UNIVERSITY of NEW HAMPSHIRE
COOPERATIVE EXTENSION

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NH Integrated Pest Management Newsletter

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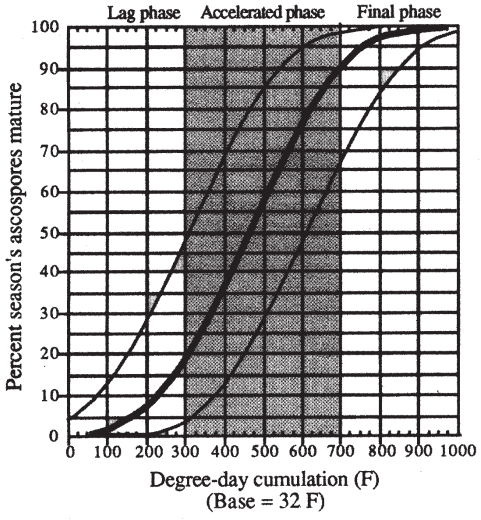
Bud Stages at UNH Woodman Horticulture Farm

As of May 19th, fruit bud stages were as follows: Pioneer McIntosh Apple: bloom. Pears: bloom. Japanese Plums: petal fall. European plums: petal fall. Peaches: petal fall (a few still in bloom). Blueberry: bloom.

Apple Scab

The weather equipment at Woodman Farm showed 647 Apple scab DD's on May 19th. That correlates with about 82% of the season's supply of ascospores having matured. We're still in the high-risk part of primary apple scab season. If you get through primary apple scab season with very few or no lesions on your trees, you can significantly relax your fungicide applications for the remainder of the year. "Significantly relax" doesn't mean totally stop. We still need to think about "summer diseases", like flyspeck and sooty blotch.



Fire Blight

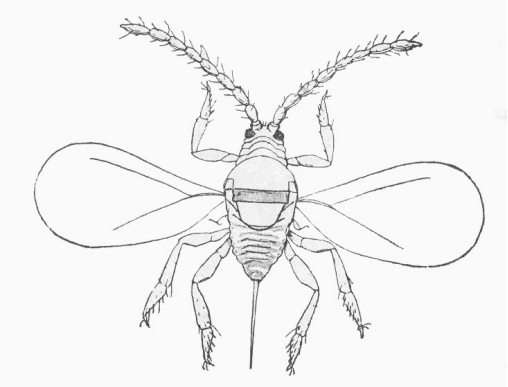
One often overlooked aspect of fireblight management is that newly planted trees leaf out later than others, and a few of them have flowers. Their flowers are likely to appear when it could be raining, and temperatures are likely to be warm --- ideal for fireblight spread. If you had some fireblight strikes last year, be sure to keep watching for any signs this year. I understand that pruning them out right away (and sterilizing shears after each cut) is important.

Males of San Jose Scale Fly During Apple Bloom

San Jose scales are tiny, grayish, slightly cone-shaped insects that are on the bark. They feed by sucking plant sap. In spots protected from sprays, these can occasionally build up to serious levels. Some scales settle on fruit, and each one eventually is surrounded with a small red ring.

There are two periods when these insects are vulnerable to pesticides. One is at half-inch green stage, when they are susceptible to smothering with oil. The other is when the newly hatched scales ("crawlers") appear. That can be predicted by measuring degree days. Crawlers start appearing roughly 3 weeks after petal fall. This is 310

degree days (base 50F) after the first males fly. If you don't have traps to time the male flight exactly, you can use full bloom date as the likely time they start flying. If you have a limb that you know is well infested, you could set out sticky tapes to tell when crawlers appear. I'll have more information on that in the next issue.



The minute males are so unusual, I'll include this old drawing, from Pests of Orchard and Garden, Mich. State Agr. Coll. Expt Sta. Bulletin #121, April 1895. They are about 1 millimeter long (25th of an inch).

Plum Curculios are Coming

Plum curculio is the most serious insect pest of apple in New England. It overwinters as an adult in leaf litter in the woods. Adults move into apple orchards during or shortly after bloom. They heavily rely on odors produced by the trees, to find their hosts. Some odors exude from bark or recently pruned branch stubs. Others are produced by the tiny fruitlets. As soon as the fruitlets swell a bit, they become vulnerable to attack.

The females attack the fruit by making a short curved cut with their mouthparts. Then, in the flap of skin created by the cut, they lay an egg just under the surface. Eggs hatch into legless grubs that bore deeply into the fruit. Most fruit that are attacked drop off the tree in June or early July.

The heaviest period of attack usually begins at or shortly after petal fall, and typically lasts 3 weeks. In some blocks with lots of unmanaged hosts nearby, attacks last a month or longer. In most of NH (South of the White Mountains), populations are high enough that the insects hit 90 to 100% of the fruit, unless you apply insecticides to protect them.

Commercial growers have many choices (see the 2008 New England Tree Fruit Management Guide). Backyard growers have a much tougher time. Formerly, we had an insecticide called Imidan that was registered for backyard growers. It is no longer available for that use, and the home fruit spray mixtures that are now available typically include a highly diluted (too weak for PC control) form of Permethrin. There is one effective alternative still left for backyard growers: Sevin. Organic growers have a material called Surround. It can work, if you apply it properly, and keep re-applying it after every rain. Several years ago we tried Surround at UNH. We had a very rainy spring, and even 1/10 inch of rain washed the stuff off. Poor John McLean was forced to make LOTS of applications, yet we almost lost the crop.

European Apple Sawfly

European apple sawfly adults emerge from the soil and start searching for a mate at about pink stage on apple. The females lay their eggs in the fruitlets during bloom. The eggs hatch into tiny larvae that make a curved tunnel just barely under the skin surface, starting at the calyx. Usually our pesticides directed at plum curculio stop the larvae, but this is sometimes after they have created the long curving scar that still will be obvious at harvest. Those larvae that escape this fate burrow deeply into that fruit or an adjacent fruit in the cluster. By July 1, they are fully grown, and drop into the soil, spin a cocoon and wait until next spring.

EAS injury is most likely on wild trees, organically grown trees, or in blocks where there is a long bloom, or where growers have to wait for all varieties reach petal fall, before a curculio spray can be made.

Stone Fruit Catfacing Insects

We have several species of insects with piercing-sucking mouthparts, that injure young peach & nectarine fruit, causing "catfacing". The term comes from the scarred appearance of fruit on which these insects have fed. Some of these are stinkbugs, which typically attack from late June until harvest. I'll probably give more detail on stinkbugs in a later issue. For now, I want to concentrate on several species that are earlier, and we collectively call "oak-hickory plant bugs". OHPB's look like pale, greenish or yellow greenish versions of tarnished plant bug. In my photo, tarnished plant bug is the one towards the upper left, and OHPB is to the lower right. They are most active starting about the time of shuck split, and typically peak in mid or late June. Their usual hosts are oaks and/or hickories, so orchards surrounded by oaks or hickories have a much higher risk of injury from them than blocks that are distant from those sources. To my knowledge, no one has figured out a threshold for these hit-and-run pests. They are winged, and feed a bit on the fruit, then move on. Standard insecticide choices for tarnished plant bug or stink bug should work fairly well on these insects. Shuck split through late June is generally the risk period. For some blocks, there is little or no need to treat.

Raspberry Cane Maggot

This is an insect that causes slight injury sometimes, usually more of a curiosity than a problem. In late May or June, some of the newly emerging raspberry canes wilt and fall over. Close examination shows a very tiny hole, and a tiny internal tunnel that may encircle the tender cane. This is caused by raspberry cane maggot. I've only seen what I thought was significant injury one time, and it was worst at the edges of the planting. Don't confuse this with raspberry cane borer, which shows up during summer! I wouldn't worry about the pest. If you'd like to see injury photos, look at the May 15, 2007 issue of my newsletter.

Grape Flea Beetle

Backyard grapes are sometimes hit heavily by grape flea beetles. Commercial growers are usually aware of the problem, and rarely allow it to get bad. The insects overwinter as adult beetles. They are about 3/16 inch long, shiny black with a bluish metallic luster. They chew holes on the opening buds. Females lay eggs under loose bark of the vines, and the larvae hatch and make little feeding trails on the leaves. Both the adults and larvae are susceptible to insecticides. If you have high numbers, it might be a good idea to spray them.

Grape Plume Moth

While I'm on the subject of grape insects, I'll show you a common early season caterpillar that feeds on grape leaves. It is tiny, yellowish-green, with white hairs. It folds the leaf on which it is feeding into a protective cover. Usually there aren't enough of them to worry about, but I get asked what it is. The name is grape plume moth. The tiny moths appear a few weeks later, and remind me of an old single-winged airplane. If you're really worried about this caterpillar, Bacillus thuringiensis sprays can control it (chemical sprays, too). But the main message is: don't bother to spray for this one.

Blueberries: Fruitworms May Be of Concern Right After Bloom Ends

We have two species of caterpillars that chew into the green, immature blueberries. They are very similar in habits, names, and controls. One is the cherry fruitworm, and the other is cranberry fruitworm. Some plantings suffer a lot of damage, so growers there benefit from applying an insecticide right after petal fall, and sometimes a second application 7 to 10 days later. Asana and Lannate are registered for cherry fruitworm control, and Imidan, Sevin, Malathion, Pyrenone, Spintor, Success, and Confirm are registered for cranberry fruitworm. In most cases, these insecticides should control both species. Organic growers can use Deliver, Entrust, or Biobit.

What Are These Knobby Things on my Blueberries?

Some blueberry twigs have little gray-brown knobs on them. They are called blueberry stem galls, and are created by tiny gall wasps. If you have a lot of these, it pays to cut them out and burn them, because the source of the wasps that cause this year's galls is last year's galls. You might consider destroying nearby unmanaged blueberries, too. If you've only got a few galls, don't worry about them. No, I never recommend insecticides to control them, since they really aren't a problem.

Other Newsletters & Websites with Fruit Pest Management Focus

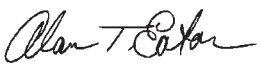
I forgot to include this in the last issue. There are other sources of fruit pest management information in New England. Websites include the one from University of Vermont http://orchard.uvm.edu/uvmapple/pest/index.html It has alerts, a library, organic production information, a newsletter, and more. The U Mass fruit advisor website http://www.umass.edu/fruitadvisor/ has their newsletter, bud stage information, meeting announcements, videos and more. Kathleen Leahy is a private consultant working in Massachusetts, Vermont and New Hampshire. She has a newsletter, and details on getting it are on her website, http://www.polarisipm.com Glen Koehler (University of Maine) has a newsletter available at the Maine Apple IPM web page http://pmo.umext.maine.edu/apple/

I've mentioned before that there are 60 of my photos of apple pests, their injury, beneficial apple arthropods, and physical & nutritional apple disorders on our website. They're at http://extension.unh.edu/Agric/AGPMP/Apples/index.htm

Some Upcoming Twilight Meetings

Wed. June 11, 2008. 5:30 - 8:00 pm. **New Hampshire Tree Fruit and Berry Twilight Meeting** at Butternut Farm, Meaderboro Rd, Farmington, NH. Hosts: Giff and Mae Burnap. For more information, contact George Hamilton at george.hamilton@unh.edu or 603-641-6060.

Wed. July 9, 2008. 5:30 - 8:00 pm. **New Hampshire Tree Fruit Twilight Meeting.** This meeting was scheduled in response to a request made by Tracy Leskey. Dr. Leskey will have research projects going on at both Poverty Lane Orchard (West Lebanon), and Apple Hill Farm (Concord). We will be finalizing which site for the meeting later. Speakers: Dr. Tracy Leskey, Research Entomologist at the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV and Dr. Starker Wright, Support Scientist at the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV. For more information, contact George Hamilton at george.hamilton@unh.edu or 603-641-6060.



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