



# BAKER WINE & GRAPE ANALYSIS



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## BWGA's Wine Sharing Series is BACK!

**WEDNESDAY, MAY 19<sup>TH</sup> • 4:00pm - 5:00pm**

**TOPIC: Rose Wines | LOCATION: Baker Wine & Grape Analysis**

You are invited to participate in our BWGA Industry Wine Sharing Series. This is a valuable educational opportunity to bring a bottle of your wine to taste blindly alongside other local wineries for comparison.

### THE FORMAT:

Bring in a 750 mL bottle of **Rosé** to share (can be a tank or barrel sample) by 3:50 pm. BWGA will 'brown bag' all wines and arrange them in random order. Everyone will taste through them on their own starting at 4:00 sharp. At 4:45, the bags come off and the wines are revealed. No voting or ranking, just an unbiased way to

evaluate your wine amongst a few of your peers. **This is an outdoor event.** Please bring your own tasting glass. BWGA will provide tasting cards, brown bags, and spittoons.

**PLEASE RSVP to [sherrie@bwga.net](mailto:sherrie@bwga.net) by Monday, May 17th.**



### BWGA 2021 Wine Sharing Series Schedule

Wednesday, May 19 <sup>th</sup> 4:00pm - 5:00pm • <b>Rosé Wines</b>
Wednesday, June 23 <sup>rd</sup> 4:00pm - 5:00pm • <b>Bordeaux Reds</b>
Wednesday, August 18 <sup>th</sup> 4:00pm - 5:00pm • <b>Rhône Reds</b>

## New Equipment: CBox

We continue to search for new equipment to bring you the most accurate results with the quickest turnaround. A new item we recently obtained is an Anton Paar CBox QC. This instrument measures **dissolved oxygen (DO)** and **carbon dioxide (CO<sub>2</sub>)** on a variety of beverages and packages in a matter of minutes. Of course wine and beer – but also sparkling wines and waters, seltzers, kombucha...the list goes on. Our previous methods for DO and CO<sub>2</sub> were laborious and time consuming. With the CBox we get accurate results in about 3 minutes for each sample!

The CBox also allows us to analyze your **Total Package Oxygen (TPO)**, which is relevant for post bottling quality control.

Let us know if you are interested in seeing our equipment, we are always happy to talk about the behind-the-scenes instrumentation that helps our lab run so well.

**DO:** \$37, min vol: 375mL  
**CO<sub>2</sub>:** \$42, min vol: 375mL  
**CO<sub>2</sub> / DO Pack:** \$66, min. vol: 375mL  
**TPO:** \$50, min vol: 2 bottles/cans

## Pricing Update

Beginning on May 4<sup>th</sup> our new pricing will go into effect. A full list of the new prices can be found on our website. Some of the most often requested analyses prices will be:

<b>Wine Check</b> (pH, TA, VA, FSO <sub>2</sub> )	\$51
<b>Wine Pack</b> (Alc, pH, TA, VA, ML, Lactic, RS, GF, Density)	\$89
<b>Full Wine Pack</b> (Wine Pack + F/TSO <sub>2</sub> )	\$110
<b>VA</b>	\$13
<b>FSO<sub>2</sub></b>	\$18
<b>Malic</b>	\$25
<b>GF</b>	\$25
<b>Short Juice Pack</b> (Brix, pH, TA)	\$30



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Editor's note: Tastry is a San Luis Obispo-based sensory sciences company. We became aware of the urgent demand for rapid smoke taint testing in early August of 2020.



In an attempt to fill the need, our lab quickly developed a method for measuring free Guaiacol and 4-methylguaiacol (down to 1 ppb) in micro-fermented samples. Within hours of announcing our offering, we began receiving samples from vineyards located between Edna Valley and Sonoma County. These samples kept our equipment running 24 hours a day for two months as we raced to deliver results in time for customers to make picking decisions. In total we analyzed around 1200 samples. While we did not conduct any controlled smoke taint experiments during the harvest period, we are able to draw some conclusions based on our analysis of the 1200 client samples. Most of what we see agrees with findings made previously by others.

**1. Guaiacol concentrations strongly correlate to fire proximity.** The thick layers of smoke that stretched from Monterey to Edna

Valley understandably created a panic that required stakeholders to have vineyards assessed for damage. Samples from some vineyard sites in Napa, Monterey and Santa Cruz did contain guaiacol in excess of 100 ppb free guaiacol and smelled undeniably like a campfire. Reaching out to the owners of these samples, we were able to confirm that they came from vineyards directly adjacent to large fires. Guaiacol concentrations of received samples were on average higher in Monterey than Paso Robles. The lowest average concentrations came from Edna Valley. The vast majority of samples we received contained free guaiacol concentrations less than 4 ppb.

**2. The ratio of Guaiacol to 4-methylguaiacol was consistently about 4:1.** This was observed in all cultivars except Syrah, which almost always contained relatively high concentrations of Guaiacol (7-30 ppb) and lower concentrations of 4-methylguaiacol (1-2 ppb) even when smoke exposure was not likely. Smoke damaged Syrah could still be identified by the elevated levels of 4-methylguaiacol. The 4:1 ratio changes in the presence of oak. Exposure of wine to oak increases concentrations of smoke markers and lowers the ratio towards 1:1 or less as more 4-methylguaiacol appears to be extracted than Guaiacol.

INTERPRETATION OF SMOKE TAINT NUMBERS

Sensory Trial

During our testing, we were able to consult with trained expert tasters, Sherrie Holzer from Baker Wine & Grape Analysis and Marcy Mallette from Laffort, to determine threshold detection levels for smoke taint in micro-fermentations. Our blind tastings suggested that detection occurred around 3 ppb free guaiacol. At 5 ppb, smoke taint was identified strongly. These results varied significantly from a panel of untrained novice wine drinkers, who were not able to consistently identify smoke taint until around 20 ppb.

Confounding Factors

- Baseline Levels:** Smoke taint markers are naturally present in unoaked wines at concentrations up to 3 ppb free guaiacol. More work is currently being done to get a better understanding of the variation in these baseline levels.
- Additional Markers:** There may be instances where smoke taint can be perceived even when Guaiacol and 4-methylguaiacol concentrations are below 1 ppb. This may be due to the presence of other smoke-derived volatile phenols such as Phenol, Cresols and Syringol.
- Hydrolysis:** Glycosylated smoke taint markers hydrolyze slowly over the course of maturation, leading to the possibility of an increasing sensory perception of smoke taint over time.

Mitigation and Remediation

Techniques have been verified for minimizing the uptake of smoke taint related compounds in vineyards and for the removal of these compounds in juice and wine. Tastry is in the process of evaluating the effectiveness of a combination of  $\beta$ -Glucosidase enzymes and activated charcoal. We have had some success in reducing smoke taint markers. However, we currently aren't making any recommendations on treatment strategies.

How Much Sample Do We Need?

For most of our analyses, a **completely full 50mL centrifuge tube** is enough. Here are some other minimum sample volume requirements:

Cold Stability	150mL	CO <sub>2</sub> /DO	Finished bottle/can or completely filled 375mL or 750mL bottle
Celstab Trial	375mL	Distilled Spirits	100mL
Zenith Trial	750mL	Olive Oil Analysis	100mL
Bentonite Trial	375mL	Vinegar	100mL
Beer Analysis	300mL		





# Quick Answers to Common Questions: Sugars

**What is Brix?** Brix is actually a density measurement of soluble solids, which includes sugars but also acids, pigments and tannins. Brix is used when harvesting grapes, because sugar makes up 90-95% of the soluble solids of grapes. Water makes up about 75% of grapes.

**Why is my Brix negative?** As must increases in alcohol, the densitometer begins to read negative because alcohol has a lower density than water.

## When should I stop using Brix?

Brix is an effective measurement during fermentation; as the yeast converts sugar to alcohol, the Brix level decreases. However, Brix cannot determine the level of dryness with certainty. When you start to see a negative reading, switch to testing for glucose/fructose.

## What is the difference between Residual Sugar & Glucose/Fructose?

Yeasts prefer glucose/fructose, the fermentable grape sugars. Residual Sugar (or Reducing Sugar) includes glucose/fructose, non-fermentable sugars, glycosides, and even some sugar that wine can pick up from wood in barrels.

## What test should I pick for dryness?

The suggested test for dryness is glucose/fructose (the fermentable grape sugars) by enzymatic assay.

## When is my wine dry?

BWGA considers a wine dry when glucose/fructose is  $\leq 0.1$  g/100 mL.

## When should I test glucose and fructose separately?

If you see your fermentation slowing down, consider checking glucose and fructose separately. A higher ratio of fructose can benefit from using a fructophilic yeast to get things going again.

**Where does sucrose fit in?** Sucrose, or table sugar, is found naturally in grapes or added for various reasons. In wine, the sucrose is broken down into glucose and fructose by yeast. If added as a sweetener (in either wine or spirits), we can test for sucrose. 50mL sample size for analysis.

<b>Brix</b>	\$13
<b>Glucose/Fructose</b>	\$25
<b>Residual Sugar</b>	\$25
<b>Glucose</b>	\$30
<b>Fructose</b>	\$30
<b>Sucrose</b>	\$30

# Fill Height

We have added a new test to help with your Bottling QC: Bottle Fill Height. Fill Height (or Volume per Bottle) is the measure of the exact volume of liquid in a bottle. **Measuring an accurate fill height is important** for reasons beyond making your package look its best:

1. Avoid closure issues from thermal expansion of wine
2. Legal fill height records are required by the TTB
3. The TTB allows a 0.05% variance of the bottle's legal fill height



To test for fill height, bring in two full bottles of desired wine in the desired package. We will determine the wine density, legal weight of wine for that bottle, and the mm distance fill height from the top of the bottle (ullage space). **Cost for Pre-bottling or Post-bottling Fill Height is \$45.**

## GUEST SPOTLIGHT: Laffort & Fermentation Nutrition

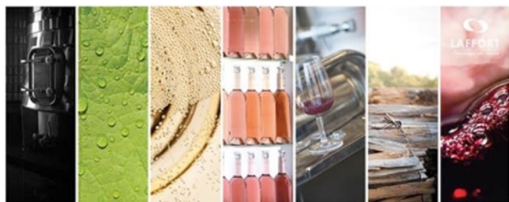
by Marcy Mallette

### The Laffort store at BWGA is stocked & ready for harvest!

One of the most important aspects of fermentation is to have a balanced yeast nutrition program with both yeast (organic) and mineral derived (DAP) nitrogen. Call me and we can talk more about nutrition and achieving your wine stylistic goals through fermentation.

**Marcy Mallette** - Technical Winemaking Rep  
(805) 234-8446 – marcy.mallette@Laffort.com

**Paso Robles Store** - (805) 226-5809  
Caitlin.McChesney@Laffort.com



## Laffort Nutrient Calculator

**Goal:** produce sufficient yeast biomass, without excess, and preserve a good physiological state of the yeast for the duration of the alcoholic fermentation.

	Total YAN required* mg/L	YAN added 1 <sup>st</sup> addition mg/L (YAN1)	YAN added 2 <sup>nd</sup> addition mg/L (YAN2)
12 % vol	180	150 – Initial YAN	30
13 % vol	190	155 – Initial YAN	35
14 % vol	200	160 – Initial YAN	40
15 % vol	220	170 – Initial YAN	50
16 % vol	240	180 – Initial YAN	60

\* For low N demanding yeasts

⇒ add 10 mg/L (YAN2) for the average N demanding yeasts

⇒ add 20 mg/L (YAN2) for the high N demanding yeast

Maximum recommended doses

Nutristart® AROM  $\leq 600$  mg/L (300 mg/L max at the first add)

Nutristart® Org  $\leq 450$  mg/L (300 mg/L max at the first add)

Nutristart®  $\leq 460$  mg/L

Thiazote® PH  $\leq 500$  mg/L (if not Thiazote, then DAP)

**YAN CONTRIBUTION at 100 PPM**

Nutristart® adds 15 mg/L

Nutristart® Org adds 10 mg/L

Nutristart® AROM adds 14 mg/L

Thiazote® PH adds 21 mg/L

LAFFORT® NUTRIENTS



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## Running Early or Late?

Leave your samples in the **BWGA drop box** anytime outside of our normal business hours!  
To access the drop box just open the utility closet at the left of the main doors.

## Referral Rewards

### Spread the Word, Reap the Rewards!

#### Who do we love? You!

And you, our customers, are our most valuable referral source.

As a token of our appreciation, **any new customers that you refer to BWGA will earn you a reward of \$100** in lab analysis. Just make sure we know you sent them.



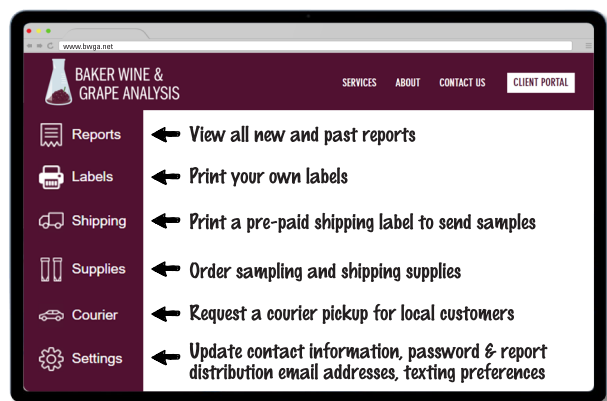
## Brenda's Lab Analysis Word Search!

A	M	I	N	O	A	C	I	D	A	O	B	T	S
C	C	M	A	L	I	C	A	T	O	I	R	A	D
O	O	O	A	C	X	U	A	Y	X	E	E	C	I
L	P	E	G	I	B	R	I	X	T	H	T	E	C
D	P	R	L	A	A	A	T	C	L	E	T	T	A
S	E	A	U	A	T	O	A	S	E	D	A	I	Y
T	R	I	C	X	C	B	E	T	S	I	N	C	T
A	E	E	O	N	O	T	O	T	O	X	O	A	T
B	U	A	S	T	A	E	I	C	R	O	M	T	A
I	B	O	E	O	N	T	C	C	C	R	Y	R	F
L	P	C	O	T	I	E	B	O	U	E	C	P	E
I	A	L	O	N	A	H	T	E	S	P	E	O	E
T	U	A	I	N	O	M	M	A	P	I	S	F	R
Y	R	T	U	F	R	U	C	T	O	S	E	N	F

MALIC  
FRUCTOSE  
PEROXIDE  
ACETOBACTER  
AMMONIA  
COPPER

ACETIC  
FREEFATTYACIDS  
COLDSTABILITY  
BRETTANOMYCES  
LACTIC  
GLUCOSE

ETHANOL  
BRIX  
SUCROSE  
AMINOACID



Check  
this out!

