

WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION

From Penn State Cooperative Extension

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Green Flavors and Wine

Most wine makers will agree that the presence of green flavors, often described as vegetal, in red wines in particular, is not a positive attribute and something we would like to control in the vineyard. If combined with too high acid, the result is a wine that is singularly and obviously out of balance and flavor. Last year at the Cabernet Franc workshop Dr. Gavin Sacks, research enologist in the Department of Food Science at Cornell University gave an outstanding presentation about the dynamics of methoxypyrazine (MPs for our purposes) accumulation and degradation in grapevines. MPs have aromas generally described as "musty" and "vegetal", so reducing their concentration has the potential for improving red wine quality, often dramatically. His research has given us a much clearer understanding of this compound and how it affects wine flavor. At a detection threshold for many tasters of 10 parts per TRILLION, a little goes a loong way, and in this case, it is definitely not a good thing. He starts us off with his Fundamental Theorem of Wine Aroma which positions "Vegetal/Herbaceous" and "Fruity/Sweet" compounds on opposite ends of a linear scale and the statement that unripe and ripe aromas have a tendency to mask each other. This is demonstrated by several sensory studies in the literature on Cabernet Sauvignon, a prime candidate for both the good and bad in red wines and a notorious difficult variety to get fully ripe in most Eastern wine regions. Of course we all know the solution in the vineyard... get the fruit ripe! Dr. Sacks illustrated how pleasant inverse action of the degradation of those nasty compounds while flavor compounds accumulate in berries just before and after veraison to harvest. As we approach veraison, this is when the good stuff starts cranking. MPs accumulate rapidly in leaves and are exported to berries in the weeks before veraison and begin to degrade quickly after veraison (this is the assertion of Duboudieu's group from Bordeaux, but Dr. Sacks finds the supporting evidence to be unconvincing. He believes that MPs are synthesized in berries with no translocation needed). Dr. Sacks encourages growers to attack MPs in the accumulation period by timing the selective removal of leaves before veraison. In conjunction with Dr. Alan Lakso he observed that light is an important factor in discouraging MP synthesis, with shaded berries having considerable higher levels of MPs. Curiously, cluster exposure appears to have little effect on MP degradation post-veraison. His collaborator in the vineyard, Dr. Justine Vanden Heuvel, found that the timing of leaf removal had fa

significant effect on MP levels, with a 75% reduction in MPs at veraison when leaf removal was done a fruit set compared to 60 days post set - the difference was still significant by the time the grapes were harvested. Justine affirms that hedging or pulling leaves 30 days post-anthesis (bloom) is the most effective time to lower MP concentration at harvest. In a separate experiment, Drs. Lakso and Sacks found that shoot growth (vine vigor) stimulated the accumulation of MPs, even when fruit zones had identical light exposures. This Cornell research indicates MP accumulation is related to vine vigor and berry shading, and these factors are independent of each other. Because MP concentration pre-veraison predicts MP concentration at harvest, early season interventions before 20 days post bloom appear to be critical in determining MP levels. Finally, while we know that MPs degrade after veraison, the mechanism for this is not understood. One very interesting coincidence that scientists have learned is that the taint caused by Multi-colored Asian Lady Beetle is a very close cousin to our vine derived IBMP called isopropyl-methoxypyrazine, however, the two icky flavors taste hardly alike. We were told in Ontario that the Seven Spotted Lady Beetle also has the potential to taint wine and while concentrations of the offending compound are less, the sensory damage is very similar to IPMP. We love lady bugs but just not around harvest time!

So what does this mean for growers right now? Well, it means that I missed the boat in getting this information to you. On Long Island, Alice Wise is seeing color in Pinot Noir so veraison is on its way. Still, fruit zone management is critical to ultimate fruit quality at harvest. We know that there are strong relationships between shade/leaves and MPs and also their influence on fruit zone microclimate. Clusters should be modestly to well exposed. On a vigorous canopy that may mean going in there and pulling leaves again. If you are fortunate to have small to modest size canopies then you may not have to manipulate the canopy. It's a major battle at this point to reduce MPs and acid and get flavors to peak at the right time. In many ways, the season is almost done but in lots of other ways it is just beginning.

This is really great research that focuses on a real problem in Eastern wines and offers key insights into the dynamics of MPs with a set of recommendations that growers can use in the field. I thank Dr. Sacks for sharing this information with me and editing this article. Please read more about his work at <http://www.nysaes.cornell.edu/fst/faculty/sacks/index.html#MP>

Heading Towards Veraison

As we enter the stretch run this is where the rubber hits the road, or whatever the viticultural equivalent of that is. It is really all about ripe and clean fruit needed to make good wines. Now is the time in a vintage when you can really learn a lot from the vines. It is towards the culmination of all of your efforts from budbreak and the vines are a record of how well you (pl) have done. In fact, we soon hit cruise control and let Mother Nature take it the rest of the way, with some minor adjustments if needed. Look at the canopy and fruit zone and give yourself a grade and note what the problems are so in the winter you can figure out the solutions. As I have said before, I feel more secure in a vineyard that has been managed for a wet and cool final run. That means adjusting

canopy and crop to the conservative side just in case we bump into another '03 or '04 vintage. Remember, even in the marginal years, good wines are very possible, we just have to work harder to get them. We are getting to that blessed point in the season when disease on fruit is less of a worry but leaves still need to be protected, especially from powdery mildew and downy mildew. Rainfall around the region is variable but there is heat between the storms so this is pushing the grapes along. If you can keep the disease at bay, if it dries out soon you should be in good shape for the stretch run. On Long Island, Alice said it had not rained for a month until some arrived this week yet in Lancaster it rains every other day and infection periods are long and acute. Rain also means continued shoot growth which is exactly not what we want right now. Shoot tips should be slowing down as the vine prepares for veraison and the big push to harvest. At this point, all your measures to control vine vigor are already in place and all we can hope for is some dry weather. '07 was a fine vintage because it dried out in August until well into September. If it keeps raining and the shoots keep growing then keep hedging and monitor new growth for downy in particular. The main threat to berries now is botrytis and the sour rot organisms. Recommendations for doing battle with these can be found in the NY/PA Pest Management Guidelines for Grapes. Certain varieties have a greater propensity to rot so they need more attention. I would like to emphasize the need for canopy and fruit zone management practices to assure clean fruit and to state emphatically that wine makers cannot make good wine from diseased and otherwise compromised fruit. It is the responsibility of the grower to deliver squeaky clean fruit to the winery. Grape berry moth is also a threat and scouting for damage is an important task. Researchers at Cornell and Penn State have developed a GBM Risk Assessment Protocol that serve as a guideline for your GBM control strategy - <http://lergp.cce.cornell.edu/IPM/ReexGBM1.htm>. Other bugs, such as lady beetles, wasps and yellow jackets can always be a problem but it is so difficult to predict their severity. In cases like this, assume the worst - anything that compromises the integrity of the berry skin can only lead to trouble and wine problems. And then there are the birds. They are browsing on Long Island so they'll be here soon. If weeds are a problem it would be a good idea to knock them down inside the canopy where they interfere with work in the vines and generate more humidity in the vine microclimate. It's late, they are mean and tough, but you can knock them down with a very heavy duty weed wacker with thick string or a steel blade.

Crop estimates at 50 post bloom around berry lag phase/seed hardening is just at the end and if you missed it you can adjust the multiplier downwards. Green harvest should be done now, before veraison, in order to have an impact on final grape quality. Fruit zone management is critical to quality at this stage and past veraison. Now is the time for small adjustments. If the canopy is wildly out of control by now you probably won't get it done in time to impact fruit quality.

Grape should be committed by now. If you are a vineyard with grapes to sell, hopefully you have signed contracts in hand. Crop estimates should allow you to give wineries a heads-up on whether or not your initial delivery numbers are on target. Wineries need to know as soon as possible what to expect. While it is too early to have wine makers in the field, it is not too soon to have discussions about the course of the vintage and

expectations for yields and quality. Wine making is much more critical to wine quality here than in arid regions so the more a wine maker knows the better he can anticipate fruit quality and quantity and avoid being reactive on the press pad. It's not too early to start thinking about harvest logistics, in particular labor and transportation needs.

I have attached a revised **harvest checklist**, a HACCP of sorts for vineyards, a revised chapter from "Oregon Viticulture" that may help with the planning of your harvest activities. Dr. Ed Hellman of Texas A&M is coauthor. See Harvest_Jul08.

Revision of Zind-Humbrecht Article plus photos of his no-hedge canopy management practice is on the Wine Grape Network web site. Olivier was kind enough to edit my text and provide some corrections.

USDA Viticulture Consortium East 2007 Final Project Reports

Many folks know that VC-E took a bit of a hiatus last year as Congress eliminated special grants but funding has been restored so this incredibly valuable funding resource for viticulture in the US is back in action. Most growers do not appreciate or even realize the amount and quality of viticulture research going on around the region. In fact, it can be argued that Cornell University may have the most significant viticulture and enology research and extension program in the country (world?). If you do not take time to access this information, you'll never know what is out there that can help you to grow better grapes. Most growers I encounter believe that they know it all, or don't have time to know more. Well, here is your chance to get as completely up to date on regional viticulture research and you can ever hope for. If none of these topics pertain to your vineyard, then I would argue strongly that you are not growing grapes. If you cannot benefit from learning something from this research, then I would argue that you are unlikely to improve the quality of your product. Here are a few examples of the research projects reported on in 2007:

- Cultivar trials in different regions
- Bird netting trials
- Crown gall research in Chardonnay, Riesling and Cabernet Franc
- Vineyard practices for Noiret
- Dieback in grapevines
- Multi-colored Asian Lady Beetle
- Clonal research on Long Island
- Graft union height to improve winter survival
- Vineyard floor management practices
- Grape root growth and physiology
- High resolution monitoring of vineyard temperature variations and their relations to grape and wine composition
- Systemic insecticides
- Mating disruption
- Disease control

- Viruses
- ... and lots more.

Check out all of the reports at the USDA VC -East web site at <http://www.nysaes.cornell.edu/pubs/vitcon/>

Dr. Hugh Price is the Eastern project manager and Mary Lou Dumbleton is his very capable assistant at Cornell University. The Regional Guidance Committee is an exceptional group of industry and academic leaders in viticulture from every region of the non-western states.

Apprenticeship at Linden Vineyards: opportunity of a lifetime

I think many of you know of my great regard for the talent and wines of Jim Law at Linden Vineyards. This is an opportunity to work side by side with one of our best wine makers. If I didn't already have a job, I would do it.

Linden Vineyards has an opening for a winegrower apprentice position beginning in late August or early September 2008.

The program is based on traditional apprenticeships. The apprentice gains both theoretical and practical experience in all aspects of winegrowing and winemaking. Linden's winegrowing philosophy is based on vineyard fine tuning and palate based winemaking. Palate training is a critical part of the apprenticeship. The ideal length of this apprenticeship is 2 fall harvests.

position specifics:

- full time 40+ hours/week
- pay = Spartan living wage + health insurance
- no experience required. A knowledge or enthusiasm for wine and food is required.
- sales/marketing work is optional, depending on individual interests -detailed information about Linden can be found at lindenvineyards.com -for more information contact Jim Law (540) 364-1997 or wine@lindenvineyards.com

NE Vineyard Equipment Show with Dr. Andrew Landers offers live demonstrations of vineyard sprayers, leaf removers, in-row tillage equipment and hilling machines. Dr. Landers will be available to offer tips on spray application strategies.

Dates: July 30 and 31 - please RSVP which date you will attend to 315 787 2429 . 9 a.m. to 5 p.m. Where: 1255 Ridge Rd in Dresden, NY.

See attachment - NY Equipment Jul08

Attachments:



Harvest Jul08.doc



NY Equipment Jul08.doc

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