



2016 Champlain Valley Apple Field Report as of 10/17/2016

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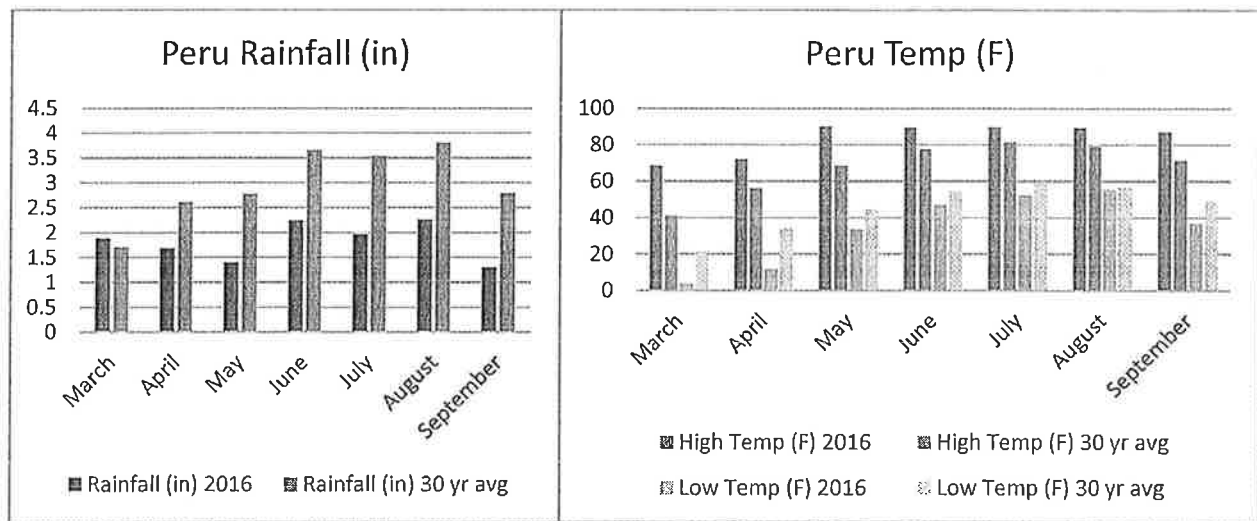
Weather Conditions: Winter conditions were extremely mild prior to the 2016 growing season in the Champlain Valley. Temperatures rarely dropped below 0°F, with the exception of two cold nights in February that reached nearly -20°F. Throughout the growing season, environmental conditions posed major challenges to this year. Bud swell began very early, due to warmer than average temperatures in May. In the first week of April, the region experienced frost conditions several nights in a row. Fortunately, tree growth was not advanced enough to cause significant bud injury; most farms experienced minimal to zero damage, for the most part restricted to loss of a few king flowers and/or some lopsided fruit in the most advanced varieties and blocks. Multiple severe isolated thunderstorms including very high wind gusts (>40MPH) and hail occurred in July. Greater than 90% crop loss due to hail was estimated in several locations. Very dry conditions for most of May, June, and July caused severe drought stress. Rain at the end of July and beginning of August have provided relief to dry weather and are contributing to fruit sizing.

Insects: In general insect damage was heavier than usual this year. Early season pests including plum curculio and tarnished plant bug caused more damage than normal, most likely due to an extended bloom period and a general movement away from pink sprays. Summer lepidoptera, especially obliquebanded leafroller, oriental fruit moth, and codling moth, had a late generation that typically is not seen in the Champlain Valley. Dipel appears to have been very effective at controlling overwintering generations. Apple maggot pressure was very high this year in every trapping location, and required more late sprays than usual. Wooly apple aphid pressure was also higher this year than is typical.

Disease (Fire Blight): Very warm conditions and rain events at the tail end of bloom led to severe fire blight infections in most orchards. This disease has only been present in a few seasons and in isolated blocks in the past, so growers have very little experience managing it, and antibiotics are typically not used. Growers responded by using cultural, mechanical, and chemical practices to slow down plant growth, in order to minimize further spread of infection. These management decisions had an effect on vegetative growth, crop load, and fruit development. Conditions were exacerbated by severe thunderstorms and hail in July.

Peru Rainfall and Temperature 2016 vs 30 Yr Average

Peru	Rainfall (in)		High Temp (F)		Low Temp (F)	
Month	2016	30 yr avg	2016	30 yr avg	2016	30 yr avg
March	1.88	1.71	68.7	41.2	3.6	21.5
April	1.69	2.61	72.1	56.1	11.8	34
May	1.4	2.77	90	68.5	33.6	44.8
June	2.24	3.66	89.3	77.4	46.9	54.4
July	1.97	3.54	89.7	81.4	52.1	59
August	2.26	3.81	89.3	79.3	55.4	56.6
September	1.3	2.79	87.1	71.3	36.8	48.8





2016 Hudson Valley Apple Harvest Summary as of 10/17/2016

Dan Donahue, Extension Associate, Cornell ENYCHP

The early accumulation of heat units led to McIntosh green tip at the Cornell Hudson Valley Research Lab on March 16th, three weeks earlier than average. Development continued at a faster than normal pace, reaching ½" green to early tight cluster, depending on the variety, by April 5th. Disaster struck on the evenings of April 5th and 6th as temperatures dipped into the single digits in Columbia County, and the low teens in Ulster. According to published cold injury charts, flower bud mortality should have been close to 100%. In reality, a substantial number of buds survived and resumed development. At pink stage, the weather cooled, with the bloom period being cold, wet, and much longer than normal. The period from pink to petal fall was as long as three weeks for some varieties. The quality of pollination appeared questionable. Viable bloom did emerge, the quality of fruit set was considered to be uncertain, at best. Concern over poor pollination conditions, cold injury to spur tissue, and what unseen damage lurked in the tree caused pomologists to be very cautious with thinning recommendations at our regional thinning meetings on May 12th. As the days progressed, the crop began to look stronger. Early season efforts at chemical thinning were ineffectual due to growers choosing low rates, and the cool conditions. Some grower decided to forgo chemical thinning entirely, implementing a hand thinning strategy later in the season.

By May 23rd it became clearer that surviving flowers, with viable pistils (most flowers) that set fruit, weren't going to drop off on their own. CCE ENYCHP issued an E-Alert suggesting that chemical thinners should be used at normal rates based on the NEWA carbohydrate model. The resulting crop had a "clumped" distribution on the tree, reflecting the loss of the king bloom, along with a high degree of set of the side bloom, and poor thinning performance. In late June, growers and industry professionals estimated the Hudson Valley crop to be 70% of the 2015 crop. Maturity estimates calculated in early August resulted in a prediction of Gala, Mac's, and Honeycrisp running three days earlier than 2015.

August turned out to be much warmer than average for the Hudson Valley. A local media outlet reported that we experienced more 90+ days this past August than any other August on record. However, the high temperatures did not result in an increase in the rate of maturity development. In comparing harvest maturity data from 2015 with 2016, Gala maturity was slightly ahead, McIntosh roughly the same, and Honeycrisp a few days behind. For later varieties such as Empire, Red Delicious, Fuji and Rome, maturity approximated general calendar dates. In general, flesh firmness and Brix were up this year, and color was down. For Gala, McIntosh, and Honeycrisp, retailers lowered color standards to accommodate. The Bitter Pit disorder was rampant in Honeycrisp this year, with incidence ranging from 2 – 60+ percent in sampled blocks. September and October were very dry, with growers continuing trickle irrigation when available, and re-deploying their solid-set equipment. Even with the short crop, fruit size was disappointing. As this article is written, Standard Fuji, "Maslin" Pink Lady, and Law Rome are being harvested. All in all, I'd estimate most varieties will pick out at 50% of last year's crop, with Gala being the bright spot at 75%.

Highland Rainfall and Temperature 2016 vs 30 Yr Average

Month	Rainfall (in)		High Temp (F)		Low Temp (F)	
	2016	30 yr avg	2016	30 yr avg	2016	30 yr avg
March	1.19	3.57	78.6	48.1	19.7	25.5
April	2.07	3.78	77.9	60.8	18.9	36.6
May	3.04	4.41	91.7	71.3	37.9	46.3
June	2.62	4.43	89.2	79.5	47.7	55.7
July	5.44	4.65	95.1	84.4	55.7	60.8
August	3.01	4.2	92.1	82.6	51.6	59.6
September	1.27	4.28	90	75	41.5	51.1

