FINGER LAKES
VINEYARD NOTES

NEWSLETTER NO. 7 JANUARY, 2012

IN THIS ISSUE

Yep, the 2011 Harvest Issue is about 6 weeks late. It's been that kind of year. Moving on…

The 2011 growing season was one that was full of extremes. We started with heavy rains early in the spring, but fortunately these didn't impact grape growers as much as other farmers. Then we moved into borderline drought conditions in June and July, which caused some vineyard blocks to drop leaves and lose fruit. Then the water was turned back on, and we ended up with some of the heaviest botrytis pressure we've seen in many years. And to top off the list of extremes this year, many growers said they had their highest yields in years, if not ever. All in all, the 2011 growing season certainly wasn't a total loss by a long shot, but growers are glad to see it gone now.

Along with our own season review, we have Chris Gerling's "enological" take on the season, along with our summary of this year's grape prices and the FLGP's extension and research activities in 2011

Hope to see you all at the Growers' Conference and Wine Industry Workshop on March 1-3, 2012 at the Holiday Inn in Waterloo!

2011: The Year That Was...and That We Wish Wasn't

They say that into every life a little rain must fall...but I doubt even the person who said that had what the Finger Lakes, and much of the eastern U.S., experienced this year in his or her mind. The year had three chapters to it - cool and wet to start, hot and dry in the middle, and a wet and warm end that defied descriptions that can be used in polite company, or official Cornell communications. This season of extremes will certainly be remembered as one of the most challenging for grape growers, especially the last two months of it. But in the midst of those struggles, there were still some bright spots like higher yields, especially in native and hybrid varieties, and an overall sense that fruit quality was still good to very good, despite the difficulties that Mother Nature threw at us.

Winter 2010-2011

The past couple of winters in the Finger Lakes have been relatively mild, with only one or two nights dropping below zero at all, and only slightly if they did. The winter of 2010-2011 was a bit chillier, with 3 or 4 events with temperatures going below zero, but otherwise had relatively normal cold weather for the area.

The one glaring exception was the early morning of January 24, when temperatures in much of the Finger Lakes dropped into the double digits below zero. Weather stations around Branchport and Geneva recorded temperatures around -10°F, but growers in several locations around the Finger Lakes had thermometers at their houses or in their trucks showing readings closer to -15°F - temperatures we haven't seen in these parts for several years.

Based on the results of our bud hardiness monitoring at that point, we anticipated that there would be some fairly significant injury to buds on more sensitive varieties like Riesling, Cabernet Franc and Cayuga White (Figure 1). We analyzed bud samples from several vineyards for injury levels and found anywhere from almost no damage to over 30% bud injury, depending on variety and location (Figure 2). The FLGP also produced a two-part video on how to evaluate bud injury before pruning, which is available on the FLGP's YouTube channel (http://www.youtube.com/user/cceflgp).

HARVEST ISSUE

Finger Lakes Grape Program Advisory Committee Members

The Finger Lakes Grape Program Advisory Committee is a group of grower and industry representatives that provides guidance and direction in planning meetings and activities of the program. Current members are:

Ontario County:
Rich Jerome, Naples
John Ingle, Bristol

Seneca County:
Cameron Hosmer, Ovid
Bill Dalrymple, Lodi

Schuyler County:
John Santos, Hector
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Industry Representatives:
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Constellation Brands

Dr. Justine Vanden Heuvel,
Dept. of Horticulture, Cornell

Derek Wilber,
White Springs Winery

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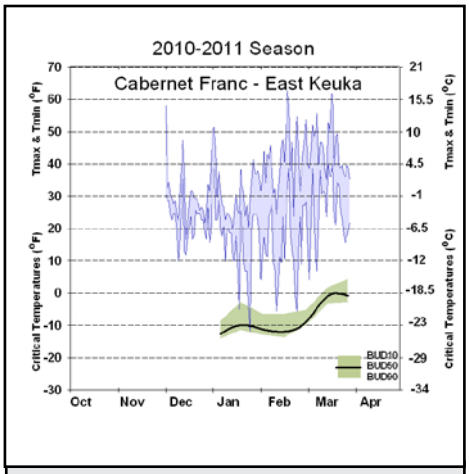


Figure 1. Low temperatures on January 25 fell into the range where we expected to find bud damage in certain varieties based on our monitoring project.

% bud injury	West Keuka		East Keuka		West Seneca		East Seneca		West Cayuga	
	1/25	3/29	1/25	3/29	1/25	3/29	1/25	3/29	1/25	3/29
Concord	8.0%	9.3%	-	10.2%	4.0%	5.0%	-	12.0%	-	6.0%
Cayuga White	27.0%	16.0%	-	11.0%	20.0%	13.0%	-	9.0%	-	14.0%
Riesling	18.0%	18.0%	-	13.0%	16.0%	16.0%	-	19.0%	-	20.0%
Cabernet Franc	36.0%	37.0%	-	17.0%	24.0%	15.0%	-	13.0%	-	18.0%

Figure 2. Results from FLGP bud injury samples taken just after January 24 cold event (two locations), and at end of March. Many growers found less injury than these samples showed.

too early and avoiding the potential for major frost damage. The heavier than normal rains that made life exceedingly difficult for many farmers in New York to get out and do field work or plant their spring crops impacted grape growers as well, but to a lesser extent than other farmers. Early season work requiring heavy equipment, like pounding or replacing posts or dehilling grafted vines, was delayed in some circumstances, but more important tasks like early season fungicide applications weren't affected as much thanks to a more normal time of budbreak. Budbreak started in early to mid-May, which is probably closer to what we should expect in an "average" year compared to what we saw in 2010.

Using this information, many growers conducted their own bud sampling and found numbers that generally agreed with those collected by the FLGP. As a result, many growers increased the number of buds they retained after pruning to compensate for the loss.

The 2011 Growing Season

The Finger Lakes growing season in 2011 can essentially be divided into three parts - a little cool and really wet in April and May, warm and extremely dry in June through early August, and finally, warm and almost continuously wet from mid-August until almost the end of harvest.

Cool and wet spring

Unlike last year's very early kickoff, the spring of 2011 stayed fairly cool for the most part, which helped keep vines from coming out of dormancy

One of the early clues that we had as to the potential for a good cropping year was that there was less primary bud injury than we expected in many vineyards based on the bud injury surveys we conducted after the cold spell in January. Most vineyards with native and bulk hybrid varieties like Concord, Catawba, Aurore and Baco seemed to have almost every bud pushing out at least one shoot that carried clusters on it. Once the shoots got going, they grew fairly evenly, with less of the very pronounced differences we often see in shoots in the middle of canes versus those shoots found near the bases and ends of those canes.

Bloom arrived in the Finger Lakes around the beginning to middle of June depending on variety, which

is close to what we would expect in an average year. We also came into a prolonged stretch of drier and warmer weather at that point. With soil profiles still holding plenty of water, warm temperatures and relatively dry weather during that period, conditions were almost ideal for fruit set this year, which turned out to be excellent almost across the board. When combined with the fact that many native and bulk hybrid vineyards this year had higher than normal clusters per vine, things were setting up nicely for higher yields in many circumstances.

Hot and dry summer

As we headed into the summer, weather conditions changed fairly drastically as the heat was turned up and the water tap was shut off. After staying near normal during April and most of May, growing degree day (GDD) accumulation began to speed up with above average temperatures starting around Memorial Day and continuing for all of June, July and into August (Figure 3).

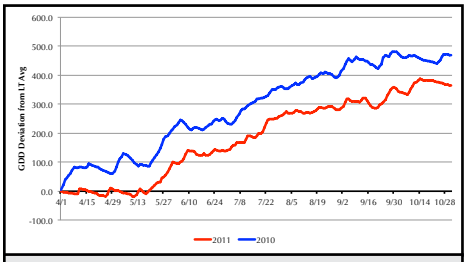


Figure 3. GDD accumulation relative to the long-term average. Note how similar 2011 looks to 2010 after mid-May.

The lack of rain that the area had in June and July was not just unusual, but extreme. This past June was the third driest June in 40 years (1988 and 1995 were drier), and July was the driest we've seen over that period of time, according to the Geneva weather station. The combination of warm temperatures and no rainfall meant that vines had higher transpiration rates and dried out the soil profile that much faster, which led to the expression of drought symptoms in a number of vineyards, especially those on shallow or very well-drained soils (Figure 4). Young vines with small root systems were also affected by the lack of rain. These symptoms were especially evident in the northern part of the Finger Lakes, where a few vineyards had many vines turning yellow and losing their entire canopy by the end of July (Figure 5), making the crops on these vines unharvestable.

Figure 4. Who turned off the water? After a wet spring, June & July turned very dry, causing some vineyards to express drought symptoms like these yellowing leaves.

Figure 5. This summer's drought caused some vines on shallow or low water holding soils to defoliate by late July.

The rainfall patterns that we saw in the Finger Lakes this year reminded us once again that conditions can vary significantly with a relatively short distance. While places in the northern portion of the region like Geneva, Dresden and Branchport were just about bone dry during July, vineyards further south tended to see a little more rain - probably just enough to keep things from getting too stressed to recover. This story held true later in the season as well (keep reading for that).

Warm and "you've got to be kidding me" wet end to the season

While the first 2/3 of the season presented their own challenges to Finger Lakes growers, the 2011 season will be remembered by most for the seemingly constant rainfall that afflicted the region starting at the beginning of September and lasted right through most of October.

Once again, we saw significant differences in how much rain fell in different parts of the region. In Geneva, there were many days with some amount of rainfall recorded, but total amounts weren't significantly higher than what the area receives on average during that time. Further south, however, it was an entirely different story. A number of the weather stations in the southern half of the region recorded significant rain totals in September and October (Figure 6). Two major rain events, Hurricane Irene and Tropical Storm Lee, played a big part in this, but there were plenty of other days with significant rainfall as well. By the end of October, the weather stations in Lodi

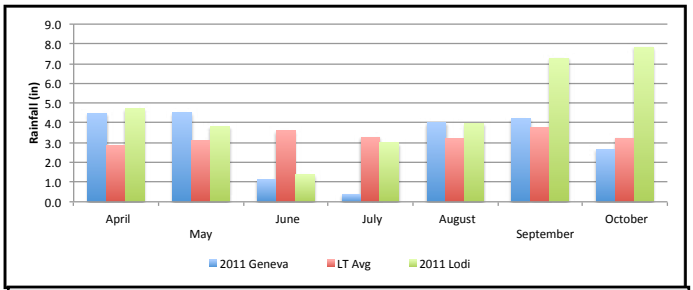


Figure 6. Monthly rainfall totals in 2011 for Geneva (blue) and Lodi (green) compared to long-term averages in Geneva.

recorded over 18″ of rain between August 15 and October 31 - 9″ more than was recorded at Geneva over that same time period.

Pest Management in 2011

As always, when we have wet conditions, we will see an increase in the amount of disease development in most vineyards, and this year was no exception. The wet spring that we had helped to promote the development of phomopsis infections in many vineyards, most significantly in native and hybrid varieties that are trained on high wire trellis systems (e.g., umbrella, high wire cordon) and where older wood is retained. Growers who were proactive about these infections and applied sprays just as clusters were emerging (1-3″ of shoot growth) generally had better control than those who waited longer or were just unable to get into their vineyards because of the wet ground. It was not uncommon to find fruit on the ground after harvest in some of these vineyards, where the disease caused fruit to be shaken off ahead of the harvester.

During the first half of the season, powdery mildew seemed to be almost a non-entity in the Finger Lakes. Wayne Wilcox even said that it wasn't showing up in some of his unsprayed trial blocks at first. That didn't mean, of course, that growers stopped applying materials to protect against infections, however. The disease did begin to gain a foothold in some vineyards after fruit set though, and in a few cases, really wreaked havoc in certain sensitive varieties, like Chardonnay.

The wet and warm conditions after veraison helped downy mildew to become a significant issue for most vinifera and hybrid growers in 2011. Because the berries develop resistance to infection by downy mildew before veraison, the disease primarily affected leaves in the canopy instead of fruit. There were a few cases where the majority of leaves were lost by harvest, but for the most part growers were able to keep the disease under a modicum of control.

One of the things that the season will certainly be remembered for was the almost constant battle that most growers had to face with late-season bunch rots, primarily Botrytis (Figure 7). While the disease is something that growers in the Finger Lakes and the eastern U.S. deal with every year, this year had probably some of the heaviest pressure that we have seen in decades. The disease thrives when temperatures are warm and the clusters remain wet from dew or rainfall, which we had in spades this year.

While there were probably several factors that contributed to the problem, one of the biggest ones was that the area had many more days with measurable rain after veraison than we usually do (Figure 8). On average, about 42% of days between August 15 and October 31 have measurable rainfall (>0.01″). In 2011, 68% of our days had at least a little bit of rain, which keeps the vines and the fruit wet longer and creates ideal conditions for infections to get established and spread.

Figure 7. Botrytis infections proved to be difficult for many growers to control in 2011 due to weather conditions prior to and during harvest.

The high levels of rain also caused a lot of berry splitting this year. After an intensely dry period for most of the region, the rains returned in a pretty substantial way and it seemed that berries could not expand quickly enough to absorb the water that the vines took up. This splitting created further opportunities for Botrytis infections to get established, as the fungus is able to take advantage of injury like this in order to gain entrance into the berries.

Botrytis infections are more common on certain varieties with tighter cluster structure, like Pinot noir and Vignoles, because the berry-to-berry contact prevents the fruit from drying out after heavy dews or rain. The fact that Botrytis infections could be found in varieties where it has never been seen by growers before, such as Vidal, DeChaunac, Lemberger, and even Concord and Catawba, is

Continued on pg. 13

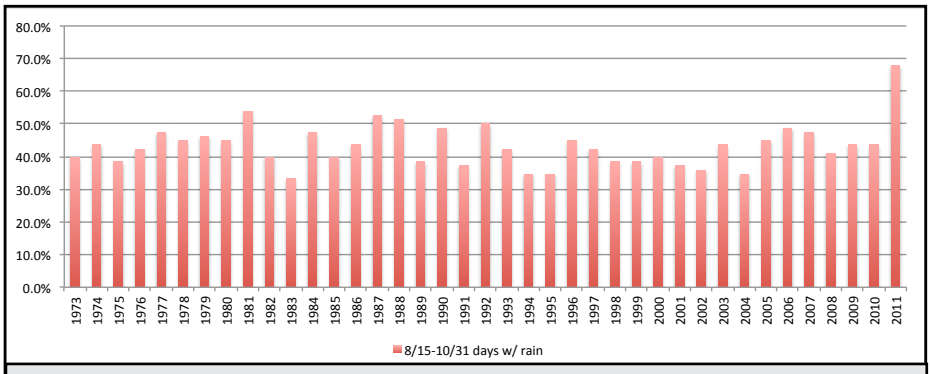


Figure 8. Percentage of days from Aug 15 - Oct 31 with measureable rainfall. Almost 70% of days during this period had some rain, which kept canopies and fruit wet, which played a major role in promoting botrytis development.

WINEMAKING

The 2011 Season*

**Rated PG-13- Intense Sequences Of Adventure, Violence. Includes Frightening Images.*

Chris Gerling
Enology Extension Associate

Arguably, after the relatively easy vintages of 2009 and 2010, the French were due a year that is already being called 'complicated', 'challenging', (mathematically incorrectly) 'average' and, with superbly inventive hyperbole from the St-Émilion growers organisation, 'the master craftsmen's vintage'.
-Jancis Robinson, "2011 - a crazy year for growers," jancisrobinson.com

California's 2011 vintage: the good, the bad and the ugly. California's 2011 vintage poses key dilemmas.
-Jon Bonné, San Francisco Chronicle headlines, SFGate.com

Oregon growers trying several tricks to salvage wine grape growing season.
-Salem Statesman Journal headline, statesmanjournal.com

Mother Nature May Not Be a Wine Fan.
-Unfiltered Blog headline at winespectator.com

I think that before we get into this discussion of the 2011 growing season, we should remember that a lot of people thought the world was going to end in May. If you think about the year from the perspective of life on Earth continuing, things really aren't so bad. Bad isn't the right word though, because for a lot of people the season was not bad, or at least the tangible results aren't bad.

The grapes in many places are wonderful, but the thing is, even the growers and winemakers who are happy with the grapes still don't look relaxed and satisfied. They look like they've just stepped off of a roller coaster—a metaphor for agricultural seasons that is used frequently but more apt in this year than most. And even the people who enjoyed the ride can't help but notice that repair personnel are scurrying onto the track and muttering things like "I've been here 20 years and I've never seen it do *that*."

Let the record show that as of October 25, Geneva, NY had 2834 growing degree days (GDD) and 20.9 inches of rain. These numbers are about 400 GDDs higher and 2 inches of rain lower than the long-term averages. I think the data pretty much says it all. I'm kidding, of course. Those numbers help us compare years about as effectively as if we compared a golf cart and a formula one racecar by counting the wheels.

It's worth mentioning that Geneva was not hit by any hurricanes, tropical storms, earthquakes or rains of brown marmorated stinkbugs. In many parts of the northeast, April and May were the wettest on record. In many of those same parts of the northeast, June and July set or tied records for dryness. In the 57 days between September 1 and October 27, 42 had measurable rainfall. Quite frankly, a lot of the farmers out there may be asking why we're so sure the world didn't end.

Yields Up. 2010 was an exceptional year in many ways, but fruit set was one area that was less than exceptional, especially for juice grape growers. In 2011 the set deficiency was corrected, and for those who could hit their targets the year was a success. Pretty much everybody I've heard from, with the notable exception of those who have had to drop or sort out large amounts of rot-affected fruit, have reported higher tonnages and higher juice yields.

Whether or not this is a good thing is a matter of perspective. If the quality is good and the inventory is low, bring it on. If the higher juice yields are a product of rain dilution and the flavors are also diluted, however, more is not necessarily better. I've heard reports of both cases so far, but keep in mind juice flavors and wine flavors are only loosely related, and at least one person who was not as happy about his juice is much more hopeful after primary fermentation.

Where's the Brix?
Sugar levels have mostly been slightly lower to a lot lower than would be expected for a high GDD year. What's noteworthy is that acids are not particularly high either. The rain and dilution may be at least partly to blame for this phenomenon, but there are probably other culprits as well: clouds.

While it can be easy to view acid degradation and sugar accumulation as two sides of a see-saw - one rising as the other falls and vice-versa- there are actually separate mechanisms at work. Acid metabolism is primarily a product of heat, which we had, while the photosynthetic engine driving sugar accumulation needs sunlight, which was tougher to come by.

In a vacuum, low sugar means only low alcohol, so this situation does not bode ill or well by itself. I've heard reports of certain hybrids with particularly low soluble solids, while notable exceptions seem to be aforementioned labrusca varieties and Bordeaux reds in some vineyards. Suffice to say that when a winemaker adds both acid and sugar to the same tank, the season has been a little strange.

B-O-T-R…OK, enough of that word.

The early season moisture laid a foundation for disease, and if overly wet conditions returned, there was the potential for trouble. The situation resembled a parched western forest at a high risk of fire. One errant spark could trigger a chain reaction that would engulf the entire area.

It was at this point that nature dropped the equivalent of an exploding petrochemical factory into the middle of our little forest and the rot machine was activated. Who got nailed and how badly they were hit had to do with rainfall timing and location. General trends seem to point to Lake Erie and Long Island being better off with the Finger Lakes and Hudson Valley seeing more problems, but everybody had challenges and your mileage may vary. Late season moisture and associated disease problems were not unique to New York (no tongue-twister intended), or even the northeast, however. When both Scott Labs and Vinquiry have posted tips for handling rot on their websites, you can bet that other coasts are also struggling.

If I had to choose three words-or two words and one contraction-to describe how New York winemakers feel about the 2011 harvest, those words would be: glad it's over. Some people are pleased with what they've seen so far, others less so; some producers are excited about the yields and the flavors, others concerned-but pretty much everybody is tired.

Tired is a natural state for growers and winemakers after harvest, so this news should come as no surprise, but there is tired and there is tired, and after 2011, everyone is tired. We are accustomed to the vagaries of weather, and we are used to being ready for everything and anything. It's a darn good thing, because this year not only tested all of that preparation, it redefined "anything and everything.

2011 GRAPE PRICES

2011 Grape Prices

Grape prices in the Finger Lakes in 2011 continued a frustrating pattern for growers, with prices for the majority of the varieties that we reported on this year remaining flat or pushing downward. While it's possible that this was partially in response to anticipation of a larger than normal crop, the trend seems puzzling especially when you consider that the "word on the street" as we approached harvest was that some buyers were having difficulty finding enough fruit for certain varieties.

But whatever the reasons, the fact still remains that grape prices, according to our annual grape price listing, remained essentially flat, with the notable exception of white vinifera varieties, which all saw fairly substantial decreases in prices this year.

On the positive end, most fruit was able to be sold this year – another indication that the surplus that caused some buyers to scale back or eliminate their grape purchases a couple of years ago has eased. Some blocks of bulk hybrid and native varieties, like Catawba, ended up not being picked primarily because of the high yields that many of these varieties pushed out this year, and buyers were not able to accommodate all of the fruit.

In addition to average, high and low prices for the varieties listed, we include the number of buyers of each variety from last year and this year to give a sense of the market for those varieties. In fourteen cases, the number of buyers for a particular variety fell by two or more compared to 2010. Most of these circumstances can be explained by the fact that five fewer wineries supplied their prices to the FLGP this year than last (with one new winery reporting their prices 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://blogs.cornell.edu/flgp/farm-business-marketing. 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
Prices for most native varieties did not move significantly this year, with the overall average price for the category barely registering a change at all. Concord and Niagara average prices moved up by 1.4% in 2011, while Elvira (-1.4%) and Catawba (-0.9%) prices dropped a bit. Two exceptions this year were Diamond, whose average price increased by 3.7% thanks to an increase in the low price offered, and Isabella which had a drop of 5.3% due to a reduction in the high price paid for it.

Red Hybrids
The average price for the red hybrid category fell by about 0.7% compared to 2010. There was some movement in the prices of about half of the varieties listed in this year's report, however. On the up side, Chambourcin (3.8%), Colobel (5.4%), Corot noir (3.5%) and Marechal Foch (2.7%) all saw increases in their average price. Varieties that had a decrease in their average price included Baco noir (-8.2%), Rougeon (-8.2%) and Vincent (-8.2%), all of which are fairly important varieties for many of the region's growers. In all three cases, the reason for the drop was a significant reduction of the lowest stated price for the varieties, from 27.5% for Vincent to -45.1% for Baco.

White hybrids
Most white hybrids saw their average prices drop between 2009 and 2010. This year, prices stabilized or even rebounded in some cases. Four varieties in the category had decreases in their average price this year – Cayuga White (-1.6%), Traminette (-2.0%), Vidal (-4.0%), and Vignoles (-1.8%). As in many other cases, these were mostly driven by changes in the high or low prices offered for them. For example, the highest price paid for Vidal fell over 20% between 2010 and 2011, illustrating how the change of one buyers price can impact the overall trend of these prices. (in this report, at least).

On the plus side, three varieties saw increases in their average price. Seyval moved up by 2.7%, Valvin Muscat was up 10.4% (after dropping almost 8% last year), and Verdelet was up 15.7% compared to last year.

Red vinifera
While the quality and reputation of wines made from vinifera varieties in the Finger Lakes continues to make great strides, the prices paid for that fruit continue to remain relatively flat or decrease over time. The average price for Cabernet Franc has dropped significantly over the past several years, but had leveled off in 2010. This year, it's average price fell again by about 1.1% according to the responses we received. Lemberger also saw a reduction in its average price by about 2.7%, after a nice gain last year. Pinot noir, on the other hand, did see its average price increase.

White vinifera
This is the category of varieties where the Finger Lakes is quickly gaining a national and even international reputation for the quality of its wines, and yet this year there were significant reductions in the average price of all six varieties that are listed. Both Riesling and Chardonnay had their average price drop by over 5% this year. Ironically perhaps, we heard several times prior to and during harvest that wineries were having a hard time finding Riesling to purchase. On the surface, this would seem to favor higher prices for the variety, but there can certainly be other circumstances that explain this difference that aren't captured by our listing. The other varieties in this category dropped by anywhere from 2.3 – 3.4% this year.

Variety	2010			2011			% Change (2010-2011)			# of 2011 Buyers	# of 2010 Buyers
	Average	Low	High	Average	Low	High	Average	Low	High		
Native											
Catawba	340	255	400	337	255	400	-0.9%	0.0%	0.0%	11	13
Concord	300	240	450	304	255	450	1.4%	6.3%	0.0%	9	10
Delaware	395	250	600	394	235	600	-0.4%	-6.0%	0.0%	7	6
Elvira	288	280	295	283	265	295	-1.4%	-5.4%	0.0%	3	2
Niagara	330	240	450	334	240	450	1.4%	0.0%	0.0%	12	14
Average (Majors)	**330**	**253**	**439**	**330**	**250**	**439**	**0.0%**	**-1.0%**	**0.0%**		
Diamond	450	400	490	467	450	490	3.7%	12.5%	0.0%	3	4
Golden Muscat	375	375	375	375	375	375	0.0%	0.0%	0.0%	2	2
Isabella	475	425	525	450	425	475	-5.3%	0.0%	-9.5%	2	4
Ives	400	350	450	400	350	450	0.0%	0.0%	0.0%	2	2
Average (Others)	**425**	**388**	**460**	**423**	**400**	**448**	**-0.5%**	**3.1%**	**-2.8%**		

Variety	2010			2011			% Change (2010-2011)			# of 2011 Buyers	# of 2010 Buyers
	Average	Low	High	Average	Low	High	Average	Low	High		
Red Hybrid											
Baco noir	607	510	700	557	280	650	-8.2%	-45.1%	-7.1%	9	9
Castel	608	425	700	595	385	700	-2.2%	-9.4%	0.0%	3	3
Chambourcin	756	700	825	785	700	850	3.8%	0.0%	3.0%	5	4
Chancellor	667	600	700	667	600	700	0.0%	0.0%	0.0%	3	3
Chelois	788	675	900	788	675	900	0.0%	0.0%	0.0%	2	2
Colobel	575	425	700	606	425	700	5.4%	0.0%	0.0%	4	3
Corot Noir	570	425	700	590	425	700	3.5%	0.0%	0.0%	5	5
De Chaunac	491	450	630	491	450	630	0.0%	0.0%	0.0%	5	5
GR7	579	510	650	579	510	650	0.0%	0.0%	0.0%	4	4
Leon Millot	625	600	650	625	600	650	0.0%	0.0%	0.0%	4	3
Marechal Foch	621	550	700	638	600	700	2.7%	9.1%	0.0%	6	6
Noiret	625	425	800	628	425	850	0.5%	0.0%	6.3%	7	7
Rougeon	538	425	650	494	252	650	-8.2%	-40.7%	0.0%	6	6
Vincent	638	600	700	585	435	650	-8.2%	-27.5%	-7.1%	6	6
Average	**620**	**523**	**715**	**616**	**483**	**713**	**-0.7%**	**-7.6%**	**-0.2%**		
White Hybrid											
Aurore	370	300	440	370	300	440	0.0%	0.0%	0.0%	4	4
Cayuga White	570	415	700	560	415	620	-1.6%	0.0%	-11.4%	14	16
Seyval blanc	596	415	700	613	550	700	2.7%	32.5%	0.0%	6	9
Traminette	875	700	1100	858	700	1000	-2.0%	0.0%	-9.1%	9	10
Valvin Muscat	691	415	900	763	415	1000	10.4%	0.0%	11.1%	5	4
Verdelet blanc	408	400	415	472	400	600	15.7%	0.0%	44.6%	3	2
Vidal blanc	648	500	900	621	500	700	-4.0%	0.0%	-22.2%	7	10
Vignoles	753	525	900	739	575	850	-1.8%	9.5%	-5.6%	7	9
Average	**614**	**459**	**757**	**625**	**482**	**739**	**1.8%**	**5.0%**	**-2.4%**		
Vidal late harvest	1650	1650	1650	1650	1650	1650	0.0%	0.0%	0.0%	1	1
Vignoles late harvest	1600	1600	1600	1600	1600	1600	0.0%	0.0%	0.0%	1	1
Average Late Harvest	**1625**	**1625**	**1625**	**1625**	**1625**	**1625**	**0.0%**	**0.0%**	**0.0%**		
Red Vinifera											
Cabernet Franc	1264	800	1550	1250	800	1700	-1.1%	0.0%	9.7%	12	14
Cabernet Sauvignon	1613	1200	1800	1620	1200	1800	0.5%	0.0%	0.0%	10	12
Lemberger	1361	1000	1900	1325	1000	1500	-2.7%	0.0%	-21.1%	8	9
Merlot	1782	1500	2000	1783	1500	2000	0.1%	0.0%	0.0%	9	11
Pinot noir	1571	1400	1800	1605	1400	1850	2.2%	0.0%	2.8%	12	12
Syrah	1750	1500	2000	1750	1500	2000	0.0%	0.0%	0.0%	2	2
Average	**1557**	**1233**	**1842**	**1556**	**1233**	**1808**	**-0.1%**	**0.0%**	**-1.8%**		

Variety	2010			2011			% Change (2010-2011)			# of 2011 Buyers	# of 2010 Buyers
	Average	Low	High	Average	Low	High	Average	Low	High		
White Vinifera											
Chardonnay	1233	1050	1450	1169	1022	1400	-5.3%	-2.7%	-3.4%	12	15
Gewurztraminer	1490	1000	1850	1444	1000	1600	-3.1%	0.0%	-13.5%	9	10
Pinot blanc	1433	1300	1500	1400	1300	1500	-2.3%	0.0%	0.0%	2	3
Pinot gris	1627	1450	1850	1572	1450	1700	-3.4%	0.0%	-8.1%	9	13
Riesling	1443	1100	1900	1362	1100	1500	-5.7%	0.0%	-21.1%	11	15
Sauvignon blanc	1673	1545	1800	-	-	-	-	-	-	0	2
Average	**1483**	**1241**	**1725**	**1389**	**1174**	**1540**	**-6.3%**	**-5.4%**	**-10.7%**		

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
Cliffstar Corporation
Fall Bright Winemakers Shop
Fox Run Vineyards
Fulkerson's Winery
Glenora Wine Cellars
Hazlitt 1852 Vineyards
Heart & Hands Winery
Heron Hill Winery
Hunt Country Vineyards
Inspire Moore Winery
Lakewood Vineyards
Lucas Vineyards
Miles Wine Cellars
Royal Kedem / Springledge Farms
Swedish Hill Vineyards

EXTENSION & RESEARCH

FLGP Extension and Research Activities in 2011

Extension

60th Annual Finger Lakes Grape Growers' Conference and Trade Show

March 4-5, 2011
Waterloo, NY

Over 300 people attended this year's Finger Lakes Grape Growers' Conference and Trade Show, which featured talks by Cornell faculty, extension staff, graduate students and others, all focused on presenting growers and winemakers with the latest information on viticulture, pest management, and business and economics. The conference was highlighted by a presentation by Dr. Kathryn Boor, dean of the College of Agriculture and Life Sciences, about the state of the College and where she sees it heading. One of the more well-received presentations was from Drs. Justine Vanden Heuvel (Dept. of Horticulture) and Todd Schmit (Dyson School of Applied Economics and Management), who discussed their project looking at consumers' willingness to pay for wines made from fruit with different canopy management

practices used. Other topics included sessions on emerging grape varieties and clones, updates on pest management materials and practices, and the business aspects of grape growing and winemaking.

Spring Grape IPM Field Meeting
May 19, 2011
Pulteney, NY
The annual Spring Grape IPM Field Meeting was held this year at the Doyle Vineyard Management farm in Pulteney, NY. The program for this year's meeting covered an array of topics including methods to improve spray deposition and reduce drift, the use of propane cannons or "bird bangers" for bird control, updates on disease and weed management, an update on the *VineBalance* sustainable viticulture program, and DEC rules regarding recordkeeping and licensure. We want to thank Matt Doyle and his crew for hosting this year's meeting. *Participants: Dr. Andrew Landers (Entomology), Hugh Fraser (Ontario Ministry for Agriculture, Food and Rural Affairs), Wayne Wilcox (Plant Pathology), Greg Loeb (Entomology), Hans Walter-Peterson (FLGP), Peter Martini (Martini Vineyards/Anthony Road Wine Company), Chris Wainwright (NY DEC). Sponsors: Bayer, Syngenta, Crop Production Services, Valent, JMS Flower Farms, BASF, Helena, Gowan.*

Field Symptoms and Management Options for Nepovirus Infections
July 20, 2011
Dundee, NY
This field meeting was held after a grower contacted the FLGP about unusual leaf and shoot symptoms on a portion of one of his vineyard blocks. Initial diagnosis indicated that the vines could have been exhibiting symptoms of nepovirus infection. The meeting discussed nepovirus symptoms, the nematode vectors of the virus, and how to sample for nematode and virus presence in order to confirm the problem. Samples from this meeting subsequently tested negative for nepovirus infection and very low numbers of nematodes in the field. Discussion at the meeting also centered on possible impacts of herbicides used the previous season which could cause similar symptoms. *Participants: Marc Fuchs (Plant Pathology), Jeff Morris - Glenora Farms (host).*

Pre-Harvest Field Meeting
August 18, 2011
Lodi, NY
The pre-harvest field meeting this year focused on two particular subjects - cover crops and the use of fungicides near harvest. The meeting started with a discussion of a new cover crop trial being led by Justine Vanden Heuvel that is looking at the potential for cover crops planted under the trellis to reduce vine vigor. This is not a new idea in other areas and has shown some success, but the fact that growers have to hill up around grafted vines adds a twist to the question about whether it can be an effective technique in the Finger Lakes. The meeting also covered the increasingly important topic of using certain fungicides late in the season and their potential impact in the winery. Attendees first got to see a demonstration of a new technique to measure elemental sulfur in grape must, which can be a useful tool to determine if sulfur residues from sprays might impact wine quality. We then switched to discussing the use of other fungicides besides sulfur and their possible impacts on winemaking and wine flavors, including a tasting of experimental wines. The meeting concluded with the initial release of the 2011 grape price listing for the region. *Participants: Justine Vanden Heuvel (Horticulture), Misha Kwasniewski (Food Science), Hans Walter-Peterson (FLGP), John Wagner - Wagner Vineyards (Host).*

Hans describes the late-season fugicide trial he is running with Chris Gerling, extension enologist, at this year's pre-harvest field meeting.

"Post-Mortem" Grower Meeting: Botrytis in 2011
December 1, 2011
Dresden, NY
One of the biggest challenges of the 2011 season was controlling botrytis infections, even in varieties where we normally don't see the disease develop. We discussed some of the weather conditions that likely played a major role in promoting disease development this year (i.e., almost 70% of days during harvest with measureable rain), followed by presentations from Tim Martinson and Wayne Wilcox. Tim showed results from his foliar nitrogen trial which showed that the addition of foliar nitrogen applications this year were associated with higher levels of botrytis infection. Wayne Wilcox shared the results of another trial he worked on with Tim Martinson on the impacts of canopy management on botrytis and sour rot infection levels - those being that more open trellis systems and canopies had lower amounts of disease. *Cooperators: Tim Martinson (Horticulture), Wayne Wilcox (Plant Pathology).*

Applied Research

Riesling Clonal Trial
Hans Walter-Peterson and Mike Colizzi (FLGP)
The intent of this trial is to identify viticultural, chemical and enological differences between Riesling clones that are currently available in the U.S. The plant material is being

The first portion of our Riesling clonal trial was planted this past spring. Part two will go in the ground in 2012.

obtained directly from Foundation Plant Services (FPS) in Davis, CA, who maintains the official collection of grape clonal materials in the United States. Five clones were planted this spring, all grafted to the same rootstock (SO4), and an additional three clones will be planted next year. Vines will be evaluated for both growth and production characteristics such as vigor, cluster size and structure, berry size and yield potential. Once the vines reach production, we will invite enology faculty and extension staff to assist with evaluating differences in fruit chemistry and sensory characteristics of the clones. *Cooperator: Hermann J. Wiemer Vineyards*

Veraison to Harvest – Statewide Grape Crop Development Newsletter. *Tim Martinson, (Statewide Viticulture Extension Program), Chis Gerling (Statewide Enology Extension Program), Anna Katharine Mansfield (Enology Extension), Tim Weigle (IPM and Lake Erie Regional Grape Program), Terry Bates (Cornell Lake Erie Research and Extension Laboratory), Hans Walter-Peterson (Finger Lakes Grape Program), Alice Wise (Long Island Hort. Research and Extension Center), Stephen Hoying (Hudson Valley Laboratory), Steven McKay (Hudson Valley Fruit Program).* *Veraison to Harvest* is a weekly update produced by Cornell Cooperative Extension Enology and Viticulture programs for growers and winemakers. It runs weekly during the harvest season, and lists results of maturity sampling from over 60 vineyards in four of the grape growing regions of NY. It also includes short articles featuring current, timely information for winemakers and growers throughout New York. It is sent electronically to over 800 subscribers to regional extension clientele throughout New York through lists maintained by regional extension programs and the Enology program at Cornell. This project funded by USDA Federal Formula funds distributed through Cornell's FFF grants program, and the New York Wine and Grape Foundation. *Cooperators: Multiple growers throughout New York.*

Veraison to Harvest

Statewide Vineyard Crop Development Update #6

October 3, 2011

Around New York...

Statewide (Tim Martinson).

Long Island (Alice Wise and Libby Tarleton).

Lake Erie (Jodi Cresap Gee).

Page 1

Bud Hardiness Monitoring *Tim Martinson and Bill Wilsey (Statewide Viticulture Extension Program), Hans Walter-Peterson and Mike Colizzi (FLGP), Jodi Cresap-Gee (LERGP), Stephen Hoying and Steve McKay (Hudson Valley Laboratory).* This project has been ongoing for the past few seasons and provides growers with valuable information about the cold hardiness of grape buds from important varieties in each region. Bud samples are collected every two weeks from January through April and analyzed at Geneva. Graphs are developed comparing bud hardiness to recent low temperatures, which gives growers an indication about the potential for any injury to primary buds. The most current information is published on the project's webpage (http://grapesandwine.cals.cornell.edu/cals/grapesandwine/outreach/viticulture/weather.cfm). *Cooperators: Multiple growers throughout New York.*

Invasive Pest Species Monitoring *Tim Weigle (LERGP), Hans Walter-Peterson and Mike Colizzi (FLGP), Stephen Hoying and Steve McKay (Hudson Valley Laboratory), Alice Wise and Libby Tarleton (Long Island Horticultural Research and Extension Center).*

With cooperation from the Finger Lakes, Lake Erie, Hudson Valley, and Long Island grape extension programs, NYS Department of Agriculture and Markets monitored New York vineyards for a second year for early detection of five exotic insect pests that could potentially become established in New York. The Cooperative Agricultural Pest Survey (CAPS), funded by the USDA and run by Ag & Market's Division of Plant Industry, seeks to provide early detection of exotic plant pests before they become established in New York. This year, the survey project targeted five pests:

- *Lobesia botrana* – European Grape Vine Moth (GVM)
- *Thaumatotiboa leucotreta* – False Codling Moth (FCM)
- *Autographa gamma* – Silver Y Moth (SYM)
- *Epiphyas postivittana* – Light Brown Apple Moth (LBM)

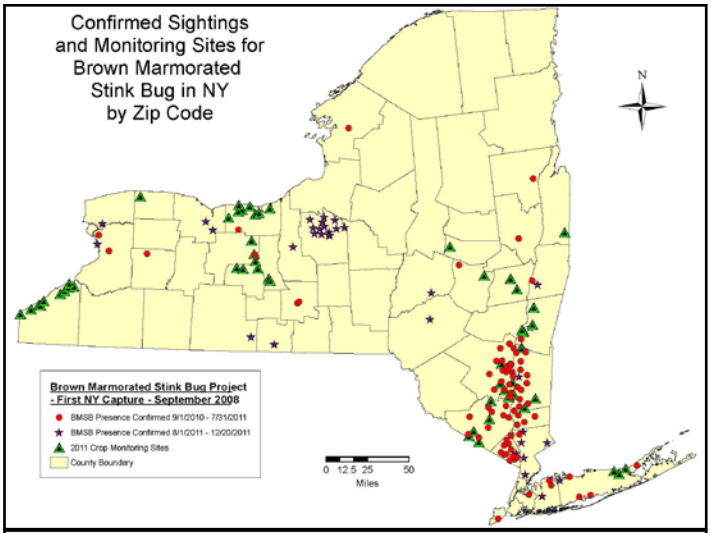
- *Adoxophyes orana* **-** Summer Fruit Tortrix Moth (SFT)

Traps were deployed in five vineyards in the Hudson Valley, five in Long Island, 10 in the Finger Lakes region and 10 in the Lake Erie region. Pheromone traps containing specific lures to attract males of each species were placed out in these vineyards, and replaced at two-week intervals from early July through October. None of the targeted pest species was identified in the traps this year. In addition to the five targeted pests, we also coordinated with Peter Jentsch (Hudson Valley Laboratory) and Greg Loeb (Entomology) to deploy and monitor traps to look for the presence of brown marmorated stink bug (BMSB) and spotted wing drosophila (SWD), two pests that also have the potential to cause damage to grape crops in New York. BMSB has been found in the Finger Lakes, but not in vineyards so far. No samples of SWD were found in the Finger Lakes traps this year either. *Cooperators: Multiple growers across New York.*

Development of Berry Growth Curves in Hybrid and *Vitis vinifera* Grapes to Enable Non-Destructive Crop Estimation and Crop Adjustment in New York and Missouri

Jodi Creasap Gee (LERGP), Terry Bates (Horticulture - CLEREL), Hans Walter-Peterson (FLGP), and Keith Streigler (University of Missouri)

The purpose of this project is to establish berry weight and diameter curves for Concord and common hybrid and *Vitis vinifera* grape varieties in NY and Missouri to enable growers to estimate and potentially thin their crops accurately and non-destructively. In the Lake Erie and Finger Lakes Regions of New York and in Missouri, individual berries from 15 different varieties in the 3 distinct regions were collected throughout the 2010 season from 15-20 days after bloom through harvest. Individual berry diameters and weights were measured and recorded. Sample sizes ranged from 100 to 200 berries per sample, for berry weight measurements, and sample sizes for the berry diameter measurements ranged from 30-100 berries. For the 2010 and 2011 growing seasons, there were strong positive, linear relationships between berry weight and berry diameter for the sampled cultivars for the Lake Erie and Missouri varieties. This indicates that a non-destructive sampling and crop estimation method may be feasible by measuring berry diameters in the field to estimate berry weights. This project needs another year before development of crop estimation tables for each variety and region.



Locations of traps and confirmed sightings of BMSB in New York. Trapping in the Finger Lakes this year was done in coordination with Dr. Greg Loeb, Dept. of Entomology, and Peter Jentsch with the Eastern New York Brown Marmorated Stink Bug Project.

Impacts of Late-Season Fungicide Applications on Wines

Hans Walter-Peterson and Mike Colizzi (FLGP), Chris Gerling (Enology Extension).

This project is designed to examine the impacts of late-season fungicide applications on fermentation and sensory characteristics. As harvest nears, growers want to continue protecting their fruit from fungal infections like botrytis and downy mildew after substantial investment has already been made in the crop. On the other hand, winemakers are often concerned about the impacts that residues from these fungicides might have on fermentation and sensory characteristics of their wines. Data generated by this work will provide Finger Lakes grape growers and winemakers with detailed information about the potential impacts of using certain late-season fungicides on fermentation characteristics and flavor development. Using this information, viticulture and enology extension staff can make better recommendations to growers and winemakers regarding the use of fungicide materials near harvest when weather conditions may require them. *Cooperators: White Springs Winery.*

Accelerating grape cultivar improvement via phenotyping centers and next generation markers
Project Leads: Bruce Reisch (Horticulture), Lance Cadle-Davidson (USDA-Agricultural Research Service, Geneva), Hans Walter-Peterson (FLGP), Anne Fennell (South Dakota State University), Julian Alston (UC-Davis).
This project will help to speed up the process to develop genetic markers that can be used to identify important traits in the grape breeding process. Without good genetic markers, it can take years for scientists to know whether a new grapevine has a certain characteristic or not. By developing new markers that are strongly correlated to these desired traits, the process to determine if new grapevines possess those desired characteristics can be sped up dramatically. Industry surveys and scientist-stakeholder workshops have repeatedly identified three traits as being very important to U.S. grape growers - powdery mildew resistance, cold tolerance, and fruit quality - and these will be the traits focused on for this project. The FLGP will be leading the extension and outreach effort for this project. *Cooperators: Multiple scientists from Cornell, USDA-ARS and other research institutions.*

Concord Clone 30
Hans Walter-Peterson (FLGP), Terry Bates (Horticulture - CLEREL).
An early ripening clone of Concord has been discovered by Embrapa, an agricultural government agency in Brazil. This clone ripens approximately 10-14 days earlier than other Concord vines in Embrapa's vineyards. Since learning about this clone during a visit to Brazil in 2008, we have been working with representatives of Embrapa, Foundation Plant Services (FPS) in California, and Cornell University to come to an agreement to have cuttings from this clone imported to the United States for viticultural evaluation. The cuttings have arrived at FPS' facility in Davis, CA where they will be under quarantine while being tested for the presence of viruses, before they are released to us for planting in approximately 2 years.

YEAR IN REVIEW, Continued

probably one of the best (or worst) illustrations as to just what kind of year 2011 was with regard to Botrytis management.

Insects
Some growers with native varieties around Keuka Lake found significant populations of grape leafhoppers in their vineyards before bloom this year, which is earlier than usual for this pest. While their presence early in the season caused some concern, the early population surge did not translate into large enough populations later in the season to cause significant economic damage. Still, the fact that this pest appeared this early in the season is something that growers will need to consider when planning their pest management program in the coming season.

Grape berry moth (GBM) posed more of a problem than usual in many vineyards in 2010 due to the high number of degree days that year, which resulted in four generations of GBM to hatch in many parts of the Finger Lakes. This past year, we had fewer growing degree days and therefore likely had one fewer generation of GBM to cause damage in clusters late in the season in most places. However, given the fact that berry moth damage can be a major factor in the development of late season fruit rots, and the high disease pressure we had during harvest, it is likely that even "normal" amounts of GBM damage was a prime factor in the spread of disease near harvest in some vineyards.

Crop quality and quantity in 2011
Weather conditions during the period after bloom in 2010 had a positive influence on bud fruitfulness in 2011, as cluster numbers were up overall according to growers around the Finger Lakes. In addition, conditions at bloom and shortly afterwards led to higher than normal fruit set. These two conditions combined to create large crops in many vineyards, especially in native and hybrid varieties, where yields were reported as high as 14 tons/acre in some spots, while still achieving acceptable quality for the wineries and processors who were purchasing that fruit. Vinifera crops were generally above average as well.

It was not unusual this year for growers and winemakers to decide to pick fruit a little early, rather than letting fruit hang longer and increase the chances of fruit rots infecting clusters.

Unfortunately, the amount of rot that accumulated in many cases resulted in less fruit actually being delivered to the wineries. Some growers who harvested vinifera varieties by machine had pickers go through their blocks ahead of time to remove clusters that had more diseased fruit than sound berries in order to keep those from delivered to the wineries. Those who harvested by hand instructed crews to avoid picking clusters that were beyond a certain stage of rot, depending on their customers' needs. When this was done, it usually meant a crop loss of somewhere in the 10-20% range, depending on variety, but in a few cases, half of the crop or more from certain blocks or certain varieties may have been lost.

As harvest approached many growers and wineries were constantly communicating about the condition of the fruit and when it should be picked. The difficulty in controlling bunch rots led many winemakers and growers to pick fruit earlier than they otherwise would in order to minimize any further degradation. Wineries were more aggressive this year with sorting fruit that did come to the crushpad, removing clusters that were infected with rots that could decrease quality.

For the fourth year, the Finger Lakes Grape Program participated in the statewide *Veraison to Harvest* project[1], which monitors fruit development through samples taken from all of the state's grape growing regions and reports those results to the industry. Fruit development this year was a bit unusual, but then again it was an unusual year. For most varieties that were sampled in the Finger Lakes this year, and in most locations, sugar concentration in the fruit was lower than would be expected given the warmth of the year, while acidity levels were often average or lower than expected given the timing of harvest.

While some fruit harvest parameters may not have been ideal, winemakers have still been generally pleased with other attributes of the fruit. Aromatic white varieties were some of the hardest hit by fruit rots at harvest, but early indications are that aromas and flavors of what was harvested and pressed are still quite good. Winemakers are also generally positive about the quality of red varieties that were harvested, including a noticeable lack of "green" or "veggie" characters in certain varieties like Cabernet Franc.

Looking ahead to 2012

As with any perennial crop, what happens in one year can have an impact on subsequent years. The high level of phomopsis infections in many vineyards with native and bulk hybrid varieties this year means that those growers will need to be extra vigilant when it comes to applying protective materials at the proper rate and the proper time. And while Botrytis infections can carry over into subsequent years, the removal of infected cluster stems from the canopy during pruning this winter will reduce the amount of inoculum already present in the vineyard next year.

Vineyards that carried heavy tonnage this year may respond next year with a lighter crop. Growers will want to be aware of their crop potential in these vineyards in particular, so they can adapt their management practices to the anticipated yields (and income) from those blocks.

In addition to crop yields, juice yields were also higher than usual this year. This probably means that some wineries are sitting on higher inventories of 2011 product than they may have anticipated based on the tonnage that they purchased this past year. Many wineries have been working through a backup of inventory over the past couple of years, which caused some to restrict their purchases of fruit from growers. If the wineries are unable to sell much of this increased inventory in the next year, it is possible that some may reduce their purchase plans next year.

The best thing about looking forward to 2012, however, is that it means the 2011 season is behind us!

1 The Veraison to Harvest project is supported by the NY Wine & Grape Foundation and USDA Federal Formula Funds.

UPCOMING EVENTS

Becker Forum 2012: Farming in a Non-Farmer World
January 23, 2012
Holiday Inn Syracuse
Liverpool, NY
Program and registration information are available at http://www.beckerforum.org/

Finger Lakes Grape Growers' Conference & Trade Show / Wine Industry Workshop
March 1-3, 2012
Holiday Inn
Waterloo, NY
Registration and program information will be available soon.

Lake Erie Regional Grape Program Growers' Conference
March 8, 2012
Cornell Lake Erie Research & Extension Laboratory
Portland, NY
Registration information is available at the LERGP website, http://lergp.cce.cornell.edu/

finger lakes grape program

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