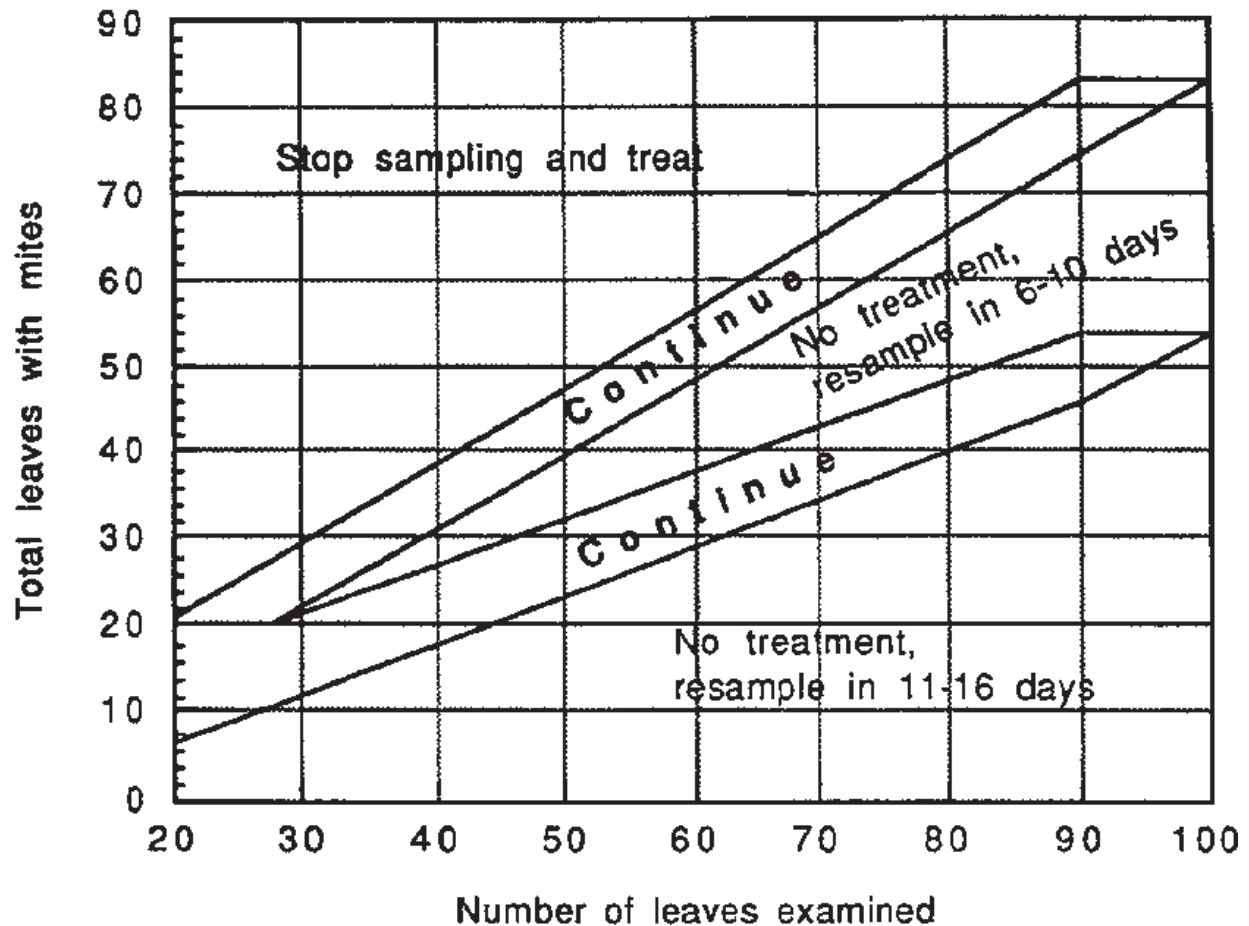
When Kevin Tracewski did his Master's thesis work on predators of aphids in our orchards, ladybugs were so uncommon that they were only briefly mentioned in his thesis (1982). Today, multi-colored Asian ladybug is a common predator in orchards, sweet corn, and other NH plants. The larvae are elongated, with black and orange forked projections down their backs. Unlike the other predators I mentioned, ladybugs feed on aphids as both larvae and adults.

There are also quite a few **parasites** that attack our aphids. They are so very small that it can be difficult to see them. One species is largely responsible for keeping our woolly apple aphids under control. Others specialize in rosy apple aphid, or other species. Aphids that have been attacked by parasites become rigid, hollow things called mummies. Some turn a tan color. When the tiny parasite wasp emerges, it cuts a neat, round hole in the body, and leaves. Stranger than science fiction!



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Mite Sampling Chart - Threshold = 7.5 mites/leaf (August 16 - September 1)



- This procedure involves examining middle aged leaves for motile mites (any stage except eggs). Use this chart, which corresponds to a mite density of 7.5 mites per leaf, from August 16 until September 1. You will not be counting mites, but will only determine whether they are present or absent on each leaf sampled.

- Starting with a random tree and sampling every other tree, collect 4 leaves in a plastic bag from each of 5 trees, choosing from each quadrant of the canopy. To make sure the leaves are of intermediate age, pick them from the middle of the fruit cluster or foliar terminal.

- Using a magnifier, examine the top and bottom surface of each leaf for motile mites and keep track of the number of leaves containing motile mites. When all 20 leaves have been examined, compare this number with the decision lines on the above chart. If you are in either of the "Continue" zones, take more leaf samples in batches of 10 (5 per tree, for simplicity), adding the number with mites present to your original value while checking the chart again. Continue until you have passed out of the "continue" zone to arrive at a decision. If you reach "Stop sampling and treat", the population is above the threshold and a miticide application is recommended. If you reach one of the "Resample" zones, the population is below threshold, and should remain so for at least the number of days stated. Return at the designated time and conduct another sample. If the resample date falls after September 1, there should be no further need for additional samples or miticide sprays this season.

Modified from: Apple IPM; A Guide for Sampling and Managing Major Apple Pests in New York State. Agnello, A., J. Kovach, J. Nyrop, H. Reissig, W. Wilcox.