



WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION
From Penn State Cooperative Extension

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The New PA Wine Grape Network Website: I'm pretty much a one-man show here with limited time and resources but I have always aspired to a grandiose web site, like Ed Hellman's *Texas Winegrape Network* (<http://winegrapes.tamu.edu/>). Well, reality check. I am now offering a slimmed down version of the Wine Grape Network website that will feature selected articles and links that I believe will be of interest to commercial wine growers in the non-western states, and an archive of my newsletters. I will also post as much of the workshop materials such as speaker presentations and handouts as possible. There is also a calendar of events for Pennsylvania and the surrounding area. There is a wealth of information on the web and in print from sources such as Cornell, Virginia Tech, Univ of MD, Ohio State, Texas, UC Davis, Ontario and much, much more. It's impossible to digest all of it so the shrewd grower targets the best sources and visits or reads them regularly. I like newsletters from Alice Wise on Long Island, Hans Walter-Peterson in the Finger Lakes, the Lake Erie Regional Grape Program, Appellation Cornell (Tim Martinson, et al.), Viticulture Notes from Dr. Tony Wolf, the Ohio Grape Electronic News from Ohio State, these are the key regional viticulture information outlets that will keep you informed of what's going on. UC Davis offers the Integrated Viticulture, Foundation Plant Service and National Grape Registry, all outstanding information sites. The more you explore, the more you can learn, but at some point you have to actually pick the information you can use and get into the vineyard and use it! I would like to express my appreciation to Harry White and Scott Gibson at Axiom WebWorks and Carol Lee Shirk in the Lancaster Extension office for their help in developing the new Wine Grape Network web site.

To visit the Pennsylvania Wine Grape Network web site go to: <http://pawinegrape.com/>

Penn State Extension Enologist: Extension Enology: I am proud to announce that Denise Gardner was the successful candidate for the Penn State extension enology position. She was the search committee's choice among 36 applicants for the job, and five highly qualified finalists. The search committee (chaired by Dr. Rob Crassweller, Penn State Horticulture) would like to thank members of the wine industry for their participation in the search process, in particular Mario Mazza who served on the committee and made many trips from Erie to State College for meetings. On a personal note, I have known Denise since she was a sophomore in the outstanding ag science program at Conrad Weiser HS in Berks County. It's rather unusual for a young student to express an interest in grapes and wine, but there she was, doing papers on phylloxera, grapevine tissue propagation with the help of faculty at Cornell, a co-fermentation experiment with Joanne Levensgood at Manatawny Creek, then traveling to France for a summer to work at the research lab at Lallemand and another summer in Napa to help Taryn Bauerle with her root physiology research. Denise is an overachiever who always delivers more than is expected of her. She graduated from the Penn State food science program with a minor in horticulture and went on to get her M.S. with Bruce Zoecklein at Virginia Tech, doing research on electronic nose technology. After VT she landed the top sensory job at Vinquiry, which morphed into Enartis and moved to Napa Valley. Her heart, however, was in the East and so she has returned to help the wine industry in Pennsylvania, where she is the ultimate example of a home grown product. Denise is young, bright, enthusiastic, talented and energetic. Her accomplishments will be measured largely by her work but I think what will make her a fine extension educator is her personality, which is unabashedly optimistic, friendly and polite. She will run circles around me but I hope that together we can deliver extension programs that will really push the quality of Pennsylvania wines even further. I hope that everyone in the wine industry will welcome and help her as she learns again who, what and where we are. We are fortunate to get her, persons of her caliber are in high demand and I am certain she will make a major contribution here. I would like to thank the other candidates for the position and hope that they might find their way to Pennsylvania in another capacity. We can use all the talent we can get. Members of the search committee include chair Rob Crassweller (horticulture), Bill Kleiner (SE Region extension director), Ryan Elias (food science), Kathy Demchak (horticulture), Andy Muza (horticulture extension in Erie), Mario Mazza (Mazza Vineyards) and myself. Dr. John Hayes and Dr. John Floros also participated in the process. Denise begins her new job on May 2nd and will be based in the Food Science Department at University Park (State College).

PWA Annual Conference: The Pennsylvania Winery Association will host its annual conference at the Penn Stater Hotel and Conference Center on Tuesday, April 19th. The meeting is a great opportunity to get together with friends in the wine industry and hear outstanding speakers in grape growing, wine making and wine marketing. This year we will have two speakers from Cornell – Dr. Terry Bates will talk about vine nutrition and Chris Gerling will address the problem of methoxypyrazines in wines. Cornell has a huge and internationally respected V&E program and we are very lucky they are willing to share their goodies with us. You don't want to miss these presentations. There is the PWA annual business meeting and the awards banquet in the evening. This is the one opportunity that we gather as an industry so I hope that everyone will make an effort to come. State College and the university have a lot to offer, among the choices are the university creamery, art museum, bookstore and much more. For information and registration, please contact the PWA office at 717.234.1844 or at info@pennsylvaniawine.com.

Wine Grape Integrated Pest Management: We had a very successful IPM workshop in Lancaster that was broadcast by video teleconference to Erie, Susquehanna and Washington counties. IPM is an

appropriate topic for every growing season and is counted among my Big 3 in annual quality management for wine grape quality along with canopy management and crop regulation. In any given season, good or bad, these three contribute to clean and ripe fruit that wine makers need to make good wine. NOW is the time to be thinking about your IPM program for the upcoming season. 2010 was no slouch when it comes to problems, we had a wet, cool and long spring that affected bloom and offered up its share of disease problems. That morphed into the dry season we remember but there was no shortage of disease problems after veraison including powdery mildew and bunch rots, especially in white varieties. Growers simply cannot be complacent in our region with our growing conditions. So we await what Mother Nature will throw at us this year. It's time to sit down and review last year's conditions in the vineyard and spray program and fill the gaps. We have new products available for combating fungal diseases and the stand-by cultural practices that are effective and timeless. These were explained in great detail by our speakers, in particular Dr. Mizuho Nita, the grape pathologist at Virginia Tech who summarized his research and discussed grape IPM in his presentations (available for viewing on the Wine Grape Network). I encourage grape growers to visit Dr. Nita's disease blog at <http://grapepathology.blogspot.com/> for regular updates of what is happening in Virginia during the growing season, which, conveniently for Pennsylvania growers, often occurs about a week before we see it here. Virginia also has its own grape disease and insect management manual, which is available on the web. Jeanette Smith has about as much wine grape growing experience as anyone I know in the Eastern US. She worked for Cornell extension on Long Island and has been a grower, consultant, vendor and grower relations manager in Virginia. Her consulting company is called **VineSmith** and for over a decade Jeanette has been producing pesticide fact sheets that give the grape grower a global view of fungicide, insecticide and herbicide products. It is an outstanding resource that she updates every year to keep it absolutely current. You can find more information about her *Pest Management Toolkit* at her website <http://www.vinesmith.com/>. Have you ever wondered where your spray material is going and ending up? A spray patternator is a tool for airblast sprayers to measure where materials are going. Marty Keen is one of our most innovative wine growers. He is an engineer and tinkerer without rival. Using NE SARE grower grant funds he has devised a low cost patternator that any grower can build and use to test the effectiveness of an airblast sprayer. His presentation is available on the Wine Grape Network web site. Dr. Noemi Halbrendt and Bryan Hed of the Penn State grape pathology team also gave excellent presentations on powdery and downy mildews and bunch rots. As well as we possibly could manage, we attempted to record the IPM workshop, which can be accessed at http://vcmedia.psu.edu/viewerportal/vmc/channel.do?channelId=esc_channel:71712465. The entry password is 1110356. Finally, a plug for two critical documents for the serious commercial wine grower in the East: The *2011 New York and Pennsylvania Pest Management Guidelines for Grapes* is THE foundation document for developing a successful IPM program for vineyards in the region. Tim Weigle and colleagues at Penn State and Cornell update this volume each season. It contains information about disease, insect, and weed control as well as spray technology and calibration information, pesticide labeling and safety information. You can find a copy on the web but I highly recommend that you purchase the laminated copy for use in the field. <http://ipmguidelines.org/grapes/>. Most growers do not fully appreciate the complexity of applying pesticides. It's unfortunate for both the efficacy of the application and the sustainability of the vineyard ecology and human health. For those who wish to understand the minutiae of spraying, spray technology and materials the new book by Dr. Andrew Landers is the book that tells all. *Effective Vineyard Spraying* will save you money and increase the quality of your fruit if you use it. Dr. Landers is the foremost authority on vineyard spraying and he has squeezed his considerable knowledge into the 261 pages of his book that includes an instructional CD. I highly recommend it to all commercial wine grape growers. <http://www.effectivespraying.com/>.

Resistance Management in Vineyards: As growers we are fortunate to have numerous tools available to combat diseases and insects in the vineyard. Regardless of method, conventional, organic, biodynamic or other, these materials should be used correctly and responsibly. In a time of increasing government regulation and costs, growers need to protect their tools as much as possible. Tim Weigle has been the senior extension associate in charge of the New York grape IPM program for many years. Tim is the lead editor of the *NY/PA Pest Management Guidelines for Grapes* that undergoes review and revision each winter and was the coordinating editor for the *2010 Production Guide for Organic Grapes* - http://www.nysipm.cornell.edu/organic_guide/grapes.pdf. Recently, Tim wrote an excellent article for the Lake Erie Electronic Crop Update (3/24/11) that clearly explains the problem of resistance and how growers can manage resistance to pesticide products. It is reprinted here with his permission and my gratitude. I encourage wine grape growers to visit the Lake Erie Regional Grape Program website at <http://lergp.cce.cornell.edu/>.

Resistance Management by Tim Weigle, Cornell University, NYS IPM

As I was working on the Grape Guidelines this year it struck me how far the industry has come in the registration of materials for use against pests in New York and Pennsylvania vineyards. And the next thought in that process was how do we keep all these materials available and effective for years to come. The obvious answer is resistance management. With the abundance of materials it would appear that resistance management should be one of the easier tasks facing grape growers these days.

However, resistance management is aptly named as it takes some time and effort on the part of the grower (management) to ensure that an effective strategy is in place to battle resistance. Currently I see three potential challenges to implementing a good risk management strategy.

1. Active ingredients. A quick look at the 2011 NY & PA Pest Management Guidelines for Grapes shows a total of 17 insecticides available for use against grape berry moth in the midsummer sprays. It seems reasonable that you would be able to rotate between the 17 and have no problems with resistance. However, a closer look at the common name of a chemical helps to give a better understanding of what chemicals are closely related.

While it is obvious that switching between Sevin 4F and Sevin 80WSP will have no effect on managing resistance as they both have the same active ingredient (carbaryl). What can be confusing is changing between the myriad of insecticides that have different names (name brands and generics) or have multiple modes of action. The best way to determine if your resistance management strategy can be effective is to look at the active ingredient on the label. Below is a table of insecticides labeled for grape berry moth in both NY and PA.

Insecticides ranked as highly effective against GBM:

<u>Trade name</u>	<u>Active ingredient</u>
Altachlor	(chlorantraniprole)
Baythroid	(beta-cyfluthrin)
Brigade	(bifenthrin)
Danitol	(fenpropathrin)
Imidan	(phosmet)
Sevin	(carbaryl)
Brigadier	(bifenthrin and imidachloprid)
Leverage	(imidachlorpid and beta cyfluthrin)

Looking at the list it appears there are a number of different active ingredients/modes of action that can be used. If you take the next step to group the insecticides into active ingredients/modes of action you come up with

1. Altachlor
2. Baythroid (same chemical class as bifenthrin), Brigade, Brigadier, Leverage
3. Danitol
4. Imidan
5. Sevin

So we went from 8 materials to 5 groups of materials. Rotating materials between groups will be effective but rotating materials within group 2 will have a negative impact on resistance management. For those of you who are wondering why Brigadier and Leverage are not in their own group due to the inclusion of imidachloprid in the mix, it is because imidachloprid is in the mixture for its effectiveness against leafhoppers and other sucking insects. It has no effectiveness against grape berry moth and therefore would not be a factor in a resistance management strategy. Make sure to check the label and understand how the material works (active ingredient/mode of action) to ensure that you are rotating materials during the growing season.

The good news for growers with vineyards in Pennsylvania is that you have three additional materials Belt, Intrepid and Voliam flexi. These add three different modes of action to your grape berry moth arsenal.

2. Increase in the number of restricted use products. Through both federal regulations and those in New York State the number of products that are designated as restricted use continue to increase. What does this mean to growers? To apply restricted use materials you must be certified as a private pesticide applicator or work under the direct supervision of a certified applicator. In addition only certified applicators can purchase restricted use pesticides. Breaking down the previous list of insecticides you will see that without an applicators license the choices are limited.

Trade name

Altachlor	Restricted use
Baythroid	Restricted use
Brigade	Restricted use
Danitol	Restricted use
Imidan	Restricted use
Sevin	
Brigadier	Restricted use
Leverage	Restricted use

Even if you go into the materials that are ranked as moderately effective you have

Lannate	Restricted use
Avaunt	

Once again, vineyards in Pennsylvania have three additional materials to use as Belt, Intrepid and Voliam flexi are not restricted use. So, if you are not a certified pesticide applicator, you may want to look into getting certified, and if you are a certified pesticide applicator we hope to see you at our meetings over the coming growing season so you can get those ever important recertification credits.

3. Cost – The continued increase in inputs have growers trying to produce a quality crop while fighting to keep a reasonable profit margin. There is a tendency to purchase and use the product that costs the least. Remember that cheapest does not always mean the least expensive. A material that is only moderately effective and needs repeated application can end up being much more expensive than a higher priced material that gets the job done the first time. When developing a pest management strategy (and resistance management strategy) make sure you look at the efficacy of the material against the pest you are going for as well as the cost. Also, keep in mind that rotating some of the newer materials with different modes of action (while

sometimes being more expensive) can help to insure that you do not develop resistance to the tried and true, older, less expensive materials, which means you will have them to use for years to come.

Resistance management is important in all aspects of your vineyard Integrated Pest Management strategy whether you are looking at insects, diseases or weeds. If you would like help developing a vineyard IPM or resistance management strategy please give me a call at 716.792.2800 x203

The New York Wine Industry Workshop: There are not many opportunities for wine makers to learn about the latest ideas and technologies for the winery and the Wine Industry Workshop, in its 40th year, is the premier technical event for wine making in the East. It is from April 13 to 15 at the Ramada Inn in Geneva, NY, which is at the north end of Seneca Lake and is the location of the NY State Agricultural Experiment Station. You can find the complete program, information, registration and hotel information at <http://grapesandwine.cals.cornell.edu/>.

Cool/Cold Climate Wine Growing: As climate change arrives it is unusual to hear much about cold climate wine growing yet the introduction of new cold hardy hybrid grape varieties as well as viticulture technologies have greatly expanded the range of fine wines into colder areas where it was very difficult if not impossible to ripen a grape or even keep a vine alive. I was recently in northwest Michigan in the Leelanau and Old Mission peninsula areas and back in Nova Scotia to give talks at grower meetings and was very impressed by what I saw, heard and, most of all, tasted during my brief visits. Michigan was a shining example of an emerging cool climate region. I was told the average winter snow accumulation in the region is 12-16 FEET. Yikes! Count me out. But for the hardy souls who endure the winter for the beautiful but short summers, fine wine is possible. A map of the region is very reminiscent of the Finger Lakes, with long, north-south extending bodies of water and narrow slivers of land that are very much affected by the water. In NW Michigan, cherries rule the local agriculture but grapes are mixing with large houses in this area that is prized as a summer vacation area by the urban folks to the south. In a little over two days I visited many vineyards and wineries with my Michigan State University extension hosts and tasted over 60 wines, not detecting a single technical flaw among them and tasting the delights of aromatic white wines with incredibly zesty fruit and vibrant acidity. Riesling is the flagship and it can be superb. Also Pinot Gris/Grigio, Gewurztraminer, Pinot Blanc, Sauvignon Blanc, Auxerrois, Gruner Veltliner are all available along with a full line of white hybrid varieties. But it's very much a *vinifera* culture here despite the cold and they are learning to adapt the vine to the climate. The reds are delightful but not quite to the level of quality of the white wines with a focus on Pinot Noir and some very classy blended wines. Farming in these conditions requires creativity and innovation so I wasn't surprised to see Cabernet Franc and Merlot begin grown in Haygrove high tunnels by Marsh Farm Management Co. They are learning how to adapt the vine to indoor conditions, warming the vine during the day and opening window vents to cool them at night, as well as control disease and acclimate the wood for winter. 2300 growing degree days and a season of 150-160 days does not leave a lot of spare time for an idle vine. Needless to say, vintages like 2007 and 2010 produced wonderful wines and 2009 was, well, we don't talk about it. But the white wines from 2009 were generally very good. I met many of the professional growers and wine makers in the industry and they are generally young, smart, enthusiastic and very talented. They are learning the local terroir and cooperating to push wine quality. Besides the short and cool growing season, winter injury and a lack of vine/vineyard uniformity are challenges to consistent wine quality. The vineyards in the southwest, like our Erie, mingle with juice grapes but some standout wine growers are appearing. MSU has a fruit research station on the Leelanau Peninsula that is devoting more time to helping the wine industry. For an industry that is

slightly smaller than Pennsylvania's, they have a dedicated research viticulturist in Dr. Paolo Sabbatini, and well established entomologist (Dr. Rufus Isaacs) and grape pathologist (Dr. Annemiek Schilder) and three extension educators including Paul Jenkins as a statewide viticulture and enology program coordinator who works with Duke Elsner in the northwest and Diane Brown in the southwest, and Dr. Tom Zabadal. About \$650,000 is available from legislative funding to the Michigan Wine Council. All of this demonstrates how under-resourced the wine industry in Pennsylvania is despite its continued growth. As in any emerging wine area the basics are needed – rootstock and clone research, mapping soils and climate, trellis, training and vine density trials, etc. But the overall quality of the viticulture was impressive and there is some serious investment going into the wine industry. There is a culture of fine wine growing in Michigan that is evident by the local wines available in restaurants and the buzz the wine industry is creating. It was definitely a good vibe. All of the above applies to Nova Scotia, also, where I spoke at the Grape Growers of NS annual meeting. Both regions are trying to figure out how to grow the industry and to an outsider the future looks very bright indeed.

RdV Vineyards and Rutger de Vink: I don't try to hide the fact that my goal since the moment I landed in Pennsylvania has been to help the wine industry in the Eastern US to make the best wine it possibly can. I was in Oregon when it happened there and so I can see it happening here, too. Just as an Allegro Cadenza made by the Crouch brothers guided me here in 1999, there are more beacons on the horizon of what is possible. It is not my habit to gush about wineries but there is a winery project in Virginia that is about to launch its wines that will set a new standard for what can be achieved in this region. I met Rutger de Vink in the early '90s when a great Eastern red wine was a mere glimmer in his eyes. Since then, he has done spectacular due diligence in the planning and development of a vineyard and winery unlike any other I am of aware of in the East. He spent three years searching for the ideal vineyard site then hired the best vineyard consultants from California and Bordeaux to help him to achieve its maximum potential. As a viticulturist who understands the problems created by soil moisture and fertility in Eastern wines, especially reds, this is the evidence necessary that site selection is the key that unlocks the door to fine wine. Jim Law, a close friend and advisor to Rutger has been telling us about this for years. The site is steep and rocky. It is planted to high density on low vigor rootstocks with new clones of Bordeaux red varieties. It achieves its desired vine size and balance and this is evident in the resulting wines. The vineyard has been tested. 2008 was a bit of a "normal" vintage. 2009 very cool and wet. 2010 warm and dry. The mark of a great site is continuity in wine quality across vintage variation and RdV achieves this. When the eventually wines came along, he applied the same strategy, seeking out the finest practitioners in wine making. A spectacular winery was built into a rocky hillside in Northern Virginia, caves and all. The singular focus on making Grand Vin is matched only among the best wine growers I have ever met. It has been a fun, educational, at times bumpy but always thrilling ride to this point of introducing RdV to the public. The opening is scheduled for May and I would encourage all wine growers to visit RdV and taste the wines. As an extension educator and wine consumer, this is an exciting moment me and our wine industry. You can visit RdV on the internet at <http://rdvineyards.com/>. David McIntyre, the wine writer for The Washington Post, recently visited RdV and you can read about it at <http://www.washingtonpost.com/wp-dyn/content/article/2011/03/15/AR2011031504565.html>.

Grape and Wine Research in California: If Cornell is the 800 lb gorilla of V&E research in the East then UC Davis is the King Kong of US V&E research (these comparisons are meant as compliments though tinged with jealousy). I try to go to California at least once a year to meet with practitioners and researchers because this is where the innovative action is (kind of like Willy Horton and banks). The

2011 Wine and Wine Grape Research Conference at UC Davis yielded some great material. Of course, leave it to Deborah Golino and her UCIV team to capture it all in excellent sound and video quality. Topics include:

- Breeding wine grapes for resistance to powdery mildew
- Integrated management of grapevine trunk diseases
- Grapevine leafroll virus effects on wine quality
- Alternative weed management strategies for vineyards
- Presentations about irrigation management and vine water status
- Various enology topics

You can access the presentations at the UCIV web site at <http://ucanr.org/sites/intvit/?uid=274&ds=351>. Thanks to our colleagues at UC Davis for making this conference available to the rest of the world.

Penn State's Budget and USDA Viticulture Consortium: It would be hard not to have noticed that the governor would like to cut the state's contribution to Penn State by 53%. Needless to say, this hits the College of Agricultural Sciences and Cooperative Extension with disproportionate force since neither receives tuition dollars in their budget. If you feel that the Wine Grape Program has made a positive difference to your business, a direct and sincere message to your legislators explaining the impact that extension has had on your business and the need to restore funding to cooperative extension would be helpful and appreciated.

At the federal level, the elimination of earmarks has led to the cancellation of the USDA Viticulture Consortium, which has funded critical, local viticulture research across the US for over the past decade. VC projects were peer-reviewed and noted for their "deliverables" to the wine industry. It is a blow for our researchers to lose this source of funding. I am in extension because I firmly believe in the value of viticulture research and education to drive improvements in grape and wine quality. If you share these values, it would be well worth some effort to defend them.

This publication is available in alternative media on request.

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Mark L. Chien
State-wide Viticulture Educator
Penn State Cooperative Extension
College of Agricultural Sciences
1383 Arcadia Road
Lancaster, PA 17601
Tel: 717.394.6851
Fax: 717.3943962
e: mlc12@psu.edu

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