

## NH Integrated Pest Management Newsletter

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### Leaf Testing for Nutrient Analysis

For apples and other tree fruit, the time to take leaf samples for nutrient analysis is **late July through early August**. For blueberries, the time is during the first week of harvest. For grapes, it should be at verasion. Here is the [submittal form](#) or you can visit the [soil testing web page](#) for more information. Instructions for taking a sample are on the last page of the form.

### Leafhoppers

This is a year with lots of potato leafhopper injury. In addition to attacks on apples, raspberry plantings have shown the cupped & stunted leaves from PLH attack, such as in this photo. For brambles and apples, we are well past the time when something could have been done to prevent this injury. But that's not completely true of white apple leafhopper.

Unlike PLH, WALH overwinters in New Hampshire. Late summer is when another generation occurs, and occasionally it builds up to very bothersome levels during harvest time. They can be quite annoying to pickers and



PYO customers. WALH creates different problems from PLH. WALH nymphs and adults feed on the foliage, and create white stippling of the leaves (see photo on previous page). They also defecate on whatever is below them: leaves, fruit, insect traps, or your new car. Since the late August/September generation is the highest of the year, that's when the brown poop spots are the most severe.

There are pesticides that control WALH very well (see the 2013 New England Tree Fruit Management Guide), but if you have to apply an insecticide to control these in late summer, let that be a reminder that it is easier (and often less expensive) to count nymphs shortly after petal fall, and if there are enough, use your sevin thinning spray to also control the leafhoppers.

## Spotted Wing Drosophila

On Monday July 15th we caught 20 SWD's in a single trap in the edge of the woods on a seacoast farm. Otherwise, we are still getting captures of one or two at scattered locations in ripe raspberries or blueberries. Many traps still have zero. So far, no SWD's have been trapped in NH cherries or strawberries. I expect SWD numbers to go up. I expect heavy attack will continue well into September, when pressure may go down a bit (due to cooler temperatures).

If you trap one or more male SWD's (males have the spot near the tip of each wing) in your crop, and it is ripe, I suggest you consider applying an insecticide to control the flies. As numbers go higher, control will be even more important. Coordinate trap emptying/checking with spraying: change the traps immediately before or soon after you spray. Then, check the trap 3 to 5 days later, to see if you are catching more or not. Most sprays we use should control the damage for about 5-7 days. If the catch continues past the period it has been protected, and the crop is still being harvested, spray again. The pesticide list on the website shows spray options and effectiveness. Rotate pesticides between different modes of action, so resistance is less likely to develop.

Remind your customers to refrigerate or freeze the fruit (SWD-vulnerable types) they pick but do not use immediately.

## Apple Maggot

I saw my first apple maggot fly this year on June 30th. At UNH, we set out our red sphere traps on July 5th, the usual time for us. The pattern of attack at the UNH Woodman Farm almost always begins in late July or early August. In an orchard barely 1 mile away, attack usually begins three weeks earlier. So I was quite surprised when we saw two AM flies on our traps July 16th. That's early for us at Woodman Farm. The flies are about 5-7mm long (roughly 3/16 inch), with black bands on the wings, and a white spot on the thorax, between the bases of the wings. If you catch an average of 1 AM fly or more per trap, it is time to apply an insecticide to protect your apples.



There is a wide range of products, and control is usually easy. The challenge is knowing when to start and stop. That's where the traps come in. Pesticide options are covered in the 2013 New England Tree Fruit Management Guide.

## Retain Application on Apples

For those of you planning on reducing fruit drop, improving color and other benefits, the time to apply the plant growth regulator Retain is **four weeks before the anticipated harvest date**. For many growers, McIntosh is the variety they treat, so the application time is getting closer. Be ready. There are label warnings about the appropriate weather conditions to apply it to get the correct effects.

## Mites in Apple Trees

Mid and late summer are when apples can usually withstand the highest numbers of twospotted spider mites and/or European red mites. Rainy weather usually slows down mite buildup. It may be from two effects: raindrops sweeping mites off the leaves, and high moisture levels encouraging mite-attacking fungi. Hot, dry weather is ideal for the buildup of these species. Predator mites are involved, too. They eat the plant-feeding mites, and slow down the population increase in the plant feeder species. At the end of this issue is the mite sampling chart for late summer. If you think your trees might require treatment, use the chart to count and find out. It may save you a lot of money!

## Wasps & Hornets in Orchards

As we get into peach harvest, wasp & hornet problems go up. It continues into apple harvest, and can be a serious problem for some pick-your-own growers. One threat comes from numerous yellow jackets, wasps, bees and hornets feeding on the over-ripe fruit that drop to the ground. Bees are the least of the problem, since they tend to be relatively docile. Yellow jackets and bald-faced hornets are the more serious threats, since they are aggressive stingers.

A second type of threat is from nests of yellow jackets and bald-faced hornets. These are especially dangerous, since the insects defend their nests from disturbance, and there can be hundreds of defenders in each nest. Some people are highly allergic to stings. The paper teardrop shaped nests are the easiest to locate. Most species of yellow jackets have underground nests, and they are much tougher to spot. If you have a pick-your-own block, it is especially good to locate and eliminate these threats relatively early - July or early August if you can. If you do it later in the season, the colony is much larger. They seem to become especially aggressive after a frost or two.

For both types of nests, the way to eliminate them is the same, and I describe it in more detail in my fact sheet [Controlling Wasps, Bees & Hornets](#). Basically, you clearly mark the entrance, so it can be found at night. I use two white sticks, pointing like arrows. Then return 2-3 hours after dark, with a can of wasp & hornet JET spray. The word jet is important. It means the can shoots a solid stream of material, 10 feet or more. Spray directly into the opening for at least 2-4 seconds. Then walk away immediately and stay away. For a ground nest, I bring a second piece of equipment: a coffee can full of sand. After spraying, I immediately dump the sand over the entrance, to hold the spray in and prevent escape. Sometimes I bring a flashlight to aid the work, and sometimes I wear tall rubber boots. Yellow jackets have a harder time stinging me in the ankle area if I wear them. **IF YOU ARE ALLERGIC TO STINGS, DO NOT DO THIS OPERATION YOURSELF!** Occasionally it takes more than one treatment to knock out a nest.

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Controlling the wasps on dropped fruit in the orchard? I'm often asked if an insecticide might be used for that. Perhaps you might find one that would work and be legal, but there are several problems. One is re-entry time for your pickers. Another is avoiding hitting fruit on the tree. A third is that bees also readily feed on dropped fruit, and spraying the drops could kill many bees. Instead of spraying, I'd consider trying to pick up and destroy the fruit (very early on a cool morning is best), or just tolerate the problem.

## Redhumped Caterpillar and Cecropia Moth

In late summer each year I get at least one report of each of these caterpillars eating apple foliage. Redhumped caterpillar is the smaller of the two, and it is gregarious. You rarely find just one or two. Usually it is one to five groups of up to a dozen caterpillars each. They eat the leaves, but leave the chewed-off midribs behind. A group of them can remove a lot of leaves. Spot-spraying with a *B.t.*-based insecticide is one remedy, and you could always try one of many chemical insecticides.



Cecropia moth is one of our native silk moths. Their light green caterpillars get huge... almost 4 inches long. Something that size ate a LOT of leaves to get that big. Like the redhumped caterpillar, the larvae tend to leave the midribs behind. It is susceptible to both chemical and *B.t.*-based insecticides. Usually I find caterpillars of this species scattered here and there. The moths lay eggs singly, so groups are rare. By the way... spraying for them when they are huge isn't the best idea. They've already done most of their damage. But if they're on a small tree, I'd want to stop the damage. Picking the caterpillar off and

throwing it into the woods would stop the damage to your tree, and not involve toxic sprays. The moths are huge and beautiful, but are missed by most people because they fly very late at night.

## Yellow-necked caterpillar --- Blueberries

My first specimens of yellow-necked caterpillar (photo actually) came in this year on July 15th. The eggs are laid in masses, and the caterpillars stay in groups. They have lengthwise yellow lines and white hairs. When disturbed, they lift both the head and tail ends of the body off the substrate. Since these are often found during harvest time, my favorite treatment is one of the *Bacillus thuringiensis* sprays, like Dipel. You have to spray the vegetation they are eating. Spot spraying the affected bush with a hand-held sprayer is usually the best control method, but if labor is not an issue, I suppose you could hand pick them.



## Food Safety Modernization Act --- FSMA

If you are a USA commercial grower of crops that people eat, you really should take time to familiarize yourself with the proposed federal food safety regulations being proposed. They will have MAJOR impacts on you as a producer. The period for submitting comments to the regulators has been extended until September 16, 2013. So this is your chance to let them know how what they propose will affect you. After that, we expect no more comments will be considered, before they finalize the rules. A series of meetings (see below) has been set up, to discuss the situation. Additional information is available on the [UNH Cooperative Extension Food Safety Modernization Act webpage](#).

### Fruit-related Meetings

Saturday July 27. [Carroll County Farm Day](#), 9AM to 3PM, Carroll County Farm, 30 County Farm Road, Ossipee, NH, 03864

[Preserving Your Harvest](#). I haven't been listing these, but there are sessions teaching this all over the state. The coming dates are:

[Aug 5th](#) - 10AM to 12PM, Granite State College, Concord

[Aug 6th](#) - 9 to 11AM, Local Works, Berlin

[Aug 6th](#) - 6 to 8PM, Rockingham County Nursing Home, Brentwood

[Aug 15th](#) - 5:30 to 7:30PM, Merrimack County UNHCE Office, Boscawen

[Aug 19th](#) - 9:30 to 11:30AM, UNHCE Belknap County Office, Laconia)

More details are on the [events calendar](#) of our website.

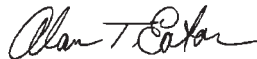
[FSMA Meetings](#). There is a series of meetings that Cooperative Extension has set up, regarding the Food Safety Modernization Act, and what fruit and vegetable growers should know. They are:

[Aug 5th](#) - 6 to 8PM, Cooperative Extension Office, North Rd, Brentwood

[Aug 6th](#) - 6 to 8PM, Merrimack Co Cooperative Extension Office, Boscawen

[Aug 8th](#) - 6 to 8PM, Grafton Co Cooperative Extension office, North Haverhill

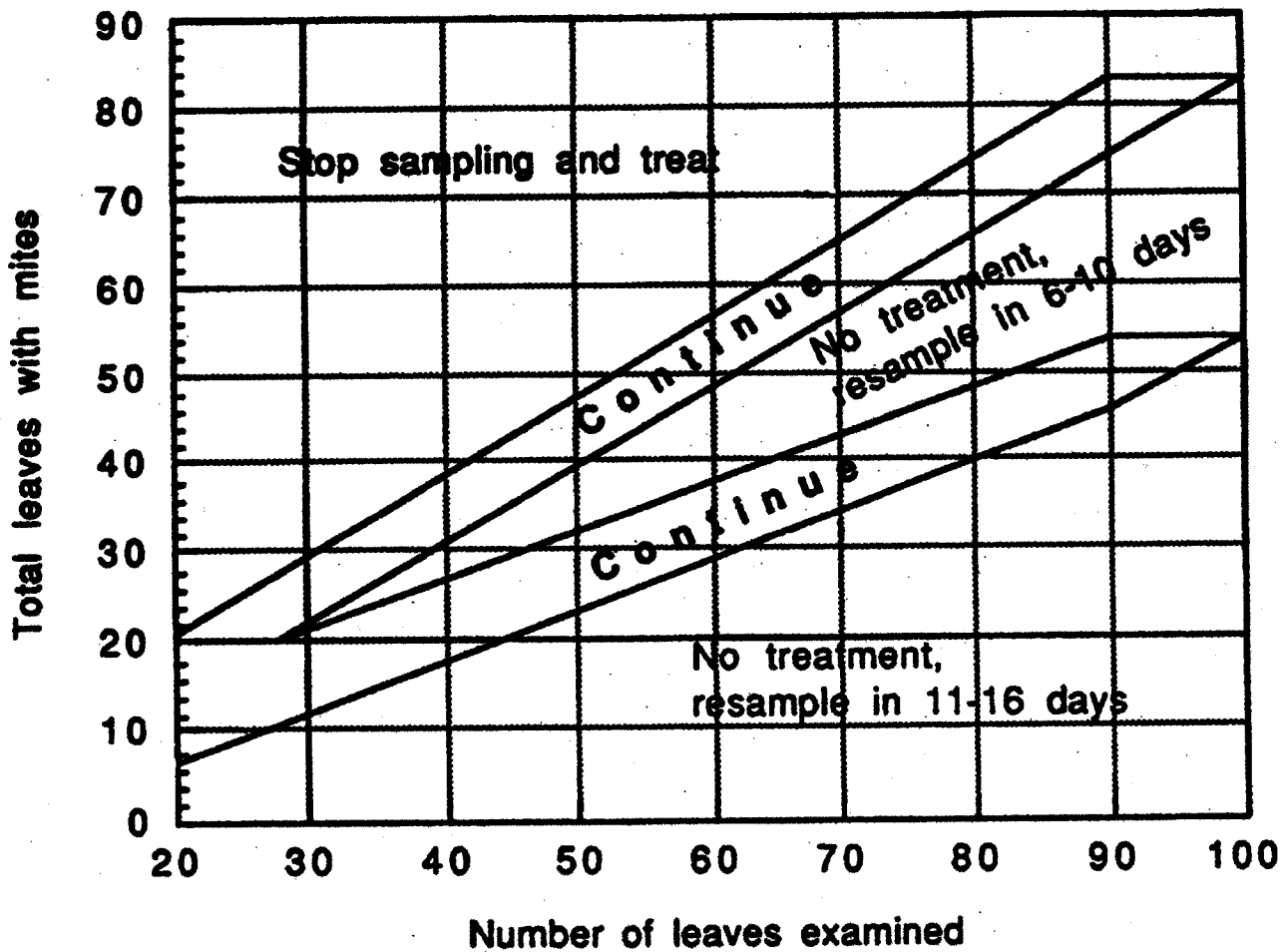
More details are on the [events calendar](#).



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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.