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Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

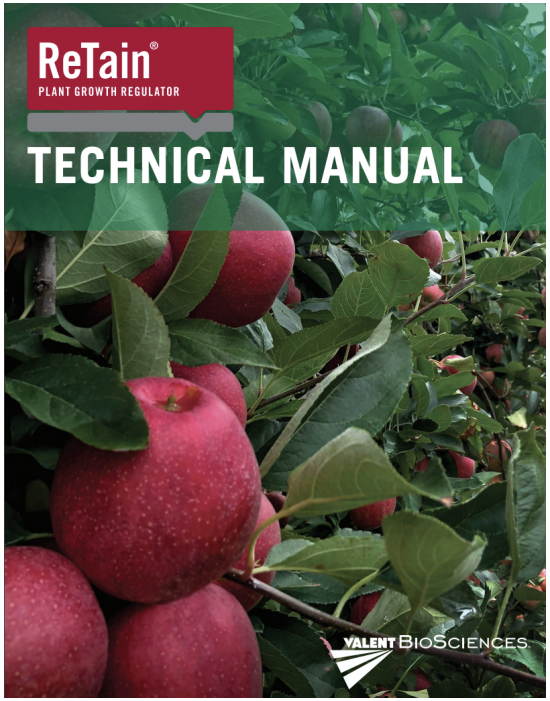
The way I see it

Jon Clements

As we move into apple harvest, pest management issues are waning. But do maintain some fungicide out there on later maturing varieties, I have not seen much in the way of sooty blotch/flyspeck yet, but rots are showing up. So is bitter pit, but not as much as last year. I did see a BMSB crawling around on my porch yesterday.

Everyone asks if apple maturity is ahead this year, as that seems to be the general consensus. Maybe. But not by much ahead of “average.” Reports out of the Hudson Valley suggest Gala maturity is variable, as I suspect Honeycrisp is here too. Macs are ahead down there (maybe?), so watch them closely for signs of maturity and potential pre-harvest drop. Best to have some NAA handy so it can be applied to Macs at 4 oz. per 100 gallons dilute tree row volume. Adding some ReTain to those NAA sprays may keep even more apples on the trees so you can get them harvested. Conversely, applying ReTain in that 7-10 day window pre-harvest, you might add some NAA to keep apples from falling off before the ReTain effect kicks in. That said, I am not seeing much drop out there yet, however, Paulareds were falling off pretty readily last week!

During the apple maturity Zoom today at noon, the ReTain Technical Manual was brought up, here is the link to it online. The variety-specific ReTain application recommendations are very handy.



https://www.valentbiosciences.com/wp-content/uploads/2023/07/Retain_Tech-Manual_English-UPDATE-12-2022_2.1.1.pdf

Entomology

Jaime Piñero, Ajay Giri, Heriberto Godoy-Hernandez, Mateo Rull-Garza, Matthew Bley

No relevant updates this week. Pest injury data are being recorded this week and next week through the non-destructive harvest surveys.

Pathology

Matthew Bley (mbley@umass.edu)

Ed. note: Matthew is our new Extension Educator at UMass Amherst, I told him we needed something regarding Pathology in Healthy Fruit and let him run with it! I only made a few minor edits. I am sure he would be open to your comments, suggestions, questions, etc. Thanks Matthew…

Declining Empire Row

Recently an entire row of Empire on G.41 rootstock has rapidly declined. As you can see in the first picture, branches are seemingly dying with no rhyme or reason. Interestingly, there are no similar symptoms in the neighboring Empire rows (I believe other rows are on Bud.9 rootstocks). Jon suspects fireblight, but this has not been found by our diagnostic lab in any of the samples we have submitted. Just yesterday, my guess of Phytophthora was disproven as we excavated some main and lateral roots, all healthy. As you can see at the grafting union, the rootstock is healthy but the tree is not. Jon also found some cankers on the trunk of the tree, which had seemingly girdled the tree. I just don't know what to make of

this yet. Let’s just hope that these trees are around for next season. (Jon says not likely.)

Bitter Rot

This year has been a somewhat lackluster year for bitter rot. But I had a rather fun and easy time scouting the signature concentric rings on Honeycrisp. (Ed. note: some of that could be black rot, Botryosphaeria?) Due to the moist and humid season, you will be able to spot the cream/salmon pink spore masses that develop.

Bitter rot is caused by pathogenic fungi species in the Colletotrichum genus. These species can infect the leaves, crowns, stems, and petioles and will be washed onto the fruit by rain. Spores can penetrate the skin of the fruit to infect, especially in areas exposed to the sun. Once penetrating the fruit, the infection will go dormant for a while and is no longer vulnerable to fungicides. Bitter rot will continue to be our bitter foe, so while you should stay on top of cultural controls (ie. removing infected fruit/tissue, managing leaf litter, and pruning the canopy open) you need chemical controls.

At the UMass Orchard we rotate between Merivon (Shawn prefers this over Pristine), Pristine WDG, a mix of Captan 80WDG and Topsin M WSB, and Flint 50W DG throughout the season. Using the NEWA Sooty Blotch and Flyspeck

model to track rainfall and leaf wetness, Shawn times applications for every 14 days as long as there is not more than 2 inches of rain. If there is more than 2 inches during that period, then Shawn will make a re-application of Captan mixed with Topsin M WSB. Shortly before harvest he will also apply Calcium Chloride for bitter rot and bitter pit. However, for apples that are being sent to packers, processors, or cold storage, Merivon is recommended as your last application before harvest to help with post-harvest rot issues.

References

- https://netreefruit.org/apples/spray-table/9-summer-apple
- https://apsjournals.apsnet.org/doi/10.1094/PHYTO-09-20-0432-R
- https://apsjournals.apsnet.org/doi/10.1094/PDIS-11-19-2378-FE
- https://extension.psu.edu/apple-and-pear-disease-bitter-rot
- Jones, A. L. and Sutton, T. B. (1996) Diseases of Tree Fruit in the East. Michigan State University Extension NCR 4. Pg. 17-18.
- Personal correspondence with Shawn Mcintire

Horticulture (apple maturity report)

Jon Clements

All observations from UMass Orchard, Belchertown, MA unless otherwise noted. Target maturity numbers: red color, >50%; firmness, >14 lbs.; soluble solids, >12; DA, 0.60 to 0.40 for Honeycrisp, 0.65 for Gala, 1.00 for Golden Delicious, 1.15 to 1.00 for Red Delicious (higher DA = more "green"); starch index, 4-6.

2023 Date	Variety	Drop	Diameter (inches)	Color (% red)	Firmness (lbs.)	Brix	Starch Index	DA Meter	Comments	Picture
8/28	Ginger Gold	nil	3.4	NA	15	10.2	2-5	1.02	Ready to harvest	
8/28	Akane	nil	3.0	80	16.8	12.5	6-7	0.60	Harvest this week	
8/28	Blondee	none	2.8	NA	17	10.6	2.7	0.93	Need another week	
8/28	Buckeye Gala	none	2.8	90 (but lacking)	19	11.3	3-4	0.79	Spot pick in a week	
8/28	Premier Honeycrisp	few	3.4	35 striped	12	13.2	6.3	0.65	Already been picked over	
8/28	MAIA 12 Summerset	none	3.4	45 still dull though	13	11.2	3-4	0.99	Nice apple but needs another week	

8/28	Honeycrisp	nil	3.1	45 barely	15	10.9	4.5	1.01	Likely had ReTain, need another week at least for spot pick	
8/28	Pink Luster	nil	3.1	55	18	10.9	4.8	0.65	Not a big fan of this apple, fire blight	
8/28	Marshall McIntosh	nil	3.1	45 lacking	16	11.9	3.7	NA	Needs another week	
8/28	Rubymac	none	3.2	95	15.5	11	4.3	NA	Needs another week to develop variety flavor	

Comments excerpted from CCE ENYCHP Tree Fruit E-Alert, August 28, 2023. Dan Donahue's observation on apple maturity in the lower Hudson Valley. (Ed.note: these comments were published on Monday, August 28 based on maturity testing done the previous week. I would take these comments and apply them to our situation on or about the end of this week to beginning of next week, ie. about September 1-4.)

> "The data from **Gala** sampled and tested last week suggest that first harvest should be made now. Our two long-term and untreated reference blocks compared to last season are less firm, 2-3 points lower in Brix but with better color and

fruit size. Starch Pattern index and DA meter readings suggest that the status of **Gala** maturity as of August 22 is comparable to 2022. Interesting that DA meter readings suggest that fruit is less mature than what SPI is indicating. However, as stated earlier, neither index is considered to be reliable for **Gala**. Let's hope that for 2023, DA is more accurate than SPI."

"Honeycrisp sizing is large, firmness is good for the size, red color is developing, Brix has improved into the 11 range. Starch has started the clearing process, still a long way to go to reach the usual 6-7 at harvest."

"McIntosh color development is good for all strains. Brix and pressure is relatively low while fruit size is good. The block of Ruby's in Ulster County stands out for its advanced maturity while the ReTain treated block of Linda's is delayed like we would expect. Linda's and Ruby's should be ready for CA harvest later this week, and Pioneers a few days after that. These recommendations suggest that Mac maturity is running a few days early this year. Drop in untreated blocks should be a concern. 10 ppm NAA at the sign of the first drop of uninjured fruit will be necessary if a harvest PGR has not been applied."

Guest article

No Guest article this week…

Useful links

UMass Fruit Advisor: http://umassfruit.com
Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu
Follow me on Twitter (http://twitter.com/jmcextman) and Facebook (http://www.facebook.com/jmcextman)
The Jentsch Lab (Peter Jentsch, Poma Tech)
Acimovic Lab (Srdjan Acimovic at Virginia Tech)
Tree Fruit Horticulture Updates (Sherif Sherif at Virginia Tech)
CCE ENYCHP Tree Fruit Blog

The next Healthy Fruit (apple maturity report) will be published on or about August September 12, 2023. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

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