



NH Integrated Pest Management Newsletter

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Last Issue This Season

Most of my audience gets too busy to read a newsletter, if I write one in late August or September, so this is the last issue planned for 2007. I'll plan on recording a fruit pest update every week (862-3763) until mid-September.

Feedback From You

It is time to hear from you, regarding this newsletter. I'm interested in getting feedback from readers, so I can evaluate how effective this is, and whether or not I'll continue. By following the link below, you will get to an evaluation form I wrote for this newsletter. It should take a short time to fill out, then press the submit button. Please let me know what you think. I'm trying to make the newsletter useful!! Here's the link: http://cecf1.unh.edu/formbuilder/forms/form171_Nwslet07.htm

Apple Insect Events in Summer

We have second (in some cases, third) generations of both white apple leafhopper and potato leafhopper, codling moth, lesser appleworm, redbanded leafroller, and tentiform leafminers. Japanese beetles sometimes injure leaves (or ripe fruit of summer varieties). European red mites build up, especially in warm, dry weather. Apple maggot adults are active well into September.

Don't Forget about Sooty Blotch and Flyspeck on Apples

Research in North Carolina proved that flyspeck infections on the fruit become visible after 270 hours of accumulated wetting after petal fall (I'll shorten this by using David Rosenberger's abbreviation for this: hawapf). Since the non-apple hosts need 270 hawapf to produce lesions (and spores), and then 270 more are needed for infections from those spores to become visible on apples, that means most apple infections don't become visible until 540 hawapf. In the last issue I reminded you that that probably occurs roughly mid- August. If the amount of rain (or dew periods) from then until harvest accounts for another 270 hours, then we'll get a third cycle of disease. The amount of disease can dramatically jump with each cycle. See my last issue for more details.



Leafminers: Hands Off the Third Generation!

I do not recommend applying insecticides for spotted tentiform leafminers or apple blotch leafminers in late August or September. Yes, sometimes there are a lot, but it is too late; damage has already occurred. In addition, the third generation is heavily attacked by parasites. The opportunities to control these were earlier in the season.

Apple Maggot Monitoring

Apple maggot flies start to fly about the first of July, and peak numbers are usually in August. In unsprayed orchards the flies can be found through the end of September. With such a long flight period, growers used to just blanket the summer with insecticides, to be sure to control this insect. The traps we use today tell us when and where flies are in significant numbers. Today we spray only when the numbers are high enough.

This year I'm only monitoring at the Woodman Horticulture farm in Durham. That site doesn't have any unsprayed apple trees close by, so usually we catch our first apple maggots about August 1st, and others slowly turn up over the next several weeks. Some years we never reach threshold and have to spray. This year we caught our first fly on a trap July 27th, a little early. On August 6 we had three more, putting us over threshold. That seems a little higher than "average" pressure for us, but I don't know what's happening elsewhere. A short ways away, in an orchard with early varieties, the pattern of apple maggot catch is always earlier.



How Many Apple Maggots is Too Many?

The threshold for unbaited red sphere traps is a cumulative average catch of 1 or more flies per trap. For baited spheres, 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. 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.

Blueberry Maggots

Blueberry maggots appear almost identical to apple maggots, but usually they are a little smaller. I haven't been actively monitoring them this year, but they may threaten through mid or late September. A common pattern (unfortunately) is that some growers never apply insecticides for this pest, nor do they monitor with traps. These people occasionally get caught with a serious problem, and no warning. Monitoring with traps (and writing down the data) provides very helpful information on the "average" pressure and time of buildup for your particular planting.

Controlling blueberry maggot with insecticides is reasonably easy, and the New England Small Fruit Pest Management Guide gives information on pesticides. Organic growers: Aza-Direct and GR-120 Naturalyte Fruit Fly Bait are among the OMRI-listed pesticides registered for blueberry maggot.

The PRONewEngland website has a recent crop profile for blueberries. You can see what New England growers said were serious pest problems, and read how the various techniques worked. Look under crop profiles on the left side of the screen. Here's the link: <http://pronewengland.org>

Mite Counting Time in Apples

The last page of this issue is a chart for counting mites in late summer. Instructions are on the form. The threshold is raised slightly, because the apple trees can withstand more mite feeding later in the season than they can early in the season.

Remember that a hand lens is usually necessary for counting mites. I use either a magnifier anywhere from 2X to 10X, plus good light. European red mites are fairly easy to spot against the green leaves, but two-spotted spider mites stand out a bit less. Remember that you're actually just counting whether or not each leaf has any motile (moving, alive) mites. You don't count how many mites are on each leaf.

Raspberry Crown Borers Fly in Late August & September



Adults of raspberry crown borer are yellow jacket mimics. They lay eggs singly, on lower leaves of raspberry and blackberry. Upon hatching, the tiny caterpillars walk down the stem and bore into the crown at or below the soil line. That's where they do their feeding, largely out of sight. The larvae are cream colored, with three sets of dark legs on the thorax, and five pairs of fleshy prolegs. It takes them over a year to complete their development, so the fully grown ones pupate in their second July. Then adults follow, in August and September.

Raspberry crown borer feeding often creates swellings near the base of the canes. They may be confused with swellings caused by rednecked cane borer. You can tell them apart by the differences in pattern of injury (ex: is there below ground boring?) and the form of the larvae.

Monitoring: Watch for signs of infestation (swellings near the base of canes, bored crowns, borers with legs in the crowns).

Suppression: Eliminate nearby untended raspberries. **Control:** If significant infestation is uncovered, apply an insecticide drench. Sniper 2E is still registered for this purpose, even though it doesn't appear in the 2006 New England Small Fruit Pest Management Guide. The label lists fall (post-harvest) or spring (pre-bloom) options for timing. I don't know if there has been success using deep-penetrating species of insect attacking nematodes.



Some Upcoming Meetings

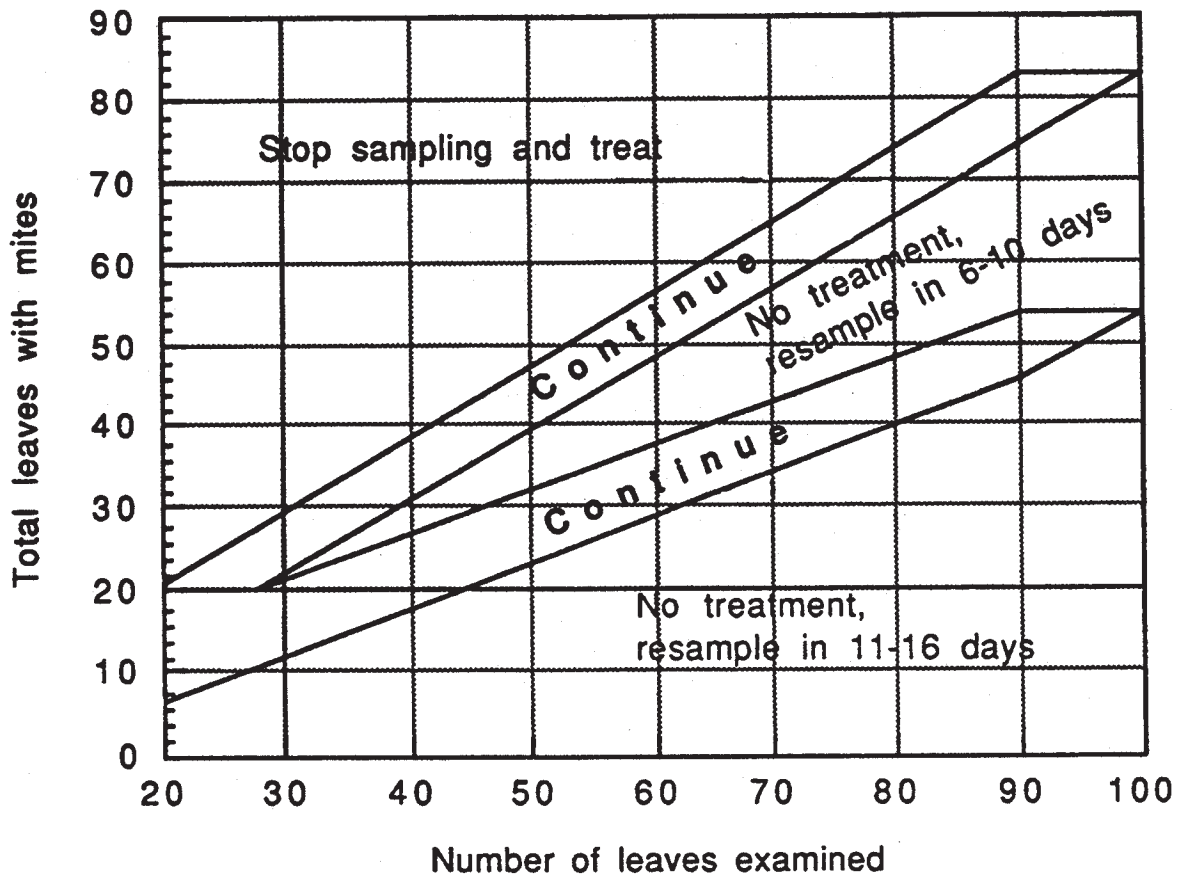
August 8 Woodman Horticultural Farm Twilight Meeting 5:30 PM. The farm staff plus research and extension staff at UNH will show some of the research there, on vegetables, fruit, and ornamentals. The Woodman Farm is located at the edge of campus, on Spinney Lane in Durham. For more information see the Cooperative Extension Agriculture Resources calendar at <http://ceftp.unh.edu/shell/webevent.pl?cmd=openical&cal=cal3>

August 10-12 Northeast Organic Farming Assn Conference, Amherst, MA. For more information see <http://www.nofa.org/conference/index.php>

August 14 Vegetable and Fruit Twilight Meeting, 6 - 8:30 pm. Dimond Hill Farm, Concord, NH. 2 PAT recertification credits have been applied for. For more information call Sadie Puglisi, Merrimack Co. Coop. Extension 796-2151, or see Cooperative Extension Agriculture Resources calendar at <http://ceftp.unh.edu/shell/webevent.pl?cmd=openical&cal=cal3>

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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.