

Healthy Fruit

Volume 11, 2003

Prepared by the University of Massachusetts Fruit Team






Issue 6 – May 13, 2003

Current Degree Day Accumulations*

Location	Base 32F	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/03 – 05/12/03)		512	322
Belchertown, UMass CSO, SkyBit™ (01/01/03 – 05/12/03)		375	NA
Belchertown, UMass CSO, observed (04/15/03 green-tip – 05/12/03)	601		

*Base 32 from green-tip used for scab ascospore maturity;
Base 43 and Base 50 from January 1 used in insect models.

Current Bud Stages

Location	McIntosh	Gala	Pear	Peach	Sweet Cherry
Belchertown UMass CSO (05/12/03)					
	bloom	king bloom	bloom-petal fall	petal fall	petal fall

Upcoming Meetings/Events

Date	Meeting/Event	Location	Time	Information
May 14	UMass Fruit Team Twilight Meeting	Tougas Family Farm, Northborough MA	5:30 PM	Jon Clements 413-478-7219 Wes Autio 413-545-2963
May 15	UMass Fruit Team Meeting and URI Extension Twilight Meeting	Knight Farms, Glocester RI	5:30 PM	Jon Clements 413-478-7219 Heather Faubert 401-874-2750

Apple Scab And Rust Risk High

Needless to say current conditions—including wet weather, accelerated ascospore maturity, and new leaf growth—have been ideal for apple scab and rust infection. Don't let your guard down. A petal fall (or sooner) spray with an EBDC protectant fungicide such as polyram or manzate plus an SI (Nova, Rubigan, etc.) will effectively control both diseases.

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Lesions are becoming visible from infections that occurred from ½” greening through tight cluster in orchards that had moderate scab inoculum from last year. You should be scouting your orchards for scab lesions.

Fire Blight Risk Low

Bloom can be a high fire blight infection risk period in apple orchards with a history of blight. Open flowers are an invitation to infection by the bacteria—all it takes are active cankers, some rain and wind, and warm temperatures preceding bloom to trigger an outbreak. Fortunately, this year has been relatively cool preceding bloom. Therefore, models such as MaryBlyt suggest the risk of infection right now is low to non-existent. This could change with rising temperatures—growers with a history of fire blight should be prepared to apply a streptomycin spray if the right conditions (significantly warmer temperatures plus rain/wind) return while we are still in bloom.

The First Apogee Application

Vegetative growth control with Apogee should start as soon as there is sufficient foliage to absorb the chemical. Generally this point is reached when shoots are 1 to 2 inches in length, and it coincides with late bloom or early petal fall. Keys to success with Apogee include:

- Make the first application at 1 to 2 inches of terminal growth. This early timing is important because it requires 10 to 14 days for the first effects of growth retardation to be observed.
- Apply at a rate of 3 to 4 oz/100 gal based upon dilute tree row volume (TRV).
- Include in the spray tank a non-ionic surfactant at the recommended label rate.
- Include in the spray tank an equal weight of ammonium sulfate or 2 pints of a water conditioner such as Quest or Choice.
- Follow the first application 2 weeks later with a second application at 2 to 3 oz/100 gal based upon TRV dilute, with surfactant and water conditioner.
- A third or fourth application may be necessary in July or August but this will depend upon block vigor and weather conditions.

Apogee may increase fruit set, especially if cool weather follows application. We previously thought that increased fruit set could be overcome by using initial rates below 6 oz/100 gal. However, research last year showed that initial rates considerably below that could result in increased fruit set. Therefore, we are recommending more aggressive thinning on all Apogee-treated trees. We encourage all orchardists to apply a petal fall thinner as a first step in any thinning program on Apogee-treated trees.

There has been some concern that Apogee may reduce return bloom. We have seen no reduction in return bloom on apogee-treated trees that was not associated with increased fruit set. This is an additional reason why it is important to pay special attention to thinning of trees treated with Apogee. For more information on Apogee, see ‘F-127R Apogee -- A New Growth Retardant for Apples’ on the UMass Fruit Advisor, <http://www.umass.edu/fruitadvisor/factsheets/factsheets.html>.

Petal Fall Thinning

We feel that a good and effective thinning program should start at petal fall. It is a key component in the multiple thinner approach. All indications are that we have had little frost or cold damage, return bloom is good, and the pollination period has been sufficient to assure good initial set. Petal fall is a very safe time to thin since over-thinning is rare. The most common petal fall thinner is carbaryl as Sevin XLR. It is usually applied at rates between 0.5 to 1.5 pints/100 gallons dilute. Frequently more aggressive thinning is appropriate and encouraged, especially on hard-to-thin varieties. In this case we recommend combining carbaryl with 6 to 10 ppm NAA. Naphthaleneacetamide (NAD or NAAm) at 25 to 50 ppm is the third thinner option that is also effective at this time.

Carbaryl is very toxic to bees. Therefore, any petal fall application containing carbaryl should be delayed until bees are removed from the orchard. Unlike recommendations made for later thinner applications, we do not suggest that you delay application until warm weather is forecast to follow application. Thinners should be applied as close to true petal fall as favorable spraying conditions will allow. Getting started early is important since you will have other opportunities to apply thinners later. For more information on apple thinning, see ‘F-118R Thinning Apples Chemically’ on the UMass Fruit Advisor, <http://www.umass.edu/fruitadvisor/factsheets/Thinning/index.html>.

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Insects And Mites

Tree development in monitored blocks ranges from late pink to bloom depending on location.

Protecting Honeybees And Other Pollinators

Cool cloudy weather is not as conducive to honeybee flight (and flower pollination) as warm sunny weather, and bloom may be extended as well. Growers considering application of bee toxic materials after bloom should be certain to wait until all bees are out of the orchard, and more than 95% of all blossoms have fallen, and should mow the orchard floor to reduce dandelion, clover and other understory flowers that are attractive to both domestic and feral (wild) bees.

A number of materials are reasonably safe to honeybees. These include: Aliette, apollo, B.t, captan, copper sulfate, diuron, Ethrel, Ferbam, fixed copper, Goal, Karmex, Kelthane, Kerb, mancozeb, maneb, NAA, Nova, paraquat, Procure, Roundup, Rubigan, Savey, sulfur, Syllit, Thiram, Vendex, Ziram, and most other fungicides and herbicides.

On the other hand, several are highly toxic and should not be applied to blooming crops and weeds. These include: Ambush, Asana, Danitol, Digon, Diazinon, Guthion, Imidan, Lannate, Lorsban, Pounce, Pyramite, Sevin WP, Sevin XLR Plus, Seving-4-oil
And supracide.

See page 97 in the online version of the 2003-2004 New England Apple Pest Management Guide for additional information on toxic materials that should be applied only during late evening or from late evening until early morning. The URL for the Guide is www.umass.edu/fruitadvisor/NEAPMG/index.htm.

Tarnished Plant Bug

TPB captures continue to be substantially lower than last year, and it is past optimal time for treating in any case except in latest developing areas of the state.

European Apple Sawfly

Sawfly trap captures are well below threshold in all monitored blocks. The highest cumulative capture so far on any single trap is 5 EAS, indicating that this may not be a big EAS year. If this is the case in your orchard, this is further indication that the petal fall insecticides can be delayed to coincide with the main immigration of plum curculio. (see below).

Plum Curculio

PC continue to be captured on Ron Prokopy's immigration traps, but the main flush of movement into commercial orchards has not yet happened. Current cooler weather is not suitable for large-scale movement of PC who prefer much warmer conditions. This differs from previous years when monitoring has indicated that the majority (55%) of immigration occurred before bloom. We anticipate that the big wave of immigration will likely occur after petal fall unless weather warms dramatically. Thus, if EAS are not a problem, it should be possible to delay post-bloom insecticide applications until fruit reach 8-9 mm in size, when they are susceptible to PC damage.

Green Pug Moth

A low-level outbreak of the green pug moth has been noted in a western Mass. orchard. Damage from this small, yellow green inchworm is characterized by small holes in young flower cluster leaves and developing florets, which, if opened up, reveal that the entire center of the blossom has been consumed. Most feeding is done by petal fall. While large infestations can significantly reduce pollination, small outbreaks are not considered significant. To confirm the status in your orchards, get out and look at the developing flower clusters.

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Leafminer

Trap captures indicate that LM populations are spotty, both within orchards and between orchards. Petal Fall is a good time to begin to look for signs of developing mines on fruit cluster leaves. A magnifying lens is desirable, especially if one is looking for the earliest sap-feeding mines. Sample 5 mid-aged cluster leaves per tree on 20 trees distributed through the block

European Red Mites

It seems that most growers were able to time pre-bloom oil sprays for maximum effect on mites. If no mite treatments were applied, begin to monitor spur leaves at petal fall for signs of hatched mites.

Putting It All Together

Growers who need to treat for EAS, PC and LM at or near petal fall, and who wish to limit use of OP and Carbamate sprays may want to consider Avaunt, which has low impact on most beneficials, but good effectiveness against PC and EAS. It also has fair effectiveness against Codling moth, and both obliquebanded and redbanded leafroller if those are a problem. While Avaunt has good effectiveness against adults, eggs and just-hatched leafminer larvae, Agri-mek, Assail, Intrepid, Provado, and Spintor are better choices against sap-feeding LM larvae. Lannate also provides good control of LM sap-feeders, codling moth, and leafrollers, and fair control of PC and EAS, however, it also has a high impact on beneficials (i.e., over 70% mortality after 48 hours).

Avaunt represents a new class of chemicals known as oxadiazines. It is more toxic when ingested than by contact alone. Please note that Avaunt is limited to no more than 4 applications per year, and not more than 24 ounces total annual per acre.

Assail belongs to another new class of insecticides known as neonicotinoids (as does Provado). Although relatively safe to beneficials, it is highly toxic to bees by contact.

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