Portland Winemakers Club

October 2024

“Bob’s Blurb”

2024 Monthly Agendas

January 17th,
Discuss plans and ideas for 2024

January 26st,
Gala

February 14th,
Speaker: Dr. Rich DeScenzo from ETS Labs, “Indigenous yeast fermentation observations”. NOTE: This is in place of our normal Feb. 21st meeting.

March 20th,
Tasting of members barrel samples.

April 17th,
Tips and tricks and demo night.

May 15th,
Tasting & judging, member produced Bordeaux Reds

June 19th,
Tasting & judging, members produced all Whites, Rose’ & sparkling

July - No meeting
Annual Picnic 13th, $10 ea. fee

August 21st,
Tasting & judging, member produced other Reds & fruit wines

September 18th,
Speaker: Geologist Dr. Scott Burns, “Tasting Terrior in the Pacific Northwest”

October 16th,
Tasting & judging, member produced Pinot Noir

November 20th,
Crush Talk

December 11th,
Elections, Planning for Next Year

Wine-related tours may be scheduled on non-meeting days.

Our leader

Well, the harvest has started in earnest this week. A group of us got Sauvignon Blanc from Aurora colony vineyards here in the Willamette valley. Most of us crushed/pressed at Rob Marr's place. Rob and Tyson did foot stomping and waited a few hours before pressing under the premise they get more juice with this method. Mark H. and I crushed and pressed directly. It looks like they might be onto something, if you don't mind cold feet :) ZS

Does anybody recognize this equation:
TA g/L = (V * N * 75) / S

V = the volume (*ml) of the titrant used to get to 8.2 pH
N = normality of the NaOH solution
S = wine sample size (ml)

I ran into an issue where the Normality of the NaOH solution I got was not the same as my previous batch.
So, the above equation solved the problem of calculated my TA. With this I was able to plug and chug to get the TA of my wine.

Happy Winemaking!

Regards, Bob

Upcoming events / Save the date

The next PWC meeting is scheduled for Wednesday, October 16th in the basement of the Aloha Grange starting at 7:00 pm. Wewill be tasting & judging, member produced Pinot Noir. Bring two glasses for the tasting.

• Take time to visit the PWC website: portlandwinemakersclub.com where there are Newsletters archived back to 2007.
• Also, visit our public group Facebook page: “Portland Winemakers Club” facebook.com Give it a look, join the discussions, and enter some posts of your own.

September Meeting Notes

Members present – 38
• Barb Thomson was intervued for an article in Winemaker Magazine (see page 3)
• Ken asked if anyone respond to the email for:
  - Free Chamberlain grapes (no).
  - Tyson Smiths’ extra Brute tubs & other containers (most gone, a few left).
  - Twin Pines Vineyard “Swan” clone Pinot Noir, some free some not (no).
• Bob Thoenen gave a grape purchase program update.

Paul Natale introduced our speaker, Geologist Dr. Scott Burns. His subject was **“Dynamic Terrior of the Willamette Valey”**

The September – October issue of WineMaker Magazine has an article about the value of amateur winemaking clubs. PWC member and Treasurer, Barb Thomson, was interviewed for the article and her portion is shown below.

Buying grapes in bulk is not only cost-efficient but also provides access to high-quality grapes that may not otherwise be available to the solo winemaker. “Good wine starts with good grapes,” says Barb Thomson, Treasurer of Portland Winemakers Club (PWC). “You don’t have to go on your own and try to find where to get good grapes.”
Thomson joined the club to find a good source for grapes, but the club also offered a chance to meet other people with similar interests and build camaraderie and friendships. The club welcomes everyone and includes members who have 30 years of experience and others who have only made a batch or two from kits, to those who haven’t even made their first wine yet.

Club members provide each other feedback at both informal tastings and formal judgings. Thomson points out that tasting other member’s wines besides your own is beneficial in your winemaking. It also helps club members learn to become better at tasting and evaluating wine, including what to look for as far as aroma, clarity, color, flavors, and what typical flaws taste or smell like, Thomson adds.

The club learns from each other’s experiences – how to clean your bottles, different techniques and methods, and how to use equipment. A tips and tricks demo night is a show-and-tell opportunity where members can demonstrate winemaking methods, a new piece of equipment, or how to test for acid in the wine.

A specific member arranges for speakers throughout the year, someone from the industry to talk about vineyard practices, winemaking techniques, or other useful topics. Another member arranges group tours to a winery or vineyard in the area. Thomson joined in 1999 and still feels like she hasn’t mastered it yet. “For me, it keeps me going to the meetings and trying wines,” Thomson says. “It keeps me excited about winemaking.”

“You can always try to get better and better and the group helps with that,” she said.

Pooling resources to buy bigger allotments of grapes and help with the work once they come in is a big benefit to home winemakers.

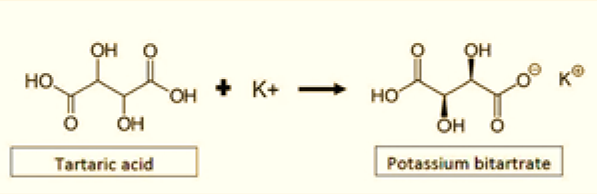
Treasurer, Barb Thomson

Preparing for harvest: Grape chemistry and pre-fermentation adjustments

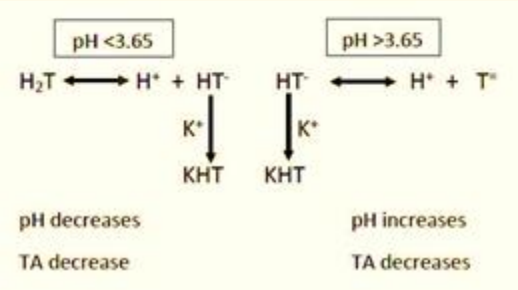
James Osborne

As harvest nears each year, there are many things to prepare for before the fruit starts arriving at the winery. One subject on the "to-do" list is grape maturity testing and planning for pre-fermentation adjustments that may be required. The standard grape compositional measurements are pH, titratable acidity (TA) and Brix. Additional parameters such as yeast assimiliable nitrogen (YAN) and malic acid may also be measured close to picking or once fruit is in the tank.

Often it is a simple process to use these chemical parameters to determine your pre-fermentation adjustments. However, in some years, fruit composition does not line up with expectations or unexpected changes occur during fermentation that may cause challenging wine chemistries. An increased understanding of these basic grape compositional components can help better predict what pre-fermentation adjustments may be needed and how they may affect wine chemistry parameters.



A hydrogen ion on tartaric acid can be substituted for a potassium ion (K^+), resulting in the formation of potassium bitartrate.



The impact of tartaric acid on pH depends on the pH of the juice or wine. When tartaric acid is added, it dissociates into three forms: tartaric acid (H_2T), bitartrate (HT^-) and tartrate ($T^=$). The proportion of each present is determined by the pH of the juice, grapes or wine. At pH <3.65, a large amount of tartaric acid is present as H_2T. The formation of KHT (reaction of HT^- and K^+) will release an H^+ ion, causing a decrease in pH.

Sugar and potential ethanol

Brix values are typically used to estimate potential ethanol of the finished wine, but this value is not equal to fermentable sugars (glucose and fructose) which can lead to over- or underestimation of potential ethanol. In some years, Brix may line up perfectly with glucose + fructose but in other years, there may be some variance (often Brix will be lower than combined Glu + Fru measures). Measuring glucose and fructose will give a more accurate ethanol estimate. Calculate this measure using the following formula:

(Glucose g/L + Fructose g/L) / 16.83 = Potential ethanol (% v/v)

Other factors that can affect ethanol concentration include the following:

•**Yeast strain**: *Saccharomyces cerevisiae* strains may vary in ethanol yields, and some non-*Saccharomyces* yeasts consume some sugar but do not produce ethanol.

•**Fermentation temperature**: Higher temps can lead to slightly lower ethanol.

Do you need to measure both pH and titratable acidity?
Acidity, as measured by pH and TA, is a critical grape parameter that affects wine microbial stability, sulfur dioxide effectiveness, color, potassium bitartrate stability, and taste. pH and TA are not the same and measuring both is important to give you a better overall understanding of grape acidity, potential changes that may occur during wine production and adjustments that may be required.

The major acids in grapes are the weak acids — malic and tartaric acid. Small amounts of citric acid may also be present, but this has minimal impact on pH and TA. Both malic and tartaric acid are dicarboxylic acids, meaning they have two carboxylic acids groups. When measuring titratable acidity, you are measuring the total amount of dissociated and undissociated ions in solution. Because both malic and tartaric acid both have two carboxylic acid groups, changes in the ratio of malic to tartaric acid are not reflected in the TA as the contribution of dissociated and undissociated ions from either acid is the same.

On the other hand, changes in malic to tartaric ratio will impact pH. The pH is a measurement of acid strength (concentration of free H+ ions in solution) and tartaric acid is a stronger acid than malic acid. This means that you can have grapes or wine that have the same TA but different pH values due to differences in malic and tartaric acid content.

The malic acid concentration of the grapes will also affect how much of a pH shift occurs post malolactic fermentation, as the dicarboxylic malic acid is metabolized to the monocarboxylic lactic acid (a weaker acid). Large pH shifts can occur during malolactic fermentation (MLF) if you have high malic acid content in your grapes/wine. Malic acid concentrations vary from year to year, so measuring malic acid in the grapes will give you a better understanding of how pH may shift during MLF and what pre-fermentation acid adjustments may be necessary.

The impact of potassium on acidity
pH and TA can also be affected by the concentration of the cation potassium (K^+). K^+ is naturally present in grapes and is an essential nutrient. In the grape, a H^+ ion on tartaric acid can be substituted for a K^+ ion, resulting in the formation of potassium bitartrate (KHT) (Figure 1). This can lead to a raise in the pH, as there is a decrease in the free H^+ ions in solution due to the substitution of a K^+ ion.

In general, higher K^+ concentrations will result in higher pH, but this relationship does not always exist. K^+ has less of an impact on TA, as TA measures both dissociated (free) and dissociated ions while pH measures only free H^+. In practice, this can lead to TAs and pH values that do not correlate as you would expect. For example, a juice having a higher pH than you would expect given the high TA.

There can also be situations where there is both a high TA and a high pH due to the extent of K^+ substitution and formation of KHT. In the berry K^+ increases during ripening and changes during grape processing and fermentation. Grape skins contain K^+, so soaking the grapes on the skins will increase K^+. Pressing also impacts K^+, with harder pressing resulting in higher K^+ content. During fermentation, there will likely be an initial increase in K^+ due to extraction from the grape skins, but then concentration starts to decrease as KHT forms and begins to precipitate out. This will remove a H^+ ion and result in an increase in pH. The TA will also increase.

K^+ has an impact on the effectiveness of acid additions to juice/grapes and wine. An addition of tartaric acid may initially increase the TA, but if there is high K^+ then the formation of KHT may not result in the expected decrease in pH. Furthermore, as KHT precipitates (during fermentation and cold stabilization) the removal of tartaric acid will then decrease the TA. The impact of tartaric acid on pH is dependent on the juice/wine pH. When tartaric acid is added, it dissociates into three forms:

•Tartaric acid (H_2T)
•Bitartrate (HT^-)
•Tartrate ($T^=$).

The proportion of each present is determined by the pH of the juice, grapes or wine (Figure 2). At pH < 3.65, a large amount of tartaric acid is present as H_2T. The formation of KHT (reaction of HT^- and K^+) will release an H^+ ion causing a decrease in pH (Figure 2). The precipitation of KHT removes tartaric acid and will therefore result in a decreased TA. Due to the loss of KHT, the equilibrium will be balanced by the dissociation of more H_2T which will release more H+ ions and further decrease pH.

In summary, at pH <3.65, a tartaric acid addition will decrease pH and decrease TA as KHT precipitates (Figure 2). However, at pH values >3.65, pH and TA react differently to a tartaric acid addition. At pH >3.65 tartaric acid exists predominately as the HT^- ion. When the HT^- ion reacts with K^+ ions to form KHT, the tartaric acid is lost due to precipitation (resulting in a decrease in TA). As before, the equilibrium needs to be balanced due to the loss of KHT but at this higher pH, this results in the formation of HT^- through the reacting of H^+ ions with $T^=$. This results in the consumption of a H^+ ion and an increase in pH.

So, in wines at pH >3.65, KHT precipitation results in a decrease in TA and an increase in pH. In practice, if you are starting with a high pH juice/must it can be difficult to reduce your pH later in the process because your tartaric acid additions will not be effective. Acid additions pre-fermentation should be targeted at getting you pH <3.50 so that post-MLF your wine will still likely be below pH 3.65 and responsive to further acid adjustments. While TA values may be initially high, KHT precipitation and cold stabilization will later reduce your TA.

Feeding your yeast for a healthy fermentation
Aside from the basic juice chemistry parameters, it is also important to know the concentration of yeast assimilable nitrogen (YAN) so that suitable adjustments can be made if necessary. YAN is composed of nitrogen from ammonia (inorganic nitrogen) and nitrogen from primary amino acids (organic nitrogen). Once determined, YAN adjustments should be based on a target YAN value. While you want to add enough YAN for a complete and clean fermentation, you do not want to add excessive nutrients, as this can also cause problems such as overly vigorous fermentations and altered aroma compound production by the yeast.

How much yeast assimilable nitrogen do you need?
Well, it depends. The general recommendation is between 150-250 mg/L for a 21-23°Brix must. If you have a higher °Brix must or are using a high nutrient demand yeast strain, then you may want to consider higher YAN levels. These are not hard and fast rules but are YAN levels that have been reported by researchers and yeast manufacturers to result in fermentations with good kinetics.

A balanced approach of both ammonia and complex nutrients works best if you need to significantly increase your yeast assimilable nitrogen levels.

Aside from nitrogen, the other nutrients that are essential factors for yeast growth are the micronutrients such as the vitamins biotin, pantothenic acid, and thiamin. If you just want to increase YAN, then ammonia (DAP) is an efficient way to do so. However, DAP does not contain any micronutrients, so you also should be sure to use a complex yeast nutrient that contains a blend of organic nitrogen (amino acids, peptides) and micronutrients. A balanced approach of both DAP and complex nutrients works best if you need to significantly increase your YAN levels. Nutrient additions should be carefully monitored and recorded, as there are legal limits (concentrations) that can be added for DAP (0.96 g/L), thiamin (*0.60 mg/L*), and pantothenic acid (0.048 mg/L). For complex yeast nutrients, carefully read the manufacturer's instructions to determine the maximum concentration of the product that can be added.

The timing of nutrient additions is important for successful fermentations. Yeast preferentially uptake DAP before amino acids. Therefore, one large addition of DAP at the beginning of fermentation may delay or inhibit uptake of amino acids and cause problems later in fermentation. For this reason, perform multiple additions of nutrients during the early to mid-fermentation stage.

For example, add half the nutrients 12–24 hours after inoculation followed by the remainder of the nutrients around 1/3 sugar depletion. Adding nutrient supplements all at once can lead to a fast fermentation rate, and an imbalance in uptake and usage of nitrogen compounds. Alternatively, supplements added too late in the fermentation (after 2/3 fermentation) may not be utilized by the yeasts. This is because as the fermentation proceeds, ethanol concentrations reach a point where they impact the yeast membrane and reduce the ability of the yeast to take up nutrients.

Overview

•Representative samples (vineyard or winery) are key to useable data.

•Brix, pH and YAN may change due to soaking on skins.

•Glucose + Fructose concentrations are the most accurate parameter for estimating potential ethanol.

•pH and TA measure different components of acidity.

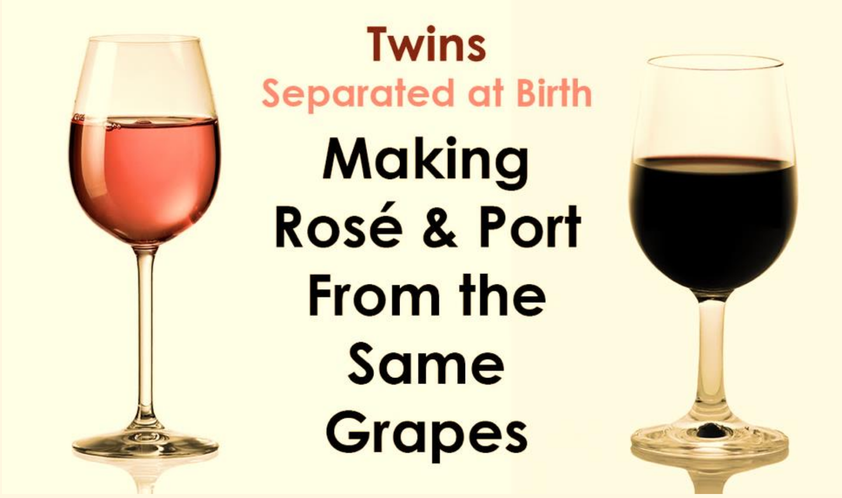
•Potassium concentration can impact pH due to formation of potassium bitartrate.

•pH shifts due to potassium bitartrate precipitation may increase or decrease pH depending on initial pH. pH <3.65 = decrease in pH while pH >3.65 = increase in pH.

•YAN assessment is important to determine appropriate nutrient additions.

•Balance of DAP and complex yeast nutrients are recommended to provide YAN and micronutrients to the ferment.

•Nutrients added late in fermentation are unlikely to be utilized by yeast. Perform additions early and at 1/3 fermentation.



by Bob Peak

Rosé and port-style wine are extreme expressions of red grapes. In the first, color is played down through short skin contact and a light, refreshing wine for summer quaffing is the desired result. For the second, intense winemaking techniques are followed, including alcohol or sugar additions, to produce a powerful wine consumed in tiny glasses by the fireplace.

Selecting An Appropriate Grape Varietal

Many grape varieties find their way into these wines. In France, Grenache is often made into still rosé and Pinot Noir is used for sparkling brut rosés. In California, both of these and many more varieties may be employed. One standout, both commercially and in home winemaking, is Syrah.

For Portuguese Port, several traditional varieties are used. The most prominent is Tinta Roriz (Tempranillo), plus Touriga Nacional and Touriga Franca. While these grapes may be used for port-style wines elsewhere in the world, we also see Zinfandel and Cabernet Sauvignon used in California, and Syrah used here and in Australia.

So, what about Syrah? Since it does well as both rosé and port, why not make both from the same lot of grapes? For the 2006 harvest, my wife Marty White and I set out to do just that.

Two Fermentations from the Same Harvest

We found some high-quality local fruit at Nolan Vineyards in Santa Rosa's Bennett Valley. We picked about 250 pounds of grapes and ran them home in the SUV with the air conditioning on to keep the fruit in its cool picking condition. The grapes were beautiful, with no rot, very few raisins, and excellent color. Upon crushing and stemming, we measured 26.2° Brix and 0.54 g/100 mL Titratable Acidity.

As is our usual practice, we had added 50 parts per million SO_2 as the fruit was being crushed. We let the crushed fruit stand on the skins for three and a half hours, then pressed off ten gallons and put the juice in carboys to settle before becoming rosé. From this point on for the rosé, I followed standard white winemaking practices.

To the remaining must in a 10-gallon open fermenter, we added back as much of the pressed skins as would fit to achieve more intensity for the port.

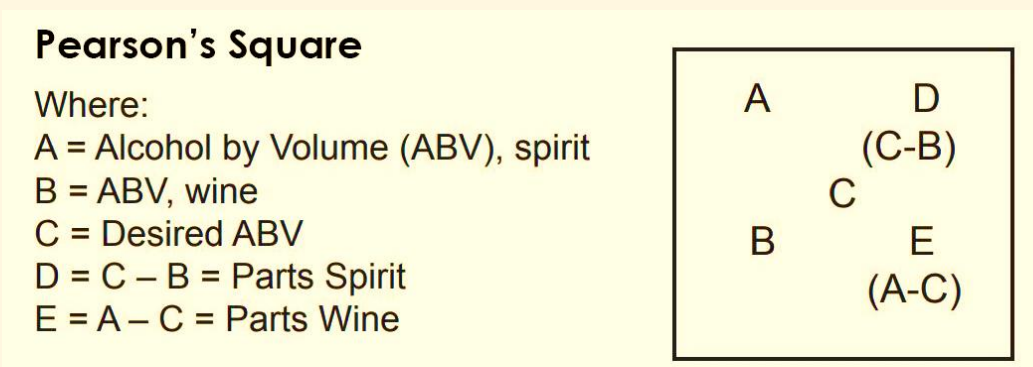
After letting it settle overnight, we racked the pink juice into two seven-gallon carboys and added five grams of Epernay II yeast to each. We stirred the port must and sprinkled 10 grams of the same yeast on top. By the next day, fermentation foam had appeared on the rosé and the port had begun forming a cap. We added five grams of Fermaid K yeast nutrient to each carboy of the rosé, but since we never intended to let the port finish fermenting, we added no additional nutrients.

From that point, the rosé went on merrily fermenting just like a white wine. Meanwhile, we were treating the port like any red wine, including twice-daily punchdowns. After one week, the port was down to 10° Brix by hydrometer, our target value for a rich residual sugar level. Because we are also home brewers, we have several five-gallon stainless steel soda kegs for draft beer. One of these was used to help stop the port fermentation.

I made use of a soda keg packed in ice to help stop the active fermentation.

We pressed the still-fermenting must, poured the semi-finished wine into the keg, added 50 parts per million SO2, and packed the whole thing in ice in a 20-gallon plastic fermenter. As we hoped, the chilling made the yeast slow dramatically and drop to the bottom of the keg.

Fortification - Calculating the Alcohol Addition with Pearson's Square
Next, time to fortify! Having fermented our port to ten Brix, we then wanted to raise the alcohol to about 19%. To do that, it was time to haul out Pearson's Square:



The Portuguese use fresh grape brandy at high proof as the spirit (basically, white lightning of grapes). We cannot buy that here, so we used grain neutral spirits instead. In California, 151 proof, or 75.5%, is the highest proof available. To calculate the approximate wine alcohol level, we subtracted the current brix (10) from the starting brix (26.2) to find 16.2° Brix consumed. Multiplying that times 0.55 gives an estimated alcohol of 8.9% by volume.

So, A = 75.5, B = 8.9, and C = 19. Plugging those in gives us D = 10.1 and E = 56.5. That means we need 0.18 parts of spirit to every 1 part of wine so the final blend will be 15.2% spirit and 84.8% wine. To fill a six-gallon carboy, we used 0.91 gallons of spirit and 5.09 gallons of wine. Keep in mind that these figures are approximate, since the alcohol level in the wine was an estimate to begin with. We put the filled carboy away in the wine cellar, after one more addition of 50 ppm SO2.

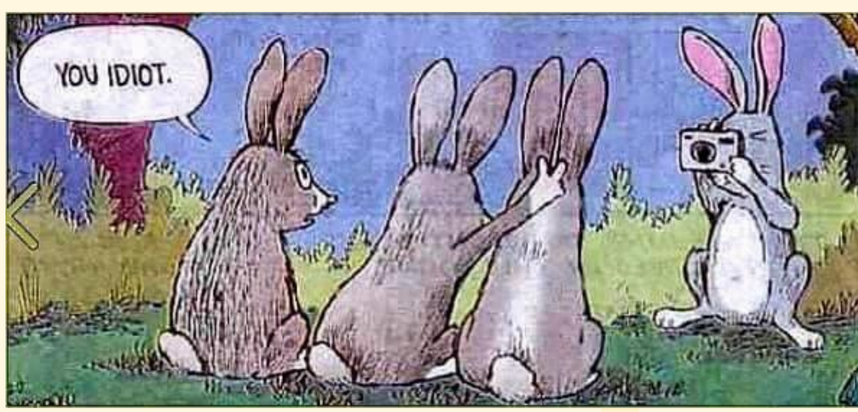
Refining the Wines
In January, we racked the port to a five-gallon carboy plus a half-gallon jug. Along with nice flavors of berry jam and spicy black pepper, there was a noticeable alcohol

warmth and, unfortunately, a slight sulfide stink. So much for not using nutrients! The rosé was fine. (Considering these wines came from the same grapes, that is a pretty good demonstration of using nutrients to prevent sulfides!) We treated the port with copper sulfate, racked again, and it was fine. The rosé was very nice, with notes of berry and melon in the nose and a crisp, refreshing flavor profile. We bottled it without added sweetening in March and we are enjoying it now.

As expected, its twin, the port, has been much slower in development. When we tasted it in March, it had cleared up very nicely, had no sulfide aromas, and had smoothed out quite a bit. It seemed to need just one more smoothing touch, so we added one dark French Winestix stave to the carboy and let it rest. I also measured the free sulfite level at this point. The reading of "low" sent me scurrying to add another 40 ppm of SO2.

We tasted the port again in May. It is coming along very nicely. Now we get distinct cherry notes in the nose, along with vanilla from the dark oak. It has a clear appearance with a smooth finish. We added SO2 again (it was "low" again) and left it to mellow a few more months.

From that single lot of Syrah grapes, our twins were evidently fraternal—certainly not identical! The young, precocious rosé is already drinking at its prime and will probably be gone before the year is out. The port, on the other hand, continues to develop at its own pace. We will taste it again in August and bottle it, or maybe leave it alone until after next year's harvest. The wine will tell us when it is ready, and we will be drinking it for years to come. So even if you have just a single source of fruit, don't think you are limited to a single kind of wine!



Reference Library

(updated 4-5-2024)

Here is a list of hobby winemaking manuals and other materials in the Secretary's file. They are available for downloading by e-mail or via an internet transfer service. Some are downloadable from the source such as Scott Lab. All are in PDF format, e-mail Ken Stinger at kbstinger@frontier.com

Scott Lab 2024 Winemaking Handbook –13.3MB – 144 pages
Scott Lab 2024 - 2025 Cider Making Handbook – 6.2 MB – 96 pages
Scott Lab 2018-2019 Sparkling Handbook – 8 MB – 58 pages
Scott Lab 2022 Craft Distilling Handbook – 5.2 MB – 26 pages
Anchor 2021 – 2022 Enology Harvest Guide 2.6 MB - 104 pages
A Guide to Fining Wine, WA State University - 314 KB - 10 pages
Barrel Care Procedures - The Beverage People - 100 KB - 2 pages
Barrel Care Techniques - Pambianchi – 42 KB – 3 pages
Enartis Handbook – 5.1 MB - 124 pages
A Review Of Méthode Champenoise Production - 570 KB – 69 pages
Sacramento Winemakers Winemaking Manual - 300 KB - 34 pages
Sparkling Wine brief instructions - 20 KB - 3 pages
The Home Winemakers Manual - Lum Eisenman - 14 MB – 178 pages
MoreWine Guide to Red Winemaking - 1 MB - 74 pages
MoreWine Guide to White Winemaking – 985 KB – 92 pages
MoreWine Yeast and grape pairing – 258 KB – 9 pages
Wine Flavors, Faults & Taints – 600 KB, 11 pages
Daniel Pambianchi wine calculator set – 13.5 MB, 10 calculators

Portland Winemakers Club
Leadership Team – 2024

<u>President:</u> **Bob Hatt** bobhatt2000@yahoo.com

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

<u>Treasurer</u>: **Barb Thomson** bt.grapevine@frontier.com
- Collect dues and fees, and update the membership list with the secretary.
- Pay bills

<u>Secretary</u>: **Ken Stinger** kbstinger2@gmail.com
- Communicate regularly about club activities and issues
- Monthly newsletter
- Keep an updated list of members, name tags, and other data

<u>Chair of Education / Speakers</u> **Paul Natale** paulnatale6@gmail.com
- Arrange for speakers & educational content for our meetings

<u>Chair for Tastings</u>: **Brian Bowles / Mike Sicard** bowles97229@gmail.com
msicard@willamettehvac.com

- Conduct club tastings
- Review and improve club tasting procedures

<u>Chair of Winery / Vineyard Tours</u>: **Andy Mocny.** acmocny@gmail.com
- Select wineries, vineyards, etc. to visit • Arrange tours
- Cover logistics (food and money)

<u>Chair of Group Purchases</u>: **Bob Thoenen / Tyson Smith**
bobthoenen@yahoo.com
tyson@tysonsmith.com

- Grape purchases and makes the arrangements to purchase, collect, and distribute
- Supplies – These should be passed to the President or Secretary for distribution.

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

<u>Chairs for Social Events</u>**: Mindy Bush / Marilyn Brown**
mindybush@hotmail.com
- Gala /Picnic/parties brown.marilynjean@gmail.com

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