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## UMaine Cooperative Extension Maine Tree Fruit Newsletter 2018-08-27

University of Maine Cooperative Extension

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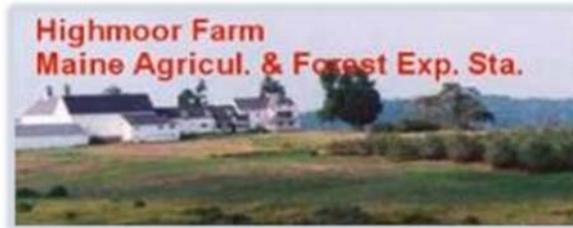
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## **Maine Tree Fruit Newsletter**

**Monday, August 27, 2018** Vol 25:15

### **Fruit Maturity**

#### **Plums**

Most of the Japanese plums have been picked. Remaining varieties are Vanier and Black Amber which should be ready to harvest in the next two weeks.

American plums are later than Japanese plums. LaCrescent is ready to pick this week, Kahinta probably next week, and the other varieties in September.

Some of European plums are just beginning to ripen, but will not be ready to harvest until early next week. First varieties at Highmoor Farm are Ouillins Gage and Castleton. Rosy Gage will ripen after that. Rosy Gage has more than the usual amount of brown rot.

#### **Peaches**

Starfire have been picked. Harken and Salish are just beginning to ripen. Other varieties have almost no fruit.

#### **Pears**

Harrow Delight pressure tested at 21 lbs. and are ready to pick for short-term storage. Some tested at 10 lbs. and are ready to eat.

Green pears, an unknown variety, pressure tested at 27 lbs. Not ready.

Purple pears, an unnamed selection, pressure tested at 28 lbs. Not ready.

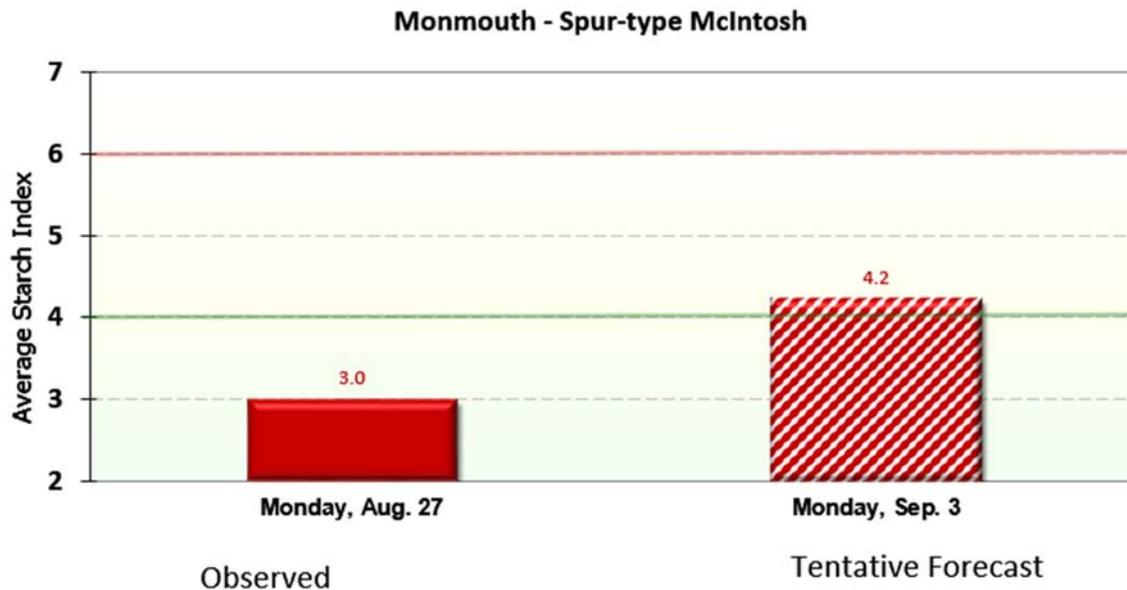
#### **Apples**

Arkcharm, a new summer apple in the Highmoor Farm test orchard, was ready to pick last week. Now, it is soft and getting mealy, but color and size are outstanding. Flavor is also good.

Zestar! is ready for a first pick, and will improve in color and flavor with more time on the tree. Starch index is 4.0.

McIntosh (spur type) starch index: 3.0. Consider this as a baseline rather than a sign of ripeness.

Honeycrisp starch index: 1.0.



**Note:** Spur type McIntosh starch index on August 27 is a preliminary baseline value only, so the 7-day forecast based on it is only a general indicator. No observed value yet for regular tupe McIntosh.

**Starch Index interpretation for McIntosh**

3.0 – 4.0: Becoming suitable for long term CA storage.

4.0 – 5.0: Optimum McIntosh maturity for long-term CA storage (> 4 months).

5.0 – 6.0: McIntosh suitable for short-term CA storage, (2 – 4 months).

## Sunburn and Bitter rot

Apples are at risk of sunburn if the fruit surface temperature (FST) reaches 113F. That can happen if daily high temperature gets above 86F, and especially above 90-93F, **IF** other factors contribute to high FST between the hours of 11am and 5pm.

Those factors, in order of importance are:

- 1) Low relative humidity (average below 33%). The “weight” of this factor vs. relative humidity, sunlight and wind speed as a group is about 43%.
- 2) High sunlight (above 49 Langleys, which is about 70 to 90% full sunlight for August 29 in Sanford Maine). The “weight” of this factor vs. relative humidity, sunlight and wind speed as a group is about 42%.
- 3) Low wind speed (below 3 mph). The “weight” of this factor vs. relative humidity, sunlight and wind speed as a group is about 15%. Thus, it is less important than relative humidity and sunlight, which are of about equal importance.

Looking at the Sanford forecast issued Monday afternoon, August 27, for Wednesday August 29, the daily high temperature is estimated at 93F. That by itself gives an estimated FST of 114.5F before accounting for the other factors.

The relative humidity between 11am and 5pm is expected to average about 52%, and will help to reduce FST by about 6 degrees F. The average wind speed is forecast to be about 8 mph, which would help lower FST by another 1 degree F. However, sunlight intensity is forecast to average about 60 Langleys, which would raise FST by about 3F.

The net effect of these contributing factors is minus 4F, with the forecast FST in Sanford presently at 110.5 F. Of the 20 Maine sites for which we have hourly forecast data to analyze, Sanford appears to be closest to reaching the 113F FST threshold. Risk is lower at other Maine sites.

While the Sanford forecast does not reach the sunburn threshold, it gets close. And a slight increase in either daily maximum temperature, or sunlight intensity, or lower relative humidity or wind speed could nudge the FST above the 113F threshold.

Locations in MA and CT are forecast to have higher FST than Sanford.

There are strategies to reduce FST. The following is from the “2018 Crop Protection Guide for Tree Fruits in Washington” by Washington State University Extension.

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“Effective strategies to mitigate sunburn damage and improve fruit quality are to reduce FST and/or UV-B light exposure to fruit. Growers in Washington have three basic options to achieve this goal: (i). Evaporative cooling (EC) (ii). Protective netting and (iii). Sprayable sunburn protectants. While these strategies have been proven to reduce apple sunburn incidence, none are 100% effective under extreme heat and light conditions. For maximum protection during severe weather periods, growers should consider a combination of strategies.

Evaporative cooling is very effective for lowering FST of apples, but EC alone does not adequately reduce damaging UV rays; thus, sunburn can occur even with EC. Protective netting may be deployed above the orchard canopy or draped directly over apple trees and has proven to be effective at reducing sunburn incidence, as well as conferring other benefits such as protecting against hail damage, reducing wind stress, and potentially excluding some invasive insect pests and birds.

Growers seeking immediate, temporary relief from sunburn pressure at lower up-front costs than installing an EC system or protective nets should consider the application of sprayable sunburn protectants. These products generally fall into one of three categories: (1) Kaolin clay-based particle films (e.g. Surround WP) (2) Calcium carbonate-based particle films (e.g. Eclipse, Diffusion, MicroCal), (3) Talc-based particle films (e.g. Invelop), (4) Calcium oxide (e.g. DeccoShield) and (5) UV-blocking wax matrices (e.g. Raynox). When properly applied, most sprayable sunburn protectants can reduce sunburn symptoms by up to 50% in apple fruit; wax-based products like Raynox may be used in combination with EC to achieve even greater protection from sunburn than either strategy alone. Since sunburn incidence is highest in unshaded fruit that are exposed to direct sun (typically in the tops of trees), good spray coverage to the upper portion of tree canopies is critical. “

“Some particle films, particularly those comprised of kaolin clay, can be challenging to wash off the fruit surface...”

“Do not apply any substance with or on top of particle film sprays (ed. such as Surround) that will increase the difficulty of removal.”

“DO NOT mix RAYNOX and Surround in the same tank; they are physically incompatible. Do not apply RAYNOX and Surround in the same season on the same trees.”

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The Washington State guide describes that value of overhead irrigation but does not mention possible contribution by drip irrigation. Trees under water stress, which is very possible when the temperature is over 90F, are more susceptible to sunburn. So keeping trees well-watered during a heat episode can help at least indirectly. Drip irrigation may have some effect on localized relative humidity by increasing soil moisture (but that is speculation, and no time to research it right now.)

Beside the observable damage of sunburn to fruit, sunburn can also lead to storage problems and increase risk of bitter rot infection.



Photo by Kari Peter, Penn State University

## Flyspeck and Sooty blotch

### Earliest safe final application dates for fungicide protection to prevent visible flyspeck and sooty blotch before harvest.

Dates assume protection against flyspeck development was adequate during June and July. Dates are based on observed weather, the 10-day forecast, and climatic averages beyond 10 days.

Preharvest intervals: captan and Pristine: 0 days, Topsin: 1 day, Flint: 14 days, Sovran: 30 days.

For protection against visible Flyspeck through:	Earliest safe final application date for Captan	Earliest safe final application date for Flint, Sovran, Topsin.	Earliest safe final application date for Pristine
Sept. 20	Sanford: Aug. 15 Monmouth: Aug. 10 Newport: Aug. 17	Sanford: Aug. 13 Monmouth: Aug. 5 Newport: Aug. 15	Sanford: Aug. 12 Monmouth: Aug. 5 Newport: Aug. 10
Oct. 10	Sanford: Aug. 20 Monmouth: Aug. 20 Newport: Aug. 20	Sanford: Aug. 18 Monmouth: Aug. 13 Newport: Aug. 17	Sanford: Aug. 15 Monmouth: Aug. 13 Newport: Aug. 13
Oct. 31	Sanford: Aug. 23 Monmouth: Aug. 23 Newport: Aug. 23	Sanford: Aug. 19 Monmouth: Aug. 19 Newport: Aug. 19	Sanford: Aug. 18 Monmouth: Aug. 16 Newport: Aug. 18

## Stink bug damage?

A possible case of stink bug damage to apples in a Maine orchard was noted this week. While not at all common, stink bug damage does occur on apples in Maine occasionally from native species such as the brown stink bug. So if the damage noted this week is in fact due to stink bug, it is not the beginning of a brown marmorated stink bug crisis.

Stink bug damage seems to be associated with during periods of hot dry weather. This may drive stink bugs from their normal host plants onto apples looking for moisture. As for need and timing aspect, monitoring is simply to look at fruit to see if damage is occurring or if stink bugs are present. Insecticide efficacy ratings for tarnished Plant Bug have some applicability to stink bug. The following text is from the "2018 Cornell Pest Management Guidelines for Commercial Tree Fruit Production"

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"A number of native stink bug species can sometimes cause fruit damage in all tree fruits under conditions that are not fully understood. Adult feeding during bloom and shuck split can cause the fruit to abort, and feeding later in the summer can cause a deep catfacing injury such as that caused by tarnished plant bug, or depressed, dimpled, corky or water-soaked areas on the skin. All tree fruits are attacked, especially peaches and apples. Other species of stink bugs are predators. Elimination of alternate host broadleaf weeds, especially legumes, in the orchard will contribute to management efforts. If control is needed, insecticides should be timed to kill immigrating adults as they appear in the orchards to prevent feeding damage and subsequent mating and egg laying. "

## Redhumped and Yellownecked Caterpillars

These foliar feeders have generated several more ID clinic submissions in the past week. Photos were included in the August 21 newsletter.

At this time redhumped and yellownecked caterpillars are almost full grown larvae, and thus harder to kill with insecticide spray. They are almost done feeding for the year and will soon enter overwintering stage. They are not typically found in sprayed commercial orchards, but are quite common on unsprayed or low-spray home plantings. They feed in groups and rear up in unison when threatened.

Yellownecked caterpillars hatch beginning about mid-July to mid-August. They feed for several weeks before they enter the overwintering pupal stage beginning around mid-August to mid-September. To prevent a repeat population where yellownecked caterpillar feeding has caused unacceptable damage, apply general purpose insecticide against young larvae beginning in mid-July. The best timing for redhumped caterpillar would be a bit later, starting around August 1.

## Closing Words

*"We are citizens of the world's greatest republic, a nation of ideals, not blood and soil. We are blessed and are a blessing to humanity when we uphold and advance those ideals at home and in the world. We have helped liberate more people from tyranny and poverty than ever before in history. We have acquired great wealth and power in the process.*

*We weaken our greatness when we confuse our patriotism with tribal rivalries that have sown resentment and hatred and violence in all the corners of the globe. We weaken it when we hide behind walls, rather than tear them down, when we doubt the power of our ideals, rather than trust them to be the great force for change they have always been.*

*We are three-hundred-and-twenty-five million opinionated, vociferous individuals. We argue and compete and sometimes even vilify each other in our raucous public debates. But we have always had so much more in common with each other than in disagreement. If only we remember that and give each other the benefit of the presumption that we all love our country we will get through these challenging times. We will come through them stronger than before. We always do."*

*"Do not despair of our present difficulties but believe always in the promise and greatness of America, because nothing is inevitable here. Americans never quit. We never surrender. We never hide from history. We make history.*

*Farewell, fellow Americans. God bless you, and God bless America."*

~ John McCain

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