

IN THIS ISSUE



After a 2009 growing season that challenged growers every which way, along came 2010 to make up for it, bringing the warmest growing season in 40 years. We also had more inches of

rain than ever over that same period. Yields were generally a little lower than normal, but there is great excitement about the quality of this year's crop, both reds and whites. Growers also found it a little easier to sell their fruit this year – hopefully this signals a return of some balance in the region's grape market.

In addition to our review of the growing season, Chris Gerling provides some winemakers' perspectives on the year. We also have the summary of this year's grape price list, and summaries of extension and research work done in 2010, including an invasive pest survey that all of the grape extension programs collaborated on with the Department of Ag & Markets. You also have a chance to learn a little bit about our new extension assistant, Mike Colizzi.

We are starting to work on some new ideas to provide growers with the information they need to be successful and profitable. Keep an eye out for them, and let us know what you think.

The 2010 Growing Season in the Finger Lakes

Hans Walter-Peterson

If there was ever any question about whether or not we have vintage variation in the Finger Lakes, all you would need to do is look at the last four growing seasons – 2007, warm and dry; 2008, close to average heat and rain; 2009, cold and fairly wet; and 2010...well, warm and wet would be understatements for sure, as we set new 40-year high marks for both heat and rainfall this past season. This pushed us into one of the earliest harvest seasons that many could remember, leading to some stressed growers and winemakers at times, but it may all be worth it in the end, as the overall assessment of the quality of this year's crop was excellent.

Another Mild Winter

The end of the 2009 growing season was not what many would consider ideal. Harvest for many varieties was 2-3 weeks later than usual thanks to the cool temperatures that predominated for much of the season, and a hard frost in mid-October caused many vineyards to lose their leaves before picking. However, periderm development still looked pretty good, thanks at least in part to a warmer and drier September. But there was still some concern about how the vines had acclimated themselves for the winter ahead.

The winter itself was another mild one for the most part. As was the case last year, we only saw only a few nights where temperatures threatened to drop below zero, or just did, primarily at the end of January. As is often the case, thermometers set in some colder spots of vineyards recorded lower temperatures than these, but growers were still fairly confident that bud damage would not be significantly above levels that they normally see, based at least in part on evaluations that they had done on their own vineyards prior to pruning.

We again collected bud samples from around the region beginning in early December to monitor the bud hardiness of several of the more prominent varieties (acreage-wise) in the Finger Lakes (Figure 1). Early on, bud hardiness was not quite as good as it was the previous year for all of the varieties we were monitoring. Once we reached January, however, bud hardiness levels were similar to, if not better than, they were last winter.



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seeing Riesling and Aurore vines that were not pushing out new shoots. Examination of the buds on these vines showed many of them with both primary and secondary buds killed, or appeared to be "in the process" of dying. Buds in

The 2010 Growing Season Unseasonably warm weather arrived in the Finger Lakes for the first several days of April, as temperatures shot up into the mid-70s to mid-80s for six of the first eight days of the month. By April 6, we had accumulated as many growing degree days (GDD) as the average GDD accumulation for the entire month.

As a result, vines started coming out of dormancy much earlier than they usually do - in many cases 3-4 weeks earlier than normal. The risk of frost damage is always present in the early weeks of a growing season, but this year's early budbreak raised that risk significantly, and it seemed like we were sitting on pins and needles for a long time, almost waiting for that inevitable morning when we would find brown and black buds or shoots. There were a couple of close calls, and some vineyards did get hit with some damage, but for the most part the region was able to skate by without any significant damage across the region. This was not the case in some other Eastern growing regions, like Michigan and the Lake Erie region, where frost damage had a significant impact on the final cropping levels, particularly in Concord.

Trunk injury in Riesling, Aurore Early in May, a couple of growers notified the FLGP that they were this latter state did not appear bright green as a live bud would, but rather had more of an olive coloration to them (Figure 2). We asked if other growers were seeing the same phenomenon in any of their vineyards and found out that the problem affected a minority of the vineyards in the region, but over a wide area. Vineyards on all four major lakes were found with this problem.



Figure 2. Aurore buds on affected vines showed dark green to brown coloration, suggesting that they were dying in mid-May, not during winter. Similar issues were found in several Riesling vineyards in the Finger Lakes this year.

It appeared unlikely that the problem was that buds had experienced cold temperatures that caused the buds to die. A few of the growers who reported this problem to us said that they had done their own bud checks prior to pruning in March, and found fairly normal levels of bud injury (~6-8%) in these blocks, which agreed with our own testing in a couple of blocks as well. But by the time budbreak arrived, the majority of buds failed to push in the spring.

If just straight cold injury to buds wasn't the answer, perhaps we needed to focus on other parts of the vine further upstream, like canes and trunks. When canes with dead or dving buds were cut, they would often bleed, indicating that at least a majority of the vascular system was still intact, yet the buds were dead or dying. After a couple of weeks, however, these canes were usually dry and dead. In many cases, the resulting shoot growth that did emerge from these vines several weeks later appeared to indicate that existing trunks had died (or were significantly injured), in addition to many of the buds and canes. Probably the most consistent factor that we found in our investigation of this was that the damage tended to occur more often on older vines, or older trunks on vines that had multiple trunks. We heard reports of similar types of injury in the Niagara Peninsula of Ontario, Virginia, and Pennsylvania as well.

The most baffling aspect of this was that it was almost exclusive to Riesling and Aurore vines. There were a few instances where the problem was found on other vinifera and hybrid varieties, but these were few and far between. Varieties that are more sensitive to winter temperatures like Merlot and Gewürtztraminer, or to trunk injury like Cayuga White, did not show similar symptoms. And according to a couple of our resident grape breeders, Riesling and Aurore have little to no genetic similarity. Yet the propensity for this injury to affect them, when it did not affect a different variety in the adjacent row, would indicate that perhaps there is some genetic component that would explain why this happened to these vines.

Unfortunately, we were unable to come up with a definitive answer as to why this happened. Our best guess was that the trunks on these vines had experienced injury to the vascular tissue, possibly as the result of early deacclimation from warm temperatures and then a few night of tempera-



Figure 3. Monthly GDDs for 2010 (blue) and long-term average (red).

tures below 20°F soon after that. But again, why did this happen only to these two varieties and not others? This was another one of those situations where all of the knowledge that we have about grapevines still can't quite explain everything that actually happens in the vineyard.

2010 GDDs

Probably more than anything else, the 2010 growing season will be remembered for being the warmest in 40 years, just exceeding the total GDD accumulation in 1991, the previous warmest season on record. Every month of the season ended up with more GDDs than its long-term average except for October (Figure 3). Unlike the two previous warm-

est years, 2005 and 2007, the 2010 season started warm and stayed warm. In both 2005 and 2007, the year started cool or average and then warmed later on. In comparison, the other two warmest years, 1991 and 2010, started warm early on and just stayed there for the most part (Figure 4).

As mentioned earlier, the region reached its average growing degree day (GDD) accumulation for April by the sixth of the month, and the heat just kept on coming after that. Combined with May's GDD numbers, which were more than 50% higher than average, some of the early varieties like Leon Millot, Foch and Baco started to bloom just after Memorial Day, significantly earlier than they usually do. Despite a bit of a cool down at the beginning of June, varieties continued to bloom anywhere from 2-3 weeks earlier than normal. Unfortunately, the cool down was also accompanied by a stretch of 5 days in 10 with over 0.1" rain, which seemed to ultimately have some impact on fruit set in some varieties in certain locations.





The season remained anywhere from 10 days to a month ahead of normal, with regard to GDD accumulation, through the beginning of harvest. While that timeframe doesn't translate directly to the vines' physiology, everything did happen earlier than usual, including the beginning of harvest. By the time we reached October 31, the region had accumulated 2924 GDDs, the most we have had in at least 40 years (as far back as our detailed records go). The previous high was back in 1991, when we recorded 2890 GDDs. Many other regions in the East also experienced one of their warmest growing seasons ever. And in a final little twist to further illustrate how unusual of a year this was, while the East was having one of their warmest seasons ever, grape growing regions in the West experienced one of their coolest years ever. As a result, the Finger Lakes actually had a warmer growing season than either Sonoma or Napa Valley this year (Figure 5).

any other year since 1973 as well. In an average growing season, the region gets about 23" of rain. This year, we had just short of 36".

It is interesting, however, that a lot of people (myself included), don't necessarily consider 2010 a "wet" year, even though it was according to the numbers (Figure 6). Something similar happened in 2009, which most people would probably call a wet year, even though we actually had less rain on average over the season. So why might we perceive these years differently from what the numbers say?



Rainfall in 2010

The rainfall data from 2010 represents one of those situations where the data and the perception of what happened don't quite match up with each other for most people. According to the rain gauges at Geneva and Fayette (Geneva's stopped working in July), 2010 had more rainfall than

very heavy rainstorms this year in the Finger Lakes that ended up giving us such high totals for the year. In 2009, the largest single rainfall we had in a day at Geneva was about 1.5", while we had at least 8 different days with over 1.5" of rain in 2010 (Figure 7). These heavy rains usually happened over short periods of







Figure 7. Daily rainfall totals April 1 - October 31. The Finger Lakes had eight days with 1.5" of rain or greater this year, compared to just one in 2009.

time as well, so soils likely did not absorb much of the water that fell. And as is often the case with intense rain storms, some areas received the full brunt of the rain while others saw hardly a drop. These factors, combined with higher than normal temperatures that caused more rapid evaporation and transpiration, actually resulted in some vineyards showing signs of drought stress at the mid-point of the season (photo?). So while we had more rain this year, we also had more sun and heat between those storms, as opposed to last year when it seemed that even if it wasn't raining, it was cool and cloudy.

Pest Management

Diseases. Dry and warm conditions predominated in the Finger Lakes for the first two months of the season, so disease pressure was fairly low during the pre-bloom period. At bloom, however, rainfall started to

in each season (April 1 – October 31) with greater than 0.1" of rain, 2010 actually had one more day of this type of rain than 2009 (50 days and 49 days, respectively). While 2010 had a similar frequency of rain to 2009, we had some pick up and reinforced the need for timely and well-targeted sprays. The warm and sunny conditions in between some of the heavy rains that we had helped to quickly dry out fruit and canopies and kept the hours of leaf wetness down. By the end of the important post-bloom spray period, most vineyards had been able to keep their fruit and canopies fairly clean for the most part.

As the summer progressed, however, signs of foliar downy mildew infection started to show up primarily in some *vinifera* vineyards. More often than not, these infections were found in vineyards that had vigorous shoot growth (warm temperatures + rain = vine vigor) that caused shading and dense canopies, making the disease harder to control. These infections didn't take over the canopies for the most part thanks to some additional canopy manipulation and good spraying practices by the growers.

As harvest got under way in late August, disease pressure (primarily downy mildew and botrytis) was fairly mild and clusters were pretty clean. Just after Labor Day, however, cooler temperatures and resulting higher humidities become more regular than they had been earlier in the season, leading to some new DM infections on leaves, but moreso to new botrytis infections on clusters. These new botrytis infections became especially noticeable by the beginning of October, when we received about 6" of rain over a two week span. In addition to the weather conditions, many of these infections were able to get a foothold on fruit due to earlier damage by grape berry moth (GBM) activity later in the season than usual (see below). Wineries that were picking rot-susceptible varieties like Riesling at this point had to do some sorting both in the field and at the crush pad in order to retain sound fruit.

As happens every year, several new materials for disease control were available to growers this year. There was particular interest in one of these materials, Revus Tops, which provides control of three of our major diseases - powdery mildew, downy mildew and black rot. A number of growers used the material in their pre-bloom spray because of this broad spectrum activity. However, reports started to come in from a few growers that they were seeing foliar injury in Concord vines after using the material. Further followup also found evidence of injury in some Noiret vineyards where Revus Tops had been applied, but not to the same extent as in Concords (Figure 8). A few growers were concerned that the material may have impacted cluster development and yield this year, but it is difficult to know this for sure without comparisons. The producer of the product placed a moratorium on its use for these two varieties for the remainder of the year. No other varieties in commercial vineyards showed any evidence of injury. Dr. Wayne Wilcox established some trials out at the research and extension lab in Portland, NY to better understand



Figure 8. Noiret leaves exhibiting foliar injury from Revus Tops.

the conditions under which the material causes injury and its impacts. We are hoping to have him present the results of these trials at the Grape Growers' Conference this winter.

<u>Insects.</u> The insect pest of greatest concern in the vineyards the past couple of years has been the Japanese Beetle. After some major flare ups in 2008 that gave many growers heartburn, the numbers seemed to come down somewhat in 2009, and this continued for the most part in 2010 as well.

Insect phenology is influenced by a number of factors each year, but heat is an important one. Warmer seasons tend to be ones where we see higher populations of insects, and this year it seemed that grape berry moth (GBM) populations and activity were higher than in the past several. Vineyards that typically do not have any GBM damage had small but noticeable amounts, and many of those with higher pressure in most years really had a battle on their hands this season.

To further compound the problem, the warmth that we had this year gave us at least a partial fourth generation of GBM cause feeding wounds on fruit in late August and early September. I was able to find larvae feeding inside berries in mid and late September in a few locations, indicating that we did end up with this extra generation at least in certain spots. With this increased pressure and injury, particularly later in the season, we saw more botrytis infections that were able to get established on berries that had GBM feeding damage, and spread through the cluster from there.

This year, growers had access to a new GDD-based model for GBM that was incorporated into the Network for Environment and Weather Applications (NEWA) website. The *Continued on pg 17*

WINEMAKING

The year 2010: Mother Nature Apologizes for 2009.

Chris Gerling Enology Extension Associate Dept Food Science (Originally published in the final issue (#9) of this year's Veraison to Harvest newsletter.)



I was talking with Vinny Aliperti of Atwater Vineyards and Billsboro Winery late last week, and he was looking like most winemakers tend to look this time of year: pur-

ple on the hands and bags under the eyes. I asked for his thoughts about the season: "It's been a good year. There's not a whole lot more to say." Looking at him, I got the impression of someone who just watched a tornado go past his house. Instead of doing lots of damage, however, the rain cleaned out the gutters and the wind actually pushed the leaves into neat piles and made the garden look neater.

Juan Micieli-Martinez, winemaker at Martha Clara, called it a roller coaster, but "I would get back on again though. There have been other roller coaster years that I would decline getting back on." A roller coaster, a freak storm, a year where mid-September to mid-October contained some of the most intense and concentrated work many wineries have ever seen and where the degree days accumulated like the score on a pinball machine - this was 2010 in New York.

Early heat. "The season started out with a lot of heat," says Matthew Spaccarelli of Benmarl, and the early heat lead to some frost problems in the Hudson Valley. The upside for vineyards that didn't see frost was that "the burst of hot spring weather got everything right out of the gate," according to Juan Micieli-Martinez at Martha Clara. The heat held as the rains came and went, and Finger Lakes Viticulture Extension Specialist Hans Walter-Peterson noted that Geneva had accumulated more growing degree days by the end of August than it had at the end of October last year. Nowhere was there more heat than on Long Island. The amazing degree day accumulation led to what Rich Olsen-Harbich of Bedell Cellars calls the earliest harvest on record. or at least the "earliest in the modern era of bird-netting." Riverhead was able to top Geneva in jaw-dropping statistics where the GDDs August 31 were roughly the same as Napa and Sonoma. Combined.

September crush. The result of the heat was that September, a month where many wineries twiddled their collective thumbs last year, became the setting for the majority of the crush. "For a small, under-staffed winery like us it was a lot to handle," reports Matt at Benmarl. "Lots of stress," agrees Kris Kane at Presque Isle, but in return "everything that was early was spectacular. Even the Chambourcin got ripe." As Chris Stamp of Lakewood Vineyards says, 2010 has been "so much easier in the cellar, because you don't have to balance the juices. They came in balanced. You squirt it in a tank, clarify and add yeast." (Ed. Note: Trained professional. Results may vary.) At Presque Isle, the sugar bill "is a third of last year's." The

downside? Pinot Noir shot past 20° brix during Labor Day picnics, challenging those who wanted to make sparkling wine.

Rain. It was against a backdrop of frantic but joyful harvest that a large part of the state got a forced break in the form of some heavy and sustained rain. Had it happened in California, this weather pattern would currently be the subject of congressional hearings. As it happened here, however: "two-week break," says Lindsay Stevens of King Ferry Winery. As Chris Stamp puts it, "if you could edit out that rain, the year would be perfect." At this point I feel compelled to admit that I was trying to get my house painted in early October, so- sorry about that. Chris continued, however: "Given a choice, I'd take a season like this every year." His sentiments are echoed across the state, as hopes are high for everything, red wines in particular.

Heat without drought. One interesting note was that in this year when neither heat nor water was limiting, development occurred in different ways in different places. "There was not the normal spacing between varietals," reports Juan from Martha Clara. "We are a farm of 14 different varietals and for the most part things were out of the normal picking sync." Some winemakers reported getting the brix where they needed but still seeing high acids, while others saw the acid numbers getting frighteningly low and picked accordingly.

In the end, however, Rich Olsen-Harbich sees the delightful combination of "soft acids with low pH," Pinot noir looks "fantastic" according to Lindsay Stevens (and others) and Kris Kane's red hybrids are "quite pleasant." If Kris could have had anything, it would be "more of everything." As I write, the last grapes have been crushed at the Vinification & Brewing Lab in Geneva and about half the wineries I talked with reported having everything in. Overall, everyone agreed on three major points:

- Although different places had different paths, the overall fruit quality is excellent,
- Despite rain early, late and in between, most grapes were kept

remarkably clean as long as humanly possible, and

• It's been intense.

Once again, there was an "excellent partnership" between vineyard and winery, as Chris Stamp put it, not only in terms of fruit quality but also in the logistics of getting things harvested rapidly. As things finally slow down, and Vinny can get some sleep and some SO_2 on his stained hands, the year is still looking pretty darn good.

How good? I asked Rich Olsen-Harbich to compare it to a recent year and he had some fairly encouraging words: "I'm not sure there is a comparable year. I don't see it comparing to anything else. For us, for the reds, it's been special." Maybe we should plan to get the house painted more often.

2010 GRAPE PRICES

2010 Grape Prices: "Flat is the New Up"

Hans Walter-Peterson

I don't recall exactly where I heard it or who said it, but the subtitle of this article kind of sums up some of the sentiment regarding this year's grape prices. While some varieties held their prices over the past couple of years, a number of others, particularly vinifera varieties, had seen their prices fall since 2007. This year, based on the Finger Lakes Grape Price List, prices stabilized for many of those varieties that had dropped over the past few years, especially in 2009 when many buyers were struggling high inventories in their warehouses and therefore cut back on their purchases. Eighteen of the varieties included in the summary chart for 2010 (not every variety from the Price List is included here) had an increase in the number of buyers, as opposed to only 3 last year. Unfortunately, the number of buyers for all varieties still hasn't guite rebounded back to where they were in 2008. On the positive side, growers indicated that they had an easier time selling their grapes this year. To varying degrees, this was probably a combination of a few factors:

- Improved sales to consumers this year helped wineries to clear out some of their inventory, which likely encouraged some more purchasing;
- Buyers were willing to invest more in fruit from an excellent growing season; and
- Yields were a bit lower than average this year in many cases, leaving some buyers to have to make a few more purchases to fulfill their needs for the year.

This could also be seen in the number of ads as well as the tonnage and varieties advertised on the NY Grape & Wine Classifieds site this year. Last year, over 3,200 tons of grapes were listed for sale on the site, while just over half of that amount was listed for sale in 2010. In addition, the varieties that were listed for sale changed between years as well (see Table 1).

Overall, it appears that the surplus of grapes that we saw in the Finger Lakes last year has eased somewhat, and that prices have stabilized for most varieties after some significant decreases over the past couple of years. 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, <u>http://flg.</u> <u>cce.cornell.edu</u>. 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.

Native varieties

Prices for the primary 'native' varieties in the listing moved very little in 2010. The average price for Concord moved up slightly, with the area's primary buyer, Constellation, increasing their price by \$5/ton. Growers may have been able to improve their price for Concord if buyers offered incentives for higher sugar content this year, as it was not unusual to see loads being picked at 17-18 Brix. The average price for Catawba also moved higher this year, but the range of prices offered for the variety remained the same as 2009. Growers with Delaware probably saw some more money per ton of their fruit as well, although the number of buyers

for the variety almost dropped in half this year compared to 2009. Niagara saw a similar pattern as well, with a small average price increase but fewer buyers this year.

Hybrids

The market for hybrid grapes varieties in 2010 was a bit of a mixed bag - a few varieties had large increases in their prices (reds, primarily) and others saw their value drop fairly substantially. In the case of the red hybrids, there were a few noticeable winners, and a few losers as well. The varieties that represent the majority of the tonnage of red hybrids in the Finger Lakes - Foch, Rougeon, Vincent, and Baco - were fairly steady performers in 2010 (i.e., they didn't drop in price). The average price for Vincent increased by 4%, bolstered primarily by an increase of almost 15% in its low

price. A couple of 'minor' varieties – Chambourcin (+10%) and Castel (+12%) - made substantial gains in their average price. However, some others saw significant drops, including Noiret (-12.6%) and Colobel (-13.8%). The other noticeable trend in red hybrids this year was that every variety in the category had the same or fewer buyers for them this year, particularly Leon Millot and Rougeon. Noiret, on the other hand, had over twice as many buyers paying for it this year.

White hybrids had the worst performance as a category in 2010, repeating a similar problem for them last year. The average price for the category overall was down by about 3% this year, and six out of eight varieties saw their average price go down this year. The most striking number in this group might be the drop in price for Valvin Muscat, one of the newer varieties released from Cornell. This, however, is one of those cases where it pays to dig into some of the details, because the drop is primarily related to one buyer listing a price for the variety that is substantially lower than the other three buyers listed. However, other varieties like Traminette and Cayuga White, both of which are bought buy 10 or more buyers, saw fairly significant decreases in their average price this year. One of the small successes in the category was Vidal blanc, which showed a small gain in its price.

Vinifera

Average prices for some of the more important vinifera varieties in the Finger Lakes really took it on the chin last year as a result of the pullback in purchasing by many *Continued on page 10*

Variety	2009		2010			% Change (2009-2010)			# of 2010	# of 2009	
	Average	Low	High	Average	Low	High	Average	Low	High	Buyers	Buyers
Native											
Catawba	329	255	400	340	255	400	3.3%	0.0%	0.0%	13	12
Concord	296	233	450	300	240	450	1.3%	3.0%	0.0%	10	11
Delaware	378	230	600	395	250	600	4.5%	8.7%	0.0%	6	8
Elvira	293	290	295	288	280	295	-1.7%	-3.4%	0.0%	2	2
Niagara	322	233	450	330	240	450	2.3%	3.0%	0.0%	14	14
Average (Majors)	324	248	439	330	253	439	2.1%	1.9%	0.0%		
Diamond	442	400	475	450	400	490	1.9%	0.0%	3.2%	4	3
Golden Muscat	375	375	375	375	375	375	0.0%	0.0%	0.0%	2	2
Isabella	492	475	525	475	425	525	-3.4%	-10.5%	0.0%	4	3
lves	415	380	450	400	350	450	-3.6%	-7.9%	0.0%	2	2
Average (Others)	431	408	456	425	388	460	-1.4%	-4.9%	0.8%		
Red Hybrid											
Baco noir	598	510	700	607	510	700	1.4%	0.0%	0.0%	9	8
Castel	543	385	700	608	425	700	12.1%	10.4%	0.0%	3	2
Chambourcin	688	525	825	756	700	825	10.0%	33.3%	0.0%	4	4
Chancellor	700	700	700	667	600	700	-4.8%	-14.3%	0.0%	3	3
Chelois	775	650	900	788	675	900	1.6%	3.8%	0.0%	2	2
Colobel	667	600	700	575	425	700	-13.8%	-29.2%	0.0%	3	3
Corot Noir	554	400	700	570	425	700	2.9%	6.3%	0.0%	5	6
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%	3	4

Average	1477	1200	1683	1483	1241	1725	0.5%	3.4%	2.5%		
Sauvignon blanc	1775	1750	1800	1673	1545	1800	-5.8%	-11.7%	0.0%	2	2
Riesling	1417	1000	1900	1443	1100	1900	1.9%	10.0%	0.0%	15	15
Pinot gris	1540	1150	1700	1627	1450	1850	5.6%	26.1%	8.8%	13	10
Pinot blanc	1450	1400	1500	1433	1300	1500	-1.1%	-7.1%	0.0%	3	2
Gewurztraminer	1440	1000	1700	1490	1000	1850	3.5%	0.0%	8.8%	10	10
Chardonnay	1238	900	1500	1233	1050	1450	-0.3%	16.7%	-3.3%	15	14
White Vinifera											
Average	1534	1167	1758	1557	1233	1842	1.5%	5.7%	4.7%		
Syrah	1750	1500	2000	1750	1500	2000	0.0%	0.0%	0.0%	2	2
Pinot noir	1532	1000	1800	1571	1400	1800	2.5%	40.0%	0.0%	12	11
Merlot	1806	1500	2000	1782	1500	2000	-1.4%	0.0%	0.0%	11	8
Lemberger	1269	1000	1500	1361	1000	1900	7.3%	0.0%	26.7%	9	8
Cabernet Sauvignon	1605	1200	1700	1613	1200	1800	0.5%	0.0%	5.9%	12	10
Cabernet Franc	1242	800	1550	1264	800	1550	1.8%	0.0%	0.0%	14	12
Red Vinifera											
Average Late Harvest	1600	1600	1600	1625	1625	1625	1.6%	1.6%	1.6%		
Vignoles late harvest	1600	1600	1600	1600	1600	1600	0.0%	0.0%	0.0%	1	2
Vidal late harvest	-	-	-	1650	1650	1650	-	-	-	1	0
Average	634	531	743	614	459	757	-3.2%	-13.5%	1.9%	-	
Vignoles	756	525	900	753	525	900	-0.4%	0.0%	0.0%	9	9
Vidal blanc	638	500	900	648	500	900	1.6%	0.0%	0.0%	10	8
Verdelet blanc	400	400	400	408	400	415	1.9%	0.0%	3.8%	2	1
Valvin Muscat	750	700	800	691	415	900	-7.8%	-40.7%	12.5%	4	3
Traminette	935	800	1100	875	700	1100	-6.4%	-12.5%	0.0%	10	10
Sevual blanc	613	500	700	596	415	700	-2.97%	-17.0%	0.0%	9	10
Cavuga White	587	323 495	700	570		700	-3.9%	-16.2%	0.0%	4	4
Auroro	302	3.75	440	370	300	440	5 00/	7 70/	0.0%	Λ	Λ
M/hite Hubrid											
Average	620	530	711	620	523	715	0.0%	-1.3%	0.5%		
Vincent	613	525	700	638	600	700	4.0%	14.3%	0.0%	6	7
Rougeon	528	400	650	538	425	650	1.8%	6.3%	0.0%	6	8
Noiret	715	625	750	625	425	800	-12.6%	-32.0%	6.7%	7	5
Marechal Foch	609	540	700	621	550	700	1.9%	1.9%	0.0%	6	7
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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. Frank's Vinifera Wine Cellars Fall Bright Winemakers Shop Fox Run Vineyards Fulkerson's Winery Glenora Wine Cellars Hazlitt 1852 Vineyards Heron Hill Winery Hunt Country Vineyards Imagine Moore Winery Lakewood Vineyards Lucas Vineyards Rooster Hill Winery Royal Kedem / Springledge Farms Sheldrake Point Vineyards Swedish Hill Vineyards White Springs Winery

GRAPE PRICES, continued

wineries. Probably more than other varieties, the phrase 'flat is the new up' probably applies most directly to some of these.

The average price for red vinifera varieties moved up 1.5% this year, led mainly by increases in the prices for Lemberger and Pinot Noir. The free fall that growers saw in the price for Cabernet Franc over the past several years leveled off, and the variety actually had a small increase in the average price this year. It is hard to say just how much of this was due to the market itself, and how much was due to the quality of the crop which encouraged some buyers to invest more in a "red friendly" year. As with many other varieties, the number of buyers for these grapes

has not quite returned to where they were in 2008.

White vinifera varieties did not have quite as positive of a move in prices as reds, but at least held their own, and in a couple of cases saw some modest improvement. After a 12% drop in its average price last year, Riesling prices came back a little bit this year, reflecting the more balanced supply and demand for the fruit this year. Both Gewürztraminer and Pinot gris, considered by some to be two up and coming varieties in the region, saw their average prices go up by 3.5% and 5.6% respectively. Chardonnay prices remained largely the same as last year, but there was an increase in the low price offered for the variety this year.

EXTENSION

2010 Workshops and Field Meetings

Viticulture 2010 / 39th Annual Wine Industry Workshop

February 17-19, 2010

This year's installment of the conference was once again held in Rochester, NY. The conference attracted over 750 people this year – down somewhat from the previous event in 2007, but many found the conference program to be informative and contained a wide variety of information. The 2½ day program contained a wide variety of topics related to business and marketing, winemaking and, of course, viticulture, and included an array of speakers from across the U.S., Canada and Europe. The two-day trade show featured products and services from almost 100 different vendors. *Organizers: NY Wine & Grape Foundation, Finger Lakes Grape Program, Lake Erie Regional Grape Program, Dr. Anna Katharine Mansfield & Chris Gerling (NYSAES enologists), industry members on the organizing committees.*

Spring Grape IPM Meeting

May 18, 2010

The FLGP's annual Spring Grape IPM Field Meeting was held this year at Darren Simmons' farm in Keuka Park, near Branchport. The program for this year's meeting covered an array of topics including equipment for more precise pesticide application, tractor safety and the use of personal protective equipment, updates on disease and weed management, the revised NEWA website, DEC rules regarding recordkeeping and others. Thanks to Darren Simmons 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 (NY-SAES – Entomology), Wayne Wilcox (NYSAES – Plant Pathology), Rick Dunst*

(CLEREL – Portland), Jim Carrabba, NY Center for Agricultural Medicine and Health, Tim Weigle (CLEREL - Portland), Ed Hanbach (DEC – Bath). Sponsors: Bayer, Syngenta, Crop Production Services, Valent, United Phosphorus, Motomco, JMS Flower Farms, BASF, Dow, Helena, Gowan.

Twilight Meetings – Nutrient Management

May 25 & 26, 2010

The FLGP hosted two sets of informal twilight meetings focusing on different viticulture topics. Meetings were held in two different locations each month in order to keep the group small and to encourage discussion. The meetings in May were primarily focused on vineyard nutrient management. Topics included soil and petiole sampling, including submitting samples to AgroOne, the new sample testing service partnership between Dairy One cooperative and Cornell, interpreting results, and the use of composts and foliar fertilizers. Growers were also encouraged to bring questions on other topics that they had for discussion. Participants: Hans Walter-Peterson (FLGP), Standing Stone Vineyards & Doyle Vineyard Management (hosts).

Twilight Meetings – Canopy Management/Bulk Variety Production June 16-17, 2010

The first of this set of meetings focused primarily on canopy management practices and their influence on fruit quality. The second meeting addressed efficient production of bulk varieties to maximize production at acceptable quality. The guest speaker for these meetins was Dr. Terry Bates, director of Cornell's Lake Erie Research and Extension Laboratory (CLEREL) in Portland, NY. Dr. Bates is one of the country's leading experts on vine physiology, while also translating that expertise into practical advice on vineyard practices. Participants: Hans

Walter-Peterson (FLGP), Dr. Terry Bates (Dept. of Horticulture - CLEREL), Goose Watch Winery & Bedient Vineyards (hosts).

Influence of Viticultural Practices Influence on Wine Quality

August 3, 2010

This workshop presented growers with updated information on the impact of canopy management practices like shoot thinning and leaf removal on fruit and wine quality in Finger Lakes fruit. Drs. Justine Vanden Heuvel and Tim Martinson highlighted results from field trials they have been conducting in the region, including the costs of the practices to both growers and wineries. The workshop also included a tasting of several different experimental wines made from fruit coming from these trials, including Riesling, Traminette, Leon Millot and Vignoles. *Participants: Dr. Justine Vanden Heuvel (Dept. of Horticulture), Dr. Tim Martinson (Dept. of Horticulture)*

'Pre-Harvest' Field Meeting

August 26, 2010

This year's pre-harvest field meeting was more of an 'early into harvest' meeting, thanks to the early start to harvest this year. The meeting started at Jordan Hall at the Geneva Experiment Station, where growers got to witness a mock truck inspection conducted by the NY State Police and were able get clarification about rules and regulations regarding transport-



ing grapes during harvest. After a discussion of the preliminary results of the 2010 Finger Lakes Grape Price List, the meeting moved to one of the research vineyards west of the Station, where Dr. Justine Vanden Heuvel discussed her Noiret trial, which is evaluating different spacing and training options to optimize production of this new variety. Finally, Dr. Bruce Reisch introduced growers to two new selections from his breeding program that are being tested in the field next to the Noiret trial, including a 'no spray' variety. *Participants: NYS Police Commercial Vehicle Division (Canandaigua), Hans Walter-Peterson (FLGP), Dr. Justine Vanden Heuvel (Dept. of Horticulture), Dr. Bruce Reisch (Dept. of Horticulture).*



NEW FACES

Mike Colizzi Joins the Grape Program

This past summer, the FLGP hired Mike Colizzi as our new fulltime extension assistant. Mike will be responsible for helping to set up, manage and collect data



from field trials and demonstration plots that the FLGP conducts and in cooperation with other faculty and extension staff. He will also be managing the NY Grape & Wine Classifieds site, and will be our primary contact for new growers who are looking for information on starting a vineyard. While some in the industry know him already, I thought this would be a good chance for Mike to introduce himself a little bit.

Tell us a little bit about your background, and how you got interested in viticulture.

I grew up in the Geneva/ Penn Yan area my whole life and from a very young age enjoyed helping my great grandfather with his garden. During the beginning of high school my goals were to be an engineer, however around the time I turned fifteen I started working at Fox Run Vineyards and quickly realized I wanted to work with grapes. During my senior year in high school my family and I composed plans to plant a vineyard on the property in front of our house. This provided me with the great hands on experience of what it actually takes to start up and manage a vineyard. I attended college at SUNY Cobleskill where I majored in Plant Science and tailored my coursework towards viticulture.

You worked for one season at a vineyard in California. What was that experience like?

It was amazing, it was truly an eye opening experience to the world of viticulture outside of the Finger Lakes. While there I worked on a 350 acre mostly production vineyard. Over ninety five percent of the grapes they produced were sold to small-scale high quality wineries. These wineries demanded the same rows from the same blocks year after year to ensure consistency. That opportunity gave me a completely different way to look at grape growing. I feel like my experiences there have added a lot to my viticulture knowledge and have helped me bring new ideas to the area.

Why did you want to work in Extension?

I always enjoyed talking with growers and trying to gain as much knowledge as possible. I felt this was a great way to do both of those things. I believe working for extension provides me with a great opportunity to help the Finger Lakes grow and prosper into the great wine region it's capable of becoming.

As the FLGP's extension assistant, what are your responsibilities? What have you been working on for the three months you've been with the program?

When I first started I was busy collecting and processing berry samples for development and yield analysis. I also collected many of the Verasion to Harvest samples from the area. I am in charge of the classified ads page as well as the main contact for new and perspective growers. I look forward to working with all of the growers in the area and hope to use my practical hands-on experience to benefit them.

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.

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.*

Leafroll Disease: Occurrence, Impact, Spread, and Budget Costs. *Marc Fuchs (Plant Pathology – Geneva), Greg Loeb (Entomology – Geneva), Tim Martinson (Horticulture – Geneva), Miguel Gomez (Applied Economics and Management – Ithaca)*. Leafroll is one of the most important virus diseases of grapevines. It can affect all cultivars and rootstocks. This disease causes delays in fruit ripening, a reduction of soluble solids and an increase of titratable acidity in fruit juice, as well as a reduction in fruit yield and vine vigor. Research is being conducted to determine the financial impact of the disease in Finger Lakes vineyards and to assess the efficacy of insecticides at reducing the spread of leafroll-associated viruses by mealybugs. The ultimate goal of this research is to mitigate the impact of leafroll and assist grape growers and wine makers in their decision making process for the best and economically most appropriate management options. *Cooperators: Hosmer Winery, Wagner Vineyards, Dr. Frank's Vinifera Wine Cellars, Grafted Grapevine Nursery, Double A Vineyards.*

High Resolution Vineyard Temperature Monitoring. Alan Lakso (Horticulture), Art Degaetano (Earth & Atmospheric Sciences). Variations in vineyard temperatures as affected by topography, distance from the lake, distance from trees, drought, etc. are being documented with over 90 small temperature loggers placed in grids or transects in Finger Lakes vineyards. In 2009 and 2010, we also are documenting the effects of wind machines at Glenora for effects on cold temperatures. We are completing 5 years of 30-minute measurements. This data to develop more precise predictions of temperature patterns at the farm level. This work is being done in collaboration with the Institute for Application of Geospatial Technologies (IAGT), a GIS center in Auburn, and Cornell's Northeast Regional Climate Center. *Cooperators: Fox Run Vineyards, Red Tail Ridge, Glenora Wine Cellars, Sawmill Creek Vineyards, Bill Dalrymple and Chris Verrill.*

Vigor Effects on Bell Pepper Aromas in Cabernet Franc. *Alan Lakso (Horticulture), Gavin Sacks (Food Science)*. 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 shoot and vine vigor. *Cooperators: Fox Run Vineyards, Anthony Road Wine Company, Prejean Winery and Harvest Ridge Vineyards.*

Site Evaluation and Selection. Alan Lakso (Horticulture), Tim Martinson (Horticulture – Extension), Art Degaetano (Earth and Atmospheric Sciences), Olga Shaposhnikova (Visiting Fulbright Scholar). 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) in Auburn, and industry specialists.

Remote Sensing of Vineyard Soil

Variation. Alan Lakso (Horticulture), Larry Brown (Geology), Tara Curtin (Geoscience – Hobart & William Smith), Steve DeGloria (Crop & Soil Sciences). Since the soils in the Finger Lakes are extremely variable, initial studies have begun testing ground-penetrating radar and electromagnetic remote sensing of soil variation in vineyards to produce high resolution maps of soil variations. Cooperators: Sheldrake Point Vineyards and Fox Run Vineyards.

Developing Simplified Ways to Estimate Vineyard Capacity. Alan

Lakso (Horticulture). Vineyards in the Finger Lakes are variable in canopy fill which affects the vineyard capacity to ripen a crop and to estimate how much crop to leave. To have balanced vines and crops appropriate to the vineyard's ability, we have begun a project to as simply as possible (1) estimate the amount of sunlight energy a vineyard can capture and turn into growth and crop, (2) estimate total vine productivity using our crop model and (3) estimate the target crop that is the highest yield without a significant loss of quality. *Cooperators: Fox Run Vineyards and Prejean Winery*.

Management of grape mealybug and grape leafroll disease in New York vineyards. Greg Loeb and Steve Hesler (Entomology), Marc Fuchs (Plant Pathology), Tim Martinson and Bill Wilsey (Horticulture). The 2010 field season was the second year of a multi-year study 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. Results indicate modest to good control of mealybugs, depending on insecticide. One application of Assail SG reduced mealybug populations in a large plot experiment about 50%. In a small plot experiment, Movento [spirotetramat] reduced populations about 90%. The assessment of the virus status of every vine in the large plot experiment indicated a slight decrease in Grape Leafroll Associated Virus 1 (GLRaV1) associated with treatment with Assail compared to untreated vines. We did not observe any differences in rate of change of GLRaV3 between treated and untreated vines for the large plot experiment. We did not assess virus levels for the small experiment involving Movento. In 2010 we also initiated a new study to assess virus status of individual mealybugs and grapevines that they were collected from through the season to gain a better understanding of the time course of infection. This may provide additional insights into the most effective time to control mealybugs.

Cooperator: Hosmer Winery.

Testing the Use of a Degree Day Model to Time Control of Grape

Berry Moth. Greg Loeb and Steve Hesler (Entomology, Tim Weigle and Juliet Carroll (NYS IPM Program), Mike Saunders (Entomology – Penn State), Jodi Timer (Entomology – Penn State), Andy Muza (Penn State Extension) and Rufus Isaacs (Entomology – Michigan State). This is the third 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). During the 2010 field season we began validating the temperature-driven model using large, multiple acre plots. We also began testing the grape berry moth forecast model now available on the Cornell affiliated NEWA (Network for Environment and Weather Applications) website [http://newa.cornell. edu/]. Finger Lakes Cooperators: Pendleton Farms. Lake Erie Cooperators: Kapple Vineyards, Kubiack Vinevards.

Determining Optimal Cropload

for Riesling. Justine Vanden Heuvel (Horticulture), Trent Preszler (Graduate Student – Horticulture). While optimal cropload varies to some extent with growing conditions and grape varietals, 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. This study began in 2008 and continued through this year. The objective 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. Cooperator: King Ferry Vineyards.

Developing Easy-To-Use Computational Tools for Vineyard Management. Justine Vanden Heuvel (Horticulture), Jamos Moyors (Craduate

ticulture), James Meyers (Graduate Student – Horticulture). 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 and 2010 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. *Cooperator: Wagner Vineyards*.

Canopy Management in Riesling.

Justine Vanden Heuvel (Horticulture), Wayne Wilcox (Plant Pathology), Gavin Sacks (Food Science), Todd Schmitt (Applied Economics & Management), Tim Martinson (Hor*ticulture – Extension*). 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 investigating the impact of shoot thinning and leaf removal (timing and intensity) in Riesling on canopy microclimate, fruit composition, disease incidence, and wine quality. Todd Schmit is determining costs and returns for these practices, and has conducted consumer willingnessto-pay studies for wines produced using different canopy management practices to determine optimal recommendations for Riesling growers. Tim Martinson is assisting



growers throughout the Finger Lakes region to compare some of these canopy management treatments on a multitude of cultivars. The study is funded by Northeast SARE. *Cooperator: White Springs Winery.*

Reducing Production Costs and Improving Wine Quality Through Root Zone Management. Justine

Vanden Heuvel (Horticulture), Taryn Bauerle (Horticulture), Anna Katharine Mansfield (Food Science). Development of new methods to decrease vine vigor and subsequently increase wine quality is critical to the advancement of our unique winegrape region. Excessive vegetative growth, often the culprit of poor flavor and aroma development in NY wines, can be targeted through management of reduced root biomass and direct root competition. Management of the vine root zone with under the row ground covers or vine root pruning may provide an innovative, easily implemented and cost effective method for enhancing wine grape quality while improving sustainable management practices due to the reduced need for herbicides. The objective is to determine the impact of three annual cover crops (annual ryegrass, buckwheat, rosette-forming turnips) planted directly under the vine and root pruning on vine size and wine quality including extensive examination of vine growth and physiology, a full descriptive analysis of wine sensory characteristics, and the associated production costs. The project is funded by a NYS Specialty Crops Block Grant. Cooperator: King Ferry Winery.

Predicting and Managing Yeast Assimilable Nitrogen in Vineyards and Wineries. Tim Martinson, (Horticulture – Extension), Anna Katharine Mansfield (Food Science), Lailaing Cheng (Horticulture), Mark Nisbet (Graduate Student - Food Science). Nitrogen status in vineyards has many effects on vine growth and wine composition - and wine quality. In particular, a measure of nitrogen in fruit called Yeast Assimilable Nitrogen (YAN) is of concern both to winemakers and growers. YAN is often low in NY musts, and YAN varied by a factor of five even in adjacent vineyards with similar management. Methods for predicting YAN are needed to allow NY winemakers and growers to manage their vineyards and the winemaking process more effectively. This project focuses on developing these methods and determining what soil, climate and viticultural practices influence YAN. We have three objectives:

- Predicting YAN 2 weeks before harvest,
- Predicting YAN at veraison and increasing it before harvest, and
- Identify vineyard factors associated with high and low YAN values.

This project integrates research and extension by capitalizing on 80 NY vineyard blocks from which we already collect preharvest fruit samples for the Veraison to Harvest newsletter. Information on YAN management will reduce wine defects, increase efficiency of vineyard and winery inputs, and thereby increase profitability for NY's wineries and growers. Data for 2010 was collected from Terry Bates' Fredonia wine grape, soil pH, and rootstock experiment. Funded through USDA Federal formula fund grant program at Cornell. Cooperators: Terry Bates, (Cornell Lake Erie Research and Extension Laboratory), Hans Walter-Peterson (Finger Lakes Grape Program), Stephen Hoying (Hudson Valley Laboratory), Alice Wise (Long Island Hort. Research and Extension Center).

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, the J. M. Kaplan foundation, and New York Wine and Grape Foundation. Cooperators: Multiple growers throughout New York.



Evaluating the impact of a foliar nutrient solution on productivity, nutrient status and fruit quality of

Concord. Hans Walter-Peterson, Bill Wilsey, Mike Colizzi (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 looked 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 have also been analyzing the economic impact of the material. Cooperator: Don Tones, Clearview Farms.

Cluster Weight Estimates to Improve Crop Estimation. Hans Walter-Peterson, Bill Wilsey, Mike Colizzi (Finger Lakes Grape Program). 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.

PEST MANAGEMENT

Extension Viticulture and NYS Ag & Markets Team up to monitor NY vineyards for exotic pests

Tim Martinson

Senior Extension Associate, Dept. of Horticulture

Kennoth Carnes

State Survey Coordinator, NYS Department of Ag. & Markets

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 early detection of four 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 Industy, seeks to provide early detection of exotic plant pests before they become established in New York. This year, they deployed over 480 pheromone traps in over 40 vineyards in the Lake Erie Chautauqua region, Niagara county, the Finger Lakes, and Suffolk county to trap and detect four potential exotic insect pests (Figure 1). Pheromone traps containing specific lures to attract males of each species were out in these vineyards, and replaced at two-week intervals from early June through August.

Cornell Cooperative Extension specialists Tim Weigle (Statewide IPM, Lake Erie), Hans Walter-Peterson (Finger Lakes), Alice Wise (Long Island) and Steve Hoying (Hudson Valley) helped Ag & Markets summer employees locate commercial vineyards for placement of the traps. Steve Hoying also serviced and changed traps in the Hudson Valley. After traps were collected at two-week intervals, they were sent Rick Hoebeke, Cornell taxonomist, for identification. The good news is that, to date, none of the four survey target insects have been found.

Why is this important? Invasive species are an increasing problem, brought on by increased movement of goods and services from interna-



Figure 1. Location of pheromone traps deployed in New York in 2010

tional sources. In New York, the emerald ash borer has become established in the past few years, threatening Ash trees. Exotic pests impose new costs and problems for producers, as illustrated by recent experience in California with the European Grape Berry moth. Early detection can prevent permanent establishment of these pests in our vineyards.

European Grape Berry Moth. A

principal target of the survey was the European Grape Berry Moth, *Lobesia botrana* – which has recently been imported and become established in major California production areas such as Napa, Sonoma, and portions of the Central Valley. Although nobody knows how *Lobesia* entered California, Extension Farm Advisors trace its spread to pomace piles from grapes harvested and transported to wineries. Its introduction has led to a wide-area spray program that is attempting to eradicate the pest – with



Figure 2: Adult, larva, and pupa of Lobesia botrana, the European grape berry moth. This pest recently became established in California.

uncertain prospects for success. The costs and additional insecticide use that this new pest imposes on California producers underscores the importance of early detection here in New York, to prevent these exotic pests from becoming established here.

In addition to the European grape berry moth, surveys targeted three other exotic pests that have the potential to become established in grapes.

False Codling Moth , *Thaumatotibia leucotreta* is a native of Ethiopia and Sub-Saharan Africa. It feeds on many hosts, incluiding grapes, where it feeds internally on grape berries:



Figure3. False Codling Moth adult and larva.

Light Brown Apple Moth (LBM),

Epipyas postvittana, a native of Australia, feeds on over 200 host plants, including grapes. It has been detected in California. Larvae web leaves and fruit together, and feed externally on berries.



Figure4. Light Brown Apple Moth adult.

Silver Y Moth. *Autographa gamma,* is common in north Africa and the Mediterranean region as far north as Paris and Scotland. It feeds on leaves of wild hosts, then moves into cultivated plants, including grape-vines. Larvae can feed on grape clusters.





Figure5. Silver Y adult and larva. Larvae feed readily on grape clusters.

More information about the CAPS can be found at <u>www.agmkt.state.</u> <u>ny.us/caps/</u>.

2010 GROWING SEASON, continued model uses a set number of GDDs starting at the point of a particular biofix - the bloom date in wild grapes, in this case - to time scouting activities and control sprays. While the model probably still requires some tweaking, Greg Loeb and Tim Weigle both believe that it is an improvement over our previous guidance for GBM control. Based on my conversations with a few growers who used the model this year, results seemed to be mixed based on the level of damage they were still seeing in their vineyards. It is certainly possible that in a few cases, the pressure was so high that good control would be difficult to achieve regardless of the number of sprays used or their timing.

Fruit Quality and Yield in 2010 The warm temperatures early in the season got the region off to an early start, and that remained true for the rest of the season. Every phonological stage was early this year, which brought a lot of excitement about the potential quality of the fruit produced this year, but also made harvest a bit more exciting than usual as well by compressing the ripening period for a number of varieties.

After a warm and dry start to the season, the region fell into a pattern of rain showers during the bloom period. This didn't appear to throw too much of a wrench into fruit set for most varieties, but in some vineyards, Riesling clusters did appear to set well. Similar to the trunk injury issue we saw in the spring, it seemed to impact some vineyards while others had good set. In many cases, these clusters didn't just have lower numbers of berries per cluster, but also had higher numbers of improperly sized or shotberries amidst the normal-sized berries - sometimes called 'hens and chicks.' (Figure 9). The effect was not uniform across vineyards or even within them, seeming to suggest that something



Figure 9. Riesling cluster with uneven set, or 'hens and chicks'.

beyond just weather was causing the problem.

Keeping with the trend of early development this year, harvest got underway in the Finger Lakes in the latter half of August. Constellation started its Aurore harvest on August 24, which is not significantly earlier than other harvests, but the difference this year is that they were not the only ones picking fruit in August. Many vineyards and wineries ramped up harvest this year earlier than they ever have in the past. Varieties like Elvira, Foch, Niagara and Diamond were being picked by the end of August, and a bunch of others started to hit their sugar and acid targets soon after that. Chardonnay and Pinot noir for sparkling wines were picked in early September, about the same time, or even a little earlier, than many of the producers in California. By mid-September, growers, wineries and processors were all starting to feel the crunch of a compressed growing season thanks to the advanced ripening the region experienced.

Bulk varieties in the Finger Lakes were a bit of a mixed bag this year. A season like this allows growers to hang as much fruit as they possibly can without much concern of failing to hit minimum sugar standards from their processors. While some growers were able to take advantage of this, others were dealing with frost damage or other issues that kept yields down. Aurore and Catawba yields were generally below average this year, while Concord yields were all over the map. Elvira yields, on the other hand, were high for the most part, which allowed their major buyer, Constellation, to make up somewhat for lower yields in other varieties. Cayuga White was another variety that seemed to have a very good year in 2010, based in part on the number of ads posted on the NY Grape & Wine Classifieds this year.

As could be expected in a very warm year, Brix levels and acidity were much more advanced this year than they usually are. By mid-September, many varieties had sugar and acid numbers that were comparable more to late September or early October, while berry weights were closer to the four year average that we have generated from the data gathered as part of the Veraison to Harvest project (figures). It was not unusual to see red varieties with pH levels in the 3.6 - 3.7 range, numbers which we rarely see in these parts. Concord vineyards that were carrying some of their heaviest crops ever - 11-12 tons per acre - were

achieving 17 Brix in some cases. Making sugar and losing acid were not issues this year. It was interesting, however, to see Riesling and Traminette somewhat resist this trend, at least in the fruit samples we took. Brix and acidity in these two varieties seemed to hold somewhat steady over the last few weeks of harvest, which some growers and winemakers also noted in their harvested fruit as well. This potentially bodes well for these varieties, as the reputation for whites produced in warm years is that they have low acidity, which is not what Finger Lakes Riesling has come to be known for. Winemakers may need to do some acid adjustments in the cellar, but perhaps not as much as was thought.

Grape Market in 2010

In addition to its value as a marketing tool for growers and winemakers in New York, the NY Grape & Wine Classifieds also helps to give some insight on the market for grapes around the state. Last year, a number of wineries cut back on their grape purchases from growers in response to high inventories that they were holding. As a result, many tons of grapes went unsold, or more often, were sold for prices at or below the cost of production. In 2010, about half the total tonnage of fruit was listed for sale as was listed in 2009 (Figure 10). Some of this was likely due to some varieties having lower yields this year, and wineries needing to fill some tank space.

According to our annual Finger Lakes Grape Price List, prices did not move dramatically up or down (see our article on Grape Prices in this issue) for the most part. The drop that some

2009		2010			
Variety	Tons	Variety	Tons		
Riesling	457	Catawba	240		
Chardonnay	344	Cayuga White	222		
Cayuga White	279	Chardonnay	127		
Cab Franc	190	Seyval	110		
Rougeon	137	Niagara	90		
Total	1,407	Total	789		

Figure 10. Top 5 varieties listed for sale in 2009 and 2010 on the NY Grape & Wine Classifieds website.

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GROWING SEASON, continued

of the vinifera varieties took over the past few years, particularly Cabernet Franc, leveled off this year.

Hopefully, these indicators point to the supply and demand for Finger Lakes fruit starting to move back towards a balance again.

UPCOMING EVENTS

Unified Wine & Grape Symposium January 25-27, 2011 Sacramento Convention Center Sacramento, CA Visit http://unifiedsymposium.org for information.

Finger Lakes Grape Growers' Conference & Trade Show March 4-5, 2011 Holiday Inn Waterloo, NY Registration and program information starting in December. http://flg.cce.cornell.edu

> Lake Erie Regional Grape Program **Growers'** Conference March 17, 2011 SUNY Fredonia Campus Fredonia, NY

40th Annual Wine Industry Workshop April 13-15, 2011 Ramada Lakefront Geneva, NY



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