



Alternative Wine Growing Ideas and Practices

A sustainable-organic-biodynamic viticulture workshop was held in Lancaster recently and was well attended. A friend counted license plates from 13 different states in the parking lot and participants attended from as far away as Ontario and North Carolina. This is a topic that appears to resonate with grape growers. In 2002 a similar 2-day workshop attracted a large audience. I have hosted and attended a lot of meetings in my 10 years in cooperative extension and none capture the attention and imagination of the audience quite like this subject matter. I consider the topics to be for the more advanced growers since it takes experience and knowledge to make many of these practices effective. But even the novice grower will benefit from the message of stewardship, vineyard floor and soil quality management, the relationship between canopy and disease management practices and the thoughtful and creative education and process that is necessary to successfully implement these production systems.

Consumers and growers alike have varying ideas and definitions for these non-traditional viticulture production systems but I like to lump them into the theme of reducing off-farm inputs and farming intentionally, intelligently and responsibly. They are each a form of stewardship of the land expressed by using different practices that consider the environmental, economic and social impact of every practice and material used on the farm. I like the idea of leaving the farm in better condition than when you arrived on it.

It is a bit ironic that these methods often require a return to more basic principles and practices in farming and a closer connection to the plant and the supporting ecosystem. In general, they are not well-suited for the lazy farmer. They require observation, critical analysis and thoughtful response in order to be employed effectively. More than conventional practices, they thrive on pro-active methods that rely on scouting and identification to thwart potential problems. Understanding the biology of the pest and its place in the farm ecosystem is a key component to successful control strategies.

We had a nice blend of academic and industry experience for this program. It demonstrated once again how innovators in the commercial sector are often ahead of the science in exploring new ways to grow better wine. But researchers like Bryan Hed are creating and testing new ideas that help to push the efforts of the growers even further. Bryan talked about his trace bloom leaf removal research and how, by restricting photosynthates to the inflorescence, fruit set is reduced and cluster compaction in tight varieties like Chardonnay and Vignoles can be reduced. It isn't without some side effects such as reduced crops and potentially lower return bud fruitfulness but the potential benefits in controlling fruit rots are significant. Bryan has also explained work done

on measuring the impact of leaving mummies in the vines or on the ground and how this can affect incidence of black rot. Sanitation in the vineyard is such an important part of any disease management program. You have to get rid of the bad guys or they will keep coming back in even greater numbers and cause problems. These are research methods that growers can test in their own vineyards.

You can read more about Bryan's work at the Penn State Erie Grape Research Station at: http://research.cas.psu.edu/Erie/plant_path.htm. This web site includes the *Disease Management Guidelines for Organic Grape Production in the Lake Erie Region*, four years of research data on the control of black rot using organic materials and grape disease fact sheets.

Bryan didn't have time to discuss the work led by Dr. Jim Travis on the use of compost in commercial vineyards, a three year project that looked at the effects of four different compost materials tested in commercial wine vineyards in SE PA. You can find the project report at

Dr. Glenn McGourty, the University of California farm advisor in Mendocino and Lake counties stopped on his way back from the Mountain Viticulture conference in Sicily and a tour of Italy to talk about organic and biodynamic practices used commercially in his region. There has been widespread adoption of organic practices among vineyards as a result of encouragement from large wineries such as Fetzer. Glenn covered a vast array of practices that are commonly used including:

- Integrated pest management
- Creating diverse habitats for wildlife, insects, etc.
- Use of cover crops to reduce soil compaction and create healthy soils
- Managing soil fertility
- Methods of weed control such as flaming and mechanical tillage
- Disease control and canopy management practices

There was nothing wildly out of the ordinary here. These are, if anything, conventional practices that many advanced growers are using but the timing and method of application are critical and there is not much margin for error. In fact, that may be the essential difference between organic and conventional production systems, the amount and types of materials applied.

I was a little bit insecure about having biodynamics as part of this program but it is a farming system that is being used and in the right hands they are producing some of the greatest wines in the world. To a large extent its methods are not scientifically validated but as a farmer for 20 years I never let the lack of science get in the way of trying something new. I emphasize that the adoption of any new practices should come with as much study and review as possible and in consultation with successful practitioners or extension educators they should be tested on a trial basis in a small plot experiment, preferably over a few years.

Glenn writes a regular viticulture column for *Wines & Vines* and is a contributor to *Practical Winery and Vineyard*. I highly recommend his articles as sources of very practical viticulture information. He has published a book on organic viticulture that will be available this summer. You can read more about his research at: http://cemendocino.ucdavis.edu/Custom_Program/

Lucie Morton is well known to Eastern wine growers. She has international viticulture training and experience and is an astute observer in the vineyard. In the very finest European tradition she is an empirical viticulturist par excellence. Lucie's game is seeing anomalies in the vineyard and then connecting the dots and figuring out cause and effect. She sees something in the vineyard then works methodically backwards to figure out why it's happening. She was a bit uneasy talking about bio-controls, a topic that is new to her but she is so well read in the international grape pathology literature that she is able to reach very far afield and pull in information that can help her clients (and the rest of us) to understand what is happening in the vineyard. For example, *Botryosphaeria* is a trunk disease that has been implicated internationally as a cause of vine decline but Lucie thinks its threat extends beyond the premature demise of vines. It may be causing stem and berry necrosis and also may be participating in graft union debilitation. These observations need to be worked out scientifically but Lucie is a keen observer who can open the door to science and, eventually, grape and vine improvements. I like the balance, objectivity and risk assessment that Lucie brings to her work. As a consultant she has to balance the risk of adopting new practices with her client's need to harvest a full and healthy crop and make money. You can see and hear Lucie at various viticulture meetings around the region or visit one of her vineyards and talk with the growers.

Two progressive wine growers gave excellent presentations of their vineyard practices. Barbara Shinn and David Page owned a restaurant in Greenwich Village but gave up city life for the bucolic surroundings of the North Fork of Long Island where they have established Shinn Estate Vineyard and a bed and breakfast business. From the very start their goal was to farm responsibly and sustainably. Their philosophy is to protect and enhance "the land, crop, wildlife and the people who farm it." These ideals led them to organic and eventually to biodynamic practices. The vineyard is a bit of an anomaly to the perfectly tended rows of golf course-like cover crops that you see in most of the vineyards on the North Fork. The cover crop extends fully under the rows and a variety of plant species grow throughout the season. I was impressed by Barbara's rigorous scouting practices. When she sees something suspicious, she labels and maps it and then returns frequently to observe any changes, right down to a single black rot affected berry. Black rot, as explained by many of the speakers, is the Achilles Heel of organic viticulture since the only effective approved control agent is copper, not a favorite treatment in the organic tool chest. Yet, with careful canopy management, good sanitation practices, cooperation from the weather and some copper, black rot can be held in check. Barbara and David place a great emphasis on the soil and have an in-house composting operation that helps them control exactly what goes into the soil. They are very willing to experiment with new methods and if a new practice works over a three year trial period it will be adopted into their regular management program. This kind of innovation and experimentation is an excellent way to improve the vineyard and the grapes that come out of it. You can learn much more about Shinn Estate Vineyards at their website: <http://www.shinnestatevineyards.com/>

I have written before about Black Ankle Vineyard and the admiration I have for Ed Boyce and Sarah O'Herron. They took the time to find a fine wine site in central Maryland and now the wines are validating their decision. Their stated goal is to make the best wine possible and they believe that sustainable-organic-biodynamic practices enhance the quality of their wines. However, if the situation in the vineyard requires the use of non-organic practices and-or materials to produce better grapes they will choose what is ultimately best for wine quality. I

admire them for adopting a flexible and blended approach to wine growing. So far, downy mildew and Japanese beetles have been their biggest problems. The beetle population diminished in '08 and '09 and they have been able to control downy mildew with small amounts of well-timed copper applications and judicious canopy management. They have been successful in their battle with fruit rots and even in the soggy 2009 vintage it was only a minor problem. A breezy site along with a moderate size vine and canopy allow for good fruit and canopy exposure. The benefits of good site selection on almost all aspects of high quality viticulture are almost too numerous to list suffice to say that a smaller to modest size vine is easier to manage than a big, vigorous one. They have planted varieties like Albarino and Gruner Veltliner that have thick skins and loose clusters, shoot thin and position carefully for best canopy architecture and cane pruning to minimize old wood accumulation. No herbicides have been used at BAV, they rely on flaming, mechanical tillage and hand hoeing to control weeds. Ed emphasizes that the key to successful mechanization is straight rows and trunks. All vines are very carefully trained using steel training stakes. Ed and Sarah do everything they can to protect and enhance their soils including making their own compost and purchasing a rear-tracked Kubota to reduce soil compaction. In the cellar they sort their fruit carefully and rely on a consultant from Bordeaux for help with the wine making. The results in the bottle have been most impressive. A straw tasting room continues the theme of sustainability into their marketing program. Their wines are widely available now in the Baltimore-DC metro area. BAV will host a Bordeaux Viticulture workshop on July 19th. Stay tuned for more information and registration. For more information about Black Ankle Vineyard go to: <http://www.blackankle.com/>

With a push from EPA Alice Wise developed a sustainable viticulture program for Long Island wine growers that would help to protect the shallow aquifer on the North Fork. The plan was modeled after existing programs in California and Oregon but fully adapted to conditions on Long Island. It was later used as the foundation for a statewide program called VineBalance that included hybrid and native varieties. A sustainable viticulture workbook was developed that growers can use to identify and/or adopt sustainable practices and track their use of them. Like the Oregon LIVE (low input viticulture and enology) program that I helped to develop, the practices should be viewed as the baseline for responsible viticulture practices. This is a very important document for the Eastern U.S. and it would be a good idea for all grape growers to compare their current practices against the recommendations in the workbook. Tim talked about the effort to measure the adoption of the practices among NY grape growers and potential impact that a sustainable program may have on marketing of grape and wine products. I would prefer that the focus remains solidly on the sustainable impact on the farm and not the store shelves. You can read more about VineBalance and see sample questions and a score sheet at <http://www.vinebalance.com/>

Dave Mattocks has 35 years of experience in the area of organic products in agriculture at Fertrell in Bainbridge, PA. He has always impressed me as a no-nonsense, straight shooter product vendor who wants to help his customers. He recognizes that our climate makes organic production a challenge in vineyards, especially with *vinifera* varieties. Dave talked about liquid and dry fertilizer products that are available for optimal plant development and production and strongly encourages regular soil and tissue testing to monitor plant nutrient status. He readily admits that most foliar products represent only a band-aid or maintenance effect on vine

nutrition. For disease and pest control they have a variety of products and options. The Fertrell web site is <http://www.fertrell.com/>

We tasted wines throughout the two day visits by the speakers to Pennsylvania and, since it is all about the wine, I should report that our encounters were very gratifying. A Syrah from Black Ankle was peppery and spicy in classic Syrah form, as well as concentrated and balanced. Their 2007 Crumbling Rock is a Bordeaux blend that borders on California fruit bomb proportions with its 15% alcohol and layers of dark fruit and concentration. It is a BIG Eastern wine! The Bordeaux blend from Shinn Estate was soft and elegant with complexity and great balance with lots of ripe, dark fruit flavors. Their Sauvignon blanc was absolutely bursting with tropical flavors, especially grapefruit, clean, crisp and fresh that would make a New Zealand sauvy blush and embarrassed by its carbon footprint. We also tasted a rare and outstanding Sangiovese from North Carolina. On the road we tasted memorable wines at Pinnacle Ridge Vineyard, Blair Vineyards and Galen Glen. If you have not tasted the true Vidal ice wine made by Galen and Sarah you NEED to make a trip to Andreas. It is superb. Bob Hackett has planted a vineyard on a superb site in New Tripoli and I fully expect it to produce memorable Pinot noir and Chardonnay.

This was a fun workshop to host. It was one that made the audience think about the ideas presented by the speakers and what they are doing in their vineyards. I could almost hear the thinking going on in the room. Viticulture is most exciting when growers are being challenged with new information and taking it home to grow better grapes.

I would urge all grape growers to read the *Wine Grape Production Guide for Eastern North America* (Wolf, et al.) and the *New York Guide to Sustainable Vineyard Practices: VineBalance* (Wise, Martinson, et al.) as two core documents to effective, sustainable and responsible vineyard management practices.

I would like to thank the speakers who helped me to deliver an outstanding program and offer my sincere appreciation to the vineyards that hosted visits from our speakers. The program was made possible by a generous grant from the Pennsylvania Wine Marketing and Research Program, Don Chapman is the chair and Ed Jansen is the research committee chair and it is administered by the Pennsylvania Department of Agriculture. I am grateful to my extension viticulture colleagues and staff at Lancaster Cooperative Extension for their support.

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