GRAPE PRESS

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Winery Sustainability Considerations

Bruce Zoecklein, Professor Emeritus, Virginia Tech

Building accounts for 1/4 of the world's wood harvest, 2/5 of its material and energy usage, and 1/6 of its fresh water use. – *David Eisenberg, Development Center for Appropriate Technology*

As sustainable viticultural practices have spread, so has the interest in sustainable winery construction. Building and construction in the USA uses 65% of the electricity consumed, produces 30% of the greenhouse gas emissions, uses 30% of the raw materials, and consumes 12% of the potable water. A study conducted in California several years ago reported the wine industry was the largest energy user among food industries. This realization, coupled with concerns regarding global warming, has promoted continued interest in sustainability.

The long-term operational savings from sustainable designs and expansion may help to offset some of the initial costs. Additionally, sustainable or green designs can be important in brand iden-

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President's Corner ...

Bill Tonkins, VVA President

Let me begin by thanking Randy and Karen Phillips and their team for hosting us at Cave Ridge Vineyard for our Summer Social on Saturday June 11th. Over 70 members registered for the event, which shows that it is a convenient location for our members, but sadly many did not make it. Put off, no doubt, by the weather that knocked out the power earlier in the afternoon and had Randy scurrying about buying generators. Fortunately the storm passed us by and power was restored in time for the band to play and for us to enjoy great food, great company and great wine.

This edition of the Grape Press focuses on Sustainability with Christine Vrooman Leaning Green and providing an introduction to the Sustainability Viticulture Workbook, which Virginia Tech will be putting out in draft prior to our Summer Technical meeting on 10 August. Tony or Tremain will explain the status of Virginia's IPM effort at the meeting and we can discuss the next steps to certification. To help us to gauge membership interest in the subject please take time to complete the anonymous survey by following the link in Christine's article.

Bruce Zoecklein has also produced a piece on Winery Sustainability Considerations - a consideration that has not been lost on Cooper Vineyard, which is leading the way with their Platinum certified LEED (Leadership in Energy

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Why Viognier as Virginia's Signature Grape?

Amy Ciarametaro, Virginia Wine Board Marketing Office

In recent years, new wine regions have focused their national marketing efforts on one grape variety as a way to increase attention and eventually drive tourism and sales to all wines from that region. On Wednesday, May 4, 2011, the Virginia Wine Board decided to pursue a marketing plan that will include the designation of Viognier as Virginia's signature grape for national branding purposes.

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Regional Reports

Northern Virginia

Dean Triplett, Greenstone Vineyard

Spring 2011 is pretty much history now. Compared to last year this one was a bit more "normal". By that I mean bud break was in the third week of April as opposed to the first week as it was last year. We got what seems to be a "normal" trend of lots of rain in late April and early May. This was followed by hot, humid and for the most part dry weather in June. Last year it was the heavy snow melt that charged the soil and got growth off to a fast start. This year it was lots of rain early on that did the same thing. Some of this year's storms were accompanied by pretty nasty hail. One hail storm in mid May missed my vineyard by less than ¼ mile. I haven't heard of anyone having much damage from hail as yet, but the season is still young.

As I write this piece it's the third week in June and flowering in all our varieties is complete. Fruit set looks very good here and in most of the vineyards I've seen in our region. The only issue we had in one of our vineyards was an infestation by grape flea beetles in five rows of Cabernet Sauvignon. I put down one spray of Carbaryl just in this section but unfortunately it was after the damage was done. Secondary growth popped back, but with much lower cluster counts. We've had problems in the past with climbing cutworms, but never grape flea beetles. Next year I'll have to be more proactive in scouting and dealing with these guys. Already I've put down seven fungicide sprays. The crews are in full shoot positioning, shoot thinning and leaf pulling mode. Instead of doing these operations separately, we're having them all done simultaneously. Shoot growth is in its jungle stage. So far, signs of disease seem to be limited to the occasional black rot lesion on a leaf here or there. But since it is the bloom/post-bloom season, all the big guns are out in each of our sprays. I've learned not to be cheap with what I apply during June. Mix the chemistries up and use rates on the high side. And most importantly, open that canopy up and get good coverage. Getting that skilled labor in the vineyard, at the right time, is as important as anything we do. We're fortunate to have access to good crews that have worked for us for a number of years and know what they're doing. You can't beat good people power.

We have a new neighbor here on the Catoctin ridge. It's actually located on what's known as Hogback Mountain, less than two miles as the crow flies southeast from Willowcroft. The owner, Mike Huber, with his vineyard manager George Wilson, has planted twenty acres of vines in the last two years. Five acres of Chardonnay and Viognier went into the ground in the first planting. These vines made excellent growth and a small crop will probably be taken this year. This spring, fifteen acres of Merlot, Cabernet Franc, Cabernet Sauvignon, and Petit Verdot have been planted. Most of this years planting was potted green growing vines from Novavine in California. Mike has a beautiful site with plenty of room for future expansion. And he has hired Lucie Morton and Jeanette Smith to consult on the project as well. He has plans for a winery, with construction slated for completion in two to three years. What impresses me most is Mike's desire to get the fundamentals in place first. And by "fundamentals," I mean hiring a team of knowledgeable people doing the job right. George, Lucie and Jeanette are known throughout our industry as being top notch in their fields. And they've concentrated all of their efforts in getting the vineyard in correctly from the beginning. As I say they have a beautiful site for the vineyard and future winery. Looking south/southwest toward the Bull Run Mountains and Blue Ridge beyond, it's a picture perfect location. From what I've seen so far, I predict that this will be one of Loudoun's premier winery operations in the very near future.

Speaking of new plantings, we put in a small addition ourselves at Willowcroft. We planted ¾ of an acre of Albarino along with a little over a quarter acre of Muscat Ottonel. We also pulled out some Riesling and replanted that site to Petit Verdot. We were lucky to get those vines in the ground before the rains in April and May. We have nearly 100% growth in the Albarino and Petit Verdot with about 98% growth in the Muscat Ottonel.

For those of you who like statistics, I've just learned that the Northern Virginia region now has 1147 bearing and non-bearing acres of vines. That compares with Central Virginia's 1082 bearing and non-bearing acres planted. That's 2229 acres for these two regions out of a total of 2966 acres for the whole state. What did Mark Twain say, lies, damn lies and statistics. Don't know what any of this means, but it is a little interesting.

BTW stat's courtesy the wine marketing office.

Southern Piedmont

Paul Anctil, Sans Soucy Vineyards

This spring has been cooler and wetter than many of the previous recent growing seasons. As a general rule I can say that everyones' canopy development is looking great and the soil in this region has had the opportunity to recharge its water needs for the summer. But, it isn't all positive.

Bud Break in this area centered around April 16, depending on the variety, and bloom hovered around May 10, again depending on the variety. The problem is that we had a very wet and moist spring with several days lasting over a week with temperatures very cool throughout the day and night. Many of the calyptra didn't separate from the flower head and it prevented many of the blooms from pollinating completely. In my vineyard I estimate that on my 2 white varieties I may have lost as much as 20% of the potential crop. A couple of other growers in the area have informed me of similar situations in their vineyards.

In general, I think the consensus in the area is very optimistic. If one planted new vines this year they have a great start. Canopies have flourished with all the moisture. We all know that the inevitable heat and dryness of July and August is just around the corner but for now things are pretty good.

Central Virginia

Turtle Zwadlo, Pollak Vineyards

June 10, 2011 marks my seventh year of growing grapes, still a newcomer to many of our more experienced growers, but long enough to notice the trend that every season presents its own challenges. Bud break in the area was not so much delayed as it was slower than usual. The window for potential damage from Climbing Cutworm was increased but scouting

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Regional Reports

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showed that they just were not out there and the early season sprays for CCW were unnecessary - a great example of how important scouting is not just to find problems in the vineyard but to discover when a problem does not exist and reduce chemical inputs.

However those gains were short lived. The weather through most of the spring was perfect for all the major fungal diseases we face and it seemed all we could do to keep up with spraying fungicide. I know my own spray program was more aggressive than usual and I have used more than one chemical this year that has not been in my schedule previously. Most reports I have heard were similar to what I have seen in our vineyard with Downy Mildew being the main concern and some phomopsis presenting but no major outbreaks. We picked up a DM infection that happened very early in the season, showing up on the oldest leaves, but so far it's been kept under control and we hope to keep it that way. The conditions so beneficial for fungi were detrimental to fruit set. Our weather immediately pre-bloom was cold, cloudy and rainy, and even though it improved during bloom it seems it was too little too late. The lack of sunshine coupled with vigorous growth due to high amounts of rain fall set up the vines to be carbon deficient which can contribute to reduced fruit set.

Several vineyards in the area have reported a higher incidence of the calyptras being "stuck" on the berries and flowers not fully opening. The degree of impact has yet to be determined but we are anticipating a lighter crop load throughout the region. Of course timing is everything and post bloom conditions have been hot and dry. On the positive side clusters should potentially be looser and more open and labor may be reduced with less fruit thinning. Don't forget to come back and readjust crop estimates if needed. Also stay aware of increased potential for botrytis later in the season as the calyptras that did not drop can become trapped in the cluster when it closes. Grape Berry Moth populations seem to be lower than usual so far this year but there was a flight that coincided with bloom so we will continue to monitor that closely.

In other news we are still seeing a lot of growth in the area with new plantings at King Family, Afton Mountain, Glass House, Pollak, as well as others. We are also very excited to add a new wine trail in the area with the launch of the Appellation Trail which includes White Hall, Mountfair, Glass House, and two brand new facilities, Stinson Vineyards who will open in June and Moss Vineyards opening in 2012.

Here's to continued success for the rest of the season!

President's Corner ...

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and Environmental Design) tasting room. You can read about this in the Virginia Wine Lover Summer edition. Pete Johns, our Eastern representative also gives his views of Sustainability at New Kent Winery and Vineyard.

Andrew Hodson has also written on another good topic – Cane Pruning versus Cordon Pruning. It will be interesting to see what the experts have to say on this in our next edition.

Dean Triplett has also provided an update on the Virginia Wineries Association Commonwealth Quality Alliance (CQA) program, which, if things go as recommended by the Technical Committee, could be great news for Virginia Vineyards as the program calls for 100% Virginia grapes and promotes quality wine from Virginia. This, together with the decision outlined by Amy Ciarametaro to designate Viognier as Virginia's signature grape for national branding purposes can only mean more demand for Virginia grapes so start planning you 2012 planting now.

I look forward to seeing you all at our Summer Technical Meeting on August 10th at Rappahannock Vineyards where we will have an interesting program for you that will include; Late Season Diseases and Late Season Canopy Management in addition to the Sustainability Workbook. Keep your eye on our new web site when it comes out in July for details.

Cordons VS Canes

Andrew Hodson

I hate to say this but I think I have just stumbled upon a fundamental truth of viticulture that is so profound that the VVA should seriously consider adopting it as the official motto. As "E PLURIBUS UNUM" is to the United States – "IS IUSTUS PENDEO" is to Virginia Vineyards Association: "IT ALL DEPENDS"

From spur pruning, to cane pruning, to vine spacing, to root pruning, and even frost protection - It all depends and it does. There is no right or wrong, every growing season is different from the last, every harvest as varied; consequently it is difficult to obtain controlled data that can compare one form of pruning to another.

As Jim Law pointed out in his excellent article in Wine East 2007 on Cane versus Cordonpruning most of our understanding of grape growing in Virginia is anecdotal. He describes his own experience of converting from cordons to canes, not necessarily because he wanted to. He had to because of the condition of his cordon pruned vines. In the early years of Virginia's viticulture vines were either head trained (Casarsa) or cordon trained. Historically head training preceded cordon training and in those days if you did not use head training, cordon training with spur pruning was the only alternative. However as the vineyard at Linden aged, and as the trunks and cordons became ever bigger, he noticed the spurs were becoming less fruitful and there was increasing evidence of trunk and cordon disease.

We have noticed that our Sauvignon and Traminnett have become less fruitful at Veritas. This is possibly due to gaps in the cordon caused by wind damage to the young shoots leaving the remainder of the vine out of balance.

Then came the year of all years 2003 – cloud covered fruit set followed by twice the normal annual rainfall. The result was that he was forced to change from cordons to canes. At that particular time and at that particular stage in the vineyard's history, by changing to cane pruning there was less mite disease, less phomopsis and less late season bunch rot. The only real negative was that the bunch and berry sizes were greater in the cane- pruned vines. He finished somewhat ruefully by saying if you have to change from one form to the other it is a darn site easier to go from canes to cordons than vice versa.

This is again born out by the major surgery that we are doing on our older Sauvignon vines. It is a slow labor intensive process finding renewable shoots resulting in a mixed cane and cordon vineyard with potential differences in ripening. Not all cordons can be switched to cane at the same time but we shall see if there are differences in the speed and uniformity of ripening and berry size when the time comes.

We have taken the easier route with our Traminette. We have removed this completely and replanted an acre of closely spaced vines 8' x 3' 5". The intention is to see if they perform better using cane pruning and if they do not we can convert to cordon and if necessary remove every other vine. Hopefully this will not be necessary. A worthy anecdote and information in what is happening in our vineyard but how does that relate to the conditions in your vineyard and do you train your vines as canes or spur pruned cordons?

I will not belabor the description of cane and cordon methodologies except to show a simple diagram. The cordon is a permanent structure from which individual shoots grow vertically

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Virginia's Signature Grape

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Why was the decision for Viognier? Winemakers consistently construct quality Viogniers in various styles across the state, expressing the region's varying terrior. It has received numerous positive reviews from wine critics in the state, nationally and internationally, and it is already perceived by wine buyers, critics and consumers as one of the great wines from Virginia.

There is a lot of positive momentum in the Virginia wine industry at this time. Overall quality is rising, increasing state support, intensifying media coverage and so on. Now is the time to capitalize on that. Viognier is a "major point of differentiation for Virginia," as our Chairman Rock Stephens stated.

There are some concerns from the industry that have been well thought out. Some worry that we will not have enough production to meet demand. Others have stated that it will distract from our host of other wines that are world-class.

Yes, it takes three to four years before new plantings become viable; however, rolling out a branding strategy doesn't happen overnight either. Also, in marketing, it is important to remember several basic principles:

1. You need to have a point of focus along with a very clear message in order to cut through the layers of competing brand messages in the market.
2. You have to be ahead of the marketing curve. Not behind it. Kind of like the old military adage, "If you're on time you're late." Other states including Texas are starting to grow Viognier. It's important that we own it first.
3. Lastly, if your message is "me too" (i.e., Come to Virginia because we produce the best Chardonnay in the world!) then you risk not being able to separate yourself in an already diluted market.

Please feel free to reach out to our office if you have any further questions about the designation. This is an exciting time to be involved in the Virginia wine industry and we look forward to its continued success.

Winery Sustainability Considerations

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tification. 'Green' or sustainable construction involves site planning, design, and construction, including the sustainability of the site, water usage, energy usage, environmental quality, and materials. The following sustainable winery considerations, adapted in part from Chauncey (2006), should be carefully evaluated in the initial phase of winery planning for winery expansion programs.

Use cool-build materials:

- If metal roofs are utilized, use materials developed or painted with infrared reflecting pigments to lower the amount of heat-absorbing light. This can create a cool roof.
- Cool roofs reduce heat absorption and cooling costs.

Reduce heat loss or gain:

- Have portions of buildings underground or partially under¬ground to take advantage of the earth's constant temperature.
- Have barrel storage areas where walls are in contact with the earth, which can eliminate the need for cooling. Air movement from fan coil units cooling an above- ground barrel room, dries out the barrels and increases evaporation. To help control this problem, winemakers humidify this space, adding cost and some additional potential problems.
- Barrel rooms that do not need cooling will promote less evaporation.

Consider geothermal heating and cooling:

- Water circulates in a sealed loop that extends well into the earth.
- In the winter, the water absorbs heat from the earth and carries it to a compressor which raises the temperature.
- In the summer, the water takes heat away form the building and transfers it to the earth.

Use regional materials and local fabricators:

- This helps to reduce transportation impacts and stimulates the local economy
- Use building and construction materials with a high percentage of recycled content:
- Straw construction buildings are becoming more popular. Straw is the inedible stock of grains such as wheat, rice and rye.
- Orient buildings to take advantage of solar energy or maximize shading

Optimize the use of shading:

- Blocking sunlight that would fall on building surfaces can dramatically reduce cooling loads.
- Plant trees along the south and west faces of the buildings.
- Install wall trellises, grow vines or shrubs to shade walls.
- Design sunscreens that shade and ventilate heat away from the wall surfaces.

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Views on Sustainability from Eastern Virginia

By Pete Johns, New Kent Winery and Vineyard

There are two facets to consider when talking about sustainability as it relates to the growing of grapes in Virginia; the actual growing of the grapes and the creation of a solid financial future for our industry.

Sustainability – relating to the growing of the grapes

Sustainability as it relates to the growing of grapes interfaces with two basic facets of the wine industry; Best Management Practices and Proper Planning.

By using Best Management Practices your vines will be healthy for years to come as you do you part to protect the environment. By selecting the proper varietals and preparing your business plan properly you will always have a market for your grapes and your future will be solid.

Sustainability and Best Management Practices must go hand in hand. Vineyards in our region in close proximity to the Chesapeake Bay must always be aware and mindful of both of these factors.

Knowing that more restrictions rather than fewer restrictions will be placed on our industry in the future, our vineyard opted to use the Ontario, Canada model of sustainability as our basic starting point. This model implemented by the Canadian Government establishes "best management programs" for the vineyards in the Niagara region and ties these practices into a solid sustainability program for the region. We also strongly endorse the efforts of Virginia Tech and feel they are the best qualified to implement any new sustainability guidelines for Virginia vineyards.

Our own sustainability program consists of four separate elements;

I. The selection of the land and vineyard layout. Not every site is suited for growing grapes but many can be modified and become suitable. Here in central region and in the Northern Neck of VA, it is not uncommon to see drain tiles used to improve the drainage for high water table or level sites.

We followed Dr. Wolf's rule of always running our vineyard rows North and South. After witnessing several vineyards that did not follow this practice suffer extreme damage from hurricane winds I am convinced this is the only way to layout a vineyard near the coast.

We have also found that widening our row spacing to 11' and planting our vines at 8' spacing has helped to maintain a healthy vineyard. We have also raised our cordon line by 5" allowing more air to flow through our vines and reduce the impact of downy and powdery mildews. We feel confident that this design when coupled with a solid spray program has kept our vineyards relatively clean each year.

Preparing the land properly prior to planting is one of the key elements for sustaining healthy vines. We deep rip plow several times the year before we plant to insure proper tap root development.

II. The selection of the proper rootstock and the correct clones prior to planting. We spent a great deal of time studying our soils and our climate prior to selecting our rootstock and the clones of our vines. It became obvious that some of the tried and true rootstocks and clones were best suited for our needs. We suggest that you learn from other vintner's mistakes; talk to other growers in your region and find out what works for them.

Select varietals that are marketable and highly sought after in the industry. Talk to the wineries you supply grapes to and determine their long term needs and goals. Develop a partnership with these wineries and plant the majority of your vineyard to fulfill those needs. You can always experiment with small plantings of new varietals and you will soon find out if you have a market for these or not.

III. Purchase the best equipment possible. Sustainability includes working with the environment to leave the smallest possible carbon footprint each and every day. Some of our efforts have included:

- The first two years following planting of new vines we mechanically weed our vineyards rather than use herbizide sprays. This practice also helps develop the necessary tap roots for healthier vines.

- We inject Admire Pro early in the season with two applications. This program allows us to eliminate 7 or 8 insecticide sprays each year. We believe very strongly that this program is far better for the environment, the employees and the vines than the traditional insecticide spray programs.

- We use a Lipco Tunnel Sprayer for most of our spraying programs. This sprayer is environmentally friendly; it is a recycling sprayer, leaves little to no residue on the ground, and uses 30% less spray materials than a traditional air blast sprayer. Most important of all, this sprayer eliminates more than 90 % of the drift that you get when using an air blast sprayer.

- One of our tractors is truly amazing; our Same' has both a front and back PTO allowing one man to do two tasks at once. This saves time, fuel and leaves a smaller carbon footprint in the vineyards.

- We use a failing mower to mow our vineyards and we keep our grass mowed very close to the ground, helping to avoid many disease and insect problems.

- We also have all our vineyard blocks outlined in deer fence. Our unique design works extraordinarily well in an area known to have the highest deer population in the Commonwealth.

- We also net most of our vines to protect our crop from bird damage.

IV. Best management practices. In short we believe a healthy vineyard is a sustainable vineyard.

Our spacing encourages healthy vine growth throughout the growing season. We encourage tap rot development.

We believe sustainability and best management practices must go hand in hand. You plant a vine once in a lifetime and it should be every vintner's goal to produce "old vine wines". This goal can only be accomplished through the use of best management practices and a passion for doing the right thing.

Economic Sustainability:

To be successful in any venture one must stay ahead of the curve and "think outside the box:, this is certainly true in the wine industry. Financial Challenges have never been greater than we now experience in this difficult economy. Here are a few ideas we have seen implemented to assist in the economic sustainability of vineyards;

- Vineyard weddings are the "in thing". Create several backdrops and venues that lend themselves to informal wedding ceremonies. Rather than building new buildings for such occasions, rent tents and pass on the expenses to the wedding party. These new "vineyard weddings" can provide significant income in the spring and fall.

- Work with local extension offices, many have master gardening classes that would love to visit your vineyards and learn about your growing practices. Charge a small fee that would include refreshments or a box lunch. Although this will not bring in large amounts of money, it will open the door for other similar programs.

- Talk to tour bus companies in your area. Agritourisium is a very exciting program that many tour groups are encouraging. Charge a small fee and provide several hours of entertainment as you tour, education and have fun

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Cordons VS Canes

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from spurs that are short canes usually cut to two buds. In cane pruning from which shoots grow vertically in contrast to the permanent cordon, a replacement cane is renewed every year. As I see it the main difference is that the spur on the cordon is fixed and shoots grow from the same spur every year giving more flexibility in determining crop load.

So let's imagine there are no variables. We are talking about a single varietal, say Chardonnay, with a given rootstock of given vigor in a controlled environment in which the rows are optimally placed with perfect in -row spacing on a south-east facing slope with ideal soil and perfect drainage with exactly the right number of sun degree growing days. Let's make it at least relevant to Virginia so the climate is Mid Atlantic with the same training system (VSP).

Do you use cordon or cane? In general the principles of pruning enunciated by Winkler et al (1974) still remain valid.

1. Pruning reduces vine capacity by removing both buds and stored nutrients in canes. Thus, pruning should be kept to the minimum necessary to permit the vine to fully ripen its fruit.
2. Excessive or inadequate pruning depresses vine capacity for several years. To avoid this, pruning should attempt to match bud removal to vine capacity.
3. Capacity partially depends on the ability of the vine to generate a leaf canopy rapidly. This usually requires light pruning, followed by cluster thinning to balance crop production to the existing canopy.
4. Increased crop load and shoot number depress shoot elongation and leaf production during fruit development and, up to a point, favor full ripening. Moderately vigorous shoot growth is most consistent with vine fruitfulness.
5. In establishing a training system, the retention of one main vigorous shoot enhances growth and suppresses early fruit production. Both speed development of permanent vine structure. With established vines, balanced pruning augments yield potential.
6. Cane thickness is a good indicator of bearing capacity. Thus, to balance growth throughout the vine, the level of bud retention should reflect the diameter of the cane. Alternately, if bud number should remain constant, the canes or spurs retained should be relatively uniform in thickness.
7. Optimal capacity refers to the maximal fruit load that the vine can ripen fully within the normal growing season. Reduced fruit load has no effect on the rate of ripening. In contrast, over cropping delays maturation, increases fruit shatter, and decreases berry quality. Capacity is a function of the current environmental conditions, those of the past few years, and the genetic potential of the cultivar.

The choice of spur vs. cane pruning often depends on the training system used. Conversely the training system may be chosen based on the advantages provided by spur or cane pruning. I have tried to distill down the facts that compare spur pruning to cane pruning.

On the positive side cane pruning is most suitable to cultivars with small clusters with long internode distances that favor shoot over-

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SPURS vs CANES

Chris Hill

You, as a grape grower, have to have a reason for every single action you take in the vineyard. Initially, in your decision making, you have to rely on what you hear, and are told, by people with greater, local experience than yourself. Eventually many of those same decisions will be based on your own experiences and observations, and also, on your experiences as they relate to your neighbors' experiences. In the end you will create the reality of your vineyard. And what is that reality based upon? This is the role of education, to help you develop a vineyard reality that successfully works for you, whether you are selling those grapes to a winery, or producing wine from your own fruit and selling that wine.

Your trellising and training systems will be the backbone of your operation. Most activities in the vineyard will follow these initial decisions. When you begin, try not to paint yourself into a corner. Most vineyard systems are initially cane pruned. This is easily and naturally converted into a cordon system at a future time, if that is desired. Your initial planting of Viognier, for example, that you intend on cane pruning, over time, may begin to show too much annual primary bud abortion. Your first remedy may be convert this vineyard into a spur pruned, cordon system, which might improve the annual fruitfulness of that variety. Converting from a cane system to a cordon system is relatively easy.

A word of caution here, if your vines are spaced too closely together, say a meter apart in the row, then you will be forced to cane prune for all eternity. Cordon training is not very practical in a closely spaced, high density, and very expensive vineyard. You will have painted yourself into a corner. Another example, is the planting of Sauvignon blanc, an enormously vigorous grape variety. On an unexpectedly vigorous soil, with closely spaced cane pruned vines, the resultant extreme vegetation will leave you wanting to leave more buds per vine after pruning. This is where cordon training, spur pruning would be useful, but you are back in that corner again, if the vines are originally spaced too closely.

Conversely, if vines are spaced too far apart, say 7 to 10 feet in the row, then cane pruning becomes impractical. It can be difficult to fill the trellis uniformly with extra long canes. Also, cordons, over time, need replacing, and with vines too far apart in the row it becomes a two or even three year procedure that greatly reduces your crop the first year of the recordoning process. Canes that are too long have a very nonuniform bud break and shoot development, so renewing a long cordon in one year doesn't work very well. If the vines are planted too far apart, your boots are going to get some wet paint on them.

Whether you cane or spur prune, remember it has to suit the chosen grape variety and the site, and it has to fit together with everything else you are doing in the vineyard. Design your vineyard for flexibility and really talk with your fellow grape growers about the results of their past actions. Develop your reasons for your vineyard actions.

Legislative Update: The Chesapeake Bay TMDL, Virginia's Watershed Implementation Plan, and the Resource Management Plans "Safe Harbor"

Patrick Cushing

Over the past two years the Environmental Protection Agency (EPA) has renewed efforts to strengthen the Clean Water Act through the implementation of a new Chesapeake Bay Total Maximum Daily Load (TMDL) program to reduce nutrient run-off into the Chesapeake Bay. The new TMDL program required states in the Chesapeake Bay watershed to submit Watershed Implementation Plans (WIP) to prescribe how each state plans on meeting its required nutrient reductions. Late last year the Commonwealth submitted, and the EPA accepted, the Commonwealth's WIP to ensure compliance with the new TMDL requirements.

Recognizing the new burdens that could be placed on Virginia's agricultural sector, the Governor included a "safe harbor" provision in the WIP that would allow farmers to be deemed in compliance with the TMDL if they implement a resource management plan (RMP). To formally adopt the RMP "safe harbor" provision contained in the WIP, Delegate Ed Scott introduced HB 1830 during the 2011 legislative session, which has since become law.

The Soil and Water Conservation Board is currently working in conjunction with Department of Agriculture and Consumer Services (VDACS) and the Department of Environmental Quality to promulgate regulations defining the requirements of an acceptable RMP. Several RMP elements listed specifically in the Commonwealth's WIP include the use of best management practices such as nutrient management, vegetative buffers, conservation tillage and soil conservation plans, cover crops, and livestock stream exclusion. To assist in implementing best management practices landowners or operators who implement and maintain a resource management plan will be eligible for matching grants for agricultural best management practices provided through the Virginia Agricultural Best Management Practices Cost-Share Program administered by VDACS.

As the number of acres under vine in Virginia continues to grow, so does the impact on water quality. Vineyard owners and operators, as well as the agriculture community as a whole, achieved a major victory by successfully working with the Governor and the General Assembly to provide a voluntary and low-cost means of achieving compliance with the EPA's new Chesapeake Bay TMDL requirements. This opportunity must not be wasted. Virginia's agriculture community must now invest the time and effort to develop resource management plans and continue to implement agricultural best management practices to ensure EPA's future review of Virginia's WIP will show measureable results and prevent additional mandatory TMDL requirements.

Virginia Tech's IPM (Integrated Pest Management) Workbook Arrives!

Christina Vrooman, Ankida Ridge Vineyards

After many years of a joint effort between Virginia Tech and Virginia viticulturists, an IPM Program with accompanying workbook will soon be available for those interested in implementing greener vineyard practices. This document is a big first step into bringing Virginia more in line with other progressive states who have recognized the need for a more environmentally sensitive approach to viticulture.

IPM... the What, Why and How

WHAT:

So just what is IPM? Most of you know the acronym IPM stands for Integrated Pest Management. But just what exactly does this mean? In a nutshell, The Integrated part refers to incorporating for your pest issues a wide range of options – biological, organic, mechancial, cultural and the judicious use of chemicals. The Pest refers to not only insects, but fungal, viral and bacterial pathogens, weeds, as well as vertebrates and any other "unwelcome invaders" to our vineyards. And the Management aspect points to the fact that we cannot expect to eliminate or eradicate all these "pests," but rather we manage their existence by the integrated means mentioned above, keeping them under control so they do not seriously affect our crop.

WHY:

The benefits are numerous including:

- Creating a healthier environment in and around our vineyards for us and our workers, our flora and fauna
- Helps to minimize pest resistance by lowering chemical applications
- Helps to maintain overall healthier ecosystem
- Improved soil health
- Increased longevity of vineyard
- Offers improved marketing perceptions
- Many are convinced the quality of wine is enhanced and can more clearly express site

For me, personally, I think IPM encourages us to better know our vineyards. It brings us closer to our vines. We observe more, notice gradual changes or increasing populations of pests, and thus make calculated decisions, adapt our practices and end up with a more balanced ecosystem that makes for a healthier vineyard whose lifespan is ultimately increased, which in turn helps to promote economic sustainablility.

How:

How can we successfully implement a Mid-Atlantic IPM Program? Beyond the creation and release of the IPM document, additional steps will be necessary for the successful use of the program in Virginia vineyards. Education and explanation of the program will, in my opinion, be vital for its success, with workshops and seminars being offered throughout the Commonwealth at regional and/or statewide conferences.

IPM for many will be a new way of thinking. I see IPM as being easier for new vineyards to implement than the older, established vineyards who might want to gradually implement portions of its concepts over time. For these established vineyards, many of the foundations of the program, such as site and variety selection are what they are and obviously cannot be

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Winery Sustainability Considerations

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Consider low emissivity insulation on windows:

- Metal oxide glazing can allow the sun's heat and light to pass through glass while blocking the heat from leaving the building, thus reducing heat loss.

Increase daylight levels and outside views:

- Add skylights or upper windows (clerestories), while avoiding direct sunlight on barrels or tanks.
- Design additional windows and skylights in subterranean spaces to expand views to the outdoors from as many occupied spaces as possible.

Design natural ventilation:

- Design windows or louvers at or near the floor level of the winery to bring in cool night air that blankets the ground. By also opening a louver in the upper part of the winery, a passive ventilation system is created. Hot air that has been accumulated during the day can be exhausted through a louver in the clerestory area. The hot air leaving the winery pulls cool night air in the lower louver. Such purging can be done without mechanical equipment.

Water usage:

- Reduce water use by collecting washdown water, settling/filtering, adjusting the pH, and using for irrigation of winery grounds.
- Consider rainwater collection systems for landscape irrigation, etc

Sustainable site planning:

- Use native and adaptive plants, and landscape that will require minimum irrigation and helps to promote biodiversity.
- Use minimal exterior lighting and computerized cut off fixtures, motion sensory, and /or timers for both interior and exterior lighting:
- Use environmentally sound lighting

Create a building with mass:

- A thin-wall building with a metal skin and batt insulation allows heat (and cold) to penetrate more quickly than a thick-wall building.
- Build with concrete, masonry, or stone, and sandwiched insulation.
- Thick-wall buildings absorb heat all day long, and release it at night with little impact on the interior temperature.
- Consider the use of biodiesel and wind energy

Consider solar:

- About 30 California wineries have installed photovoltaic panels to provide some or all of their electrical needs.
- Establish a recycling program

The United States Green Building Council (USGBC) has promoted 'green' practices for some time, including using recycled materials in construction, providing erosion control on building sites, limited site disturbance, and reusing buildings and building components, as well as minimizing energy consumption. LEED (Leadership in Energy and Environmental Design) is a point system used to quantify the use of 'green' materials, designs and products. The rating system contains several sections and subsections in which points are allocated towards LEED certification of a building. Information is available at www.thermomass.com.

Dr. Bruce Zoecklein is Professor Emeritus of Virginia Tech and a Certified Sustainable Auditor for the Wine Institute. For additional information on winery sustainability issues see www.vtwines.info. click on-line publications and Enology Notes.

References:

Chauncey, J. 2006. Sustainable Winery Architecture. Wines and Vines. Oct.

Stanwick, S., and L. Fowlow. 2006. Wine by Design. John Wiley & Sons Ltd., West Sussex, England.

Swaffar, G. 2007. Verbal presentation at Winery Planning and Design seminar, Wineries Unlimited. Summit Engineering, Santa Rosa, CA.

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IPM elements for wine grapes released and the sustainable grape growing workbook to be released this summer

Tremain Hatch

An IPM elements document for wine grapes has been developed by the Virginia Tech pesticide program. The IPM elements document details a checklist of IPM practices for grape growers in the mid-Atlantic. This document was written by a group including grape growers, extension specialists, and researchers. The document was presented by Dr. Mike Weaver at the VVA winter technical meeting and the document was published to the IPM center website early this spring. The document can be found by selecting Virginia from the dropdown menu http://www.ipmcenters.org/IPMelements/.

With The IPM elements published, the next step is to develop a sustainable viticulture workbook. The sustainable grape growing workbook will have a larger checklist than the elements and offer more explanation of why these tactics should be used. Many growers, researchers and specialists have been working together to develop this workbook over the past couple years, but especially within the last 4 months.

The workbook should be both a guide and a tool for growers to assess and possibly improve their vineyard practices and vineyard sustainability. The workbook is currently being edited, and a finished draft will be released prior to the VVA summer technical meeting on 10 August. We anticipate spending some time at the 10 August meeting discussing the format and content of the workbook. Check out the preview of the first page of the 25 page workbook. The full workbook will contain 130 questions which cover components of vineyard management including: pre-plant considerations, soil-fertilizer-irrigation management, vine training, groundcover management, pest management, pesticide safety and application, and grower/employee education. The workbook will provide a scoring scheme that will allow the vineyardist to self-assess the sustainability of their vineyard.

Views on Sustainability

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with the group. As word spreads about these programs more and more opportunities will come your way.

- Join with your nearby winery and encourage "vineyard dinners" or trips to your vineyards as part of their social and party programs. "Meet the Vintner" dinners that are set inside your vineyard have proven to be most popular program in other markets.

- Encourage schools to bring children to your vineyard as part of their educational program. Work with your local community collages to develop viticulture training programs for their students; our industry will need good qualified individuals in the future and this might provide you with additional income.

Summary: Take time to study and plan for the future before you begin. Communicate with other growers and learn from their mistakes. Attend VA. Tech seminars and symposiums and never stop trying to learn new techniques. The Virginia wine industry is on the verge of a period of great expansion and growth, if we are properly prepared and take the necessary steps we can achieve exceptional success and our future will be bright and exciting.

Virginia Tech's IPM Workbook

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changed. But other components such as canopy management, use of cover crops and beneficial insects and adjusting spray schedules can all be incorporated into an existing vineyard. Vineyard managers will have to make their own decisions as to what aspects of IPM they want to incorporate into their best management practices.

The IPM Workbook is a first step, a launching pad, toward more Sustainable Vineyard Management systems. One can implement an IPM program without "sustainablility," but the reverse is not true. IPM is the cornerstone of a Sustainable Program. A Sustainable Workbook is planned to follow this IPM Program, and there will be much discussion as to whether there is a need or desire to eventually create a certifiable Sustainable Program for the Mid-Atlantic, such as California's program, The California Sustainable Winegrowing Alliance (CSWA) or Oregon's Low Input Viticulture and Enology (LIVE) program.

At the bottom of this posting is the link to the IPM document. Please take a few moments to review it. Below that link is a link to a brief, anonymous survey we would like to answer. We would like to get an accurate gauge on growers' interest levels and intentions on IPM implementation in their vineyards. Your answers will be very helpful as we move forward to improve our best practices. For the survey, just check and fill out the boxes and click "Done." That's all there is to it. Your participation is important and very appreciated.

THE IPM DOCUMENT:

http://www.virginiavineyardsassociation.com/documents/IPM-VA-NCWineGrapeElements.pdf

SURVEY: http://www.surveymonkey.com/s/SRKKBPN

For further reading on the history and origins of IPM:

http://www.ipmnet.org/ipmdefinitions/index.pdf

http://www.lodiwine.com/Why_IPM.pdf

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Next issue: Why do fruits growing in the wild have more intense flavors? Does allowing the plant to defend itself to some degree (as allowed in low input vineyards) improve fruit flavors? This concept of SAR (Systemic Acquired Resistance) will be discussed in the next issue, including input from Virginia Tech's Dr. Bruce Zoecklein.

Commonwealth Quality Alliance

Dean Triplett

The article below is a short summary of work that has been going on for the last two years on what has become known as the Commonwealth Quality Alliance. This has been a venture between many members of the Virginia wine industry. The members of this committee are members of both the VWA and the VVA. The technical committee was formed by the VWA and has moved forward under its auspices. Many long hours have been spent by the members of the CQA committee working out the details of this program. The CQA will be officially rolled out this fall. It has the full support of the Board of Directors of the Virginia Wineries Association, the Virginia Vineyards Association and the Virginia Winery Distribution Company. We hope implementation of this program will help the Virginia wine industry continue its growth and reputation as a producer of high quality grapes and wine. The members of the technical committee responsible for the CQA are as follows.

Jordan Harris, Chairman, Tarara Winery
Matthieu Finot, King Family Vineyards
Neil Glaser, Horton Vineyards
Emily Pelton, Veritas Vineyard
Simone Bergese, Potomac Point Winery
Justin Rose, Rosemont Vineyards and Winery
Bill Gadino, Gadino Cellars
Jim Corcoron, Corcoran Vineyards
Jake Bushing, Pollack Vineyard
Pandit Patil, Narmada Winery
Dean Triplett, Willowcroft Farm Vineyards

Background:

The Virginia Wineries Association pursued a Specialty Crop Grant to create a wine quality program in Virginia. The grant was approved and will be wrapped up by the end of August, 2011. After the grant was received, a technical committee was formed. The technical committee worked to draft the guidelines for the technical analysis of the wine. A second committee was formed to establish the program's structure. An operating committee will be formed when the Commonwealth Quality Alliance program is launched. Sixteen wineries have been represented throughout the process of creating this program.

Mission:

The Mission of the Virginia Wineries Association's Commonwealth Quality Alliance program is to continuously cause re-assessment of Virginia Wine.

Objective:

We want to create a program that ensures customers that our wines have gone through

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Turning Water, Soil and Sunshine Into Wine - Part II

Kelly Carr

Now, where were we... Spring was coming, as were 250 grape vines for our test vineyard. And so on Saturday, April 9th, a drippy wet, bone-chillingly cold, character-building day, we headed out and tromped the entire 20 feet from the house to the edge of the field. I did not start whining right away. In fact, you'd be proud of me. I was awesome - covered in mud, shivering, fighting off bears and eagles, I valiantly moved from hole to hole, lovingly placing each stem that promised lifelong celebration and delight. Not buying it?

Ok, rewind. Yes, it was a gray mucky day, but actually, the whole thing was a blast. Larry-the-mastermind had organized us way in advance with multiple steps. Several weeks in advance, we had prepared the ground. Mike, our friend, had come to auger 18" holes in our hardpan soil on a carefully laid grid. So we moved methodically from row to row, and at the end of the day, could survey 21 neat 8' rows, 2 for each varietal and 3 for table grapes. The neighbors think we are daft. Proud, proud vine parents that we are, we took tons of photos for their baby vine books. The Merlot is the cutest (but I am not supposed to have a favorite, now, am I?)

It is now mid-May. Hello?!?! Why are the vines sinking? Lordy, but the rains have taken a toll. All that lovely hole drilling did make for easy planting, but it has also meant that the soil settled, and our poor babies look like they are about to be swallowed by Mother Earth. Fortunately, the nodes are still above the original soil line – we're sure we can dress up the holes successfully. They are fighters in their own right too! Beautiful, emerald green tiny leaves are emerging. All but two vines have awakened. Wouldn't you know it - those two are Chardonnays. I think they are hung over. Rumor has it they are always the ones to party hardest.

One very special fellow got a place of honor. The nursery sent us an extra, and so he did not fit into Larry's big scheme on the grid. Cab Frank (isn't that a darling nickname?) gets to live right off the back porch. Already, he is bigger than his siblings. Naturally, we will expect more from him.

All the planting, digging and tending does indeed bring on thirst. Dutifully, we continue to explore the world of oenophilia (did you know that word didn't even exist until 1977?), determined to become experts. We can now tell a red from a white. Next week, we'll even try to tell them apart with our eyes closed. Stay tuned. Next: Staking, fungi, bugs, more wine 'testing.'

Commonwealth Quality Alliance

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stringent quality assurance parameters to ensure they meet international standards. We want to ensure that 100% of the grapes used to create the wine were grown locally in Virginia. We want to take those assurances to drive marketing initiatives to help Virginia catch up to the rest of the premium wine growing regions in the world.

Overview:

The basis of this program is to reward and promote wines that meet international standards and best showcase Virginia grown wine that can garner acclaim both locally and abroad. There will be a grading system in place to ensure that all wines branded with CQA will best showcase the brand of the CQA and the participating wineries. With successful completion of the CQA grading system, a wine will be rewarded with the ability to use the CQA seal to promote their wine as quality approved and a guarantee of being produced in the Commonwealth of Virginia.

The following rules apply to the content of the wine.

1) All fruit for CQA wines are made from 100% grape.
2) Wines entered will adhere to TTB label regulations which allow hybrids to be a blending component in Vinifera varietal labeled wine.

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EXCHANGE

Due to the large number of items for sale, I would direct our members to the following web site: Virginiavineyards association.com

Editors note:
Please take note of the change of email address for our office manager Kay Thompson vavineyardsassoc@gmail.com

Cordons VS Canes

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crowding. Vine capacity is enhanced because apically dominant buds are more fruitful than basal buds. On the negative side cane pruned vines require more skilled workers that result in increased labor costs.

Cordons on the other hand are easier to prune with less skilled labor and are therefore less costly. Spur pruned cordons provide less apical dominance that favors uniform bud break and for reasons that I cannot fathom berry size is smaller in spur pruned vines. I am sure I do not need to emphasize how important the uniformity of crop and small berry size is to wine quality.

Another major factor to consider is the harvesting method. I think there is only one mechanical harvester in Virginia- the vast majority of vineyards world wide use mechanical harvesters for which a strong trellis and cordon pruning is mandatory – that could be end of the story!

The Aussies – the great iconoclasts of grape mythology use a method called minimal pruning and have conducted detailed comparisons to show that in Australia at least minimal pruning – to us hedging, has minimal effect on wine quality with maximal savings in labor costs.

So you can see there really is not much in it and as long as you remember all the variables mentioned above.

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References:

Clingeleffer, P. R. (1993) Development of management systems for low cost, high quality wine production and vigor control in cool climate Australian vineyards.

Aust. Grapegrower Winemaker 358 43-48

Jackson, J. S. Wine Science Principles and Applications. Academic Press 3rd edition. (2008).

Law, J. Wine East (2007)

Winkler, A. J., Cook, J. A., Kliewer, W. M., and Lider, L. A. (1974) General Viticulture.

University of California Press, Berkeley, CA.

New and Improved Website

The VVA has contracted with McCade Design to convert its website to a format called Word Press. This format will allow us to make the site more interactive, user friendly, and current. The Resources section will contain more links to industry related sites and educational resources. Also be sure to check out the Community page where our Grape Press contributors have been invited to blog about current events. We hope the idea gains traction as time goes on and provides VVA members and website visitors a source for timely viticulture and wine industry news. The new format launched July 1, 2011. Please be patient and check back often as we work out any kinks. If you have comments or suggestions, or would like to be a blog contributor, please contact me at tzwadlo@pollakvineyards.com. We are also considering adding a forum to the website where members will be able to post questions and comments and have discussions about vineyard related topics. We appreciate your feedback as to whether or not you would use this feature.

Turtle Zwadlo

Communications Committee Chair

Commonwealth Quality Alliance

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3) Any fanciful labeled wine may include no more than 25% hybrids.

4) All grapes that are used must be 100% Virginia grown.

5) Commercial concentrates are prohibited in the CQA. Concentrates are not possible to audit for their origin or varietal content. Chaptalization should be performed by products that show neutral flavors post fermentation such as sucrose.

6) Enological additives are permitted such as per TTB approved products.

The chemical analysis will be performed by Virginia Tech. The sensory panel evaluation will be performed by the Art Institute of Washington using the Davis tasting system. The wine must receive 12 out of 20 points to pass. The wine will receive a pass/fail grade and, if the wine fails, the winery will receive the reason for failure. The juice analysis can be performed by the winery and have the results submitted to the CQA administration. The winery will be responsible for conducting and submitting initial harvest Brix, CQA staff will match the Brix to the end alcohol to ensure the max chapitalization has not been exceeded.

All results will be held in complete confidence except from the CQA staff.

There will be three payments required for wines included in the CQA.

1) Membership dues per winery to become a member of the CQA. All wineries producing at least one wine from grapes grown solely in the state of Virginia are eligible to become members. The annual membership dues are $300. Dues are 85% tax deductible as a necessary business expense. All members of the CQA will be posted on the website, www.commonwealthqualityalliance.org.

2) The fee for a final wine analysis per wine including the laboratory analysis and sensory panel evaluation is $170.

3) After a wine receives the CQA seal, a per-bottle fee of $.05 will be assessed for marketing materials and associated administrative costs.

Once a wine has been accepted into the Commonwealth Quality Alliance program, the winery will be permitted to use the CQA seal on their wine. There are multiple formats that the CQA seal can be used in. The wine will also be posted on the CQA website.

Wineries will begin submitting wine to the program after July 8, 2011. Results will be returned within one week to the wineries and to CQA staff.

Marketing

The logo is designed to drive consumers to the Commonwealth Quality Alliance website, www.commonwealthqualityalliance.org. It will be a joint website for consumers and wineries. The website will explain the program to consumers and will educate wineries. A marketing firm has been retained and we hope to work in conjunction with Wine Marketing Office. The marketing firm will be developing brochures, materials for wineries to explain the program to consumers, and materials for restaurants, wholesalers and retailers to use to promote the program.

Administration

Administrative staff has been retained for oversight of the program.

Calendar

A Special Sensory Meeting with Tim Hanni

July 18, 2011, 1:00 - 4:00 PM
Paradise Springs Winery

July 19, 2011, 1:00 - 4:00 PM
Veritas Vineyard & Winery

Bruce Zoecklein and Tim Hanni are conducting two special sessions. These programs are designed to link wine sensory features and marketing and therefore would be of interest to winemakers, winery owners, wine marketers, and tasting room managers. Please review Wine Market Segmentation Based on Taste Sensitivity to gain an understanding of Tim's work.

There will be two locations/dates for this event. You may attend either location: Paradise Springs Winery: 7/18 | Veritas Winery: 7/19

Because of the food and wine component part of this event, there will be a $20 'donation' for each participant at the door.

Pre-registration is required by July 11. If you are not enrolled in the Winemakers Sensory program you may still attend this event. Even if you are enrolled in the Winemakers Sensory Training Program you must register for this event. This is a food and wine event so pre-registration is required. Register by emailing Vicki Keith at vkeith@vt.edu. In the subject line you must put either Paradise Springs or Veritas for the location you wish to attend.

Wine Bloggers Conference

July 22 - 24, Omni Charlottesville Hotel

The 4th Annual Wine Bloggers Conference is the premier conference for new media and the wine industry. The expected attendance for this event is 300. There are numerous ways for your wineries and vineyards to share their varietals with this influential gathering of influential wine enthusiasts.

Join us at Rappahanock Cellars for our annual Summer Vineyard Meeting. August 10, 2011, Rappahannock Cellar

Details to follow.

VASWCD Annual Meeting

December 4 - 6, 2011, Omni Downtown Richmond

The Virginia Association of Soil & Water Conservation Districts will hold its annual meeting at the Omni Hotel – Downtown Richmond on December 4-6, 2011.

Virginia has 6 of the 187 AVA's (American Viticultural Areas) in the United States – 160 vineyards in Virginia ranking it fifth in the USA. The VASWCD annual meeting will have representatives from most or all 95 counties in Virginia representing the Soil and Water Conservation Districts.

For more information please contact Kendall Tyree, MPA, VASWCD Executive Director, 7308 Hanover Green Drive, Suite 100, Mechanicsville, Va. 23111 Telephone 804-559-0324 (800-727-6345)

VVA Annual Technical Meeting and Trade Show

Feb 2-4, 2012, Charlottesville Omni Hotel

We will update the website with regional workshops as they become available to us. www.virginiavineyardsassociation.com under "Events".