

Harvest Maturity Report #5



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**Craig J. Kahlke, Area Extension Educator, Fruit Quality Management
Cornell Cooperative Extension – Lake Ontario Fruit Program
Cell phone: (585) 735-5448; email: cjk37@cornell.edu**

This is the fifth Apple Maturity Report for the 2013 harvest season. Reports will be sent out every week (usually Wednesday afternoons), with supplemental reports during peak season if needed.

- **Ginger Golds**- Picking finished, except in the latest-maturing sites.
- **Gala** – Spot-picking starting on early sites, **see pages 2-3**.
- **McIntosh** – this week there was some detectable internal ethylene early on untreated samples. Couple this with stressed trees and the risk for preharvest drop (especially if you've had a history of drop) would lend you to making stop-drop applications. However, the cooler weather patterns forecasted for much of the next 10 days would lend itself to holding back ethylene and preharvest drop potential. In addition, cooler weather extends the effectiveness of stop-drop control products. As always, this is a block by block decision, **with past history being a key. Please make sure you are checking each of your Mac blocks regularly. As a reminder, some of the newer highly-coloring Mac strains such as Linda & Ruby may be fully colored now- but there are by no means mature. There is little varietal flavor and some final sizing may be needed.** We are past the window to make full use of Retain or Retain + NAA. For Terence Robinson's & Mario Miranda-Sazo's recommendations on materials, rates, and timing, see past Fruit Notes (Issue 18, August 14) or Fruit Fax from August 6 to look at a promising stop-drop program for next year. For most, we are only in the window for an NAA application as a rescue treatment 7-10 days before harvest if you have not already started split applications of Retain or Retain plus NAA. Next week some earlier-maturing blocks of Marshall & Spur Macs will be ready for harvest for CA. See **pages 3-4** in this report for testing data on different strains of Macs.
- **Jonamac** – Ethrel-treated blocks are ready or near ready for harvest, as are some fruit intended for the slicer market. Other blocks are not far behind. **See page 4.**
- **Honeycrisp** – Not ready yet. **See page 4.**

Overall Maturity Issues:

If the 5-10 day weather forecast proves correct, fruit will move through the harvest window rather quickly. Growers should monitor individual blocks every 2-3 days.

Weather Forecast For most of the fruit belt in Western NY, it looks as if we'll have a lot of traditional early fall weather over most of the next 10 days with highs in the 60s and 70s along with 50s (and even 40s!) at night. This is excellent weather for coloring of fruit, holding firmness, and for efficient harvest operations in general. Only 2 days out of the next 10 (Tues/Weds next week) is it forecasted to be highs in the low 80s with 60s at night. There is also little chance for rain most days.

Gala- Spot-picking starting in early sites

There have been notable advances in maturity over the past several days. Some blocks of higher-coloring and earlier-maturing strains of Gala are now entering the harvest window for first spot pick. Please examine your Galas closely and decide if they warrant their first pick. In addition, young blocks, blocks with a light crop load, and blocks which contain stressed trees may also be ready for first pick. With inadequate thinning on some blocks, along with extended bloom and fruit on 1 year wood, some Gala may require more picks than usual. Keep in mind it is inherent in this variety to have such variability in maturity.

In concert with acceptable flavor, Gala for long-term CA storage should be picked when the background color is changing from light green to cream. Fruit intended for short term CA or regular storage should be picked with cream to light yellow background. Fruit that are bright yellow are over-mature and should not be put in storage-i.e. market those immediately. As your block gets close to first pick, check blocks every two to three days for color and varietal flavor development.

Please know your different strains- a highly coloring strain is not necessarily more mature than an older, lesser coloring strain. Although color change is usually one of the best indicators for this variety, keep in mind that varietal flavor is also extremely important.

20 non-Retain Gala blocks tested in Western NY on September 3rd & 4th, 2013.

Index	Non-Retain September 3-4, 2013 Average Range n=20		Non-Retain September 4-5, <u>2012</u> Average Range n=5		Non-Retain September 6-7, <u>2011</u> Average Range n=29		Non-Retain September 7-8, <u>2010</u> Average Range n=7	
	Firmness (lb.)	20.3	17.3-23.0	20.2	18.5-21.7	18.4	15.3-22.4	18.6
Soluble Solids (%)	10.8	9.5-13.5	13.5	10.8-17.7	11.2	8.5-13.9	12.5	11.8-13.4
Starch Index	2.5	1.1-4.1	4.2	3.3-5.5	3.2	1.2-5.4	5.1	4.1-7.5

Marshall & Spur Mac – Harvest for CA beginning sometime next week in earlier sites.

As stated on page 1, ethylene levels in most Macs that I've tested are up higher than I'd anticipated. Again, with the cooler weather forecast, ethylene levels should be held in check and the effectiveness of stop-drop materials are extended. With most early Macs at least a week away from harvest we do not see a large risk of drop, however, know your individual orchard block history and monitor closely.

10 non-treated (9 Marshall, 1 Spur) and 5 Retain/NAA treated (all Marshall) blocks tested in WNY on September 3 & 4, 2013

Index	Sept. 3 & 4, 2013 untreated AVG. Range n=10 samples		Sept. 3 & 4, 2013 Retain +/- NAA AVG. Range n=5 samples		Sept. 12 & 13, <u>2011</u> untreated AVG. Range n=5 samples		Sept. 6 & 7, <u>2011</u> untreated AVG. Range n=10 Marsh., 4 Spur	
Firmness (lb.)	16.5	15.3-18.4	16.3	15.5-17.2	16.2	14.6-17.5	14.6	12.4-18.0
Sol. Sol. (%)	11.4	8.7-12.5	11.6	9.7-13.5	11.6	11.0-12.1	10.6	9.0-11.9
Starch Index	3.5	2.9-4.4	4.0	3.4-5.1	4.2	3.6-4.9	3.6	3.2-4.2
Ethylene (ppm)	9.2	0-72.7	0.28	0.19-0.37	45.8	0.04-81.0	2.83	0.01-10.6
Producing > 0.5 ppm ethylene	30% (30/100)		10% (2/20)		60% (30/50)		5% (8/150)	

McIntosh in the Regular and Slightly Later-Maturing Window (including Rogers-Buhr, Ruby and other “standard” strains, along with the usually few days later Linda and Ruby Macs) - Not ready yet.

We're well over a week away for harvest of even the earliest-maturing sites. Remember, higher-coloring strains may only look mature. Color is usually a poor indicator of maturity. We are waiting on varietal flavor development, final sizing/coloring, pressures declining, and starch movement into acceptable range for intended market. The five untreated samples I looked at this week had pressures in the 15.5-16.8 pound range, starch from 3.2-3.9, and brix at 10.3-12%. Much more testing next week.

Jonamac – Ethrel-treated & slicer market fruit harvesting now, the remaining are not ready for fresh (untreated) market

Ethrel-treated Jonamacs for fresh market are being harvested now, as are fruit that need to be picked early (starch index ~3, pressures 15-16 pounds) for the fresh slice market. The remaining untreated fresh market fruit can wait. **Keep in mind there is no risk of drop in this variety**, so you can attend to more pressing varieties such as early McIntosh and Gala if needed. However, watch for falling pressures. Jonamacs also tend to move through the harvest window quicker than other varieties, moving about 2 starch units per week while most other varieties only advance about 1 unit per week.

Honeycrisp – not ready yet

Nearly every Honeycrisp apple I looked at this week had no color break. Varietal flavor was also lacking. In all likelihood, first pick will occur the week of September 16 for most. Partial rates of Retain will help slow preharvest drop in some years. Remember, this is a multiple-pick variety (plan to pick 3-4 times), but only the earlier picks tend to store best. Young trees also tend to have poor-storing fruit.

Honeycrisp is susceptible to soft scald and soggy breakdown. The correct storage temperature is 38F in regular atmosphere, and we recommend a delay of 7 days at around 50F before cold storage. Consider using SmartFresh on air-stored Honeycrisp to delay greasiness and retain acid flavor components. If fruit have high bitter pit risk, however, the delay treatment will aggravate the risk of bitter pit development. It may be better to cool these fruit immediately after harvest and market them quickly. If you see bitter pit in fruit on the trees, more will show up in storage, so do not delay cooling in these cases.

Do not pick fruit that has not developed varietal flavor and proper color. Picking under-ripe fruit will kill repeat sales! Look for color that “jumps out” when the yellow background color makes the red almost florescent or

iridescent. Once color change has happened, then an every other day walk-through is warranted to determine readiness.

6 blocks tested in WNY on Sep 3 & 4, 2013

Index	Non-Retain September 3 & 4, 2013		Non-Retain September 4 & 5, 2012		Non-Retain Sept. 6 & 7, 2011	
	AVG. n=6	Range	AVG. n=10	Range	AVG. n=5	Range
Firmness (lb.)	16.9	15.4-18.7	17.0	15.2-18.4	15.8	13.4-19.9
Soluble Solids (%)	11.5	10.1-13.2	13.2	11.2-14.6	10.7	9.1-12.3
Starch Index	3.6	1.0-6.9	4.6	2.6-6.6	3.6	1.7-4.9

Reminders

Please follow recommended maturity indices for each variety in addition to consulting with your marketer. Make sure there is adequate varietal flavor prior to harvest. **While I realize inventories are very low and the large demand for fresh apples have marketers screaming for fruit, picking under-mature fruit will only kill repeat sales.**

Variation between individual blocks and orchards always occur. Because of this inherent variation, the average maturity index readings of several grower blocks (as developed by the regional testing program) has often provided a better guide to harvest than readings from individual orchards. BE SURE TO CONSULT WITH YOUR MARKETER – **before harvesting the block.**

Crop load effects maturity. Trees with lighter crop loads, along with stressed trees (i.e. drought and frost damage/loss) and very young trees usually mature earlier. Maturity is usually delayed in trees carrying a larger crop.

Cooling fruit as soon as possible following harvest is critical in maintaining quality!

- **At the very least, shade your fruit right after harvest** – temps even in the low 80's with strong sunlight will result in fruit surface temperatures well over 100 degrees, sun-scalding fruit at the tops of bins.
- **Rapid cooling** – importance cannot be under-estimated, especially if harvest temperatures are high, in concert with higher respiration rates in fruit.

The harvest maturity report for next week (9/11) will focus on testing data of most strains of McIntosh, Gala, Honeycrisp, and Autumn Crisp, while finishing Jonamacs, along with starting Snap Dragon (formerly NY-1).

Harvest maturity report subscription reminder – tell a friend. Call or email Kim Hazel to subscribe at 585-798-4265 ext. 26, krh5@cornell.edu.

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