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**EXTENSION**

# Healthy Fruit

Volume 14, 2006

Prepared by the University of Massachusetts Fruit Program

**Healthy Fruit, Issue 6, May 9, 2006**






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

## Current DD accumulations

	Base 32F	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/06 – 05/08/06)		421	203
Belchertown, UMass CSO SkyBit (01/01/06 – 05/08/06)		402	
Belchertown, UMass CSO observed (04/10/06 [GT] – 05/08/06)	595 [77]*		

\*[77] = % mature apple scab spores

## Current bud stages

Location	McIntosh apple	Honeycrisp apple	Pear	Redhaven peach	Cavalier sweet cherry
Belchertown, UMass CSO (05/08/06)					
	early petal fall	bloom+	petal fall	bloom-petal fall	bloom-petal fall

## Upcoming meetings/events

Date	Meeting/ event	Location	Time	Information
May 9	Fruit Team Twilight Meeting	Apex Orchard Shelburne, MA	5:30 PM	Jon Clements 413-478-7219
May 10	Fruit Team Twilight Meeting	Smolak Farms North Andover, MA	5:30 PM	Jon Clements 413-478-7219
May 11	Fruit Team Twilight Meeting	C.N. Smith Farm, Inc. East Bridgewater, MA	5:30 PM	Jon Clements 413-478-7219

## ***Plum curculio immigration 2006***

Have you been wondering how much plum curculio (PC) immigration has occurred so far this season in your blocks of apple trees? Thanks to Jaime Piñero, we have some information for you. Jaime (currently working on a post-doc job in Switzerland) has been using the UMass Cold Spring Orchard (CSO) weather data from [www.umass.edu/fruitadvisor/](http://www.umass.edu/fruitadvisor/) to run a PC degree-day model developed by Jaime with Ron Prokopy over the last 6 years. Winter and spring weather data and trap-capture patterns recorded over this period predicted the onset of immigration by over-wintered PC in 2006 occurred April 27-28 at the CSO location. This model requires validation in different regions of the Northeast, but if your orchard is near the CSO, your PC can be expected to behave similarly. Considering the six previous trapping years, the timing of plum curculio immigration for 2006 can be considered “normal” despite the mild winter that prevailed in the region and the early season we are experiencing.

Considering the rise in temperatures during the last several days, we expect substantial PC immigration to have occurred by now. However, this number of PC may only represent 40 or 50 % of the total population for this season population. If this warm weather continues for the next week or so, we would then expect the majority of the population to have colonized orchard trees by then. Under these circumstances (and in locations near Belchertown), a whole-block spray shortly after petal fall should eliminate most of this year’s PC. The curculios are not interested in fruitlets until they are about 6 mm in diameter. Subsequent cover sprays could be border row sprays, especially if PC were managed well the previous season and did not over-winter inside the block.

## ***Apogee application pointers***

Petal fall is when you should be thinking about applying Apogee in overly vigorous trees. Quickly, here are a few Apogee application pointers as a refresher:

- Apply Apogee when shoot growth is 1-3 inches long; do not delay beyond this time or growth control will suffer.
- Use a lower rate of about 4 to 8 ounces per 100 gallons; higher rates (12 ounces) may interfere with thinning and are not necessary, however, the lower rate will require a repeat application(s) at 2-3 weeks; don’t concentrate any higher than 2X.
- Hard water and Apogee don’t mix -- use Ammonium Sulfate (AMS) in equal proportion to Apogee. Also use a non-ionic surfactant according to label recommendations.
- Do not mix calcium or boron fertilizers with Apogee.

## ***Whoaa!!! Out of control? Consider controlling tops-only of vigorous dwarf apples -- Wes Autio and Win Cowgill***

Over the last several years, we have recommended different approaches for reducing growth specifically in the tops of apple trees. Scoring (a knife cut completely around the trunk of a tree through the bark into the wood) and ringing (a saw cut completely around the trunk) can very effectively slow tree growth. Applied near the top of a vigorous tree at about a week after petal fall will increase fruit set for this season and increase flower-bud formation for next season. Reduced shoot growth will be seen for the next couple of years. These physiological changes will shift a tree from vigorous vegetative growth in the tree top to more fruit production and weaker growth in the top. The down side of ringing and scoring is the amount of time required to perform the treatment.

We have been working on alternative top-control procedures for the last two years. One of the approaches uses high concentrations of NAA to slow growth in just the top of the

tree. At this point the most effective treatment appears to be on 1-year-old wood and is applied as Sucker Stopper Concentrate (Monterey Chemical) mixed in pruning/grafting compound at a rate of one part Sucker Stopper to nine parts pruning/grafting compound (1.5% NAA in the application solution). Paint a 3-inch wide band completely around the trunk near full bloom. To be effective, you must treat your trees before they reach the desired height, probably when they have been in the orchard for a year or two.

Apogee also can provide excellent control if directed just at the top of the tree. Our research has only used the 12-ounce/100 gallon rate. Multiple applications of lower doses may also be effective, but since the treatment is directed only at the tree tops, special trips into the orchard will be required for each application. Remember that you should apply Apogee with a non-ionic surfactant and with a water conditioner (equal weight of spray-grade ammonium sulfate to the amount of Apogee added). Apogee also may increase fruit set, but this may be advantageous if the trees are excessively vigorous in the top. Treat with Apogee near bloom to begin controlling growth early.

We established seven experiments at the Rutgers Snyder Farm in NJ last week ago to further evaluate materials and methodology.

### ***Does Oil Increase Thinning? -- Jim Krupa and Wes Autio***

Recent recommendations have suggested that the addition of oil to your normal chemical thinning treatments increases the thinning action. To test this suggestion, we conducted a simple experiment in 2005 to compare various surfactants applied with a standard chemical thinning treatment. At about a week after petal fall, trees were either left untreated or treated with 5 ppm NAA plus Sevin. NAA-plus-Sevin treatments included Regulaid, Silwet, oil, or no additional material. All NAA-plus-Sevin treatments thinned compared to the untreated trees and enhanced return bloom, but no differences existed among the surfactant treatments. In 2005, oil, Silwet, and Regulaid did not increase thinning activity.

### ***Healthy Fruit Disease Elements -- Dan Cooley***

**Keeping an Eye Out for Scab.** By now the infections from the infection period on and around April 24 should be visible. It will be a week or so before the infections from last week's rain should show up.

The infection period last week was our most severe to date. Plenty of inoculum was mature, and the wetting and temperatures combined with tree growth stage to make the risk of infection very high. If there are doubts in your mind about coverage going into the rains of last Weds, May 3, then now would be the time to use a couple of SI applications.

It's past the time when Vanguard and Scala are optimally effective, except perhaps for another few days in the coolest orchards in hills to the North. Flint or Sovran applied as post-infection materials won't stop lesion development from last week's infections, but may still suppress spores and slow secondary infections. However, that's exactly the wrong way to use Flint and Sovran if you're trying to reduce the chances of resistance development. Better to use two applications of an SI in combination with captan or mancozeb, even if there's a chance of some loss of effectiveness with Rubigan, Nova or Procure.

The East, particularly southeast New England, is getting soaked as this is written. However, it hasn't rained in the north and west. Predictions are that this pattern will hold, and that the more continuous rain will be east, while the western sections of New England will get showers.

Since scab risk remains high, it is important to maintain protection through wetting periods, as these will be infections in many parts of the region. By next week, the risk of scab

infections will have started to drop. As of today, about 75% of the scab ascospores for the season have matured or been released at Cold Spring Orchard.

**The Mysteries of Fire Blight.** One of the more irritating and really distressing things about fire blight is that it is so difficult to predict when an outbreak will break out. Fortunately, the models, Maryblyt and Cougar Blight give us a better indication than there was 15 years ago. This year will give an indication of how well they work in a low risk year.

The only appreciable risk of fire blight comes today and tomorrow. The warm temperatures of the past few days have built up the bacterial inoculum a little bit, trees are in bloom, and rain is in the forecast or falling. BUT, the temperature is also falling to levels too low to support growth of fire blight bacteria. And bees will be less likely to fly (perhaps the only good aspect of that is that they won't be spreading fire blight). Only those blocks that had fire blight, or are near a block that had fire blight, have any risk of disease, and that risk is at worst low to low-moderate in highly susceptible cultivars.

Overall, there will be virtually no risk of fire blight in any blocks by Thursday.

**Serenade as a Disease Control Material.** This past week a little discussion came up on the Apple-Crop listserv about Serenade, a product promoted to cure or prevent almost any apple disease that can be thrown at it. Serenade is a biocontrol, a material based on the bacterium *Bacillus subtilis*. The company feels that the particular strain of this bacterium produces more types of anti-microbial chemical than other strains.

Fortunately many fruit pathologists run tests on fungicides and antibacterial compounds. Most of the testing for Serenade has been for use against fire blight. In those tests, Serenade almost always is less effective than streptomycin, though it usually reduces blight below the levels in untreated controls.

For fungal diseases, the same is generally true. Keith Yoder, the tree fruit pathologist in Virginia who runs some of the most extensive apple fungicide tests in the country, reports these ratings published in their disease management guide:

- fair for mildew and rusts
- slight for scab and sooty blotch & flyspeck
- fair for finish of Golden Delicious and Red Delicious

By comparison he gives sulfur 2-3 lb /100 gal dilute these ratings:

- fair for scab
- no effectiveness on rusts
- good for mildew
- slight for sooty blotch & flyspeck
- good for finish of Golden Delicious and fair for Red Delicious

Considering price and efficacy for apple diseases, sulfur looks good. However, Serenade is an option for organic producers.

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