

UMassAmherst  
**EXTENSION**

# Healthy Fruit

Volume 14, 2006

Prepared by the University of Massachusetts Fruit Program

## Healthy Fruit, Issue 4, April 25, 2006






<http://www.umass.edu/fruitadvisor/>

### Current DD accumulations

|                                                            | Base<br>32F | Base<br>43F | Base<br>50F |
|------------------------------------------------------------|-------------|-------------|-------------|
| Belchertown, UMass CSO observed (01/01/06 – 04/24/06)      |             | 271         | 120         |
| Belchertown, UMass CSO SkyBit (01/01/06 – 04/24/06)        |             | 266         |             |
| Belchertown, UMass CSO observed (04/10/06 [GT] – 04/24/06) | 300 [23]*   |             |             |

\*[23] = % mature apple scab spores

### Current bud stages

| Location                                 | McIntosh<br>apple                                                                   | Honeycrisp<br>apple                                                                 | Pear                                                                                 | Redhaven<br>peach                                                                     | Cavalier<br>sweet cherry                                                              |
|------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Belchertown,<br>UMass CSO<br>(04/024/06) |  |  |  |  |  |
|                                          | early pink                                                                          | very early<br>pink                                                                  | late green<br>cluster                                                                | pink                                                                                  | white<br>bud                                                                          |

### Upcoming meetings/events

| Date          | Meeting/<br>event                 | Location                      | Time       | Information                  |
|---------------|-----------------------------------|-------------------------------|------------|------------------------------|
| May 9         | Fruit Team<br>Twilight<br>Meeting | Apex Orchard<br>Shelburne, MA | 5:30<br>PM | Jon Clements<br>413-478-7219 |
| May<br>10, 11 | Fruit Team<br>Twilight<br>Meeting | TBA                           | 5:30<br>PM | Jon Clements<br>413-478-7219 |

## Critical spring temperatures for fruit crops

Widespread frost(s) are predicted for this week with the arrival of Canadian high pressure tonight. For fruit growers it's a trying time when crops are in bloom and we are flirting with temperatures near or below 30 F. Those with wind machines or overhead irrigation will be using them this week. Below are tables for apples, peaches, and cherries adapted from data collected in Washington on critical spring temperatures (degrees Fahrenheit) that will result in injury to fruit buds. In general, we will hope the temperature this week does not drop below 28 F., and certainly not below 25 F. Note also that peach buds are slightly hardier than apple or cherry buds.

| Apples (based on 'Delicious') |            |           |                |               |            |           |             |            |            |
|-------------------------------|------------|-----------|----------------|---------------|------------|-----------|-------------|------------|------------|
|                               | silver tip | green tip | 1/2 inch green | tight cluster | first pink | full pink | first bloom | full bloom | post bloom |
| 10% kill                      | 15         | 18        | 23             | 27            | 28         | 28        | 28          | 28         | 28         |
| 90% kill                      | 1          | 10        | 15             | 21            | 24         | 25        | 25          | 25         | 25         |

| Peaches (based on 'Elberta') |           |             |           |            |             |            |            |
|------------------------------|-----------|-------------|-----------|------------|-------------|------------|------------|
|                              | bud swell | green calyx | red calyx | first pink | first bloom | full bloom | post bloom |
| 10% kill                     | 18        | 21          | 23        | 24         | 26          | 27         | 28         |
| 90% kill                     | 1         | 5           | 9         | 15         | 21          | 24         | 25         |

| Cherries (based on 'Bing') |           |            |           |               |              |             |             |            |            |
|----------------------------|-----------|------------|-----------|---------------|--------------|-------------|-------------|------------|------------|
|                            | bud swell | side green | green tip | tight cluster | open cluster | first white | first bloom | full bloom | post bloom |
| 10% kill                   | 17        | 22         | 25        | 26            | 27           | 28          | 28          | 28         | 28         |
| 90% kill                   | 5         | 9          | 14        | 17            | 21           | 24          | 25          | 25         | 25         |

All temperatures are in degrees Fahrenheit. The tables show the temperatures at which 10% and 90% of fruit buds would be killed when exposed to the temperature for 30 minutes.

## Some pink insecticide thoughts

Many Massachusetts apple orchards will be at pink this week and perhaps into early bloom this weekend. There are a couple important pests which should be on your mind during pink, and in some cases, control may be warranted. First, the over-wintering generation of **leafminer** are hatching, and if you have had a problem with leafminer in the past, you should be hanging red trunk sticky traps by now to monitor the situation. A heavy hatch of adult leafminer is your signal that you may have a problem again this year. You will have several opportunities to treat during the season, but you may choose to control this generation now if it is of particular concern to you. Early pink sprays for leafminer may include pyrethroids (Asana, Pounce, Danitol), or Actara, Assail, Avaunt, and Calypso. Again, if you miss it you have more opportunities to control leafminer but you will have to monitor succeeding generations to get the timing right.

The other pest to watch is **tarnished plant bug**. Again, you should be hanging white sticky traps at knee height to monitor, the threshold for treatment being 3 – 5 per trap. You can also

check for bud 'ooze' and/or plant bug presence in the orchard. Imidan and Guthion only have fair activity against plant bug (at best) and are not recommended. The pyrethroids (Asana, Pounce) give excellent control, Danitol, Warrior, Actara, and Avaunt give good control.

Now is also a good time to clean up plant bug in peach orchards if they are still in pink. Remember to never apply any insecticide during bloom, and that the pyrethroids can lead to mite problems later – you have to balance the risk/benefit equation.

### **Healthy Fruit Disease Elements – D Cooley**

**Scab damage assessment.** This past weekend through today (Tuesday) represents the first significant apple scab infection period of the year. If orchards were covered with a full rate of a protectant fungicide going into the rain then the fungicide should have been adequate to last through today. Full rates would be 2 lbs of captan 50 or mancozeb, or the equivalent of other formulations, in 100 gal. of water. Most of New England received from 1 to 2 in. of rain since Saturday, and since it was cool, new tissue growth was relatively slow.

But with rain predicted for this weekend, it's time to re-apply a fungicide. This is especially critical if there were no or low rates of protectant fungicide applied before the weekend infection period. In that case, some form of post-infection fungicide should be applied as soon as possible, along with a protectant for this weekend.

**Free resistance testing!** This past year, we cooperated with Cornell to run resistance tests on 5 orchards in New England, looking at the resistance of apple scab to four types of fungicides, including the SI's, dodine, strobilurines and anilinopyrimidines. At least, I'm pretty sure we did. So far we haven't heard back from Geneva as to what the results were. However, we want to forge ahead, and are asking our cooperators from last year to be patient and supply us with another round of scab for this season. And we'd like to find 5 more growers who can give us scab. This a test that normally runs close to \$1,000, but we will pick up the costs and sample the leaves. Give me a call or send an email:

Dan Cooley 413-577-3803 or 413-531-3383  
dcooley@microbio.umass.edu

**Brown rot blossom blight.** This rain also brings pressure for brown rot on peaches and other stone fruit. However, it was still a little early and a little cool. That situation is changing rapidly. This week, with temperatures a little warmer and bloom developing, and rain predicted for this weekend, it's now time to apply a blossom blight fungicide.

The list of fungicide products labeled for brown rot is pretty impressive. Some simplification may be in order.

**Captan** is a good protectant, but under cool or hot conditions can cause peach leaves to yellow, shot-hole and/or drop.

|             |                  |
|-------------|------------------|
| Captan 50WP | 1 1/2 lb/100 gal |
| Captan 4L   | 1 pt/100 gal     |

**Sulfur** is an old fungicide, effective against brown rot but not as effective as more modern materials. It is an option for organic production.

|        |              |
|--------|--------------|
| Sulfur | 5 lb/100 gal |
|--------|--------------|

**Echo** is chlorothalonil, the same as Bravo. It's a good protectant. It comes in two formulations, a liquid flowable and a dry flowable. Do not use after shuck split because it can be phytotoxic. **Bravo S** (Helena) and **Bravo Weatherstik** (Syngenta) are also labeled for blossom blight.

|                   |                     |
|-------------------|---------------------|
| Echo 6F           | 1.0-1.4 pt/100 gal  |
| Echo 90DF         | 0.75-1.2 lb/100 gal |
| Bravo S           | 4.0 pt/100 gal      |
| Bravo Weatherstik | 1.0-1.4 pt/100 gal  |

**Elite**, **Indar** and **Orbit** are all sterol inhibitor (SI) fungicides. As with apple scab, the brown rot fungus can develop resistance to them, so they should not be used in season-long programs. Instead, if you use them, use them either now for blossom blight, or later on for fruit rot, but not for both. These materials have good post-infection activity against brown rot, up to 48 hr.

|             |                                   |
|-------------|-----------------------------------|
| Elite 45DF  | 2 oz/100 gal                      |
| Indar 75WS  | 0.8 oz/100 gal (max 2 oz/A)       |
| Orbit 3.6EC | 1.6 fl oz/100 gal (max 4 fl oz/A) |

**Rovral** is another fungicide with good post-infection activity as well as protection. For resistance management purposes, it can only be used in two applications per season.

|             |                                 |
|-------------|---------------------------------|
| Rovral 50WP | 8-10 oz/100 gal (max 2 lb/A)    |
| Rovral 4F   | 8-10 fl oz/100 gal (max 2 pt/A) |

**Scala** and **Vanguard** are both anilinopyrimidine (AP) fungicides that can be used against the blossom blight phase (only) of brown rot.

|               |              |
|---------------|--------------|
| Vanguard 75WG | 5 oz/A       |
| Scala 600SC   | 9-18 fl oz/A |

**Pristine** is a mix of two active ingredients, a strobilurine similar to Sovran or Flint, and a carboximide, a different class than other brown rot fungicides. It is probably best used against fruit rot, but is labeled for blossom blight as well, and can be used up to 5 times per season.

|                |                |
|----------------|----------------|
| Pristine 38WDG | 10.5-14.5 oz/A |
|----------------|----------------|

**Elevate** is a relatively new chemical, and also unique in its resistance class. While it is labeled for both fruit and blossom blight, it is most effective against blossom blight, and less effective than SI's, Pristine and other fungicides against fruit rot.

|               |                     |
|---------------|---------------------|
| Elevate 50WDG | 0.33-0.5 lb/100 gal |
|---------------|---------------------|

Hmmm. Looking at that list I'm not sure that it's any simpler, but perhaps it will help.

In general, later this week and through the weekend will be a critical period for brown rot infections, so be ready with one of the options listed.

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