

## **WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION**

From Penn State Cooperative Extension

### Table of Contents

1. PAW Annual Summer Vineyard Walk Around at FREC
2. The Vintage
3. American Society for Viticulture and Enology Eastern Section Annual Meeting
4. New Grapes from Cornell
5. North Carolina Wine Industry
6. Crop Estimation and Thinning: It's that time of year again...

### PAW Walk Around: Information, Program and Registration Materials (attachment)

And exciting program has been planned for this year's vineyard walk around. The focus will be on viticulture research at the Fruit Research and Extension Center in Biglerville (Adams County). Program topics will include fungicide trials and disease control especially late season rots, alternative fungicides for DM and PM, nematode suppression and viruses in vineyards and late season viticulture practices. PAW will also hold its annual business meeting. A full program and registration is attached to this message. Please register now!

### The Vintage (attachment)

Yikes! How quickly things can change. A dry but cool spring has turned hot, humid and nasty. Severe weather has affected vineyards in SE PA with hail and high winds and powdery mildew, downy mildew and black rot have arrived in full force. The rain has caused shoots to take off so canopy management has become a major challenge and weeds have really begun to grow. On top of all of this Japanese beetles seem to get worse every year. What is a grower to do in the face of all of this unpleasantness?

Well, prioritize. The disease certainly needs to be high on the list. Losing fruit is not an option so a thoughtful spray program is absolutely necessary with consideration that we have another 6-8 weeks until harvest. It would be very helpful if we got back into a dry cycle to slow down growth and reduce disease pressure. Botrytis can get started on hail damaged berries. The dinged berries on the exterior of clusters will often develop a scar that can spread over the berry like sunburn. It may split and, hopefully, if the weather cooperates, dry out and fall off. If you haven't closed bunches yet, a fruit zone directed fungicide spray of a botryticide and captan will probably help lower incidence of late season rots. Leaf pulling will help to get spray to the target.

I have attached comments from Dr. Jim Travis and Bryan Hed, our two key grape pathologists to help guide you in your spray decisions.

Weeds and canopy management take time and effort. Spot spraying under the canopy will help keep the weeds in check. Only effort will help with the canopies - hedging, leaf

pulling and shoot positioning. I still have a sense that a very big crop is on the vines so crop estimation and thinning are a good idea. I do not have a clear sense of how this vintage will look as we head towards veraison then harvest. If you want quality grapes I suggest regulating the crop.

#### ASEV Eastern Section Annual Meeting

I sure wish more growers from PA and around the region would attend this meeting. It is an important opportunity to hear the latest in vit/eno research and to meet with the people who do it. The meeting in Rochester was very successful. I began with a tour of wineries and vineyards in the Finger Lakes which was highlighted by a visit to the incredible brand new \$7.5M New York Wine and Culinary Center in Canandaigua. This center takes the New York wine industry and particularly around the lakes to a whole new level. The wineries are making impressive wines despite suffering setbacks in the vineyards in 03 and 04 due to winter injury. Sessions covered topics including the NY Sustainable Viticulture Program, Pierce's Disease and vectors, Irrigation scheduling, NGWI, acetaldehyde in wines, using an electronic nose to detect volatiles in wines, yeasts response in ice wines, simultaneous alcoholic and malolactic fermentation and many, many more excellent presentations by graduate students researchers and projects funded by the USDA Viticulture Consortium East.

As always, scholarships were given to graduate students in enology and viticulture. This year six students from the U.S. and Canada received \$1000 scholarships. If you are in the wine industry, you should be a member of ASEV.

This year's symposium addressed the problem of the Multi-colored Asian Lady Beetle and it is an amazing story! Fantastic research has gone into understanding this pest and its effects on wine, mostly in MN, OH and Ontario. It demonstrates that even the best intentions in IPM and bio-control can go awry. Besides affecting grapes, MALB has had non-target impact on other lady beetles, green lace wing and monarch butterflies. MALB was released in 1916, 1964/65 in CA, CT, DC, GA, LA, MD, DE, OH and PA through a USDA-APHIS program intending to control a variety of aphids in soy bean, corn, pecan, peas and citrus. It was very effective at doing this and populations exploded and spread.

MALB has 0-20 spots on its back and color ranges from orange to red. Its signature is a white "M" shape design on the back of its black head. Bill Hutchinson from Univ of MN and Kevin Ker from KCMS/Brock Univ both spoke about their experience with MALB. The bug first appeared in Ontario in 1994 and was looked at suspiciously but not considered a pest. It wasn't until 2001 that MALB was considered a problem in wine and half the vintage was lost due to tainted wines. Populations crashed in 2002 and have been up and down since. Serious research at Brock University began in 2004. Kevin has been trying to develop a system for estimating MALB numbers in bins but has found it very difficult to get accurate surface or core samples. Thresholds have been established through amazing research done by Dr. Gary Pickering at Brock (more on that later). Kevin notes that MALB is worse in vineyards near soy bean fields and woods areas and perimeter vines have the highest populations. Since the bug originated in the Himalayas it is also very cold tolerant. He tried to add 200 bugs/metric tonne of grapes on the belts

of a harvester to see how many actually ended up in the grapes but it was difficult to measure. In surveying vines near harvest he found 35% on foliage, 57% in clusters, 6% on canes and trunks and 2% on the ground. Bug counts are highest at mid-day and populations drop after rain or in cooler weather. Kevin says they do not use carbaryl to knock down MALB since it is too close to harvest and they do not want it to be detected in wine. The LCBO will not let them apply it after bunch close. They get 87% knock down with malathion but the bug comes back fast. Bug He believes that the bug is attracted by terpenes and also volatile aromas resulting from diseased fruits. Bill Hutchinson says that MALB cannot break the berry skin so are not responsible for primary damage to berries. In MN MALB populations peak in late July and August when soy bean plants are senescing and then they look for alternate hosts. They monitor populations using yellow sticky cards as an early warning system starting in late August and noted that traps are 2 weeks ahead of clusters. Sampling begins 2-3 weeks before harvest using 500 clusters. They also feel it is very important to avoid berry damage to keep MALB in control. Carbaryl is the main chemical used to control MALB.

MALB has a defensive reflex response of a chemical called haemolymph when stressed. There is a clear signature in sensory evaluation spider graphs of changes in flavor and aroma profiles in MALB wines, even at thresholds of 1 bug per liter in both white and red wines. Besides a clear decrease in varietal flavor and aromas, descriptors such as peanut, bell pepper, asparagus, earthy and herbaceous begin to dominate. In samples provide by Dr. Pickering of a Sauvignon blanc wine, the peanut aroma was overpowering with obvious asparagus in the background. They have identified the culprit as isopropyl-methoxypyrazine (IPMP) in the haemolymph compound and it only takes amounts in "parts per trillion" to taint a wine. Interestingly, MPs are a problem in red wine production everywhere, especially prominent in unripe grapes but they are also responsible for the unique "grassy" flavor of New Zealand (and other) Sauvignon blanc - a real irony when we tasted the tainted SB sample from Dr. Pickering. Dr. Grant Holder at Appalachian State University told me that in all of the 12,500 acres of SB in New Zealand, the amount of methoxypyrazine that accounts for the grassy flavors would weigh less than 2.5 grams or, as he vividly described it, less than 3 paper clips. That's a lot of flavor (good and bad) in a small amount! Dr. Pickering uses a trained panel of tasters to evaluate his research wines using reference standards. He likened his panel to a human gas chromatograph. It is very effective.

Dr. Pickering's talk was quite detailed and my notes are too vague to allow me to take a stab at explaining the exact results of his research. But he did make this illustration... Riesling can be tainted at 3 bugs/kg of fruit. In a red wine the threshold is 10 bugs/kg (20.9 ng/L IPMP) He suggests avoiding thermal vinification practices in musts with MALB present. His safe tolerance level is 200-400 bugs/metric tonne, though the actual levels were higher in his research. Bottle age does not correct the problem. In wine making, fining with bentonite, oak chips, irradiation all did not help. Activated charcoal did help to remove taint but also all the other flavors. Oak chips had a masking effect only. His recommendations are to control MALB in the vineyard with sprays or using attractants as a decoy. At the winery, shaking and sorting conveyors help.

This story is a great example of how research and extension services can respond rapidly to a serious problem in the wine industry. The Brock group, along with Ohio State and Univ of Minnesota all focused resources on the problem and helped to gain an understanding of the issues as well as recommendations for coping with MALB. We do not yet have all the answers but thanks to these dedicated research and extension personnel we are able to deal with MALB. For more information from Brock University go to this fact sheets -

[www.brocku.ca/ccovi/news/MALB\\_QA\\_2004\\_update.pdf](http://www.brocku.ca/ccovi/news/MALB_QA_2004_update.pdf) or google "multi colored asian lady beetle."

### Three New Grapes from the Cornell Grape Breeding Program - Joe Ogradnick, Cornell University

Cornell officially debuted three new wine grape varieties today (July 10), Noiret, Corot Noir and Valvin Muscat, which are broadly adapted to the wine-growing regions in the East and cool North West and produce high-quality varietal wines that are superior to those currently available to eastern growers, says grape breeder Bruce Reisch, a professor of horticultural sciences at Cornell's New York State Agricultural Experiment Station in Geneva, N.Y.

Reisch developed and tested the grapes with Thomas Henick-Kling, professor of enology at the Experiment Station and leader of Cornell's enology program.

The grapes were released at the 31st Annual Meeting of the American Society for Enology and Viticulture - Eastern Section, held July 9-11 in Rochester, N.Y.

Noiret (pronounced *nwahr-ay*), a mid-season red wine grape, is a complex interspecific hybrid resulting from a cross made in 1973 between NY65.0467.08 and Steuben. Corot Noir (pronounced *kor-oh nwahr*), a mid- to late-season red wine grape, is a complex interspecific hybrid resulting from a cross made in 1970 between Seyve Villard 18-307 and Steuben. Both varieties are well suited for making single varietal and blended wines. "Both Noiret and Corot Noir represent distinct improvements in the red wine varietal options available to cold-climate grape growers," said Reisch. "Care should be taken to grow Noiret on sites less susceptible to extreme winter temperatures and downy mildew." Reisch. "Wines made from these grapes are free of the hybrid aromas typical of many other red hybrid grapes and have a complete tannin structure" said Henick-Kling. "Both wines have good deep red color. Noiret has notes of black pepper, with raspberry and mint aromas and a fine tannin structure. The mouthfeel of Corot Noir is round and heavy, the tannins are big and a bit edgier than in Noiret."

Valvin Muscat is a mid-season white wine grape with a distinctive muscat flavor and aroma that is desirable for blending as well as for varietal wines. The complex interspecific hybrid grape resulted from a cross in 1962 between Couderc 299-35 (an interspecific hybrid known as Muscat du Moulin) and Muscat Ottonel.

"Valvin Muscat is recommended for the production of high-quality muscat wines," said Reisch. "Vines are well suited to good grape-growing sites in the eastern United States, and should only be grown on suitable rootstocks." Some care should be exercised to control disease, and fruit should be picked when the muscat flavor reaches its peak, he noted.

"Historically, one of the unique strengths of Cornell's wine grape breeding program is the extent to which the breeders and enologists work together to select new grape crosses

based on the flavor profile of the wine we are seeking to develop," said Thomas Henick-Kling. "All three of these new grapes were extensively screened and evaluated by the Cornell enology group, in the field by Bruce Reisch, and by cooperators in industry wineries. It is a team effort."

With the new varieties, which have trademarked names, the Experiment Station now has nine wine grapes to its credit. The previous Cornell releases are: Melody, Horizon, Cayuga White (grown widely throughout New York and beyond), Chardonel (now the number two grape in Missouri), Traminette (quickly gaining in popularity throughout the East), and GR 7 (used in red wine blends).

Vines of the three new grapes are available from licensed commercial nurseries. Contact Reisch <bir1@nysaes.cornell.edu> for a list of sources. Commercial nurseries may be licensed by contacting Cornell Research Foundation, 20 Thornwood Drive, Suite 105, Ithaca, NY, 14850 (phone: 607-257-1081; fax: 607-257-1015; e-mail <des33@cornell.edu>). You can see a fact sheet on the new grapes at <http://www.nysaes.cornell.edu/pubs/press/current/060707Grapes.html>

### North Carolina Winegrowing

I recently had a chance to spend some time in the Yadkin Valley AVA and western mountains of North Carolina and came away very impressed with the maturing wine industry there. Biltmore Winery at the Biltmore Estate sells more wine from its tasting room than any other winery in the U.S. I also got to see two very fabulous winery and vineyard estates at Childress Vineyards (owned by NASCAR owner Richard Childress) and Shelton Vineyards. These are winery operations far above in scope and investment anything that we have in Pennsylvania. There are 56 wineries in NC and about 1300 acres of grapes and both are growing fast. They have a \$500,000 line item from the state legislature which is mostly used for marketing and promotion through the NC Wine Council in the state Department of Commerce. Margo Knight is the full time executive director employed by the state and devotes all of her time and talent to NC wines. I'm not exactly sure who is providing the leadership in the industry but they seem to be very effective. Mark Friszlowski, transplanted from Long Island to Childress, was one of my hosts and is very involved with the winery association. In research and extension NC State has just hired two new personnel. Sara Spayd is an NC native but spent 26 years as a vit researcher in Washington. She just arrived in May to take the vit extension position and will make a huge impact in the state. Trevor Phister was hired a few weeks ago to take over the extension enology position. He was working at Drexel University and has a PhD from UC Davis in microbiology. I found out directly what the tobacco settlement has meant to the wine industry in southern states. Golden leaf funds have been used extensively to fund projects and programs in NC, including the outstanding vit/enol program at Surry Community College. The program was started with funding from Shelton Vineyards but has grown on its own. It currently has 25 students in viticulture including one from Pennsylvania! I was enormously impressed by the 7ac teaching vineyard and a terrific pilot winery used to teach the students. Gill Giese, who is working on his PhD with Tony Wolf at VA Tech is the viticulture instructor and Dr. Bob McRitchie, who is about to retire, teaches enology. SCC is a huge resource providing trained professionals to the wine industry in NC. I was also exposed to the facilities and

people at Appalachian State University in Boone, at 1000m in the western mountains it is a spectacular and beautiful location but perhaps a bit too high for grapes. Dr. Grant Holder hosted the 2nd Western NC Wine Conference which attracted about 175 people for a program covering a range of wine topics from marketing to quality alliance programs. Dr. Holder has used Golden Leaf funds to finance a WISELAB, a mobile wine analysis lab that will provide services to NC wineries. This is a great tool that should help wineries, especially smaller and newer ones, to improve their quality. ASU, NC State, Surry and other CCs are forming a very serious coalition to service the local wine industry. We can only dream of such resources here. Shelton and Childress have the most modern equipment, great design and talented and trained personnel. The wineries and vineyards are impeccable and the source of great admiration. I still wonder, however, about the ultimate quality of wines that will come from the Yadkin AVA given the very deep clay soils they have. It will take a lot of viticulture know-how to learn how to best grow wine in this terroir when you add rain, heat, humidity, Pierce's disease, hurricanes and a host of other Eastern challenges to the production process. Red grapes on young vines were already entering veraison while we are still closing bunches. The wines I tasted were varied in quality from really good to, well, could use improvement but that's just about where you would expect them to be. As they learn how to work the vineyards, the wines will get better. Right now they are gathering the resources for a real run at quality. I learned a lot about the stock car culture, too, and what it means to the region. Oh boy. It was stunning to see what the Childress winery and racing operations meant to the area. He has influence on par with a rock or screen star. I was very impressed and would like to thank all of my hosts for a wonderful visit. I am anxious to return.

You can find out a lot more about the wine industry in North Carolina at <http://www.ncwine.org/welcome.html>

#### Crop Estimation and Thinning: attachment

We are approaching lag phase and it is time to get out the calculator. From what I have seen and what growers have been telling me the crop is big this year. While we still have a long way to go before harvest, now is the time to be thinking about fruit quality and wine style. It is a good idea for growers to talk with wine makers or if you are both, decide how much fruit to leave on each variety and block. There are many ways to estimate crop and you should find a system that you are comfortable with and get consistently accurate results. Guessing is not a system. Crop load and balancing a vine has so many ramifications for quality of fruit and vine. It is really worth doing well. See attachment for my explanation of crop estimating and thinning.

#### **Attachments:**

[2006 PAW summer walk info reg.doc](#)

[Disease Control Travis Hed Jul06.doc](#)

[Crop Estimating in Vineyards.doc](#)

\*\*\*\*\*

Mark L. Chien, Wine Grape Agent  
Penn State University Cooperative Extension  
College of Agricultural Sciences  
Lancaster County  
1383 Arcadia Road, Room 1  
Lancaster, PA 17601-3184

Phone: 717 394-6851  
Fax: 717 394-3962  
Email: [mlc12@psu.edu](mailto:mlc12@psu.edu)  
Web <http://winegrape.cas.psu.edu>

\*\*\*\*\*