

Harvest Maturity Report #12



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This is the final Apple Maturity Report for the 2013 harvest season. As always, your comments and suggestions are always appreciated via email, cell phone, or fax.

Overall Issues:

Time is winding down to still get quality fruit in bins, especially for the fresh market. The weather will cooperate less, labor will remain tight, and bins are short for many growers. The good news is there are no freezes in the long-term (10 day) forecast and the end to harvest 2013 is in sight. **The main message continues to be to prioritize your picking, concentrating on first harvesting the blocks that are going to give you the largest potential returns. Work closely with your field men, marketers, and storage operators to try and make the most informed decisions possible.**

- **Fuji** – Most samples that I looked at this week were in the range for harvest for CA. There were a few exceptions, in which fruit needed final coloring and varietal flavor development. Since Fuji are not considered a drop-susceptible variety, if you have other higher priorities you can likely wait a few days, but monitor for declining pressures and other indicators of advancing maturity. **See pages 2-3.**
- **Cameo** – The declining number of growers that have this variety are well into first pick, with some looking at a second pick very soon. Suggested CA maturity guidelines are 40-50% red color and background change from green toward creamy. **See page 3-4.**
- **Braeburn**- There are few growers that have this late-season fruit. Next week is the suggested harvest for CA. The one sample I looked at had a firmness of almost 21 pounds, sugars at 11.3%, and a starch index of just over 4. Flavor was bland. Color was full.
- **Stayman**- Even less fruit grown in Western NY than Braeburn. The lone sample I collected had a firmness of just over 19 pounds, sugars at 14.4%, and a starch index of 2.3. Color was full- to the point of some slight bleeding of the peel pigment into the flesh. I would venture a guess that if storing fruit for any length of time, they're ready or close to ready.
- **Candy Crisp** – There seems to be no room in the marketplace for another yellow/green apple. Fruit blemish issues also plague this variety. The two samples I looked at this week had a firmness of 17-17.5

pounds, brix at 10-12 %, and a starch reading of around 4. Color was mainly green with a blush. Next week for Candy Crisp harvest?

- **Granny Smith** – The processing markets will dictate when to harvest, but I was surprised that 2/3 samples I tested had a brix over 13%! Still more tart than sweet on tasting, but surprisingly mild without the overwhelming acid. Pressures were from 19.5-23 pounds and the starch index was about 3.
- **Empire** – This looks to be a year in which a lot of fruit may not have a home. Empires that are still firm on the tree (16 pounds, for instance) will not have the legs for ANY storage. From a maturity standpoint, the fruit are all producing ethylene, have a background color that is bright yellow and they will go soft quickly if they are held for any length of time. Remaining fruit should be directed to quick sales or VERY short regular cold storage.
- **Red Delicious** – There are still quite a few unharvested blocks of mainly Retain-treated fruit. Fruit not treated with a growth regulator, like Empire should be directed to quick sales or SHORT storage in regular atmosphere. Even Retain-treated fruit are questionable for CA at this point.
- **Ruby Frost (Formerly NY2)** – Most fruit from young trees for farm markets were picked last week. There were some reports of fruit that were hard to pull of the tree, and there was some breakage of wood during harvest. Fruit like this that are showing little to no signs of greasiness can probably wait a few days for harvest next time around.

Fuji – Harvesting now into next week

15 blocks tested in WNY on October 21-22, 2013

Index	October 21 & 22, 2013		October 14 & 15, 2013		October 17-18 , <u>2011</u>		October 19-20, <u>2009</u>	
	Average	Range	Average	Range	Average	Range	Average	Range
	n=15		n=6		n=6		n=7	
Firmness (lb.)	18.2	16.2-20.3	17.6	17.0-18.0	17.7	16.3-19.0	18.8	16.9-20.3
Soluble Solids (%)	14.0	11.3-15.8	13.5	12.0-14.3	13.5	11.9-14.7	12.8	11.4-14.1
Starch Index	6.5	5.0-7.8	4.7	3.8-5.3	5.4	4.4-7.0	5.7	3.4-7.8
Ethylene (ppm)	1.55	0.11-11.15	0.69	0.12-1.23	0.21	0.02-0.48	0.61	0.28-1.13
Producing > 0.5 ppm ethylene	53% (80/150 apples)		50% (15/30 apples)		8% (3/40 apples)		50% (35/70 apples)	

Most blocks of Fuji are in the harvest window at this time. Sugars are up, color is very good, and varietal flavor is coming on very strong. That being said, finishing picking of earlier varieties can be prioritized over Fujis in most of the region if there are high value blocks of other varieties that need more immediate attention. Be aware that Fujis were bred for enhanced watercore in the Orient, where it is considered a desirable characteristic. Therefore it is a given that Fuji's will have watercore, and again this year I have seen it in every set of samples I looked at this week. However, watercore will dissipate in storage.

Ken Silsby at Agrofresh has recommended that SmartFresh™ treated Fuji with moderate to severe WC can be stored for 6 months (and possibly longer) in air while maintaining “near harvest” fruit firmness levels. The normal oxygen concentrations in regular air storage will speed the rate of WC disappearance. Contact Ken Silsby for more information.

In NY, elevated CO₂ levels in CA storage have resulted in internal browning in Fuji. If using a postharvest application of DPA for scald control, you can greatly reduce this disorder. If DPA is not used, Dr. Chris Watkins recommends that CO₂ be kept as close to zero as possible for the first few months, at least under 1%. Contact Chris Watkins for more information.

Cameo – First pick finished/in progress

7 untreated Cameo blocks tested in WNY on October 21-22, 2013

Index	October 21-22, 2013		October 14-15, 2013		October 17-18, 2011		October 19-20, 2009	
	Average	Range	Average	Range	Average	Range	Average	Range
	n=7		n=5		n=6		n=8	
Firmness (lb.)	15.8	14.7-16.7	15.8	15.0-16.7	16.5	15.8-17.6	18.2	17.0-19.5
Soluble Solids (%)	12.9	12.3-13.8	12.3	12.0-12.8	12.5	11.1-13.8	13.1	11.3-15.2
Starch Index	5.5	4.5-6.0	4.0	3.5-4.5	3.9	2.6-5.2	4.4	3.2-7.8
Ethylene (ppm)	1.52	0-12.93	9.36	0-24.50	0.18	0.03-0.84	5.13	0.09-17.46
Producing > 0.5 ppm ethylene	34% (24/70 apples)		40% (10/25 apples)		3% (1/40 apples)		32% (29/90 apples)	

Cameo is being picked now. Most folks are into/finished with first pick and some will be starting a second pick shortly. Again, Cameo usually requires 2 picks, as color is usually variable on the tree. Suggested CA maturity guidelines: 40-50% red color and background change from green toward creamy.

Moldy core (especially in larger fruit) has been observed, and appears to be widespread, but tends to cause few problems in storage. Much rarer in Cameo is watercore. An recent observation is that Cameo with severe watercore is highly susceptible to developing internal flesh browning in CA storage.

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

Although there is no freezing temperatures forecasted in the next 10 days, if unharvested fruit do freeze do not handle them until the fruit have thawed. They thaw much better on the trees than in bins, and harvesting/handling of frozen fruit can damage them.

THANK YOU

As always, I welcome your comments, criticisms, and suggestions for improvement of the reports. Please do not hesitate to contact me via cell phone, email, or fax, listed at the top of page 1 of the report.

I would like to take this opportunity to thank the many people who help make this report. I am particularly indebted to **Jim Eve, Bill Gerling, Ken Silsby, and Jim Verbridge** for their indispensable input and advice. I especially am thankful to Jim V. for his advice on apple maturity, storage, and marketing, and his hospitality. All four always took time out of their busy schedules to either make the conference call or talk at another time. A big thanks to **Dr. Chris Watkins**, for always being available no matter what the time or how busy his schedule. I am also very grateful to **Mike Biltonen, Alison DeMarree, Randy DeWitt, Bob Fowler, and Scott Henning**, for their input and advice on the conference calls or at other times when their busy schedules allowed. A very special thanks to **Emily Kane** and **Shane DeLyser** at **KM Davies, Inc.** (KMD). Emily always had the gas chromatograph maintained and ready, and even added an automatic pressure tester to save valuable time for me late in the season. Shane was always courteous, and helped me out with a computer issue when I was in a pinch. The crew at KMD always does their best to accommodate me when I'm testing apples there.

Also a shout out to Mike Fargione, whose Hudson Valley reports always help me. Without the weekly sampling and advice from **Alison DeMarree, Jim Eve, Scott Henning, Jim Misiti, Randy Paddock, and Phil Smith**, the comprehensive data collection and timeliness/accuracy of these reports would not be possible. And thanks to **Kevin Maloney, Roger Lamont, and Dr. Susan Brown** for sample collection and advice on developing harvest maturity guidelines for SnapDragon & Ruby Frost. Thanks also to **Dan Ingersoll** for getting samples in a pinch.

Thank you all again for subscribing!

For details and registration info on upcoming farm produce safety workshops (GAPs, etc.) from December-February, check back on <http://www.gaps.cornell.edu/> and click on events calendar for future GAPs training workshops in NY. These are for growers who are being required by their buyers to have 3rd-party food safety certification such as the basic USDA GAP/GHP audit, the Harmonized GAPS audit, or for folks who want to know the requirements of the Food Safety Modernization Act. We help you write your own individual farm food safety plan. Registration information will become available online approximately 4-6 weeks prior. More details later in Fruit Notes as well.

The four have been scheduled. They are:

December 10 & 11, 2013 – Genesee County, the Fire Training Center in Batavia

December 18 & 19, 2013 – Wayne County, CCE Wayne in Newark

January 6 & 7, 2014 – Ontario County, CCE- Ontario in Canandaigua

February 27 & 28, 2014 – Steuben County, specific location TBA

This is it for your region- we don't schedule them during the growing season!

CCE- Lake Ontario Fruit Program online: <http://www.fruit.cornell.edu/lof>

Every effort has been made to provide correct, complete, and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are still possible. These recommendations are not a substitute for pesticide labeling. Please read the label before applying any pesticide.

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