



NH Integrated Pest Management Newsletter

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Volume XII

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Late Start for Newsletter

I have been so very busy with Eastern equine encephalitis work and grower meetings that this is quite a late date for the first newsletter. Usually it is dated April 1st. My apologies to those of you who wondered where it was!

Fruit Pest Update Telephone

The FPU has begun on time, and as usual, I am recording new messages every Tuesday. Message #4 is on the system as I write this. The telephone number is 862-3763, and I cover the current fruit pest situation, plus upcoming meetings. The equipment runs continuously and automatically answers any time of day, so call when it is convenient for you. I'll keep it up until some time in September.

Tarnished Plant Bug

TPB's overwinter as adults, so they feed on buds anytime we have a warmish day. Right now they are probably most active on peach and apple. On apple, any injury done before about tight cluster stage results in death of one or more individual florets within the bud. After tight cluster stage, feeding results in scabbing or dimpling that shows up on the fruit. On peach, there is a similar pattern. My white sticky traps haven't picked up any adults yet, but I only have two, and we tend to have low TPB populations at the Woodman Horticulture Farm. It might also be that numbers are lower this spring. I don't have enough observations to tell if that is the case.

Thresholds for TPB on Apple

Thresholds for TPB catch are a bit complicated, because there are two options for decision times, and two general targets for fruit quality.

For growers who have a strong market for #1 fruit, I suggest a threshold of 5 TPB's caught per trap from silver tip to tight cluster. If you haven't reached threshold by TC, you could wait and look again at pink. An average of 8 or more per trap by pink would warrant control.

For growers who want to market extra fancy fruit, the corresponding numbers are 3 and 5 per trap. I expect TPB numbers to be higher in blocks with large acreage of alfalfa or fallow fields nearby. Those are good places to produce lots of TPB's. I'd expect lower numbers in blocks that are surrounded by woods. Warm weather really causes an increase in TPB activity.

If numbers cross the threshold, it is worthwhile to treat. The New England Apple Pest Management Guide lists options. There are quite a few choices for insecticides.

Spotted Tentiform & Apple Blotch Leafminers

STLM and ABLM overwinter as pupae in dead apple leaves from last year. The adults are emerging now, and the easiest place to find them is low on the trunk, on the South or Southeast side.

That is where it is warmest. Adults fly around dusk, and rest during the day. Soon the females will be laying eggs on the opening leaves. When I checked my LM traps on April 18th, none had appeared yet (in Durham), but they should be flying now. The adults are tiny (3-4mm = 1/8 inch) grayish moths with white or silvery markings. Once they've been stuck to your sticky trap for a week or more, they turn black, and are hard to identify. That's one reason it may be wise to check the counts (and write them down) a couple of times.

How many moths are too many? For McIntosh, a cumulative average of 4 or more per trap (from silver tip through tight cluster) is enough to warrant control. If you leave the traps up through pink, the threshold is 9 or more per trap. McIntosh is very sensitive to leafminer injury, which is why the threshold is so low. **For all other varieties**, the figures are 8 moths (ST through TC) and 21 moths (ST through Pink).

There is one more complication. If you plan on applying RETAIN to your McIntosh trees, you can use the same threshold as for the other varieties. McIntosh often responds to LM injury by dropping its fruit, just as you are about to begin harvest. Retain counteracts this tendency, so we adjust the threshold accordingly. If the numbers you catch are at or above threshold, it tells you that it is worthwhile to treat your apple trees for leafminers this spring. There are many options as to when to treat and what to use. Read below.

Pesticide Options and Timing for STLM & ABLM on Apple

There are several pesticides that could be applied early (tight cluster or pink stage). Examples include Esteem, Intrepid and Vydate (yes there are more). During bloom the moths are flying and laying more eggs, but I do not recommend spraying leafminer insecticides then, because it could seriously deplete populations of honeybees and wild bees that we depend on for pollination. At petal fall stage (or after), choices include Lannate, Intrepid, Agri-mek plus oil, Spintor plus penetrating surfactant, Provado...

Green Pug and Winter Moth

Both of these moths have caterpillars that attack apple early (now!) and are tiny greenish inchworms. Green pug larvae usually have a dark red-brown line down the back when they are fully grown, but that isn't visible on younger ones or some of the older ones. They REALLY like to eat the pistils and stamens of flowers, so high numbers can reduce fruit set. In Nova Scotia, they have set a threshold of 6 or more larvae out of 100 fruit clusters.

I don't have a photo that I am certain is winter moth, but anything that looks like a green fruitworm (but is a looper/inchworm) is a suspect. They may be found in the seacoast, but probably not too far inland (yet). The



following photo is from Heather Faubert, and might be WM, but might be green fruitworm. You can't really tell from the angle of the photo. Notice how small the critter is early in the season. As they get larger, they eat more foliage, and they can begin to chew on the fruit. Green pug doesn't do this (because it completes its feeding during bloom).



Apple Scab Situation

You can follow degree day information in your own orchard, or use information from UNH Cooperative Extension's website, to follow scab degree days. SDD's have a base of 32F, and computations begin at the silvertip stage. For Durham, that was April 3rd. As of Monday April 24th, we had accumulated 309 SDD's in Durham. That puts us in the accelerated phase of (apple scab fungus) ascospore maturation. With increasing amounts of green tissue available to attack, this is a high risk period for apple scab infection. Daytime rains are the worrisome periods, and this will remain a significant threat until we begin to run out of spores from last year's dead leaves.

Cedar-Apple Rust and Quince Rust

Rust fungi also threaten apples now. We have two types: quince rust and cedar-apple rust. Many apple varieties are resistant, so this isn't as high a concern as scab, for most growers. Rust diseases switch back and forth between two hosts. This means that you **MUST** have both hosts present, to get infection on either. Rust lesions on apple **WILL NOT** infect other apples. For quince rust, the key alternate host is common juniper. During rainy periods now, juniper branches that are infected will show fleshy orange projections that release the spores. They are really easy to spot from a distance when the telial arms are out.

Cedar-apple rust hits red cedar, and the galls are round. They also have orange fleshy telial arms when they get soaked by rain. Pink to bloom stage is usually the period when these galls shed the most spores. You don't like the idea of targeting these with fungicides? You could completely eliminate the problem by eliminating junipers and red cedar within 100 yds or so of your apples. If the offending hosts are on your neighbor's property, what about asking permission to eliminate them, and explain how it hurts you? You could offer to replace them with some other plant that isn't a host for pests.

Ready for Pollinators?

I don't have a feel for how many native pollinators we will have this spring, but last spring many growers noticed that there were very few bees. Bumble bees are among our native pollinators that are effective in cooler conditions than honey bee. There are also many other bees in the families Colletidae, Megachilidae, Andrenidae and Halictidae. I'm often asked if wasps help pollinate. No. Theoretically they might occasionally move a few grains of pollen, but they lack the numerous branched hairs that bees have, that make it easy to move pollen. Flies are pretty much the same as wasps, when it comes to pollinating.

Honey bee specialists tell me that you can figure out the best places to place hives by keeping in mind that honeybees don't like to work in wind, and really want warm conditions. So we face the entrances southeast or east, to warm them up early in the day. We try to have wind breaks, and avoid placing the hive directly on the ground (where it would wick up water and stay cool). Water is necessary for your bees. If it isn't available close by, they'll have to fly a ways to get it, taking time from pollination duties. Beekeepers often float rough boards in shallow water containers near the hives, to give the bees clean water close by. The boards provide a good landing site, with good grip.

Stone Fruit: Bloom is Brown Rot Time

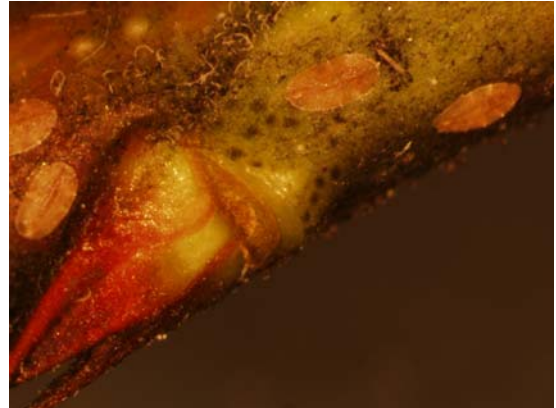
The blossom phase of brown rot begins when fungal spores attack the wilting petals. The fungus builds up on the petals, and moves to fruit and other plant parts. Protecting petals is one key period in brown rot management.

Blueberry Pests: Mummyberry

Dr. Annemiek Schilder's article on mummyberry management (complete with color photos is now on our website. The url is <http://extension.unh.edu/Agric/AGPMP/PMPIPIM.htm> The article starts on the right side of the page (click on the link). The fungal cups should be releasing spores during rainy periods now. I THINK it is similar to apple scab, in that daytime rains are the major concern. Anyway, fungicide protection is important. Indar is allowed for use this year in NH; Dr. Becky Grube's newsletter has details. Orbit is NOT legal for use on blueberries in NH.

European Fruit Lecanium Scale

EFLS overwinters as partially grown scales. They are vulnerable to a thorough application of oil (delayed dormant timing) but many blueberry plantings are close to the end of the window of opportunity to do this. Pink bud is the last time when this might work, without injury to the A bigger problem is that most oil labels now list the timing as "dormant". Mixing Esteem with the oil increases the effectiveness of the treatment. If you've missed this opportunity, you'll have another chance about June 30th, when the eggs start hatching. Esteem will be the material of choice. I'll remind you. The photo to the right is one Cheryl Smith took last October. The scales are a little larger now, but should be similar to the photo. ELFS also hits a number of other woody plants (including apple).



A handwritten signature in black ink that reads "Alan T. Eaton".

Alan T. Eaton

Extension Specialist
Integrated Pest Management