FINGER LAKES
Vineyard Notes

NEWSLETTER NO. 7 NOVEMBER 24, 2009

IN THIS ISSUE

The 2009 growing season is behind us, and many growers are thankful for that. The combination of some very wet weather in the middle of the season and a lack of heat made for a difficult year, whether you were growing Catawba or Cabernet Franc. Fortunately, growers produced good quality fruit that processors and wineries are pretty pleased with given the challenges of the season. But perhaps the bigger challenge that many growers faced this year was the reduction in purchases by grape buyers. Hopefully a new year will bring more buyers with more demand back into the marketplace.

In addition to the regular suspects in this year's Harvest Issue, you will find a short summary of how things have been going with the new Classifieds website, Chris Gerling's article on winemakers' assessment of the 2009 vintage, a wrap-up summary of the Sustainable Viticulture project that ended this year (at least the first phase of it) and a short interview with our new enology faculty member, Dr. Anna Katharine Mansfield.

Finally, don't forget to mark your calendars for Viticulture 2010 will be held February 17-19, 2010 at the Riverside Convention Center in Rochester. You can find program, vendor and registration information at the event's website, www.viticulture2010.org. Hope to see you there!

The 2009 Growing Season in Review

Hans Walter-Peterson

One of the greatest challenges to growing grapes in the eastern U.S. is the lack of consistency between growing seasons. Just look at the past four growing seasons in the Finger Lakes – two of the years were warm and dry overall (2005, 2007), one year was pretty good until the end of the season (2006), and one year that kind of played it closer to average for most of the season (2008). Growers always need to be prepared for Mother Nature to throw just about anything at them, and adjust their practices accordingly in order to produce the best quality and quantity of fruit that they can in a given year.

The 2009 growing season was one that certainly would fall under the 'challenging' category for the Finger Lakes. Cooler than normal temperatures for much of the season, combined with what felt like almost constant rain for part of the summer, meant that growers had to pull out all of the stops to get to harvest with good quality fruit, which many were able to do in the end. On top of the difficulties thrown at growers by this year's growing conditions, the industry was also faced with a difficult market situation with a number of buyers of grapes pulling back on their purchases this year, or cancelling them altogether, and lower average prices for most varieties compared to last year.

Winter 2008-2009

Going into last winter, vineyards looked to be in pretty good shape. Canopies remained green and functional through much of October, allowing for development of periderm on canes and carbohydrate reserves that could be packed away into the vines' permanent structures for overwintering. There was some initial cause for concern in some vineyards that ended up with much higher than normal crops that cold hardiness might be compromised due to the vines' allocating resources to rip-

	2009 Bud Hardiness (LT_{50} in °F)							
	12/11/08	12/22/08	1/6/09	1/21/09	2/4/09	2/17/09	3/3/09	3/18/09
Concord	-15.2	-20.6	-19.4	-22.6	-24.1	-21.4	-19.5	-4.1
Cayuga White	-7.7	-14.0	-11.9	-15.5	-16.5	-11.2	-9.0	-2.3
Riesling	-9.0	-13.0	-12.5	-13.0	-12.5	-11.7	-10.2	-3.5
Cabernet Franc	-7.1	-12.3	-10.4	-12.2	-12.9	-10.4	-9.8	-3.3
Catawba	-9.2	-10.8	-12.3	-15.3	-16.1	-10.1	-10.5	-4.4

Table 1. Bud hardiness of five varieties during the winter of 2008-09.

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ening a large crop and less to reserves. However, bud samples analyzed for cold hardiness showed that vines were well prepared overall to survive another winter.

For the second consecutive year, the Finger Lakes Grape Program (FLGP) collected bud samples of 5 different varieties from multiple sites in the region to monitor their level of cold hardiness (Table 1). By the time the first samples were taken in mid-December, bud hardiness, measured as LT_{50} or the temperature required to kill 50% of the sampled buds, was already well below zero for all five varieties. Cold hardiness had reached its maximum by early February, with all varieties showing average LT_{50} values below -10°F. Concord, Cayuga White and Cabernet Franc had better hardiness in 2008-09 than in the previous winter, while Riesling achieved similar results compared to last year.

Overall, the region experienced a fairly mild winter once again. Low temperatures recorded at Geneva only dipped below zero once, on January 18, and then only to -0.9°F (Figure 1). Other weather stations in the region, however, recorded temperatures during that same time period as low as -6.9°F (at Branchport). While temperatures like this are still much better than those experienced in 2003 and 2004, growers reported that individual thermometers or temperature loggers in their vineyards recorded temperatures closer to -10°F or even colder. Walking through some vineyards later during the growing season, evidence of trunk injury could be found in some spots, primarily in lower portions of a site or where air circulation was poor, with shoots collapsing due to the failure of vascular tissues to maintain their connections as the demand for water and nutrients increased during the season. For the most part, however, vineyards came out of this past winter once again with relatively low levels of bud and vine damage.

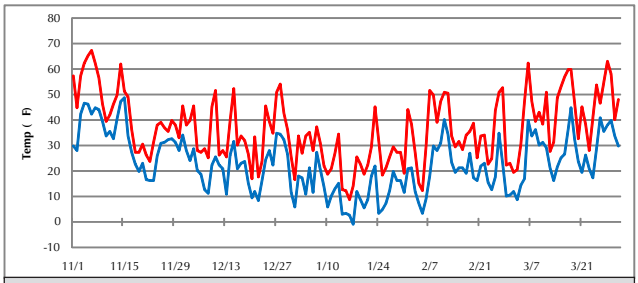


Figure 1. High and low temperatures recorded at Geneva, NY from 11/1/08 - 3/31/09.

2009 Growing Season

The year's growing started out very similar to the past couple of years, with a couple of periods of warm weather in April but not enough to get the vines to break dormancy early. A stretch of five days with temperatures in the 70s and 80s at the end of the month, however, seemed to give early varieties like Marechal Foch and Leon Millot a bit of a kick start. By early May, many varieties were showing signs of budswell or even budbreak.

As it is every year, the potential for frost damage is a primary concern of growers during May. Most years it seems there are one or two nights where temperatures are forecast to drop close to freezing and growers lose a little bit of sleep. On May 19, well after shoot growth had started on most vines, low temperatures in the Finger Lakes fell to about 32°F as recorded at several weather stations in the region. Several vineyards experienced some minor shoot damage, primarily on young vines and sucker shoots close to the ground. Damage was more extensive in a couple of vineyards where air drainage may have been restricted, but overall the region was fortunate to escape the spring without any major frost events. The same cold event, unfortunately, had a much greater impact in the Lake Erie region, where many growers suffered significant frost damage to large portions of their acreage.

2009 Heat Accumulation

The warm weather at the end of April put the region ahead of average with regard to accumulation of growing degree days (GDD) early in the season (Figure 2). Temperatures in May were generally about average, which kept the region slightly ahead of the game with regard

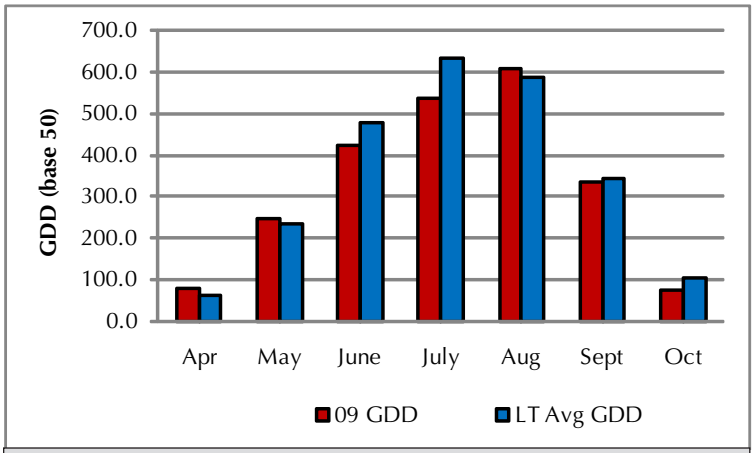


Figure 2. Monthly GDD accumulation in 2009 at Geneva, NY compared to the long-term average.

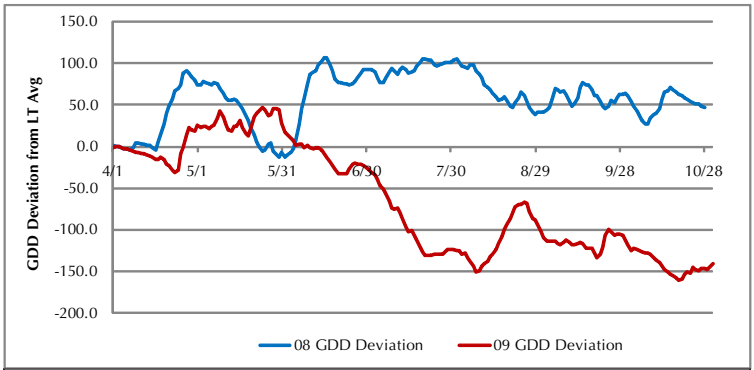


Figure 3. Deviation of GDD accumulation from the long-term average at Geneva. The region experienced below average GDDs in June and July and could not make up the deficit the rest of the season.

to GDD accumulation by the time June rolled around. As of June 1, wild grapes and clusters on rootstocks were in bloom, which led to hope on the part of many of an earlier than normal bloom for cultivated varieties. Trace bloom was evident on early varieties like Baco and GR7 by June 6, with Concord and Niagara starting bloom about 4-5 days later, which was still a little bit earlier than normal.

The tide for the growing season really started to turn near the beginning of June. At the beginning of the month, GDD accumulation was running about 10% higher than the long-term average, or about 2 days ahead (Figure 3). Below average temperatures seemed to become the rule for the month, however, as the region went from 10% above average GDD accumulation to about 4% below normal. The bigger issue in June for the Finger Lakes, however, was the seemingly almost constant rainfall (see next section). The cool weather, combined with many days with cloud cover and rain, created less than ideal conditions for bloom in many varieties. As a result, problems with fruit set were evident in a number of vineyards, with clusters showing reduced berry numbers per cluster or a lot of "shot berries" on clusters (Figure 4). In most cases, reduced fruit set was limited to certain vines or certain portions of vineyards rather than being found over large areas. It was not unusual to see vines with poorly set clusters directly adjacent to others that had more normal-looking clusters.

In 2009, June will be remembered as a wet month, and July will be remembered as a cold month. In fact, July 2009 had the third fewest number of GDDs since 1973, with only 1992 and 1976 being cooler than this year (July 2000 had the exact same GDDs as this year as well). In the span of one month, the growing season went from being 2 days behind average to almost one week behind. The cool temperatures during the month did not seem to reduce vine growth, however, as the vines had access to plenty of soil moisture which promoted vigorous shoot growth in many vineyards.

Figure 4. Cool temperatures and rain after bloom caused problems with fruit set in some Finger Lakes vineyards.

August brought about a return to relative normalcy with regard both to GDDs and rainfall, but the previous couple of months put the region into a heat deficit that it wasn't likely to makeup. However, with even normal temperatures and some decent sunshine after veraison, there was still hope that the season would not be lost, and that good quality fruit could still be harvested. Fortunately, September responded somewhat to the industry's needs dry, sunny weather for most of the month. While heat accumulation remained just below average for the month, the lack of rainfall was a welcome change of pace and helped to keep development of late season bunch rots in check. October, however, decided to give the region one last change of pace, as the month finished off the season with low GDD accumulation and more rainfall than normal.

> *...July 2009 had the third fewest number of GDDs since 1973, with only 1992 and 1976 being cooler than this year.*

Despite the cooler than normal season, harvest in Finger Lakes started on August 31, which was only a few days later than the start date most years. The sunny weather in September made harvest go smoothly for most growers picking earlier varieties. Vineyards around Branchport and Dresden experienced the first freezing temperatures of the season on October 12, when morning lows dropped to around 27°F in some spots. To some growers, this was a signal to get fruit off the vines, while others decided to wait longer to harvest despite the lack of functional leaf area. Some late season varieties like Catawba and Cabernet Sauvignon ended up being picked with no leaves remaining on the canopy. Other vineyards in the region, such as some of those on the west side of Cayuga Lake, did not lose

their leaves until the end of the month. The last grapes in the region, except those destined for dessert wines, were harvested by the end of the first week of November.

Rainfall in 2009.
Let me open with a statement that will probably surprise most people – over the entirety of the growing season, 2009 was a *drier than normal* year. That's right – we had less rain from April to October this year than we normally do, at least according to the data collected by the weather station at Geneva (Figure 5). This may not necessarily have been true everywhere in the Finger Lakes. We know that in some years, certain areas can receive significantly more or less rain than others, but the notion that there was anyplace this year which recorded less rain than average was surprising to say the least. This is likely one of those cases where looking at the data gives us a different picture of the year than the impressions that the season left with us. The impact of when the rains came and when they did not certainly makes a difference as well.

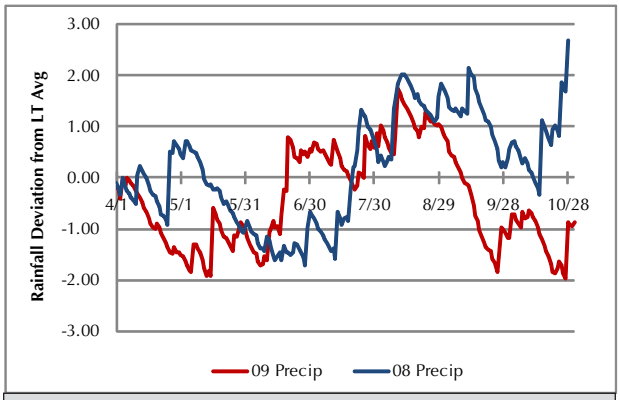


Figure 5. Deviation of 2009 rainfall from the long-term average. While June and July were wetter than normal, April and September were very dry and brought the overall season total back down below average. Most people, however, will probably still say that 2009 was a wet year because of the timing.

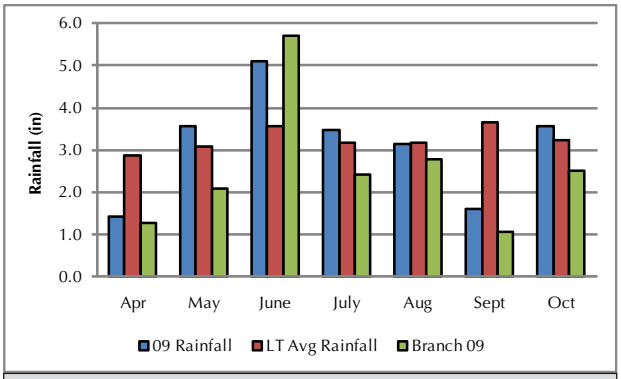


Figure 6. 2009 rainfall by month at Geneva (blue) and Branchport (green) compared to Geneva's long-term average.

The year started off dry, with April being the driest month of the season with only 1.4" of rain. While this early deficit certainly contributed to the "drier than normal" status of the growing season, one could easily argue that a wet or dry April has less impact on the characteristics of the growing season than other months simply by the lack of vine growth during that time. Rainfall in May was a bit above average in Geneva, but as an example of how patterns can be different depending on where you are, Branchport had about 1.5" less than Geneva (Figure 6). This relatively dry weather in portions of the Finger Lakes meant it was less likely to find phomopsis infections on shoots in areas like Branchport and Pulteney later in the season.

Rain seemed to be an almost constant reality in the month of June, particularly during the latter half of the month and the early part of July when it seemed like it rained almost every day, which it turns out, it did. During the last 21 days of June, 15 days had some level of measurable rainfall. Rainfall at Geneva totaled just over 5" for June, about 1.5" above the average for the month, while Branchport recorded 5.7 inches. This heavy rain made vineyard work more difficult, particularly spraying as growers had difficulty finding enough time without rain to apply materials to their vineyards. Ample soil moisture also promoted strong shoot growth in many vineyards. Many growers ended up having to make more than one hedging pass in order to keep shoots from getting too long and shading the fruiting zone (Figure 7). The high rainfall amounts also made weed control more challenging as the season progressed, particularly when it came to late season grasses.

Figure 7. High rainfall during the middle of the growing season promoted shoot growth and forced many growers to hedge more than once.

The region finally started to experience a break from the cool and wet of June and July starting around August 10, when a prolonged period of lower rainfall took over almost until the end of September. On August 10, rainfall at Geneva was 1.7" above normal for the season. Over the following six week period, rainfall amounts were about 3.5" below average, with September totaling only 1.6" of rain for the month. The lack of rain helped to prevent significant outbreaks of botrytis and other bunch rots in most vineyards, allowing growers to feel more comfortable about letting fruit hang longer before picking. The rains made a final return appearance in October, but only to the extent of what growers are used to during the last month of harvest.

So yes, all in all the year ended up drier than normal, but the timing and consistency of the rainfall, especially during the middle of the season, left everyone with the impression of 2009 as a wet and cloudy year overall.

Pest Management
Pest management in Finger Lakes vineyards is a challenge every year, to say the least. This year, growers found themselves pulling sprayers through the vineyards more often than they usually have to, thanks to the rains during June and July, prime periods of the year for infections to get established on clusters.

Continued on page 15

WINEMAKING

Harvest report 2009: The Waiting is the Hardest Part

Chris Gerling, Statewide Extension Enology

In late October of 2008, I talked to winemakers from across the state to get their impressions of the season, the harvest and what kind of wines we might expect. Making contact this year to ask the same questions, I noted one area of contrast fairly quickly. As Dave Breeden at Sheldrake Point told me, "I'm happy to share my thoughts, but we won't be harvesting Riesling, Cab Franc or Cab Sauv for a couple of weeks yet. " Waiting is the tactic that is both physically easiest and emotionally hardest on winemakers and vineyard managers, and 2009 has featured plenty of it. While having Halloween serve as more of a checkpoint than a finish line may be one of the notable features of the season, however, delays are not all there is to talk about. In a year where the challenges were plentiful and the degree days were not, winemakers and vineyard managers used all of the tools at their disposal to focus on producing high-quality cool climate wines.

In a general sense, we've had a pretty good idea about the look and feel of 2009 for quite some time. The tone was set early on as late freezes and ill-timed moisture wreaked havoc on fruit set in Western NY and on Long Island, lowering crop levels by half or more in some cases. The silver lining to the apparent disaster is that 2009 was a fantastic year to have some pre-thinning. This idea was echoed by Christopher Tracy of Channing Daughters, who explained, "what we have will be super; there's just not that much of it." And while there's no getting around the basic truths that the season was a.) cool and b.) wet, it was consistently so, and this consistency gave people the opportunity to adjust. In the Finger Lakes, where nature didn't thin, people did. As John Herbert at Wagner said, "We saw this coming, so we thinned most everything, and we thinned the Pinot Noir twice." Mario Mazza of Mazza Vineyards and Mazza Chautauqua said that shoot thinning, especially for white hybrids, "paid huge dividends."

After the thinning came the waiting. "We didn't touch a grape in September," said Barry Tortolon of Rooster Hill. Dave Breeden estimates that they are picking on a schedule that's about three full weeks behind last year. Waiting would not be a viable option if the grapes weren't clean, however, and all of the winemakers were quick to praise the heroic efforts of vineyard personnel in keeping up with the sprays and canopy management. In a year plant pathologists have described as ready-made for powdery mildew, all winemakers were quick to praise tireless work from their outdoor counterparts. John Herbert said the words every vineyard manager loves to hear: "We didn't pick on disease pressure at all."

The varieties we usually describe as "early" have been praised for having excellent varietal character and Gewurztraminer was mentioned more than once as being a highlight to date. People are also happy with Pinot Noir, and I would definitely put this info into the category of pleasant surprise. Along with Gewz., Christopher Tracy is excited by Pinot Gris, Sauvignon Blanc, Tocai and more. Mario Mazza said he has seen some "fantastic whites," and quite good reds where the vineyard was balanced. "The acids are a little high" was a phrase I heard repeatedly, but everyone had a plan and was dealing accordingly. Dave Breeden went further, saying, "we usually have to add acid to some of these early wines, so this year we're saving money." A fair amount of acid reduction is happening in the juice, because, as Barry Tortolon puts it, "the juice seems indestructible compared to the wine." The later reds are just now happening or have yet to happen for the most part, but Dave Breeden sees no green favors, and Peter Bell at Fox Run is seeing the best color he can remember in Lemberger.

In the twenty-first century, we have apparently adopted a triennial cycle of cold, wet seasons. 2000, 2003, 2006 and now 2009 have distinguished themselves as years where money could be saved on sunscreen but not spray materials. But when the winemakers looked back on the previous gray years, things seemed a lot brighter this time around. 2009 is not as "wrenching," as Peter Bell put it, and I don't think it's because the weather was so much more favorable. My theory is that New York vineyards and wineries are gaining experience and sophistication, and they are responding more quickly and accurately to changing conditions. This is not to say our troubles are behind us, or even that we're out of the woods this year (we're not even out of the vineyard). The point is that we will expect excellent wines from New York State in 2009, and, all things considered, I think that's really saying something about where this industry is and where it's going. Just you wait.

2009 GRAPE PRICES

2009 Grape Price Analysis

Hans Walter-Peterson

According to the information gathered for the Finger Lakes Grape Program's grape pricing list, grape prices in the Finger Lakes continued a similar pattern as 2008, with prices for most varieties dropping from those paid from the previous year, except for native varieties. The downward price pressure was a result of high inventories at most wineries, which caused buyers to cut back on their annual grape purchases, if not cutting them entirely. The number of buyers in 2009 also decreased for 28 of the 51 varieties included in the survey, while only 3 varieties saw more buyers this year. Those buyers who were in the market to purchase grapes were in the driver's seat when it came to setting prices and deciding which growers to purchase grapes from this year.

The information in this analysis, and the following table, is based on price lists submitted to the Department of Agriculture and Markets and voluntarily submitted to the FLGP by participating grape buyers. The full price list was published in the *Finger Lakes Vineyard Notes* newsletter, and is available at our website, http://flg.cce.cornell.edu. This data does not take into account the number of tons purchased by any specific buyer, and therefore may not reflect the 'true' average price of particular varieties.

Natives. Overall, the major native varieties were the lone bright spot in this year's prices. The average price for the varieties in the category increased by 4% over last year, due in large part to an 11% increase in the price for Elvira this year. Delaware prices increased by 8% on average, while Concord and Niagara prices inched up slightly. Only Catawba saw a drop in its average price, but then only by 1%. Prices for other native varieties were flat except for Diamond, which saw a slight increase of 2%.

Hybrids. Prices for most red and white hybrids fell this year, reinforcing a trend from last year. The average price for all white hybrids (as a category) fell by 10% this year (this was partly influenced by the price for Verdelet Blanc, which was not included in the 2008 list but was this year). Every variety in the category had lower average prices this year except for Aurore, which gained 3%. Cayuga White saw its average price fall by 6%, which was not surprising given the tons that were listed as available on the Classifieds website. Average prices also fell for Seyval (2%), Traminette (7%), Vidal (4%) and Vignoles (6%).

Price changes were a bit more of a mixed bag with red hybrids. As a category, the average price for red hybrids fell by 2%, but there was a wide range of price changes for individual varieties. Four varieties increased in price this year – Chancellor (+5%), Chelois (+10%), GR7 (+5%) and Noiret (+3%), but this positive move in price was tempered a bit by a reduction in buyers for all four varieties. Significant varieties with lower prices this year included Corot Noir (-12%), Marechal Foch (-8%), Baco Noir (-6%) and Chambourcin, which had its average price drop by 25%, the largest decrease for any variety this year.

Vinifera. Prices for vinifera varieties followed the same trend as hybrid prices, with all varieties but one having lower average prices in 2009. The average price for white vinifera varieties overall fell by 5%, with the biggest drops by Gewürztraminer (-12%), Pinot Blanc (-9%) and Riesling (-9%). The lone bright spot in vinifera prices this year was Sauvignon Blanc, which saw an increase of 9% in its price. Sauvignon Blanc is still a relatively new variety for the Finger Lakes, and it will be interesting to see what kind of demand there will be for it in the future, and just where its price will settle as a result.

Red vinifera prices fell across the board, which resulted in a drop of 8% in the overall average price for the category. Besides Sangiovese, the largest price drop was for Cabernet Sauvignon (-10%). This was a little surprising at first, but it is likely that at least part of the reason for this is fewer Finger Lakes wineries purchasing these grapes from Long Island this year. The average price for Cabernet Franc, another variety with a surplus this year based on ads in the Classifieds, dropped by 7% in 2009. Prices also fell for Lemberger (-9%), Pinot Noir (-8%) and Merlot (-7%). Syrah was one of the few varieties with any gain at all in the number of buyers this year, going from one buyer to two.

Variety	2008			2009			% Change (2008-2009)			# of 2009	# of 2008
	Average	High	Low	Average	High	Low	Average	High	Low	Buyers	Buyers
Native											
Catawba	338	400	150	333	400	200	-1%	0%	33%	12	13
Concord	297	450	215	301	450	233	1%	0%	8%	11	11
Delaware	370	600	250	399	600	295	8%	0%	18%	8	10
Elvira	265	290	230	295	295	295	11%	2%	28%	2	3
Niagara	321	450	225	329	450	233	2%	0%	4%	14	18
Average (Majors)	**318**	**438**	**214**	**331**	**439**	**251**	**4%**	**0%**	**17%**		

Variety	2008			2009			% Change (2008-2009)			# of 2009	# of 2008
	Average	High	Low	Average	High	Low	Average	High	Low	Buyers	Buyers
Diamond	431	475	400	442	475	400	2%	0%	0%	3	4
Dutchess	400	400	400	-	-	-	-	-	-	0	1
Golden Muscat	375	375	375	375	375	375	0%	0%	0%	2	1
Isabella	492	525	475	492	525	475	0%	0%	0%	3	3
Ives	415	450	380	415	450	380	0%	0%	0%	2	2
Average (Others)	**423**	**445**	**406**	**431**	**456**	**408**	**2%**	**3%**	**0%**		
Red Hybrid											
Baco noir	636	850	510	598	700	510	-6%	-18%	0%	8	10
Cascade	375	400	350	-	-	-	-	-	-	0	2
Castel	543	700	385	543	700	385	0%	0%	0%	2	2
Chambourcin	917	950	900	688	825	525	-25%	-13%	-42%	4	3
Chancellor	667	750	600	700	700	700	5%	-7%	17%	3	6
Chelois	706	900	600	775	900	650	10%	0%	8%	2	4
Colobel	700	800	600	667	700	600	-5%	-13%	0%	3	3
Corot Noir	628	700	585	554	700	400	-12%	0%	-32%	6	3
De Chaunac	526	650	450	491	630	450	-7%	-3%	0%	5	6
GR7	549	630	510	579	650	510	5%	3%	0%	4	5
Leon Millot	650	700	625	625	650	600	-4%	-7%	-4%	4	5
Marechal foch	666	725	600	609	700	540	-8%	-3%	-10%	7	8
Noiret	692	800	600	715	750	625	3%	-6%	4%	5	6
Rosette	417	525	350	375	375	375	-10%	-29%	7%	1	3
Rougeon	538	650	400	528	650	400	-2%	0%	0%	8	10
Vincent	669	750	600	613	700	525	-8%	-7%	-13%	7	8
Average	**617**	**718**	**542**	**604**	**689**	**520**	**-2%**	**-4%**	**-4%**		
White Hybrid											
Aurore	381	440	300	393	440	325	3%	0%	8%	4	4
Cayuga White	622	700	550	587	700	495	-6%	0%	-10%	17	19
Seyval blanc	625	700	500	613	700	500	-2%	0%	0%	10	11
Traminette	1003	1100	800	935	1100	800	-7%	0%	0%	10	10
Verdelet blanc	-	-	-	400	400	400	-	-	-	1	0
Vidal blanc	665	800	500	638	900	500	-4%	13%	0%	8	13
Vignoles	800	900	700	756	900	525	-6%	0%	-25%	9	11
Villard blanc	800	800	800	700	700	700	-13%	-13%	-13%	1	1
Average	**699**	**777**	**593**	**628**	**730**	**531**	**-10%**	**-6%**	**-10%**		
Vidal late harvest	2000	2000	2000	-	-	-	-	-	-	0	1
Vignoles late harvest	1500	1800	1000	1600	1600	1600	7%	-11%	60%	2	4
Average Late Harvest	**1750**	**1900**	**1500**	**1600**	**1600**	**1600**	**-9%**	**-16%**	**7%**		
Red Vinifera											
Cabernet franc	1328	1750	650	1242	1550	800	-7%	-11%	23%	12	15
Cabernet sauvignon	1789	2800	1500	1605	1700	1200	-10%	-39%	-20%	10	14
Gamay noir	1600	1600	1600	-	-	-	-	-	-	0	1
Lemberger	1400	1750	1000	1269	1500	1000	-9%	-14%	0%	8	9
Merlot	1936	2800	1600	1806	2000	1500	-7%	-29%	-6%	8	14
Pinot noir	1663	1800	1500	1532	1800	1000	-8%	0%	-33%	11	14

Variety	2008			2009			% Change (2008-2009)			# of 2009	# of 2008
	Average	High	Low	Average	High	Low	Average	High	Low	Buyers	Buyers
Sangiovese	1800	1800	1800	1500	1500	1500	-17%	-17%	-17%	1	1
Syrah	1800	1800	1800	1750	2000	1500	-3%	11%	-17%	2	1
Average	**1664**	**2013**	**1431**	**1529**	**1721**	**1214**	**-8%**	**-14%**	**-15%**		
White Vinifera											
Chardonnay	1299	1600	900	1238	1500	900	-5%	-6%	0%	14	18
Gewurztraminer	1643	1800	1400	1440	1700	1000	-12%	-6%	-29%	10	15
Pinot blanc	1600	1700	1500	1450	1500	1400	-9%	-12%	-7%	2	2
Pinot gris	1623	1725	1450	1540	1700	1150	-5%	-1%	-21%	10	12
Riesling	1565	1750	1100	1417	1900	1000	-9%	9%	-9%	15	20
Sauvignon blanc	1633	1800	1500	1775	1800	1750	9%	0%	17%	2	3
Average	**1561**	**1729**	**1308**	**1477**	**1683**	**1200**	**-5%**	**-3%**	**-8%**		

We thank the following processors and wineries for providing copies of their price lists for this report.

Anthony Road Wine Company
Bully Hill Vineyards
Constellation Wines
Chateau Lafayette Reneau
Cliffstar Corporation
Dr. Konstantin Frank Vinifera Wine Cellars
Fall Bright Winemakers Shop
Fox Run Vineyards
Fulkerson's Winery
Glenora Wine Cellars
Hazlitt 1852 Vineyards
Heart and Hands Winery
Heron Hill Winery
Hunt Country Vineyards
Imagine Moore Winery
King Ferry Winery
Lakewood Vineyards
Lucas Vineyards
Rooster Hill Winery
Royal Kedem / Springledge Farms
Sheldrake Point Vineyards
Swedish Hill Vineyards
White Springs Winery

EXTENSION

2009 Field Meetings and Demonstrations

John Santos discusses his composting system at Hazlitt 1852.

December 8. ***Compost Use in Vineyards.*** With growers becoming more conscious about the importance of their vineyard soils' quality and health, along with the increasing costs of fertilizers, there continues to be interest in the benefits growers might find by using compost, pomace and other organic materials in their vineyards. This meeting provided growers with some guidance when it comes to using these materials. Cornell extension staff discussed compost management practices and resources to help find finished compost or feed stocks, along with the nutrient impact composts might have in vineyards. Local growers Matt Doyle and John Santos shared their experiences with using composted materials in some of their vineyards. The meeting also included an outdoor demonstration on the construction and composition of compost piles, and equipment used to spread the material in the vineyard. *Participants: Jean Bonhotal (Cornell Waste Management Institute), Hans Walter-Peterson (Finger Lakes Grape Program), Matt Doyle (Doyle Vineyard Management), John Santos (Hazlitt 1852 Vineyards).*

May 12. ***Canopy Management for Hybrids.*** Canopy management practices like leaf pulling, shoot thinning and crop adjustment are becoming standard practices for growers of vinifera varieties. This meeting was held to provide growers with an update on research by Dr. Justine Vanden Heuvel that is looking at the potential benefits of these practices on the quality of hybrid grape varieties. The meeting covered not only impacts on fruit parameters, but also productions costs and potential returns and labor requirements for these practices. Experimental wines from several of the treatments were brought for growers to compare as well. *Participants: Justine Vanden Heuvel (Cornell University), Tim Martinson (Cornell University), Trent Preszler (Cornell University, grad student).*

May 19. ***Spring Grape IPM Field Meeting.*** The FLGP's annual Spring Grape IPM Field Meeting was held this year at the Dresden farm operated by Doyle Vineyard Management. The program for this year's meeting covered an array of topics including equipment for more precise pesticide application, grape berry moth management, updates on disease and weed management, scouting for pests, DEC rules regarding recordkeeping and others. Thanks to Matt Doyle and his crew for hosting the event this year, as well as the program's sponsors who provided financial support for this year's meeting. *Participants: Andrew Landers (NYSAES – Entomology), Greg Loeb (NYSAES – Entomology), Wayne Wilcox (NYSAES – Plant Pathology), Rick Dunst (CLEREL – Portland), Andy Muza (Penn State Cooperative Extension), Tim Weigle (CLEREL - Portland), Ed Hanbach (DEC – Bath). Sponsors: Bayer, Syngenta, Crop Production Services, Valent, United Phosphorus, Shake Away, JMS Flower Farms, Acadian Agritech, BASF, Dow, Helena, Gowan.*

Growers watch a sprayer demonstration during the annual Spring Grape IPM meeting.

May 20. ***Mechanical Shoot Thinning Demonstration.*** Shoot thinning can be one of the most effective means of both reducing crop and shoot density in vigorous vineyards, which can lead to improved fruit quality and disease control. Mechanical means of doing this are gaining interest from growers because of the potential to do this practice with minimal labor costs while still gaining the benefits. This meeting demonstrated a mechanical shoot thinner that is being used commercially in other parts of the country. The demonstration took place in a Concord vineyard, but the machine was also used successfully on a Vignoles block on the same farm. *Participants: Hans Walter-Peterson (FLGP), Wade Heinemann, Andy Joy (OXBO), Jim Bedient (Branchport – host).*

Ted Bennett from Navarro Vineyards discusses his business with members of the Finger Lakes industry.

June 15. ***Industry 'Roundtable' with Ted Bennett and Deborah Cahn, Navarro Vineyards.*** Ted Bennett and Deborah Cahn founded Navarro Vineyards over 20 years ago in California's Anderson Valley. The vineyard is committed to sustainable farming practices, and specializes in cool climate white varieties, including Riesling, Gewürtztraminer and Pinot Gris, similar to the Finger Lakes. Ted and Deborah discussed their company's history, production practices and marketing strategies with about 20 growers and winemakers from the Finger Lakes. One area that the discussion focused on was their success at marketing to the 70,000 customers on their mailing list, to whom they sell over 95% of their 35,000 case production directly. *Participants: Anthony Road Wine Company (hosts).*

June 18. ***Marketing for Grape Growers.*** About 18 growers and winery owners met to hash out ideas about marketing grapes to potential buyers both within and outside of New York. Trent Preszler, chief operating officer of Bedell Cellars on Long Island, and a graduate student of Justine Vanden Heuvel, talked about his perspective on how growers can help make themselves stand out in the crowd, which is always an important undertaking, but can help to pay even better dividends in

Continued on page 18

NEW FACULTY

Dr. Anna Katharine Mansfield is Cornell's new enology faculty member in the Department of Food Science in Geneva. Anna Katharine started her position this past January, and while she has had the opportunity to meet many members of the Finger Lakes industry, I thought this might be a chance for her to tell us a little bit about herself, what she's been up to over the past 10 months, and some initial thoughts about where she sees her program starting to focus in the near future. - HCW

Tell us a little bit about your background and how you ended up at Cornell?

I was an English major in college, but took an internship in a winery in what is now the Yadkin Valley AVA of North Carolina and realized that I loved the work. After a few years at the Biltmore Estate winery in Asheville, NC, I went to Virginia Tech for an MS in food science, focusing on wine flavor precursors. This led to a job as the first Enology Project Leader at the University of Minnesota, where I developed an extension program to serve the growing cold-climate wine industry in that state, and became very familiar with cold-hardy winegrape cultivars. I also worked on a PhD part time, focusing on wine flavor chemistry and sensory characterization. I completed that degree in 2008, and was excited to have the chance to return to the east coast and work in another interesting and variable wine region.

Can you tell us a little bit about your position, your specialties or areas of interest?

In the new, expanded enology program at Cornell, I'm often called "the new Thomas," and it's true to some extent;

like Thomas Henick-Kling, I have both extension and research duties. This means that I'll collaborate with Chris Gerling in providing technical support to wineries and planning educational programs, but will also advise graduate students and develop a research program to address applied research problems. My lab will be involved in more short-term projects covering a range of questions. The goal will be to answer pressing industry questions that might not be suitable for longer-term studies.

My areas of interest are fairly broad; my academic training was in wine flavor and sensory evaluation, and I've spent most of the past 8 years working brand new, cold-hardy winegrapes. In a more general sense, I see a need in NY to look at some basic quality issues and characterization questions - how yeast assimilable nitrogen (YAN) varies in various parts of the state, how we can grow or process wine grapes to optimize phenolic profiles, and how regional differences affect wine sensory profiles. There are a lot of interesting questions still waiting to be answered.

What have you been discovering about the grape and wine industry in New York? Has anything surprised you at all?

This year I was astounded to see Rieslings with TA's that reminded me strongly of the high-sugar, high-acid hybrids we were working with in Minnesota. It's been quite a year! Beyond that, I was surprised to find that there's a broad range of expertise in New York. After coming from Minnesota, where nearly everyone is new to the industry, I expected that the New York industry would have less need for extension help - it's an established wine region, so everyone knows everything, right? It's been fun to work both with all the new wineries that are still opening in the state, and with some of the more established producers who have more challenging questions, issues that I haven't had a chance to tackle in a smaller region. Further, I have been very pleasantly surprised to see how open the industry is, how people work together and cooperate, and how welcoming they have been to me. That varies from region to region, and I was pleased to see the camaraderie that exists here.

I know you have been in your position for only a short time, but can you tell us a little bit about any projects you are starting to work on? What about any research ideas a little further down the road?

Right now, I have a graduate student working on a comparative sensory study of Rieslings grown in various microclimates in the Finger Lakes; it was partially funded by the NYWGF, and I hope it will help the region start to define what differentiates a FL Riesling from other great Rieslings of the world. Prompted by industry members, I have another graduate student working to optimize tannin addition protocol for low tannin reds; it was a perfect year for that project! We received funding from the NYFVI for that work, and will extend the project next year to some expanded winery trials. I'm currently working with colleagues from other universities to put together multi-state grants to look at various parameters of interest - how to optimize white wine processing to improve sensory profiles- ie, reduce bitterness - and how phenolic profiles are implicated in that. Some of the YAN data we saw in the Veraison to Harvest samples this year is intriguing, and I would like to look at that more closely- track variability from year to year and cultivar to cultivar, for instance, and see if we can link vineyard practices more closely to yeast nutrient issues. The biggest driver, of course, is industry interest, so I hope to keep communicating with winery owners, and continue to focus on projects that will positively impact the NY wine industry.

SUSTAINABILITY

Sustainable Viticulture Project Enters a New Phase

Timothy E. Martinson
Senior Extension Associate
Dept. Horticultural Sciences - Geneva

Since 2005, grape extension programs across New York have teamed up with industry groups in the Finger Lakes, Lake Erie, and Long Island regions to promote and document sustainable viticulture practices in New York. The *VineBalance* program has reached over 85 growers and wineries, providing a means to evaluate, document and address environmental issues on their farms.

The heart of this program is the *New York Guide to Sustainable Viticulture Practices*, which allows growers to rate specific production practices for sustainability- and to develop a detailed action plan to address issues they have identified. The guide was developed collaboratively by extension, industry, and the New York State Agricultural Environmental Management (AEM) program.

Impacts. The program has reached 85 NY vineyards, representing 7,300 acres of grapes, or 23% of New York grape acreage. Forty growers completed an action plan, and changed 15 practices per plan (on average). Seventeen applied for cost-sharing through local Soil and Water Conservation districts, and 8 were funded, at an estimated $77,000-100,000. The most common improvements were in the areas of:

- safe storage and handling of fertilizers and pesticides
- Improving soil health (including changes in N fertilization)
- Modifying spray practices to reduce drift and increase deposition.

Continued on page 11

MARTKETING

'NY Grape and Wine Classified' Website Debuts in 2009

Several years ago, the Finger Lakes Grape Program developed the Finger Lakes Grape Listing website to help grape growers and winemakers in New York who were looking to buy and sell grapes and bulk wine to connect with each other. In November 2008, the Grape Listing site had to be taken down, leaving industry members without an easy and convenient way to let others know what they had available or were looking to buy.

In April 2009, the FLGP launched the *NY Grape and Wine Classifieds* website to take the place of the previous service. In addition to listing ads for grapes and bulk wine to purchase or sell, the website lets growers, wineries and others in the New York grape and wine industry to advertise for equipment and vines for sale or to purchase, and contains a help wanted section as well. The new site is organized in a similar fashion to the popular classifieds site, Craig's List, and is free to use. Growers and wineries from other states looking to purchase fruit or wine from New York are also able to post ads, in an effort help growers to find new buyers in new markets.

The site has been well-received by the industry. There have been almost 500 ads placed on the site within its first seven months of operation, almost 5 times the number of ads that the previous site would receive in any given year. In a recent survey, almost 80% of users had a favorable impression of the site, and 88% who had used the previous version of the service indicated that the new site was an improvement over the old one. The 32 respondents to the survey indicated that the site helped them to sell over 280 tons of grapes and 6,500 gallons of bulk wine this year.

In order to expand the reach of the Classifieds service, the FLGP has also been working with the New York Wine & Grape Foundation to promote the site in other states to help growers to develop new customers and markets in areas outside of New York. The Foundation has also provided financial support for the development and maintenance of the site, which we thank them for.

SUSTAINABILITY, continued

The program documented significant decreases in N fertilization use over the past 5 years- leading to an estimated 40% overall reduction, and savings of around 90 tons (actual N) applied per year.

Green Marketing. Industry interest in documenting sustainability stems from interest by consumers in food safety and sustainability. The *VineBalance* workbook has allowed major processors (such as Welchs) to shape policies and evolution of retailers' sustainability programs, maintaining and expanding markets for NY grape juice. Wineries are incorporating their use of sustainable practices into their marketing programs.

Funding Support. The effort to produce the workbook and provide outreach to growers was made possible with funding from the **Northeast Center for Risk Management Education** and the **New York Farm Viability Institute,** who funded two separate grants for this project.

The Future. Now that educational materials for documenting sustainable practices are in place, industry representatives are taking the lead in developing 'green labeling' and certification procedures. The New York State Winegrape Growers and National Grape Cooperative have teamed up on a new project to develop green labeling and certification. **Peter Martini** of Anthony Road Vineyard and **Rob Smith** of National Grape Cooperative are leading the effort, with funding from the *New York Farm Viability Institute*. We wish Rob and Peter success in carrying forward this new effort to benefit grape growers in New York.

VineBALANCE
Sustainable Viticulture in the NORTHEAST

A Strong Future for New York Agriculture
NYFVI
NEW YORK FARM VIABILITY INSTITUTE, INC.

The Northeast Center for Risk Management Education

RESEARCH BRIEFS

Finger Lakes Growers and Wineries Cooperate on Research and Demonstration Projects

Each year, a number of growers and wineries in the Finger Lakes cooperate with Cornell research and extension staff on applied research projects that deal with real issues in the vineyard and the winery. The participation of these people is a valuable contribution to the success of these projects, and we all appreciate their support of this work. Following are short summaries of many of these cooperative projects over the past year.

Software to determine the optimal volume rate for pesticides *Andrew Landers and Emilio Gil (Entomology – Geneva).* A computer program was developed by Emilio Gil at the University Polytecnica du Catalonia in Barcelona, Spain, to determine application volume based upon canopy dimensions at the time of application, pesticide, trellis and sprayer type. Two cooperating growers conducted a second season-long trial using recommended rates from the program. *Cooperators: Bill Dalrymple, Lodi and Mike Jordan, Westfield.*

Evaluation of weed control nozzles. *Andrew Landers (Entomology – Geneva), Rick Dunst and Mike Vercant (CLEREL – Portland).* This project, funded by the Kaplan Fund, is the third year of a trial to select the best nozzle type for weed control. It is being conducted at the new Portland Lab vineyard and at Westfield. *Cooperators: Bob and Dawn Betts*

Evaluation of a Botrytis and GBM sprayer. *Andrew Landers (Entomology – Geneva).* A secondary sprayer was developed to apply a botryticide or insecticide to the fruit zone at the same time as the main canopy sprayer was applying a fungicide to the canopy. A second tank, pump, manifold and focused nozzle system was developed. Trials are underway to investigate the optimum quantities to be applied. Efficacy trials with Wayne Wilcox and Greg Loeb. *Cooperator: John Santos, Hector.*

Development of a Precision vineyard sprayer. *Andrew Landers (Entomology – Geneva).* Two major projects are underway at the NYSAES at Geneva. One project is developing an adjustable air louvre for both sprayers with a grape tower and traditional airblast sprayers. The second project is to develop a GPS/GIS flow recording system, to monitor flow and location for farm management and traceability purposes.

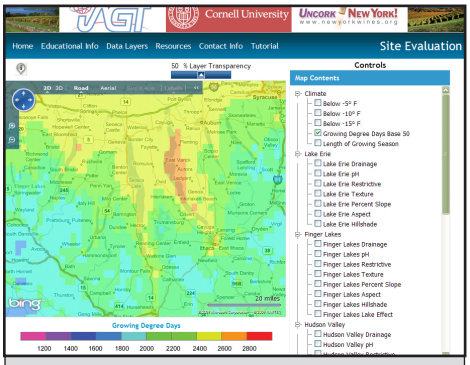
Leafroll Disease: Occurrence, Impact, Spread, and Budget Costs. *Marc Fuchs (Plant Pathology – Geneva), Greg Loeb (Entomology – Geneva), Tim Martinson (Horticulture – Geneva), Brad Rickard, Miguel Gomez (Applied Economics and Management – Ithaca).* Leafroll is one of the major virus diseases of grapevines. It's transmission from vine to vine is achieved by mealybug and soft scale insects. A survey of Finger Lakes vineyards for leafroll disease indicated a widespread distribution and high infection rate in most of the sites tested. Similarly, three species of insect vectors were found in most of the vineyards surveyed although at low population densities. However, most of the insect vectors collected in leafroll-affected vineyards were viruliferous and natural spread of leafroll viruses was determined in a few vineyards. Leafroll viruses delay fruit ripening in wine grapes by 2-3 weeks as measured by Brix levels; they increase also titratable acidity in fruit juice. The objectives of our study are to identify the potential of insecticides at managing populations of insect vectors and to evaluate the budget costs of leafroll management. *Finger Lakes Cooperators: Hazlitt 1852, Hosmer, Wagner, Dr. Frank, Anthony Road, Fox Run, Prejean, Lucas, Knapp, Goose Watch, Rooster Hill, Keuka Spring, Atwater, Swedish Hill, Chateau Lafayette Reneau, and Sheldrake.*

Grape leaf showing symptoms of infection by leafroll virus.

High Resolution Vineyard Temperature Monitoring. *Alan Lakso (Horticulture – Geneva), Art DeGaetano (Earth and Atmospheric Science – Ithaca).* Variations in vineyard temperatures as affected by topography, distance from the lake, distance from trees, drought, etc. are being documented with over 100 small temperature loggers placed in grids or transects in Finger Lakes vineyards. In 2009, we also are documenting the effects of wind machines at Glenora for effects on cold temperatures. Understanding these effects will help the grower to better match variety to site or optimize sampling and harvest timing. This work is in collaboration with the Institute for Application of Geospatial Technologies (IAGT), a GIS center in Auburn, and Cornell's Northeast Regional Climate Center. *Cooperators: Multiple Finger Lakes growers.*

Vigor Effects on Bell Pepper Aromas in Cabernet Franc. *Alan Lakso (Horticultre – Geneva), Gavin Sacks (Food Science – Geneva).* To help control amounts of the methoxypyrazine (MP) bell pepper character in Cabernet types, we are examining shoot vigor on MP levels in Cabernet Franc in experimental vineyards and commercial Finger Lakes vineyards. Fruit MP values are being determined in relation to vigor,but also wines are being made from fruit from weak, moderate and very vigorous shoots. *Cooperators: Fox Run Vineyards, Anthony Road Wine Company, Prejean Winery.*

Site Evaluation and Selection. *Alan Lakso, Tim Martinson (Horticulture – Geneva), Art DeGaetano (Earth and Atmospheric Science – Ithaca).* A continuing project is compiling all the available digital data in NY on soils, topography, elevation, location, and climate in one place to provide a site on the web that allows users to identify sites and obtain useful information on that site. This is a joint statewide effort with Cornell grape research and extension specialists, Cornell's Northeast Regional Climate Center and Center for Advanced Computing, the Institute for Application of Geospatial Technologies (IAGT) a GIS center in Auburn, and industry specialists.



Map of Seasonal GDDs in Finger Lakes from the NY Site Evaluation website, www.nyvineyardsite.org.

Viticultural and Environmental Impacts on MPs. *Justine Vanden Heuvel, Justin Scheiner (Horticulture – Geneva), Gavin Sacks (Food Science – Geneva).* The most notorious contributor to herbaceousness in wines are the methoxypyrazines (MP), a class of compounds associated with the green, "bell pepper" aroma of Merlot, Cabernet Franc, and other Bordeaux varieties. The primary determinant of MPs in finished wine is the concentration present in grapes at harvest; therefore efforts to control MPs should be focused in the vineyard. Research suggests that MPs in grapes are influenced by complex interaction of viticulture and environmental factors that are not well understood. Beginning in 2008 and continuing through 2009, a mulitvariate study has been conducted to identify factors that most directly affect MPs. This year we worked with six grower-cooperators in the Finger Lakes, and two in Long Island. A variety of physiological and environmental parameters that correlated with MPs in 2008 were measured. The objective of this study is to identify factors that affect MP concentrations in grape berries and develop management practices to control MPs to desired levels. *Finger Lakes Cooperators: Hazlitt 1852, Shalestone, Fox Run, Anthony Road, Anyela's. Long Island Cooperators: Bedell, Raphael.*

Determining Optimal Cropload for Riesling. *Justine Vanden Heuvel, Trent Preszler (Horticulture – Geneva).* While optimal cropload varies to some extent with growing conditions and grape varieties, in general a well-balanced vine will have a cropload ratio (yield divided by pruning weight) between 5 and 10. However, cluster thinning is unique among viticultural practices because it presents growers with a complex decision in which two seemingly disparate considerations – vine physiology and economics – are pitted against one another, with potentially beneficial and deleterious consequences existing simultaneously. It is not clear from any existing research whether the costs associated with cropload adjustment result in justifiably significant enhancements to flavor and aroma attributes of the finished wine. The objective of this study, which began in 2008, is to understand the response of Riesling grapevines in the Finger Lakes to varying levels of cropload. Specific cropload effects being studied are vine health, fruit composition, wine quality, production costs, and consumer willingness-to-pay for resulting wines. Results will be merged under one utility-theoretic behavioral choice framework called the "Cropload Economic Index," intended to enhance judgment certainty among growers seeking to optimize their Riesling yields. *Cooperators: King Ferry Winery.*

Developing Easy-To-Use Computational Tools for Vineyard Management. *Justine Vanden Heuvel, James Myers (Horticulture – Geneva).* Some of our recent research (led by Ph.D. student Jim Meyers) has focused on the development of computational tools for assisting growers in making cultural decisions for canopy management. These tools enable growers to turn simple field-collected data into detailed descriptions of their canopy microclimates. Employing these tools early in the growing season can provide growers with the data required to guide deliberate, efficient, and cost-effective cultural decisions in support of their quality goals. In 2008 we demonstrated (and distributed) software tools for producing cluster exposure maps (CEMs) and demonstrated the sensory differences among wines produced from canopies with different cluster exposure profiles. In 2009 we continued ongoing research using these tools to quantify light environment in Riesling canopies, and to produce light response curves for aroma and flavor compounds of interest. These curves will be used to guide grower practices for determining optimal exposure levels required for producing fruit with specific flavor and aroma profiles. *Cooperators: Lamoreaux Landing, Sawmill Creek Vineyards, Wagner Vineyards.*

Canopy Management in Riesling. *Justine Vanden Heuvel, Tim Martinson (Horticulture – Geneva), Wayne Wilcox (Plant Pathology – Geneva), Gavin Sacks (Food Science – Geneva), Todd Schmit (Applied Economics and Management – Ithaca).* The primary goal of this project is to develop, demonstrate, and implement canopy management practices in NY vineyards that reduce fungicide use and improve wine quality, resulting in increased economic returns to wine grape growers. Currently, a minority of growers of Riesling practice canopy management techniques such as shoot thinning and leaf removal. As a result, many white wine grape canopies are dense and shaded, with a high incidence of disease. We are investigat-

Measuring Riesling yields in a canopy management trial at White Springs Winery.

Photo: Tim Martinson

ing the impact of shoot thinning and leaf removal (timing and intensity) in Riesling on canopy microclimate, fruit composition, disease incidence, and wine quality. *Cooperator: White Springs Winery.*

Field testing a plant-based lure for capturing female grape berry moth. *Greg Loeb, Dong Cha, Steve Hesler, Charlie Linn, Wendell Roelofs (Entomology – Geneva), Tim Weigle (CLEREL – Portland).* Pheromone-baited traps only capture male grape berry moth and often, this reveals little about the activity of female moths and damage in the vineyard. We know from laboratory experiments that female Grape berry moths use volatiles (organic compounds released by plant tissue) to locate grape plants for egg laying. Over the past several years we have identified many of the key compounds in the volatile blend and in 2009 we tested synthetic lures based on these compounds to monitor female moths in a commercial vineyard in the Finger Lakes and in the Lake Erie region. So far the traps are not working well enough to be commercialized, but we are still looking at ways to improve the technology. *Finger Lakes Cooperators: Jeff and June Pendleton. Lake Erie Cooperators: John and Jay Hardenburg, Joel Ramelt.*

Testing the Use of a Degree Day Model to Time Control of Grape Berry Moth. *Greg Loeb, Steve Hesler (Entomology – Geneva), Tim Weigle (CLEREL – Portland), Mike Saunders, Jodi Timer (Entomology – Penn State), Rufus Isaacs (Entomology – Michigan State), Andy Muza (Penn State Extension – Erie).* This is the second year of a cooperative project being conducted in commercial and research vineyards in the Finger Lakes area of NY, Lake Erie Grape Belt, and the major grape-growing region of Michigan. Our objective is to test a temperature-based phenology model for predicting the timing of pest control for grape berry moth compared to the current procedure of using calendar date for the second the third generation (risk assessment protocols). *Cooperators: Jeff and June Pendleton.*

Management of grape mealybug and grape leafroll disease in New York vineyards. *Greg Loeb, Steve Hesler (Entomology – Geneva), Marc Fuchs (Plant Pathology – Geneva), Tim Martinson, Bill Wilsey (Horticulture – Geneva).* We initiated a new two-year study this spring to investigate the effectiveness of different insecticides in controlling grape mealybug and the consequences of mealybug control on the spread of virus associated with grapevine leafroll disease. *Cooperator: Hosmer Vineyards.*

Impact of Terroir on Finger Lakes Riesling Typicity. *Anna Katharine Mansfield, Becky Nelson (Food Science – Geneva), Justine Vanden Heuvel (Horticulture – Geneva).* Riesling is recognized as the flagship wine in the state of New York due to its long history and high quality potential in the state's wine growing regions. Furthermore, Riesling has become the core varietal in the Finger Lakes AVA based on its compatibility with the local environmental conditions. Informal sensory assessments of Riesling have shown differences that are attributed to the terroir of Keuka, Seneca, and Cayuga Lakes. In order to scientifically support these assertions, a controlled terroir study with standardized wine production, chemical analyses, and detailed sensory evaluation of Riesling commenced during the 2009 vintage. Two Riesling blocks were chosen from each of the aforementioned Finger Lakes, and a Riesling crop was produced from each vineyard site with similar viticultural practices while standardizing viticultural treatments throughout the growing season. Data collection in the vineyard involved measurements of defined terroir components which will be evaluated alongside juice/wine chemistries and sensory results from descriptive analysis with a trained panel of white wine consumers. The objective of this study is to define Riesling typicity according to each lake microclimate and identify the factors of terroir that are correlated with specific chemistries and flavors in Finger Lakes Rieslings. *Cooperators: Keuka Spring Vineyards, King Ferry Winery, Rooster Hill Vineyards, Sawmill Creek Vineyards, Wagner Vineyards.*

Preharvest Fruit Sampling for *Veraison to Harvest*. *Tim Martinson (Horticulture - Geneva), Ben Gavitt and Becky Nelson (Food Science- Geneva), Bill Wilsey and Hans Walter-Peterson (Finger Lakes Grape Program), Jodi Creasap-Gee and Terry Bates (CLEREL - Portland), Alice Wise and Libby Tarleton (Long Island Grape Program), Steve Hoying and Stephen McKay (Hudson Valley Fruit Program).* We collected preharvest fruit samples from 68 vineyards in four regions of NY from September - October, for publication in nine *Veraison to Harvest* newsletters. Twenty-eight of the sample sites were from the Finger Lakes. *Cooperators: Multiple Finger Lakes growers.*

Evaluating the impact of a foliar nutrient solution on productivity, nutrient status and fruit quality of Concord. *Hans Walter-Peterson, Bill Wilsey (Finger Lakes Grape Program).* Production costs for grape growers have increased dramatically over past couple of years, while prices they receive for their grapes have not kept up, making it even more critical to make sure that every dollar spent on inputs is cost effective. Some growers of native varieties have been incorporating various foliar nutrients into their vineyard nutrient management practices. This trial is looking at whether the use of a foliar nutrient material has an impact on productivity, nutrient status and fruit quality in Concords. In addition to collecting viticultural data such as vine nutrient status, yield, and soluble solids content, we will also analyze the costs and benefits of these materials. This was the trial's second

Is Concord productivity and quality improved with annual foliar nutrient applications? We should know after next year.

Continued on page 20

Some growers who were affected by heavy botrytis pressure last year were also probably worried about a repeat performance, especially given the consistent rains during the bloom to post-bloom period.

Diseases. The primary issues that most growers seemed to struggle with this year were downy mildew and, to an extent, botrytis. The other three main fungal diseases that we work to control – phomopsis, black rot, and powdery mildew – could all certainly be found here and there, but were kept in check for the most part.

Figure 8. Yellow oilspots indicating downy mildew infections were prevalent in many vineyards this year.

Given the cool and wet conditions around bloom and the following several weeks, it is a testament to growers that there were not more disease issues this year. But often when the words "wet" and "cool" are used to describe a growing season, downy mildew is likely to be part of the conversation (Figure 8). Downy infections started to appear on varieties like Catawba and Niagara shortly after bloom, but most growers' vigilance with their spray programs seemed to keep the disease under control during the post-bloom period. By late July, however, it was becoming apparent that a few vineyards were already losing the battle, and that they might end up losing their leaves before harvest even got started.

The disease took advantage of conditions later in the season as well, and started to spread in vineyards that up until then had been able to keep the level of infections down to a dull roar. While rains were few and far between in late August and September, cool temperatures in the evenings resulted in the formation of morning dews on canopies. The result was some serious infection periods for downy mildew to establish a new, more significant foothold in vineyards around the Finger Lakes (Figure 9). New infections were easy to spot in a number of vineyards in early September, even in those that had been sprayed recently. Within a couple of weeks, downy infections were fairly well established in most vineyards, but only in a few cases did the disease cause the majority of leaves on vines to drop.

The wet weather at bloom also raised concerns about 2009 being another banner year for botrytis infections. It seemed that more growers were proactive with spraying for the disease after bloom in order to reduce the potential for it to gain an early foothold. Similar to last year, however, early infections could be found in some Chardonnay clusters just prior to veraison. All of these early signs pointed to another difficult year for controlling botrytis. Fortunately, the lack of rain that we had starting in late August, along with somewhat cooler temperatures, made it more difficult for the disease to really take off. Fruit in most vineyards stayed clean for most of the duration of harvest, and even where botrytis infections were able to get established, there was little evidence of significant sour or bitter rot in the clusters. The relative lack of fruit rots enabled growers and winemakers to make decisions to let fruit hang longer and try to squeeze out every last bit of ripening potential this year.

Figure 9. Wet conditions after bloom and cool damp mornings later in the season made downy mildew control difficult in 2009.

Insects. The bug that's been "bugging" everybody the past couple of years has been Japanese beetles. Populations of the insect have been increasing over the past two years, and growers have become more and more concerned about the impacts that large populations of these insects could have on vines. In 2009, however, populations never reached the levels that they had gotten to in previous years, and there were fewer vineyards with significant feeding damage. In addition, vineyards that had experienced heavy feeding damage from beetles over the last two seasons did not appear to be impacted in any noticeable way this season. While there is no sure answer as to why this happened this year, one possible reason could be the low GDD totals, particularly in June and July. Whatever the reason was, growers were glad to have one less thing to worry about in the vineyard, at least for one season.

The presence of mites, or at least the leaf bronzing symptoms of feeding, in a few vineyards was a total surprise this year. As has been mentioned previously, we typically associate mite problems with warm, dry summers, like 2007. We're unclear as to why this is occurring in years that we wouldn't normally expect them. In speaking with the growers where these symptoms were found, there was no indication of use of any materials that would have significant impacts on predatory mites. Also, there is little consistency to where the problem shows up. A vineyard that had mites in 2008 did not in 2009, and vice versa. The problem was not widespread by any means – we only saw it in a couple of vineyards this year. But the

fact that we saw any at all makes us wonder about just what is going on.

Crop Results in 2009

The Finger Lakes grape harvest got underway on August 31, with Constellation starting to bring in Aurora that day. While this year's start of harvest was not significantly delayed compared to other years, picking was delayed at least to some extent for most varieties thanks to the cool weather. Niagara harvest for major processors did not start until the end of September, and ripe Concords did not start getting picked until early October. The first freeze of the fall hit vineyards in Branchport and certain areas around Dresden, mostly on the west side of Rt. 14 (Figure 10), causing the loss of a good portion of the functional canopy. In a number of cases, growers continued to let fruit hang even after the leaves were frozen in hopes of seeing some more acidity drop from the fruit before harvesting it. Final loads of late varieties like Cabernet Sauvignon and Franc were brought in by the end of the first week in November for the most part.

Figure 10. The first freezing temperatures of the season on October 12 crisped up leaves in some vineyards before fruit could be harvested.

Fruit chemistry in 2009 reflected what one would expect in a year cooler than normal year – reduced Brix and higher acidity. Brix accumulation was almost 2 weeks behind normal this year, and some wineries reported picking varieties as much as three weeks later than they normally would. While some varieties, like Riesling, were able to reach more "normal" sugar levels by harvest in many cases, other varieties like Cab-

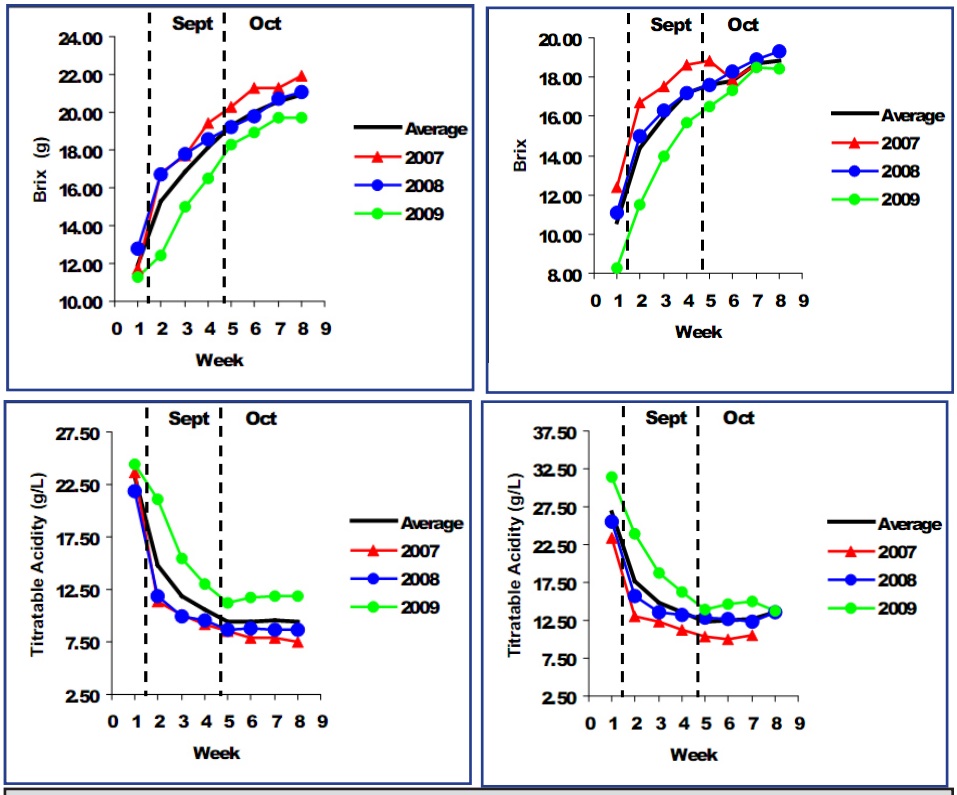


Figure 11. Cabernet Franc brix and TA (upper and lower left), and Riesling brix and TA(upper and lower right) in 2009 compared to 2007 and 2008. Data shown is from multiple regions in NY including the Finger Lakes, which followed the same trends.

Source: Veraison to Harvest Issue #9
Tim Martinson

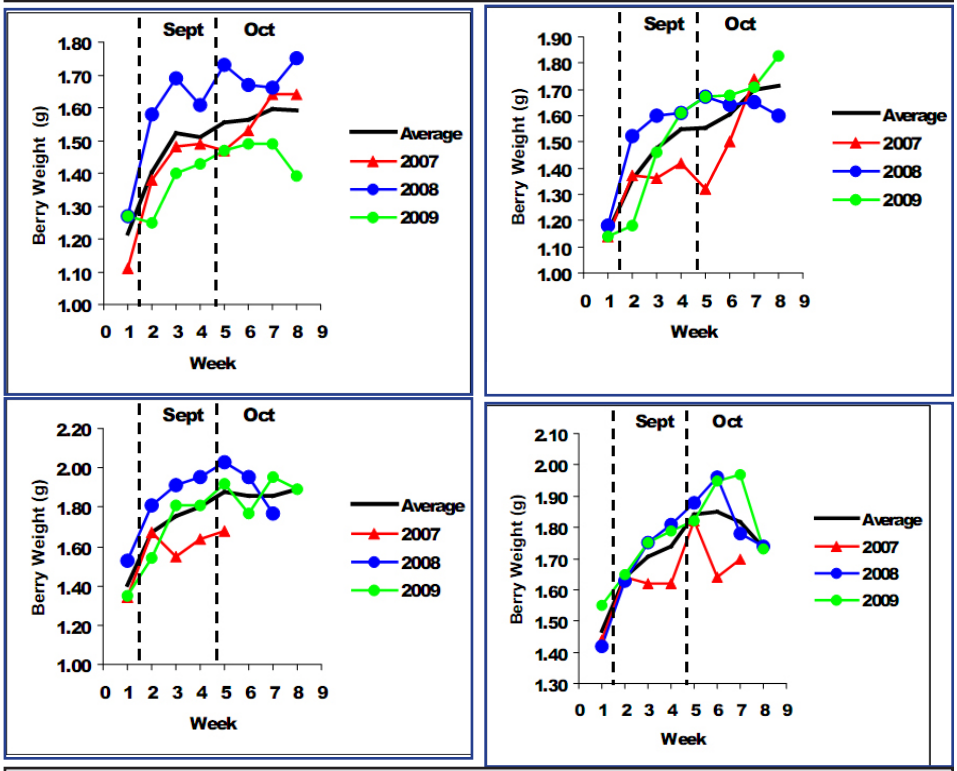


Figure 12. 2009 berry weight curves for Cabernet Franc (upper left), Riesling (upper right), Noiret (lower right), and Traminette (lower left), compared with 2007 and 2008. Data shown is from multiple regions in NY, including the Finger Lakes.

Source: Veraison to Harvest Issue #9
Tim Martinson

ernet Franc did not. Titratable acidity was higher across the board this year, but winemakers and processors have said that they are at levels that can be addressed during processing. Concord growers who sell their fruit to processors with higher sugar standards were sweating a little bit during harvest as well. Many Concord vineyards never reach 16 Brix this year, due to both the cool growing season and the lack of early season frost damage to reduce the crop. However, there were few if any loads rejected from Finger Lakes growers due to inadequate sugar.

Yields tended to be average to a little below average this year. A few varieties, such as Aurore and Elvira, seemed to perform well for growers this year, but a number of growers reported that crop levels were running a little lower than they expected. This was particularly true in the case of some *vinifera* varieties, where several growers said that their pre-harvest estimates were running a little higher than what was actually coming off the vines. This was perhaps due, at least to some extent, to a greater impact on fruit set in some vineyards than was initially thought. Berry size tended to be slightly larger than average, but in most cases not significantly (Figure 12). This was in contrast to areas like Long Island and the Lake Erie region, which saw much higher than average berry weight in Merlot and Concord, respectively, most likely due to a greater impact of low fruit set and causing the vines to compensate with larger berries. One variety that bucked the trend in the Finger Lakes this year was Cabernet Franc which actually had the lowest average berry weight in 3 years. Due to the major frost damage in the Lake Erie region this spring and poor ripening conditions, National Grape has reported that it received its smallest Concord crop since 1977, and its smallest Niagara crop since 1998. Finger Lakes growers were fortunate to avoid major frost damage this year, and were able to harvest native and bulk hybrid varieties with near normal crops.

Fruit thinning was employed by most growers this year, both for economic and quality reasons. The cool growing season that the region had this year prompted growers to drop fruit in order to try to improve ripening in those clusters that remained. Most vineyads focused their thinning on red varieties like Cabernet Franc and Pinot noir (Figure 13), but a few growers also dropped fruit on varieties like Gewurtztraminer. More than a few growers also reported making multiple thinning passes during the season, as the weather conditions and conditions in their vineyards dictated. Growers did a lot of "green thinning" of fruit towards the end of veraison in order to remove clusters that were lagging in their development. This year, Cabernet France seemed to be especially slow to go through veraison (Figure 14), and there were similar reports from Long Island and Ontario as well.

Figure 13. Pinot Noir clusters thinned in mid-September. Many growers made more than one thinning pass to reduce crop load.

After harvesting higher than normal yields in a number of vineyards last year, there was concern that some vineyards with *vinifera* and premium hybrid varieties would swing the other way and have significantly lower than average crops this year. In most cases, this did not pan out and most vineyards expressed normal to even above normal fruitfulness (in terms of clusters per vine) early in the season. Due to both the cool season and the looming surplus of grapes this year, many growers made one or even two fruit thinning passes in red *vinifera* varieties to bring yields down in order to improve ripening. Yields on white varieties this year were more in line with normal expectations.

While any overall assessment of wines produced from a growing season can't be made until the wines are released (or even later), early comments from winemakers are positive with regard to the quality in this year's fruit, despite all of the difficulties that the year presented. The lack of bunch rots helped winemakers and growers to make decisions to let fruit hang longer in order to develop flavors and reduce acid as much as possible. Winemakers have been finding good varietal flavors in most white varieties, including Gewurtztraminer, Traminette and Riesling, as well as Pinot Noir. Years like this are typically more of a struggle for reds, but winemakers and growers alike continue to make strides in pulling good quality wines out of what might be considered poor quality years, so we will have to wait and see what will come out of the cellars over the next 1-2 years.

Figure 14. Many clusters of Cabernet Franc were slow to change color this year.

Probably one of the best indicators of the advances that the Finger Lakes grape and wine industry has made in recent years is the level of fruit and wine quality that can still be achieved even in more challenging seasons like 2009. This is a testament to both growers and winemakers who continue to improve their practices, learning from previous experiences, to make wines that still reflect the conditions of the growing season but are of good quality.

Grape Market Situation in 2009

The surplus situation that the Finger Lakes found itself in last year at harvest was only magnified this year. Most small and mid-sized wineries cut back on purchases of grapes this year, and in some cases, did not purchase any grapes at all. Most wineries were facing an excess of inventory this year, caused

by a combination of slowing sales due to the economy and larger purchases of grapes over the past couple of years. Growers and wineries alike were aware of the situation early in the growing season, and knew that it likely meant lower prices for many varieties at harvest, which is what ended up happening (see article on this year's grape prices in this issue). Some growers were able to find new markets for small lots of fruit in other states, but the difficulty in searching for new buyers in other states is that most wineries in the East are very small, especially compared to the large amounts of fruit that some growers had available to sell this year.

A new website, the 'NY Grape and Wine Classifieds', was developed by the Finger Lakes Grape Program to take the place of the former Finger Lakes Grape Listing (see article in this issue), and was heavily used by members of the industry to try to sell excess fruit and bulk wine this year. Over 3,000 tons of grapes and over 114,000 gallons of bulk wine were listed for sale on the site this year. Varieties that were listed most often for sale included Cayuga White, Riesling, and Cabernet Franc. While it is likely that some fruit was never able to find a home, many growers ended up selling excess fruit at very low prices again this year. The best hope for bringing the supply and demand for grapes back into balance is for both wineries and growers to be able to increase sales and open new markets.

years such as this one where marketing grapes will be difficult. Tina Hazlitt shared some strategies that she is using to help promote her family's vineyard operation as well. The discussion that ensued at the meeting was lively, and demonstrated the importance of this topic for the industry. Further programming in this area will be developed over the coming seasons. *Participants: Trent Preszler (Bedell Cellars / Cornell grad student), Tina Hazlitt (Sawmill Creek Vineyards), Hans Walter-Peterson (FLGP).*

Growers heard about canopy management in Riesling at the Pre-Harvest Field Meeting.

August 24. ***Pre-Harvest Field Meeting.*** The final field meeting of the season featured a discussion and walk-through of a canopy management trial in a Riesling block at White Springs Winery. Justine Vanden Heuvel led the discussion of the trial, which is examining the impacts of various amounts and timing of canopy management practices on disease control and aromatic and flavor compounds in the fruit. There was a brief discussion about important factors in collecting pre-harvest fruit samples to make them more accurate, and finally the 2009 Finger Lakes grape price list was handed out and discussed. *Participants: Justine Vanden Heuvel (Cornell – Horticulture), Hans Walter-Peterson (FLGP), Derek Wilber (White Springs Winery – host).*

year, and we anticipate running it for one more season. *Cooperator: Don Tones, Clearview Farms.*

Cluster Weight to Improve Crop Estimation. *Hans Walter-Peterson, Bill Wilsey (Finger Lakes Grape Program), Justine Vanden Heuvel (Horticulture – Geneva).* Development of a database of average cluster weights can help growers to better estimate their crop early in the season. If reliable data can be given to growers about average cluster weights for different varieties at harvest, the only data growers would need to collect is average number of clusters per vine, and then adjust their estimates based on fruit set and weather conditions when necessary. We started collecting clusters of ten native, hybrid and vinifera varieties in mid-July and continued collection through harvest. We should begin to have reliable cluster weight data for growers to use within 3-4 more years. *Cooperators: Multiple Finger Lakes growers.*

UPCOMING EVENTS

Unified Wine & Grape Symposium
January 26-29, 2010
Sacramento Convention Center
Sacramento, CA
Visit http://unifiedsymposium.org
for information.

Viticulture 2010 and
39th Annual Wine Industry Workshop
February 17-19, 2009
Rochester Convention Center
Rochester, NY
Information is available at
http://www.viticulture2010.com

Wineries Unlimited
March 9-12, 2010
Valley Forge Convention Center
King of Prussia, PA
Visit http:// wineriesunlimited.vwm-online.com for information.

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