GRAPE PRESS

Winter 2014

The Quarterly Newsletter of the VIRGINIA VINEYARDS ASSOCIATION

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INSIDE

Regional Reports

How was the harvest this year and what were the challenges?

PAGES 4-5



Sustainability

Where we are and where we're going in the new year.

PAGE 8

Fruit Ripening

In the vineyard: How fruit maturation affects the wine.

PAGE 10

Good Reads

Looking for a good book in your down time? Some of our favorite people in the wine industry tell us about some of their favorite books.

PAGE 13

Are You Ready for the VVA Winter Technical?

Mark your calendars for Feb. 5-7 and be sure to register!

PAGE 7



Courtesy of Jim Law

Richard Boisseau owns and manages five acres of vines that produce "fruitdriven, very ripe and hedonistic" wines, says Jim Law.

Building a Consistent Supply of VA Grapes

By Jim Law *Linden Vinevards*

his article takes a business perspective on a key issue for the Virginia wine industry: a lack of a strong, consistent supply of Virginia grapes. I've heard grumblings from both sides of the equation.

Growers aren't getting paid enough to support their business. Wineries can't find enough grapes. Over the years Linden Vineyards has had successful long-term relationships with two independent growers. Writing about money matters is difficult for me, but I feel compelled to tell our story.

The idea of single vineyard bottlings at Linden started with the 1997 vintage. For years we had only bottled one Chardonnay and one Cabernet. They were blends of various vineyards.

When all the different lots went into one tank at blending time, it felt like a sad occasion. I always wondered how each individual vineyard lot would have expressed itself after bottling. This is the essence of the concept of terroir.

Then came 1997, which was a beautiful cool and dry vintage. Each vineyard site was distinctly expressive and individual. This marked the beginning of single vineyard bottlings at Linden, which are now the backbone of all our bottlings.

Three vineyards are involved. The focus of this article is on the relationship of independent vineyards and wineries, so Hardscrabble, Linden's estate vineyard, does not enter into this equation.

See VINEYARD on page 6

President's Corner

Making Virginia Vineyards Profitable

By Tom Kelly *Kelly Vineyard Services*

ith the 2014 growing season now behind us and the 2015 season just around the corner, it's time to turn our attention to the business of learning: talking with our peers about the challenges of the season – what worked and what didn't – catching up on the latest research and product developments, and so on.

And what better place to do just that than at the VVA Annual Winter Technical Meeting? If you have ever been to one of the winter meetings, you'll know that this three-day event is chock full of valuable, leading-edge information and that it provides the perfect opportunity to gather with friends and fellow growers over great food and wine in beautiful downtown Charlottesville.

Who could ask for more?

By the time you read this article, the big event will be just weeks away and this year's meeting is one you won't want to miss. The last issue of the Grape Press featured an advance copy of the schedule for this year's program and by now you've received your registration information.

If you haven't done so already, please register soon, as the new 'breakoutworkshops' have limited

See PRESIDENT on page 2

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Bruce Zoecklin



PRESIDENT'S CORNER (cont.)

PRESIDENT from page 1

seating and will fill up fast. If you have not yet seen the program or have not received the registration information, you can access it at: http://www.virginiavineyardsassociation.com/events.

Beyond planning for the coming technical meeting, much of the recent work of the VVA board has been concerned with addressing the objectives laid out in our new strategic plan. And, as you have read and heard me say many times of late, much of this plan is focused on dealing with the current shortage of grapes our industry is facing.

Facing Financial Realities

As we work toward the ultimate goal of

the plan – increasing vineyard acreage in Virginia – we need to ask how we can incentivize the planting of more grapevines. To answer this question, we must take stock of current financial realities of grape growing in the Commonwealth.

I'm sorry to tell you what you surely already know, but the closer we look at these realities the less pretty the picture becomes. Grape growing on its own, as things stand today, is not profitable. There – I've said it.

The problem is multi-faceted. Consider the cost of land, equipment and the raw materials needed to plant an acre of grapes... And then consider the increasing cost and dwindling supply of labor... Add to that the risk of frost, freeze, hail, and wildlife damage, as well as the cost of mechanisms to guard against those risks, and – well I could go on, but you see the point.

Then consider the current value placed on a ton of grapes and you have to ask, why would anyone grow grapes at all? What is clear is that in order to entice more people to plant more grapes, we need to fix the economics of grape growing.

Seeking Solutions

Believe it or not, there are some ways to do this. Granted, few of them are easy or cheap. Some of them may be downright unpalatable (did someone say hybrids?) and none of them, on their own, provide a magic bullet.

However, if even some of them were implemented to some degree by the majority of Virginia growers, I suspect we could dramatically change the fiscal dynamics of Eastern viticulture for the better.

I have decided that I will begin to use

this quarterly article as a platform to begin to highlight and explore some of these approaches and their potential. I can't call them solutions, but perhaps they are pieces to the puzzle.

Each article will focus in part on a different piece of the puzzle – not to say that they will be all encompassing. I don't have all the answers. I will try not to get too soapboxy; however I may interject some personal opinion in with the cold hard facts from time to time, so take those statements for what they're worth.

I would like to begin with some comments about economies of scale. One of the biggest challenges Virginia faces with respect to vineyard profitability is scale. I will leave the number crunching to those more qualified

than myself, but suffice it to say, there is a threshold under which no vineyard can ever break even on its investment.

Depending on which model you use and what numbers you plug in (remember, garbage in, garbage out) this threshold is about 10 acres. In order to be "profitable," the threshold approaches 20 acres.

By last (unofficial) count, the average size of a Virginia vineyard is about 5 acres. Take out the half-a-dozen or so largest plantings (you know who they are) and that

number drops to about 3 acres. Is the light bulb beginning to glow?

Larger plantings have many advantages over smaller ones. One of those advantages is volume purchasing discounts. These kick in during the first stages of vineyard development when purchasing vines, posts and other raw materials and continue into the operational phase of the vineyard when buying spray materials, etc.



TOM KELLY

Mechanization

Another advantage of large-scale plantings is the ability to implement mechanization. Almost any task in the vineyard can be mechanized. A single machine can not only do the work of many men, it will generally do the work faster and more consistently.

Some might even argue that a quality improvement can be realized when certain tasks in the vineyard, such as leaf removal, are done in a more timely fashion.

And let's not forget about the dwindling labor force and rising wages. This problem will almost certainly get worse before it gets better. But the machinery is expensive and one must have sufficient scale and

See PRESIDENT on page 3

PRESIDENT'S CORNER (cont.)

PRESIDENT from page 2

correspondingly large labor expenses to realize a return on their investment.

This may seem like circular logic – plant larger vineyards to justify the cost of the machines needed to work them but, in fact, there comes a point at which economies of scale kick in.

Per-acre costs can be substantially reduced as a vineyard grows larger.

By way of an extreme example; during my time at Rappahannock Cellars, we tried implementing several forms of mechanization. The most notable of these was mechanical pre-pruning which reduced our pruning expenses by about 30 percent.

Had we purchased the machine new, it would have taken 15 years or more for it to pay for itself on the 12 (out of 20) acres on which we were able to use it.

However, because I purchased a used machine at auction for a fraction of the cost of new it was paid for in less than three years. Now, it is putting (or rather keeping) money

▶ One of the biggest challenges Virginia faces with respect to vineyard profitability is scale ... there is a threshold under which no vineyard can ever break even on its investment.

in the bank.

Again, a rather extreme example but it gives one food for thought. There is a good market for used equipment in larger growing regions like Ontario or Finger Lakes, even out west. This may be an option for the medium sized grower to take advantage of.

Of course, there are other advantages to large-scale plantings that I do not have

room to expand upon in this article but may touch upon in future columns. I also plan to focus on ways of reducing inputs, improving yields and other ways of maximizing return on investment – all from my humble point of view of course.

So, the "my two cents" portion (and I'm talking to the independent grower here)... If you're happy working your couple of acres because it gets you outside and you enjoy the work, then God bless. More power to you.

But the fact remains that the closer we can get the average size of a Virginia vineyard to the 10 or – even better – 20-acre threshold mentioned above, the more profitable those vineyards will become, and the more we will shift grape growing from a lifestyle choice to a viable agricultural enterprise.

By the way, many of the above mentioned "puzzle pieces" will be explored in greater detail by a host of experts during the upcoming Winter Technical Meeting. I look forward to seeing you there!

Until next time, Tom Kelly



REGIONAL REPORTS

SOUTHERN: "We didn't get enough heat this year."

By Paul AnctilSans Soucy Vineyards

he reports coming in from the Southern Piedmont Grape growing area are as diverse as our weather. Depending on who is doing the talking, the harvest of 2014 is all over the place.

Some of the industry bloggers and writers seem to think that this year's vintage will be exceptional. Well, maybe, maybe not. I think the final assessment will vary significantly by region and wine style selection. The quick summary can be boiled down to this: "we didn't get enough heat this year."

In general, the white varietals fared better. Early reds did OK, but the varietals that typically need more hang time just didn't develop the normal phenolic compounds that add to the aromatics and color of some red varietals.

This will be the first year that I have chosen to ferment the majority of my Petit Verdot into a blanc de noire Rose. There simply wasn't enough heat. My Cabernet Franc had excellent color, but I'm not sure the complexity I have come to expect will be there.

Discussions I had with Justin Rose of Rosemont of Virginia Winery revealed similar problems with some of their red varietals. Stephen Ballard of Annefield shared with me that his vineyard chose not to harvest its red grapes. The reason: a combination of irregular ripening, insufficient color, and some rather serious damage from the Spotted Wing Drosophila fruit fly.

Stephen quickly added that the whites did very well. This year was their first harvest of Vermentino, and he said he was excited about the wine it will produce. The HomePlace Winery in Chatham had some reds hanging well into mid-November, hoping to get more sugars and more color into their Cabernet.



Holly Raguza, Bugwood.org

A new pest: the winged Spotted Lanternfly.

The early ripening white varietals and red hybrids seemed to do better. My Viognier didn't suffer as much sun damage as it has in other years. The Chambourcin from Pinehaven Vineyards in Charlotte County had good varietal characteristics.

If there was one consistent report from thoughout the area, it involved the quality of the canopy.

Regardless of the trellis system used, it seems that everyone's canopy stayed healthy and full right into the cold weather. The buds necessary for next year's crop should prove to be very fruitful.

And finally, I don't think we can close out the year without a serious review of pests like the Spotted Wing Drosophila fruit fly. It proved to be extremely important to employ traps to determine exactly when those buggers got busy attacking the fruit.

The timing and rotation of sprays is critical. Justin Rose said they hit the vineyard twice in a three-day interval for the first defense and then continued with a more normal spray schedule. He

said it appeared to have worked for them.

Stephen Ballard said that their spray schedule seemed adequate for some of the grapes (whites in particular), but not for some of their reds.

At Sans Soucy Vineyards, we had good protection on the early varietals, but those that required more hang time had a higher incidence of damage. But we did manage it. Needless to say, the costs for chemicals and labor increased noticeably.

This may be a good time to share some news from an article in the December 2014 issue of Wine & Craft Beverage News. T.W. Burger wrote about the winged Spotted Lanternfly. Here we go again!! Another pest from China that attacks grapevines.

The article says that the critter, so far, has been contained to a small area of Pennsylvania. Perhaps the entomology department at Virginia Tech has more to share about this, but I recommend Virginia growers learn to recognize this new potential threat.

So, now that this growing year has come to an end, it is time to

review, reflect and plan for next year. What we did right and what we did poorly. On the quick-fix side of analysis I can see that leaf-pulling decisions make a difference. It was difficult to know in advance that the end of the summer was going to be cooler than normal. Maybe I would have pulled more leaves earlier. Who knows?

For the long term I think more research and courage is needed to determine a selection of varietals better suited to this hot region. Stephen Ballard seems pleased with Annefield's decision to add Vermentino to the vineyard. I have been very pleased with the Tempranillo I grow here. Sometimes simple logic works.

Unfortunately, the time and cost of establishing a vineyard and lack of research makes it difficult to be courageous. I think we need to consider varietals that do well in other hot growing regions and start adding them to our vineyards. Carignan, Alicante Bouschet, Muscat of Alexandria. Just a thought.

A final toast: to all of you brave enough to grow this magical fruit: see you next year.

REGIONAL REPORTS

► NO. VIRGINIA: "Almost all of our varieties came in with lower than average brix."

By Dean Triplett

Willowcroft Farm Vineyards

The glory of grape growing east of the Rockies is that you rarely have to worry about being bored. It's not a job, it's an adventure.

As adventures go, 2014 was really not too exciting. That's a good thing. After a cooler and slightly wetter growing season, harvest for us started the day after Labor Day. It then went on for what seemed like a very long

The weather at harvest was kind of an extension of the entire growing season. September and October were fairly cool with periods of rain. Here at Willowcroft, many of the rain events passed to the north, with the bulk of the rain missing us. As always, the weather did make for interesting harvest decisions.

Brix levels in many of our varieties rose into the 20 degree range and then just flattened out. Acid levels were similar, plateauing and then not budging much. Flavors, however, did accumulate nicely, especially in the aromatic whites. Our Muscat Ottonel, Petit Manseng and Traminette are displaying really pretty aromas.

Almost all of our varieties came in with lower than average brix, though. So while I don't expect to have any truly blockbuster, high alcohol wines, I think many of the wines will show real elegance with very fine acids and nice fruit. These will be food wines as opposed to big, aperitif style wines. I consider this to be a good thing.

Most growers I've talked to have been more or less in the same boat. Emails from Jack Sexton of Williams Gap Vineyard, Bill Hatch of Zephaniah Farm Vineyard, Malcolm Baldwin of WeatherLea Farm & Vineyard and Nate Walsh of Sunset Hills Vineyards have all echoed our observations. Lower brix, good acid, very nice flavors and aromas, and low disease and animal damage.

Larger Than Average Yields

Also, most saw larger than average yields in many varieties. Malcolm reported 1.73 tons of Cab Franc from his half-acre section of vineyard, plus a good yield of Malbec from a few rows. As he reports, "This comes after zero harvest from these vines last year, due to late frost in 2013 and apparently still mysterious effects of Roundup which I applied as usual during the dormant season. But I'll never use it again."

We saw larger than average yields as

well in many of our varieties, especially the hybrids. The vinifera vines, while having a bigger crop than average in many cases, still didn't yield over 3.5 tons per acre. So I don't feel they were over cropped.

The one exception to this was my Merlot, which came in closer to 4.5 tons per acre. In hindsight, I probably should have dropped clusters on these vines after fruit set. One interesting note was my Muscatt Ottonel. While something like 40 percent of the vines experienced damage, I harvested one of the biggest crops in years. This increase in vields seemed to be a combination of lower predation and bigger fruit set in the uninjured

Nate Walsh reported a very good harvest. "The primary points of interest were some vine death due to cold injury, of which we had a small amount, as well as the generally wet spring that we had," he said.

"Our yields were very good, fruit quality overall was fantastic but varied based on the timing of ripening. Early whites came in more delicate, whereas some of the midseason reds like Cab Franc were able to get extremely ripe with particularly good color. I am very happy with the quality," he added.

Bill Hatch noted average yields in most varieties and less animal damage than 2013 "except for a very costly, one-hour visit by a flock of starlings. The starlings were sly enough to find small openings at the bottom of the netting and quickly damaged about 10 percent of our Cab Franc and Chardonnay clusters."

Stressed Viognier Vines?

Bill, Malcolm and Jack reported dead or dying Viognier vines this year. Jack wrote, "Viognier, Tannat, Syrah, and, to a lesser extent, Merlot, were the most adversely affected in our vineyard."

He added: "The current hypothesis is that the prolonged cold, if it did not kill the vines outright, created stress that enabled crown gall to become a clinical issue. The resultant vascular damage showed up throughout the summer and will continue to manifest itself in the coming growing season with higher vine mortality next spring."

Both Malcolm and Jack are in the process of digging up their Viognier and Bill will probably replant dead vines with Vidal.

One notable exception to the previous remarks came from Bill Freitag.

"Here at Toll Gate Farm, between the horrible spring with its winter damage emerging, and the weird weather all summer,

we had a disastrous vintage," Bill said. "We probably had a good 30 percent reduction in crop from all of the spring problems, combined with poor fruit set."

Bill said his vines looked okay as he passed veraison, giving him hope. "Pinot Grigio was the first to really ripen with virtually no disease problems. The pH was great but the brix never climbed over 20.5. Still, everyone seemed happy with it and we harvested in mid-September."

His other varieties – Cab Franc, Viognier, and Petit Verdot - crept up to about 20

degrees brix and the pH remained fairly low. "So far, so good," he said. "With a few days of warm weather in late September we hoped for the best. No diseases, more warm days. Then as October arrived, everything remained stuck at 20 degrees brix. The fruit tasted good, looked good, but there was no sugar."

Bill harvested in late October for all the varieties as the fruit began to come apart.

No Bird or Mammal Predation

'This is not a good vintage," he said. "The only significant good news was that we had no bird or mammalian predation. None! We had put up bird netting on the VSP blocks, but most of our blocks are on lyre. We also spent a good deal of effort in clearing a wider open zone around the blocks, plus reinforcing the fencing with heavy gauge metal mesh, dug into the ground at key problem areas. So we may never know if we deterred the critters or if they just weren't interested in grapes this year.'

Bill's remarks are sad to read, but they illustrate just how difficult grape growing can be in our region. It also shows how location can make such a huge difference from year to year. His experience with critter damage is similar to mine.

While we still had damage, mostly from raccoons, it was much less than last year. We did a number of things this year to prevent predation. Whether they were effective or there was just much more food in the wild easing pressure in the vineyard, I'll never know for sure. We will of course keep up our anti-critter efforts next year regardless.

I'm still a bit upset with myself for hanging as big a crop on my Merlot as I did. Had the season been warmer, I don't think it would have been a problem.

As it is, the wine we have in barrel is very nice. I wish Tony would get his team at the AREC to turn their attention into Crystal Ball research. I sure wish I had one.

Relationships: Wineries and Growers

VINEYARD from page 1

Avenius Vineyard is owned and operated by Shari Avenius who has also been Linden's general manager for the past 25 years. In 1995 Shari purchased a beautiful high elevation ridge of land above her house with the intention of planting grapes.

The Farming Attraction

One could say that her experience in the business and marketing side of the winery dissuaded her from any aspirations of starting her own winery. It was (and is) the farming aspect that was the attraction.

Today, Avenius Vineyard consists of 5 acres of grapes. Shari does the bulk of the work, but is also assisted during the busy times by part-time help. The vineyard is managed in a slightly unorthodox manner and is influenced by biodynamic and other spiritual forces. Avenius wines are sinewy, energetic and fresh.

Boisseau Vineyard is owned and operated by Richard Boisseau. Richard was a customer of Linden back in the 1990s. His love of wine, gardening and his family farm led to planting vines beginning in 2000.

Boisseau comprises 5 acres of vineyards which Richard meticulously manages himself along with some part-time help. The vineyard management is precise, manicured and conservative. The wines from his warmer vineyard site are fruit driven, very ripe, and hedonistic.

The common factors in both of the vineyards are a love of farming, an intellectual curiosity and the desire to produce the best wine that the land is capable of giving. While not involved in the day-to-day winemaking process, both growers help at crush and at blending trials.

Over time, I have learned to value their perspectives both in the vineyard and with the wines. I've also learned that the personality of the grower needs to be respected throughout the



Courtesy of Jim Law

Shari Avenius working her high-elevation vineyard.

entire process. Farming provides us with an inexplicable primordial satisfaction. The transformation of our grapes into wine takes us to an even higher level of wonder.

In Good Times & Bad

A successful relationship between a winery and an independent grower has to be long term: in good times and bad. When certain plantings don't work out, they are removed. When yields need to be reduced, grapes fall on the ground. In a wet summer when canopy work never seems to end, there needs to be more boots on the ground.

Making money is rarely the primary motive for anyone getting into this business. But whether we like it or not, profitability has to be any business's first priority. Otherwise, everything else falls apart.

Over the years, Boisseau, Avenius and Linden have had several contractual relationships including payment by the acre. Eventually this evolved into an old-fashioned handshake and verbal agreement that the grapes will always come to Linden for a good price. Both of these vineyards are within a few miles of Linden so we are all back and forth during the growing season keeping an eye on things and discussing strategies.

The gorilla in the room is how much does Linden pay for the grapes? With these two vineyards' level of commitment, labor, and quality, "market price" is way too low and unsustainable.

In a marketing sense, the "brands" Avenius and Boisseau are now very important to Linden. If these vineyards can't make money and they fold, the result

would be a devastating loss, not only of production, but also of Linden's identity. We are now codependent.

Grape Pricing

To determine grape pricing, I use the 100 times retail formula as a foundation. It is an old California model that I think has a lot of merit. Simply put, the price of a ton of grapes should be worth 100 times the retail price of the bottle. The grapes that make a \$25 bottle should have been bought for \$2,500. Over the years I have made one modification for Virginia. I have increased 100 times to around 110 times. This reflects the greater risk and expense of growing grapes in Virginia.

But it's not straightforward. Our wine production is based on triage and declassification. An example would be with the red grapes. Each vineyard grows the Bordeaux red varieties. As the season unfolds and the wines are made, those grapes will go into three different programs.

At the top are our single vineyard bottlings which retail for \$45/bottle. Anywhere from 0 percent (2011) to 60 percent of the grapes will make it into this level in a given vintage.

Next is Claret, which retails for \$26. Claret comprises declassified barrels and hard press wine. Finally, our Rosé retails for \$20. In some cases red grapes are picked specifically for Rosé, but most Rosé is made from bleeding (saignée) certain lots of crushed red grapes.

Pricing is determined on an historical average of the proportions of single-vineyard, Claret and Rosé wines. If the relationships are long term, this works. In 2011 Linden overpaid for grapes, as there were no high valued single vineyard wines produced. In 2012 one could argue that the grapes were undervalued, as the percentage going to single vineyard wines was very high.

See VINEYARD on page 7

Have You Registered for the VVA 2015 Winter Technical Yet?

It's time to register for the 2015 Winter Technical Meeting & Trade Show, which will be held Thursday, Feb. 5, through Saturday, Feb. 7, at the Omni Hotel in Charlottesville.

This year's annual meeting features:

- A Thursday workshop with three tracks to choose from: New Grower Workshop and Social, Virginia Governor's Cup Winners Tasting and Basic Fruit Analysis.
- The Jim MacKenzie Memorial Scholarship will be awarded.
- Saturday will feature a half-day session on Viognier Viticulture and Tasting.

The registration fee is \$210 per member and \$290 for non-members. To avoid a \$50 late fee, registrations must be completed by Jan. 20. The fee includes the following for one attendee:

- Educational sessions on Friday and Saturday (Thursday workshops are \$25 per member and \$100 per non-member).
 - Morning and afternoon coffee breaks
 - Trade show with exhibitors
- Friday night reception featuring VVA member's wines
- Continental breakfast on Friday and Saturday
 - Buffet lunch on Saturday

For more information and to register, go to www.virginiavineyardsassociation.com.

VINEYARD from page 6

Over the past three vintages Linden has been able to pay more for grapes. This is commensurate with an increasing percentage of single vineyard wines (less declassification) of even better quality. With the increase in quality, I am comfortable charging a higher bottle price. Winemaking has, and will continue to improve, but the principle reason for the bump in both quantity and quality originates in the vineyards.

As we have determined which varieties show the best promise, blocks have been pulled and replanted. We have a better understanding of appropriate canopy management, yields and picking strategies.

All of this is a reflection of a long-term, shared goal: better wine.

In Memoriam: William Friel Edmands

VA member William Friel Edmands passed away at his home in Savannah, Ga., on Nov. 5 following a prolonged illness.

Known to his friends as Bill, he established Vintage Ridge Vineyard and Winery in Delaplane. He was 71.

Born in Washington, D.C., on Feb. 26, 1943, he spent his youth in Poolesville, Md., and then Bethesda, Md.

After more than three decades as a commercial electrical contractor, he established Vintage Ridge Vineyard and Winery in Virginia from which he retired last summer.

Bill served his community as Assistant Chief, EMT and was one of the founding members of the Urbana Maryland Volunteer Fire Department; a Lions Club member, a past member of the Chesapeake Yacht Club and Little League coach. He was also an active member of Goose Creek Save Our Streams, Virginia Winery Association and the Virginia Vineyards Association.

Following his long career as a commercial electrical contractor overseeing large government contracts, Bill married Victoria in 2001.



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Promoting Sustainable Viticulture

By Bill Freitag

Toll Gate Farm and Vineyards

he vision of the VVA Virginia Sustainability Program is the longterm sustainability of our winegrowing community. Sustainability is often used alongside other terms, such as, "being green."

We chose to define our sustainability goal as having three dimensions:

- Environmentally sound care of the land we farm:
- Socially equitable concern for our community and neighbors;
- Economic viability. By enhancing our profitability, we stay in business.

We have now almost completed the second year of experience using our association's online self-assessment tool that codifies science-based best management practices (BMPs) for sustainable viticulture.

It is designed to help vineyard managers assess how well they're doing against 105 BMPs spread across 12 major activities.

We've named this tool the Virginia

Sustainable Winegrowers Self-Assessment Guide (VSWAG).

To get more information and background about the tool, go to the VVA website and click on the Sustainability Tab. The tool is largely intuitive to use and there are numerous aids under the Help tab.

A Reminder

The workbook was designed to be used on a continuing basis, not a one-time shot. As you modify your practices, you should update your score. For those of you who created score sheets for last year, you will find your old workbooks on the tool just as you left them.

To update your scores, simply click on the score you want. You can select your existing score from last year or a new one.

There is no need for you to first select the edit icon. I encourage all 70 of you who filled in partial responses last year to complete the entire self-evaluation in the coming 2015 season.

We have 78 registered users, and another 11 out-of-state users using the tool who are not included in our statistics. Eight users have completed their entire guide; I hope you print

your certificate of completion and display it prominently.

Changes to the VSWAG

We have completed some changes, most of which affect administration of the workbook. However, several functions impact users:

- New users without a vineyard can now fully access the practices of the guide as an educational and reference tool.
- We have added a 'Not Applicable' (N/A) choice to the 5-point scoring in case a practice just does not apply to your operation.
- We have created an annual certificate of completion.

The VSVAG is not a static entity. We will add and modify content as new research results emerge. which is why a one-time pass through the guide is not in a user's best interest. There will always be new, more informative changes.

Developing a New Tool

As part of the VVA Strategic Plan, the Sustainability Committee has been given a new task to conduct a study to define the content and specifications for a Vine Growth Stage Tool.

This tool will provide in-vineyard best management practices to Virginia winegrowers, providing the grower with tips for performing key viticultural best practices based on grapevine phenology (annual growth stages of wine grapes).

The intent is to provide information spanning a range of topics from the existing VSWAG's 10 major topics. Among them are soil management, fertilization, canopy management and pest management. They are integrated with real-time inputs such as weather data, in one place in an easily accessible form for each stage of growth.

This tool will be available from desktop or laptop machines and, eventually, from mobile devices such as smartphones or tablets.

Join the Sustainability Committee

None of these plans will materialize out of thin air. They all require participation by members in the Sustainability Committee. I hope all readers of Grape Press understand that the VVA depends on volunteers to move us into the future. An active group of members defined the basics for the VSWAG. Now it is time for a new generation to step up and move it to the next level.

We need a few good men and women to help in the various committee tasks, particularly updating the VSWAG and defining the Vine Growth Stage Tool. Critical to success in this endeavor is willingness to provide some of your valuable time to make this work.



Postmodern Winemaking

A New Philosophy Requires both Technical Expertise and Artistic Instincts

By Dr. Bruce Zoecklein

Professor Emeritus, Virginia Tech

he physicist Leo Szilard once announced he was thinking of keeping a diary, not for sharing, but for recording the facts for God. "You don't think God knows the facts?" he was asked. "Yes," Szilard responded, "but he doesn't know my version of the facts!"

Years ago, one of my professors in charge of university admissions offered his definition of intelligence. "An intelligent person is one who knows what he knows, and knows what he doesn't know."

Sounded good – however, how do we know if what we know is really correct or true?

Classical philosophical skepticism imposes severe limits on all claims of knowledge by suggesting that nothing can really be known with certainty. Despite this possible boundary, we have two divergent traditions of processing acquired information.

These were broadly outlined by the rationalism of René Descartes, who suggested that reason alone, unaided by the senses, yields knowledge of the world, and the empiricism proposed by John Locke, who thought that true knowledge can only by acquired by our own experiences.

This dichotomy is similar to the Zen

phenomenological understanding of the two modes of awareness, perception (via senses) and conception (rational thought). The dual roles of science and empiricism are critical infrastructures to our industry's development.

As a university professor, I found that one of the hardest concepts for my students to fully appreciate is that human thought has a history. The way we think now, the way we understand the world, is not the way people have always understood it or thought about it – even recently.

Any change in epistemology – how we think about knowledge, how it is acquired, what it is, what its limits are, how one tests that knowledge, how one thinks about these issues – influences every particular subject we can discuss, including, of course, viticulture and enology.

A Postmodern Alteration

Within the wine industry, we are currently experiencing an epistemological transformation, a postmodern alteration.

Scientists and those with science-based underpinnings often view themselves as having been schooled to see the world rationally, shedding myth and superstition. They have faith in 'progress' and the superiority of the new, not antiquity.

However, obvious problems have directed some to lose faith in the infallibility of science to completely coordinate and explain technological advancements.

The limits of science are all around us. Wine's ability to communicate subtle emotion, for example, remains a primary appeal that cannot be adequately explained by science. Such limits, coupled with conformational bias readily attained from the internet, has created a skepticism about science.

If you believe, for example, that eating with plastic utensils causes cancer, you will find ample studies suggesting the same. What you will not find is proof that that is true. It may be that science is best served by leading orderly, logical inquiry suited to verification, rather than to creative leaps.

What's Required

An ever-increasing number of participants in our industry rely more and more on empirical knowledge, knowledge acquired through observations and experience. Of course, such knowledge may, at times, be faulty

Our senses are sometimes errant: a stick in a glass of water looks bent, for example. What may apply to one circumstance may not apply to another, and we have the universal challenge of cause and effect.

After all, experience enables one to recognize a mistake when one makes it again!

Postmodern winegrower philosophy requires both technical expertise and artistic instincts from empiricism.

As suggested by Clark Smith in his book "Postmodern Winemaking," postmodernism seeks "to move beyond rationalism [science] as the sole determiner of what is true, beautiful, sustainable and good" by questioning the utility and virtue of some of the generalized universal 'truths.' The truth worth knowing is largely local rather than universal.

A Two-Day Discussion

Join Clark Smith and me for a two-day discussion on postmodern winegrowing in Virginia, March 4 and 5, in Richmond. For details, go to www. Craftbeveragesunlimited.com.

"Not everything that counts can be counted and not everything that can be counted counts."

Einstein

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How Fruit Maturity Impacts Wine

By Dr. Bruce Zoecklein

Professor Emeritus, Virginia Tech

A woman holding a glass of wine said to her husband, "I love you so much." "Is that you or the wine talking?" he asked. "That is me talking to the wine."

wine that we love should offer satisfaction on some hedonistic level and, according to Robert Parker, have the following characteristics: ability to hold interest, taste better with each sip, and have the ability to improve with age in the bottle. The capacity for Virginia wines to improve, not simply survive in the bottle, is gaining importance.

The number of days from bloom to harvest is an important fruit, and subsequent wine, quality parameter (Haselgrove et al. 2000). Indeed, it is widely accepted that "hang time" impacts aroma, flavor, and color. If we change the ripening rate, what impact will that have on ultimate wine quality?

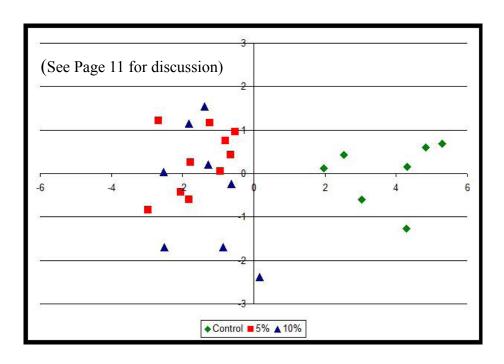
We have conducted two types of studies evaluating the impact of fruit maturation on grape secondary metabolites: aroma, flavor and phenolic compounds.

These studies used two natural products, a hormone stimulator and a material for increasing the fruit dehydration and respiration. This discussion is a snapshot highlighting one of our evaluations on the impact on grape phenols, important sources of color, astringency, bitterness, mouthfeel, and longevity.

What effect does the timing of ripening have on phenolic compounds in Virginia? Studies we conducted in the 1990s demonstrated that the rate of grape maturation impacts the production of grape glycosides, important sources of phenols. The following is a review of one of those efforts.

Overview. The standard rule of thumb is that the best-fitting variety for any particular climate will reach optimum maturity in the second half of the first month of autumn (September in northern latitudes, Gladstones, 2011). Any change in the ripening rate (such as could occur with excessive crop load, for example) can change the thermal environment of the fruit.

It is easy to imagine that temperatures above or below optimum enzyme activity temperatures for secondary metabolite production could have both quantitative and qualitative impacts. Happ (1999) qualified sites for optimizing varietal selection by



using a heat load system defined as degreehours in excess of 22°C (71.6°F), summed for the 28-day period prior to harvest.

The 22°C basis was chosen as the optimum temperature for most of the important enzymes that produce grape aroma, flavor and phenol compounds. Heat loads decline quite dramatically in autumn, but the degree of heat and its speed of decline can vary dramatically.

Tannin Polymerization and Reductive Strength. We have been evaluating the impact of ripening rates on two important phenol-based features, grape tannin polymerization and reductive strength.

All winemakers know that phenolic compounds, such as color and tannins, are important to red wine quality. It is tannin size and the way they are assembled, not their total concentration that impacts red wine sensory attributes. As fruit matures, tannins polymerize or bind together by several mechanisms (oxidative and non-oxidative).

Oxidative polymerization involves tannin chains binding or increasing in length until they are bound by anthocyanins, the pigmented phenolic molecules. Thus, during oxidative polymerization, anthocyanins can act essentially as 'book ends,' stopping the chain elongation (Cheynier 2010).

Tannin chain length impacts the degree of astringency and harshness by limiting the number of sites able to bind with saliva proteins in the palate. Generally, the shorter the tannin chain length, the better the longterm mouthfeel.

Oxidative polymerization is impacted by fruit maturity, maturity rate, and the ratio of tannins to anthocyanins (optimally 4 to 1). Additionally, small polymers form small colloids that help integrate aroma and flavor components.

In addition to mouthfeel, tannin maturity influences reductive strength. A wine's reductive strength is related to its ability to absorb oxygen without falling apart, that is, longevity. Reductive strength can be thought of as analogous to chi, the Chinese expression for life-force (Grahm 2010).

When a wine is young, it can share its chi with the world; when old, it must guard it so the wine does not diminish too quickly and become oxidized. Reductive strength may be one of a wine's most important features and one that is the most difficult to measure and quantify. We do know that reductive strength is strongest in the best wines. In red wines, it is mainly a feature of phenol compounds. As such, fruit maturity has a major impact (Smith 2013).

So what is new? The answer is our evaluation of fruit maturity. In the recent past, we evaluated tannin maturity by attempting to have very supple tannins in the fruit, which resulted in immediately-supple

See RIPENING on page 11

RIPENING from page 10

tannins in the wine. We now realize that up-front suppleness may limit reductive strength. Winemakers are not as afraid of rough initial tannins because they realize that some oxidative polymerization will occur during winemaking, helping to provide reductive strength.

Immature fruit is characterized by the following (Smith 2010, 2013):

- Insufficient pigments resulting in extensive phenolic polymerization and harshness
 - Limited extraction
- Limited desirable aroma and flavors and integration

Over-ripe fruit, as seen in 2010, has the advantage of supple tannins and up-front fruit, but has some notable downsides. The disadvantages include the following:

- Loss of color and color stability
- Excessive tannin suppleness
- High alcohol capacity, which can destabilize color, diminish the volatility of fruit aromas
- Significant loss of reductive strength and, therefore, longevity

Fruit Ripening Research. Ethylene is a natural maturation hormone, increasing in vines at véraison and causing a rise in fruit respiration. We conducted research over several years (Athamneh et al. 2008, Baki, 2004, Martin et al. 2008, Zoecklein et al. 2011), using an ethylene stimulator to evaluate the impact on fruit ripening and the production of aroma and flavor compounds. Our current research is directed towards phenols.

In one Merlot study, vines treated with 5 or 10 percent ethanol had a mean ethylene concentration of 70 ppb, compared to 10 ppb in control grapes.

Three hours post-treatment, the ethylene concentration averaged 50 ppb, while there were no differences between treatment and control fruit at 6 and 24 hours post-spray. Thus, the increase in this ripening hormone was transitory.

However, as explained below, the impact on fruit maturation was not. At harvest, components of yield (shoots per meter, clusters per shoot, clusters per vine, cluster weight, berry weight, berry numbers, and fruit weight per vine) did not differ among control and treated fruit.

The graphic on page 10 shows the combined effects of statistical analysis on seven fruit chemistry parameters at harvest on the same date (Brix, total glycosides,

See RIPENING on page 12

Check Out Wind Energy Potential

he Center for Wind Energy at James Madison University is interested in the potential of vineyards in Virginia to generate clean, renewable energy.

The Center strives to provide educational and technical opportunities, support and resources to foster the advancement of sustainable energy in Virginia. The center is currently seeking opportunities around the Commonwealth for distributed wind projects. Vineyards and other agricultural businesses are well suited to take advantage of these types of projects.

If you are interested in learning more about your vineyard's wind energy potential, an initial desktop study can tell if your vineyard is located in a windy area that would make a small wind project economically viable.

The Center can talk to you about this opportunity and some of the incentives and grants that would be available to assist you with the cost.

You can call the center at 540-568-8770, or write to: The Center for Wind Energy at James Madison University, 1401 Technology Dr., Suite 120, Harrisonburg, VA 22807.

Or you can check out the center's web site at: http://wind.jmu.edu.



RIPENING from page 11

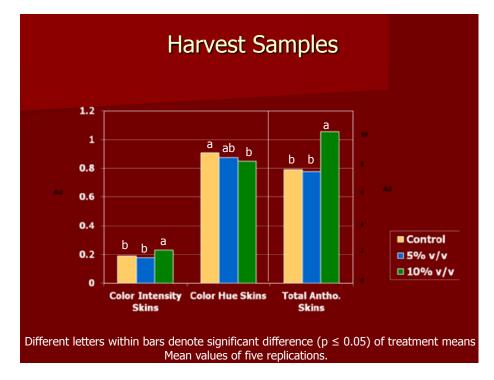
phenolic glycosides, total phenols, color intensity (A520nm + A420nm), color hue (A520nm/A420nm), and total anthocyanins). Data points in this spacial array represent the mean values of each analysis.

As can be seen, treatment vs. control data points are clustered in different regions illustrating that each measured component was statistically significantly different between control and the two treatments at harvests (95% confidence limit). Thus, clearly there was a treatment effect.

What we were particularly interested in was the impact on phenols. The graphic at right illustrates some of our results. The most striking differences occurred in the skin concentration of anthocyanins, with the treatment effect being highly significant. This can provide additional color to the wine.

Equally important is the fact that a higher level of anthocyanins changes the ratio of tannins to these important color components, thus effecting color stability, mouthfeel, and possibly reductive strength.

The mode of action may be a direct effect on anthocyanin biosynthesis by stimulating production of the key enzyme for attaching sugars to the pigmented anthocyanin molecule (UDP-glucose flavonoid 3-O-glucosyl transferase).



This research explores the use of a tool to help understand the impacts of fruit ripening rate on red grape phenolic compounds. These compounds impact color, color stability, and reductive strength, the ability of a wine to age well.

Additional information on these and other topics, including the sources cited in this article, is available at www.vtwines.info. Click Enology Notes Index.



What We're Reading

A Wealth of Wine Knowledge

inter is the perfect time of year for grape growers and winemakers to settle back with a new book or magazine. Grape Press asked members and friends of the Virginia Vineyards Association to suggest some of their favorite vine- and wine-related reading materials.

In no particular order, here's a sampling:

Tony Wolf

Virginia Tech's Tony Wolf had two great suggestions. The first is "The Grapevine: From the Science to the Practice of Growing Vines for Wines," by P. Iland, P. Dry, T. Profitt, and S. Tyerman, 2011(Patrick Iland Wine Promotions, Adelaide. 310 pages.)

"This is a fairly expensive book, and not easy to find, but it's one of the most approachable books that explains how our vineyard management practices impact grapevines, grapes and wine quality potential," Tony said. "The well-illustrated topics include grapevine form and function, growth and development, physiology, and environmental influences. Each chapter is summarized and the authors sprinkle the text with practical questions and research-based answers."

Tony's second suggestion is "The Science of Grapevines, Anatomy and Physiology," by Markus Keller Elsevier (2010, 377 pages).

"As the title might suggest, this text jumps right into the biochemical and physiological basis of how grapevines grow and function. This is not a casual read but is more in the style of a technical reference text with abundant references to the primary literature in the well-written text. I would recommend this book to viticulture undergraduate and graduate students, and to practitioners who

want a deeper understanding of cell, tissue and organ function in grapevines."

Jim Law

Jim Law, of Linden Vineyards, suggested a magazine rather than a book.

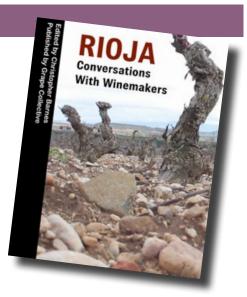
"Tong is an international wine quarterly that devotes each issue to just one topic," he said. "Equal space is devoted to technical viticultural and winemaking aspects of a given subject. Tong is the Dutch word for tongue. Contributors are different for each issue and are experts in the given field. The writing is focused, precise, and well edited. There is no advertising or fluff lifestyle pieces. My favorite issues have included Number 15, "Every Wine is a Blend," Number 11, "Chardonnay," and Number 2, "Terroir."

Paul Anctil

Paul Anctil of Sans Soucy Vineyards said he's found a couple of e-books that have been extremely valuable.

"I grow and bottle Tempranillo so I'm always looking to further develop my understanding of the Grape varietal and wine produced from it. I purchased the online version of "RIOJA: Conversations with Winemakers." It's a cheap and quick read, consisting of a series of interviews with the owners and winemakers of Spanish Bodegas that are known for quality Riojas."

Paul added that, "it's the same mantra repeated wherever good wine is produced: know your soil, know your vines etc. I was amazed to learn that some of these wineries age in barrels (one Bodega likes American oak - go figure!) for 6 to 12 years before bringing the wine to market! One great



"RIOJA: Conversations with Winemakers" is available on Amazon.com.

little feature of the online book is that it has imbedded URL links that allow you to go to the homepage of the Bodega and find more information. It's quick, informative, and inexpensive."

Bruce Zoecklein

Bruce Zoecklein of Virginia Tech suggests "Postmodern Winemaking," by Clark Smith. Postmodern winegrower philosophy requires both technical expertise and artistic instincts, and as the author suggests, postmodernism seeks "to move beyond rationalism [science] as the sole determiner of what is true, beautiful, sustainable and good" by questioning the utility and virtue of some of the generalized universal "truths." The truth worth knowing is largely local rather than universal. (See Bruce's article on postmodern winegrowing on Page 9.)

Bob Garsson

And finally, a suggestion from Bob Garsson, co-editor of Grape Press.

"Authentic Wine: Toward Natural and Sustainable Winemaking," by Jamie Goode and Sam Harrop, is a delight. While the authors clearly respect the idea of natural wine and sustainable viticultural practices, their first priority appears to be good wine, and they understand that a business isn't sustainable if it isn't profitable.

Sustainability and profitability are both key issues for Virginia growers. "Authentic Wine" falls neatly into two parts, one dealing with viticulture and the second focusing on winemaking. Beautifully written and thoroughly researched.

Have you read something lately you'd like to share? Let us know, and we'll continue this column in future issues of Grape Press. Send your thoughts to Bob Garsson at rgarsson@gmail.com.



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Monitoring a Million Wine Conversations

By Frank Morgan *Drnk What You Like*

Continuing Grape Press's ongoing series on social media, this installment provides an introduction to social media monitoring and describes a tool that can assist wineries in effectively engaging consumers online.

hile the use of social media is not a requisite for selling wine, the importance of engaging consumers online — via Twitter, Facebook, Instagram, Wine Berserkers, or Deletable, among others — is growing and will play a notable role in the future of the wine industry.

Paul Mabry, the Chief Strategy Officer and founder of California-based social media management company VinTank, noted in his recent keynote at the 2014 Wine Communicators of Australia conference that, "44 percent of customers consume media through digital outlets."

Contrast that percentage to findings in a recent report by the Federal Trade Commission, which showed that companies in the wine and spirits industry spent only 7.9 percent of marketing dollars on digital marketing.

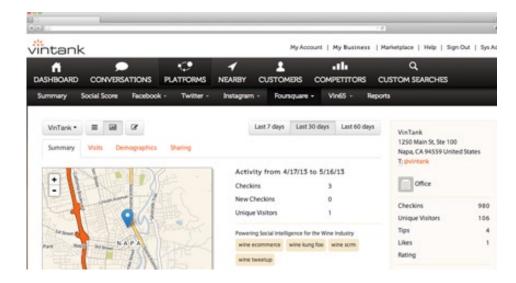
"We [the wine and spirits industry] only devote 7.9 percent of our attention to the place where our customers devote 44 percent of their attention," said Mabry in his keynote. "That is a huge disconnect."

Breaking it down further, Mabry estimates that the wine industry's spend on digital marketing is just 1.4 percent. An even bigger disconnect.

Based on recent conversations that I've had with a number of winemakers, much of this disconnect — angst even — may be a result of uncertainty about how to get the most return (i.e. - money) for time spent sitting in front of a computer versus working in the vineyard, cellar or at tastings.

"Besides posting announcements about events at the winery, I have no clue what we should be saying on Twitter or Facebook," said one Fauquier County winemaker during a recent conversation about why this particular winery has all but abandoned its social media efforts. "We just can't devote time to figuring all this out."

Making the time to learn how to effectively leverage social media may always be a challenge for wineries, especially smaller operations with limited staff, but there are tools available to help flatten the learning



curve and identify the right consumers to spend time engaging online.

While all customers are no doubt important, not all of your customers are created equal in terms of online value, according to the results of recent research published by social marketing technology company, EngageSciences.

EngageSciences analyzed data from 400 large brands across a number of industries like retail, financial services, and media and entertainment, and found that typically only 4.7 percent of a brand's fan base generates 100 percent of the social referrals.

In other words, the research shows about five percent of your customers generate nearly all of the online conversations (and word of mouth results) about your winery and wines.

Using a wine-focused social media monitoring and management tool like VinTank's Social Connect (see image above), which is the most robust of the applications that I reviewed, to identify this group of important customers — or, online brand ambassadors — may be the key to maximizing results of time spent on social media.

Social Connect monitors over a million wine conversations each day from platforms like Twitter and Facebook, wine apps like Delectable, Instagram, online forums and rating sites like CellarTracker, wine blogs, and location based platforms like FourSquare and Yelp.

Having one tool that monitors mentions—both positive and negative—of your winery or wines across the wine interwebs is invaluable, for any number of reasons.

Mabry suggested one important reason late

in his speech at the Wine Communicators of Australia conference, when he noted that over 80 percent of mentions a winery receives online go unanswered.

That's a lost opportunity. A robust social media monitoring tool will ensure that you do not miss these mentions, which are opportunities to engage with this valuable segment of your customer base.

Social Connect can serve a social media mission control — providing a streamlined mechanism to identify your most enthusiastic customers online, help make sense of the enormous amounts of data across multiple platforms, alert you when social media influences are near your winery (as part of the geo-fencing feature) and a number of other useful benefits.

As noted in the previous installments of this series, social media is not a panacea but it can help wineries connect with a large and growing audience and tools like Social Connect can help wineries make the most of their time online by focusing on their most important online brand ambassadors.

Frank's blog, Drink What You Like, follows wine and Virginia wine in particular. Find it at: https://drinkwhatyoulike.wordpress.com.

LEARN MORE

■ Learn more about establishing a free Social Connect account at:

http://www.vintank.com/social-connect

■ Visit VinTank's Social Media Index for today's most discussed wineries and wine labels:

http://cruvee.com/brand-index/score