



UMassAmherst Outreach UMass Extension

# Healthy Fruit

Volume 15, 2007

Prepared by the University of Massachusetts Fruit Program


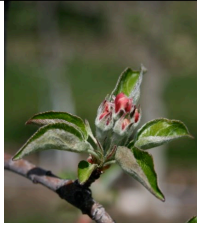



## Healthy Fruit, Issue 6, May 8, 2007

[http://www.umass.edu/fruitadvisor/healthy\\_fruit/](http://www.umass.edu/fruitadvisor/healthy_fruit/)

### Current DD accumulations

Location	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/07 – 05/07/07)	379	207
Belchertown, UMass CSO SkyBit (01/01/07 – 05/07/07)	274	NA

### Current bud stages

Location	McIntosh apple	Honeycrisp apple	Bartlett Pear	Redhaven peach	Cavalier sweet cherry
Belchertown, UMass CSO (05/07/07)	 pink	 early pink	 early bloom	 bloom	 bloom

More bud stages at: <http://www.umass.edu/fruitadvisor/clements/2007budstages/050707/050707.html>

### Upcoming meetings/events

Date	Meeting/event	Location	Time	Information
May 15	Fruit Team Twilight Meeting	<b>UMass Cold Spring Orchard</b> , 391 Sabin St., Belchertown MA	5:30 PM	Jon Clements 413-478-7219
May 16	Fruit Team Twilight Meeting*	<b>Brookdale Fruit Farm</b> , 36 Broad St., Hollis, NH	5:15 PM	George Hamilton 603-641-6060
May 17	Fruit Team Twilight Meeting*	<b>Jaswell's Farm</b> , 50 Swan Rd., Smithfield, RI	5:30 PM	Jon Clements 413-478-7219

Pesticide re-certification credits offered at each Fruit Team Twilight meeting. Please be on time to receive credit

\* In cooperation with New Hampshire Fruit Growers' Assoc. and UNH Cooperative Extension

\*\* In cooperation with Rhode Island Fruit Growers' Assoc.

## ***The way I see it***

Although showers are predicted for the end of the week, you can't ask for much better weather for fruits in bloom right now. This includes peaches and cherries, and any day now, apples. We seem to have escaped a close call with frost on Monday morning and there is none in the long-range forecast. I have noticed plenty of wild pollinators in stone fruit, including some honeybees. It appears many Massachusetts apple growers have been able to get bee hives to pollinate their apples, despite the prevailing information about honeybee Colony Collapse Disorder (CCD) in the media. (See guest article for more information on the Massachusetts-specific situation with CCD.) As petal fall sets in, growers should be prepared to apply thinning sprays, and their first insecticide spray directed at curculio, sawfly, and plant bug as warranted. Be sure to attend one of the three twilight meetings scheduled for next week (see page 1. and attached) for updates on bloom and petal fall management decisions you will soon have to make. J. Clements.

## ***2007 New England Tree Fruit Pest Management Guide NOW available***

The 2007 New England Tree Fruit Pest Management Guide (NETFPMG) has arrived. There are two options for ordering: you can order on-line, pay by credit card, have immediate access to an on-line version, and we will ship your Guide ASAP:

<http://www.umass.edu/fruitadvisor/2007netfpmg.html>

<http://fruit.umext.umass.edu/netfpmg/>

Or, you can complete the attached order form and mail with your check. The price is \$35 (payable by credit card on-line, or check with attached order form) and includes both the printed version (mailed to you ASAP) and access to the on-line version (on-line credit card payments only). Note that the NETFPMG now includes stone fruit as well as apples. J. Clements

## ***Healthy Fruit Disease Elements***

### **Key Management Activities:**

- Protect against scab
- The first bout with brown rot
- Be ready for fire blight in risky blocks

**Protect against scab.** With weather like we've been having the risk of scab is – well, there isn't any. Right now. But that will change. In fact, the pieces are coming together as you read this. The amount of scab inoculum that is ready for release builds with each warm day. When the next rain comes, there will be a lot of scab spores in the air.

That doesn't mean there has to be an infection. The best scenario would be that very short showers hit towards the end of the week, producing wetting that is so short that there are no infections. Unfortunately, the chances of that aren't good, because it should be warm, and for infections, scab will need as few as 6 hours of leaf wetness.

One factor that might be in a growers' favor is a rain that starts at night. Scab spores need light to be released, and so if a rain starts when it's dark, the spores don't release until just after dawn, around 5:30 or 6 AM at this time of year.

Suppose it starts raining at 10 PM. It stops at 6 AM, leaves dry by 10 AM, and the average temperature is 65° F over the wetting period. That's twelve hours of wetting, more than enough for an infection at 65°. But if spores aren't released until 5:30 AM, that's 5½ hours of wetting, just shy of the required 6 hours for infection. However, that may be cutting things close. And there's the issue of having a clean orchard.

What is a clean orchard? It's an orchard that has a minimal amount of scab. The point is, in a clean orchard, even if the percent mature inoculum is high, the absolute number of spores that get released in a rain is low. In a not so clean orchard, a low percentage of the total scab inoculum will still be a lot of spores. A low percentage of a lot of spores is still a lot of spores.

Back to the night-time wetting. While 99.9% or so of all ascospores wait until daylight to release, 0.1% or so of them will be released during the dark. If an orchard was not mostly scab-free the previous fall, then quite a few spores may be released at night.

Most growers have a general sense of whether their orchard had a significant amount of scab, particularly if they pack their own fruit. If someone is seeing 1% of fruit with scab lesions during packing, then it's an indication that scab is out and about in the orchard.

The best estimate, the most objective measure, of whether an orchard is clean is the potential ascospore dose evaluation, or PAD. This relates scab on leaves in the fall to the scab spores and infections that happen the next spring. Most people don't bother to do it, but it will give a clear indication of how far things like night-time wetting can be pushed.

As for the present situation, the conditions are right for a large spore release with the next wetting period. It would be a good idea to plan for that, and apply a protectant when it looks like an infection period is coming.

**The first bout with brown rot.** Brown rot is really a two stage disease. There's a high risk of infection during bloom through until 3 weeks after shuck split, and a high risk when the fruit starts to ripen. There's a break in between, when the risk drops off.

As with apple scab, the fungus that causes brown rot produces a single crop of primary ascospores, just about now. The fruiting bodies that produce these spores are in old mummies that are on the orchard floor. So, if those old mummies are cleaned up, the inoculum level will drop dramatically or disappear.

The fungus infects blossoms, and in wet weather, young twigs and leaves. These infections will produce conidia, which cause new infections, which then cause more infections ... it's a familiar story. However, unlike scab, blossom infections of stone fruit will often sit and do nothing until fruit starts to ripen. Then it takes off. These latent infections are particularly tricky because things can appear to look fine, with no sign of brown rot, and then it will appear to explode out of the ripening fruit.

To avoid this, wet blossoms need to be treated with a fungicide to protect them, or to stop infections that may get started. Chlorothalonil (Bravo, Echo) will provide the best residual protection, but shouldn't be used after shuck-split. Captan is another option. The organic option is sulfur. For systemic post-infection activity there are several options, including Rovral, Elevate, Indar, Orbit, Elite and Pristine. Elevate is less effective against fruit rot. Vanguard and Scala (anilinopyrimidines) can be used against brown rot on stone fruit, except cherries. For resistance management, try to use different classes of chemicals over the season, rather than one type.

**Be ready for fire blight in risky blocks.** It's hard to tell at this point where the risk of fire blight will be when trees bloom. Weather has been cool and recently dry, so the build up of bacteria has been slow. If this trend continues, then it is only the most risky blocks, those which have had fire blight over the past two years or are next to blocks that have had fire blight recently, that will probably need to be sprayed.

## **Guest article: Honey Bee Colony Collapse Disorder Update**

Reprinted from MDAR Farm & Market Report, Vol. 84, No. 2, April/May

[http://www.mass.gov/agr/news/fmr/2007/07\\_april\\_may.htm](http://www.mass.gov/agr/news/fmr/2007/07_april_may.htm)

Over the past month, news media reports indicate that thousands of honey bee colonies' populations have collapsed throughout the United States. The terms "Fall Dwindling", later evolving into "Colony Collapse Disorder" were coined by an apiary extension service working group at Pennsylvania State University. What essentially happened was that honey bee colonies' populations completely disappeared, or in some cases just a cluster of worker bees and a queen remained in individual hives. Anecdotal reports from Pennsylvania commercial migratory beekeepers, wintering in Florida and Penn State Extension implied that this disorder was something new.

Since the detection of honey bee tracheal mites (HBTM) in 1984 and varroa mites (VM) in 1987, honey bee colonies have diminished by the thousands; feral colonies have all but disappeared. The term "colony collapse disorder" resembles a situation in honey bee population dynamics referred to by USDA-ARS scientist Hachiro Shimanuki as "parasitic mite syndrome". This occurs when unchecked varroa mite populations vector excessive amounts of honey bee viruses, mainly chronic paralysis virus, between larvae, pupae, and adult bee stages while feeding on the bees' haemolymph. Viruses cause extensive stress on honey bee immune systems. The act of feeding via a piercing sucking mouth part also leaves openings for opportunistic insect pathogens. As varroa mite populations grow, bee populations eventually crash, leading to colony collapse.

Commercial migratory beekeeping places significant stress on hives even without the presence of varroa mites. Before HBTM and VM, it was not unusual for migratory beekeepers to lose 25% of their colonies through queen loss caused by long distance transport, overheating, starvation, nectar and pollen dearths, and unfavorable weather conditions. Mites appear to be the fulcrum on which the industry balances. Commercial beekeeping is not an easy way to make income; expenses and exhaustion create constant stress.

From observations in ten apiaries located in Hampshire, Franklin, and Middlesex Counties ranging from 1 to 78 colonies, 146 of 256 hives were still alive. Mortality in 110 hives appeared to be due to starvation, and or varroa mites. Colonies had not been adequately prepared for winter; i.e. varroa mite controls had been applied when economic injury levels had been exceeded. There was no evidence that starved out colonies had been supplementally fed. All 78 colonies in one Concord apiary examined in mid-March contained 78 live prosperous colonies; varroa mite control measures had been effective and winter stores deficiencies had been corrected in September 2006.

Good news for Massachusetts cranberry growers; after consult with three of four migratory beekeepers in Florida and Louisiana who pollinate cranberries, none of their hives are suffering from "colony collapse disorder" or "parasitic mite syndrome". As Shimanuki once said, "when you control the mites, you will control the viruses".

If beekeepers suspect that their colony populations are collapsing, contact Al Carl, Chief Apiary Inspector at 617-626-1802 or 413-253-2414 or [al.carl@state.ma.us](mailto:al.carl@state.ma.us)

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Extension

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## Fruit Twilight Meetings

Program for all meetings:

- 5:30 PM Farm tour including update on phenology and current pest status.  
6:30 PM Speaking program will include updates of current cultural practices and integrated pest management approaches.

*Pesticide-license recertification credit (2 hours) will be offered.*

*Please be there on time to receive pesticide credits.*

***\$20/person registration fee (except NH meeting). Light refreshments will be served.***

**TUESDAY, MAY 15 UMass Cold Spring Orchard**  
391 Sabin St., Belchertown, MA (<http://www.coldspringorchard.com/>)

**DIRECTIONS:** from Belchertown Center: proceed on Route 181 toward Palmer for about two miles, bear left onto Cold Spring Road. In about 0.5 miles, bear left onto Sabin Street. From Route 9/Route 202 intersection take Route 9 East for about 2.5 miles, and turn right onto Sabin Street. In approximately 1.75 miles, you will see orchard on your right. If these directions are not clear, call Wes Autio at 413-545-2963; Jon Clements at 413-478-7219; Joe Sincuk at (413) 323-6647.

**WEDNESDAY, MAY 16 Brookdale Fruit Farm**  
36 Broad St. (Rte,130), Hollis, New Hampshire (<http://www.brookdalefarms.com/>)

**!!!PLEASE NOTE THAT THE BROOKDALE MEETING STARTS AT 5:15 AND WILL HAVE 2.5 CREDITS!!!**

**DIRECTIONS:** From eastern Massachusetts & points south-Take Route 3 North to Exit #6 (RT-130) towards NASHUA/HOLLIS-Keep left at the fork in the ramp-Turn left onto Broad Street / NH-130 West-Travel 6.2 miles and Brookdale will be on your left – the wholesale division is just past the farm stand on your right  
From Groton & Pepperell Area -Take Pepperell Road/Route 122 North to Hollis -Make a right at the 4-way traffic light in Hollis Center onto Route 130 -After coming to a stop sign continue straight – the wholesale division is on the left – the farm stand immediately follows on the right. If these directions are not clear, call George Hamilton at 603-641-6060 or Jon Clements at 413-478-7219.

**THURSDAY, MAY 17 Jaswell's Farm**  
50 Swan Rd., Smithfield, RI (<http://jaswellsfarm.com/>)

**DIRECTIONS:** Take I-295 (south) to the Greenville exit (7B). Follow Route 44 West to the fourth set of lights. Take a right at the lights onto Route 5 North. Follow approximately ½ mile, bearing right at the stop sign onto Route 116 North. Follow 116 North approximately ½ mile looking for Swan Road on the left. Take a left onto Swan Road; we're a ½ mile up on the left. If these directions are not clear, call Heather Faubert at 401-874-2967 or Jon Clements at 413-478-7219.

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2007 New England Tree-Fruit Pest  
Management Guide



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**Massachusetts Order Form**  
**2007 New England Tree Fruit Pest Management Guide**

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<http://www.umass.edu/fruitadvisor/2007netfpmg.html>