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Bordeaux Wine Workshop at Black Ankle Vineyard

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When I arrived in Pennsylvania, then the Southeast Grapegrowers Association (SEGA), now the Pennsylvania Association of Winegrowers, told me that a high industry priority was to identify a regional identity for the wines of Southeast Pennsylvania. Because varietal diversity is the raison d'être of the Eastern U.S. this has not been an easy task. In fact, there are many facets to our wine industry that are intermingled but all of equal value. I have always argued that any grape variety has to meet two essential criteria – viticultural suitability and market acceptability. Unfortunately, the two do not always conjoin readily. But that is the art and attitude of the business and the successful wine grower and owner finds a way to balance them. The native and hybrid wines have always been and will continue to be our bread and butter wines - they pay the bills and do a whole lot more because there are lots and lots of people who enjoy them. But these wines do not identify a region among the international wine community, who are a bit insistent about their classic European varieties. There is an emerging sector of wine growers who want to chase this elusive market. As we plod along this path, dipping our toes in the wine market with varieties as diverse as Tannat or Petit Manseng, it is very clear that the process is neither easy nor well defined. Suffice to say that Cabernet Sauvignon and Merlot are easily recognizable names even to the wine novice and carry much weight in the minds and palates of wine critics and snobs alike. So the more I hang around, the more the conversation about Bordeaux red wine varieties appears to capture the imaginations and attention of the wine growers and consumers alike.

I would dare to define the area which these varieties can grow successfully as the Piedmont Plain north through parts of Adams, York, Lancaster and Chester counties and south to areas in Virginia and North Carolina. The varieties are quite adaptable to different soil and climate regimes as reflected in wine styles as diverse as those from Napa and Bordeaux. I am not alone in thinking we have the opportunity to bridge these two famous places with wines of elegance and balance with perhaps a bit more weight and concentration than the average Bordelais. What evidence do I have of this interest or trend? I cannot cite acreage planted although it appears to be growing. It's more of a buzz than a well-defined movement. Last summer Eric Miller hosted a Cabernet Sauvignon symposium to try to calibrate our qualitative position. It happened that Chateau Cheval Blanc was our benchmark. Outstanding red wine producers from Long Island to Virginia were invited and wines were tasted blind and, much to our surprise and pleasure, many of our best showed well against the three vintages of the white horse. This was followed by a red wine workshop in Maryland, the Bordeaux wine seminar before this year's VVA meeting, the New Jersey Outer Coastal Plain AVA Bordeaux workshop, and my own personal attempt to obliquely measure our wines against international red wine benchmarks at the Wine Spectator Grand Tasting in New York. This is a lot of activity focusing on one type of wine. I can speak only for myself in observing that the qualitative gap is closing, which is not to say that we don't have a long way to go, we most certainly do but our progress is undeniable. It is beginning in the

vineyard with a transformation of viticulture. Dedicated growers are raising their vineyard design, development, maintenance and practices to international standards of quality. I see the same trend that I witnessed in Oregon as devoted wine growers tried to chase down the Pinot Noir. It starts with a few brilliant wines, then consistency, and after a time it ceases to be a surprise when blind tastings offer evidence of a potential regional identity. That's not to say that we got this red wine thing licked, there are challenges galore from our unstable climate (see 2009, 2010), high acidity, veggie flavors, missing mid-palates, short finishes and the litany of missing pieces to complete a very complicated puzzle. But slowly, the puzzle is taking on a recognizable shape, image and flavor. So here we go, chasing Bordeaux. It may not be the future of Mid-Atlantic wine but there is a core group of passionate and determined wine growers and makers who want to give it a try. The latest evidence arrived in the form of a hundred people attending a Bordeaux wine workshop at Black Ankle Vineyard in Maryland that featured some of our best local practitioners and a superbly talented viticulture professor and consultant from Bordeaux. Ed Boyce and Sarah O'Herron were appropriate hosts for this meeting because of their singular desire to make great red wine at BAV. They are among the first I know of in the region to seek a property specifically for that purpose. With funding from the Pennsylvania Wine Marketing and Research Program, Penn State Cooperative Extension and the University of Maryland Cooperative Extension designed a program to address Bordeaux red wine production. The featured speaker was Dr. Jean-Philippe Roby, the head of the viticulture and enology department at ENITA de Bordeaux. He is also a consultant to vineyard in Bordeaux and internationally. He came to us by way of Rutger de Vink and RdV Vineyards in Northern Virginia, who have hired JPR as a consultant. Ed and Sarah have engaged the services of Lucien Guillemet of Chateau Boyd-Cantenac as their consultant. Jim Law has studied Bordeaux winegrowing methods for years and has recently worked with a French enologist. Finally, Lucie Morton, viticulturist from Virginia was trained at the University of Montpellier and has extensive contacts and experience in France. The goal of the program was to compare, contrast and adapt Bordeaux and Mid-Atlantic viticulture and wine making to guide us towards a better understanding what French practices may benefit our wines.

Jean-Philippe Roby

In Bordeaux, fine red wines are should be harvested between mid-September and mid-October. That window may shift with climate change but right now, that is the defined window of quality. We sometimes end up harvesting Cabernet Sauvignon in very late October, even November in the East which says that something is out of balance. In 2003, a blistering hot year, grapes came off in August, way too early and the wines reflect the excessive heat in their lack of acidity and premature aging. When October 15 arrives and the reds are still on the vine you've run out of season to get the grapes to full maturity. Cool temperatures are much preferred for the end of the grape maturation period to slow the ripening processes. A mature grape is evaluated by its aromas, polyphenol content and balance, and the technological components with the hope that these development curves can merge on the picking date. One of the key quality criteria is small berries with high skin to juice ratio. Moderate water stress is preferred in early July but not too much stress. It was mentioned on a few occasions that to engage in high quality red wine production in a cool area on the edge of the ripening period is risky business and that practitioners should accept the risk and reward, and that this is not industrial winemaking. Taking risks does not confer better quality to any wine. It is only within a particular intention and style of wine that the necessity of higher risk may result in better quality to the critic and consumer. Hybrid wines are, by their nature, less at risk to many environmental threats yet can

produce lovely wines. Jean-Philippe instructs growers to work with the challenges and sometimes it's necessary to push the season against frost and other threats. In fact, great years are irregular because of the necessary convergence of conditions to create one, the odds are against it.

The adequation of soil and climate for Cabernet Sauvignon necessitates reducing the vegetative cycle which can be assisted with rootstock selection such as Riparia Gloire de Montpellier, and the risk of methoxypyrazines that may affect wine quality in two years in ten. Regulation of water and nitrogen are important to achieve proper Cabernet Sauvignon. Soils should be shallow, <20 inches to a limestone or shale base and roots should not penetrate deep. Gravel is preferred with very limited clay and organic matter. Minimal rain during the vegetative cycle (<300mm) and slope if possible. RGdM is a low vigor rootstock that may put the vine at risk in drought seasons.

Merlot and white varieties have a bit more latitude in their growing conditions. Objectives include a longer vegetative cycle and the risk of overripening (fruit, jam) in two years in ten. These varieties are a bit more malleable in their terroir needs, requiring some water deficit but little or no nitrogen deficit. They perform well in medium soils that are less than 40 inches or shallow clay soils with moderate water status. 420A and 3309 are considered rootstocks with medium vigor qualities. Fercal is also used on Merlot. In Bordeaux it is considered easy to ripen Merlot and white varieties like Sauvignon Blanc, Semillon and Muscadelle.

The structure of a wine will be influenced by the depth of soil and proportions of gravel, clay, and sand, also organic matter, nitrogen and cation exchange capacity (nutrient availability).

Disease is always a threat in Bordeaux and great care is taken to prevent it from damaging wine quality. Bunch rots are to be avoided and cluster positioning is taken very seriously in all red wine varieties. In fact they have determined how many centimeters of space between clusters on various vine spacing. They look for mushrooms on the property as a sign of conditions that will promote disease.

It is difficult to characterize terroir because of the variations in climate between vintages. It's very typical for growing degree days to vary by as much as 200 GDD. Rainfall amounts and patterns are different between Bordeaux (700-850mm) and Virginia (1200mm). Snow in the winter adds nitrogen to the soil and can increase vine vigor in the spring. Virginia has a shorter vegetative cycle than Bordeaux but more rapid growth, especially in June. This creates a management problem for growers, they must be ready to manage the canopy during this period. In Bordeaux there is more time to get critical vineyard tasks done. Warmer temperatures during spring in Virginia also help to drive more vine growth. In 2003, a very hot year in France, there was 3x more nitrogen in the juice musts. In warm conditions there is greater mineralization of nitrogen.

Evapotranspiration rates are higher in Virginia than in Bordeaux and the canopy grows to full capacity faster so ET is higher. Water is very important to vineyard management in Bordeaux, it seems there is always too much or too little. If water stress is too high yields are reduced and cover crop is removed and the soil is cultivated. In Bordeaux more growers are using cover crops as a management tool for the vineyard floor. The amount of grass cover varies according to soil.

Vine vigor is determined by pruning weights – at 10,000 vines/ha (4000/ac) pruning weights should be less than 400g/vine. $1.5m^2$ of exposed canopy per kilogram of fruit is considered the optimal balance.

For optimal yields keep records and determine for each block what is the idea yield for wine quality. Measure berry and cluster weight and berry size.

Bordeaux wines tasted:

- 2005 Chateau Haut Bailly (Pessac-Leognan): 14 soils in 20 ha, 65% Cabernet Sauvignon, 25% Merlot, 10% Cabernet Franc
- 2005 La Clemence (Pomerol): clay soils, 85% Merlot and 15% Cabernet Franc
- 2005 Chateau Lynch-Bages (Pauillac fifth growth): gravelly, warm soils, 75% Cabernet Sauvignon, 15% Merlot, 10% Cabernet Franc, higher yields than most wines in the area.

Lucie Morton

I always tell wine growers we are not agronomists growing corn or soy bean with the production pedal jammed to the floor. Viticulture is a distinctive approach to soil and a production philosophy and goals that emphasize balance and harmony. Traditional commodity crop growers turned wine grower like Jan Waltz in Manheim can testify to need to keep these clearly separated. Lucie pointed out again how the woods are dark and deep and full of spooky creatures. There are no other vineyards in the vicinity of BAV and yet in the first year every manner of disease and bug showed up. Shade is bad in so many ways for vines (veggie flavors, disease, insect pests, etc) and should be avoided within the canopy and around the vineyard - they are always out there and very opportunistic. Rain and humidity, well, that's our climate and we have to learn to live and work with it. Lucie doesn't tolerate much viticultural belly-aching. When it comes to excess vigor she gets out the razor. She encourages growers to show who is boss out in the vineyard - who is in control out there, the vine or the grower? We can't control the weather but we can determine how many leaves are on a vine. I think my comment here would be to do better vineyard site selection as a method to moderate vine growth, just as they did at BAV. Low vigor rootstocks, shoot thinning and positioning, leaf removal, hedging and are all standard practices in Eastern vineyards for quality grape production. Cabernet Sauvignon doesn't have to be the vigor monster if it is put on the correct rootstock. Lucie encourages the use of different rootstocks in a vineyard because of their variable performance and in any season one may outperform the others. She used the example of a vigorous vineyard in spring that was "manhandled" and how well balanced it looked at veraison. Veggie wines are a sign of failed viticulture. Deer fence and bird netting are quickly become default expenses in the business plan for Eastern vineyards. Bordeaux vineyards are always replanting and it's not unusual to have 2 year old vines next to 50 years vines. She likes double trunks for our area simply because if something hits a vine, like winter injury or a trunk disease, there is a backup part to help replace it.

Wines tasted:

- 2007 Boxwood Topiary (northern Virginia): this is their "right bank" wine, a blend of 50 % Cabernet Franc, 48% Merlot and 2% Malbec

Jim Law

There are people who have grown grapes for 30 years and don't know much more at the end than the beginning. Then there are growers like Jim who are encyclopedic in their knowledge of their vineyard. Jim pointed out that 30 years in the vineyard is not a cumulative experience but rather he has done the same thing 30 times. In Europe, this empirical form of viticulture makes the grower an essential component of the terroir. We can debate the relative virtues of organic or biodynamic production systems until the cows come home but I would argue that growers of Jim's caliber would farm better than most regardless of method. They are thoughtful and creative in their observations, analysis and response to the vineyard.

Jim walked us through 30 years of wine growing and making at Linden. Most notably, he is entering a new phase in his stewardship of Linden Vineyards. He is going to turn it upside down by using all of his accumulated knowledge to redirect Linden towards the great wines he wants to make. That means wholesale changes in the vineyard and cellar – new vines, vineyard design, trellis, clones and rootstocks, cellar practices etc. will change Linden completely and the wines should get even better. This modernization is both appropriate and terrifying.

His goal is to make wines of terroir and not wines of variety, as are often the case in technical, production wine making. An example is the growers of Burgundy who identify a wine not by its grape but instead by its place. It is an interesting exercise to contrast two great French wine regions, Burgundy and Bordeaux, which generally may be described as the artisans vs. the technocrats. In Burgundy the wine is always at greater risk. This is partially the nature of Pinot Noir but also the mentality of the people who grow and make the wines. Jim speaks of the quality of water that falls on his vineyard, which has to do with timing and duration. The key is to move the water away from the vines as quickly as possible. Bordeaux has longer wetting periods than Virginia so we can definitely learn from them about how to manage water.

Jim states that June is the most important month in the vineyard because the vines launch into their grand period of growth in June and the grower must be ready to manage the canopy and perform many tasks at once. If the vineyard falls behind, the quality of work is compromised and thus the fruit is diminished. It is a question of labor to make it work, both the availability and quality of the workers and the means to pay them. But for serious wine to occur this has to happen. If you can survive June then good wine is much more likely. Yields at Linden for red wines are typical one pound of fruit per foot of trellis.

Jim has begun to pay as much attention to the cellar as the vineyard. He readily admits that he is most at home in the vineyard but has realized over time that great fruit needs a proper follow through in the winery to attain its full potential in wine. So even though the cellar is not his natural milieu, he has spent a lot of time recently refining his practices with Bordeaux as his model. Over time Jim realized that he was letting red varieties hang too long, perhaps succumbing to "hang time" fever. But great wine is not all about opaque color, weight and density, it's more about balance of elements of the wine. More important than sugar is phenolic balance that can be determined by proper berry assessment, especially the skins. Hanging fruit exposes it to more rain which stretches the skin causing a thinner membrane that can is more susceptible to rot. Jim also seeks uniformity in degrees but not absolute because some variability can add complexity to the wine. He agrees with the Bordelais that small berry size is important

and has taken to collecting cluster and berry weights, remarkable since he is generally data averse.

The winemaking process begins with five stages of sorting the fruit, from cluster thinning, picking, manual and mechanical sorting before and after the destemmer. He is always amazed by the "junk" that is removed. In Bordeaux, wine makers fear residual sugar more than volatile acidity or reduction in reds. Jim wants to make sure he ferments his reds completely dry.

The extraction process has been a focus of his efforts recently, trying to get every bit of goodness from each grape, equally important in good vintages as the bad ones. The optimal time and temperatures are what he is seeking. Movement of the must is also important – how and how long to punch or pump over. Maceration conditions and length is always up for debate from cold soaking to fermentation time and temperature and post-fermentation period on the skins. He's trying to slow down the fermentation and experimenting with both native and commercial yeasts, noting the former can offer up more residual sugar and VA. He is looking to avoid bitterness, green flavors and roughness in the wine texture. For post fermentation temperatures should be in the 80s and the tank sealed up to prevent oxygen ingress. Jim admits to being confused by all the coopers and barrel choices and also corks. New oak for Hardscrabble, his top red blend is from 30-60 percent depending on the quality of the vintage and no new oak is used in the claret second label. Jim has tossed in the towel when it comes to explaining to customers what the sediment in the bottom of the bottle is so he coarse filters to 3-4 microns to catch the big stuff.

All of this attention in the cellar requires more organization and meticulous record keeping, not Jim's strength. To fill the gap he has always hired interns who get practical experience and often go out into the industry to make their own contributions.

Wines tasted:

- 2006 Linden Vineyards Hardscrabble (located in northern Virginia) – all from the estate vineyard it is 61% Cabernet Sauvignon, 17% Merlot, 11% Cabernet Franc and 11% Petit Verdot. You can read detailed production notes on the Linden Vineyards web site.
- 2009 Linden Vineyards Hardscrabble

Ed Boyce

Even though he was plenty busy as our host Ed wanted to talk about soil and water relations at the meeting. I always listen to what Ed says. Ed is a black hole for viticulture information and I take any opportunity to listen whenever he speaks. His talk was about how to induce water stress on grapevines growing in one of the wettest wine districts in the world. For red wines in particular, well-timed and regulated water stress can help push grapes towards full ripeness, as well as reduce berry size. Ed talked about how water moves through the soil profile, using the example of a heavy rainfall and how soil moisture progress from saturation to field capacity and then gradually toward permanent wilting point. In order to achieve mild water stress rainfall must be reduced (rain shadows?), surface and subsurface drainage improved, reduction of soil to root contact, increased evapotranspiration of vine and cover crop. Site characteristics such as slope, soil rock content, shallow soils over fractured rock, wind and soil texture can all improve

the balance of plant available water. Soil texture cannot be altered but soil structure is affected by almost everything we do in the vineyards.

Ed focused much of his presentation on the dangers of soil compaction and how to prevent and relieve compaction. They are living their ideas having just purchased the new Kubota half-track tractor (Ed says they could not get a full crawler due to asphalt roads on the property). Causes of compaction include heavy equipment, especially when soil moisture is above field capacity. Rain on bare soils such a clean strips under vines can pound the top inches of soil into a compacted layer. Repeated wetting and drying of soil aggregates can increase compaction. Promoting soil life is the best way to relieve compaction (microbes, fungi, worms, nematodes, etc). This subterranean life requires air and water, which can be added, usually in the form of compost. They use a spader to help aerate the soil. Cover crops will also help to relieve soil compaction.

His criteria for a good site with healthy soils include:

- Windy, sloping site with shallow, rocky, loamy soil over fractured bedrock
- Closely spaced vineyard planted up and down the slope
- Crawler tractors
- Cover crop in row middles and-or vine rows if necessary
- If vine rows are kept clean, use a mechanical blade-type device
- No tractor work when soils are wet
- Compost added regularly
- Spaded row middles every few years
- Goal is less than 24 hrs from saturation to field capacity, less than 2 weeks from FC to mild water stress and as long as possible from mild water stress to plant shutdown

Wines tasted:

- 2006 Black Ankle Vineyard Crumbling Rock (located in Frederick County in central Maryland)
- 2007 Black Ankle Vineyard Crumbling Rock - 34% Cabernet Franc, 30% Cabernet Sauvignon, 22% Merlot, 11% Petit Verdot, 3% Syrah
- 2008 Black Ankle Vineyard Crumbling Rock

For my palate, the Bordeaux wines simply had, well, more of everything than the Mid-Atlantic wines but I state this in a completely positive and congratulatory way towards our producers. The Bordeaux wines have a characteristic complexity, weight and concentration but also a suppleness and elegance that are completely their identity. I like the balance in the French wines with all component parts fitting seamlessly together. Perhaps the local wines were most notable for what they did NOT have – green flavors, harsh tannins, brutal acidity, too much oak, light color, weak mid-palate and other problems often associated with our red wines in the past. The local wines were very generous, ripe, deeply colored, well crafted and very promising, beyond even the wines themselves, showing what we have learned in the past decade.

I would encourage anyone who got this far in this article to visit Black Ankle Vineyard, Linden Vineyards, Boxwood Vineyard and, well, Bordeaux, of course! Visit the cellars and vineyard critically with your own questions in mind. Talk to the practitioners, not the marketing people. You will learn very little in the tasting room. You can taste the wine just fine over here. If you are there, pay attention to the qualities and features that make these properties special. Then figure out how you can use what you learned in your own wine making.

I would like to thank Rutger de Vink, the proprietor of RdV Vineyards for sharing the charming and talented Jean-Philippe Roby with the regional wine community. How can I thank Ed Boyce, Sarah O'Herron and their staff enough for all the work and hospitality they put forth for this workshop? It was an exceptional effort (they hosted a wedding that afternoon also, no problem). I am grateful to Lucie Morton and Jim Law, who are the great educators and passionate about our ability to make high quality wines in the region, and who always have a new and interesting message to deliver. The spirit of sharing among this group is what makes this industry so exceptional.

Recommended Reading:

1. *The New France: A Complete Guide to Contemporary French Wine*. Andrew Jeffords. Mitchell Beazley Press. 2002
2. *The Complete Bordeaux: The Wines, The Chateaux, The People*. Stephen Brook. Mitchell Beazley Press. 2007
3. *The Wines of Bordeaux: Vintages and Tasting Notes from 1952-2003*. Clive Coates. University of California Press. 2004
4. *Noble Rot: A Bordeaux Wine Revolution.* William Echickson. W.W. Norton. 2006.
5. *Bordeaux: A Consumer's Guide to the World's Finest Wines.* Robert M. Parker, Jr. Simon and Schuster. 2003
6. *Parker's Wine Buyer's Guide No. 7.* Robert M. Parker, Jr. Simon and Schuster. 2008

While these are wine writers and not viticulturists they taste and see so many great wines and estates they inevitably come to understand a lot about the production practices, if not in technical detail then general descriptions which they offer and can be very helpful to growers and wine makers. These are the people who define great wine for all of us, it pays to know what they are worth paying attention to.

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