



Viticulture Notes..... Vol 34 No. 5 (September 2019)

Tony K. Wolf, Viticulture Extension Specialist, AHS Jr. Agricultural Research and Extension Center, Winchester, Virginia

vitis@vt.edu

<https://www.arec.vaes.vt.edu/arec/alson-h-smith.html>

I. Current situation	1
II. Spotted Lanternfly fact sheet available	3
III. Test available for powdery mildew resistance	3
IV. Question from the field	4

I. Current situation:

Reflecting an advanced season, grape harvest started around the 10th of August with grapes destined for sparkling and rosé wines, and quickly moved into still wines with early whites by mid-August. Chardonnay and Viognier harvest are in full swing in northern Virginia now and even our tardy Cabernet Sauvignon is bumping the 22° Brix level at this point. The comparison to last year is dramatic: quantities are up considerably and the fruit quality thus far has been very high. In travels throughout the state in the past few weeks we’ve seen some vineyards with visible downy mildew evident on leaves, a few situations of apparent “spray burn”, fruit bruised by apparent leaf-blowing, and even some vineyards with significant black rot infections. But these have been the exceptions in an otherwise generally smooth season, with generally very high-quality grapes and vineyards. The picture might be entirely rosy were it not for some who are finding difficulty finding a home for fruit this season. The apparent surplus of some fruit in Virginia mirrors a much larger picture of supply and demand at the national level that suggests prevailing headwinds affecting growth over the next few years. Interested readers can (and should) dive deeper into such issues with the Silicon Valley Bank report by Rob McMillan (<https://www.svb.com/wine-report>) being but one springboard. I don’t know how closely Virginia will hew to the national trends in this regard, but key negative factors such as labor cost/availability, competition from imports (wine) and competitive alternatives (e.g., craft beers, spirits, cannabis), particularly among millennials, are likely at play in Virginia and reflect the national canvas. In the short-term, if you’re long on crop and short on buyers, you can post your fruit on the Virginia Wine web site (<https://www.virginiawine.org/> find “Exchange Board” under trade information and resources).

As harvest approaches for any given variety it’s important to stay on top of disease and potential pest pressure. If your vineyard has had problems with fruit flies and sour rot in the past, chances are, it will again. Late-maturing varieties such as the Cabernets and Petit Verdot seem particularly

attractive to fruit flies, including spotted wing (*Drosophila suzukii*) and African fig fruit fly (*Zaprionus indianus*) found by Dr. Doug Pfeiffer and others here in Virginia. Dr. Pfeiffer's fruit notes page (<https://www.virginiafruit.ento.vt.edu/SWD.html>) has a good description of spotted wing drosophila biology, as well as cultural and chemical control options. Culturally, maintaining a relatively open, well ventilated fruit zone, and avoiding damage to the fruit by birds and grape berry moth are helpful tactics. Spray options, found in the 2019 VCE Grape Pest Management Guide (https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/456/456-017/ENTO-290C.pdf) include the relatively benign Surround, which deters egg-laying, neonicotinoids and other classes of insecticide. Surround, Entrust 2SC (a spinosad) and PyGanic (a pyrethrin) are organic alternatives. Pyrethroids (not organic) include Tombstone and Mustang Maxx. These materials have a rapid effect but generally short residual. Malathion (organophosphate) and Sevin (carbamate) are entirely different classes of insecticide (both are IRAC code 1B) and are also options for fruit fly management. Most materials have a short pre-harvest interval (PHI), but check the specific label. If fruit flies are abundant and persistent, weekly applications of insecticide leading up to harvest might be needed. It is important to rotate among IRAC codes of material, using 3 or more IRAC classes if possible (e.g., 3A, 4A, and 5) to avoid resistance development. I mentioned this early in the 2019 season (April 2019 Viticulture Notes) and it's a reminder now. The ability of fruit flies to develop resistance to a specific insecticide, and apparently cross-resistance to other classes of insecticides, has been demonstrated. Let's not fan that fire. The following was presented earlier, but bears repeating:

The PMG and insecticide product labels are very specific about "reducing" the potential for resistance development. The Mustang Maxx label, for example, has the following prescriptive labeling, which is good advice in a more generic sense too:

- Rotate the use of MUSTANG Maxx Insecticide or other Group 3A insecticides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
 - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
 - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
 - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pests.
 - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
 - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of

insecticides with unequal periods of residual insecticidal activity may offer an insect resistance management benefit only for the period where both insecticides are active.

- Adopt an integrated pest management program for insecticides that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological, and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.

Disease-wise, you've hopefully been on top of this game thus far. If the canopy is clean now, you might coast through harvest and come back in with a late-season spray for downy and/or powdery mildew, depending on when harvest occurred and how much season is left before frost or natural leaf senescence. Fruit rots become more prevalent at this time of the year and some, such as botrytis, might still benefit from botrytis-specific fungicides, most of which have a short PHI. The Pest Management Guide lists six options, and there are others that fall in the category of organically approved. Materials such as Vangard (cyprodinil) and Scala (pyrimethanil), both in the FRAC class 9, should be rotated with fungicides of alternative FRAC code(s), such as Luna Experience (fluopyram + tebuconazole), FRAC code 7,3. Again, be mindful of the PHI's on these products; Luna Experience, for example, is 14 days. Also, be careful not to exceed the maximum number of applications of a given product in a given year. Oxidate 2.0 (hydrogen dioxide) can be effective against sporulating botrytis infections, but has little or no systemic activity. Repeated applications are needed to sustain the reduction in sporulation, which can help reduce botrytis spread.

II. Spotted Lanternfly factsheet available:

Dr. Doug Pfeiffer and others of the Department of Entomology at Virginia Tech have recently released a short factsheet entitled **Spotted Lanternfly in Virginia Vineyards**. The fact sheet covers identification, impact of SLF feeding, management strategies and more. It is available as a PDF document from here:

<https://www.pubs.ext.vt.edu/ENTO/ENTO-323/ENTO-323.html>

The same publication is available in Spanish here:

https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/ENTO/ento-323s/ENTO-323S.pdf

III. Test for powdery mildew resistance:

For those of you who have some powdery mildew development and are wondering about fungicide resistance, there is a nationwide program available to have samples tested for strobilurin (QoI) resistance. See <https://framenetworks.wsu.edu/grower-information/>. QoI resistance (affecting Abound, Flint, etc.) has been common in Virginia for over a decade. This resistance has hit the West Coast in recent years, and Michelle Moyer (Washington State University) and others received a USDA/NIFA Specialty Crop Research Initiative grant to work on this, see

<https://framenetworks.wsu.edu/grower-information/>. Although they had proposed a national survey of powdery mildew resistance, most of their samples to-date have been from the West

Coast. Charlotte Oliver, who formerly worked at Virginia Tech with Mizuho Nita, is working on that project now and asked if we could provide samples from Virginia. They can provide sampling kits at no charge (swabs). You would collect the sample, mail the sample/kit back to them and should receive an answer after a few weeks. There is a video at <https://www.youtube.com/watch?v=VuEBF-1Md08&feature=youtu.be> showing how it's done.

Growers may request their own sampling kits. If you have concerns about other fungicides or about downy mildew, feel free to contact Anton Baudoin (abaudoin@vt.edu) to discuss testing options and sample needs.

IV. Question from the Field:

I'm having a hell of a time with Viognier production. Reds are doing great but Viognier has yet to yield over a ton per acre. Primary bud abortion, poor crop yields. Year to year consistency in my other blocks. There are blocks that will yield great one season and this season nothing; half a ton to the acre. Everyone I talk to says, "That's Viognier!" Why? What can I do to increase yields and have more consistency? Canopy health looks great. I'm going to take soil and petiole samples this week. I'd like to do some post-harvest fertilization on all my vines, either foliar or soil applied.

Response (TKW): Yes, Viognier is one of our problem varieties. If there were an easy way to boost the yields with Viognier, you'd already have an answer. We know the cause of the low fruitfulness (bud necrosis, or BN), but we really don't understand what causes BN. We can correlate BN with high shoot vigor and low carbohydrate status of the buds themselves, but gaining control of BN has been elusive. What is very interesting about BN is that it appears to be somewhat vineyard-specific. For example, when we grew Viognier here at Winchester, we never suffered more than about 60% bud loss. Our yields were usually well above the equivalent of 3.0 tons per acre. Our Smart-Dyson yields, for example, averaged 22 lbs/vine or 6.0 tons per acre over a 6-year period; this was old-school, low density vine spacing of only 544 vines per acre, but definitely fair dinkum yields. On the other hand, a nearby vineyard in Rappahannock County would routinely see 80 or 90% bud kill, and yields were often less than 1.5 tons per acre. I have some ideas about how the root environment and root-to-shoot signaling might be a factor in BN, but have not had a good opportunity to test my ideas.

What to do? You have a few options:

- admit that Viognier is not a good fit at this site and take it out. Saves money in the short term and if you plant with a higher yielding variety.. well, you understand the economics.
- depending on training, which will dictate the selection of extra nodes (head vs. cordon), you can retain more primary buds to compensate for the buds lost to BN. For head-trained vines, some growers are simply laying down an extra cane (or two) with their Guyot system. For cordon-trained vines, it's better to retain *more* spurs, rather than *longer* spurs. In either case, be advised that the extra shoots will be a mix of fruitful and non-fruitful secondary shoots and that extra labor will be required to thin non-fruitful shoots to avoid excessive canopy density. The slightly increased crop at the expense of added labor is marginally profitable at best.

- a third option that no one uses, but could still be considered, is to convert the training to Smart-Dyson to allow the retention of more shoots without necessarily having to increase shoot density. Here the added labor is for shoot-training. Again, no free lunches in this business.

If you wanted my opinion on what to do, it would be to take out the Viognier and sit tight on the open space until the industry figures out how much more independently-grown grapes are needed. That's an important, fundamental question that we're pursuing in other ways with the VVA and the VWA.

If you haven't done petiole tests or soil tests in a while, I do think this is a good step and you might find some things like soil pH or vine nitrogen status that should indeed be adjusted. I don't believe this will dramatically impact the expression of BN, or the resultant crop yields though. If needed, post-harvest application of low rates (up to 20 lbs/acre of actual N) of soil-applied nitrogen can be a very useful timing for this element.

It's a great question – I wish I were smart enough to have a great answer for you.

Good luck with the rest of harvest! We'll pick back up on the conversations afterwards.

