GRAPE PRESS

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Grower of the Year

Congratulations to Fernando Franco, viticulturist at Barboursville Vineyards, who was named 2015 Grower of the Year at the VVA Winter Technical Meeting in Charlottesville in February.

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Courtesy of Karl Hambsch

Surround, a kaolin clay product, covers grapes at Loving Cup Vineyard & Winery in an effort to combat Spotted Wing Drosophila infestation.

Surround Trials Show Promise

Helpful, but 'Not a Magic Bullet'

By Christine Vrooman
Ankida Ridge Vineyards

The problem of SWD (Spotted Wing Drosophila fruit fly) infestation in vineyards has become a serious issue, not only in the mid-Atlantic region, but globally as well.

This past summer, our SWD forum received a communication from a Swiss grower looking for help in how to handle new issues with SWD in 2014. The grower was at a loss about what to do, as there was no history of SWD in that region.

Many of you might have read of the SWD problem spreading in 2014 to Bordeaux, Burgundy and Italy, to name a few regions.

It is evident that growers around the world are having a difficult time handling this new pest. From what I can discern in my own research, it seems we are in the gathering information stages with this pest, with definitive solutions yet to be determined, other than environmental measures taken pre-veraison and the use of insecticides, which typically need to be applied at levels deemed undesirable for many growers.

This past growing season, a number of central Virginia growers decided to do their own trials with Surround, a kaolin clay product that was sprayed on the grapes late in the season with the goal of using less insecticide and ending up with less sour rot. The trials varied from vineyard to vineyard in how it was applied, when it was applied and how often it was applied, but each grower noted the anecdotal and measurable effects of the spray, both in the field and in the vinification process.

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President's Corner

Making a Case for Hybrids in Virginia

By Tom Kelly
Kelly Vineyard Services

Spring has sprung!

Well, not quite. Up in my neck of the woods we're still waiting for those warmer temperatures to kick in. Oh, we've had the odd day or two, but most days are still pretty blustery for finishing up the pruning and taking the sprayer out of moth balls.

I for one have been itching to get back in the vineyard after a long winter hibernation, especially after this year's Winter Technical Meeting! There was so much great information shared at this year's meeting, it's hard to know where to begin.

In my mind, some of the highlights were Greg Jones's presentation on climate change and variety selection; Mizuho Nita's virus panel, which included such notables as Marc Fuchs and Lucie Morton; Jim Law and Jeanette Smith's discussion of vineyard renovation strategies; and the half-day focus on the challenges and attributes of Viognier.

There were so many more great moments at the 2015 meeting, it's no wonder this was our biggest event yet. We had record attendance for the main sessions, and the new breakout sessions were so popular we didn't have

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PRESIDENT'S CORNER (cont.)

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room for everyone. These breakout sessions will definitely be continued – and probably expanded – at future meetings.

As always, we owe a great debt of gratitude to Tony Wolf and his amazing team at the Winchester AREC.

These meetings are as much a product of Virginia Cooperative Extension services as the VVA, and we can't overstate how important they are to our industry. Many thanks, indeed!

The VVA board will now turn its attention, among other things, to planning the upcoming Summer Technical Meeting, which is typically held in June. Details will be coming out soon, so please keep an eye out for them.

You should also be on the lookout for enhancements to our website. Members will be asked to create a login that will provide exclusive access to members-only content. We're very excited about the new features coming to the website, especially those that will be available only to VVA members!

TOM KELLY

Vineyard Economics

At this point, I would like to shift the focus of this article back to the (one-way) discussion of vineyard economics that I started in last month's Grape Press. As previously stated, there are a number of steps growers can take to improve the rather dismal fiscal realities of our business.

In the last article I talked about economies of scale and the importance of achieving an appropriate size in order to realize not just a faster return on investment, but profitability. After all, very few of us set out to lose money on our business ventures.

But profitability requires good planning, and good planning means assessing risk. Risk comes in many forms but for grape growers in Virginia, the greatest risk comes from weather, and more specifically, from cold weather.

Certainly there are other forms of catastrophic weather events that can wreak havoc in the vineyard, but as we've seen in recent years, occurrences of extreme cold temperatures in the form of either spring frost or winter injury are becoming more prevalent.

And, given the climatic changes we're facing, these are problems that are likely to be become more and more common place. Each of these risks presents different concerns.

Winter injury can have profound effects on the long- and short-term survival of the vineyard while spring frost is a seasonal issue where yields are the primary concern.

Looking at Land Potential

Which leads us to another facet of proper planning: having a realistic understanding of the true potential of your land.

Again, I'm talking about yields. There is a lot of talk out there about what sorts of yields should be anticipated from an acre of grapes.

Viticultural research paints one picture, Virginia's own Annual Grape Report another. Vineyard consultants will tout the benefits of either high-density planting or divided canopies to improve per-acre tonnage, while winemakers can have very rigid ideas about yields with respect to quality.

Often, winemakers look at crop loads in terms of pounds per foot of trellis or grams per square meter of solar collecting canopy. Who's right? Well, who's to say? There are too many variables to consider.

So where am I going with all of this? Put quite simply: Hybrids. (Oops, I used the 'H' word!)

Let's look at hybrid varieties, categorically, as they apply to each facet mentioned above. First we'll look at winter injury. Most if not all hybrid varieties are appreciably more cold-hardy than their European counterparts.

Cold-Hardy Hybrids

This means that when the evil Polar Vortex comes around (and it will, again and again), varieties like Chambourcin are far more likely not only to survive major cold events without substantial injury to the permanent structure of the vine but also to remain more productive than say, Merlot or even Cabernet Franc. Because Chambourcin is more cold-hardy, there is less risk of bud mortality.

In fact, there is a great amount of effort being put into developing extremely cold-hardy varieties for production in the colder regions of North America.

These breeding programs have been so successful that wine grape production is now a reality in parts of this continent that might have previously been considered impossible for growing grapes.

Now let's examine hybrids with respect to

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spring frost. It is worth noting here that most hybrid varieties are highly productive from secondary and latent buds, whereas Vinifera varieties are typically less productive from those same buds – and in some cases not productive at all.

This means that even if those precious primary shoots are wiped out during a frost event, the shoots that emerge from hybrid varieties following that event will almost always be fruitful.

So much so, in fact, that even frost-injured Vidal Blanc is likely to produce as much fruit as non-frost injured Chardonnay might in any other year.

This characteristic of hybrid varieties will also allow you to put into production parts of your property that would be unsuitable for even the latest breaking Vinifera varieties, thereby maximizing the potential of your land.

Finally, let's look at hybrids in terms of their yield potential under "normal" conditions (read: non-frost years). It is generally recognized that most properly established hybrid plantings will experience greatly increased yields compared to Vinifera varieties, often on the order of double or more on a per-acre basis.

I am not nearly expert enough to fully understand or have knowledge of the physiological reasons for this, but it is likely due to a combination of the above mentioned fruitfulness of the buds and a tendency for larger clusters with more or bigger berries.

Success with Vidal Blanc

I can personally speak to an example of one particular block of Vidal Blanc that typically produces no less than six tons per acre of well-ripened fruit. This same block in 2014 produced an astounding nine (yes, nine) tons to the acre and achieved a respectable 24.3 degrees brix and 3.43 pH with cluster weights clocking in at .5 pounds each!

And while pricing for hybrid grapes is typically lower than that of Vinifera, I'll personally take five tons to the acre of Chambourcin at $1,095 per ton as opposed to two and a half tons to the acre of Cab Franc at $1,950 per ton any day of the week. (Those prices are the average per variety, according to the Virginia 2014 Commercial Grape Report.)

And don't even get me started about Viognier!

In the interest of space, I'll save the lengthy dissertation about the rather myopic point of view towards hybrid varieties as "junk grapes" that produce low-quality wines for another article.

Suffice it to say, though, that quality is in the eye of the beholder. Let's let the consumer, not the critics, decide what constitutes quality.

But when a 375ml bottle of well-made "Late Harvest Style" Vidal can sell for $16.50 (that's equivalent of $33.00 for a standard 750ml bottle, folks – not bad for a sugared-up "junk grape"), there is a place for hybrid wines in any tasting room lineup.

The same can be said of the increasingly popular "Port-style" wines made from Chambourcin, Norton or any number of other low-cost grapes that can sell for as much as $40 for a 500ml bottle.

Resistance to Fungal Diseases

And while we're on the subject of cost, another potential benefit to hybrid varieties is that some varieties are more tolerant to certain fungal diseases.

The level of tolerance and which specific diseases are tolerated will vary from variety to variety. In my 10-year experience with a particular block of Seyval Blanc, I can honestly say that I have never seen so much as a single spore of Downy Mildew on Seyval, while a neighboring, accidental Vidal vine mixed into the same block would be decimated by the same fungal pathogen annually.

It is entirely possible to utilize a greatly scaled back and less expensive spray program with many hybrid varieties and in some cases they even make organic production a possibility.

So, these grapes can not only satisfy the more frugal or environmentally sensitive farmer, but also fill a certain niche market of concerned consumers as well.

All of this brings us back to planning: It is the wise and prudent grower who incorporates hybrid varieties into a well-diversified and sustainable vineyard model to mitigate risk, maximize land use, and increase average yields and profitability across his or her agricultural enterprise.

Until next time,
Tom Kelly

CENTRAL: "Everyone ... coped with near or sub-zero temperatures this winter."

Courtesy of Fernando Franco

Barboursville's Fernando Franco looks for winter injury and gets some good news. At left, a healthy primary bud without stem necrosis or winter injury, and, right, a shoot with healthy cambium and xylem.

Grape Press

Everyone in the central region coped with near or sub-zero temperatures this winter. Jeff Sanders at Glass House Winery reported slight bud damage and an unusually high degree of crown gall, which he is attributing in part to both cicada and cold damage from the previous year. The lowest temperature he recorded was 0 degrees Fahrenheit.

Others around him, he said, reported temperatures a bit lower.

The several vines that sustained significant damage were all previously stressed vines (only two years old when the cicadas hit), and he had already begun bringing up additional trunks.

Barboursville Vineyard's Fernando Franco said the slow cooling leading up to the freeze gave his vines enough dormancy to withstand the single-digit temperatures. The lowest temperature he recorded was 1 degree Fahrenheit, with several mornings of 3 to 5 degrees.

The checks he ran for vascular damage were negative, and fewer than 1 percent of the buds were damaged.

NO. VIRGINIA: "Minus 3 was the coldest I heard of in our immediate area."

By Dean Triplett
Willowcroft Farm Vineyards

Cold, gray, with occasional snow. That's been the weather forecast from December 2014 through March 2015. Or at least that's what it's seemed like.

Everyone I know is completely tired of winter at this point. February brought both extreme cold and multiple snow events to our region repeatedly. We recorded seven nights with temps 10 degrees or lower. Minus 3 was the coldest I heard of in our immediate area. Snowfall, while not huge in any one event, stayed on the ground due to the cold weather and made vineyard work miserable.

Many vineyards have held off on pruning. We've had our guys out in the vineyards first rough pruning and then lately finish pruning. We started in the hybrids and have begun moving through the hardier vinifera varieties.

We've taken samples of Merlot, Chardonnay and Cab Franc and so far have seen no significant bud damage in any of the varieties. I am a little concerned about trunk damage in my Muscat Ottonel vines. The older vines in my vineyard sustained damage last year. I won't be able to tell if there's been any injury this winter until warmer weather arrives.

Fortunately it appears that the weather will be breaking in our favor starting the second week of March. Long-range forecasts show temps in the 40's through 50's for at least 10 days.

Nate Walsh of Sunset Hills writes me that he has seen some trunk damage from this year and apparently damage still expressing itself from last year. This year's damage however seems less than what was seen last year. He's also done some bud checks and not seen appreciable damage. Nate's lowest temps were just below zero.

Leaf Reddening

Mitch Russ of Russ Mountain Vineyards said he saw a low of minus 6 once, minus 1 once and zero twice. Last year Mitch sustained about .5% vine loss.

He also observed some pretty extensive early leaf reddening toward the end of last year that he thinks might be due to latent winter damage. Mitch is doing rough pruning for the first time to see if this will help speed up final pruning later this year.

I find the leaf reddening that Mitch describes interesting. In one of our vineyards we saw leaf distortion that initially looked like herbicide damage. I've talked to some growers in the Charlottesville area who observed the same sort of damage also, but instead of herbicide damage, may have been winter injury.

In both my case and the Charlottesville vineyards, the damage was highly variable and random in its incidence. What I find interesting is how winter damage expresses itself in many different ways. And in Nate's case the damage can continue over a number of years.

Mark Malick of Maggie Malick Wine Caves wrote that they planted an additional eight acres last year and hilled up the vines in December. His lowest temp this past winter was minus 1. He'll know in April when he de-hills if the hilling up was worth the time and expense.

Mark and Maggie are planning on planting another two acres this coming year. This planting will be Chardonnay. Mark says if he was asked five years ago if you should plant Chardonnay he'd have said no way. But with the current lack of grapes statewide and demand for Chardonnay on the rise, planting it makes more sense. Between last year's and this year's plantings, Mark and Maggie will have 30 acres of vines in the ground.

A Scary Winter

Bill Freitag of Toll Gate Farm sent me the following email for the spring report:

"Just as I was about to buy a set of snow shoes, the snow disappeared under the onslaught of a week of tropical weather in mid-March. Now all we have to do is hope we make it without budbreak until our average last frost in early May is passed. As they say, it is farming.

What our winter looked like was scary. With no frost in October we finally had some freezing weather in early November but with lots of above freezing nights until late November when we had one night of 5 F with nothing really hardened off.

Finally in December we saw a normal winterizing and by mid-month I felt comfortable in starting rough pruning. I quickly discovered that my Pinot Gris vines had not hardened off well and we still had cold damage from the year before. Bottom line: we did a lot of heavy pruning and laying down of new stub cordons to try to fix it.

All the other varieties seemed OK and we continued pruning. Then of course came the snow and ever more snow with extremely cold temperatures down to the 5 degree range again throughout February. So I did the old "cut some representative vine shoots" and brought them indoors for a couple of days to then cut into buds for signs of winter kill.

Amazingly there was no significant bud kill. So we continued with normal pruning. That brings us to our new tropical paradise with its own worries. Oh well, it's a labor of love."

A labor of love certainly is part of the equation when it comes to grape growing. But now that the snow has turned to mud and the freezing temperatures have turned to high pollen counts, spring's promise is just around the corner.

And maybe, just maybe, this past cold, gray with occasional snow winter will have killed off some of the pests that will try and plague our existence this coming season.

Hope springs eternal.

SOUTHERN: 'Squishy' tips and frozen bud nodules were not uncommon.

By Paul Anctil
Sans Soucy Vineyards

I feel pretty confident in saying that by the time everyone reads this edition of the GRAPE PRESS we will be in full bud break, maybe even more!

It's the time of year that fills me with both excitement and anxiety. The promise of the eternal cycle of renewal, rebirth, etc. is contagious once the weather softens. But I can't help but get a bit anxious over the challenges that are sure to come: false spring, disease, predation, and violent weather!

I gathered some historical precipitation data for my area of Virginia dating back 30 years. My suspicion that we didn't get as much rain and snow this year was supported by the data.

'Anxiety' Over Water Deficit

During the months of November, December, January and February, my part of Virginia has historically received 3.66, 3.3, 3.28, and 3.01 inches respectively. What was recorded in 2014-2015 was 2.86, 1.94, 1.94, and 2.55 inches. That translates into 9.29 inches instead of the normal 13.25.

Starting the growing season with a water deficit is in the category of "anxiety."

The unusually cold winter caused pruning problems for just about everybody. There were several days where it simply was not possible to get out and do the work properly. When the worst of the cold finally let up, I noticed considerably more cold damage to the canes.

Other vineyard owners in the area reported the same observations. "Squishy" tips and frozen bud nodules were not uncommon. I also noticed considerable crown gall developing in the newest vines I planted 2 years ago. Steven Rose at Rosemont of Virginia told me he had similar issues at his vineyard.

An App for Ailments

Some of you might be interested in an app I found for my Android smartphone. It's in French, but it's a pretty useful app with good quality photographs of the common ailments we all encounter in the vineyard.

Leaf, cane, and fruit damage caused by several pathogens is presented in various stages of development.

It was produced by INRA (Institut National de la Recherche Agronomique of France).

You can find it on the Google app store using Di@gnoPlant.

For those of you who have limited French skills, you might try downloading another app called Dictionary.com. One of the sub categories within that app is a Translator function. You can copy and paste the French words into that function and get a reasonably accurate and useful translation.

Screen shots from the Di@gnoPlant application. The app, which is available on the Google Play store, has high-quality photos, and the French text can be translated into English using a translation app.

I like the Di@gnoPlant app, because it is portable, has quality photos, and forces me to use French. I almost always have my cellphone with me, so it is convenient.

Finally, I know that there are a growing number of growers in our area that I have never met. I would love to have input from more of you for my Grape Press columns. Drop me a line at Paul@sanssoucyvineyards.com and introduce yourself.

The encyclopedia of Virginia Viticulture grows best when everyone contributes.

Linden's Band-Aid Trials for 2015

Experimenting with 'Whale's Tail' Removal and Kicker Canes

By Jim Law
Linden Vineyards

As each growing season approaches, I like to plan a few vineyard trials. These trials can be as simple as manipulating a single vine and observing it throughout the season, or as complex as flagging panels or rows and comparing two treatments.

However, Linden is not a university research facility, so our findings are not data driven nor conclusive. There is just more anecdotal information that contributes to a direction. Keeping things simple is very important. Too many treatments lead to confusion.

A lifetime ago, I studied economics, which was referred to as "the dismal science." Horticultural science can easily compete for that title as each growing season presents a totally different set of parameters. One year's observations will often not translate into the next. So we keep plugging away using gut feel as our guide.

The following are things we will be playing with at Linden for the 2015 growing season:

Vigor diverting kicker canes. This is classic band-aid viticulture: trying to fix a problem that could have been avoided by better planting strategies.

We have certain corners and end sections of blocks that are excessively vigorous resulting in lots of canopy work for poor quality fruit. Over the years we have had some success in leaving extra canes on these vines. The canes are left in the vertical position (not tied to the fruiting wire).

During the early part of the growing season they push lots of vigorous shoots with clusters. They are then cut off and removed. Afterwards the remaining canopy is in much better balance. Timing is the issue. How long can one stand to have a totally out of control canopy, not to mention the downy mildew pressure? The earliest we have removed the canes is post-fruit set. The latest is just pre-veraison (lag phase).

Whale's tail removal. It's been 10 years now since our vineyards have been converted to cane pruning. The biggest challenge remains uneven shoot development, especially with the older six-foot spaced vines.

Apical dominance often gives the vine two vigorous end shoots with stunted shoots in the mid-cane area. Over the years we have experimented with "whale's tail" removal. This is literally pinching off the tiny shoot tip of the vigorous shoots that resembles a whale's tail.

> ► Of all the canopy management techniques, leaf removal arguably has the greatest impact on wine style and quality.

The idea is to temporarily slow development in order for the others to catch up. Thus far results are at best inconclusive. We are still working on timing techniques for this, but I'm not too optimistic.

Leaf pulling. Always a constant theme, after several cooler, later vintages our pendulum is swinging back to a bit more aggressive removal. Of all the canopy management techniques, leaf removal arguably has the greatest impact on wine style and quality.

After a couple of tepid attempts of early (pre-bloom) leaf removal I'm ready to be a bit more proactive in my approach, primarily with our large, tight clustered clone #4 chardonnay.

Frankly, this is not because of any results at Hardscrabble (inconclusive), but because of the success of others. I have found that pre-bloom pulling is very labor intensive, as one needs to be careful as to not break off the entire shoot.

Increased bird pressure has indirectly influenced our leaf and lateral removal regime. Netting has now become part of life. Because netting reduces light penetration and air circulation in the fruit zone, we have found that leaf pulling needs to compensate by being more aggressive.

We have been pulling lightly in June, then more aggressively just before netting is put up in August. I'm thinking of being even a bit more aggressive earlier, at least with the reds.

Fruit thinning. In an ideal, balanced vineyard, no cluster thinning is necessary. While some blocks at Hardscrabble fit this description, most need cluster removal. Why? Three reasons: over cropping, aeration, and uneven ripening (green harvest).

We thin for over cropping at lag phase, which is about 45 days past full bloom. This has worked well if the vines are fairly strong and the crop is only moderately too big. There is little berry enlargement compensation if the timing is right. However, with weaker, younger vines the crop is removed as early as possible (even pre-bloom) so as not to stress the vines.

Lag phase is also when we thin for aeration. The goal is to visually see each individual cluster, not a mass of grapes. Any cluster touching, or worse, growing into a neighboring cluster is removed or trimmed (i.e. wings removed).

Over the past few years we have been slowly focusing more on aeration rather than trying to count the number of clusters per shoot or vine. The work goes faster and the results have been encouraging especially in wet harvests.

Green harvest for reds is executed at about 90% veraison now. Again, the later timing makes the work go faster as there is less indecision. Less than 5 percent of the crop is removed. Cabernet Franc and Petit Verdot need the most attention.

I am still trying to figure out how to manage those odd vines where all the fruit is significantly behind the rest of the block. In this case we remove about half of the clusters, hoping that the smaller crop will ripen more quickly.

Band-aid viticulture is an acknowledgement that things didn't work out as planned. The best situation is to have balanced vines that require less green work and regulate their crop naturally.

We do have a few blocks like this at Hardscrabble. They also consistently make our best wines.

While we continue to experiment with various band-aid techniques, I have concluded that the best path for Linden is to remove the unbalanced blocks and replant more appropriately based on experience rather than hope.

Results of Surround Trials in 2014

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What follows are the abbreviated comments and observations of the participants in our Surround trials. Generally speaking, SWD infestations were less prevalent in 2014 than previous years, most likely due to the previous harsh winter and the relatively dry summer, although that has not been definitively determined to be the reason.

The compilation of these trials indicates the use of Surround alone in this rainy climate is not adequate in preventing SWD damage, but it does offer other advantages. With continued experimentation we hope to discover how Surround or other non-toxic sprays can help combat the effects of SWD.

Photos courtesy of Matthieu Finot

Surround on Petit Verdot grapes, above and below, at King Family Vineyards.

♦ Matthieu Finot
King Family Vineyards

Surround is not the magic bullet that everyone hoped it would be. That being said, I think Surround is important for its prophylactic action.

We know that SWDs like a wet environment (so this year's dry conditions might explain the smaller population). Sour rot also likes high nocturnal temperature and humidity (again this year: low temperatures and not very wet conditions at night).

A French equivalent of VA Tech recommends using copper (600g to 800g/HA) at bunch closure and a second identical spray at veraison. The toxicity of the copper makes the skin more resistant and offers a "partial" protection against sour rot. The French had many more problems this year with SWD, so I am sure we will get a lot of new data and articles this coming year.

We are not the only ones fighting on this front, and this is a good thing.

Here's what I like about Surround:

It allows us to do a complete leaf pulling on both sides at veraison. The advantage is very good airflow, which reduces the chances of botrytis, bunch rot, sour rot, and SWD, since the clusters dry quickly. This spray needs to be targeted only on the fruit zone. Otherwise photosynthesis will be inhibited and ripening will be slower.

Also the canopy should be tall enough to compensate for the loss of leaves from leaf pulling.

The cover layer of Surround will reduce the heat in the berries and act like the shade that you will get from the leaves while allowing the fruit to dry faster. That means we could achieve better pH levels by not overheating our red varietals. (I would like to see some data on berry temperature with and without Surround and the correlation with the pH.)

By having your fruit zone completely exposed, insecticide applications, if needed, will be more efficient

So my take on Surround is this: It will not eliminate our SWD problems, but it will make conditions more difficult for SWD to develop.

♦Jeff Sanders
Glass House Winery

We sprayed surround trials on Cab Franc, Chambourcin, Merlot and Barbera. In each case, we sprayed Surround on somewhere between 25 and 60 percent of the vines in a block. We did not spray the rest of the vines in that block with Surround, but instead used a rotation of pesticides, every 4 to 6 days, once we saw any evidence of SWD.

Prior to spraying Surround, we pulled leaves, fully on the east side and perhaps 60-80% on the west side. We also pulled leaves on the vines that were sprayed with pesticides, though perhaps not quite as thoroughly.

We applied Surround twice, once in mid-August (before any sighting of SWD) and once on Sept. 6 (when we had just started finding a few SWD). The vines were well coated.

Here are our tentative conclusions.

Surround does not seem to affect ripening, either in our early-ripening reds or in the later-ripening reds like Cab Franc (which had Surround on for almost seven weeks). We saw no differences in either sugar or pH in the vines that were covered in Surround, and those that weren't.

We did not see any noticeable differences in either the must or the wine based on whether the vines were sprayed with Surround, with the exception of color early on. (The must from Surround-sprayed was pink, not red.) That did not carry over into the wine once it was racked. We can perceive no differences in flavor. I have a table with all

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numbers that I'm happy to share with anyone who is interested, but the table supports the conclusions above.

Surround seems to have no preventative effect on deer, and some, but not at all perfect, prevention for birds.

With regard to SWD, we found some in the Barbera that had Surround, and a bit more in the Barbera that did not have Surround. However, the SWD pressure in this block was not severe, and came late, so we experienced virtually no SWD damage in either Surround or non-Surround treated vines.

Elsewhere, we either had no SWD or only modest pressure with no real damage (Pinot Gris and Viognier). Of course, those were not varieties that had sustained any damage in 2012 or 2011. So we don't have a firm conclusion from this year.

I was not willing to let any of the red varieties go completely untreated, so all vines that showed signs of SWD were treated with either Surround or pesticides.

Based on these observations, our plan for next year is to spray our south vineyard (all red varieties) with Surround (that's about 4 acres of red grapes), and to use pesticides on our north vineyard, only as needed if SWD develops.

♦Ben Margulies
Democracy Vineyards

In 2014, I used Surround on Pinotage, a variety at high risk for SWD. In general, SWD populations were much lower and less aggressive than in 2013. I saw evidence of this pest only in the Pinotage. (It has many of the same issues as PN – tight cluster, dark skin, early ripening and despite laboratory evidence to the contrary, I believe SWD prefer this variety to others.)

The variety had been netted to minimize bird damage and had already had Delegate applied one time. I used Surround when I noticed SWD activity following the Delegate application.

Surround was effective only where the spray coverage was perfect. The coverage was not perfect on the "inside" of the clusters, and due to this, I'm switching the training from Smart Dyson-ballerina to a standard VSP and will do some aggressive leaf pulling next year before applying the Delegate.

I think the lesser effectiveness of Delegate may have also been due to poor coverage in a few problem areas.

I'd keep Surround in mind, but it's a real pain to clean out of the sprayer, and I'm a bit concerned about respiratory safety if it's being applied close to harvest.

♦Karl Hambsch
Loving Cup Vineyard & Winery (Organic)

Results with Surround were disappointing, and largely due to my reliance on it almost exclusively. I did spray Pyganic a couple times right at the end, but the damage had already been done.

I began each variety at around 16 - 18 Brix with a triple coat of Surround. Fruit coverage was complete on the exposed side, and was poor on the other side. Needed 2-3 additional sprays per variety to reapply what the rain washed off. Sprays ranged between 25-40 lbs/acre, dependent on number of nozzles used. A half-pound per gallon was standard.

I left a half row unsprayed and saw no noticeable difference in SWD infestation there. I had SWD everywhere, including my late season whites, which is where they moved after the reds were harvested.

I will probably try Entrust/sugar next year, and will install spreaders to keep the bird nets farther away from the fruit. I saw statistically negligible differences in Brix between the Surround fruit and the control fruit, with a slightly higher pH (0.10) in the control fruit.

♦Carrington King
King Family Vineyards

We have used Surround now for several years. I sprayed all red varieties and all my Viognier this year. I use Surround for its insecticidal benefits but also to protect the fruit from sunburn. I also believe it helps keep the fruit a bit cooler.

I have also found its helps me as a scouting tool for timing drosophila sprays. Especially in the reds, any damaged berries show up very clearly when all its neighbors are still white with kaolin. So far Matthieu has not complained about it in the cellar.

♦Christine Vrooman
Ankida Ridge Vineyards

Our mountain setting, with vast areas of

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wild blackberries and other assorted hosts, presents us with more SWD pressure than many areas. We have noticed that, when blackberry season ends, SWD enter the vineyard en masse, attracted by our ripening dark Pinot Noir fruit. The SWD have ignored our Chardonnay fruit every year.

We set cider vinegar traps amongst the rows and along the perimeter of the vineyard, and we counted twice daily. SWD entered the vineyard en masse on Aug 5, when our count jumped from 4 to 41 in one trap overnight. That day we sprayed Surround to one block of Pinot Noir and insecticide in the rest of the Pinot Noir. Brix was only 14.5.

In one Surround fruit block we pulled all leaves in the fruit zone on both sides of the row, the next block pulled no additional leaves. In the non-Surround fruit, we maintained usual leaf coverage on the west side.

Summary of observations:

Many consecutive days of rain affected coverage of Surround, leaving fruit vulnerable to SWD if not sprayed with insecticide. We experienced SWD damage in this area during that time. We had 14 out of 18 consecutive days of measureable precipitation.

One of the most interesting observations was that the row with the most overall damage to SWD was the first row of non-Surround fruit, just below where Surround coverage stopped, seemingly indicating if they have a choice, they prefer the non-Surround fruit. Insecticide coverage had been compromised by the rain as well.

To get thorough coverage, we recommend all leaves should be pulled in the fruit zone on both sides.

Because the white color of Surround on the exposed fruit seems to keep the temps lower, our pH levels remained good, in fact were slightly lower.

Vinification in the cellar: There have been essentially no differences between the non-Surround and Surround fruit throughout the vinification process. There was no noticeable difference in color or taste or in the fermentation process in regards to specific gravity and temperature differences, or color and taste.

Next year, we will continue trials. In the blocks where we use Surround we will pull leaves on both sides, ensuring more complete coverage and encouraging greater air movement.

The use of insecticides is still warranted at this point until some other form of protection or deterrent can be discovered.

We also will keep the end rows unsprayed to serve as an attractant for SWD and regularly treat with an insecticide applied with a backpack.

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I am hoping we will see an international symposium in the near future. Hopefully with a global effort, we can come up with a means of controlling this pest that is not harmful to the environment, beneficial insects and honeybees, and will let our fruit ripen to its heart's content.

Cheers to that!

A Look at Short-Term Leases

Created Mainly to Benefit Wineries, These Agreements Also Help Growers

By Jim Benefiel
Benevino Vineyards

A session on vineyard leasing and grape supply contracting at the recent winter technical meeting of the VVA was so well received that we decided to expand upon it in a Grape Press article and post some of salient features on the web.

Over the course of the next several issues of Grape Press, articles on vineyard leasing will cover:

- Short-term leases that comply with the Farm Winery Act;
- Medium-term leases in which the lessor takes over full responsibility for a planted vineyard; and
- Long-term leases of raw land upon which the lessor plants a vineyard.

Because each type of lease serves a different purpose and incurs different risks, each will be the subject of a separate article.

Short Term Leases and the Farm Winery Act

For you independent growers who make up about two-thirds of our VVA membership, short-term leases are created principally for the benefit of your client wineries. That does not necessarily mean the grower gives up some benefits, as we will discuss. Virginia requires an applicant to obtain a license in order to produce wine in the Commonwealth. Most prospective producers pursue a Farm Winery license. The Virginia Code, at § 4.1-219, provides for two classes of farm winery licenses, defined as follows:

"For Class A farm winery licensees, at least 51 percent of the fresh fruits or agricultural products used by the owner or lessee to manufacture the wine shall be grown or produced on such farm and no more than 25 percent of the fruits, fruit juices or other agricultural products shall be grown or produced outside the Commonwealth.

"For Class B farm winery licensees, 75 percent of the fresh fruits or agricultural products used by the owner or lessee to manufacture the wine shall be grown or produced in the Commonwealth and no more than 25 percent of the fruits, fruit juices or other agricultural products shall be grown or produced outside the Commonwealth. No Class B farm winery license shall be issued to any person who has not operated under an existing Virginia farm winery license for at least seven years."

Virginia Code states elsewhere that when a producer "is licensed as a farm winery, the term "farm" as used in this definition includes all of the land owned or leased … as long as such land is located in the Commonwealth." (Emphasis added)

So in order to obtain a Farm Winery license to produce wine in Virginia, one must own or lease the land on which the grapes are grown. This is the reason wineries seek leases of vineyards when they source your grapes.

Definition of a lease. A lease is a legal agreement that conveys the right of a party (the lessee) to use the property of another (the lessor). Why does the Commonwealth require leases, rather than straight commercial sales contracts? I suggest that it requires a winery to literally put down roots in Virginia.

Wineries with such arrangements will not generally be looking to move their operations to the next tax-advantaged location, once they're up and running. Such (anticipated) long-term arrangements also maintain the value of agricultural land throughout the Commonwealth.

There is nothing inconsistent with both a vineyard lease and a vineyard maintenance/grape supply contract. But for the lease to be true, these two arrangements must be separate. There are "triple net leases" in commerce that require the lessee to pay all taxes and maintenance expenses. There are also retail leases in which the lessee pays the lessor a percentage of revenue derived from the sale of goods from the leased facility. So these could be in your lease terms.

For this article, it is presumed that the grower is the landowner, and he retains the contract to manage the vines (i.e., tend the vineyard) separate from the lease provisions suggested below. What is being leased? For these short-term leases of planted vineyards, this is usually a block of land – specific rows designated within your vineyard.

Renovation and Improvement. Is the lessee expected to fund the cost of any improvements? For example, what if the lessee wants irrigation brought into the vineyard, or an exclusion fence erected to minimize animal predation? Who pays for that is a subject of negotiation and the relative standing of the parties.

Lease Duration. The duration is up to the parties, but typically extends for a few years. The lessee will want the lease to survive the landowner's disposition of the underlying real property, and may also want a right of first refusal should the land go up for sale. Since a newly planted grapevine usually takes five years to reach full production, don't expect a lessee to pay for replacement plantings within five years of the termination of the lease.

Assignment. Each party will probably want the right to assign its interest—for example, what if the assignor retains an interest? What happens if one party becomes disabled or incapacitated? Except for these two cases, a typical assignment provision requires the permission of the other party, and states that such permission cannot be unreasonably withheld. Some leases specify the criteria for denying an assignment.

Penalties and Remedies. Lay out the process for resolving disputes, including notifying the breeching party and allowing a reasonable "cure" period to correct the problem. What should be the penalty for a lessor's failure to make timely payments? Beyond the cure period, the lessor should have the right to re-market the grapes to be produced from the block. After that, most leases look to arbitration, rather than an expensive and time-consuming court fight.

Price. The rate for a lease should be consistent with the property being used. To focus on a short-term lease of a producing vineyard, I will use some examples. Your costs will certainly vary.

Current estimates range from $15,000 to $25,000 per acre for new vineyard development. New vineyard costs are relevant because that's the winery's alternative: acquire grapes from your land or plant its own vineyards.

Your historical cost is relevant only if the parties think that the productive life of your prior investment is substantially declining—determinable by the yield and quality of grapes you have recently produced from the property.

If a $20,000 development expenditure is amortized over a 20 year productive

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A Look at Short-Term Leases

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period, then that establishes the base "development" rate at $1000 per acre per year—before including any carrying costs. If you borrow the money at 6% to develop the vineyard, you would be paying the bank $1744 per acre per year over a 20-year period. This would be the fully-burdened development cost.

You may negotiate for more or less than this figure, depending on your standing relative to the prospective lessor and the expected remaining value at the end of the lease. The development cost is separate from the rental rate for the field capability of your raw (unplanted) land in your area.

Whether its next-best alternative use is hay, row crops, or cattle, your county extension agent can provide you with a reasonable rental rate, and this amount is usually considered to include any taxes and assessments on the underlying land. Let's say the alternate value is $50 per acre year. That puts your lease rate in the range of $1,800 per acre per year. You can now see why some Virginia officials are pointing to $1-per-year lease rates as shams. As an aside, the annual lease rate does not vary with the expected remaining life of the vineyard block.

As long as the vineyard is producing at full production—whether 5 or 20 remaining years are expected—the annual lease rate remains the same (of course, the potential term, in years, varies). What causes the value of the lease to vary is the efficiency and productivity of your investment. If you have a superior site (for yields or quality) or are producing varieties in high demand (as evidenced, perhaps, by high prices), then your investment is worth more to a lessee than another property producing lower yields or lower-valued varieties.

Before you run to your wineries expecting that you just "found" $1,800 per acre per year in new revenue, recognize that this amount has been implicitly included in your charges for grapes. Therefore, the price in your next grape supply contract probably needs to be reduced by this amount. That is, if your current contract calls for $2,000 per ton, and your recent production averaged 3 tons per acre, then you have been generating $6,000 per acre in revenue. If you split up that contract into separate land lease and vineyard tending contracts, then the for the land lease to be worth $1,800 per acre, your vineyard tending services are worth $4200 per acre to your clients.

Payments. You may wish to charge the lessee a one-time, up-front fee (which could be amortized over the duration of the lease, as a deposit would be applied against a purchase) to ensure that the lessor is serious about taking the output over the life of the lease. (Yes, grapes may be in short supply in Virginia today, but that hasn't always been so, and the pendulum may swing back again.)

Since the lease is a right to use the property, payments should be made annually at the beginning of the growing season or spread out over the length of the growing season – unlike a grape supply contract where payment is usually made at delivery. The lessor may want to spread payments over the season to ensure you are tending the grapes to their specifications (covered in a separate vineyard management/grape supply contract).

The Grape Supply Contract. We have already noted that the lease needs to be separated from the grape supply contract. The landowner/grower typically retains responsibility for management of the vineyard and production of the grapes to the winery's specification, which might include such activities as shoot thinning, shoot positioning, hedging, sampling and attendant fertilization, fruit thinning, and irrigation and spraying regimens. They might also take the form of quality measures (brix, TA, pH, color intensity, MPs, MOG, etc.) If you are expected to meet the spirit as well as the letter of the Virginia law, a handshake agreement is probably not satisfactory.

Summary. This article focused on the particulars of short-term leases to comply with the Virginia Farm Winery Act. Why should you go to all this trouble, since the principal beneficiary appears to be a winery? Because you are providing your winery customer with a secure, reliable source of grapes that should survive any future effort by the State to enforce laws already on the books—laws which place your customer at risk. A sample vineyard lease agreement is available from the Virginia Wine Association on their website. That sample agreement will be updated with input from the VVA Board.

Jim is vice president of the VVA.

Sustainability Corner

Bringing Science to Virginia Vineyards

By Bill Freitag
Toll Gate Farm and Vineyards

The vision of the Virginia Vineyards Association Sustainability Program is the long-term sustainability of our winegrowing community. 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; and
- Economic viability. By enhancing our profitability, we stay in business.

We have now completed the third year using our association's online self-assessment tool that codifies science-based best management practices for sustainable viticulture.

It is designed to help vineyard managers and owners assess how well they're doing against 105 best management practices spread across 12 major activities. We've named this tool the Virginia Sustainable Winegrowers self-Assessment Guide (VSWAG).

To get more information and background

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► The VSVAG is not a static entity, and the workbook was designed to be used on a continuing basis.

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about the tool, visit the VVA website to see the tool under the Sustainability Tab (http://vswag.virginiavineyardsassociation.com/login). The tool is largely intuitive to use and there are a numerous aids to assist you, if needed, under the tool's Help tab.

Some Statistics from VSWAG as of 2014:

We currently have 85 registered Virginia users. Additionally, we also have 7 out-of-state users (with .edu domain names) and a small group of miscellaneous users that we have not included in our statistics. Eight Virginia users completed the entire guide in 2014, and I hope they printed the certificate of completion and are displaying it prominently

During the past year we made changes in several functions that impact the users:

A "Not Applicable" (N/A) choice was added to the 5 point scoring. This is not a sort of "get out of jail free" card and should be used only for legitimate purposes such as a practice in your original site selection and planting that was not used.

We have created an annual certificate of completion.

The tool can now be accessed from your smart phone. Launch your browser and enter the following URL: http://vswag.virginiavineyardsassociation.com/login.

Coming Events

The VSVAG is not a static entity, and the workbook was designed to be used on a continuing basis. As you modify your practices, you should update your workbook score.

Additionally, we reset the tool to capture the data for the end of each calendar year. That requires each user to revalidate or change some of the scoring.

To update your scores, you simply click on the score you want. You can select your existing score from last year or a new one. You do not need to first select the edit icon. I'd like to encourage all 85 of you who have partial workbooks to complete the entire self-evaluation in the coming 2015 season.

We have made some structural changes to organization of the workbook, specifically in the number of topics and subtopics.

In the workbook last year we had the following topics:

- Soil management, fertilizer, and irrigation
- Vine training and crop/canopy management
- Groundcover and weed management in established vineyards
- Pre-plant considerations
- Pest mangement
  - Disease management
  - Arthropod management
  - Vertebrate management
  - Pesticide safety and management
  - Pesticide storage
  - Pesticide mixing and handling
  - Pesticide application technology
  - Grower/employee education

The first three topics have now been reorganized into two topics with practices as follows:

- Managing the Vine, the Canopy and Crop Load
  - Vine Training
  - Canopy Management
  - Crop Load Management
  - Site Management
  - Soil Management and Irrigation
  - Groundcover and weed management in established vineyards

The other topics remain unchanged. The modification was made to provide more focus on the individual practices. Further, they have some additional sub-practices under their Learn More tag.

The rearranged practices have been enhanced with some new material stemming from Dr. Tony Wolf's recent Viticulture notes pertaining particularly to winter damage and the material on Recovery and Retraining of Cold Injured Vines that was presented at the Winter Technical Meeting in February 2015.

We also plan to add some more BMPs to the workbook over the next year to be ready for the 2016 growing season. More on this as the 2015 season unfolds.

This is another reason that a onetime pass through the guide is not in a user's best interest. There will always be new and more informative changes.

One User's Story

I was talking to one of our users recently and he told me how he used the VSWAG after having been notified that a state agency was going to look at his handling and storage of pesticides.

He told me that he went into the workbook and reviewed the practices related to the storage and handling of pesticides and then made some adjustments to his storage area and posters, and also cleaned up the shed. He updated his inventory records, separated his PPE from the storage area and placed a fire extinguisher close by.

He told me that he not only easily passed the inspection but garnered some extra "atta-boys" from the inspector, all thanks to the VSWAG!

The More Distant Future

The VVA Strategic Plan tasks the Sustainability Committee with conducting 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 for each stage of annual growth of the grapevines.

The tool will provide 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 the information spanning a range of topics from the existing VSWAG's major topics such as soil management, fertilization, canopy management, and pest management integrated with real time inputs such as weather data, in one place in an easily accessible form for each stage of growth.

Of course this new tool will be available from user desk/lap tops and from mobile devices.

Join the Sustainability Committee

None of these plans will materialize out of thin air. They require participation by members of the Association and particularly from the Sustainability Committee.

I hope all readers of Grape Press understand that the VVA is truly a major organization in the Virginia wine industry that 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. We don't need software developers, but rather practitioners interested in growing great wine grapes with ideas on how best to pass knowledge to all our members.

Critical to success in this endeavor is willingness to provide some of your valuable time to make this work.

The operative word is "work." The workload won't be overwhelming, but it will require some dedicated time to do properly.

If you have an interest in joining us, please contact to me at the following address: bfreitag6@gmail.com or call me at 540-675-2509. Let's discuss how we can move forward.

For those of you who created score sheets in past years, you will find your old workbooks on the tool with scores as you left them. Let's get them updated and completed as you work in 2015.

Funding and the Cost Share Program

By Bill Robson
16 Rows Vineyard

Some Virginia Vineyards Association members may already be aware that the VVA board has been busy advancing the Grape Cost Share Program (GCSP) in Richmond, both independently and through the Virginia Wine Council. However, you may not have heard all of the details. The purpose of this article is to familiarize both the vineyard and winery industries of the program and the legislative advances to date.

Because of the Virginia wine industry's rapid growth and the continued growth in wine tourism, the industry as a whole realized several years ago that there is a significant wine grape shortage that is likely to continue.

Very simply, more grapes are needed to sustain the current and future production of Virginia wine. The wine industry established an annual statewide goal of 200 new vineyard acres for each of the next five years, which would yield 1,000 new acres.

To meet that goal, the VVA anticipates that established independent growers, new vineyards, and wineries would need financial assistance.

The cost-share program, which supports our strategic plan, was officially adopted as part of the VVA board's legislative agenda in 2013. It calls for funding from the Commonwealth of Virginia equal to 50 percent of the cost of vines planted in expanded or new vineyards.

Our financial assessment shows that the program will be self-funding, since it will generate sufficient additional tax revenue to offset the Commonwealth's initial investment. Each dollar invested will generate a minimum of $25 in wine excise tax revenue over the life of the vine.

The VVA also proposed an administrative plan for managing the program to safeguard government funds and to ensure funding is allocated statewide and that the vines are planted on high-value agricultural sites.

The GCSP program would not set a new precedent. Virginia currently funds the following cost share programs:

- Forestation – 75 percent of the cost of new seedlings
- Quail – Reintroduction of Bobwhite Quail ($10,000)
- Cider production – $30,000 funding in the 2014 legislation
- Cattle fencing – 100 percent of the cost of new fence construction

Based on research, other states and other wine producing countries have used the cost share concept to fund the planting of new grapevines. Maryland is the closest state and considered the program successful.

Following the VVA Board's adoption of the GSCP, the legislative committee sought formal industry "buy in" and advanced the concept towards state legislation.

The VVA's efforts are summarized below:

The VVA proposed the cost share program to the Virginia Wine Council (VWC) in 2013. After several months of discussion, the Wine Council board endorsed the concept (by vote) in August 2013.

The Wine Council did not agree on a source of funding. Members of the Council voiced opposition to any funding originating from the wine excise tax (i.e., through the Virginia Wine Board), arguing that those tax funds were for "wineries and research," not a cost share program. That statement was later disproven in examining the Virginia Wine Board enabling legislation.

The Wine Council decided not to seek funding for the program during the 2014 legislative session on the recommendation of its director. The Virginia Cider Cost Share Program (pilot program) was advanced in the 2014 legislative session and funded by the Commonwealth's general revenue fund ($30,000).

The VVA re-proposed the program to the Wine Council for the 2015 legislation session. The Council reiterated its view that funding should not come from wine excise tax.

In August 2014, the Wine Council decided (without seeking approval from the VVA) to release a survey to the industry. The survey proposed several methods of funding the program including a per acre tax on vineyards.

The VVA voiced concerned over the survey and reiterated that funding should be from Virginia's (or other public sources) general revenue.

During the second, third and fourth quarters of 2014, various legislators and public officials were consulted regarding public funding options for the GCSP. Due to the Commonwealth's budget shortfall, no funding was available for the program in 2015 budget.

The VVA recently wrote to the Governor asking if his office would issue an agricultural grant for $250,000 to support the cost share program (statewide).

In response, Secretary Todd Haymore indicated there would be no public funding in 2015 to support the program. He also noted that the Governor did not cut funding for the Wine Board and said that those funds might be used to finance operations of wineries and vineyards, including planting more grape vines.

Recently, the VVA board prepared a grant request and submitted it to the Virginia Wine Board to fund a pilot program for the Cost Share Program.

Based on publicly available information, the VWB board fulfills several goals to promote "the growing of wine grapes and wine production throughout the Commonwealth." The Wine Board's annual report for 2012-2013 indicated a "carry-over of $394,257 in residual funds."

The VVA Board is currently seeking revenue from other sources to fund a pilot program and will pursue public funding again in the 2016 legislative session.

Bill is chairman of the VVA Legislative Committee.