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Healthy Fruit

Prepared by the University of Massachusetts Fruit Program

Healthy Fruit, Issue 4, April 22, 2008

Current DD accumulations

Location	Base 43F	Base 50F	Base 33F*
Belchertown, UMass CSO observed (01/01/08 – 04/21/08)	191	94	156 (5%)
Belchertown, UMass CSO SkyBit (01/01/08 – 04/21/08)	160	--	-- (1%)

*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 (04/21/08)					

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

As I suggested last week, and based on the weather forecast then, we are close to apple tight cluster in Belchertown and moving rapidly along. I am thinking first king bloom in a week unless the forecast changes dramatically. (Although some cooler temperatures are predicted for the weekend, so that could change things a bit.) Remarkably there are NO apple scab infection periods predicted by SkyBit (at this point) through May 1. Although I would not totally relax, there is no good reason to be applying fungicide(s) until the chance of rain increases dramatically. Now, that is a bold statement, but the cost

savings are substantial if sprays can be skipped. Use the best information you have, and read the following article by Dan Cooley to help you make a decision when to apply the next fungicide.

The warm, dry weather, however, is conducive to high insect activity. Watch for tarnished plant bug, and if too many are seen, an open cluster to pink spray with a pyrethroid or Calypso or Actara may be warranted. The window for an oil application for red mites is rapidly drawing to a close, with 1% concentration suggested through tight cluster. 1% oil on pears is still indicated for psylla. J. Clements.

Apple tree planting tips

The past week has been ideal weather to plant trees. Here are some reminders if you are so doing:

- keep trees in a refrigerator (not with fruit) or the coolest place you can find upon arrival from the nursery -- I check the trees for moisture and premature budding, but leave them in wrap and box
- remove trees from box the day before planting and soak roots overnight in a tub of water -- some put a little 'Miracle-Gro' or similar in the water. Plant immediately after removal from water, do not let the roots dry out
- use the apple tree spacing calculator, <http://www.umass.edu/fruitadvisor/clements/appletreespacing.htm>, to determine proper tree spacing
- make sure the graft union is at the desired planting depth -- every inch or so above the ground gives app. 5-10% more dwarfing. Recommended planting height is 3 to 6 inches, depending on system and how much dwarfing you want
- make sure roots are settled in and there is no air space around the roots by 'stomping down' the trees
- water immediately ('Miracle-Gro' tip above applies) and keep watered unless it rains, install irrigation ASAP to make the watering job easier
- prune immediately -- as long as you know what you are doing! -- general rules apply, whips get headed at waist height if a central leader, feathers stay as long as they are less than half the diameter of the leader (unless there is only one, cut it off), know your system (semi-dwarf central leader, dwarf slender spindle, vertical axis, tall spindle, super spindle, etc) and prune to it!
- support the trees ASAP -- if you can't get the permanent support it (posts, wire, etc.) use a temporary support made of strings and stakes

J. Clements

Healthy Fruit Disease Elements April 22, 2008

New Fungicides

There are two relatively "new" fungicides available for use on apples this spring. New is in quotes because the fungicides have actually been around for some time, but they have been cleared for use on apples, **Indar** (Dow AgroSciences) last year, and **Inspire Super MP** (Syngenta) this year. The SI fungicide Nova is also available as **Rally 40WSP** (the active ingredient in both is myclobutanil). Rally 40W has been labeled in the western states only, but the WSP formulation is national.

Indar (fenbuconazole) is a sterol inhibitor in the same resistance class as Nova, Rally, Rubigan and Procure. It has been labeled on stone fruits for many years. Inspire Super MP is also an SI (difenoconazole), but it is uniquely marketed as a multi-pack with a separate container of a different

kind of fungicide, Vangard, included with the Inspire Super container. The two must be tank mixed and used together.

The multi-pack of Inspire and Vangard is apparently an interim solution for Syngenta. In the future, they will apparently be packaged in a single premix. Using Vangard with the Inspire Super is a resistance management tactic. However, Vangard has been recommended for use in the early season rather than later as it does not have good efficacy against fruit scab. Other fungicides, such as captan offer better fruit protection, but the label for Inspire Super MP appears to require that the Inspire Super be applied in combination with Vangard. Adding captan or mancozeb to this mix may be effective, but doesn't appear to be very efficient.

With SI resistance widespread in Massachusetts and throughout New England, it's surprising to see Indar and Inspire Super MP in the apple market. However, there is a difference between the new products and the older SIs. Tests in NY by Köeller indicated that Indar and Inspire had more activity against the scab fungus than the other SIs labeled for apple scab. This past two seasons, Köeller and Cox ran tests in orchards that had SI-resistant apple scab, to see whether increased activity translated to increased effectiveness against apple scab in the field.

In those tests, sometimes the Indar and Inspire Super performed better than other SIs, and sometimes better than a protectant program using mancozeb and captan. At other times, there was no difference between the newer SIs and other treatments. Performance was not consistent. This probably relates to how resistant the apple scab in the different tests was to SI fungicides.

The scab fungus may be susceptible to an SI, be only slightly resistant to SIs, or be very resistant to them. Resistance to SI fungicides is not an all-or-nothing response, but a gradual buildup of resistance over time. That means that using the relatively stronger Indar or Inspire Super MP in an orchard with moderate SI resistance will most likely improve control – for awhile at least. In an orchard with high levels of SI resistance, Indar or Inspire Super will probably not be any more effective than a good protectant program using mancozeb and captan.

Eventually, even the stronger SIs will lose efficacy. It isn't clear whether this will take a single season of two or three applications, or a few seasons of many more applications.

Some notes on copper for bacterial spot on peaches and nectarines.

As problems with bacterial spot on peaches and nectarines have increased in recent years, it's natural to look for a solution. In more southern regions, growers apply copper after dormancy and into the first couple of cover sprays. As an added tool in blocks where bacterial speck was a problem last year, growers may consider copper applications through petal fall.

However, this can be risky, as copper may cause leaf damage and defoliation if too much of it is applied, or builds up on trees. These later copper applications should be limited to those blocks that have had a problem. In addition, pay attention to the following factors to decrease the chance of damage.

- Copper formulations differ, and their potential to cause phytotoxicity varies. It depends on the amount of metallic copper in a product. For example, Champ WP contains 50% metallic copper, Cuprofix Disperss 20%, Kocide DF 40%, and TennCop 5E 5%. Check the amount of metallic copper in a product to determine how much is being put on trees.
- To minimize the chance of damage, the metallic copper should be kept to 1 lb. per acre up to pink bud. After that, $\frac{1}{2}$ lb. per acre metallic copper could be used to petal fall.
- At low pH, where spray water is acid, more copper will be available, and the risk of damage will be higher. So avoid low pH levels, and keep spray solutions near neutral, pH 7.

- Obviously, calibration will be critical. If calibration is wrong, too much copper may be applied, resulting in phytotoxicity.
- Dry weather can allow copper to accumulate. Because it has been so dry to this point, additional copper is NOT recommended until we have had significant rain.

D. Cooley

Blast from the past

from *Fruit Notes, February-March, 1955*, <http://www.umass.edu/fruitadvisor/fruitnotes/archive/>

YOUNG TREES IN AN OLD ORCHARD

When a young tree is planted where an old one is taken out, growth is frequently disappointing. At one time it was thought that a mature tree left something toxic in the soil. But that idea has been very largely discarded. The scanty growth of the young tree is explained in this way: (1) Certain elements may have been depleted leaving a lack of balance in the soil. (2) The organisms which bring about decay of the dead roots require nitrogen and therefore compete with the young tree. (3) If other mature trees with widely ranging root systems remain standing nearby, they also offer serious competition. (4) Use of sulfur in scab control over a period of years lowers pH to a level unfavorable for the young tree. After removing an old tree a soil improvement program is frequently essential. This involves more than a mere surface application of lime and a complete fertilizer. These materials incorporated into the soil, plus a rank growth of cover crop will help restore the depleted soil to its former condition. sorryA year spent in growing fertilized cover crops will be time well spent. If manure is available it can be used to good advantage. The soil must be handled in such a way that the young tree makes good growth from the start. If we allow a young tree to loaf along, making one year's growth in three, we lose both time and money.

Guest article -- Controlling apple scab when it doesn't rain

This article appeared in Mike Fargione's Grower (e-mail) message for 4-22-08 (J. Clements)

The following comments are summarized from an upcoming Scaffolds article by Dr. Dave Rosenberger, Plant Pathologist at Cornell's HVL:

On Friday, April 18, apple scab ascospore maturity at the HVL, Highland, showed 40% mature spores and 3.2% empty asci (editor's note - we have reached and gone beyond the 12-15% mature spore threshold Dr. Rosenberger uses for the chance of commercially-significant scab infections in "clean" orchards). Low-inoculum orchards that were not sprayed prior to April 11-13 rains may have escaped with few scab infections. Orchards that had any level of visible scab last year may have enough

infections from the April 11-13 rains to create problems later this season.

Serious scab problems emerge more often than one might expect following a dry spring. Some factors that may lead to scab infections in a dry year include:

- Massive spore releases can occur after long dry periods. The spore load in over-wintering leaves does not disappear during dry weather.
- Extended spray intervals during dry weather means less fungicide residue is available when rains finally arrive. Accumulated residues in the trees from weekly fungicide applications may exceed what can be expected from a single spray applied just ahead of a rain event that occurs after a long dry period.
- Fungicide redistribution does not occur in the absence of rains. Light rains may actually improve fungicide effectiveness by redistributing contact fungicides (Polyram, mancozeb, captan) to new growth and/or to small areas missed by the sprayer.
- Open flowers create a massive increase in plant tissue surface area that can complicate fungicide coverage. Fungicides applied at the pink bud stage are more likely to reach flower stems, sepals, and petals than are fungicides applied at full bloom.

An effective pink spray may be especially important for scab control in a dry year. Full rates of fungicides and thorough spray coverage (no alternate row spraying) are recommended if several prebloom sprays were omitted prior to the pink spray.

Attempting to catch up with scab control after the flowers open is likely to be a losing strategy in a dry year unless no rains occur during bloom.

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