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UMassAmherst Outreach UMass Extension

Healthy Fruit

Prepared by the University of Massachusetts Fruit Program

Healthy Fruit, Issue 5, April 29, 2008

Current DD accumulations

Location	Base 43F	Base 50F	Base 33F*
Belchertown, UMass CSO observed (01/01/08 – 04/28/08)	285	150	326 (28%)
Belchertown, UMass CSO SkyBit (01/01/08 – 04/28/08)	253	--	-- (3%)

** from April 16, green-tip date, for apple scab ascospore maturity (% mature spores)*

Current bud stages

Location	McIntosh apple	Honeycrisp apple	Bartlett Pear	PF-14 Jersey peach	Cavalier sweet cherry
Belchertown, UMass CSO (04/28/08)					
	pink +	early pink	white bud	bloom	bloom

Upcoming meetings/events

Date	Meeting/event	Location	Time	Information
May 20, 21, 22	Fruit Team Twilight Meeting(s)	TBA	5:30 PM	Jon Clements 413-478-7219

Two pesticide re-certification credits offered at each Fruit Team Twilight meeting.

The way I see it

Certainly the weather must be on everyone's mind. Significant wetting yesterday into today (Tuesday) has resulted in significant apple scab *and* brown rot (blossom) infection periods in stone fruit. I would suggest most of you apply fungicide(s) to both apples and stone fruit later this week. The apple scab spray should include a protectant and something with good kickback -- Nova (Rally), Rubigan, Indar. The brown rot spray should be Rovral, Elite, Indar, Orbit -- and I like to include a protectant at 1/2 rate (Captan) in my brown rot sprays.

The other weather-related 'issue' is frost, which is in the forecast for Wednesday and Thursday mornings this week. A reminder, that apples in the pink bud to pre-bloom bud stage will be injured at 28 degrees F. So will stone fruit. If you can supply any kind of frost protection, you will no doubt have sleepless nights the next couple nights. Let's hope it only goes down to about 30 degrees F.

Finally, I apologize for a mistake we made last week on the mailed version of Healthy Fruit -- you got the previous week's Healthy Fruit. Included with this mailing (snail mail only) is the issue you missed. Not too timely, I agree, and again we apologize for the mistake. (I urge everyone to get on-board and get e-mail or web access -- sooner or later we may discontinue the printed Healthy Fruit.)
J. Clements.

Healthy Fruit Disease Elements

As promised. What a great stretch of weather. But it was dry. And with the rain, the fruit tree pathogens have come alive. Here are a few of the major issues.

Scab. A lot of inoculum was and is available for release with the wetting, it's been long enough, and there's a lot of susceptible tissue available to infect. This is a heavy infection period.

Up to this point, scab management was easy, but things could go downhill fast if there wasn't a good fungicide cover before the rain started. With no rain for over a week, it may seem that any fungicide applied from green tip on should still have been in place. But fungicides do break down in the light, to some extent, and trees have kept growing, and there is several times as much green tissue now as there was just 10 days ago. That spreads fungicide coverage very thin.

Opening flowers will increase the amount of new, unprotected tissue much, much more. Make sure that coverage at pink is very good, particularly if rain is predicted.

There aren't many options for "insurance" if coverage may have been thin going into this rain. Resistance to the SI fungicides Rally (Nova), Rubigan, Procure and Inspire Super is widespread. As detailed last week, of the four, Inspire Super should be the most effective, unless resistance levels are high in an orchard.

Strobilurines, Flint and Sovran, are not particularly good post-infection fungicides. They're good protectants, and they can reduce spore production. But using these fungicides to reduce spore production will only hurry the development of resistance to them.

The AP fungicides, Vangard and Scala, have up to 72 hrs. of post-infection activity, and are probably the best options at this time for a post-infection fungicide. They work best in cool weather, and don't do well against fruit scab. They are most effective through tight cluster.

The Inspire Super MP, as noted last week, uses Vangard as a mixing partner with Inspire. This would, therefore, be a reasonable option for post-infection activity, and in those orchards where SI resistance is not well developed, the combination should work well.

Brown rot blossom blight on peaches and nectarines.

How long does it take for the brown rot fungus, *Monolinia fructicola*, to infect? Or put another way, is there something like the apple scab Mills Table for brown rot?

Yes there is, but they may not be very useful. Here is a list of temperatures and associated wetting periods needed for infection by brown rot.

78ºF 2 hrs

70ºF 3 hrs

60ºF 4 hrs

45ºF 6 - 7 hrs

40ºF 11 - 12 hrs

Earlier estimates list times that longer, for example, 18 hrs at 50ºF and 5 hrs at 77ºF. This is probably related to the fact that infection depends on inoculum being produced and released, and then the time it takes to infect. It doesn't take long for brown rot fungi to produce inoculum. For an old canker to produce condia takes about 12 hrs. of wetting (my rounding - it too changes with temp), so all told it takes about 24 or more hours at 40, or 16 hrs. at 60, to get blossom infections. This wetting period is more than enough, however the infections are figured.

The rains that have fallen are sufficient to wash off protection, and new flowers are opening. The best post-infection fungicides are Rovral, Elite, Indar or Orbit which should be applied as soon as rain stops.

Fire blight.

So far, the models tell us that there is no risk of fire blight on the horizon. While the spring has seemed warm and beautiful to us, it has on average been cool and dry. Average temperatures have been in the high 50's, and the fire blight bacteria need a threshold of 60F to grow. So there hasn't been a buildup of fire blight bacteria yet. It's too early to predict well how things will develop for fire blight, but now it looks like pressure will be low. However, be ready with streptomycin in case we get significant warming during bloom in case it is needed. D. Cooley

A reminder that weather data and disease models from Belchertown weather data are available on the UMass Fruit Advisor, http://www.umass.edu/fruitadvisor/hrcweather/

Guest article -- THE BRINK OF PINK

Art Agnello, reprinted from Scaffolds Fruit Journal, April 28, 2008
http://www.nysaes.cornell.edu/ent/scaffolds/

The stop-and-go temperature wheel has succeeded in playing havoc with nearly everyone's expectations about where we are vs. where we should be at this point in the season, since some blocks in some regions are certainly at pink bud already (or will get there this week), and others are still clambering through tight cluster. Nevertheless, this would probably be a timely opportunity to get prepared for the crush of pink bud pest management duties that always seems to coincide during too short a period. A brief assessment of where we stand with insect pests might be useful at this point.

The potential pests of most concern just now are probably rosy apple aphid (RAA), oriental fruit moth (OFM), and tarnished plant bug (TPB), with European apple sawfl y and plum curculio lurking in the wings. Unlike the past few years, OFM has managed to show its face well before bloom this season, and very likely the warm-up predicted for the end of this week will see biofix established in most plantings statewide. In blocks with a history of internal worm infestations, 1 or 2 traps checked weekly might help indicate the relative size of the first generation population this year. This is followed, course, by the question of how to respond when the numbers start building.

This is always a pertinent time of the year to quote the philosopher Yogi Berra, who might have been giving prebloom advice when he said 'If you don't know where you are going, you will wind up somewhere else.' However, I might venture a guess that, even though we may get quite a few moths flying during pink and bloom, the overall temperature ranges we're expecting will result in very little egg hatch until petal fall, when the newly emerged 1st brood larvae will be best handled. Most growers

will be using an OP like Guthion or Imidan at petal fall, possibly tank-mixed with a Bt, Intrepid or Proclaim for OBLR, and all of these will have some effect on most OFM populations. In particularly high-risk situations (that is, where you had a hard time managing internal leps last year, and can predict that they'll be back this year), you might want to substitute a more lep-active material like Avaunt or Calypso for one of your petal fall or (adding Assail in the list of options) first cover sprays. This way you might get an extra jump on the OFM/CM complex during their first generation, while covering the need to protect against other petal fall regulars like plum curculio and European apple sawfly. Speaking of which, both of these postbloom anticipators will have gotten a kick-start from the recent warm days and nights, so they're likely to be waiting anxiously for the newly set fruitlets to becomeavailable for their good works. This will underscore the importance of prompt petal fall sprays, admittedly more of a challenge in mixed plantings of varieties with markedly different bloom dates.

According to your personal philosophy, RAA and TPB can be either perennial challenges, puzzling but non-fatal occurrences, or else a complete flip of the coin. Do you have them, do you need to treat for them, are you able to control them if you do, and does it matter if you don't? These pests also have been slow to tip their hand this season, although some founding colonies have already been noted in local orchards. It's possible to scout for rosies at pink, but this is often not practical, given all the other hectic activity at this time. TPB is not a good candidate for scouting, and if the bloom period is prolonged by cool, wet weather, a pink spray is of little use. You'll have to decide for yourself whether this bug is of sufficient concern to you to justify treating. We have seen few orchards in western NY where TPB control is warranted (and only slightly more in the Hudson Valley), simply because the most effective treatment to use has been a pyrethroid, which a) kills predator mites, and b) still rarely lowers TPB damage enough to be economically justified. If you elect a spray of Ambush, Asana, Baythroid, Danitol, Pounce or Warrior at pink for plant bug, you'll take care of rosy apple aphid (and STLM) at the same time. If RAA is your main concern, you could elect a pink spray (non-pyrethroid options include Actara, Assail, Calypso, Esteem, Lannate, Lorsban, Vydate, OR the newly labeled product Beleaf – see the "Chem News" section) if you have the luxury of a suitable application window. Once again, be sure to consider potential impacts on non-target species such as beneficials, and be aware of your bee supplier's concerns about effects on pollinating bees.

What else is happening at pink? STLM is laying eggs, but most orchards don't seem to suffer too greatly from 1st brood leafminer these days, and a sequential sampling plan can be used to classify STLM egg density at pink or of sap-feeding mines immediately after petal fall (see pages 69 and 71 in the Recommends). Treatment is recommended if eggs average 2 or more per leaf on the young fruit cluster leaves at pink, or if sap-feeding mines average 1 or more per leaf on these leaves at petal fall. Sampling can be completed in approximately 10 minutes.

Leafrollers are also out there, but only part of the population is active at this time, so while you might get good control of any larvae you spray now, don't neglect the fact that the rest of the population won't be out (and susceptible to sprays) until bloom or petal fall, so it's probably better to wait until then to address this pest.

Finally, if mites normally need attention in a given block, and you haven't elected (or been able to) a delayed-dormant oil application as a part of your early season mite management program, you'll be needing to rely on either: one of the ovicidal acaricides (Apollo, Savey, Zeal) available for use, whether before or after bloom; a rescue-type product (Nexter, Acramite, Kanemite, Kelthane, Carzol, Zeal) that can reduce motile numbers later on if they should begin to lap at the threshold; or Agri-Mek, which falls somewhere between these two strategies. Like the true ovicides, Agri-Mek should also be

considered a preventive spray, since it needs to be applied early (before there are very many motiles) to be most effective, generally within the first 2 weeks after petal fall. Also, as a reminder, Carzol is restricted to no later than petal fall, so it may be of limited use in most programs. For any of the rescue products, the operational threshold in June is an average of 2.5 motiles per leaf (see the chart on p. 79 of the Guide).

Blast from the past

from Fruit Notes, April, 1955, http://www.umass.edu/fruitadvisor/fruitnotes/archive/

LOCAL SUPPLY OF BEES FOR POLLINATION IS SHORT

Early Attention Needed to Assure adequate Supply of Bees for Pollination: It is very likely that bees for hire will be scarce this spring. Fruit growers and others who need bees for pollination are urged to arrange early for their supply of these very necessary insect helpers.

Protect the Bees: Do everything to avoid unnecessary destruction of bees through the unwise use of insecticides. At times when bees are most active, whether on crop blossoms or on dandelions or other weeds, use those insecticides which are the least toxic to bees.

If you rent bees or have an arrangement with a beekeeper to handle package bees, make sure the owner has ample opportunity to get the bees away from the orchard before applying post-bloom sprays or dusts.

Experience carried out last year and in many other parts of the country give us no reason to think the aerial spray program carried out for gypsy moth is deleterious to bees to the extent that colonies are greatly weakened or lost.

F.R.Shaw & E.H.Wheeler