



UMassAmherst Outreach UMass Extension

# Healthy Fruit

Volume 15, 2007

Prepared by the University of Massachusetts Fruit Program

## Healthy Fruit, Issue 2, April 10, 2007

### Current DD accumulations

Location	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/07 – 04/09/07)	133	49
Belchertown, UMass CSO SkyBit (01/01/07 – 04/09/07)	NA	NA

### Current bud stages

Location	McIntosh apple	Honeycrisp apple	Bartlett Pear	Redhaven peach	Cavalier sweet cherry
Belchertown, UMass CSO (04/09/07)					
	silver tip+	dormant+	dormant+	swollen bud	dormant+

### Upcoming meetings/events

Date	Meeting/event	Location	Time	Information
April 11	Fruit Team Twilight Meeting	<b>Ragged Hill Orchard</b> , 94 John Gilbert Rd., W. Brookfield, MA	5:30 PM	Jon Clements 413-478-7219
April 12	Fruit Team Twilight Meeting*	<b>Dowse Orchards</b> , 98 N. Main St., Sherborn, MA	5:30 PM	Jon Clements 413-478-7219
<i>Note: the April 12th meeting may have to be cancelled if the weather is bad. See note below or call 413-478-7219 before heading to the meeting.</i>				

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

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

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

It's official -- Easter Sunday was colder than Thanksgiving, Christmas, and New Years Days. The average temperature during the first week in April was about 34<sup>0</sup> F. Needless to say, buds did not budge. Which is generally good, however, expect rapid movement when the weather finally warms. This spell of dry weather should allow chopping of brush, sprayer maintenance and calibration, etc., so you should be all set to get that first scab spray on when green tissue and wet weather arrives. Also, if you did not get a fungicide spray on yet for peach leaf curl, it's probably still not too late. J. Clements.

## ***Thursday's Twilight Meeting at Dowse Orchards***

The weather forecast for Thursday, April 12 does not look too good. We have scheduled a Twilight Meeting at Dowse Orchards in Sherborn for 5:30 PM, however, if the weather makes travel difficult we may have to cancel the meeting. *By noon on Thursday we will make a decision and post it on the UMass Fruit Advisor (<http://www.umass.edu/fruitadvisor>) and send an e-mail to Healthy Fruit subscribers. You can also call us (413-478-7219) to find out if it is a go or no-go.*

## ***Healthy Fruit Disease Elements -- D. Cooley***

### **Key Management Activities:**

- Reconsider fungicide selection
- Monitor for green tip on McIntosh
- Leaf chopping and or urea for scab management
- Copper applications where fire blight was a problem
- Copper on peaches for bacteria and fungi
- Leaf curl on peaches

**Reconsider fungicide selection.** More and more, managing apple scab involves staying ahead of the game and reducing risk. Waiting until the weather gets warmer and cluster buds have formed is a much riskier decision these days. That's because if small mistakes are made early, we no longer have the fungicides that will deal with them reliably.

Thank resistance to the SI fungicides for that. Nova, Rubigan and Procure have been shifting towards resistance in New England. The data are impressive. Of 14 orchards tested in New England over the past two years, 12 have scab that is resistant to the SI fungicides. The other two have scab that is partially resistant. No orchards could rely on SIs to be as effective as they were several years ago.

In past years, if a few scab spores made it to apple leaves and started an infection, an application of Nova, Rubigan or Procure stopped it. Even if the first application went on over a week after the start of the infection, two consecutive SI applications stopped it. Not any more.

In most New England orchards, if SI fungicides are used, and they are mixed with a protectant fungicide (Captan, Dithane, etc.) then it is the protectant that's doing the heavy work. There's little or no contribution from the SI.

At the same time, scab was resistant or moving towards resistance to dodine (Syllit) in all 14 orchards. No option for burning out scab there.

The strobilurines (Flint, Sovran) and the anilinopyrimidines (Vanguard, Scala) were also tested. A shift towards resistance to strobilurines had started in four orchards (about 30%), and the rest still had sensitive scab. Surprisingly, a resistance shift to the AP fungicides had started in 7 (50%) of the orchards. And while the strobilurines and APs can suppress scab infections after they start, they do not

have the long-term post-infection effectiveness that the SIs had.

So, resistance to fungicides means that if a few scab infections get started early, they can explode in a wet season. So, it may be time to forget about the SI's in our orchards, and develop strategies that won't require eradication of early-season mistakes.

**Monitor for Green Tip on McIntosh.** What's the big deal about 50% green-tip on McIntosh? For scab, that's when the clock starts. When Bill MacHardy and Dave Gadoury developed the model, they developed it around McIntosh. After 50% green tip, by keeping track of the temperature in the orchard on a daily basis, growers can follow ascospore maturity. Usually, a very small number of scab ascospores mature at about green tip. In "clean" orchards, these are not considered a significant risk. (More about clean orchards later.)

With warm weather, assuming we get some, the number of mature ascospores builds. When it hits 12%, then the risk of infection is considered to be high. That happens when about 250 degree-days (Base 32) have accumulated. But there's a lot of variation in the model. So, there's a reasonable chance that 12% of ascospores will be mature as early as 100 degree-days, or as late as 400 degree-days. Using temperatures from Belchertown, rather than the actual orchard being sprayed, adds more variability.

The ascospore degree-day model provides good general guidelines, but in this age of fungicide resistance, use it conservatively.

**Leaf chopping and or urea for scab management.** Details of this were covered last year. Here are the key reminders.

1. Chopping leaves and applying urea can reduce scab inoculum in the orchard from 50% to 90%, depending on how thorough the chopping and spraying are.
2. This reduces early season scab risk.
3. Urea should be used at the rate of 40 lbs. urea fertilizer in 100 gal. of water sprayed at the ground, especially under trees.

Often, growers consider their orchards "clean", without any scab, based on what they saw from the tractor seat or during harvest the previous fall. Research has shown this isn't an adequate estimate. Actual counts that systematically cover the orchard are necessary. So, even if an orchard is thought to be scab-free, chopping and/or urea will likely be useful.

**Copper applications where fire blight was a problem.** For apples, the primary reason to apply copper at this time of year is to help control fire blight. These treatments are effective against overwintering bacteria on trees. As weather warms, old cankers become active, and from these bacteria will spread to blossoms. A layer of copper kills the bacteria as the old cankers start to ooze and produce bacteria.

Copper sprays are definitely useful where there has been fire blight in the last two seasons. However, if there is no recent history of fire blight, the treatment is probably less useful. Copper is moderately effective against scab, for the first week or so of green growth, but other fungicides care more effective.

**Copper on peaches for bacteria and fungi.** A dormant copper spray on peaches can control leaf curl (a fungal disease caused by *Taphrina deformans*), and can help with bacterial canker (caused by *Pseudomonas*) and may reduce inoculum for bacterial spot (*Xanthomonas*) later in the year. Last year was a bad one for bacterial spot, and so inoculum is probably high in orchards this year. Copper is a good way to knock it back.

There are many formulations of copper fungicides available. Check label rates, because too high a rate

can damage peaches. As a reference, COCS and Kocide are both recommended at 4 lbs. per 100 gal. before bud break.

**Leaf curl.** If bacterial canker and bacterial spot aren't a concern, don't forget to apply a leaf curl fungicide. The year a leaf curl application isn't made is sure to be the year leaf curl is heavy.

Bravo Ultrex 82.5 WDG	0.9 to 1¼ lb per 100 gal.
Bravo Weather Stick 6F	1 to 1.4 pt. per 100 gal.
Echo 6F	1 to 1.4 pt. per 100 gal.
Echo 90 DF	¾ to 1.2 lb per 100 gal.

Both Ferbam and Ziram are also good leaf curl fungicides.

Ferbam 76 WDG	1½ lb per 100 gal.
Ziram 76 DF, 76 WDG	1½ lb per 100 gal.

**Final thoughts on copper.** The information on early-season copper is not black and white. Yes, there are benefits. But how big they are remains unclear.

There are some speculative ideas that early season copper provides copper as a nutrient, helping deal with cold stress. Other speculation suggests that by killing ice-nucleating bacteria, copper reduces freeze damage. At the same time, warnings are made that cold-damaged cells will absorb more copper than healthy cells, and hence there will be more potential for phytotoxicity.

The bottom line: it appears to me to be very useful on apples and peaches, and worth the time and expense, particularly where bacterial diseases have popped up last year.

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