

**Scheduled Meetings** 

January 16, 2019 Crush Talk / Planning

January 19th, 2019 Annual Gala – At Dennis & Marlene Grants new tasting room at Parrett Mountain Cellars

February 20, 2019 Bordeaux Tasting

March 20, 2019 Speaker:

April 17, 2019 Barrel / Carboy Sample Tasting.

May 15, 2019 Speaker:

June, 19, 2019 Best practices; member demonstrations of tips & tricks

July 13 2019 Annual Picnic

July 27 2019 Tour

August 21, 2019 All Whites Tasting

August 24, 2019 Tour

September 18, 2019 Other Reds Tasting

October 16, 2019 Pinot Noir Tasting

November 2019 No Meeting

**December 4, 2019** Planning, Tours, Speakers, Events, Elections

# **Portland Winemakers Club**

January 2019 "Bill's Spiel"



After six years of positive and progressive leadership Phil Bard has stepped aside and a new president for our club was elected. Being the only one nominated I accepted the role and with all the members help I think we can carry on the club to the future from what it is today.

Another big change is the search for a new permanent meeting space. After 50 years of hosting the Club at Oak Knoll Winery Marj Vuylsteke, founder of Oak Knoll Winery and the Westside Wine Club, felt it was time to retire. We will be meeting at Four Seasons HOA clubhouse on the 16th in Beaverton this month. Details will be found in the meeting notice in this newsletter (see page 2).

Another change will be our Gala. This year it will be held at Parrot Mt. Cellars on Haugen Rd. between Sherwood and Newberg on Jan 19th in club members Dennis and Marlene Grant's magnificent new tasting room. Hopefully you have seen the flyer and we hope to see a good turnout. We need to thank Dennis and Marlene for their support and hosting the club by visiting them often and buying their wines. It should be a superb evening in a beautiful space.

Lastly, most of us find ourselves transitioning through our winemaking. With all things going to plan we are through the ML conversion and are able to finally sulfite to protect our wines. On to long term storage in either barrel of carboys and another vintage put to rest.

Cheers, Bill

Drink Responsibly. Drive Responsibly.

#### Misc. Information

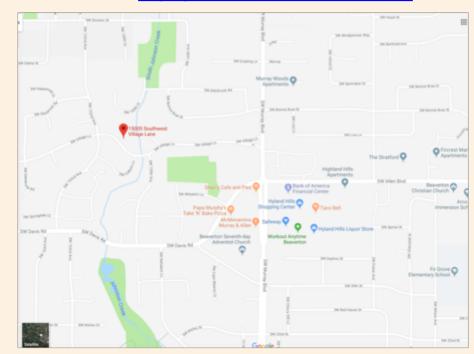
 Copper Cane Embroiled in Label Saga over Elouan Wines . Oregon's Liquor **Control Commission has** taken the first step toward revoking Joe Wagner's Copper Cane permit to ship and sell wine in the Pacific Northwest state, according to a notice sent recently to the Napa Valley-based winery. At issue is the labeling of Copper Cane's Pinot Noir and Rosé wines. The labels improperly imply the wines come from American Viticultural Areas in Oregon when in fact the products are finished in California, state officials and industry representatives have claimed since this summer. The wine already in the state could still be sold, according to OLCC spokesman. OLCC would have to issue a recall order to have the product removed from the shelves. The Liquor **Control Commission cited** Copper Cane for seven alleged violations, according to the notice.

#### The closure of the Alcohol and Tobacco Tax and Trade Bureau,

commonly known as the TTB, could impact the release of thousands of new beers, wines, and liquors across the country, hitting craft brewers hardest as the government shutdown continues with no end in sight. While a handful of smaller brewers are already starting to feel the impacts of the two-week-old shutdown, brewery owners and industry insiders told BuzzFeed News many are starting to look ahead as the dispute over government funding continues. "We haven't seen any direct effects, though we do have several projects in the queue with the TTB that are now at risk, pending how long the shutdown continues.

**Note:** The next regular meeting will be Wednesday, January 16th at 7:00 PM. Note that the next meeting location has changed and will no longer be held at Oak Knoll Winery. **The new meeting place is a one time trial run to see how we like the facilities. January 16th meeting location: Four Seasons Home owners Association Club House at 15005 SW Village Lane, Beaverton, OR, 97007 (see google map or use your smart phone). If you haven't already, be sure to renew your club membership and sign a new waiver.** 

The regular meeting will be a potluck, bring a small snack to share. The 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/



Note: If you are traveling South on Murray Blvd, turn right on Village Lane just before the Allen Blvd intersection. If you are traveling North on Murray Blvd turn left at Allan Blvd onto SW Davis (at Sheris Restaurant"), turn right on SW 150<sup>th</sup> Ave, turn left on SW Village Lane.

#### **December Meeting Minutes**

(There was no Meeting in November)

Present: 32

• Meeting locations for the next three months will be at different locations. The Four Seasons HOA Club House in Beaverton in January, possibly the Scholls Grange in February & possibly Robinwood Station in West Linn in March, subject to change. Directions and maps will be e-mailed to members.

• Marilyn Brown passed around a protein sign up sheet for our Gala on January 19th.

• Elections for 2019 were held.

ions for 2019 were held.	
President	Bill Brown
Secretary	Ken Stinger
Treasurer	Barb Thomson
Grape purchases	Bob Hatt
Tastings Chair	Paul Sowray
Competitions Chair	Paul Boyechko
Events Chair	Marilyn Brown / Mindy Bush
Tours Chair	Damon Lopez
Speakers/Education Chair	Barb Stinger
Website	Alice Bonham



# Saturday January 19, 2019 from 5pm – 9pm

# PARRETT MOUNTAIN CELLARS

33434 NE Haugen Rd Newberg, OR 97132

Members, please contribute to the Gala by bringing a salad, side dish or dessert – and some wine to share! Please also bring your own wine glasses.

GALA: \$15 per person

ANNUAL DUES will also be collected.

Marilyn Brown, our Event chair, still needs volunteers to supply major dishes for the Gala on January 19th. We need main dishes for beef, poultry or fish. Keep receipts and your cost will be refunded. Contact Marilyn Brown at. <a href="mailto:brown.marilynjean@gmail.com">brown.marilynjean@gmail.com</a> to sign up.

If you have plans to enter the Newport Seafood & Wine Festival Amateur Wine Competition, you need to have your entries delivered to Steinbarts in Portland by 18 January. Entry forms must accompany each wine entered. Also include \$10 for each wine entered.

42ND ANNUAL NEWPORT SEAFOOD & WINE FESTIVAL

# AMATEUR WINE COMPETITION

Enter your wine to be independently evaluated by a panel of judges as part of the Newport Seafood & Wine Festival. Winners will be awarded Gold, Silver, or Bronze, and one Best of Show. Entries must be dropped off by 1/18/19.

JAN 18, 2019

Entry forms must accompany each wine entered. Forms available at all drop off locations and online at www.seafoodandwine.com. For more information, call 1-800-262-7844.

Drop off locations: F.H. Steinbart in Portland / Davison Winery Supplies in McMinnville / Home Fermenter Center in Eugene / Salem Brew Supply / Corvallis Brewing Supply / Newport Chamber of Commerce Pomace (or in French marc) is the remaining solid material left after pressing grapes for juice. It is made up of the skins, pulp, seeds and stems of the fruit. The word Pomace stems from the Latin word 'pomum' (meaning fruit or fruit tree). Grape pomace has traditionally been used to produce pomace brandy (such as orujo, grappa, zivania or törkölypálinka) and also grape-seed oil. Today, it is mostly used as castle feed or natural fertilizer.

The Ancient Greeks and Romans used pomace to create a wine that was known as *Piquette*, it was a very simple wine served to slaves. After wine grapes had been pressed twice, the pomace was soaked in water, then allowed to fermented and pressed for a third time. The resulting liquid was mixed with more water to produce a rough, weak wine.

In the '*Middle Ages*' pomace wine with a low alcohol content of around 3 - 4% was very common. Typically wines of the time were only partially fermented - resulting in a pomace that would have some unfermented residual sugars.

Pomace in winemaking differs, depending upon whether white wine or red wine is being produced. In red wine production, pomace is produced after a period of time the juice is poured off, leaving behind dark-red debris consisting of grape skins and stems. The resulting pomace is more alcoholic and tannic than pomace produced from white wine production.

In white wine production, grapes are quickly pressed after crushing to avoid skin contact with pomace as a by product of the pressing. The resulting debris is a pale, green-brown in color and contains more residual sugars than it contains tannins and alcohol. It also has nitrogen, amino acids and other goodies that did not make it into the fermentation tank. This is the pomace normally used in brandy production.

During wine production pomace is produced in large quantities, with its disposal an important environmental decision. Some wineries use the material as fertilizer, while others sell it to Bio-Gas companies for renewable energy to produce methane gas that could be used to generate power. Oenocyanin a natural red dye and food coloring agent, is produced from grape pomace. Tartrates (*potassium bitartrate, 'cream of tartar'*) and grape polyphenols can also be manufactured from grape pomace.

Pomace, even when fermented, contains a staggering variety of chemical components. The skins mainly consist of cellulose, tartaric acid; trace amounts of other organic acids, unfermentable sugars, tannins, anthocyanins and some aromatic phenolic substances. The seeds, which remain largely intact during pressing and fermentation, are gold mines of bitter and astringent tannins. The seeds also contain large amounts of nutritious oil, which is popular with chefs due to its high cooking-smoke point. Stems contain tannins and if the pomace is pressed from a fermented wine, it will contain water and alcohol.

White or red, pomace also varies in moisture content depending on how hard it has been pressed. White pomace, often pressed gently to avoid extracting bitter compounds into a delicate white wine, can be juicy and sticky with sugar. On the other hand, red pomace often forms large clumps and can be quite dry. Anything added during the winemaking process - like enzymes, bentonite or yeast - will be present in the pressed pomace.

In Verona, Italy winemakers re-use skins by placing the pressings from red wine, into another fermentation tank to get more mileage from the grapes. By crushing fresh red must over already-pressed and fermented red pomace, it is possible to extract even more of the colors, tannins and - if the grapes were at all raisined and not completely fermented sugars. The most famous and delicious examples of this technique is the Italian *'Ripasso'* wines where the sweet, raisined pomace from Amarone della Valpolicella is added to other red ferments of lighter style red wine. These wines, having been *'re-passed'* over the sweet, flavorful Amarone skins, are richer and have more depth than they would have had on their own.

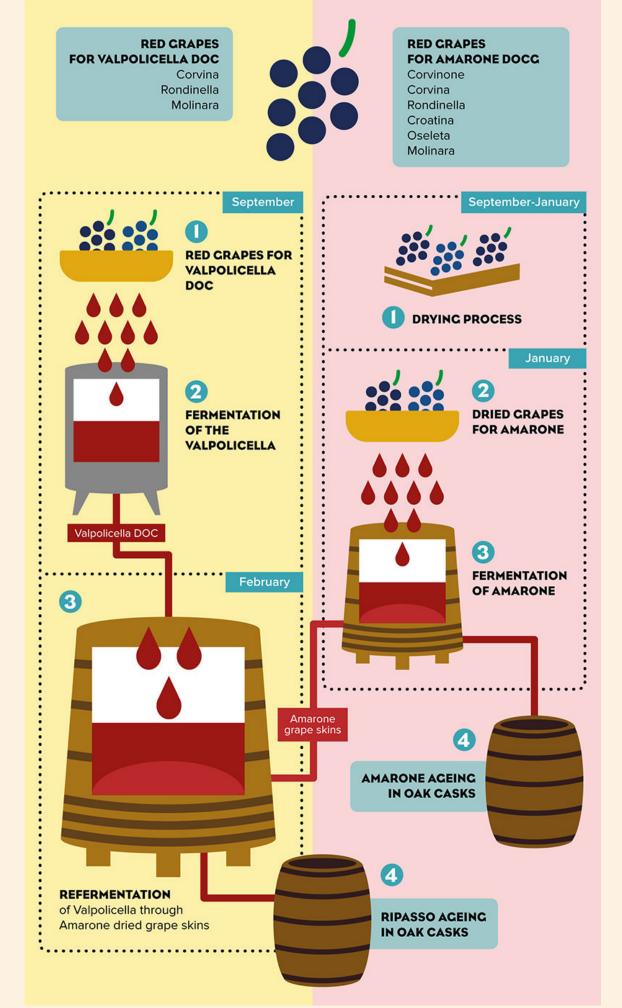
Ripasso and Amarone are two typical wines from the northern Italian wine region of Valpolicella. Ripasso is generally less well known than Valpolicella and Amarone wines even though it shares some features of both wines.

The term "Ripasso" means "repassed." In its production process regular, fermented Valpolicella – a blend Corvina, Rondinella and Molinara – is added to a cask containing the skins left over from fermented Amarone wines. The process of adding (or "repassing") the lighter Valpolicella wine over the remainders of the big n' bold Amarone wine gives additional texture and flavor to the Valpolicella wine. Also, it induces a second fermentation of the wine that increases the wine's alcoholic content.

Here is a quick explanation of the winemaking methods of Ripasso and Amarone.

Ed - Has anyone used the Ripasso method for anything? How about Grenache over Petit Verdot pomace or a light Pinot Noir over Petite Sirah pomace?







# Is my wine finished with malolactic fermentation? (aka secondary fermentation)

Friday, October 7, 2016 Drew Horton, Enology Specialist

Each wine harvest season as the picking ends and the last wines are completing primary yeast fermentation, it is often asked about how to know when your secondary or "malolactic" fermentation has completed? "MLF", as it is known, is a bacterial fermentation that can occur naturally, or as an addition, in a wine, which converts most of the stronger or harsher malic acid into the softer and "rounder" lactic acid. Think of malic as the "green apple" acid and lactic as the weaker acid in dairy products; cream, butter, cheese, and etc. as the names imply. MLF can change the sensory perception of the wine (less sour due to lower TA and higher pH) as well as changes in the mouthfeel with the development of additional compounds that add to a wine's body such as glycerol.

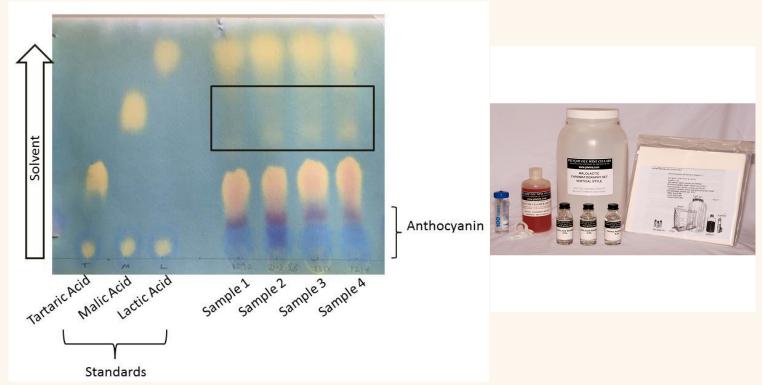
99% of the red wines made in the world are allowed or encouraged to complete MLF as one of the beneficial effects of MLF is to lower total acidity in a wine. Its use in white wines is mostly limited (to Champagne and white Burgundy wines) as it can negatively mute and/or alter the fresh fruit flavors and aromas in most white wines.

**Paper Chromatography** is an easy and inexpensive method used to determine if MLF has finished, or completed. A kit with solvents and paper for analyzing 50 wine samples can be purchased on-line through various vendors including www.piwine.com,\_who have a kit for \$60: http://www.piwine.com/chromatography-test-kit-vertical-paper.html

Testing is easy to do and the results are simple to read. Figure 1 is a sample of a test executed on four red wines here at the UMN Horticulture Research Center. Three standards are utilized (tartaric, malic, and lactic acid) to show their migration and serve as a reference to the wine samples. In this case, all 4 wines have undergone MLF, as there is very little malic acid evidence on the chromatograph.

Follow the manufacture directions carefully. Special consideration should be taken as the solvent used does require a place with adequate ventilation. The paper can be dried overnight in a garage or shed or other place with sufficient ventilation.

There are other options available from commercial labs to test your MLF, but they can start to get expensive if you are doing multiple wines and if you include shipping time and cost.

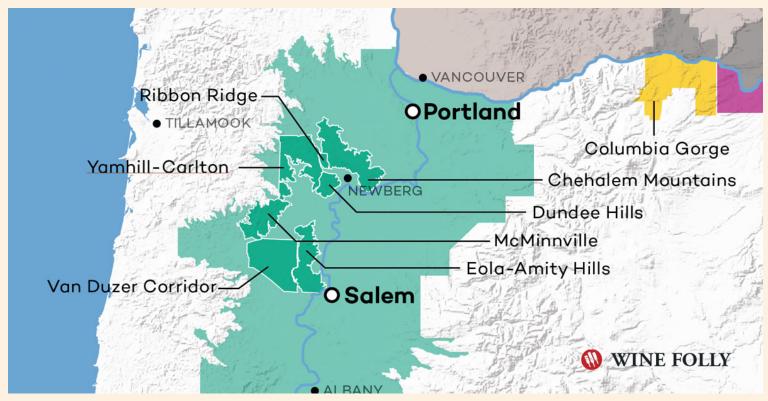


**Figure 1**. Paper chromatograph showing the three acid standards (tartaric, malic, and lactic acid) and 4 wine samples. The reference standards show the relative migration of the compounds in each sample in the direction of the solvent. You can see that lactic acid moves the farthest on the chromatograph. There is little evidence for malic acid remaining in the wine samples as shown in the rectangle. However you can see that tartaric acid remains.



# Van Duzer Corridor: Oregon Gets a New Wine Region

It's official, Van Duzer Corridor is now an American Viticulture Area.



The new wine region is located within the Willamette Valley, west of Salem, and next to Eola-Amity Hills AVA. It's a big growing area in Oregon, with six bonded wineries and nearly 1,000 acres planted (405 hectares). So, if you're an Oregon wine lover, this is definitely a spot to keep an eye on. Here's what's you need to know about Van Duzer Corridor and its wines.

Pinot Noir is the most planted grape, followed by Pinot Gris and Chardonnay. That said, winemaker Florent Merlier at Van Duzer Vineyards, says Sauvignon Blanc and Gamay show real promise here, along with a few other varieties. He's even spotted some Syrah (a very rare find in the Willamette Valley!).

Wines from this region have bright, fruit flavors, increased aromatics, and marked acidity; much more so than wines from the other Sub-AVAs in the Willamette Valley. This is most definitely caused by the area's unique climate.

Van Duzer Corridor gets its name from a gap in the Coast Range that leads to the Pacific Ocean. The passage causes an induction effect that sucks cool air into the Willamette Valley from the Pacific Ocean. The winds start gusting at 2:30pm in the afternoon. "It's almost on a timer," says Merlier.

The winds do several things for Van Duzer Corridor grapes:

The cool air slows ripening and helps maintain acidity. Van Duzer Corridor growers pick grapes about a week or more after everyone else.

The winds give grapes thicker skins, which increases color concentration, aromatics, and tannin potential. Florent Merlier says that he treats Van Duzer Corridor grapes much differently in the cellar than other grapes because of their thicker skins.

After it rains, vineyards dry out quickly, which reduces disease pressure. Merlier estimates that about 60–70% of the vineyards in the region are Live Certified sustainable and several are organic.

## 7 Sub-AVAs in the Willamette Valley

Overall, it's great news to see a new sub-region carved out of the Willamette Valley of Oregon. The creation of the new Van Duzer Corridor gives wineries (and wine drinkers) more options to home in on an Oregon wine region that they love.



# **Floating Lid Tanks**

### Understanding the gap in variable-capacity tanks

Curtis Phillips

of year when it seems like everything runs short. Tempers, time, cooperage and supplies all seem to be running low or running out. Wineries are scrambling to find a container to hold new wine lots, and sometimes winemaker or cellar crew mental exhaustion leads to the creation of unintended blends.

Someone sent me **Daniel Pambianchi**'s article on variable capacity tanks at *winemakermag.com*. *Winemaker Mag* is very much oriented toward the home-winemaker, rather than commercial wineries. As such, they are constrained by the 200-gallon, plus 100 gallons per additional adult member of the household, production limit for home winemaking. This alone does make home-scale winemaking a bit different than for commercial wineries, simply due to the small volumes. Within these limits, Pambianchi's article is a pretty good summation of variable capacity tanks with volumes between 50 and 100 gallons. This got me thinking about variable capacity tanks and their role within commercial-scale winemaking.

At the most fundamental, variable capacity (VC) tanks are relatively inexpensive and very useful for holding odd-sized volumes. Every winery should have several VC tanks. Winemakers may want to set an upper size limit for VC tanks, anywhere from 200 to 2,000 gallons. For fermentation, especially for red wines, variable capacity tanks make decent opentop fermenters.

#### A Problem of Scale

Making wine in volumes smaller than 200 gallons is many times more prone to oxidation than winemaking at typical commercial winery scale. As the tanks get smaller, oxidation becomes more of a concern. Simply put, and assuming that were only talking about full tanks, small tanks have more exposure to atmospheric oxygen than do large tanks because the top surface, the top door in a conventional tank, the annulus around the floating lid in a variable capacity tank, is larger relative to the total volume of the tank as the overall volume of the tank decreases. My back-of-the-envelope calculations give anywhere between two and six orders of magnitude more oxygen exposure than a full closed-top tank simply due to the difference in the surface area to volume ratios. This has nothing to do with the design of the tanks themselves. It is simply a matter of geometry.

#### Mind the Gap

That 1-inch gap adds up to be more area than you think. The exposed area of a variable capacity tank is actually pretty reasonable since, if the lid is floating on the wine, only the inch or so between the lid and the wall of the tank is open to the atmosphere, which only happens if the gasket deflates. All the same, this is a larger area than one might think. A variable capacity tank with a 2-foot radius has an exposed area of around 150 square inches, which is roughly the equivalent of a 14-inch-wide top-lid.

#### That Floating Lid

The lids for variable capacity tanks could be designed better. I'm sure that there are custom designs where the lid has a dome so that the bottom of the pressure relief valve (fermentation trap) isn't down in the wine when the lid itself is floating on it, but I haven't seen or used them. The variable capacity tanks that I've used all have a flat lid with about a 2-inch lip that floats like a lily-pad on top of the wine. The inflatable gasket expands to close the roughly 1-inch gap between the edge of the lid and the side of the tank. A "marble-type" fermentation lock usually extends as much as half an inch below the underside of the lid.

#### **Oxidized Wine or Fruit Flies?**

Floating lid tanks are very sensitive to thermal expansion. When the wine expands it is forced up and out of the fermentation lock because there is nowhere else for it to go. The spilled wine makes a mess on the top of the floating lid and attracts fruit files who tend to carrier around acetobacter. One can have the cellar-crew clean off the floating lid every time this happens, but this is an addition to their workload that shouldn't be necessary. Additionally, if the level of the wine in the variable-capacity tank is more than a few inches below the rim, cleaning the lid off means removing it so it can be hosed down. This exposes the wine to the atmospheric oxygen on a daily basis thus making an already oxidative container even more so. The trick is to lift the lid an inch or so above wine then inflate the gasket so that it leaves enough space for thermal expansion. To be honest though, I don't really like this solution unless the winery is willing to spend enough money to keep everything under a blanket of argon. Otherwise, all you're doing is trapping an inch or so of the ambient, 20 percent oxygen, atmosphere inside the tank so that it can be absorbed into the wine.

#### **Blanketing Gases**

A winemaker has three available gases to use to protect wine from oxidation when needed: carbon dioxide, nitrogen and argon. Each gas has its own advantages, but I would consider only one, argon, to be useful as a blanketing gas. Carbon dioxide is inexpensive and can be dispensed as a solid, liquid or gas. Solid CO2 (dry ice) sublimates directly to CO2 gas. Liquid CO2 flash- freezes to "dry ice snow" then sublimates to CO2 gas. CO2 gas is a dense gas. It makes an

adequate "blanketing" gas for short periods prior to, and then during, fermentation but is too miscible with the atmosphere, and dissolvable with the must/wine, to make a good blanketing gas unless the must/wine is generating CO2 on its own. Pure nitrogen, while also inexpensive and can even be generated on-site, also isn't a good "blanketing" gas. It isn't as dissolvable in must or wine as CO2, but it is lighter than air and mixes readily with it, which should be no surprise since air is already 70 percent nitrogen to begin with. This is why bottling tanks, which typically use nitrogen as the inert atmosphere, need to be kept at a higher pressure (e.g., positive pressure) than the surrounding atmosphere.

The two most popular "blanketing" gases, carbon dioxide and nitrogen, protect wine more from dilution than from any actual blanketing action. Even then, it requires three to five volumes of gas to get an appreciable dilution of the atmospheric oxygen in the tank, which is to say a 1,000 gallon tank needs at least 3,000 gallons and probably more than 5,000 gallons of CO2 gas to be considered purged of an appreciable amount of the oxygen that was there initially. You can shade this a bit by only considering the volume of the headspace, which is fine for re-gassing a tank, but it is likely that a wine will absorb and bind a good portion of the oxygen in an un-purged tank while it is being filled.

If both carbon dioxide and nitrogen are more useful as purging and inerting gases, argon is my blanketing gas of choice. Argon is a very dense gas. It also doesn't dissolve readily in must or wine. Neither is argon especially miscible with atmospheric air, which means simple random Brownian motion won't cause the argon to mix with the ambient atmosphere as long as the air is reasonably still. The point is that argon will stay put in a container while neither CO2 nor N2 will. The latter two mix too easily with the atmosphere.

#### Things to Remember

Variable capacity tanks are simply too useful for any winery to not invest in having several. Commercial wineries should keep in mind that, for wine storage, the smaller the tank, no matter the design, the more oxidative an environment the tank is. This is can be a virtue when aging wine in barrels, but it does mean that wine oxidizes considerable faster in a small tank than in a large one, even when both are completely filled. Due to their small size and floating lid design, this is especially true for any variable capacity tank.

#### What's Going on With Steel?

It seems that any time I get to writing about tanks, I end up looking at the metals market. File this note under "Random Stuff I'm Monitoring" but I just got a short press release from the **London Metal Exchange** noting that August 2018 was their highest volume of trades for scrap steel on record. Now, granted, that is just mild steel and not stainless steel, like I usually watch, or even iron pellets for stainless production, but all the same, 86 Eiffel Towers' worth of steel (630,000 tonnes or 694,456 U.S. tons) is a lot of transactions for a single exchange in a single month. It's enough to suspect that there's more to the underlying causes than the continued skyscraper surge in China, Dubai and elsewhere.

Of course, this is just trivia for the wine industry, but I'll be keeping an eye on the stainless steel spot price, as well as the constituent metals used in producing 316-grade stainless, and the CF8M cast stainless steel equivalent, in the unlikely event that there is a knock-on effect for the stainless steel supply.

# what we'd really like to put on the back of our wine labels:

This wine has a very tasty taste. The color is somewhat white, but not white like glue or paper. Pairs good-ish with various foods. Hints of other stuff can be tasted, such as the glorious taste of the time you walk through your child's room without stepping on a Lego. Most people say stuff like "AHHHH, this is delicious!" or "which wine did you say this was?" Open before serving. Save cork for that cool art project you saw on Pinterest and will never do.

GOVERNMENT WARNING (1) ACCORDING TO THE SURGEON GENERAL, WOMEN SHOULD NOT DRIV ACOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RECEIPTION OF PRECINING

# Portland Winemakers Club Leadership Team – 2019

## President: Bill Brown <a href="https://www.bbgoldieguy@gmail.com">bbgoldieguy@gmail.com</a>

- Establish leadership team
- Assure that objectives for the year are met
- Set up agenda and run meetings

## Treasurer: Barb Thomson <a href="https://doi.org/10.1016/journal.com">bt.grapevine@frontier.com</a>

- · 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/Speakers: Barb Stinger kbstinger@frontier.com

Arrange for speakers & educational content for our meetings

# Chair for Tastings: Paul Sowray & Barb Stinger davids1898@aol.com

- Conduct club tastings
- gs <u>kbstinger@frontier.com</u>
- Review and improve club tasting procedures

# Chair of Winery/Vineyard Tours: Damon Lopez. <u>dlopez5011@yahoo.com</u>

- Select wineries, vineyards etc. to visit
- Arrange tours
- Cover logistics (food and money)

## Chair of Group Purchases: Bob Hatt <a href="https://doi.org/10.1016/journal.com">bobhatt2000@yahoo.com</a>

- Makes the arrangements to purchase, collect, and distribute
- Grape purchases
- Supplies These should be passed to the President for distribution

Chair of Competitions: Paul Boyechko labmanpaul@hotmail.com

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

Chairs for Social Events : Marilyn Brown & Mindy Bush brown.marilynjean@gmail.com \* Gala / Picnic / parties mindybush@hotmail.com

Web Design Editor: Alice Bonham alice@alicedesigns.org