



Healthy Fruit

Volume 14, 2006

Prepared by the University of Massachusetts Fruit Program

Healthy Fruit, Issue 7, May 16, 2006






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

Current DD accumulations

	Base 32F	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/06 – 05/15/06)		471	213
Belchertown, UMass CSO SkyBit (01/01/06 – 05/15/06)		461	
Belchertown, UMass CSO observed (04/10/06 [GT] – 05/15/06)	722 [93]*		

*[93] = % mature apple scab spores

Current bud stages

Location	McIntosh apple	Honeycrisp apple	Pear	Redhaven peach	Cavalier sweet cherry
Belchertown, UMass CSO (05/15/06)	 fruit set	 late petal fall to fruit set	 fruit set (4-5 mm)	 petal fall	 petal fall to fruit set

Note: this will be the last bud stage update for 2006

Upcoming meetings/events

Date	Meeting/ event	Location	Time	Information
June 6 – 8	Fruit Team Twilight Meetings	TBA	5:30 PM	Jon Clements 413-478-7219

Petal fall apple entomology -- J Clements

Once we get through this stretch of miserable weather most Massachusetts apple orchards will be well into petal fall. And it is bound to warm up with increased insect activity. Some pests to watch out for at petal fall include:

- Plum curculio (PC) – a whole block petal fall spray is warranted as the first nights above 60 F. will result in fruitlet damage from resident PC. A petal-fall carbaryl (Sevin) application at a moderate-high rate for fruit thinning will control PC for about 7 days. Of course you can also use an OP insecticide (Guthion/Imidan), but most growers apply petal fall carbaryl anyways. Be sure all petals are off and bees are removed from the orchard before applying carbaryl or OP's. In mixed blocks with cultivars still in bloom, Calypso is a good option for controlling PC -- Calypso can be applied with bloom still on the trees as long as bees are not actively working. Calypso is also effective on sawfly. The 'reduced-risk' insecticides Avaunt and Actara are also effective on PC, and for organic growers, Surround is the only option. (Interestingly, the 2006 Michigan Fruit Management Guide lists no fewer than 17 insecticide options for curculio at petal fall -- clearly there are lots of options, some better than others.)
- Obliquebanded leafroller (OBLR) – has become a problem in some Massachusetts apple orchards. Blocks with OBLR damage last year will probably benefit from a petal fall application of Intrepid (12-16 oz/acre). A repeat application for second generation larvae as indicated by monitoring adults with pheromone traps and the degree-day model may still be necessary, but this petal fall application of Intrepid is a good start for OBLR.
- Tarnished plant bug (TPB) and European apple sawfly (EAS) – are sporadically problematic at petal fall depending on orchard. You probably know who you are. The petal fall PC spray will help keep these pests at bay. Unfortunately, the OP's and carbaryl have limited activity against TPB, the synthetic pyrethroids (Ambush, Pounce, Asana) are much better. And vice-versa, the synthetic pyrethroids are OK on PC, but OP's are better choices for various reasons. You can't win.
- European red mite (ERM) – scouting the oldest spur leaves now for hatched mites is a good indication of whether you are going to have a problem. Again, look at the oldest spur/cluster leaves. (You will need a magnifier, but they should be pretty easy to spot.) Technically, the threshold is about 2-3 mites per leaf, but even 1-2 mites per leaf at this point might present a problem. Agri-mek, Savey, Apollo, and Zeal are all very good control choices at this time if mites slipped through your oil spray. Remember that miticides should be rotated on an annual basis.

Winter moth destructive in Essex County apple orchard -- J Clements

Last week we confirmed a case of winter moth in an Essex County orchard. (See pictures at end of Healthy Fruit.) This is a new pest we are not too familiar with, and fortunately, it appears to be isolated very near the coast. The bottom line on this pest is it can do a lot of flower and foliar feeding damage and is not to be tolerated. The particular orchard was in bloom, so treatment options were limited, however, spinosad (SpinTor, Esteem) was a viable treatment option. (If it ever stopped raining.) Waiting out the damage until a petal fall insecticide spray -- most insecticides are effective on the winter moth inchworms -- was another option. Perhaps a pink spray would have been the best control choice, however, it's likely the grower did not realize they had an infestation at the time. Next year they will be sure to be on the watch for it earlier. For more information on winter moth see:

- http://www.umassgreeninfo.org/fact_sheets/defoliators/winter_moth.pdf

To thin or not to thin -- D Greene

Since the last publication of *Healthy Fruit* the sun has not come out, the temperature has been cool and it has rained nearly every day. The questions on most of our minds are what effect does this have on fruit set and should I even consider chemical thinning? The answer is not straight forward and it will differ depending upon your location and the amount of pollinating weather you had prior to the start of this cloudy rainy period.

If you had 2 to 3 days of good (or even fair) pollinating weather and the king flowers and a lateral flower or two were open, the chances are good that you had adequate pollination. If the king flowers were just opening at the start of this period of poor weather then chances of good pollination are less sure and a conservative approach to thinning seems advisable.

If you had fair or adequate pollination the chances are very good that this inclement weather we are experiencing has had no adverse effect on fruit set. If you did have good pollinating weather and the blocks in question have had a history of good set, then I suggest that you apply a spray of carbaryl at the next opportunity, which appears to be Thursday from the most current weather forecast. This should be considered your petal fall thinning spray. Fruit are just starting to show signs of growth. It will still be several days before the extent of fruit set can be assessed. If cool weather continues I suggest that you be patient since there will be adequate time to effectively thin if it is deemed necessary.

The weather will be the driver for all thinning decisions in the next week. Based upon the current forecast for the next 7 days it should remain relatively cool. If this turns out to be correct then fruit growth should be relatively slow, stress on fruit should be low and you will have time to apply thinners when initial set can be accurately assessed. When fruit reach the 7 to 12 mm stage we normally recommend selecting a time to apply thinners when a 2 to 3 day period of warm temperatures will follow. I do not see this period forecast in the next 5 days.

Normally we do not consider cloudy weather to be a major player in the determining the success or failure of a thinning spray. This is generally true in New England since cloudy weather generally is accompanied by cool temperatures. However, if over the next few days warm temperatures (70's during the day and upper 60's at night) return and cloudy weather persists the timing of your thinner application may be critical. It is good and acceptable to apply a thinner in the 7 to 14 mm stage at the end of a cloudy warm period. However, we caution you not to apply a thinner going into a cloudy warm period of 3 days or more, since we have demonstrated recently that excessive thinning is likely to occur.

Healthy Fruit Disease Elements -- D Cooley

Thoughts on apple scab from the shores of Lake Hitchcock. The Connecticut Valley in Massachusetts is the bottom of a 10,000 year old glacial lake called Lake Hitchcock. In a few more days, it may be refilled. It's safe to say that we're not getting much of a tan on the old beach.

The honest answer concerning to how to handle scab in this sort of weather is, there is a lot we don't know. The obvious answer is spray when you can. But with what? Is it worth going out in the rain? Let's try to get a best guess by looking at the things we do know. First, scab biology. The best news at hand is that primary scab season is approaching an end. Right now, at CSO about 90% of the spores are gone, and by next week, the last of the ascospores will have matured, and likely been released.

And here's another small piece of good news. Primary infections during this type of rain are probably rare. Most spores that are mature and ready to go are released in the first couple of hours or less of a rain. After that, spores continue to mature slowly, at least during

cool weather like this, and as they do, they probably get released. And then they probably get pounded into the ground by the rain. So, the amount of primary inoculum landing on leaves after the initial flush is very low.

On the other hand, conidia don't stop growing, and they're designed to get knocked around in the rain. So, if there were some early infections that started to produce spores last week, they are still there, still producing spores, and those conidia are moving around into nearby trees. This long-term rain makes any early mistakes much more costly.

Next, let's look at fungicides. Captan and mancozeb, if they get a chance to dry on leaves, they can stick well. In a study done years ago in NH, no matter what the rain, effective residues of Captan were still on the leaf after 7 days. That may still hold true. We can hope that it does. However, it's a safe bet that after 6 or 12 inches the levels of either of these fungicides on leaves has gotten very low. And after 7 days from the application, protection is probably gone.

But what about the strobilurines, Flint and Sovran, and the SI's? They get absorbed into leaves. Does that mean that they're less likely to get washed off in a monsoon? Well, remember that the SI's never were very good protectants, with about 3 or 4 days activity maximum. So 5 days into a rain, they are moot. The strobilurines are better protectants, but we just don't know whether they will last through heavy, long-term rain any better than captan or mancozeb. So the safe bet is to not depend on it.

All this means is something you already know: at the next opportunity, SPRAY. Spray something. Probably the best choices are either an SI, as long as there is no indication of resistance in the orchard, or the strobilurines. These materials are included to take care of those mistakes that may have been made early in the year and to try to prevent any new infections that may have occurred during the rain from growing.

If Rubigan, Nova or Procure are used, they should be mixed with at least 3 lb/A mancozeb or 3 lb /A Captan 50W (or the equivalent). Given the long-term forecast, it might be a better idea to increase those rates to from 4.5 lb to 6 lb /A. The protectant ability of the SI's being what it is, the only protection after 4 days will be from the captan or mancozeb. Also remember that it is necessary to put on a second SI combination about 7 days after the first. This is needed to make the post-infection activity of the SI effective.

Flint or Sovran are effective in a single spray. However, it may be advantageous to plan a pair, as the pressure for scab has been intense.

Alternatively, a 6 lb. /A rate of captan 50W or mancozeb alone will provide protection, and about 18 hrs. kickback. The problem is that there may have been long, wet hours after the last spray well washed away but spores were landing on leaves, and growing.

One less conventional way to avoid this is to try spraying in the rain. Some fungicide will land and stick on leaves, and protect for a while. The problem is we really don't know how much sticks, and how long it will be effective. It's a lot of uncertainty for a major effort.

Another fungicide which may be useful is Syllit (dodine). Usually applications are limited to early season, but where still effective, Syllit has good (up to 36 hours) kickback and suppresses spore development. Use at the the 0.75 lb/ 100 gal. rate. Check the label for cautions against tank mixes and russet on Golden's.

So until next week, this is Dan from Cold Spring Orchard Research and Education Center.



Winter moth larvae on apple flowers and foliage, May 10, 2006, Essex County, MA

UMass Amherst is an affirmative action, equal-opportunity institution. UMass Amherst Extension programs and materials are open to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, marital status, or family status.

This information is for educational purposes only. References to commercial products or trade names does not imply endorsement by UMass Extension or bias against those not mentioned.

Tips on Apogee Use for 2006

Win Cowgill, Rutgers Cooperative Extension

Labeled rates are 3-12 ounces/100 gallons dilute spray. We do know that the higher rates of Apogee have caused some fruit set issues, primarily variability in set. In some cultivars it increases fruit set, in some it reduces set. Based on the consensus of research the last three years we are recommending utilizing multiple applications of the lower rate, three ounces/100gallons

- Our suggestion is make three applications of the 3 ounce rate. Begin at 1-3 inches of growth bloom-petal fall, and repeat at two week intervals.
- More vigorous varieties may need a fourth application as may orchards located further south where the growing season is longer.
- Water Conditioner- Always use a water conditioner, Ammonium Sulfate (AMS)@ one pound/100 gallons –use the spray grade AMS
- Adjuvant- always use a non ionic surfactant to improve leaf coverage
- Do not use Apogee on Empire!**
- Do not use with Boron or Calcium, reduced efficacy may result
- Be aware of the mixing order when combining with other chemicals, consult the label
- Do a jar test of materials before combing in the tank, consult the label
- Apogee is rainfast 8 hours after application
- Note that Apogee should not be applied the same season with PGR's that contain Gibberellic Acids, these include Provide and Promalin. They may interact and prevent one another from working effectively.
- The label is the law, follow it!

Win Cowgill is at UMASS on sabbatical with Wes Autio and can be reached at <cowgill@aesop.rutgers.edu>