



Healthy Fruit, Vol. 27, No. 16, August 20, 2019

Jon Clements, Author (unless otherwise noted) and Editor

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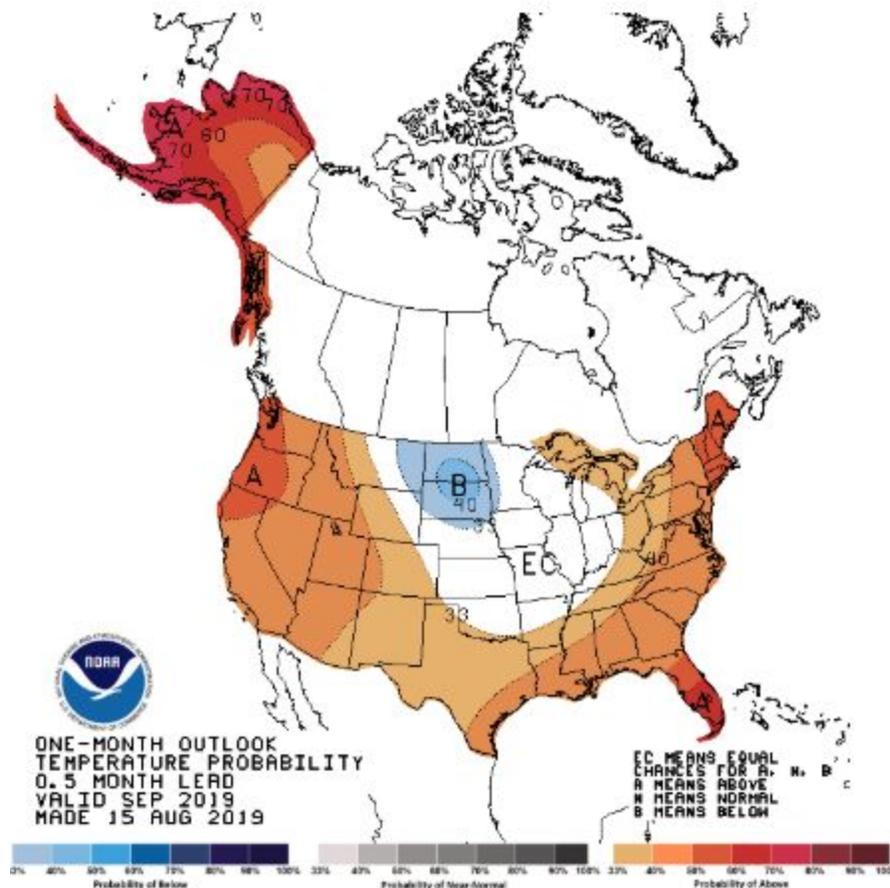
UPCOMING MEETINGS

New England Vegetable & Fruit Conference, December 10-12, 2019, Manchester, NH.

<https://newenglandvfc.org/>

THE WAY I SEE IT

As usual the weather is up and down. Peaches ripen quickly in this weather, apples not-so-much. I am picking 'Brigantine' today (Monday), a high quality yellow nectarine. Rarely have I seen a nectarine with so few surface defects. Premier Honeycrisp are coloring up, but with this heat I would avoid harvest -- maybe this weekend? Zestar! are lacking color, Ginger Gold are being spot-picked and Paulared harvest I am sure will start soon. The Climate Prediction Center 30-day outlook is not so great for an early apple harvest. We'll see...but looks like Alaska might be a great place for a September vacation? Closer to home, maybe the Cape? Apple harvest? What apple harvest??? :-)



INSECTS

Jaime Pinero

Apple Maggot Fly (AMF). AMF captures continue to be low in most monitored orchards although in a few blocks action thresholds have been reached.

As harvest time is getting close, consider materials that are effective and also have a relatively short PHI: Altacor 35WDG (IRAC group 28; PHI= 5 days), which also has strong activity against lepidopteran pests, is recommended at a rate of 2.5 to 4.5 oz. per acre; Delegate* 25WG (IRAC group 5; PHI= 7 days) is also effective at a rate of 4.5 to 7 oz. per acre.

Other effective materials include Imidan 70W (IRAC group 1B; PHI= 7 days, 14 days for PYO orchards) at a rate of 2.1 to 5.7 lb. per acre; Assail (IRAC group 4A; PHI= 7 days) at a rate of 8 oz. per acre; Exirel (IRAC group 28; PHI= 3 days) at a rate of 13.5 to 20.5 fl. oz. per acre; and Avaunt (IRAC group 22; PHI= 14 days) at a rate of 8 oz. per acre.

*Most effective when adult flies ingest this material. This product has limited activity on eggs.

Note that Assail, Delegate, and some of the other non-organophosphate insecticides (e.g., Imidan) that historically have been recommended for AMF control do not provide the same level of control and residual effect as the organophosphates. Therefore, our recommendation is to continue AMF monitoring even after the mid-August spray in case populations continue to increase.

In some experimental blocks, perimeter-row sprays of insecticide mixed with sugar (3 lbs per 100 gallons of water) are being evaluated. Sprays are triggered based on AMF thresholds (5> AMF per trap) using odor-baited sticky spheres.

DISEASES

Liz Garofalo

Bitter rot conditions are back! After a brief vacation of its own, summer is back in full swing. For those of you who struggled with bitter rot last year, its especially important to keep on it this year as harvest approaches. I haven't seen any cropping up, yet in MA, however, Mary Conklin in CT reported symptoms showing up, so best to keep covered. Below you will see a table of options. Resistance Management is a critical part of successful disease management!

Product	Apple SCAB	Powdery mildew	cedar apple rust	sooty blotch flyspeck	black Rot white rot	bitter rot	FRAC Code
Aprovia	1	1	4	4	4	4	7
Captan	1	4	4	2	1	2	M4
Copper	3	-	-	-	-	-	M1
Double Nickel	3	-	-	-	-	-	F6
Flint	1	1	3	1	2	2	11
Flint Extra	1	1	3	1	2	2	11
Fontelis	1	1	1	-	-	-	7
Indar	1	1	1	1	-	-	3
Inspire Super	1	2	1	1	-	-	3+9
Lime sulfur (Sulforix)	2	2	-	-	-	-	M2
Luna Sensation	1	1	1	1	1	1	7+11
Luna Tranquility	1	1	-	-	-	-	7+9
Mancozeb (Dithane, Manzate, Penncozeb)	1	4	2	4	2	2	M3
Merivon	1	1	2	1	1	1	7+11
Polyram	2	4	2	1	2	2	M3
Pristine	1	1	3	1	1	1	7+11
Procure	2	1	1	-	-	-	3
Rally	2	1	1	-	-	-	3
Regalia	3	3	3	3	3	3	P5
Rhyme	2	1	1	-	-	-	3
Rubigan	2	2	2	-	-	-	3
Scala	1	-	-	-	-	-	9
Sercadis	1	1	-	-	4	1	7
Serenade Optimum	3	3	3	3	-	3	F6
Sovran	1	1	3	1	2	2	11
Sulfur	3	3	4	4	4	3	M2
Syllit	1	3	2	-	-	-	M7
Topsin-M	3	2	-	1	3	4	1
Vanguard	1	-	-	-	-	-	9
Ziram	3	4	2	2	2	4	M3

1 = high; 2 = moderate; 3 = low; 4 = very low to none; - = not registered/no efficacy

HORTICULTURE

Jon Clements

Manage your ethylene...

Depends on variety, but ReTain application window is here. A reminder to not apply when it is too hot, avoid applications with calcium chloride (surfactant -- don't forget to include! -- can cause phyto), needs a couple hours (at least) of good drying, and has a 7 day pre-harvest interval. Need to know more? What follows are the latest ReTain application recommendations (mostly for apples but also for pears and peaches) per Valent rep James Wargo fresh out of Mary Concklin's email newsletter. (You can download the PDF for printing [here](#).)

ReTain label limits and best practices

- Up to 2 pouches per acre (see suggested programs below)
- Single or split applications
- Timing of first application no greater than 28 days before harvest; other apps as close as 7 days before harvest.
- Use Organosilicone surfactant at 0.05 - 0.1% v/v (6.5 – 13 fl oz / 100 gallons)
- Recommended water volume: 100 GPA or 2X
- Apply under slow drying conditions and cool fruit temperatures (early AM, late PM)
- 7 day PHI

General Effects of ReTain

- Ethylene production reduced
- Starch to sugar conversion slowed
- Fruit softening slowed
- Fruit drop reduced/delayed
- Watercore reduced/delayed
- Cracking reduced/delayed
- Internal bleeding reduced/delayed
- Greasiness reduced/delayed
- Delays background color shift (e.g., Gala)
- Delays red color development in some varieties

Practical Impacts

- Harvest management:
 - Promotes orderly harvest of large acreage of single varieties by treating portions of the crop with different rates/timings of ReTain, delaying maturity and subsequent harvest of those blocks, allowing growers to harvest fruit of optimum quality over longer periods

- In PYO situations: extend the availability of popular varieties over more weekends
- Labor management:
 - More efficient use of smaller crews to harvest fruit at optimum quality
 - ReTain can help eliminate the “crunch periods” for more orderly harvest.
- Maintenance of fruit quality (firmness, watercore, greasiness, etc.)
- Protection of yield through drop control
- Increased fruit size due to harvest delay (increased yield)
- Improved fruit color due to harvest delay (improved packout)
- Preconditions fruit to optimize response to postharvest 1-MCP (SmartFresh, FYSIUM) by keeping ethylene levels in check, results in more uniform response across all fruit

ReTain Recommendations – APPLES

Gala

- Typical program for harvest management, drop control, cracking reduction
 - One half to 1 pouch per acre at 21 days before harvest; higher rates result in longer delays in maturity and color development
 - Organosilicone surfactant at 0.05% v/v (6.5 fl oz / 100 gal)
- Multiple picks starting “on time”, but with extended harvest period of later picks
 - 1 pouch at 7 to 14 days before harvest
 - Monitor fruit maturity closely
- Program to minimize color delay on color sensitive strains e.g. Royal or Tenroy strains
 - One half to 1 pouch per acre 7 - 10 days before first harvest
 - PoMaxa/Fruitone (4 oz/A) may be included for additional drop control

Honeycrisp

- Typical program for harvest management, drop control
 - One half to 1 pouch per acre at 21 days before harvest; higher rates result in longer delays in maturity and color development e.g. up to 2 - 3 weeks
 - Organosilicone surfactant at 0.05 – 0.1% v/v (6.5 - 13 fl oz / 100 gal)
- Program for extended harvest window
 - Split application of half to 1 pouch at 21 days before harvest plus half to 1 pouch at 7 days before normal harvest
 - Higher rates will result in longer delays in maturity (up to 4 weeks)
 - PoMaxa/Fruitone (4 oz/A) may be included in the second ReTain application for additional drop control
- Program to minimize color delay on color sensitive strains
- One half to 1 pouch per acre 7 – 10 days before first harvest
- PoMaxa/Fruitone (4 oz/A) may be included for additional drop control

McIntosh (including Mac types such as Macoun and Aceymac)

- Typical program for harvest management, drop control

- One pouch per acre at 14 - 21 days before harvest
- Organosilicone surfactant at 0.1% v/v (13.5 fl oz / 100 gal)
- Program to minimize color delay on color sensitive strains e.g. Rogers Mac
 - One half pouch 2 weeks prior to harvest (short term delay and drop control)
 - For longer drop control and harvest management use one half pouch 3 – 4 weeks prior to harvest followed by one half pouch 1 – 2 weeks prior to harvest
 - PoMaxa/Fruitone (4 oz/A) may be included in the second ReTain application for additional drop control
- Program for extended harvest window
 - Split application of 1 pouch applied 21 days before harvest plus 1 pouch applied 7 days before normal harvest
 - PoMaxa/Fruitone (4 oz/A) may be included in the second ReTain application for additional drop control

Red Delicious

- Typical program for harvest management, drop control, reduction in watercore
 - 1 pouch at 21 - 28 days before harvest
 - Organosilicone at 0.05 to 0.1%; use lower rate under hot conditions (>85F)
- Enhanced drop control programs:
 - 1 pouch applied 14 days before harvest combined with NAA (10 ppm) plus organosilicone surfactant
 - Split application: 1 pouch at 21-28 days before harvest plus half to 1 pouch at 7-14 days before harvest.
 - PoMaxa/Fruitone (4 oz/A) may be included in the second ReTain application for additional drop control

Empire:

- Typical program for harvest management, firmness retention and aiding storage quality
 - 1 pouch at 14 - 28 days before harvest, 21 days before harvest is ideal
 - Organosilicone at 0.05 to 0.1%;

ReTain Recommendations – PEACHES

- General Effects
 - Inhibits/decreases ethylene production
 - Can delay maturity and extend the harvest window
 - Maintains higher fruit firmness
 - Increased fruit size by delaying harvest
 - Reduces fruit drop
- Practical Benefits
 - Reduced number of picks due to effect on fruit firmness
 - Season extension – delay harvest to fill gaps in the marketing window or extend the sales season of late season varieties
 - Flexibility - keep fruit on the tree longer rather than pick and place in cold storage

- Larger fruit - maintaining firmness allows fruit to hang on the tree longer and gain size
- Firmer fruit will store better and are less likely to get over ripe
- Application guidelines:
 - ReTain – one pouch per acre
 - Include ProGibb LV Plus (20 fl oz/A) for enhanced performance
 - Tank mix both products in the same application
 - Spray volume: 100 gal/A
 - Organosilicone surfactants MUST be used
 - Application: 10 -14 days before start of normal harvest (first pick)
 - PHI: 7 days
 - In order to maximize uptake, apply during slow drying conditions (late evening or early morning)

ReTain Recommendations – PEARS

The two most common pear varieties that ReTain is used on are Bartlett and Bosc (Pacific Northwest), but good results have been obtained on Red Clapps, Starkrimson, and Comice.

- General Effects:
 - Delayed maturity – on average about 7 days
 - Reduced pre-harvest fruit drop
 - Increased fruit size
 - Better fruit firmness
 - Enhanced storage potential
- Application guidelines:
 - Application rate is 1 pouch per acre
 - Best timing on Bartlett, Clapps, Starkrimson, and Comice is about 7 – 10 days before normal harvest of untreated fruit.
 - If stop-drop on Bartlett is the primary goal, then an earlier timing works better – more like 14 - 20 days before normal harvest.
 - For Bosc, the best timing is 14 – 16 days before normal harvest.
 - Apply in a sufficient volume of water to ensure thorough coverage without run-off. In most cases, a spray volume of 100 GPA is fine; however if trees are very large and/or have a lot of dense watersprout / sucker growth in the tree centers, you may get a better response by increasing application volume to 150 or 200 GPA.
 - Buffer spray tank pH to neutral to slightly acidic.
 - Do not apply to trees under stress.
 - Apply in slow drying conditions.
 - Apply when fruit surface and internal temperatures are at their lowest point e.g. early morning and evening applications
 - Always use a surfactant with ReTain. An organosilicone surfactant or Lightweight summer oil at ½% v/v may be used.

- Unusually cool weather in the 30 days prior to harvest can advance pear maturity and require an earlier application timing.

SMALL FRUIT UPDATE

Sonia Schloemann

Spotted Wing Drosophila (SWD) - Trap captures for SWD around the region are increasing with many traps yielding double digits of both male and female flies. Larvae have been found in Cherries, Early Season Raspberries, Blueberries and Dayneutral Strawberries in several locations around the region but not in a great number of fruit. It's time to employ all recommended tactics for SWD management.

These include:

- 1) maintaining an open canopy with good sunlight reaching the ground where fallen fruit may lie
- 2) frequent and thorough harvest of ripe fruit
- 3) immediate refrigeration of harvested fruit
- 4) frequent use of the [salt flotation test](#) to monitor for fruit infestation
- 5) a weekly spray regimen **or** the installation of exclusion netting to keep SWD out of a planting. Monitor SWD in the field or inside a netted area with traps to confirm that SWD have been controlled.

SWD Insecticide charts from last year are still accurate for this year.

See them at:

Small Fruit: http://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/2018_sw_d_insecticides_for_small_fruit.pdf

Stone Fruit: http://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/2018_sw_d_insecticides_for_stone_fruit.pdf

An excellent guide for organic growers entitled "[Management Recommendations for Spotted Wing Drosophila in Organic Berry Crops](#)" is available, too.

Crop Conditions: Strawberries: June-bearing varieties are growing well after renovation. Be sure to keep fields irrigated during hot and dry periods to keep plants healthy and avoid stress during this regrowth period. An inch of water every 5 days is what is recommended. Weed management during this time can also be important. Keep an eye out for late season foliar diseases ([leaf spot](#), [leaf blight](#) or [leaf scorch](#)). While there is no precise threshold for how much of these diseases can be tolerated in late season, past experience will help determine when action is needed. A light infection (<20-25% across the field or only found in a few locations), might not trigger a spray application, whereas a higher degree of infection would. Having a healthy canopy going in to the dormant season is important for winter survival and good plant health next spring. Here's a [good article](#) on this from MSU. Also look for signs of root failure due to [Black Root Rot](#), [Verticillium Wilt](#), or [Red Stele](#). There are some Fall spray options for Red Stele, but limited options for the other root diseases. A field that is weak after renovation may not be worth keeping over to the Spring. If you haven't sampled yet for tissue analysis,

this is still the time to get it done. Here are the [sampling directions](#). Samples can be sent to the [UMass Soil Testing lab](#) or other labs listed in the [New England Small Fruit Management Guide](#). **Brambles:** Floricane harvest is complete (except in very late locations) and spent floricanes can be removed any time. Black raspberry is also complete and new primocanes can be thinned to 4-6 per crown and tipped to stimulate branching. Blackberries are still being harvested. New primocanes can be tipped, too. Early Primocane varieties are being harvested now. **SWD is the main issue from here on out.** See [UMass IPM Berry Blast from July 17](#) for more info on recommended management practices. [Botrytis fruit rot](#) can be an increasing problem as the season goes on due to shortening day length and more wetting periods (including dew) on fruit. Keep plants well irrigated (via drip rather than overhead), through the late summer fruiting period. **Blueberries:** Harvest is mostly complete except for very late season varieties. Keep bushes irrigated through the hot dry periods as blueberries are very susceptible to drought stress, especially during the harvest period. At least 1" of water is needed every 5 days to keep bushes healthy and fruit sizing properly. As with Brambles, [Spotted Wing Drosophila](#) is still the main concern. An occasional pest that can defoliate blueberry bushes is the [yellow-necked caterpillar](#) or one of the other *Datana* moth species (see photo below). These caterpillars can quickly defoliate a bush or limb of a large bush. The best remedy is to gather the caterpillars (wear gloves), and destroy them. This is easier than spraying because they cluster in large masses on the bushes. [Blueberry Stem Gall Wasp](#) is another pest that has gained importance over recent years. Now is a good time to scout fields for new galls. If found, remove and destroy them before winter. Any remaining galls can be pruned out during dormant pruning.



A cluster of Drexel's datana caterpillars (Datana drexelii). This species can be distinguished from others in the genus Datana by the "orange rump patch" circled here on two individuals. Caterpillars seen on 8/21/18 in Chesterfield, MA. (Photo: T. Simisky, UMass Extension)



*Blueberry Gall Wasp summer gall (left) and spring gall with emergence holes and small adult (right).
(Photos: R. Isaacs, Michigan State Univ.)*

HAWKEYE'S CORNER (notes from the field)



I haven't seen a single apple maggot fly (AMF) in a trap this year. (P.S. I have! JC) Yesterday, I saw two of the dirty little so and so's poking around. Make sure you are keeping an eye on your traps so AMF doesn't sneak up on you! See Jaime's Insects section above for more information.



And a stranger in town... Not a common caterpillar, and certainly not cause for alarm, but this is a new one on me! Bragging rights to the first person with a positive ID on this critter!

GUEST ARTICLE

No Guest Article this week...

FACEBOOK ME



Clarkdale Fruit Farms

23 hrs · 🌐



Freestone Redhaven peaches now available!



👍❤️😮 123

4 Comments 7 Shares

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USEFUL LINKS

[27th Annual March Message \(2019\) to Tree Fruit Growers \(Google Doc\)](#)

UMass Fruit Advisor: <http://umassfruit.com>

Scaffolds Fruit Journal: <http://www.nysaes.cornell.edu/ent/scaffolds/>

Network for Environment and Weather Applications (NEWA): <http://newa.cornell.edu>

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[Acimovic Lab at Hudson Valley](#)

[Peter Jentsch's Blog](#)

The next Healthy Fruit will be published on or about September 3, 2019. (Maybe. It might just be an apple maturity report.) In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

Thank you sponsors...



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