

MSU Fruit Team Apple Maturity Report 2014
Northwest Region, Special Report: October 2, 2014
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A week of weather working with us.

This past week brought us excellent weather for advancing the coloration (and maturity) of all our apple cultivars. In the Sparta area, even Cripps Pink (a.k.a. Pink Lady), a variety so late it never properly ripens here in Michigan, has seen some color formation. In my 25 years as a postharvest physiologist, I cannot recall better color. As noted in a previous maturity report, it has been a cool year, somewhat similar to 2009. In that year, we found controlled atmosphere injury prevalent in our Honeycrisp if the fruit were not conditioned properly and plunged directly into a controlled atmosphere (CA) containing 3% O₂ and 3% CO₂. Chris Watkins of Cornell also notes in the Harvest Maturity Report by Craig Kahlke for this week that a cool season is linked to an increased susceptibility to a number of internal browning disorders, including chilling injury. In fact, there has been at least one report of some chilling injury in Honeycrisp from a Grand Rapids area orchard already. This should serve to put our industry on alert for using appropriate handling and storage conditions to preserve the quality of our beautiful and bountiful crop. An article in the forthcoming NY Quarterly (**attached here**) will help in describing some of the alternatives for Honeycrisp. As an aside, it is worth noting that in our ongoing laboratory experiments, we have already begun to find CA injury in Honeycrisp that have been stored in CA (3% O₂ with 3% CO₂) without conditioning or DPA treatment.

I looked back over my records for the maturation of apples in 2009, a year with very similar (low) growing degree day accumulation, and found similar delay in the maturation of our early varieties. For instance, Gala harvested from the Sparta area in 2009 had only just begun to ripen by the third week in September and well underway by the fourth week, very similar to this year (although color is better in 2014). In contrast, Gala fruit (if you had them) were rapidly ripening by September 4 in 2012 and September 2 in 2010! Interestingly, Honeycrisp ripening trailed Gala considerably in the warm years, but was well ahead of Gala in the cooler years - probably by 7 days or so.

Finally, with advancing cool and rainy weather, it will be important to make as much progress as possible in getting fruit out of the orchard and into our storages. Keep in mind that apple fruit store best if they have not yet begun to produce ethylene (and they will taste pretty 'green'), and that CA and SmartFresh are most beneficial on fruit harvested at this stage. Balancing harvest maturity with storage duration continues to be important despite our technological options (CA, ReTain, and SmartFresh) for improving maintenance of fruit condition.

From Dr. Randy Beaudry, Dept of Horticulture, MSU