Fruit Maturity

Zestar! is overripe but still good. They will begin to breakdown soon.
Sunrise is ready to pick and will break down if not picked soon.
Silken, a new variety from British Columbia, was ready to pick this week. I was impressed with its texture and flavor, but not by its small size.
Spurtype McIntosh taste OK. Standard (Rogers) McIntosh are not ready for harvest.
Honeycrisp is at starch index 1.5, and not ready for harvest.
Cortland and Gala are also not ready for most folks.
Flyspeck update

The rainy weather this week has shifted the estimated dates for when flyspeck colonies that began growing after depletion of the final fungicide application could become visible. The following estimates assume there were negligible amounts of flyspeck development due to poor coverage or gaps between earlier spray dates in July and August. Some fruit sprayed regularly through the summer and with renewed protection after the Irene rain on August 29 are already showing flyspeck. This has to be due to inadequate coverage / dosing.

These estimates are based on forecast weather out through September 15. The outlook for Sept. 16–22 is for slightly above average chance of rain and normal temperatures over those dates. The blue dates in parentheses and italic are a rough worst-case scenario if weather after September 15 turns out to be in both the warmest 20% and the wettest 20% of previous record for those dates at that location. The chances of that happening are very roughly 1 in 25 years, so it’s a rather extreme and unlikely estimate, but also certainly possible.

Of course, in addition to spray coverage and timing, the actual flyspeck show date for an orchard is controlled by site-specific factors such as air drainage, wind and sun exposure, block history, and proximity and density of alternate host plant sources of flyspeck spores, color of the fruit, and eye of the beholder.

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<th>Final application date</th>
<th>MONMOUTH Latest “safe” harvest date with low risk of flyspeck (assuming continuous protection prior to final spray)</th>
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<td>Captain or Ziram</td>
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<td>August 19</td>
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The following text is paraphrased from an email received September 9 from Dr. David Rosenberger of the Cornell University Hudson Valley Lab.

Both in my plots and in some commercial orchards, we are seeing a significant amount of bitter rot showing up in Honeycrisp, Macs, and some other early cultivars. We are also seeing more black rot fruit decay than usual in some blocks. My hypothesis is that much of the decay that is showing up now resulted from decays that were initiated in fruit that were damaged by heat injury during the extremely hot weather that we had on July 21-22-23.

It appears to me that fruit damaged by this heat wave (perhaps interacting with other factors, such as drought stress) lack the normal plant defenses that provide significant protection against these fruit rot pathogens. But Honeycrisp in another block here at the lab have relatively little decay. I don't know why one block has lots of bitter rot decay and other one doesn't, but commercial growers are reporting the same inconsistencies on their own farms.

My concern at this time as that the fruit present on the tree that already have bitter rot are now supplying inoculum that will potentially be infecting additional fruit. Some of the bitter rot infections that I believe probably occurred in recent days may not show up until fruit have been stored for a while.

I have queried both Keith Yoder and Turner Sutton, and they both agree that the best option for us at this time (since all fungicide residues have been removed by recent rains) is to recover ASAP with Pristine. Both of them seemed to feel that Pristine alone was OK, but I would probably add 2 lbs./acre of Captan 80W if I had high-value Honeycrisp that I wanted to protect.

None of us know if Pristine really has any "kickback" against bitter rot, but if there is any at all it is probably minimal. Thus, blocks with visible bitter rot should be recovered ASAP.

Keith Yoder has reported in several trials that Scholar fungicide applied as a postharvest treatment can significantly reduce the amount of bitter rot that develops during storage, apparently by eradicating latent infections. Thus, for growers who still have postharvest drenchers available and functional, this might be a year where a postharvest Scholar treatment will pay for itself if fruit coming from the field are carrying a lot of latent bitter rot and/or black rot infections. Keith characterized his reports as follows:

Trial #1: Scholar controlled latent bitter rot on Fuji. Mertect, Captan, or Mertect + Captan did not.
Trial #2: Scholar again was generally effective against bitter rot. Penbotec was partially effective. Mertect and Mertect + Captan gave no control of bitter rot.
Trial #3: Pre-harvest Pristine followed by post-harvest Scholar reduced bitter rot from 66% to 2% in Granny Smith, and from 35% to 2% in Idared.

The preharvest treatments alone did not have significantly better bitter rot control than the untreated check fruit. But preharvest treatments followed by Scholar did have significantly better bitter rot control.

Preharvest treatments alone were significantly better than the untreated check for control of White rot on Granny Smith, and for control of Alternaria rot on both Granny Smith and Idared.
As I recall, Keith held these fruit until they were far more senescent that would be commercially acceptable, but his work illustrates the effectiveness of Scholar. However, I suggest that you warn growers about the cost of Scholar since they may go into cardiac arrest if they buy the product without seeing the price tag until the bill arrives in the mail!

There was far more SBFS in an August 23 evaluation of Cameo fruit in test plots than I would have expected for that time of year. More recent evaluations have shown that sooty blotch in particular is present on well-sprayed fruit from my plots and will "pop out" given enough time. (We document this by incubating fruit after harvest). Thus, I am afraid that the recent 2 weeks of rain will cause an extremely severe outbreak of SBFS on fruit harvested after the 3rd week of September.

Pristine is a good option for SBFS as well as for fruit rots. However, where bitter rot is not a concern, it may be cheaper to use Captan + Topsin M to control SBFS. Captan 80 WDG at 2-3 lbs./A plus Topsin M will also control black rot.

I am leery of using captan + phosphite for late-season SBFS control because our experience is that it will not control black rot very well unless you use high rates of captan.

For fruit that will not be harvested for at least two weeks, Inspire Super plus captan is another option that should do an excellent job at preventing SBFS. However, I am reluctant to recommend Inspire Super at this time of year because I think that it will really push selection pressure for DMI-resistant apple scab. Note that summer use of Inspire Super requires possession of the supplemental label. ~ ~ ~

**Notes from research trial reports sent along with the message**

**Data from 2009 trial at the Hudson Valley Lab:**

1a) Ginger Gold check fruit had 79%, and Golden Delicious check fruit had 90%, fruit rot at harvest due to black rot and white rot. (The check fruit received no fungicide protection after initial sprays of Penncozeb at Green Tip and approximately Half Inch Green.)

In comparison plots that received a standard scab prevention regime, followed by different postbloom treatment schedules with relatively "commercially normal" intervals and doses of either Inspire Super, Indar, Tebuzol, or Captan + Topsin M; all of those treatments were effective at greatly reducing the levels of black rot and white rot.

1b) The Ginger Gold check fruit in this trial had 15% fruit rot at harvest. All of the summer treatment programs (Inspire Super, Indar, Tebuzol, or Captan + Topsin M) were highly effective at preventing bitter rot.

1c) In this trial, 100% of McIntosh and Golden Delicious fruit exceeded the U.S. Fancy tolerance for SBFS. The Inspire Super treatment schedules were highly effective at reducing the percent of fruit downgraded for SBFS; and were more effective than Captan + Topsin M.

Captan and Topsin M was much more effective than the Indar and Tebuzol schedules.

The Indar and Tebuzol schedules, while better than the “no control” check treatment, did not provide adequate protection.
Data from a 2011 field trial at the Hudson Valley Lab:

2a) 100% of unsprayed Cameo fruit had flyspeck present, and 100% had sooty blotch present by August 23. (Severity relative to US Fancy threshold not reported).

A treatment regime of wettable powder sulfur at 7–11 day intervals from Green Tip through First Cover, followed by liquid lime sulfur applications at 13 – 20 day intervals gave poor control of SBFS. The percentage of SBFS was statistically lower than on the unsprayed fruit, but very much higher than Pristine and Captan + Topsin treatments and inadequate for commercial control.

2b) Treatments with standard scab protection through First Cover, followed by summer treatment schedules using Pristine or Captan + Topsin were both highly effective at reducing the percent of fruit with detectable SBFS on these Cameo fruit.

2c) The wettable powder sulfur followed by liquid lime sulfur treatment did not reduce infection level of black rot or bitter rot fruit infections on Honeycrisp fruit below the untreated control. Neither did the Pristine or Captan + Topsin M treatments. The percent of Honeycrisp infected with black rot and/or bitter rot by August 23 in the Pristine and Captan + Topsin M plots was 40 – 65%, compared to 78% in the check plots.

2d) On Cameo fruit evaluated September 2, the wettable powder / liquid lime sulfur treatment did not reduce black rot or bitter rot compared to untreated check fruit. A Captan + Topsin treatment schedule did significantly reduce black rot and bitter rot levels, though not necessarily to a commercially acceptable degree.

Other comments:

Bitter rot is a heat-dependent disease that thrives in hot humid conditions. As with SBFS, infection pressure is higher in the Hudson Valley than in Maine. The same may also be true for black rot and white rot.

Hudson Valley had somewhat more rain than Monmouth and Sanford Maine in June, almost the same rain in July. They were a few degrees hotter than Monmouth on July 21–23, but Sanford was almost as hot as the Hudson Valley on those days.

While rain was plentiful in Monmouth and Sanford in August, in the Hudson Valley they had an extremely high amount of rain – roughly 16 inches in one month vs. 8 inches in Maine.

For September 1 – 14, Monmouth and Sanford show an above average 3.2 inches of rain. However, the Hudson Valley is ahead again with 7.7 inches in the first half of the month.
Dr. Alan Eaton (Univ. of NH) has found Spotted Wing Drosophila (SWD), *Drosophila suzukii*, attacking small fruit and tomatoes near Concord NH. His report is at http://extension.unh.edu/Agric/Docs/swd_9_2011.pdf. Suspected SWD specimens of SWD were also recently collected in CT.

Ripening raspberry, blackberry, blueberry, strawberry, and grape are highly susceptible to being damaged by SWD. Though probably not listed as an apple pest, it does attack tree fruit such as peach, cherry, nectarine, and plum. Tomatoes may be a lower risk, though only time will tell.

SWD are similar to common native vinegar gnats/fruit flies, but can attack sound, ripe fruit. SWD do not need over-ripe, rotting food because the female has a serrated egg-laying apparatus (ovipositor) that can cut through unbroken fruit skin. Once larvae are inside the fruit, pesticide cannot reach and kill them. Those fruit are unsuitable for sale. Early detection, and control if needed, is necessary to prevent losses where SWD are present.

Small fruit growers, esp. those located near NH, should consider monitoring for SWD using simple traps (see factsheet below) and by checking susceptible types of fruit for egg laying holes and maggots.


A Univ. of CA factsheet oriented for home plantings is available at http://www.ipm.ucdavis.edu/EXOTIC/drosophila.html

From Lorraine Los at UConn: Laboratory assays at Michigan State showed that most pyrethroids, Imidan, malathion, and Delegate worked well as controls. Entrust (spinosad) also was rated good to excellent and is an organic option. The neonicitinoids (such as Assail, Actara, and Provado) were not as effective. As always, check the preharvest interval for the target crop before making any pesticide application. For instance, Entrust has a 1-day PHI on raspberries, but a 3-day PHI on blueberries.

For more information:
- Michigan State: http://www.ipm.msu.edu/SWD.htm
- Oregon State http://swd.hort.oregonstate.edu/
Brown marmorated stink bug (BMSB)

Stink bugs are not common Maine apple pests, but become noticeable occasionally, usually in late-summer hot and dry periods. While that does not exactly describe this week’s weather, stink bugs are out and about. There are at least two native brown stink bugs in Maine that resemble the brown marmorated stink bug \((\textit{Halyomorpha halys})\), but which do not cause anything near the amount of damage caused by BMSB in the MidAtlantic states in recent years.

In addition to the general coloration and 17mm (5/8 inch) length, two key characteristics for identifying BMSB are:
1) the light colored section that extends on both sides of the joint near the terminal of the antennae, and
2) the banded pattern around the margin of the abdomen.

The gold colors in the photo above will probably be faded and less distinct in field collected specimens.

The brown stink bug, \((\textit{Euschistus servus})\) is 10-15mm long. It has a similar marginal pattern around the abdomen, but while there are different color shades on the antennae, the prominent white/cream-colored section on either side of the last joint is not present.

The dusky brown stink bug also has the marginal abdominal bands, but again the antennae while having different shades of coloration, lack the whitish section around the last joint. It has also has distinctly pointed “shoulders,” whereas the shoulders of BMSB and brown stink bug are rounded.

Brown stink bug adult by Russ Otten, Bugwood.org
Dusky brown stink bug adult by Herb Pilcher, Bugwood.org.
Closing Words

"Every life is in many days,  
    day after day.  
We walk through ourselves,  
    meeting robbers, ghosts, giants, old men, young men, wives, widows, brothers-in-love.  
But always meeting ourselves."  
– James Joyce

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Orchard Radar weather and pest tracking models at http://pronewengland.org/AllModels/DecisionModels.htm

Glen W. Koehler  
Associate Scientist IPM  
Email: glen.koehler@maine.edu  
Voice: 207-581-3882 (within Maine: 800-287-0279)  
Pest Management Office, 491 College Avenue  
Orono, ME 04473-1295  
http://pmo.umext.maine.edu/apple/

Dr. Renae Moran  
Extension Tree Fruit Specialist  
Email: rmoran@maine.edu  
Voice: 207-933-2100 ext 105  
Highmoor Farm Ag. Exp. Station, P.O. Box 179  
Monmouth ME 04259-0179  
http://extension.umaine.edu/agriculture/programs/tree-fruits/

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