

West Side Wine Club

October 2013

Monthly Rant



Drink Responsibly.
Drive Responsibly.

Scheduled Meetings

January 11, 2014

Annual Gala – Archer Winery

January 15, 2014

Crush Talk / Planning

February 19, 2014

Bordeaux Tasting

March 19, 2014

Aroma Kit / Faults & Flaws

April 16, 2014

2013 Barrel / Carboy Sample Tasting

May 14, 2014

Tour

May 21, 2014

Speaker

June 18, 2014

“Best Practices of Amateur Winemakers”

July 12 or 13, 2014

Annual Picnic.

July 19 or 20, 2014

Tour

August 20, 2014

All Whites Tasting

September 17, 2014

Other Reds Tasting

October 16, 2013

Pinot Noir Tasting

November

No Meeting

December 4, 2013

Planning, Tours, Speakers, Events, Elections

The 2013 growing season did not fail to bring the level of intrigue that Oregon is famous for. Early warm weather, cold temperatures and some hail during flower, beautiful summer days and promises of a record setting vintage going into September. September, however, came in like a lamb and left like a lion, with seemingly endless days of tropical storms setting a different kind of record altogether: record rainfall. Brix numbers dropped, Botrytis started showing up, and some vineyards rushed to get their crop off before even more rain came. Then bees and birds descended, and those who weren't netted saw some serious loss of crop. It was a year that really showed how important vineyard management is. Some of the Pinot Noir in the Willamette is sketchy at best, with damaged skins and Brix numbers at 17 and 18. Some of it is utterly beautiful, with deep and complex flavors and dark juice only 48 hours after crush.

Eastern Oregon and Washington were largely spared this time around. At first it looked like they were going to have too much heat and dryness, compressing the pick times for the different varietals, and causing too much wither. But the cooler and slightly wetter weather moved in at just the right time, and now some vineyards are letting their fruit go long. Its not uncommon for opposite ends of the state to tell two different stories of the vintage and this year will likely be one of those in which they do.

Good luck with your winemaking, hope you were dealt a strong hand...Phil



Crushing Montazi Pinot Noir at Bill Brown's

Information & Trivia

Taste, vision and hearing can be quantified, but a systematic description of smell has remained elusive. Now, researchers have used mathematics to describe odors systematically and simplify them into 10 categories: **fragrant, woody/resinous, fruity (non-citrus), chemical, minty/peppermint, sweet, popcorn, lemon, pungent and decayed.**

What's happening with France? Wine consumption there has declined by more than 50 percent over the last 40 years. And according to a recent poll, only 17 percent of the French drink wine on a daily basis, while 38 percent claim to be teetotalers. *Sacré bleu!*

Two California scientists, Yunfeng Lu of UCLA and Cheng Ji of the University of Southern California, claim to have invented a sobriety pill. Made up of alcohol-eating enzymes, the pill has proved to be a quick soberer of besotted mice, but has yet to be tested on humans. One can hardly wait.

These are tough times for Beaujolais producers. According to reports in the French press, as many as 200 of them are set to shut down because they can't pay the costs of the 2012 vintage, which, owing to difficult weather, was 40-percent smaller than 2011.

The next meeting is scheduled for Wednesday, October 16 at 7:00 p.m. at Oak Knoll Winery.

• **Agenda "Pinot Noir". Member wines blind tasted with raves & critique. Bring your best or your problem wine.**

• **Snacks: This will be another potluck; bring a small snack to share.**

- 1.) Please bring a couple wine glass for tasting wines.
- 2.) Waivers will be present at the meeting. If you have not previously signed a waiver for, please do so at the meeting. You may also pay your 2013 dues if you have not already done so.
- 3.) The meeting will begin at 7pm and end by 9pm. If you can get there a little early to help set up, please help to put away chairs and tables at the end.

WSWC Website: <http://www.westsidewineclub.com/>

Message Board: <http://groups.yahoo.com/group/Westsidewineclub/>

September Meeting Minutes

Members present = 25

- Phil opened the meeting with a discussion about the club grape purchase program, grapes already received and grapes yet to be delivered.
- Phil said that some members are purchasing grapes through the club for non-members. It is important to know that persons contracting with any particular vineyard are responsible for payment to the vineyard and not the WSWC. Any renegeing of the purchase agreement reflects badly on the WSWC. The discussion revolved around the responsibilities and liabilities of the club regarding club arranged vineyards grape sources.
- Dennis Grant said the daughter of Paul Portteus (Portteus vineyard in Zillah, WA) has some Sangiovese grapes for sale.
- We discussed moving the location of our annual Gala to Archer Winery. All present agreed. Marlene Grant will book the winery for Saturday, January 11th. We agreed to start at 4:00 PM and end at 9:00 PM.
- Don Robinson passed a fact sheet on NT-50 yeast. He had to purchase a 500 gram quantity so he was offering to sell some of the extra to members for \$7 for 80 grams. If you are interested, contact Don at don_robinson_pdx@yahoo.com

Phil Bard & Barb Thomson conducted the blind tasting of other reds. The following is in order of tasting.

- | | | | |
|-----------------------------|------------------------------------|--|--------|
| #1 – 2011 Red Blend | Jon Kahrs | Barrel sample, recently sulfited | Bronze |
| #2 – 2011 Red Spanish blend | Robinson, Blizzard, Gellert, Kahrs | 50% Tempranillo, 15% Grenacha, 26% Syrah, 9% Cab. Sauvignon | Bronze |
| #3 – 2012 Tempranillo | Jim Ourada, Paul Rogers | Sagemore Vineyard | Bronze |
| #4 – 2010 Red Blend | Bill Spiller | 50% Cab., 50% Marechal Foch | Bronze |
| #5 – 2009 Barbera | Scott Nelson | Hungarian oak | Gold |
| #6 – 2011 Syrah | Dennis & Marlene Grant | Fruit had H2S in the beginning and was over sulfited, may try to salvage | Bronze |
| #7 – 2011 Syrah | Dana Blizzard | Sagemore Vineyard 5% Viognier | Gold |
| #8 – 2010 Syrah | Jon Gassaway | Songbird Vineyard (Red Mountain) | Silver |

Oak Adjuncts in Red Ferments

How winemakers add oak early to improve aroma and texture

by Peter Mitham

The glamour shots (such as they are in the wine craft) showing cellars with row upon row of barrels convey to consumers the romantic notion of *élevage*, a French term that literally means the elevation or upbringing of wine. The role oak plays in the final sensory experience of the drink seems inextricable from the use of barrels. The toast, the tannins from the wood and the dynamic interaction with the environment that oak allows all contribute to the experience of the wine through the eyes, nose and palate of the drinker.

Many winemakers are getting a jump on the barrel, however, by using various oak adjuncts (chips, shavings or powder) during red wine fermentation. One of them, Alison Crowe of Napa's Plata Wine Partners, describes these as non-coopered oak, a nod to both the quality of the best available adjuncts and their influence on *élevage*.

While some winemakers use oak adjuncts to stabilize color early on, oak products are more commonly, and often with greater scientific justification, helpful in rectifying flavors prior to aging.

"The most important thing we're trying to do is stabilize the color. One of the additional benefits is it can help reduce or eliminate any vegetal character if the grapes came with it from the vineyard," Mike Robustelli, winemaker at McManis Family Vineyards in Ripon, Calif., says of oak used in red wine ferments.

McManis typically adds shavings to the receiving hopper. Red ferments at McManis typically run five to seven days. Shavings have a greater surface area per pound than chips, and while the must doesn't necessarily exhibit a strong hint of oak when fermentation is through, its character is better defined, Robustelli says.

"What we're really trying to do is make as homogenous a mixture as possible, because if the juice or the skins aren't in contact with the chips, then they don't have a chance to react," Robustelli explains. "We want to avoid having a big cluster of chips in one area of the tank and no chips in other portions."

The toast on the shavings reflects the type of grape pressed and the wine McManis aims to achieve. "Typically, the lighter, fruitier wines would see lighter toast levels. So, say our Pinot Noir would use a medium toast, and the heavier wines would use a darker toast," Robustelli says. "Petite Sirah or Cabernet would see heavy toast or a combination of medium toast plus and heavy toast."

He's opted against untoasted oak adjuncts, though some claim a growing following for them. Toasting tames the raw oak flavors that might otherwise be transferred to a wine. Unlike stems and other woody material that most winemakers don't want crushed with the grapes, toasted oak is primed to release compounds that give definition and complexity to the wine. "My concern would be, using untoasted chips, that you'd get a green, woody, resinous character," Robustelli says, shying from the prospect.

Dave Nagengast, winemaker at Scheid Vineyards in Greenfield, Calif., shares many of Robustelli's objectives in using oak adjuncts. While he hasn't done enough trials to document color stabilization, he believes it happens. But he knows the overall sensory qualities of Scheid's wines improve.

"Start getting some oak impact early on, and it helps with the mouth feel of the wine down the line. And actually, the overall impression longer term -- if it gets started with the fermentation, it just kind of builds from there," he says.

Nagengast uses shavings at a rate of about 3 to 4 pounds per ton of grapes. The toast is light, with the oak from the U.S., France or Hungary. Nagengast says he has also used dust, but at a lower rate. The control over the process, and the quicker extraction during fermentation, are advantages of using adjuncts.

While oak barrels are making a bit of a comeback as fermenters, winemakers know that the engineering and design of stainless steel tanks often offer better temperature control and management of the cap. Oak adjuncts in steel or plastic tanks introduce an oak element early under circumstances that are more controlled. Nagengast says Scheid complements its use of oak adjuncts during fermentation with adjuncts during *élevage*, when micro-oxygenation also comes into play to mimic the gentle aeration of wine in barrels.

Joshua Maloney, red winemaker at Chateau Ste. Michelle in Washington state, uses oak chips at fermentation to eliminate green characters and soften tannins. The majority of ferments, about 60%, use inch-long chips at a rate of about 3 to 4 pounds per ton, while special lots will see quarter-inch chips. He may add a double portion -- and in extreme cases, a pound of oak dust -- where green characters are a concern.

He's skeptical of the role oak at fermentation plays in stabilizing color. "It's not really doing what we say it's doing," he says. He believes oak is more significant in masking green characters and bringing forward favorable phenolics. Oak doesn't get rid of green characters so much as mask them, he explains.

Some winemakers will add tannins to correct a green wine, but Maloney feels oak does a better job because of its biochemistry. His own experience fermenting fruit from the same block with and without oak chips underscores his argument. "The one that we do the oak fermentation with is always more fruity and less vegetal than the one where we omit the oak chips," he says.

Oak chips also round out the wine, softening tannins and polishing the mouth feel. "The one with the oak is richer, it's sweeter -- not sugar sweeter, just rounder sweeter -- and the tannins seem to be better integrated. The one without, it's missing a little bit of extract, and the tannins are grainy in comparison."

Special cases are when the green character of a wine is pronounced, prompting the addition of oak powder. Red wines typically spend about seven days on skins, but if there's a whiff of vegetal aromas as the cap rises (usually on the second day), Maloney might opt to pare a day off the skin time and toss a pound of oak dust into the fermenter.

He adds that oak during fermentation doesn't necessarily affect barrel treatment afterwards. The barrel's oak imparts a separate character to the wine, partly due to Chateau Ste. Michelle's practice of malolactic fermentation in the barrel.

"I still think the quality of oak that we get out of the barrel is greater than the integration and quality of the oak that we get from the chip itself," Maloney says. "But that's largely a stylistic choice. I don't think you can really say that one is good and one is bad."



Editor: Some more information from "Stavin" about using various forms of oak during ferment.

Fermentation Products for Enhancing Color and Body



1. Segments –Bags tied off under fermenting must. Bags follow wine into the press tank for MLF and aging. Use at 4 to 8 #/ton.

2. Beans –Bags tied off under fermenting must. Can be used for multiple fermentations or moved with wine into the press tank for MLF and aging. Use at 4 to 8 #/ton.

3. Granular –Dosed in after de-stemming grapes. Use at ½ to 2 #/ton. Best if dosed in two adds, at crush and 4 days later.
4. Toasted Chips* -Dosed in after de-stemming grapes. Use at 1 to 6 #/ton, removed at pressing.
5. Untoasted Chips*-Dosed in after de-stemming grapes. Use at 1 to 2 #/ton, removed at pressing.

*Best use may be combination of toasted and untoasted chips. Decrease use of chips by ½ if they are used in combination with fermentation tannins. (suggest using tannins at ¼ to ½ suggested rates when used with chips)

Why Add Toasted Oak at Crush?

- 1 - Compounds developed during the toasting process aid in the initiation of anthocyanin stabilization from the start of fermentation.
- 2 - Aromatic aldehyde compounds extracted from the toasted oak may aid in the stabilization of Co-pigment stacks (protective mechanism for monomeric anthocyanins).
- 3 - These compounds appear to have sparing effect on acetaldehyde produced by yeast in exponential growth phase, enabling effect described above, #1, to be more effective.
- 4 - The same reactive compounds described above also appear to react with polyphenolic material (tannins) from the grape enhancing mid-palette mouth feel in wines.
- 5 - Used in combination with macro aeration, certain “green/vegetal” characters in the must can be minimized.

Why Add Un-Toasted Oak?

Untoasted Oak appears to complement toasted oak and work in concert to aid in color stabilization and produce increased smoothness and mouth feel. This is thought to be due to the ellagitannins and various polysaccharides extracted from the untoasted oak. Those compounds are degraded during the toasting process.

How Much?

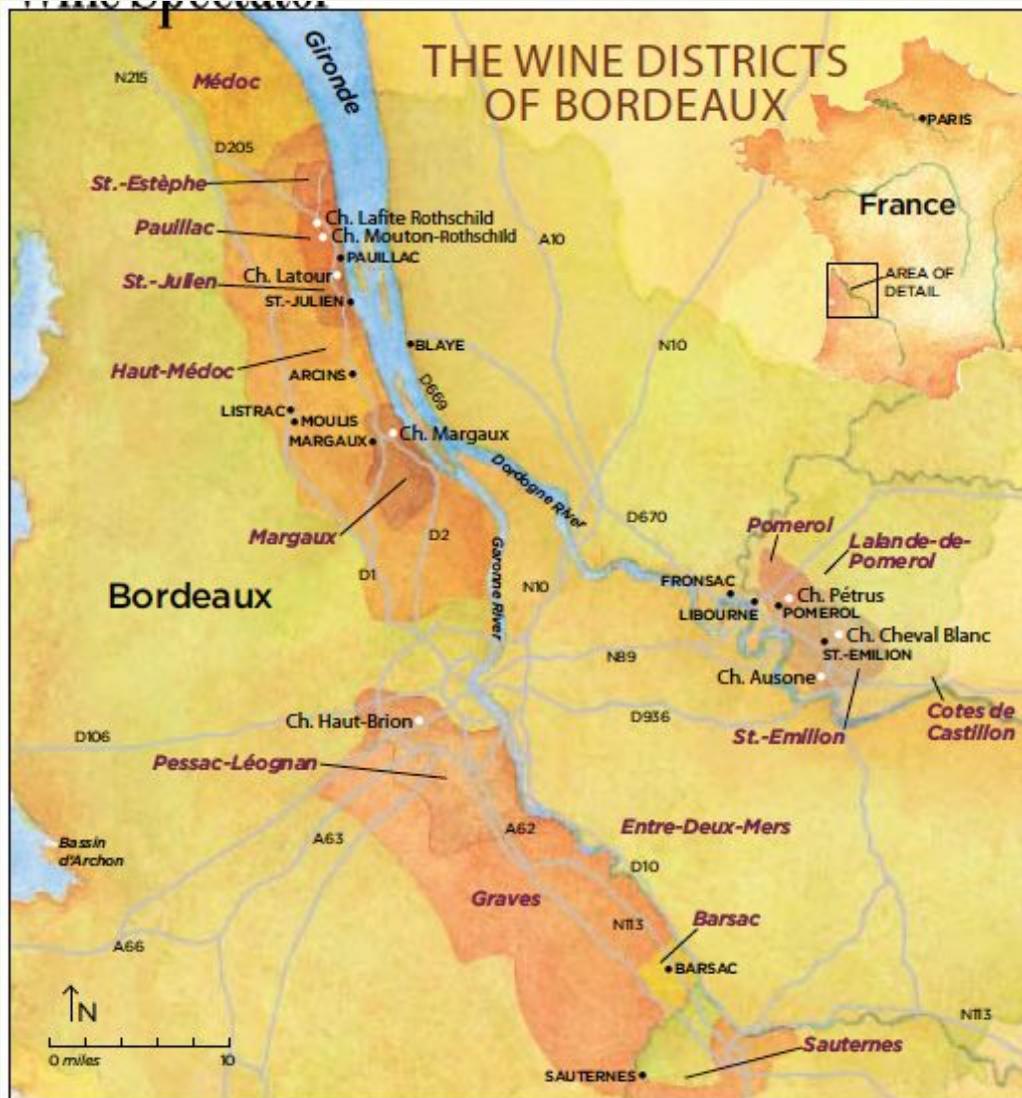
- 1 - Even on high tier wine, benefits in mouth feel have been seen with the addition of small amounts of toasted oak. Larger forms , (Beans, Segments and Staves) of toasted oak are usually preferred at 4 -8 #/ton. Using the lower amounts when combining with un-toasted oak products, chips, long beans and segments. Some winemakers use as little as 2 #/ton toasted oak.
- 2 - Untoasted Oak added at up to 2 #/ton has been found to complement toasted oak additions with color stabilization and mouth feel enhancement. Use at approximately 25% of the toasted oak addition
- 3 - Most wines benefit in the range of 2 –8 #/per ton of grapes. Low end for some color stabilization and body building. Use the higher end of the range when “green / vegetal” characters may be suspected in the fruit. Again use the lower addition rate when using in combination with un-toasted oak products.

What About Using Tannins with Toasted Oak?

- 1 - Many winemakers prefer to use purified tannins in addition to toasted oak, with the thought they all work synergistically to improve color and mouth feel.
- 2 - When you use the combination, reduce the toasted oak addition by 50% and reduce the recommended tannin addition by 50 to 75%. Since these types of products work synergistically, you need less of both to accomplish the intended task of color stabilization and building body.
- 3 - Using less of purified tannin and oak, as described above, will minimize the potential for over use. The over addition of either product may increase a harsh aftertaste to the wines.



I have wondered if “Left Bank” & “Right Bank” Bordeaux was designated going up stream or downstream. Well, here you go:



The term “Left Bank” derives from the side of Garonne river as it descends towards the ocean. This area includes, traveling down river, Graves, Sauternes, Barsac, Pessac-Leognan, and Medoc. The Medoc includes Haut Medoc, Margaux, Moulis, L istrac-Medoc, Saint Julien, Pauillac and Saint-Estephe.

Bordeaux: The world’s quintessential wine garden. When wine connoisseurs think of the greatest bottles in their collections, they are more often than not thinking of wines produced by the houses of the Bordelais. It has become the archetype of a grape-growing region; verdant, gently-sloped vineyards surround towered chateaux, where expert vigneron craft what are considered by many to be the most exalted examples of fine wine in the world.

The term “Right Bank” derives from the side of the Dordogne River as it descends towards the ocean. This area includes, traveling down river, Cotes de Castillon, Cotes de Francs, St. Emilion and its satellite appellations, Pomerol, Lalande de Pomerol, Fronsac, Canon-Fronsac, Bourg and Blaye.



Tannin and Winemaking

by Duncan Ainslie

The subject of tannins goes off in a multitude of different directions. The only unifying theme is the dryness of the subject. The language of tannins is even sleep inducing. There are actually two languages:

The first language is wine chemistry chat – an example: The Cabernet Sauvignon LPP-to-SPP ratio, as percent of color, ranged from 0.11 during cold soak to 0.37 at de-juicing. The SPP would be expected to contain pigment dimers and trimers formed by acetaldehyde cross linking of anthocyanin and flavan-3-ols.²⁸ The LPP fraction likely contains anthocyanins that have reacted directly with polymeric flavan-3-ols, or by acetaldehyde cross links, to form polymeric pigments large enough to precipitate with BSA in the assay.

The second language is wine appreciation baffle-gab: here from the Scott Lab catalog are the descriptions of three recommended cabernet Sauvignon yeasts:

1. Stable color, intense fore mouth feel, mid-palate tannin structure and fresh after taste.
2. Creates high fore-mouth volume, big mid palate mouth feel, and an intense fine grain tannin sensation.
3. Contributes high fore-mouth feel and big mid-palate mouth feel.

I don't know about you, but this verbiage conveys nothing to me to help select a yeast – and so I focus instead on comments on alcohol tolerance and other better-communicated aspects of yeasts – and leave tannins in their impenetrable verbiage thicket.

Recent History

I started making wine and joined VAWA in 1993, 18 years ago. At that time, Ted Underhill's "Making Better Wines" was the go to manual for many of us that date back that far.

I went back to the section in the manual that addresses "Starting a Wine from Grapes." The discussion runs over 4 pages and addresses sugar, acid, pH and grape freshness. Grape tannins are not mentioned. Similarly during the early and mid 90s, premium grape growers in the Okanagan were picking based on the 3 variables of acid, pH and sugar plus the X factor of the weather forecast.

The evolution to a different approach to wine grape growing, timing of harvest and wine making started at different times in different regions. It is possible that Australia lead the way towards red wines that could be consumed earlier and without meat, by using riper fruit, softer tannins, higher pHs and perhaps residual sugar. In the Okanagan, it has been suggested that Sandra Oldfield lead the way to emphasizing tannin ripeness as the prime indicator of the ideal time to pick.

This about face in wine grape growing from tannin being a non-factor to being the critical factor is not a 100% success story. Well maybe it's a success story for producers whose aim is to sell three-year-old reds to consumers who grew up on soft drinks and lite beer.

As home wine makers we are faced with new challenges: excess alcohol potential, yeasts that can't finish, solutions including replacing juice with water and a more bug friendly high pH ferment to name just a few. Last year, our high priced Sonoma Pinot experienced a heat spike that drove it to Zinfandel like Brix just before it was picked. The vineyard owner suggested we ferment it then take it to a de-alcoholizing plant, as if such facilities were as accessible as a 7-11.

Some Background on Tannins

Tannins are bitter, astringent compounds found in most plants.

They serve defensive roles in plants – one against microorganisms and the other against herbivores such as deer that find the taste bitter. These compounds, collectively called flavanols – catechin, epicatechin and epigallocatechin can exist as monomers but dearly love to link up into multi-unit chains – polymers. To qualify as tannin, at least 2 units have to be intertwined. Tannins bind with all manner of compounds, making their family tree large and complicated.

The **benefits of tannins** in red wine include:

- Stabilizing color
- Serving as an anti-oxidant
- Acting as natural fining agents by binding with haze-causing proteins
- Enhancing mouth feel and contributing to balancing the reduced acid (compared to whites) alcohol and residual
- Sweetness (from both the grapes and the oak).

Some of us use a pH guideline for bottling dry whites of 3.30 – 3.35, these whites should have little or no tannin. For reds we use a pH guideline of 3.60 - 3.70. I think of that 0.3 pH difference between whites and reds as what tannins contribute to balance in reds.

Tannins at Harvest

“Wines are made in the vineyard.” Influences include:

1. Terroir: Soil type, temperature, rainfall, sunshine, terrain, and prevailing wind. Amount of tannin per berry varies within a vineyard in the same year and certainly from year to year. The weather is the variable factor; but both during the growing season but also in the preceding year when the vines were laying down the next year's buds.
2. Canopy Management: Some varieties do not respond to bunch exposure vs. shade (Shiraz), in others shaded fruit has more tannin (Merlot) and lastly some shaded varietal bunches had lower tannin.
3. Rootstock
4. Irrigation: Studies show that it has no effect on tannin volume other than to reduce or increase berry size. Others suggest that, particularly during a hot spell close to picking time, some water is essential to keeping the vines alive so that the tannins can mature.
5. Vine vigor: Vines with high vigor have lower tannins. Studies suggest vine vigor is the main driver in tannin variability.
6. Varietal: Cab Sauvignon, Tempranillo and Nebbiolo are high in potential tannins, Merlot, Syrah and Zinfandel somewhere in the middle while Grenache, Cinsault and Gamay are at the low end. Smaller berries with a higher skin to pulp ratio will have more tannins.

In California, Cabernet Sauvignon is the most tannic major varietal with up to about 1,500 mg/l. California Pinot Noir has from 300 to 990 mg/l, with an average of about 340 mg/l. A Beaujolais Nouveau might have as little as 30 mg/l, whereas a top Australian Shiraz usually has a bit less than the finest Napa Cabernets; the Penfolds South Australia Grange 1998, for example, had 870 mg/l.

While Sandra notes above that Okanagan grapes are less likely to have huge tannins, others note that cooler climate grapes may have more acid and less sugar producing less alcohol, so the same level of tannins would seem much more bitter and astringent.

Central Valley grapes have plenty of tannins in their thicker, tougher skins but that makes the tannin and color difficult to extract. In Argentina, the high altitude Salta region (highest wine growing region at up to 1700 meters and closest to equator) produces thick-skinned grapes with higher acidity that produce more robust wines than those of Mendoza.

Seeds and seed tannins – In a wine grape, seed tannins weigh 3.5 – 5 milligrams compared with 0.5 – 0.9 milligrams of skin tannins, making seed tannins about 6 times more plentiful. Seeds make up 6% of the weight of grapes. Delestage is able to remove up to 1/3 of seeds. For all the new found interest in tasting seeds as the critical factor in determining time to pick, I have found very little in the literature explaining the difference between unripe and ripe grape tannins. One study found that seed tannins in Syrah grapes declined by about half from véraison to harvest, and were about three times greater than skin tannin concentrations.

Tannins in the Ferment

In the ferment, the less plentiful **skin tannins** come out earlier and more easily as most are water soluble and don't need heat or ethanol for extraction (ergo cold soak).

Seed tannins come out only with ethanol as a solvent and at a much slower pace. While skin tannin extraction plateaus, seed tannins come out slowly and steadily for a longer time including during any extended maceration.

Seed tannins comprise about 60% of total phenols in **conventionally produced** wine with nearly half of extractable bitter compounds in grape seeds transferred to wine.

As home winemakers, we can influence this 60/40 figure in a number of ways:

Cold Soaking: Sulphite at 25 mg/L and do daily punch downs to stimulate color extraction and to reduce bacterial infection risk. Temperatures of 7 C or lower are suggested. Some Barossa Shiraz is being cold soaked for 1 – 2 months using dry ice pellets. If grapes are not impeccable on receipt, do not cold soak as the mould or ? will take off and eat up the nutrients needed by the yeast and ML.

Color Pro and other color enhancing enzymes enhance tannin extraction. Similarly **yeast selection** can flavor enhanced structure and mouth feel while others emphasize varietal character and fruitiness – if you can overcome the tannin vocabulary.

Catechins are more soluble in alcohol so removing seeds early in the ferment is the optimal time.

Time of Pressing: At 2 – 4 brix, the wine has all the color and flavor you will get, so continuing on the skins/seeds **will only increase bitter seed tannin extraction.**

Ferment temperature: While the Scott Lab catalogue recommends keeping ferment temps below 82 F for high brix musts, others suggest a brief temp spike into the mid 90s F can promote some desirable reactions to happen as skins break down. Temperature is the primary factor in tannin extraction from skins; duration of ferment influences extraction from seeds. Hotter will pull out more of everything while cooler extracts fewer tannins and preserves more fruity flavors and aromatic esters.

Before anyone becomes overly focused on maximizing skin tannins and minimizing seed tannins, please note that a huge focus has been put on the contribution of short chain seed tannins to bitterness as compared with the contribution of longer chain skin tannins to astringency.

Astringency – the tactile sensation of dryness and roughness in the mouth. Through wine making technique and aging tannin molecules join into medium and long molecules. It is believed that long molecules taste astringent while short young molecules taste bitter.

Bitterness – one of the 5 basic flavors (the others being sweetness, saltiness, acidity and umami). Small molecules, those found in seeds, impart bitterness. The reason for this is thought to be that the bitterness receptors in our taste buds are too small to taste the big tannin chains that come off as astringent.

Qualified wine judges, even when asked to differentiate between bitterness and astringency, are not able to do so. And so, as we begin a ferment, maybe we should think more about total tannins and less about manipulating the 60/40 ratio between seed and skin tannins. Factors to consider when assess total tannins include:

- **A high concentration of extractable seed tannins** has been shown to negatively impact wine quality.
- **Grape source** - where the grapes came from with hotter regions usually producing bigger tannins.
- **Assessing by taste** the total volume of tannins in the grapes and how bold the fruit taste is to carry large tannin volumes.
- **Assessing by number of seeds** – the average grape has 1.5 seeds. If your grapes have 2 –3 seeds per berry your must has the potential for being overly tannic.
- **Age of drinkability** - are you aiming for enough tannin for the wine to be in its prime between 7 – 20 years? If you don't have the storage space and stock pile of drinkable wines for next 7 years, you may want to restrict tannins and maybe raise pH.
- **Meat or greet?** Is this wine to compliment red meat or will it being consumed without food?

Once in suspension, tannin chains begin to form, reform and break apart: - Some change through oxidative reactions, others through reaction to acid. Others bind with anthocyanins (color compounds) forming pigments that provide long term color stability. Others morph into forms that provide structure and mouth feel.

Tannins in Wine

By the end, only 20% of wine tannins have the same structure as the preceding grape tannins. This transformation is individual to each batch of wine and the contribution of half the compounds is unclear.

Myth: Tannins that remain in suspension do not continue to form longer chains, which is fortunate, as aging wine would become overly astringent. Those that do form long chains through oxidization or binding with proteins (fining) drop out.

A 50 year vertical of a single Australian Cabernet Sauvignon found lots of vintage variation, but there was no sign of tannin drop-off; some of the oldest had more phenolics than recent vintages.

Some wines start and stay hard, but more often perceived tannin levels drop and, if there is still some fruit, the balance in a well aged red shifts harmoniously. Research has determined that the tannins don't form longer chains and they don't drop out – but **what they do to improve is not known.**

Because tannins are bitter and astringent they contribute to the **mouth feel** of the wine.

Tannins precipitate the salivary proteins that lubricate the mouth and make it easy to chew and swallow food. This causes the drying and puckering sensation associated with drinking red wine. In addition to protein, tannins also interact with polysaccharides in saliva as well as cells in the oral cavity. These interactions are impacted upon by the alcohol concentration and viscosity of the wine and can be masked by residual sugar and other flavor and aroma characters, such as fruit intensity. The perception of mouth feel is also affected by tannin concentration, polymer length and polymer composition. We know that epicatechin-gallate is perceived as coarser than epicatechin, while epigallocatechin is perceived as smoother, however the sensory character of oligomers and polymers and combinations of tannins and other elements such as polysaccharides is unknown.

Tannins most important benefit is their affinity to bind with oxygen and so they function as an antioxidant slowing the transformation of phenolics into browning compounds and alcohol into acetaldehyde, a common spoilage compound.

Types of tannins

1.- Hydrolyzable tannins

Tannins attached to sugar molecules which, when diluted in water, can be cleaved into the subcomponents of gallotannins and ellagitannins. These are relatively soft tannins found in low concentrations in grape juice. The ellagitannins, castalagin and vescalagin are abundant in oak and chestnut. So if you want to add more pronounced yet rounder mouth feel, add a wood based tannin mix.

2.- Condensed tannins

Condensed tannins are found in seeds, to a lesser extent in stems, and very little in the skins. These tannins are able to polymerize (bind) with anthocyanins so as to make the wine color more stable with less dropping out. All, condensed tannins

are derivatives of the flavanol, catechin. Since anthocyanins are more soluble in grape juice, do a cold soak before fermenting, having sulphited at 25 mg/L and do daily punch downs to stimulate color extraction and to reduce bacterial infection risk. If grapes are not impeccable on receipt, do not cold soak as the mold or ? will take off and eat up the nutrients needed by the yeast and ML.

Catechins are more soluble in alcohol so removing seeds early in the ferment is the optimal time.

3.- Complex tannins

Both types of tannins evolve over time in carboys, barrels and bottles into large, high- molecular weight complex tannins. They also bind with anthocyanins and precipitate resulting in a lighter color and reduced bitterness.

Points to Ponder

Emile Peynaud: "A considerable amount of tannin is more acceptable if acidity is low and alcohol is high. The less tannic a red wine is, the more acidity it can support (and needs for freshness)".

Testing tannin: There are tests for tannin that are both expensive and time consuming. But even if you had access to testing the results would be of little value unless you had several years of past numbers for those vineyards and samples of the wine produced.

Eleni Papadakis speaking on Managing Tannins: Toasted oak is **caramelized sugar** so its addition serves to soften the grape and oak tannins.

Sandra Oldfield: With the heat in California, they get huge tannins and their techniques are geared to minimizing tannin extraction. BC reds do not develop big tannins and for Tinhorn's reds, we are often looking to add tannins (perhaps referring to Merlot and Cabernet Franc).

I focus on **how the wine drinks after 3 years** when it goes to market and do not attempt to speed processes that occur naturally over time (such as tannin polymerization).

Fining with egg white or gelatin does reduce tannins but they can result in a less desirable wine, so bench tests should be done first.

Many suggest keeping the **pressed wine separate** from the free run and possibly fining the pressed before combining. Tom Schillimore noted that they used to keep pressed and free run separate and that over time the pressed wines had longevity (10 – 15 years for Tom) while the free run was over the hill rapidly.

The **grapes** certainly limit our options, especially since we usually have no control over picking decision. And most of us seem to have a "Bigger is Better" mindset. Keep in mind with respect to crushing and de-stemming that the more whole berries that come through and the fewer shredded skins and broken seeds, the greater the potential for a lighter style with reduced tannin extraction. (Since most of us have no control of crusher settings, so an alternative could entail the time consuming manual removal of some whole berries from the stems.

Using Oak Adjunct: If fruit tastes big but has vegetal hints, adding an oak adjunct will increase overall structure, not overwhelm fruit and get rid of the vegetal character.

Other options: **add skins from a different ferment** in must or at time of pressing. Addition of whites may stabilize color and provide aromatics

Delestage

Delestage means the process of fermenting red wine with skins and seeds, and doing sub-heroic treatments to the fermenting mass to insure not only a complete fermentation, but to achieve a finished wine with good fruit, soft tannins and stable color. Part of the motivation to study and to perform the process called delestage is the advancement of the date of marketability of the red wines treated this way. Simply put: delestage may enhance not only wine quality, but cash flow as well. Professor Bruce Zoecklein at Virginia Tech has done some excellent research on the quality of the results of this process. In detail, the delestage procedure is as follows:

- 1) The de-stemmed and crushed red grapes are pumped or dumped into a fermenter. The fermenter is usually open-topped, and equipped with a drain valve at the edge or the center of the tank bottom.
- 2) The fermentation is begun in the standard way.
- 3) The delestage really starts here: the first step is to drain the tank through a bottom valve, into an intermediate container by letting the juice/wine flow freely across a screen to capture and remove some of the seeds, a step known as seed deportation. (Seed deportation is not really a part of the word delestage. However, seed removal is so important in the improvement of the wine that I think of it as an integral part of the process.)
- 4) From the intermediate container, a pump then sends the juice/wine to a second tank.
- 5) This trip is done with some fanfare: the wine entering the second tank goes in over the top to become aerated, read that 'sprayed,' into the receiving tank. Magnificent aromas fill the fermenting room as a result.

6) The seed-catching screen is emptied as necessary to keep a good flow without spilling the juice out of the screen or the small intermediate container.

7) After all the juice/wine has been removed from the starting tank it is, in fact, returned to starting tank, where the huddled mass of grape skins waits.

8) The returning wine also goes in over the top, with spraying, to accomplish a second aeration.

Whether the delestage process is performed once a day, or twice a day, or every other day, seems to vary from winery to winery. The amount of seed deportation varies as well, being somewhat dependent on the slope of the tank bottom and the location of the drain valve used. The fermentation is normally completed in five to seven days.

Benefits of the Delestage Process

Several articles on delestage all emphasize:

- Total drainage of juice from the cap.
- Removal of up to 1/3rd of seeds from out flowing juice.
- Leaving skins and liquid separate for about 2 hours.
- Vigorous and rapid spraying of the juice over the skins.

I am guessing that most of us trying to follow this process by bucketing from full to empty primaries are not achieving several of these points.

Home Wine Making Considerations

Home Delestage: I would suggest that those that are doing it are more successful at the seed removal part of the process rather than the aeration. Might pressing at 2 – 4 brix restrict seed tannins in a more labor saving manner?

Why Oxygenate? Oxidized tannins bind into large enough chains to drop out; so the effect is to reduce tannins.

Commercial wine makers speak glowingly about the wonderful aromas that come into the winery when doing pump over and maybe delestage. Those aromas are certainly not going to be in the wine when bottled. Aren't most commercial wineries doing this to speed the marketability of their product?

Aquarium pumps: If we think our tannins may be excessive we can remove seeds by bucketing, press early and maybe expand our use of aquarium pumps which most of us use now for yeast health.

Most comments in the literature regarding macro oxygenation during red ferments refer to maintaining healthy yeast, minimizing H₂S and possibly enhancing color. Others speak to it softening tannins but I found very little suggesting how much oxygen is optimal nor any practical home method of managing the oxygen volume our wine absorbs. Through micro-oxygenation, a new barrel delivers 1 mL of oxygen per liter per month to wine. Oxygen can be artificially delivered at rates of over 10/ month but such high rates may flavor SO₂ as opposed to phenolic compounds.



Something witty this way comes:

- A slipping gear could let your M203 grenade launcher fire when you least expect it. That would make you quite unpopular in what's left of your unit. - the Army's magazine of preventive maintenance.
- If there was any logic in this world, it would be men who ride side-saddle, not women.
- If you think education is expensive, try ignorance.
- It has recently been discovered that research causes cancer in rats.
- Only in America do we have drive up ATM's with braille on them.
- People are more violently opposed to fur than leather because it's safer to harass rich women than motorcycle gangs.
- The Romans didn't find algebra very challenging, because X was always 10.
- E=mc². - Written underneath it: Very nice, Albert. Next time show your work.

West Side Wine Club Leadership Team - 2013

- 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: **Scott Nelson** nelsonsw@gmail.com

- Collect dues and fees, update membership list with secretary
- Pay bills

Secretary: **Ken and Barb 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: **Mike Smolak** Mike@NWRetire.com

- Arrange speakers for our meetings

Chair for Tastings: **Craig Bush** pnoir1@hotmail.com & Phil Bard phil@philbard.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: **Jonathan Brown** jonabrown@gmail.com & Jim Ourada
jim.m.ourada@intel.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@yahoo.com

- Encourage club participation in all amateur competitions available. Make information known through Newsletter, e-mail and Facebook.

Chairs for Social Events: Marlene Grant denmargrant@earthlink.net Barbara Stinger & Mindy Bush – Helpers

- Awards Gala / Holliday parties

• Web Content Editor: **Rick Kipper** kips@lycos.com

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