

WINE GRAPE INFORMATION FOR PENNSYLVANIA AND THE REGION

From Penn State Cooperative Extension

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P.S. If I seem hard to reach recently it is because I am. We are moving our offices at the Lancaster Extension Office while they remodel our space. We will then move back in later this year. The best way to reach me is by e-mail. Thanks for your patience!

Observations: Vintage 2006

I visited a few vineyards this week in Berks and Schuylkill counties. Site selection is essential to making great wine and I saw one newly developed site that just makes my palate tingle. In Schuylkill County it's a bit far north but it has a perfect south slope 10+ degree slope with soils heavy in shale and rock that indicate excellent drainage. With the right clones and rootstock on quite high density fine wines seem almost inevitable. These kinds of sites bode well for the future of Pennsylvania wines. Ernesto dumped from 3-6" of rain and then we had some wet periods afterwards but a few days of drying weather recently. Dry weather makes ALL the difference to everything at this stage of the game. There is clearly botrytis and ripe rot in progress in vinifera and hybrid varieties. Stephen and I did not detect very much sour rot, which is a good sign but many varieties have not yet hit 20 brix yet, the danger threshold for the late rots. We saw black rot, powdery and downy also. It was a difficult year. Spray programs were important this year. If you had holes they should be plugged this winter. We saw a little bit of bird damage and precious few yellow jackets which are both very good signs. One grower mentioned that the birds were vicious a week ago but then just disappeared. Nets and bird guards were out. It is very important to get them up and out BEFORE the birds take an interest in your fruit! I was very impressed by the overall quality of the viticulture that I saw, especially since this was not an easy season. Canopy management was very well done with good shoot density and positioning and leaf removal around the fruit zone which surely helps with disease avoidance. In many varieties shoots were lignifying very nicely and despite the recent rains there was not a flush of shoot or lateral growth. These are all good signs. I noted the very nice balance in the canopies even among hybrids on both VSP, SH and HWC. Growers are really managing their vines for quality now. Vines have been hedged 3-4x this year. I have noticed in quite a few vineyards, especially on vertically divided canopies, shoots that are hedged too short, 10-15 leaves instead of 15-20. We need those leaves! Of course, it takes labor and money to do this work. I admire greatly growers who make this commitment. It is the only way to realize quality from a vineyard. Among nutrition problems there we no surprises - potassium and magnesium and some phosphorus. If you have a block with a problem make sure to flag it and take petiole and/or soil tests next season to diagnose the issue, don't let it linger. Two growers agreed that own-rooted Chambourcin benefits from a regular regime of nitrogen addition, in one

case from horse manure compost + 3 apps of organic fertilizer that helps to extend the canopy late into the season. Both growers also thin Chambourcin to one cluster per shoot (one at bloom and the other before veraison) and you can see the effects in the fruit and taste it in the wines. Even with thinning they are patient, waiting until November to harvest Chambourcin. Chambourcin is impressive - loose clusters and big berries w/ thick skins, no disease, minimal ozone damage. The late reds will require the same patience - Cabernet Sauvignon and Cabernet Franc, while uniformly colored, both have a long way to go in flavor development. Just as we need dry weather for disease control we need warmer temperatures to help push secondary metabolite development for flavors, phenolics, etc. Crop management is so important in an unpredictable year like this one. It takes real thought and courage to trade production for quality but in almost every variety you can taste the difference on the vine and that will certainly translate into the resulting wines. In two vineyards I tasted beautiful Pinot noir but it was clearly reaching the limits on the vine. I believe that this bumpy year will end with grapes reaching early physiological maturity at lower brix. The PN berries were soft to the touch and would leave a slight indentation in the skin. Berries pull away easily and taste very good with lower than expected acidity. Tasting is so important to determining fruit maturity and harvest date. In the flavor background I could taste a very slight sensation of rot which is a danger sign. I wondered if diffuse powdery mildew might be creating opportunities for the secondary rot pathogens to move in on thin-skinned varieties like PN. Watch these carefully. We saw quite a bit of downy mildew taking the tops off of canopies in addition to the work of the JB's. This is a real concern since the new lateral leaves are needed for ripening. I think we are not adjusting our sprayers properly or using the right sprayer or adequate gallonage to get proper coverage. Every grower with a disease problem needs to consider these issues. Clone and rootstock make a difference and I saw this dramatically in a few blocks of grapes. It is just so important to get it right. SO4 is far too vigorous and a beautiful block of Riesling never ripens well enough to make good wine whereas beside it Gewurztraminer on Riparia Gloire was gorgeous in color (bright pink shifting to deeper red) and flavors (spice!). In PN clones are terrifically important for good wine. The Dijon clones are impressive, but so is the K. Frank #7 in a good year. We saw the effects of ToRSV in Vidal and evidence of it in other varieties as well as some leafroll virus. I'll be sending out more information about possible control and replant strategies in the future as I collect information. If you have virus affected vines please flag them and pull them out this winter. Weed control was very good in all the vineyards, a combination of herbicides and mechanical tillage. A lot of PA growers still use weed badgers which I think are a major cause of tractor blight. I like the grape hoe much better but soil conditions matter in the choice of tools. Stephen and I tasted wines at two estate wineries and were really impressed by the 04s and 05s. Remember that 2004 was by no means an easy vintage especially for the reds. These wines were great indicators of the quality of work in the vineyard but also the skill of the wine maker in the cellar. A couple of true ice wines were truly amazing wines! I was so impressed by these amazingly thoughtful, meticulous and determined growers. I was so glad when one wine maker told me that he is working with two other wineries on barrel trials - comparing the effects of different types of oak and coopers on their wines. This is how we learn! There is a continuum in the vineyard that makes the whole thing work - it starts with careful observation and thinking about what you see then making connections

and understanding relationships between the vine, you and the environment all in a very complicated but amazing closed loop of knowledge and experience. Even with all this cerebral viticulture it will still be up to Mother Nature to decide if this vintage will be recognized for fine wines. We need 5-6 weeks of pretty to very good weather to get these wines home. Keep up the good work and good luck!

Late Season Spraying and Its Effects on Fermentation - Alice Wise, Cornell University Cooperative Extension, Long Island, NY

All pesticides have a days to harvest restriction, also called a preharvest interval (PHI). If a product is labeled 14 days PHI, this means it cannot be used within 14 days of harvest. With many growers, the application of bird netting in late August effectively ends the spray season though more and more growers are tacking down nets so that equipment can get through, particularly in late ripening blocks. From a winemaking standpoint, one of the primary concerns about late season sprays is that potential residues may inhibit fermentation. Interesting that some winemakers consider this an issue, others discount it. It is known that antifungal agents - fungicides - used in the vineyard may inhibit yeast. After all yeasts are also fungi.

Sulfur is often demonized as the reason for “stuck fermentations”. Yeasts have the ability to convert elemental sulfur into H₂S. If the residual elemental sulfur in the must is 1 ppm (although some sources claim it takes 5 ppm), it may lead to H₂S formation and off-odors in the wine. Think “rotten egg”. Consequently, a late application of sulfur, particularly if no rain occurs between the spray and harvest, may lead to H₂S problems.

Copper can also be inhibitory to yeast and bacteria (malolactic fermentation is a bacterial fermentation). Non-lethal doses of copper can cause stress on the yeast which can cause incomplete fermentations and release of undesirable metabolites, all leading to wine aroma defects. Generally this occurs only with very high residual copper concentrations. There are a number of factors that influence whether a late sulfur spray – or any other type of spray - will lead to a problematic fermentation. Many enologists call for >30 days between the last spray and harvest. The type of product is important. Micronized sulfurs, for example, are used at lower rates than the dusting sulfurs used on the west coast. Rainfall is also a factor in east vs. west coast conditions. Coverage can be a contributing factor. If fruit is free from powdery mildew, minimize the nozzles in the cluster zone and focus on keeping the canopy clean. Use a lower rate of sulfur, 4 lbs./a for example rather than a high rate for the last spray.

Other potential end of season sprays include potassium bicarbonate (Kaligreen, Armicarb, Milstop), monopotassium phosphate (Nutrol), hydrogen peroxide (Oxidate), JMS Stylet Oil and the phosphorous acid products. Winemakers may express concern about the first two. Adding excessive amounts of potassium to the must, potentially raising the pH, could be an issue. Again, this is unlikely to be an issue unless a heavy application was made shortly before harvest. No issues come to mind with hydrogen peroxide. JMS Stylet Oil is actually a very good late season spray. Past experience has shown it to do a good job keeping late season powdery mildew to a minimum. It will knock back European red mite as well. There is some evidence that late applications depress Brix (sugar) accumulation via reductions in photosynthesis. To that end, we are again conducting research comparing season long Stylet Oil with a conventional schedule

to judge effects on fruit quality. Last year's results were inconclusive. Research conducted in California a few years ago indicated that Stylet Oil had no effect on fermentation. There are no obvious issues with the phosphorous acid products. Finally, for DM and PM, there's the synthetic materials such as the strobilurins and sterol inhibitors. The strobilurins are not the best choice due to resistance issues. Even where canopies look relatively clean, inevitably there may be low levels of powdery mildew. For this reason, if deciding to select from synthetic materials, a sterol inhibitor such as Rubigan might be a better choice than a strobie. From a fermentation standpoint, there appear to be no issues with either group of materials.

Botrytis materials are perhaps more of a concern as they are targeted on the cluster zone. There are no known issues with botrycides such as Elevate, Vanguard and Scala and fermentation. In general botrycides are inactive against most fungi that are not closely related to Botrytis. Fortunately, yeasts are not closely related. If near harvest and time/labor is available, snip out the worst of the infections at the minimum. Another option would be one or more sprays of Oxidate, which leaves no residue as it dissipates soon after application. While Oxidate is labeled for Botrytis, the efficacy has not been clearly determined. We are conducting trials on this topic this year. Where infections exist, some growers have tank mixed Oxidate and a botrycide. Again, there is no data to suggest this is a superior strategy; growers are experimenting in an attempt to limit the spread of infections.

Bottom line – minimize spraying late into the season - easy to say, harder to make the call if disease exists or a major rain looms. If fruit is clean at this point, don't target the cluster zone with powdery and downy sprays. Consider all options for Botrytis control and expect rainfall between the last spray and harvest to have an impact. Scout the vineyard carefully for Botrytis, a few diseased berries 2 weeks before harvest can turn into a lot of disease if rains occur. Research has shown that traditional Botrytis fungicides (Vanguard, Scala, Elevate) can slow disease spread significantly when applied under this scenario. *(AW with thanks to Wayne Wilcox and Thomas Henick-Kling)*

References

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- Zoecklein, Bruce. Feb. 26, 2003 Enology Notes # 70. <http://www.fst.vt.edu/extension/enology/contentextenologynotes70.html>.
- Wolf, Tony. June 1, 2000 Vineyard Information Series. In his monthly newsletter, Dr. Wolf discusses work done by grad student Sarah Finger on the impact of Stylet Oil sprays on vine photosynthesis and Brix accumulation. This work is undoubtedly published formally in a scientific journal, there was insufficient time to track it down.

Yellow Jackets - taken from an article by Neil Carter, Tender Fruit and Grape IPM Specialist, OMFRA, Ontario. Sept-Oct, 05

Yellow jackets are not just pests in vineyards. They feed on and control other insects pests, especially caterpillars in fruit crops during the early spring and summer. In the fall they become in pest in grapes when their feeding habits change from a "meat" diet to sugar sources. Their feeding habits can be solitary or in large enough numbers to affect

yields and quality. They can be a serious problem for hand harvesters. Trapping queens early in the season appears not to be an effective control method. Instead, starting early in the ripening season and maintaining traps throughout harvest may be the best strategy. Fresh bait is essential - early season bait can be fresh meat or tuna but Mountain Dew TM has been shown to be an excellent bait. It is easy to make traps or they can be purchased at most hardware or home/garden centers. Traps need to be serviced regularly.

I would like to thank Alice, Wayne, Thomas and Neil for their sharing their resources with the wine growers in Pennsylvania.

*Mark L. Chien, Wine Grape Agent
Penn State University Cooperative Extension
College of Agricultural Sciences
Lancaster County
1383 Arcadia Road, Room 1
Lancaster, PA 17601-3184*

*Phone: 717 394-6851
Fax: 717 394-3962
Email: mlc12@psu.edu
Web <http://winegrape.cas.psu.edu>*
