



WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION

From Penn State Cooperative Extension

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Upcoming meetings: We are still in the thick of the winter meeting months with plenty of great events around the region. Coming up in Pennsylvania are the [new grape grower workshop](#) (3/8) and a [grape IPM workshop](#) (3/19), both in Lancaster. IPM will focus on post-veraison threats and challenges in the vineyard. Also in Lancaster for its second year is the [Eastern Winery Exposition](#) with very attractive vit-enol sessions and an bigger trade show. The [Pennsylvania Winery Association](#) hosts its annual meeting at the Lancaster Marriott Hotel on March 5. [Wineries Unlimited](#) is in Richmond from March 12-14. For Pennsylvania licensed pesticide applicators there is a [pest manager's school](#) (3/5) in Lancaster that offers a core and category credits. Please check the [PWGN regional calendar](#) for events that interest you in your area.

Research abstracts: The goal of research abstracts is to distill complicated viticulture research articles to their essence and make the information more accessible to grape growers. Projects are mostly drawn from the [American Journal of Enology and Viticulture](#), and in the past, from USDA Viticulture Consortium funded research. Bibiana Guerra has produced [two new viticulture research abstracts](#) titled, *Evaluation of chemical and natural resistance inducers against downy mildew* and *Foliar application of abscisic acid increases freeze tolerance* that address two important current topics facing Eastern U.S. wine growers. Bibiana is a technical author who writes regularly for Wine Business Monthly, and has appeared in Practical Winery and Vineyard. She was a member of the editorial panel for The V&E Review, a series of viticulture and enology research summaries published by UC Davis. Bibiana is currently the grower relations liaison for Bogle Vineyards in the Sacramento Delta region. The [Pennsylvania Wine Marketing and Research Program](#) provides funding for research abstracts.

Meeting reports: observations from the field and classroom - Denise Gardner has provided [reports](#) from the grape and wine session at the Mid-Atlantic Fruit and Vegetable Convention and her PA Wine Quality Initiative workshop. Xavier Chone and Jim Law gave a seminar on vineyard terroir at [Blair](#)



[Vineyards](#). Jim illustrated the tortuous path to understanding the soils at [Linden Vineyards](#) and how specifically adapted each type is to a grape variety. Only by planting and making wine over the years could he make these determinations. Now, with modern vineyard assessment knowledge and tools, growers are able to analyze their sites for quality traits that took Jim years to discern (see his article [Finding my Terroir](#)). Jim is an empirical wine grower who observes cause and effect in this vineyard and cellar and then makes the necessary corrections. He has used viticulture travel to inform himself of the best practices that he can adopt at Linden. While spending a very cold morning in soil pits with Xavier we learned about the complex relationship between soil characteristics (mainly physical and chemical properties), grapevines (rootstocks in particular) and how soil moisture and fertility impact wine quality. Root structure and orientation is mostly determined by soil composition rather than any predisposition or growth habit. In fact, it was rather surprising to me to see *Riparia*

Gloire roots at one meter on 3-year old Cabernet Sauvignon vines on very stony soils. We discussed vine-soil water relations a lot and the need to monitor vine water status which he prefers to do using a pressure bomb to measure stem water potential throughout the season. Because our region can experience somewhat severe mid-summer drought, having irrigation available, particularly on light soils, maybe be a necessity, but knowing when and how much to irrigate is the key, and a big hole in our viticultural knowledge in the East. In a nutshell, for the production of fine wine (red and white but particularly red) creating a mild water deficit at critical points during the growing season helps to set berry size and push fruit towards ripeness. This involves limiting plant available soil moisture and nitrogen availability in the soil. Water is a conduit for nitrogen to the vine which exacerbates vigor and all its wine consequences, so the impact of N and organic matter are important to managing vine behavior and wine quality. Soil consultants from California have explained how they use soil pH as a tool to manage nutrient uptake, and thus soil capacity and vine size. Xavier described how copious amounts of lime (up to 50 tons per hectare) are applied to adjust soil pH. His concern for excess soil nitrogen supersedes any limitations that pH may have on micronutrients. This discussion brought to mind fascinating research by Dr. Terry Bates in low pH soils in western NY, including a [trial on young Concord vines](#) (please read this!) and another on 3 *vinifera* varieties on different rootstocks and soil pH. I visited the wine trial one summer and the impact of soil pH and rootstock was visually dramatic, and clearly evident to me in the Cabernet Sauvignon experimental wines. The East is a wine region with generally fertile soils and a humid, continental climate this effect can be difficult to achieve. It's mostly about site selection and finding well-drained soils, but it is also about using all of the viticulture design and management principles and practices available to manage vine size and balance including, but not limited to artificial soil drainage (tiling, French drains, etc), hillsides and slopes, soils with low to moderate pH range, low fertility sites, lower vigor rootstocks, planting the right variety in the right soil (and meso-climate), using transpiration as a tool to rid the soil and vine of moisture by using cover crops to manage vine vigor, and irrigation to assist in drought periods (often in July), and letting the canopy grow in wet periods. We had, what for me, was a surprising and perhaps enlightening conversation about vine density and spacing. Xavier believes that distance between rows is as important, if not more important, than distance between vines for fruit quality (and quantity), that close spacing engenders root competition that encourages deep rooting, an idea that was perhaps validated by those deep *RG* roots on young CS vines. His visit, like most thought-provoking experiences, left in its wake more

questions than answers for us, and encourages a more thoughtful examination of some fundamental viticultural principles, and hopefully more research to answer some of these questions. I encourage you to read [Remedy for Underperforming Cabernet Sauvignon](#) in *Vineyard & Winery Management* which illustrates Xavier's basic principles in action in Napa Valley, understanding that this is a different climate than ours but the wine goals may be similar to yours, and that grapevine biology and physiology is the same no matter where they are planted. You can read research and trade articles by Xavier, Jim and Cathy Peyrot des Gachons on the PWGN website.

Grapevine Red Blotch Disease: it's a dangerous world out there for grapevines – there are the [associated leafroll viruses](#) (2-10), phytoplasma ([N. American Grapevine Yellows](#)), our old bacterial nemesis crown gall is never far away or not causing trouble, nepoviruses like Tomato Ringspot virus are often found in older vineyards, and now Grapevine Red Blotch disease, a geminivirus, has been found in Eastern vineyards. When I arrived in the area in 1999 I was rather aghast at the condition and open trellis in many vineyards, especially older ones. After learning more about trunk diseases, winter injury and this formidable array of maladies that can weaken or kill vines, young or old, I simply started calling it vine decline. It appears that our new vineyards are doing better, the key is good care and healthy plant materials from the start, but the threats continue to build and keep nipping at the heels of grape growers. How do we know that Red Blotch is here? If you appreciate a good detective story then you should read Lucie Morton's article in the February issue of *Wine Business Monthly* titled [On the Trail of Red Blotch Virus: View from the East](#) (page 132). Lucie has always had superb observation and diagnostic skills, from her experience as an ampelographer and her interest in grapevine trunk diseases. Using her keen senses and logic and with the help of a national who's who cast of grape pathologists, she was able to gather the evidence and have the right labs analyze it. Of course, like most new vineyard problems, it raises more questions than answers. In the same WBM issue, Mark Greenspan also addressed Red Blotch in his monthly column: [Meet Red Blotch](#) (page 128). A lot of resources are being thrown at Red Blotch. [USDA National Clean Plant Network \(grapes\)](#) has produced an [information fact sheet](#) and will offer a [webinar about Red Blotch](#) on March 27th (pre-registration is required). Grape growers should understand and be able to identify the visual symptoms that characterize Red Blotch and the leafroll-associated viruses, and for that matter, Pierce's diseases and N. American Grapevine Yellows. All of these can negatively affect fruit quality (insufficient ripening) and ultimately vine health and survival.

UC Davis RAVE: No, it's not a freaky warehouse party in California but instead a chance to get instantly informed about all the viticulture and enology research going on at UC Davis, which, along with Comell, represent the two biggest research and extension programs in the U.S. On March 14, RAVE will cover a wide array of topics, from berry ripening to vine biology, irrigation management, cap extraction, soil microbial ecology, news about phylloxera and more. Past RAVEs are archived on the [UC Integrated Viticulture website](#) and are an outstanding information resources, browse the topics to see which ones can be helpful to you.

Pest Management from VineSmith: 2011 and 2012 were not easy disease and pest management years. Jeanette Smith is a vineyard consultant in Virginia who has been a grape extension agent, grower liaison for one of the biggest wineries in Virginia and managed vineyards, she is one of the best IPM advisors in the region. Anyone has been around knows about her annual [vineyard pest management toolkit](#). *VineSmith's Vineyard Pest Management Tool Kit enables you to quickly and easily select the best fungicide, insecticide or herbicide for the job. Every pest management product carries a long litany of application specifications and restrictions. Each year, some of these restrictions change, new products are registered and old products are taken off the market. Keeping up with these changes can be*

daunting. The Tool Kit consists of three posters that display updated important information about each registered product in a table format. The layout allows you to, at a glance, compare your options and select the right material for your situations. VineSmith releases a new edition of the Tool Kit every two years. For \$59 (plus tax, S&H), you receive a Fungicide Guide poster, Insecticide Guide poster, Herbicide Guide poster, and "Planning a Vineyard Pest Management Program" booklet.

Viticulture Research Position at Penn State: The Department of Plant Science at The Pennsylvania State University is seeking a dynamic individual for a tenure-track, 9-month Assistant Professor with 75% research and 25% education (resident and/or extension) responsibilities. To view the full position announcement, please go to https://app2.ohr.psu.edu/jobs/home_EJMS/view_faculty.cfm#38847

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