



WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION

From Penn State Cooperative Extension

<http://pawinegrape.com/>

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What's that I see this morning? Blue sky? At this point it's better than last year but we are once again walking the vintage tightrope. Dr. Tony Wolf, extension viticulturist at Virginia Tech, sent out these excellent observations and recommendations which, if true for Virginia, will probably apply in Pennsylvania. Please note that, once again, reports I am receiving indicate that conditions to the north and west of Harrisburg may be considerably drier and more favorable: the afternoon storms and Isaac remnants appear to have focused on the VA, MD, NJ and lower sections of PA. Thanks to Tony and Dr. Mizuho Nita, grape pathologist at VT for allowing me to share their notes.

To: Commercial Virginia grape producers

From: Tony Wolf, Viticulture Extension Specialist

Re: Vineyard conditions

Remnants of Isaac, including oppressively humid conditions, punctuated with local downpours has made the last 5 days uncomfortable and downright depressing at times. On the bright side, we're generally better off than we were last year at this time, and the week ahead looks downright glorious. Furthermore, much of the fruit that came in before last Saturday looked extremely good. But what of the next 24- to 36-hours and the days ahead? Mizuho and I have been pow-wowing on this and offer up some considerations for disease management. A basic question that I had, and one that you might be mulling over yourself, is "should I put on another pre-harvest fungicide?" We opted to do so with our research vineyard here at Winchester (P. Manseng and Cab Sauvignon), but there are a bunch of considerations, including:

- *Anticipated harvest date*
- *Condition of fruit (and foliage) now*
- *Susceptibility of fruit to rots, and susceptibility of variety to downy and powdery mildews*
- *Fungicide options: concerns of wine-maker for fermentation issues, PHIs, efficacy*

Much has to do at this point with when you anticipate harvesting fruit: today, 7 days out, 10 days out, 14- to 21-days out? Also, what is the integrity of the fruit now? If skins are dissolving at touch, they're not going to stand much more rain. Much of the Chardonnay and other whites are in now, so much of the conversation has to do with Merlot, the Cabs and other reds, some of which won't be harvested until late-September and into October. Sure, no one knows what the weather will be doing that far out, but we can imagine that the reds, like the whites, will be coming in up to 10 days earlier than "average".

Rains are expected to move across the state with a cold front tomorrow (Saturday). The bad news is that it's another wetting period and berries tend to crack with free water absorption; the good news is that it appears to be a fast-moving front, and the projection for Sunday and beyond is much more favorable. What are the options? A first consideration with any spray this close to harvest is the possible repercussion on wines. Application of copper or sulfur fungicides this close to harvest, for example, would definitely not be advised; post-harvest, however, these fungicides would be options for downy mildew and powdery mildew, respectively. Watch the Pre-Harvest Intervals (PHIs) with ANY product -- many have a 14-day PHI, although some, like captan, some phosphorous acid products, and the botrytis-specific fungicides are much shorter. Check the label. Then talk to your fruit buyer or wine-maker. Even though the label might indicate a short PHI, the wine-maker may not want the potential problems associated with a fungicide, such as captan, on fruit near harvest.

I can't tell each of you what to do, so I'll explain what we chose to do: Our last spray here at Winchester was back on 28 August and consisted only of phosphorous acid (ProPhyt) for downy mildew. Now, in hindsight, I wish I had included a broad-spectrum fungicide, captan, as we've seen some late-season fruit rots starting to crop up that might be bitter rot or possibly macrophoma. We rationalized that our harvest was still 10 to 14 days away so we applied a low rate of captan (0-day PHI) plus Switch (cyprodinil + fludioxonil) (7-day PHI) yesterday to target downy and possibly help reduce further infections by the rot organism [okay, we don't know which rot organism it is, but Turner Sutton's data presented at the VVA meeting in 2010 showed that captan was pretty effective against the most common fruit rot organisms, except botrytis; furthermore, it's going to give us forward protection of younger leaves to downy]. While Mizuho concurred with this as a general recommendation, he also had a good point – any fruit infections that occur with tomorrow's rain probably won't show up as disease for 10 or more days. So if you're planning to harvest next week, you should forego a spray and come back in post-harvest if you're concerned about keeping the canopy healthy through the fall. Mizuho also felt that hail, bird pecks, and other primary injuries to berries earlier this summer were contributing to some of the late-season rot that became evident this past week – other than sorting in the field and on the crush pad, there's not a lot that can be done with these rots now.

Keep on top of the vineyard scouting and watch the skin integrity of your fruit. Last year we had some horrific problems with botrytis when skins of normally pretty resistant varieties started degrading with the frequent rains. Sorting is helpful to an extent, but you run the risk of losing it all if you wait too long. Good luck, we've all got a ways to go with the 2012 harvest....

The 2012 Virginia Cooperative Extension Grape Pest Management Guide can be found here:
<http://pubs.ext.vt.edu/456/456-017/456-017.html>

Dr. Mizuho Nita's Virginia Grape Disease Updates can be found here:
<http://grapepathology.blogspot.com/>

I was on Long Island last week with Alice Wise and Libby Tarleton where the [Long Island Horticulture Research and Extension Center](#) was celebrating its 90th anniversary of providing research and extension services to the farmers in Suffolk County, which has the highest agriculture revenue of any county in New York. LI vineyards got a punch from Isaac also. The fruit appears to be sound but fragile. PN is such a tender variety, I'm just not sure if it can be grown successfully in coastal areas in the East. It is troubling that humidity levels are so high that every evening and morning is an infection period, especially for downy mildew. Jim Thompson, the vineyard manager of 100 acres at Martha Clara Vineyard is certain that tight spacing (< 8') contributes to humidity in the vineyard. The stretch run from veraison to harvest has become extremely complicated in all but the best vintages ('07, '10). Alice and I discussed changes over the past decade of the post-veraison period that includes increased pressure from diseases, especially downy mildew, botrytis and sour rot, insects like fruit flies, grape berry moth (a fourth generation is almost certain, possibly even a fifth in SE PA, see [observations and recommendations](#) from Dr. Rufus Isaacs at Michigan State University), spotted wing drosophila ([Penn State four-part fact sheets](#)), and birds, deer, bees (see book recommendation below) and assorted other critters, that has made harvesting a clean crop an almost annual challenge. Neither of us are sure why this has happened. In the past, pesticide application ended with the application of bird nets but now growers fasten nets at the bottom allowing tractor work to continue. This allows growers to continue to address late season pest management problems. That said, except for PN, her research vineyard (>>) is squeaky clean, the result of a highly effective IPM program that is a model for success and if it works for *vinifera*, it should cover just about every variety. There appears to be downy mildew resistance problems with Pristine in some vineyards in SE PA. Dr. Turner Sutton, grape pathologist at NC State University who has studied sour rot extensively (see Missouri grape growers presentation: [Managing Late Season Fruit Rots](#) 5MB) recommendation of late season



Libby and her research vines at LIHREC



Double nets (difficult to see but it's there) on Merlot: note ideal cluster spacing

applications of Pristine, Switch and captan to manage sour rot are still a good options. In her fungicide trials, Alice has seen mid-season application of Pristine and captan reduce fruit rots (especially bitter) in Chardonnay. In Canada, research indicates that potassium metabisulfite (KMS) may also slow the development of sour rot (research, not a recommendation). Current conditions are conducive to botrytis and sour rot, especially in tight clustered varieties. The use of pre-bloom leaf removal (5-7 leaves) may be a long-term solution this increasingly serious problem, as well as offering other viticultural and fruit quality benefits (note: Alice tested it in 2010 and got severe sunburn on Chardonnay, we are not sure why). Nets: I saw vineyards double netted (<<) against birds for the first time – side netting and over the row nets. Note: side nets that are not lock-stitched are vulnerable to bird damage. This apparently is a 100% effective anti-bird treatment. Needless to say it is very expensive and time-consuming. One issue with netting is the lack of access to fruit and leaves, it's difficult to sample and make canopy

adjustments. There is a type of net that will discourage bees (contact [Spec Trellising](#)), and the tighter weave has not resulted in more botrytis under the nets. Growers on LI pull leaves in the fruit zone, exposing fruit completely, some try to retain leaves to shed rain from clusters. Alice has noted that any contact with clusters – cluster to cluster, leaf to cluster, wire to cluster, will increase the likelihood that rot will develop at that contact point. High value red varieties are often thinned to one cluster per shoot and spaced just right so each cluster is in its own space. The vineyards on LI are very well-tended. My only concern while touring vineyards was the deep green color of the leaves and the profusion of lateral growth, indicating that the vines were still very vegetative. This is the essence of the fine wine conundrum in the East, how to manage post-veraison soil moisture. I don't have a pressure bomb so I cannot measure stem water potentials but I would guess they are in the single digits, not a good place to be when trying to ripen fruit. In a recent exchange with [Mark Greenspan](#), initiated by his excellent column in the September *Wine Business Monthly* – after I read *Let it Hang: Fruit Thinning not Needed?* I asked him about the impact of diurnal temperature range and light quality on ripening and fruit quality. If one subscribes to [Gladstones](#), our low diurnal temperature range and high diffuse light conditions (translation: cloudy and/or hazy) should be virtually optimal conditions for speedy ripening and balanced alcohol and tannins. But, it's not and I wonder why. I think it's the water (rain, soil moisture)



Are these leaves too green for this time of the season?

that is spoiling the party for some of us. Although in a recent conversation with Ed Boyce at Black Ankle Vineyard in Maryland, we DO have a compressed ripening season relative to other wine regions like coastal California, or even Bordeaux, i.e. we break bud later and pick earlier in some places. What will save all of us, of course, is some warm but dry weather, preferably with a nice breeze, which it appears we may get for most of this week (but we need more!). If the weather doesn't cooperate again... in a conversation with Rich Harbich-Olsen at Bedell Vineyards, we talked about the virtues of picking grapes early. There is a point when the fruit cannot sustain another punch (disease, birds, insects, etc), don't be afraid to bring it in. Alice has some disease resistant varieties in her variety trials, including Cornell grape breeder [Bruce Reisch's](#) new no-spray red hybrid, Marquette (both tasting very ripe and not grapey) and others that cause much less wear and tear on the grower and the environment. Maybe, just maybe, it's time to have a more serious dialogue about these varieties, which are improving in wine quality with each new release. Sorry, but I just had to say it. The die is pretty much cast for the season by now, and there's not much a grower can do except hand the vintage off to Mother Nature. If difficult conditions persist, get the grapes as close as they can to ready and then work with the winemaker to make the picking decision. For a PDF with photos of this LI section, click **HERE** and for more information about Long Island wine growing, read [2011 notes from LI](#).

The September issue (#6) of [Vineyard Notes](#) (7MB) from the Lake Erie Regional Grape Program is why I am dark green with envy over the vast resources of the Cornell viticulture and enology research and extension program. This newsletter encompasses vast swaths of viticulture that can only be surveyed by a group as large and talented as the personnel at Cornell. The **NDVI technology** that James Taylor writes about is almost standard in the best vineyards in California, and eventually will bring precision viticulture to Eastern wine vineyards. Even though many vineyards have not started harvest yet, it's not too early to consider **fall weed control** measures offered by Tim Weigle, and get a jump on 2013 weed management. Jodi Creasap Gee offers an excellent overview of **soil pH, organic matter and micro-macro nutrient management**. As mentioned above in Long Island, spraying continues ever deeper into the season and Hans Walter-Peterson examines the impact of **late season vineyard sprays on fermentation**

and flavors. Tim Weigle and Greg Loeb give an update on **spotted wing drosophila**, it's out there but we aren't sure how much damage it is doing. Finally, Kevin Martin discusses **employer obligations to employees** including unemployment insurance, wages, and health care. This is a big and very informative newsletter so please take the time to read it between bird patrols or harvesting different varieties. Thank you to my Cornell colleagues for providing this great information.

I was excited when I got the flyer that Cornell NRAES was releasing a book titled: [Wasp and Bee Management: A Common Sense Approach](#). I thought maybe it would have the answers to an increasingly severe annual harvest problem in vineyards. Alas, it is more of a homeowner-type guide but it does contain some good information including wasp and bee ID (did you know there are seven types of yellow jackets?), IPM recommendations, and how to treat bee stings. There is no silver bullet here but at least you'll have a much better understanding of your adversaries after you read it.

During a recent visit to California's central coast region I mentioned the excellent work being done by Mark Battany, UC viticulture farm advisor for San Luis Obispo and Santa Barbara counties. He just published data in his newsletter called [Vine Training Height and the Air Temperature Microclimate](#) (September, 2012 *Grape Notes*). This work demonstrates the potential for significant effect of vine training height on risk of spring and-or fall frost hazards. Mark tested the relationship between height and temperature in both night and daytime situations and found that on a frost night in April the temperature at between one foot and eight feet can vary by as much as 3 degrees F (cooler at the ground level), and the daytime temperature in August can differ by as much as 6 degrees F from one foot to eight feet (in his example the temperature was 108F near the ground and 102F at the 8' level). While we all know of these temperature and height relationships, this experiment quantifies the differences and shows just how dramatic they can be. This has implications for both frost hazard and fruit ripening. It would be interesting to know how the daytime warmth is stored in the ground and how it affects nighttime temperatures after fruit set. Jeff Newton at Coastal Vineyard Care Associates wants red varieties low and close to the ground (20-24") to get them ripe fully and early, and this work may offer clues about how and why.

Recommendations:

- Scout especially for powdery and downy mildews. Treat canopy only with special attention to the top of the canopy
- Additional fruit rot may or may not be effective now, but if used should be directed at the fruit zone using high (> 50 gpa) for a cluster wash application
- Consult with winemakers about all late season sprays, timing, product/rate, fruit condition and maturity, picking dates, etc.
- Recent research (see Greenspan article) indicates that lagging berries in clusters will catch up in ripeness by the time harvest arrives. But thinning unripe clusters will help to even out fruit ripeness.
- There is almost certainly a fourth flight of grape berry moth (too late to treat) and maybe even a fifth in SE PA. Scout hot spots for damage and be aware of fruit rot potential.
- Keep birds, bees and other critters away. So far no indication that MALB or BMSB are players in this vintage.
- Risk management involves playing the weather game for the best possible outcome. Pick earlier if fruit pressures exceed potential benefits.
- Be ready to harvest quickly, when the decision is made.
- Variably pick vines, rows, sections for the best quality fruit. Sort in the field and on the crush pad.

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