



Wine Grape Information for Pennsylvania and the Region From Penn State Cooperative Extension

<http://pawinegrape.com/>

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Table of Contents

1. Vintage Observations
2. John Thull Visit to Endless Mountains: focus on cold hardy hybrids (August 15-16)
3. Berry Water Balance and a New Divided Canopy System: W&V article review
4. PQA Seminar with Dr. Bhaskar Bondada: focus on Berry Shrivel (August 6 – PSU Berks)
5. PSU Research Viticulture Interview Sites and Schedule (July 2, 18 and 30)
6. SO2 workshop, events calendar and seeing the benefits shoot positioning

Third Consecutive Year: Frost in the spring followed by a warm and wet weather in June. Remember, in 2011 and 12, neither particularly easy years in the Mid-Atlantic, a hot and dry July saved reds from veggie-ness, but in both years (Irene, Lee and Sandy) interfered with a promising vintage. The frost reduced crops in many vineyards and some hail in the southeast has caused additional crop loss. It hasn't been good for grapes the past two weeks in SE PA and the Mid-Atlantic area - yesterday in Lancaster we had 2" of rain in the afternoon and another 2" during the night. The weeds are growing, well, like weeds, and so are the vines. If the rain keeps up, let both grow out and blow off moisture, then when it dries out, cut them back. But the canopy must be managed for air, light and spray penetration, avoid shading. All the major diseases are in play right now and as we have exited fruit set most growers are struggling to keep up with canopy work. Things to think about include leaf, shoot, lateral removal, shoot positioning, Japanese beetles, grape berry moth – the Reading, PA [NEWA](#) station is at 1023 DD today so we have passed 810 on our way to 1620. Given the fruit rot situation in vineyards around the state in 2011/12, if you have tight cluster varieties you may want to apply a GBM spray at 1620 DD. If you can nail down the vineyard now, and we get a modicum of cooperation from the weather, the grapes have a good shot at fine wine in September and October.

John Thull from Univ of MN and Cold Hardy Hybrids: John Thull is the research vineyard manager (his title is Gardener) at the University of Minnesota, where cold hardy hybrids like Marquette and La Crescent were developed. Having just returned from Vermont and seeing how these varieties have influenced the growth and quality of Vermont wine, it is fair to acknowledge the amazing contribution his work has had on the opening of new cold climate wine areas where they might not have existed before. Pennsylvania's diverse climate includes areas where the low winter temperature often fall below -20F. In the past, entire vines, or at least parts of vines, would be buried to ensure survival and productivity. That is no longer necessary with the cold hardy hybrids. As rapidly as wine growing with

these cultivars has advanced in recent years, in Vermont I learned that there are still a lot of basic viticulture questions about how to cultivate them for best wine quality. The aim of this seminar with John is to answer many of these practical answers from the person who may have more experience growing them than anyone. Stan Sowinski from Endless Mountain Vineyard received an education grant from the Pennsylvania Wine Marketing and Research Program to bring John to northeast Pennsylvania. **John will lead a seminar and discussion about the cultivation of cold hardy hybrid cultivars on Thursday, August 15th at Grovedale Winery in Wyalusing, PA. Click [HERE](#) for a schedule and location of events.**

Berry Water Balance and Taming Big Vines: I lament the loss of *Practical Winery and Vineyard* magazine from the landscape of grape growing and winemaking publications. For 3 decades or so, publisher Don Neel delivered practical information that, as a wine grower I counted on and used in the vineyard, and as an extension agent it helped to keep me current with important issues in the vineyard, cellar and research labs across the U.S. Now it appears in a greatly diminished form in [Wine & Vines](#), having suffered the same fate as our own *Wine East*, but I suppose we should be grateful both have not vanished completely. For this reason, *Wines & Vines* is now an extremely important resource to commercial wine growers, along with *Wine Business Monthly* they are the key sources of published wine and grape production information. I strongly encourage commercial wine growers to subscribe to both magazines.

In the July issue of *Wines & Vines* [Dr. Markus Keller](#), viticulture researcher from Washington State University, who wrote the excellent *Science of Grapevines* textbook, addresses the issue of “water balance of grape berries.” In wet and dry regions alike, water balance is critical to wine quality, but it is easier to manipulate in arid wine regions. Unfortunately for most of the humid Eastern U.S. the availability of rainfall, particularly during the critical post-veraison period, complicates the balance in our effort to create an optimally ripe berry. Dr. Keller likens the berry to a checking account with inputs (phloem and xylem inflow) and outputs (berry transpiration and xylem backflow), but in situations when these are not in equilibrium, berries can split (too much inflow) or dehydrate (too much outflow). What is complicated for us is the way water is made available to the berry. In dry regions drip irrigation is carefully regulated to maintain a stable berry turgor. In areas of rainfall (or overhead irrigation) water is sprayed over the canopy which increases humidity and decreases berry transpiration, slowing a critical output source. Also, previous work by Dr. Keller has demonstrated that water migrates across the berry skin, even in a submerged environment. If berries crack, they rapidly lose soluble solids and, as Eastern growers know from the fuzzy moustaches, are openings for botrytis. I have wondered if our warm day-night temperatures and high humidity might be a net gain for us in developing flavor and tannins, but it appears that any benefits are probably thwarted by the added risk of dilution and disease. This fine hydrological balance in the berry all rests on the amount of rainfall, especially after lag phase when berry engustation occurs (expansion by water intake) and most importantly after veraison, and hence all the effort we must expend to create a balanced and well-aerated canopy, and to drain the soil to its maximum dryness. Keep the canopy dry and roots from excessive moisture (within tolerable limits) when the fruit is trying to ripen. The work of Tony Wolf in Virginia and Alice Wise on Long Island address many of these issues, expressed as excessive vine vigor but all driven by soil moisture.

Oh, and speaking of canopy balance... I was fortunate to be a grower in Oregon when Scott Henry in the Umpqua Valley invented the vertically divided training system that is appropriately named after him. Scott became world-famous and spent many years traveling the globe, explaining his new system and fly fishing, his first love ahead of growing fine wines. Some guys have all the luck! In the same issue of *Wines & Vines*, in the PWV column, [Dr. Richard Smart](#) introduces us to another divided system called the

“double header” developed by Terry Bennett at [Home Hill Vineyard](#) in Tasmania’s Huon Valley. I like this system because like Scott’s it offers a way to use cane pruning in vigorous, cool climate vineyard sites. Dr. Smart reminds us of some of the key indices of balance: 30 buds per kg of pruning or pruning weight (13 buds/lb) and a maximum of 15 shoots per meter (4 shoots/ft), and there are many others, like cane weight (20-40 grams) that indicate if site capacity and vineyard design were properly correlated (see *Sunlight into Wine* – Winegrape Canopy Ideotype on page 28-29). If balance is not achieved (ideally through proper site evaluation and vineyard design), then band-aid viticulture takes over and the scramble to bring vines into balance, to push or pull vine vigor is how I describe it. The double header system is designed to pull vine vigor back, while keeping canes at a reasonable length (< 2.5 ft). I guess you might also call this Medusa training since it involves the creation of a two-headed vine, either from one trunk, or conveniently for many cold areas, a bilateral head on each of a double trunked vine. The tough part of this system is the acknowledgement that vines are too close and the removal of every other vine to accommodate the necessary bud count on each vine, so a 5’ spacing become 10’ on a quadrilateral VSP that, unlike divided systems, remains truly vertical shoot positioned. No trellis manipulation is necessary. Mr. Bennett claims that fruit quality is better and yields are higher, in his case 3.5 t/a on Pinot noir. It remains to be seen if the double-head vine idea is widely adopted in cool and high vigor wine areas as Scott Henry and Lyre have been, but it adds another option for growers to choose from, and that’s never a bad thing.

PA Quality Assurance Seminar on Berry Shivel: In recent vintages I have seen it more often before harvest, especially in red varieties, variations on cluster degradation such as bunch stem necrosis and berry shivel. Berry shivel is not the dehydration effect that Markus Keller talked about caused by more output from the berry than input. These are physiological disorders that cause the berry to stop accumulating sugar that results in unripe fruit and poor wine quality. The Pennsylvania Quality Assurance is a consortium of growers dedicated to improving the quality of their wines through continuing education. Each year they sponsor a seminar, selecting a topic of interest to their members then finding an expert speaker who can address it. This year they have invited [Dr. Baskhar Bondada](#), grapevine physiologist from Washington State University who has a particular interest in berry shivel, and other aspects of berry physiology and histology. Here are two good background articles about berry shivel and related disorders: [Distinctive symptoms differentiate four common types of berry shivel disorder in grape](#) (Krasnow, et al. *California Agriculture*. September 2010) and [Berry Shivel: grapes behaving badly](#) (Bondada et al. *WSU Wine and Grape Research and Extension Newsletter*. Fall/Winter 2005). **SEMINAR INFO: Tuesday, 6 August from 9 a.m. to noon at the Penn State Berks Campus in Reading, PA.** Cost is \$35 per person. Click [HERE](#) for more information and registration.

PSU Research Viticulturist Candidate Seminars: It’s really important to get wine industry insight and feedback from the research viticulturist candidate interviews. I urge grape growers and wine makers to attend any or all of the three remaining seminars from 10:15 to 11:15 a.m. on July 2, 18, and 30. You can attend the seminar and have lunch with the candidate if you go to Room 424, Agricultural Administration Building on the main Penn State campus, or participate via polycom at Lancaster, Erie or Suquehanna extension offices (call each location for details). An announcement is forthcoming with the website to view the recorded seminars. Your feedback to Rich Marini, the Plant Science department chair, will be invaluable and appreciated. Please contact Mark Chien for more information or click [HERE](#) for a schedule and information. **TOMORROW’S CANDIDATE IS DR. MICHELA CENTINARI FROM THE UNIVERSITY OF BOLOGNA AND CORNELL UNIVERSITY.**

Reminder: SO2 Management Workshop on July 9 at Penn State Food Science with Denise Gardner and Dr. Ryan Elias. Click [HERE](#) for program and registration. Check the [PWGN Events Calendar](#) for upcoming events around the region.



Dave Scurlock, viticulture outreach specialist at the Ohio Agricultural Research and Development Center showed these two photos in a recent OGEN of high-wire Chambourcin before and after shoot positioning. Note the effect of both shoot position and cluster exposure after combing. Timing is critical for the best effect and least damage to still tender shoots. The open canopy allows more light, air and spray penetration to the fruit zone and interior of the canopy, all huge advantages when managing disease and promoting fruit ripeness in a difficult season. One risk is sunburn to fruit if a heat spike occurs after combing. In this case, a couple of pictures are worth a thousand words!

P.S. I do not do wine marketing but I understand how important it is to the wine industry. What appears in the popular media is a bell-weather of our progress as an industry – and how well or much we are getting into the consciousness of the consumer, either at the local level or beyond - Virginia and the Finger Lakes are probably the most notable examples in the Eastern US. Just yesterday, however, I couldn't help but notice two complimentary articles about Pennsylvania wines: [Lancaster County Growing a Variety of Fine Wines](#) by Jane Holohan in the Lancaster Intelligencer-Journal and [State of Un-Commonwealth: Pennsylvania's Struggle to Produce Quality Fine Wine](#) by wine blogger Joe Roberts in the Palate Press. Among all industries, progress in agriculture is slow, and in agriculture, perennial crops are really slow to change, and wine may be the slowest of all. But with knowledge and technology, we can do in decades what has taken centuries in the old wine world to achieve. It is patience and persistence driven by passion that is rewarded in our business.

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