



Volume 14, 2006

Healthy Fruit

Prepared by the University of Massachusetts Fruit Program

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

Upcoming meetings/events

Date	Meeting/ event	Location	Time	Information
Aug. 24	Bramble Field Day	Nourse Farms Whately, MA	3-7 PM	Sonia Schloemann 413-545-4347
Aug. 29	Grape Meeting	Jonathan Edwards Winery N. Stonington, CT	3 PM	Hilary Sandler 508-295-2212 x21

The way I see it -- J Clements

Early apple harvest has started. Maturity appears to be slightly ahead of average, so keep an eye on apple blocks for signs fruit are ready to pick. Size and color appear to be excellent. Fruit condition may be affected by the large size, early August heat, and heavy disease pressure this season. So keep a close eye on fruit condition, and take preventive steps if necessary -- see the article by Dan Cooley on preventing pre-harvest diseases. These include various fruit rots -- black, bitter, and white -- which may be a problem this year.

Note that the next Healthy Fruit will be published September 6.

Pre-harvest disease management for apples -- D Cooley

As we approach apple harvest, there's a nasty memory from last season about late-season sooty blotch and flyspeck, SBFS. Given the outbreak last fall, and the ample rain this year, there is undoubtedly plenty of SBFS inoculum around.

A key point in the SBFS disease cycle is the beginning of the epidemic. This happens at 270 accumulated wet hours after petal fall (hr-awpf). At Belchertown CSOREC, we reached this on June 20. From then on, there is plenty of inoculum available to infect fruit.

But the fungi that cause SBFS are stealth pathogens. They infect, but it takes another 270 hr of accumulated wetting before symptoms appear. Presumably the fungi are growing, invisible to the naked eye, on the surface of fruit until they reach a point where they darken and are large enough to be seen. The key to keeping this from happening is to keep a layer of fungicide on the fruit and to promote

drying. Since June 20 at CSOREC, there have been 180 hr of accumulated wetting. This includes dews that were wet enough to be recorded by the leaf wetness monitor, though leaf wetness monitors can have a lot of variability. But it has been relatively dry since the end of June, and at the Research Orchard, the number of wet hours needed to develop SBFS symptoms haven't been reached. So, any infections that are out in orchards are still invisible.

Suppose, for example, that after scab fungicides were done on June 20, no more fungicide applications in a block at Belchertown were made. There would be no visible infections yet, but as soon as additional rain and dew drove the accumulated wet hours up to and beyond 270 hr., symptoms would be seen.

So, whether infections will develop, and new ones start, depends on two things: fungicide coverage and wetting. Keeping fungicide on fruit through harvest will suppress development of existing infections, and protect against new infections, even if the weather gets wetter. But as soon as fungicide is gone, either because it is washed off or breaks down over time, existing infections will start growing again and new ones might start whenever fruit surfaces are wet. This will continue until the next fungicide application.

Deciding when to stop SBFS sprays becomes a matter of deciding whether fruit were always protected from the start of the epidemic. If they were, then it will take a full 270 hrs of wetting after fungicide protection finally breaks down before SBFS shows. In this case, with dry weather in late August and September, it might be possible to put on a final fungicide now.

However, if fruit were not always protected, then the SBFS fungi have a head start. For example, at Belchertown, in trees that haven't gotten fungicides since June 20, it will take only another 90 hrs of wetting before SBFS appears. If a fungicide were applied to these trees tomorrow, and next week it was washed off by two and a half inches of rain, then it would take only that same 90 hrs of wetting for SBFS to show up. With a wet week next week, the fungicide could be washed off, and those 90 hrs accumulated. If so, by the end of August there would be SBFS on the apples.

Obviously, the later apples are harvested, the more chance there is that fungicide protection will be depleted. And the more chance fruit will be wet for long enough to develop SBFS. For example, varieties harvested in late September may have to deal with a five-day Nor'easter. Last year, it appears that breaks in summer protection and wet weather during a short period in September caused rapid growth and development of SBFS.

Some blocks are more at risk than others. Blocks where trees dry slowly, and are subject to heavy dews, are most at risk. Those trees that are closest to the woods not only tend to stay wet longer, but are closest to SBFS inoculum. They are at high risk. If there is some question as to whether to spray one more time, start with borders next to woods and blocks of big trees in low, poorly mowed areas.

The most effective fungicides are the strobilurines, including Sovran, Flint and Pristine, or Topsin-M plus captan. Be sure that limitations on the number of applications, their timing and the total amount of material used are not exceeded, and day to harvest limits are met. Captan alone is not as effective as the other fungicides, but if applied at approximately 14 day intervals, or after any rain of 2 in. or more, should protect fruit adequately.

Apple Maturity Report -- J Clements

Here are results from recent apple maturity testing of 'summer' apples at the UMass Cold Spring Orchard in Belchertown. Fruit maturity is progressing nicely, and cooler weather has been favorable for color development. Every indication suggests we are a touch ahead of normal harvest, so keep this in mind. Monitor apple blocks closely for color development, taste, and use the starch-index test to help assess maturity, If you need starch-iodine solution, let me know. For details on the starch-index maturity test see:

- <http://www.umass.edu/fruitadvisor/clements/articles/sitest.htm>

date	variety	drop	size (in.)	color (%red)	firmness (lb.)	soluble solids	starch index	taste	disorders	comments
18-Aug	Sunrise	few	3.0	60	13.8	11	4	very good		very nice, ready to pick
21-Aug	Paulared	some	3.2	80	15.4	12	3.2	starch-tart	water core in one fruit	OK, could be picked
21-Aug	Gingergold	nil	3.2	yellow	20	12	1.7	OK, early	moldy core; rot	needs another week
21-Aug	Akane	few	2.7	75	18	13	5.5	tart		ready to pick
21-Aug	Sansa	nil	3.2	60	16	13	3.5	good	mites; insect injury	close
21-Aug	Zestar!	nil	3.1	60	15.6	14	3.5	nice varietal flavor		ready to go

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