Portland Winemakers Club

January 2017

Monthly Rant

2016 was a year of many changes for our club. After almost 50 years with the name West Side Wine Club, we changed to Portland Winemakers Club in an effort to make the title more clearly reflect who we are. This was followed with a complete redesign of the website and a significant improvement of its search engine presence. The purpose for both of these actions was to raise our profile to the wider winemaking community and make it easier for potential new members to find us, and this did indeed bare fruit. Many of our new attendees this year remarked that they had been previously unaware of our existence, even though they had been looking for a local club for some time. Our newsletter history is now available to search engines so that any newsletter with content that matches the desired topic will show up in search results, allowing access to the full PDF of that particular month. This serves not only our members looking for information but also the community at large and again helps make our presence known. Thanks Alice!

As always, the beginning of a new year is the appropriate time to recognize the people who have been instrumental in the function of the PWC. Through the generosity of Oak Knoll Winery founder Marj Vuylsteke we have a place to meet and we are forever grateful to her. As our Grande Dame, Marj provides us with a dignity and perspective that we sometimes lack, and that is no small feat. The committee chairs are the wheels on which the club rolls, and kudos go out to all of them: Ken Stinger/Secretary, Barb Thomson/Treasurer, Bill Brown/Tours, Bridget Lopez/Education and Events, Jon Kars and Barb Stinger/Tastings, Bob Hatt/Grape Purchases, Don Robinson/Competitions, and of course, Alice Bonham/Web Designer. You guys rock! See you all at the Gala… Phil

Drink Responsibly.
Drive Responsibly.

Scheduled Meetings

January 14, 2017
Annual Gala – Archer Winery; 4-9 PM

January 18, 2017
Crush Talk / Planning

February 15, 2017
Bordeaux Tasting

March 15, 2017
Speaker:

April 19, 2017
Barrel / Carboy Sample Tasting

April, 2017
Tour:

May 17, 2017
Faults & Flaws

June, 21, 2017
Speaker:

June 26, 2017
Special club event?

July 2017
Annual Picnic (no meeting)

August 16, 2017
All Whites Tasting

September 20, 2017
Other Reds Tasting

October 18, 2017
Pinot Noir Tasting

November 2017
No Meeting

December 6, 2017
Planning, Tours, Speakers, Events, Elections

Misc. Information

• **There is now a Star Trek replicator wine**. A winery in SF called Ava Winery made a 100% synthetic Moscato using the building blocks of wine: water, ethanol, amino acids, and aroma compounds. Their site says, "Your favorite wines created from scratch on a molecular level."

• **Open-source genome project sequences Cabernet**. A high-quality map of the Cabernet Sauvignon genome was drafted with an open-source genome assembly process. This study is particularly exciting for viticultural scientists who are working tirelessly to create new disease-resistant and climate-change-tolerant grape varieties that wine drinkers actually like.

• **Another amazing reason to practice active tasting.** A group of Master Sommeliers was tested and they appear to have a much thicker zone in the part of the brain associated with smells and memory. Scientists theorize that developing these olfaction senses (smell and taste) may affect the onset of diseases Alzheimer's and Parkinson's.

• **Wine does indeed, make you happy. Duh.** A deductive scientific study produced by the London School of Economics has determined that wine does indeed make you happy. On a scale of 1 to 100, wine will increase your happiness by 10.79 points, particularly when doing unenjoyable activities including traveling, commuting, and waiting.

• **Can wine stop cow farts from heating up the planet?** Grape pomace is the stuff leftover after the wine is made and it includes the skins and seeds of grapes. When it's dried and served in a cow's meal, it greatly reduces their gas and burps. Cow farts/ burps have been noted to producing at least 1/5 of the world's greenhouse gasses.

Note: The next PWC event will be the Annual Gala at Archer Winery on January 14th (see page 3).
The next regular meeting will be held on January 18th. The agenda will be 2016 crush talk and planning. Come with ideas for 2017. Bring one of your bottles to share. How are your 2016 wines doing so far? Now is a good time to renew your club membership and sign a new waiver.

1.) Snacks: This will be a potluck; bring a small snack to share.
2.) . Everyone needs to sign a new waiver. If you didn't pay your dues at the Gala or picnic please remember to pay your 2016 dues at this meeting.
3.) Bring a wine glass for tasting of member wines.
4.) The regular club meeting will begin at 7 pm and end by 9 pm. If you can, get there a little early to help set up. Please help put away chairs and tables at the end of the meeting.

Website: http://portlandwinemakersclub.com/

December Meeting Minutes
(There was no meeting in November)

• Discussed a problem Alex Knotts is having with elemental sulfur in his wine. Suggested possible fining techniques or internet search.
• Gala – Damon Lopez passed around the protein sign up list. Gala poster needs to be corrected for the potluck sides.
• Elections: Phil Bard was nominated for President for another year - passed. Ken Stinger was nominated for Secretary - passed. Paul Rogers was nominated with Barb Stinger helping for Tastings chairman – passed. Bill Brown was nominated for Tours chairman – passed. Marilyn Brown was nominated for Events chairman – passed. Don Robinson was nominated for Competitions chairman – passed. Bob Hatt was nominated for Grape Purchases chairman – passed. The position of Education/speakers was left open, Bill Brown will fill in temporarily.
• The meeting was thrown open to discussions and cures for 2016 wine problems.

The 40th Annual Seafood & Wine festival is again inviting amateur wine makers to enter their wines in the Amateur Wine Competition. In order to participate entries must be received by the Greater Newport Chamber of Commerce no later than 5:00 PM on January 27th, 2017 or to a local drop off site no later than January 20th, 2017. Go to seafoodandwine.com

2017 WineMaker International Amateur WINE COMPETITION

ENTER YOUR BEST HOMEMADE WINES IN THE WORLD'S LARGEST COMPETITION FOR HOBBY WINEMAKERS!

There are less than two months to go until the entry deadline of March 3, 2017!

Go to: https://winemakermag.com/competition
For more information

THE PORTLAND WINEMAKERS CLUB GALA


SATURDAY~ JANUARY 14, 2017 4:00PM-9:00PM

Archer Vineyard
32230 NE Old Parrett Mtn Rd
Newberg, OR 97132

$15.00 PER PERSON

~ Pay at the door, and remember to renew your membership ~

Call Bridget Lopez for questions, at: 904-254-7592, or Email at: BFOSTERPACIFIC@GMAIL.COM

Bring your own wine glass, and favorite wines to share.

If your last name starts with:

A-G: Please bring a side dish
H-P: Please bring a dessert
Q-Z: Please bring a salad

Editor: Here is an article written by Club President, Phil Bard.

pH and TA Fluctuations in Winemaking

by Phil Bard
12/23/16

Over the past 7 years of making wines from Willamette Valley and eastern Washington/Oregon fruit, I've followed the generally accepted practice amongst winemakers of taking regular measurements of pH and TA along the way. After noticing some patterns in how the numbers evolve during the process, but also experiencing unexpected changes, I've spent some time trying to understand the various forces that are at work in the chemistry of fermentation, mostly so I could make intelligent choices when manipulating those numbers. Obviously, failure to take the initiative when your must or fermented wine needs adjustment can affect the finished product, and every winemaker learns sooner or later that inaction can produce disappointing or even disastrous results.

So to begin, some basics about acids. Acids can be defined in several ways, but for our purpose they are simply compounds that have the ability to donate a proton in a chemical reaction with another compound, usually a base. This is because an acid has one or more hydrogen atoms attached. When dissolved in water, acids tend to "ionize" or split apart into hydrogen and what is called the conjugate base. So hydrochloric acid, HCl, ionizes to hydrogen and chlorine, chlorine being the conjugate base. A finer point is that the hydrogen atom actually leaves its electron with the base ion when it splits off, so you end up with a negatively charged chlorine ion Cl- and a proton H+, which is hydrogen minus the electron. The degree to which an acid splits apart in water, or "dissociates," is different for each acid. Strong acids dissociate to a greater extent than weak ones. Some, such as hydrochloric acid dissociate completely, so that there is no longer any of the molecular form of HCl present, only H+ and Cl- ions. For sake of simplicity we will refer to acids as HA (A is the conjugate base). When dissolved in water, each acid automatically establishes a dissociation equilibrium between the molecular acid (HA) and that of the ionized forms, H+ and A-. So an aqueous solution of a strong acid being highly dissociated would create a lot of H+ (technically as H_3O+), would be a strong proton contributor and therefore react vigorously with another compound looking for protons. pH itself is a DIRECT MEASUREMENT OF THE CONCENTRATION OF H+. It is a negative logarithm, so it is low for strongly acidic solutions and high for weak ones. The acid equilibrium can be represented as:

$$HA \rightleftharpoons H^+ + A^-$$

Where the arrows indicate there is a balance between the quantity of molecular and ionized states of the acid in solution. Strong acids are balanced more towards the right and weak ones towards the left. If a chemical reaction occurred that removed a quantity of the conjugate base, more HA would dissociate to rebalance the equilibrium.

So, to re-emphasize, pH is a measure of the STRENGTH of an acid. Acids like Hydrochloric, Nitric, and Sulfuric are strong ones, high dissociated with larger quantities of H+ in solution. Acids such as tartaric, lactic and malic are weaker, not as highly dissociated with lower quantities of H+ present in solution. Strong acids have low pH's and weak ones have higher pH's, but still below ph 7.0, which is the boundary between acids and bases.

Bases are compounds that behave in the opposite manner. By the definition above for acids, defining them as proton donors, bases are proton acceptors. This is often because they have a hydroxyl group attached (OH-). Bases also have dissociation behavior, though this is not as relevant to our discussion. But as an example, here is the dissociation equilibrium for sodium hydroxide, NaOH.

$$NaOH \rightleftharpoons Na^+ + OH^-$$

The important point for winemakers is that when NaOH or any base is added to a solution containing acid (a process called titration), the H+ and the OH- combine one-for-one to form water, making the solution less acidic as there are now fewer protons present. If the NaOH addition is continued eventually most all the protons will be used up, and if you know the amount of NaOH added you can determine the amount of acid that was initially present as you have essentially accounted for all the H+. This number is the Titratable Acidity, and it is generally close to the measure of the total QUANTITY of acid (Total Acidity), stated in either grams/liter or as a percentage. It is not exactly equal to the Total Acidity because technically not all of the protons can be accounted for in a titration, but it is a fair indicator of how tart a wine will taste and is therefore important. While pH is a measure of the STRENGTH of the acid present it does not always move in tandem with Total Acidity. Two solutions with equal amounts of acid (same TA) but with one containing stronger acid than the other would have different pH readings. The one with stronger acid would be at a lower pH because the concentration of H+ is higher. Generally speaking, wines are mixtures of acids of varying strengths, most of them relatively weak, the main ones being tartaric, malic, lactic and succinic.

What is so important about TA and pH in winemaking? First of all, pH is critical as higher pH wines, above 3.7 or 3.8, are more at risk of microbial spoilage during fermentation and less likely to age well when finished. They are also prone to oxidation and loss of color. Additionally, pH affects the level of molecular SO2 present, which is the ONLY form of sulfite that

protects wine against microbial contamination. SO2 exists in solution in both free and molecular forms and an equilibrium exists between the two which is pH dependent.

$$\text{Free SO2} \rightleftharpoons \text{Molecular SO2}$$

At low pH, the equilibrium shifts towards the molecular state, so that more of the SO2 present in a wine is in this form, meaning less SO2 overall is needed to attain the required level of protection (.5 to .8 ppm). But at high pH the opposite is true, the free form is favored and more overall SO2 has to be added to get enough of the molecular form.

TA, when it is an accurate indicator of how much acid is present (although it may be way off as we will discuss below), tells us how much acidity we can expect on the palate.

Factors Affecting pH and TA in Grape Physiology and During Fermentation

Lately I've had some email correspondence with Dr. Roger Boulton, Professor of Enology at UC Davis, who back in the 80's conducted important research into the effects of metal cations in acid equilibriums inside the grape while it is growing. Metal cations are positively charged ions of metallic elements, prominent ones in grapes are Potassium (K+) and Sodium (Na+). Potassium and sodium are usually taken up from the soil and are important to the grape for numerous reasons. What Dr. Boulton found, however, is that the grape cells exchange K+, and to a lesser extent Na+, for H+ through their outer membranes, reducing the number of protons present. So if you perform a titration on the resulting juice your TA would be lower than the actual total acidity as you are counting a reduced number of protons. Only when you measure the quantities of K+ and Na+ and then add them in do you end up with an accurate value for total acidity, However, doing this is beyond the home winemaker's ability so we are basically unable to glean total acidity from a TA reading in fruit of this sort.

$$\text{Total Acidity} = [H^+]\ \text{titratable} + [K^+] + [Na^+]$$

This is the main reason that TA measurements at crush are always low in my eastern WA and OR grapes, potassium levels in the berry are often high. Also this creates a high pH reading. In the Cab's and Cab Franc's particularly, I commonly see initial pH's of 4.0 and 4.1. However, these numbers are not indicative of low TOTAL acid levels, they are skewed by the cation exchange phenomenon.

A second process is at work in grape maturation that I was unaware of until recently as it is rarely discussed. Sugar transport effectively shuts down at around 22 brix, meaning that very little additional sugar is produced beyond that. Higher brix levels result from berry DESICCATION during extended hang time as all juice constituents are becoming more concentrated. 10% desiccation is required to get to brix 24 and another 10% to arrive at brix 26, which is a common number at harvest for big reds. Along with sugars, acid levels are also becoming concentrated, but a lot of that acid is stored in the SKINS. The consequence of this is that they are not immediately released at crush, but leach out gradually during fermentation. This will cause a significant rise in TA during primary, something that I have seen time after time, with TA sometime going from 4 grams/liter to 8 or 9 grams/liter in as little as 10 days.

Turning to the process of fermentation, there are a number of causes for fluctuations in the acid balance. First, primary fermentation causes the formation of weaker acids such as succinic at the expense of stronger ones, like tartaric. This raises pH but does not necessarily affect TA. During malolactic fermentation this is continued as malic acid is replaced by lactic, which is a weaker acid, further raising pH but this time lowering TA. Also, K+ combines with one of the ionic species of tartaric acid, bitartrate, and precipitates out as potassium bitartrate. If the pH is at or near 3.7 or so, this causes no change in pH. But at higher pH protons are consumed by this precipitation and pH goes even higher. At lower pH protons are produced, driving pH downwards. This precipitation occurs during normal fermentations, but is amplified by cold stabilization, which can be useful to the winemaker for control of pH and TA in a wine.

By now is should be apparent that there is a complex interrelationship of forces that drive the acid numbers we obtain from testing during winemaking. As I look over the years of data I have from my efforts, most of the patterns are explained. High potassium and berry desiccation cause high pH and low TA in the juice at crush. pH rises, falls or is unchanged as fermentation proceeds depending on the extent of weak acid production, amount of acid leaching from the skins and the degree of bitartrate precipitation. At the same time TA will usually rise during primary, but always fall after malo. Sometimes the changes aren't as significant as expected, likely attributable to the fact that wine is a mixture of many other compounds that can act as buffers and dampen these effects. Buffers make it hard to predict, for instance, how much pH change will accompany an acid adjustment, but that is beyond the scope of this discussion.

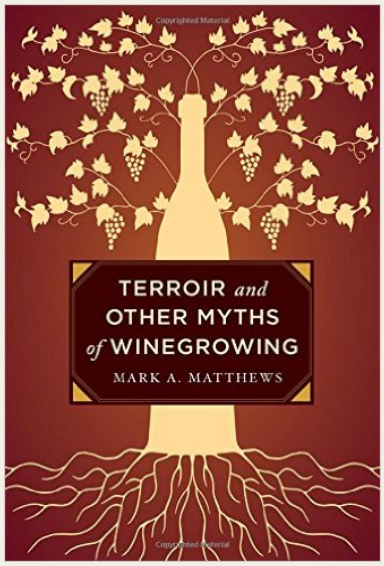
Summary of pH and TA Fluctuations

Event	pH	TA	Comment
-Uptake of K and Na in the berry	rises	falls	K+ exchanges for H+
-Yeast fermentation	rises		Weak acids formed
-Malolactic fermentation	rises	falls	malic converted to lactic acid
-Potassium Bitartrate precipitation	rises or falls	falls	starting pH determines final
-Actual fermentation (combination of forces above)	rises or falls	falls	depends on balance of forces

Hopefully this casts some light on some of the things that are underway during the process of winemaking. As I make my decisions regarding additions of acid and whether or not to cold stabilize, knowing what my measurements actually mean has helped me to make better calls with more reliable results. And that makes both me and my wines happy!

Editor: Member Jonathan Brown submitted the following book review. The Portland Winemakers Club presents the review for your information and does not necessarily recommend or agree with the conclusions drawn. It is a way to broaden your knowledge base from which to draw your own conclusions.

In *Terroir and Other Myths of Winegrowing*, Mark A. Matthews applies a scientist's skepticism and scrutiny to examine widely held beliefs about viticulture. Is terroir primarily a marketing ploy that obscures understanding of which environments really produce the best wine? Is reducing yield an imperative for high quality grapes and wine? What does it mean to have vines that are balanced or grapes that are physiologically mature? Matthews explores and dissects these and other questions to debunk the myths of winegrowing that may be holding us back from achieving a higher wine quality. (Amazon description)



BOOK REVIEW FROM JOURNAL OF WINE ECONOMICS, Vol 11, Issue 2, Dec 2016

Mark A. Matthews: TERROIR AND OTHER MYTHS OF WINEGROWING. University of California Press, Oakland, 2016, 288 pp., ISBN 978-0-520-27695-6 (hardcover), $34.95. (Amazon $27)

I immensely enjoyed reading this book, not so much because its author cites one of my articles, but mainly because he quotes Vladimir Nabokov, one of my favorite writers, who starts his Lolita with words that could apply to a wine when you taste it: "the tip of the tongue taking a trip of three steps down the palate to tap at three on the teeth."

The preface sets the scene: "As I gained experience in the world of viticulture, I found that some of the received archetypes were incongruous with elementary crop science. For example, there is a long-standing argument that one cannot both irrigate vines and produce fine wines (yet rain and irrigation water are the same to grapevines)". It is followed by four chapters debunking four false truths: (a) wine quality is determined by low yield and small berries; (b) vine balance is the key to fine wine grapes; (c) there is a critical ripening period, and vines should be stressed; and (d) terroir matters. I will try to deal fairly with all these issues, but it will come as no surprise to those who know me a bit if I spend more time on terroir.

Professor Matthews argues that these myths are all about getting ripe fruit, but they are no longer needed today, because "we have become skilled in grape growing [that is, more skilled than in the past, when these myths were invented] and in many regions, ripe fruit are generally attained [without relying on mythology]." (1)

Matthews is serious and supports his claims with statistical observation and experiments. However, he also knows the difference between correlation and causation (which should please economists), though he suggests that "as long as one can count reliably on one easy observation (yield, for example) to predict another more difficult to resolve phenomenon (fruit and wine quality), vines can be managed accordingly, whether the correlation is causal or not."

(1) Private correspondence, April 27, 2016. The first chapter kills the high yield–low quality (HYLQ) and the big bad berry (BBB) false truths. Both in Europe and California, historical data show that good weather, high yields, and quality often come together. Matthews suggests that HYLQ is artificially used to limit production and increase prices, but not to produce better quality: "when limiting the acreage of an appellation was insufficient to secure a decent price, rules grew to also include a crop yield". Matthews and Guinard launched an experiment to test the HYLQ hypothesis, changing the yield by using two common practices: pruning and cluster thinning. Irrigation was used in a different experiment with the same Cabernet Sauvignon grapes. They found that these three common practices resulted in different wine sensory profiles under identical yields. For instance, vines pruned to higher yields were less veggy and fruitier, but higher yields produced the inverse result under irrigation conditions. The obvious conclusion is that sensory profiles cannot only be explained by crop load, as the HYLQ myth would have it.

The BBB myth that small berries produce better wines is problematic as well, because the low yields praised in the HYLQ myth produce big berries. Thus, the two myths cannot be true simultaneously. The real story is a bit more complicated, but the essential message is that "in the large context of comparing vintages, yield and quality are not mutually opposed in any robust or fundamental way".

In chapter 2, Matthews refers to many meanings that describe vine balance, ranging from the aesthetic pleasure when looking at a vineyard (which may indeed change the quality of the wine, especially if you are drunk) to metrics such as ratios of yield/leaf area or yield/pruning weight (Y/PW). I will concentrate briefly on the Y/PW ratio. In a figure on page 103, Matthews shows that for Cabernet Sauvignon (grown in almost all wine regions of the world), the relation between Y/PW (horizontal axis) and wine score (vertical axis) is flat: a wine score between 10 and 15 can be generated by a Y/PW that varies from 2 to 9.5. A "subtle" econometrician who would discard one of the 15 observations as an outlier could even show that the slope is positive, but then, why is this ratio considered attractive and used? Because, Matthews writes, it is "convenient to measure". What he refers to as the critical ripening period in chapter 3 is indeed critical: "the fact that ripening is occurring," writes the author, "is what justifies the period as critical". Reaching maturity requires more days at low temperatures than at high temperatures (as expected), and early season conditions may be important for the wine, even

if the ripening rate remains unaffected. In short, no critical ripening period has ever been identified under normal growing conditions. Vine stressing stems from playing with temperature or light, or reducing the water input, the three conditions needed to grow any plant. Temperature and light are both out of the winemaker's control (except at the time of buying his ground). In addition, there now is a growing realization that fine wine can also be produced on irrigated vineyards because vines cannot tell whether they are getting their water from irrigation or from rain. In Australia and California, vines would die without irrigation, and non-irrigation rules are slowly but surely disappearing throughout the world. What remains true, however, is that the amount of water and the timing are essential.

Chapter 4 on the terroir explanation is just great. It starts out with a long digression on the history and the various meanings of the word itself, and concludes with a quote by Jean-Antoine Chaptal (1756–1832), a distinguished French chemist and agronomist who "revolutionized the art of wine-making in France." (2) Chaptal referred to "the repulsive and very strong and unpleasant taste of terroir" (cited by Matthews). Winemaker Krug (1800–1866) genuinely pointed out: "a good wine comes from a good grape, good vats, a good cellar and a gentleman who is able to coordinate." (3) No terroir is involved, unless the "gentleman" represents it.

These are two serious departures from the contemporary view supported by Tinlot (2001), a former director general of the Organization Internationale de la Vigne et du Vin in France: "There is no wine region in our world that does not try to value its vineyards and their output without reference to the character that they inherit from the place where the wine is produced. Consumers who visit producers are particularly sensitive to the beauty of the landscape, to the architecture of the villages and to any other element that belongs to the region of production". Vines indeed look at the landscape now and then. If they like what they see, they grow properly; if they do not, the wine will be bad. Tinlot adds that, more recently, "there is even a tendency to extend the notion to human factors, such as know-how and traditions of the local population, that are influenced by the natural, social, political and, why not, religious conditions that prevail in the region". Oh, yes, vines also look at God, choosing the exact moment when he shows up in a cloudy sky. This is consistent (or is it inconsistent?) with what Michel Feuillat, the director of the Institute of Vine and Wine at Université de Bourgogne, reports about the reasons why Burgundy winemakers are not keen on having their terroir studied: "They say, 'You are going to demystify everything. If you start saying a grand cru means such and such a percentage of clay and limestone, such and such a slope and nutrition of the vine—it will lose all its sacredness.'" (4)

Matthews then moves on to the question of whether the flavors in wine come from the soil: "Soils do have profound impacts on grapevine growth and fruit development" and need mineral nutrients, but these "have no established contribution to flavor". But then, do flavors really exist? Not according to Weil (2007): "Wine words used by critics to convey analogy to fruits, vegetables, minerals, and odors have no value."

(2) See https://en.wikipedia.org/wiki/Jean-Antoine_Chaptal.

(3) Cited by Krug and Krug (1979).

(4) Kunzig (1999), cited by Matthews. He also points to economic forces in the use and renaissance of the concept of terroir and evokes two instances. The first is that after phylloxera destroyed French grapes, they had to be replanted (or grafted) using American grapevines. French winemakers needed to find a good argument to differentiate themselves from America, and thus was French terroir reborn, this time, and since Chaptal died in 1832, with a positive connotation. The second instance followed the increase in competition after the Judgment of Paris, (5) in which Californian wines came out better than French wines. Patriotism is now also part of terroir. Matt Kramer, who also wrote a review of the book, claims (6) that "when scientists assert there's no evidence of terroir, Matt Kramer says the proof is on the palate." Much has been written on the palate that shows that blind as well as non-blind tastings are close to, if not complete, "bullshit," in Frankfurt's sense. Several articles in the Journal of Wine Economics have debunked the myth of wine tasting as well. Hodgson (2009) analyzes the results of 13 blind-tasting wine competitions including 4,167 wines, of which 375 were tasted in at least 5 competitions. Judgments were so inconsistent that a statistical test carried out using the 375 often-tasted wines shows that those that received gold medals could also have been chosen randomly. Cardebat and Paroissien (2015) study the correlations between the grades given to a common set of wines including 15 vintages (2000–2014) by 12 famous experts. (7) The average coefficient of correlation between pairs of judges over the whole period is 0.60, but it may get quite small between some pairs (0.14 between Robinson and Galloni). Hodgson (2008, 2009b) shows that judges not only disagree but are also inconsistent: often, a judge cannot repeat his or her scores on identical wines. However, this, Kramer will certainly argue, is science and not tasting: it is the palate that matters.

Let me conclude by praising the book. It is beautiful, useful, serious, and also highly entertaining, especially the parts on the history of wine myths, but (there must always be a but) it is not always easy to understand by economists who, like me, know little about wine growing but still love wine**. Victor Ginsburgh**,

(5) See Taber (2005) for details and G.M. Taber, "The Judgment of Princeton," Journal of Wine Economics, 7(2), (2012).

(6) M. Kramer, "It's All Just Myths, You See?" Wine Spectator, April 19, 2016, http://www.winespectator. com/webfeature/show/id/53034.

(7) Michel Bettane and Thierry Desseauve, Jacques Dupont, Antonio Galloni, Jeannie Cho Lee, Jeff Leve, Neal Martin, Robert Parker, Jancis Robinson, James Suckling, Decanter, Revue des Vins de France, and Wine Spectator.

Hot Rhônes: Syrah & Carignan

Author: Kevin Hamel

No group of grape varieties has generated as much enthusiasm among winemakers recently as Rhône varieties. So great is the demand for them that interested wineries scramble to find the best vineyard sites and then must guard them closely. Home winemakers have always had a tough time finding high-quality fruit and with Rhône varieties, the search can be even tougher...but not impossible.

Several Rhône grapes, such as Mourvèdre, Grenache, and Carignan, have been planted in California for decades and so acreage actually exists. Others, such as Syrah, Viognier, and Rousanne, are relatively recent arrivals, and much that has been planted has been done at wineries' request. Still, it is possible to find these grapes and they are certainly worth searching out.

Syrah and Carignan make an interesting pair to consider from a production point of view. They occupy almost opposite positions on the esteem spectrum. Syrah produces some of the most highly regarded red wines in the world. Carignan has the dubious distinction of being limited to a maximum of 30 percent of the most basic Côtes du Rhône wines. And yet they both yield full, dark wines that can be made successfully on a small scale.

Both varieties are found throughout California, Carignan because it has been planted since the last century as an all-around red blender and Syrah because it shows such promise that everyone wants to try it. The best-quality fruit of either variety generally can be found in the coastal and foothill regions of the state. Considerable acreage is also grown in the Central Valley. Syrah can be grown successfully in the coolest regions, whereas Carignan needs the slightly warmer climates. Other states where Rhône varieties are grown include Washington (Syrah and Grenache), Colorado (Syrah and Viognier), Virginia (Viognier, Marsanne, Mourvedre, and Grenache).

Wine quality is always best when vines are cropped conservatively. But because most Syrah acreage in California is young, yields are higher than for the typically older Carignan vineyards — say four to six tons an acre vs. three to four respectively. Carignan's poor reputation in France stems partly from the fact that when it is over cropped — which is easy to do with Carignan because it has a natural tendency to set a large crop — wine quality is very poor. The advantage in California is that most of the Carignan vineyards are mature, if not downright old, so naturally yield less.

Choosing Grapes

Home winemakers often have little input into viticultural practices, but there are some things to watch out for. Mildew and bunch rot can be problems in Carignan during wet years. Clusters are typically large and tight and can deteriorate if crop level is high or canopy is dense. Syrah tends to have a smaller, looser cluster and is more tolerant of wet weather. In fact drought can be a bigger problem. Syrah typically loses leaves in the area around the clusters as ripeness approaches, and shriveling can creep up suddenly in dry years.

Both varieties should be picked fully ripe, and this is critical with Carignan. As Carignan approaches ripeness, when field sampling first indicates a sugar level of, say, 23.5° Brix, pH will still be under 3.3. If the fruit is picked at this point, sugar level in the tank may actually measure less than 23° Brix and acidity will be high enough to make the wine taste lean and hard. Most of the Rhône varieties make low-acid (less than six grams per liter) wines when they are fully ripe, but that's okay (really). It's best to wait until pH rises above 3.4, at which point sugar is generally in the 24.5° Brix range. Not only is texture and mouth feel better at this point, but flavors are more complex and richer than they would be at lower ripeness levels.

Syrah's tendency to show water stress as it ripens is reflected in the chemistry of field samples. The pH may be above 3.5 even with sub-23° Brix sugar levels, but the fruit will still retain a tart taste. It is very important to pick Syrah by taste — to watch for the disappearance of tartness — and to consider Brix, titratable acidity (TA), and pH secondarily. Don't worry too much if your 24.5° Brix must has a pH of 3.7 and a TA under six grams per liter. Carignan, on the other hand, can be picked more by the numbers: pH higher than 3.4 and TA less than seven grams per liter, with sugar in the 23.5° to 24.5° Brix range.

If you receive uncrushed fruit, take the time to sort it before beginning to make wine. Discard rotten, mildewed, under ripe, or poorly colored fruit. As a home winemaker you are dealing with small quantities of fruit, so it won't take long. You don't have a bottom line to worry about, and this may be your first opportunity to influence the quality of your wine. Yes, the grapes still cost money, but making a little less wine that is substantially improved doesn't cost extra. Besides, you're making this for your own enjoyment; make it the best you can.

Both Syrah and Carignan respond well to fermentations with uncrushed fruit. Syrah, especially, undergoes a dramatic change in aroma when whole berries or whole clusters are included in the fermenter. If a crushed and destemmed fermentation yields smoky/meaty/earthy aromas, whole fruit will bring out sweeter, more berry-like aromas. Given that ripe or brown stems are seldom seen in harvested fruit in California, the best practice is to destem without crushing. If this isn't possible, and if the lot is small enough, crushing by foot and fishing the stems out later also works.

Yeast Selection

There are many interesting yeast strains available to the winemaker these days. Each has been selected for some special

property it brings to a fermentation, whether it is temperature tolerance, enzyme activity, or ability to completely ferment high-sugar musts. The newer strains cost more (more than double the price of standards such as Montrachet and UCD595), but some have yielded impressive results. The strain Brunello has produced Mourvèdre with better mouth feel than the UCD595. RC212 (a Burgundian strain) has produced Syrah with a higher floral character than Brunello. QA23 produces Viognier with greater exotic perfume than the Epernay 2.

Wild or un-inoculated fermentations are favored by many winemakers for producing wines with more complexity than pure-strain fermentations. The decision to "go natural," however, should be made only when conditions are right. If fruit is not free of rot and the winery is not clean, the longer lag phase of a wild fermentation can allow spoilage organisms to gain a foothold before Saccharomyces takes off. Off-flavors, high volatile acidity, and stuck fermentations can result from fruit in poor condition, even when you use a cultured strain of yeast, so be vigilant!

Fine-Tuning

Syrah and Carignan can give soft, fruity, early drinking wines if the fermentation is cool and short, but let's assume that's not what you're after. Extract, color, and mouth feel improve when the fermentation is warm (85° to 90° F), but you may have to work at this. Put the fermenter in the sun or use heating pads. Punch down the cap as many times a day as is practical, at least twice at day. Both varieties will also benefit from long macerations; but it's important to protect the wine from spoilage as CO_2 production falls off. If you can't blanket the fermenter with CO_2, don't attempt an extended maceration, meaning anything longer than it takes to reach dryness.

This raises another time-element issue. The smaller the wine lot, the shorter the whole vinification process should be. You can make delicious wine from very small quantities of fruit if you shorten everything up: rack soon, don't try to introduce oak flavor just because Chateau Woodstone Hills Creek does it, be paranoid about oxidation, and bottle early.

Neither Carignan nor Syrah needs much new wood, but they do benefit from barrel aging. If you are making less than 10 gallons, don't worry about barrel aging. If you're making one barrel (60 gallons) of wine, nothing newer than 2 years old should be used and a neutral barrel, if it's in good condition, works just fine. The importance of barrel conditioning in small-scale winemaking can't be over-emphasized. Better to keep wine in glass or stainless steel than in some old French oak barrel that has become tanky or swampy from being stored for years with bad water in it. Many wineries sell 4- to 6-year-old barrels for $50 or less, so replace old cooperage as often as you need to.

If you simply must have oak character in the wine, go easy. Use no more than a small handful of medium-toast chips (not shavings) per five-gallon carboy. The lovely smoky/berry aroma of these wines is quickly buried under a lot of wood. Remember that in the most traditional wineries of the Rhône Valley, the wines never see new wood.

If you make more than one variety of wine, don't be afraid to blend into either Carignan or Syrah. If your Syrah is dense or heavy, lighter reds or even aromatic whites can really punch up the nose. If your Carignan is simple or coarse, a small amount of something complex will add interest.

As a home winemaker you have this advantage over commercial wineries: You don't have to conform to labeling requirements or fit into a market segment. Satisfying your own pleasure is your only rule. If a blend of 60 percent Syrah, 35 percent Zinfandel, and 5 percent Chenin Blanc works best, then that's what you should make.

Malbec: Varietal Focus

Author: Chik Brenneman

When we think of the great wines of the Bordeaux region of France the names of the Grand Cru châteaus of Lafite, Latour, Mouton-Rothschild, Haut-Brion or Cheval Blanc come up. Today, the blends created by each of these châteaus are comprised primarily of Cabernet Sauvignon or Merlot, and hold high esteem amongst the winemaking and wine-consuming world, giving Bordeaux blends worldwide recognition. The other grape varieties of Bordeaux, such as Petit Verdot, Cabernet Franc, Carménère and Malbec have not commanded such attention for their contributions to the wines of southwest France, and Malbec in particular is seldom seen in French blends outside of the AOC Bordeaux region of Cahors. Malbec, however, is still quite noble and has carved out a space in the hearts and minds of wine drinkers. It just had to leave France to become a star.

In Argentina, Malbec has risen to worldwide recognition and given prominence to the Argentinian wine industry. That is not to say that Malbec was not once extensively planted in France. To be included in the traditional six main varieties that make up Bordeaux blends, Malbec had to have had some prominence in the region at one point in time. And in fact historical records show that Malbec was once the most important variety in parts of the Médoc and St.-Emillion appellations of Bordeaux. In her book Vino Argentino, Laura Catena writes a brief history of Malbec prior to its arrival in Argentina and reports that in the mid-nineteenth century, at Chateau Latour, that the noble varieties of the château consisted of Malbec and Cabernet Sauvignon. Malbec also represented up to sixty percent of the blends produced by Chateau Cheval Blanc, now primarily known for its Merlot based wines.

So what happened to Malbec? It was almost like a, “now you see it, now you don’t” in France, thanks to Phylloxera. You may recall the story of the root louse Phylloxera, which was accidentally introduced in Britain by English botanists who were importing North American grapevines. The pest decimated the vineyards of England and soon spread to the European mainland where it caused significant damage to the French and European vineyards and wine industries. Desperate to recover from the plague, viticulturists, breeders and botanists developed hybrids and rootstocks bred for resistance to the pest. They used North American native varieties as rootstock, which is where Malbec failed to recover like the other Bordeaux varieties. Malbec did not adapt well to the new rootstocks, and the resultant vines had excessive canopy growth, high yields, and were not maturing early enough for the relatively short northern latitude growing regions. The wines resulting from the new rootstocks exhibited good color but were very tannic. What was left of the remaining old-vine Malbec vines in Bordeaux that weren’t affected by Phylloxera were killed in the great frost of 1956, making way for Merlot, a more forgiving variety.

In modern-day France Malbec is mostly limited to the AOC Cahors, where Malbec must make up seventy percent of the blends produced in the region. AOC Cahors is protected from the maritime influence of the Atlantic and the Mediterranean Sea, resulting in a hot dry summer which discourages downy mildew, to which Malbec is susceptible. It is known there locally as Cot, Cot Noir, Auxerrois, Pressac or Pressac. Outside of Cahors, Malbec is a minor blending component in the Loire Valley Saumur region where it is blended with Cabernet Franc and Gamay. Loire Valley plantings are gradually being converted to Cabernet Franc, however, which is widely planted throughout the region.

Prior to the European Phylloxera epidemic, it was a Frenchman, Michel Aimé Pouget, who brought Malbec to Argentina in 1853. While not known at the time, Phylloxera did not affect the Malbec vines that were introduced to Argentina, presumably because the sandy and gravelly soils would not support the organism. Some reports suggest that Argentina’s isolation and vineyard elevations also contribute to its lack of susceptibility. Today, many large areas of grapevines are still cultivated on their own roots, although there is increasing awareness being paid to rootstocks because of nematode pressure acting as a possible vector for grapevine leaf-roll virus and other diseases.

When he brought Malbec to Argentina, Monsieur Pouget’s goal was to create a great wine industry there based on the greatness of the wines of Bordeaux. In the late 1800s, Argentinian culture was heavily influenced by French culture and it was said that Pouget was ordered by the provincial governor of Mendoza to import many wine grape varieties. It seems Pouget’s dream is being realized as today the Argentine wine industry is the fifth largest producer in the world (however only 10 percent of the wine is exported). Jancis Robinson, English wine expert and writer credits Nicolés Catena, the son of Nicola Catena, who planted his first Malbec vineyard in Argentina in the very early 1900s, with putting the Argentine wines on the world map. Nicolés was among the first to bring modern European winemaking and viticultural techniques to Argentina. Other writers have likened Catena to the Robert Mondavi of Argentina, focusing on quality to be able to compete on the world stage.

The wine growing region of Argentina stretches along its western border for almost 1,000 miles in the shadow of the Andes Mountains. Argentina’s long, hot summers with cool evenings are an ideal climate for Malbec. The altitude of these viticultural areas range from 1,500 feet to more than 6,000 feet, which provides a variety of climates. The highest rated Malbec wines are from vineyards ranging in elevation from 2,800 to 5,000 feet above sea level. However, ninety percent of the grape production is centered in the provinces of Mendoza and San Juan, where elevations range from 2,000 to 3,600 feet. Over 1.6 million tons of grapes were produced in the year 2000, with Malbec comprising about fifty percent of that total. The economics of the wine industry in the current century have led to decreased plantings and production. Elsewhere in the world, Malbec is produced but not in the quantities reported in Argentina. In contrast, only 8,000 tons of Malbec were crushed in California in 2010. Australia reported 1200 acres of Malbec in 2002, with plantings declining since.

Viticulturally, there are many clonal variations of Malbec, with clusters larger and more tannic in France. In Argentina, the vines produce small tight clusters and there is another grape called Fer, which is considered a clone of Malbec. The grapes are sensitive to fungal diseases and can be subject to increased incidence of shot berries if weather conditions at flowering are not favorable. A recent research project originating at the Catena Winery in Argentina, sought to determine if any clonal differences existed within and between wine growing regions. A parallel study was also undertaken at UC-Davis in the fall of 2011 with wines produced from California’s Malbec vineyards. As of this writing, the wines are undergoing final preparation for a comprehensive chemical and sensory analysis study.

The wines produced from the grape are inky red and are often described as having characteristics of cherry, plum, raspberry, coffee, chocolate and raspberry. The wines can be aged in oak, however, the winemaker should make that decision based on the tannin structure and mouth feel of the wine. Wines that are higher in tannin and resultant bitterness and astringency would benefit with some aging in oak barrels to help soften the tannins over time. While there are many examples of varietal-specific Malbec, it is most commonly blended in Argentina with Cabernet Sauvignon, Merlot, Syrah and Sangiovese. In the United States it is also commonly used as a blending grape, making its way in to the “Meritage” blends. If you are not familiar with the term Meritage, this is a name for wine produced in the Bordeaux style outside of Bordeaux, France. A group calling itself the Meritage Alliance, originating in Napa, California, trademarked the name and the vintners paid a fee to use the name on their labels. If a winery or winemaker chooses not to join the Meritage Alliance, then the federal government regulations on wine labeling only permits these blends to be referred to as red table wines. Meritage

wines were at first limited to the United States, but the alliance has grown to 250 members and those members are encouraged to limit their production and only use the name to designate their top tier wines.

Pairing Malbec with food is very simple: steak or barbequed meats are the most logical choices. Malbec is a big red wine and it generally follows the “red with red” mantra that so many foodies debate. Argentinian cuisine incorporates lots of beef and Malbec is a great match. Try it with steak au poivre or with a well-braised lamb shank. It should hold its own with any hearty stew as well.

I have often referred to Zinfandel as America’s grape, and similarly (although its heritage actually lies in France) Malbec is arguably Argentina’s grape. Enjoy your Malbec and know that it is noble no matter where it comes from!

Bernau wins OSU honor

Jim Bernau, founding owner of Willamette Valley Vineyards in Turner, Ore., was honored with the 2016 Oregon State University College of Agricultural Sciences Hall of Fame Award. Bernau helped start the Oregon Wine Advisory Board, which became the Oregon Wine Board, and supported legislation that allowed winer-ies to be built in areas with agricultural zoning, direct-to-consumer sales and wine tasting in retail stores. “Jim’s generous spirit has lifted our industry through his gifts to ¡Salud! and Oregon State University,” said OWB executive direc-tor Tom Danowski. “He has been an effective spokesperson for our industry in Salem (Ore.) and Washington, D.C.”

Phylloxera detected in Colorado

The Colorado Department of Ag-riculture (CDA) announced that Phylloxera was detected in the state’s Grand Valley AVA. The state agency said it was working with the vineyard owner to contain and eradicate the pest and was conducting “extensive surveying” to “determine the scope of the infestation.” Colorado is home to 150 vineyard owners and 1,000 acres of vineyards. “Hopefully we caught this quickly enough to protect Colorado’s grape crop,” said Laura Pottorff, the CDA nursery and phytosanitary program manager.

OREGON yield 2016

Patty Skinkis
Viticulture extension specialist and associate professor
Oregon State University

The yield in 2016 was considered average for the state. The past two vintages (2014 and 2015) were very large for Oregon. Growers re-ported 20%-40% lower total yields in 2016 from the prior year, depending on region.
The state experienced a warm spring leading to early bud break and bloom. Bloom time weather in late May/early June was variable across the state, leading to variable set, but it was one of the earliest bloom dates in recent years. Early summer was mild, and August was hot. Be-cause of the early start to the season, harvest was early, starting in late August and being mostly completed by late September to early October. Quality is good.
The 2016 season was a relatively typical year with respect to disease pressure (powdery mil-dew) and required close attention to spray pro-grams to maintain prevention of powdery mildew. The dry conditions in August and Sep-tember led to clean fruit at harvest.
Labor availability is a growing issue for produc-ers each year. With the shift in crops in the Wil-lamette Valley, there seems to be greater pressure on the labor force as other crops com-pete with grapes for those workers.

Portland Winemakers Club
Leadership Team – 2016

• President: **Phil Bard** phil@philbard.com
• Set agenda for the year
• Establish leadership team
• Assure that objectives for the year are met
• Set up agenda and run meetings

Treasurer: **Barb Thomson** bt.grapevine@frontier.com
• Collect dues and fees, update membership list with secretary
• Pay bills

Secretary: **Ken Stinger** kbstinger@frontier.com
• Communicate regularly about club activities and issues
• Monthly newsletter
• Keep updated list of members, name tags and other data

Chair of Education: **Marilyn Brown** brown.marilynjean@gmail.com
• Arrange speakers for our meetings

Chair for Tastings: **Paul Rogers & Barb Stinger** paulgrogers@fastmail.fm
kbstinger@frontier.com
• Conduct club tastings
• Review and improve club tasting procedures

Chair of Winery/Vineyard Tours: **Bill Brown** bbgoldieguy@gmail.com
• Select wineries to visit
• Arrange tours
• Cover logistics (food and money)

Chair of Group Purchases: **Bob Hatt** bobhatt2000@yahoo.com
• Makes the arrangements to purchase, collect, and distribute
• Grape purchases
• Supplies – These should be passed to the President for distribution

Chair of Competitions: **Don Robinson** don.robinson.pdx@gmail.com
• Encourage club participation in all amateur competitions available. Make information known through Newsletter, a-mail and Facebook

Chairs for Social Events: **Bill Brown (temporary)** bbgoldieguy@gmail.com
• Awards Gala / Holliday parties

• Web Content Editor: **Alice Bonham** alice@alicedesigns.org Web Host: **Phil Bard**