



# BAKER WINE & GRAPE ANALYSIS



## Baker Wine & Grape Analysis 101

### Hello Baker Lab Customers and Adoring Fans.

We thought we'd do something a little different over the next few newsletters and theme each one to a different aspect of our business — Welcome to Edition 1: BWGA 101!

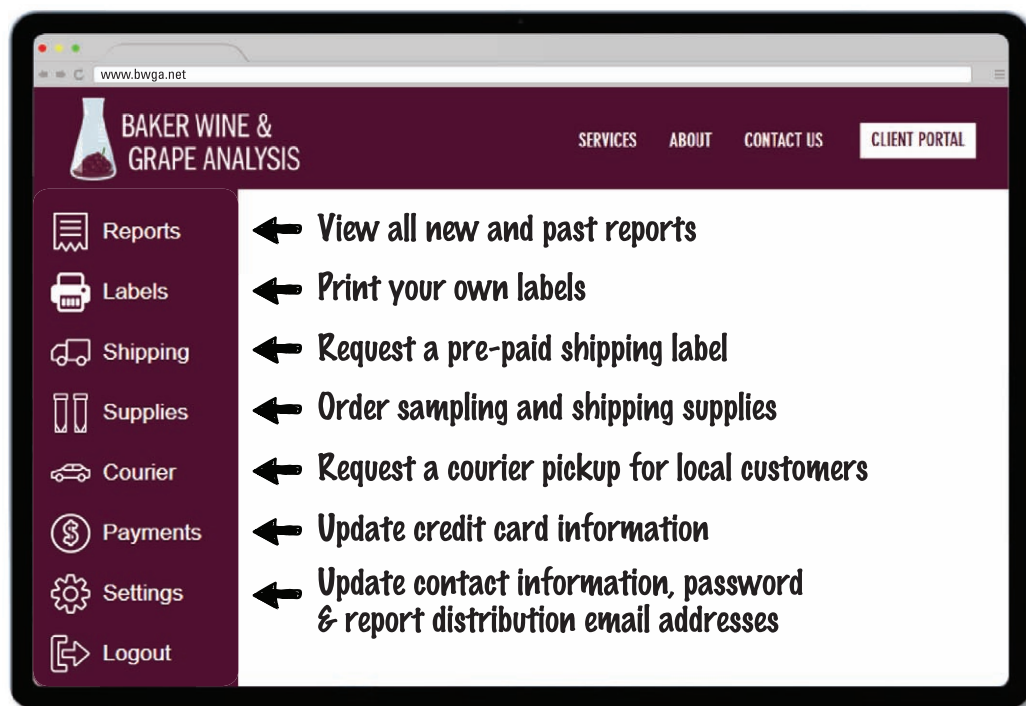
Topics to look forward to:

- The Harvest Edition
- The Microbial Edition
- The Olive Oil Edition

And many more! Our hope is that you can use these as a reference for any future questions or problems that you may come across. This issue contains information about what we offer here at BWGA. As always, contact us with any questions.



## Client Portal



## Common Packages

- **Short Juice Pack:** Brix, pH, TA
- **Full Juice Pack:** Brix, pH, TA, GF, NH<sub>3</sub>, PAN/YAN, Malic, Tartaric, K, VA
- **Wine Pack:** Alc, pH, TA, VA, Malic, Lactic, RS, GF, Density
- **Full Wine Pack:** Wine Pack plus Free and Total SO<sub>2</sub>
- **Wine Check:** VA, pH, TA, FSO<sub>2</sub>
- **Cider Pack:** ABV, ABW, Malic, Lactic, Manual TA, Acetic Acid, pH, GF
- **Disgorging Pack:** Alc, pH, TA, Malic, GF, FSO<sub>2</sub>, CO<sub>2</sub>, Dis O<sub>2</sub>, Sucrose
- **Tirage Pack:** Alc, pH, TA, Malic, RS, GF, FSO<sub>2</sub>/TSO<sub>2</sub>, NH<sub>3</sub>/PAN/YAN, Sucrose

# Sample Sizes

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

- **Cold Stability:** 150mL
- **Celstab Trial:** 375mL
- **Mannostab Trial:** 375mL
- **Zenith Trial:** 375mL
- **Bentonite Trial:** 375mL
- **CO<sub>2</sub>/DO:** 375 or 750mL bottle / Finished bottle / Unopened can
- **Beer Analysis:** 300mL
- **Distilled Spirits:** 100mL
- **Olive Oil Analysis:** 100mL
- **Vinegar:** 100mL
- **Disgorging Pack:** Unopened bottle

## FILL ALL SAMPLE CONTAINERS TO THE TOP

### CRITICAL POINTS OF ANALYSIS SUMMARY

Timing	Analysis
Vineyard samples	Brix, pH, and TA (Short Juice Pack)
Juice / Must - harvested	Brix, pH, TA, GF, NH <sub>3</sub> , PAN/YAN, Malic, Tartaric, K, VA (Full Juice Pack)
Mid Fermentation	Alc and GF for potential alcohol
Post Primary Fermentation	Whites: pH, TA, GF, RS, Malic, LA, VA, and Alc (Wine Pack) Reds: Alc, GF, and Malic
During MLF	Malic and VA
Post Malo-Lactic	pH, TA, GF, RS, Malic, LA, VA, and Alc (Wine Pack)
Aging	VA and FSO <sub>2</sub>
White and Rose	Protein (Heat) and KHT (Cold) Stability
Pre-Bottling	Alc, VA, Micro Scan, and FSO <sub>2</sub> /TSO <sub>2</sub> Dissolved O <sub>2</sub>
Post-Bottling	Bottle Sterility

# Sampling Tips

• **Vineyard Sampling:** Pick clusters on both sides of the vine and throughout the whole vineyard in order to get a representative sample for picking decisions. Avoid the following: sampling only the prettiest grapes, sampling during the heat of the day, during rain or fog to prevent artificial lows/highs in sugar.

• **White Must Sampling:** Collect juice after the grapes have been pressed into tank or vessel (not from the press pan).

• **Red Must Sampling:** Pull a sample 1-2 days after crushing and after a pump-over or good mix. This allows for raisins to soak (if present) and eliminates pockets of water in the tank. Gather a sample prior to fermentation (especially spontaneous) and before yeast addition to get accurate nitrogen and sugar numbers.

• **Barrel Sampling:** If testing for a Micro Analysis such as *Brettanomyces* sp., pull from the bottom of the barrel where yeast settles.

• **Post-Addition Sample:** Properly mix before pulling the sample to help obtain the most representative sample. Sending in a sample from an unmixed vessel can lead to false highs or lows.

• **Dissolved Oxygen:** Use a clean 375 or 750mL bottle. Displace the oxygen in the bottle using nitrogen, argon, or CO<sub>2</sub> before filling full of wine.

• **Free and Total SO<sub>2</sub>:** Fill sample container full to avoid any headspace. If there is oxygen present, your analysis could be a false low.

# Accessing Your Reports

- Results are stored online, easily accessible, and searchable by several parameters
- Reports can be viewed in PDF, HTML or CSV
- To select your preferred report type, login to your account at [www.bwga.net/clients](http://www.bwga.net/clients) and go to 'Settings'
- Results from Baker can be uploaded to Vintrace using the CSV option
- **Not sure of your login credentials?**  
Go to the login page and enter your email address on the right side.

**Notifications**  
☒ Send an email when a new report is added  
Attachment  
☐ None ☐ HTML ☒ PDF ☐ CSV  
☐ Send a fax when a new report is added  
☐ Send a text message when a new report is added  
Mobile  
  
Mobile #2

BWGA has TTB Certified chemists that can perform chemical analysis of wine for export. We offer export panels for most countries. Please provide two labeled bottles for analysis. Double check with your contact in the country importing your wine to see which exact tests will be needed to save any problems down the road.

## TA

**Titrateable Acidity:** measures how strong the weak acids are in the juice/wine – or put another way – the “sourness” of the liquid; reported as g tartaric/100 mL. This is different from Tartaric Acid (the most common acid in grape juice) and Total Acidity (the complete concentration of all weak organic acids). Although knowing Tartaric Acid concentration and/or Total Acidity concentration may be useful for some winery procedures, typically Titrateable Acidity is the measurement that most winemakers need for their daily work with juice or wine.

## GF

**Glucose and Fructose:** the fermentable sugars, reported as g/100 mL. They are the only sugars that can be converted to ethanol; once GF is less than 0.1 g/100 mL, the wine is considered dry.

## RS

**Residual Sugar:** including GF and also other nonfermentable sugars such as the pentoses (arabinose, xylose and ribose), sucrose, rhamnose, and galactose; reported as g/100 mL. These nonfermentable sugars will not convert to ethanol, but they do have a perception of sweetness.

## MAL

**Malic Acid:** one of the main grape acids. Malic acid can convert to lactic acid during malolactic fermentation; once the Mal is less than 0.1 g/100 mL, the wine is considered malic dry; measured in g/L.

## NH3

**Ammonia:** inorganic nitrogen source for yeast; reported in ppm.



## PAN

**Primary Amino Nitrogen:** organic nitrogen source for yeast; reported in ppm.

## YAN

**Yeast Assimilable Nitrogen:** calculation of NH<sub>3</sub> and PAN which represents the amount of nitrogen available for yeast to use during fermentation; reported in ppm.

## FSO<sub>2</sub>

**Free Sulfur Dioxide:** the active form of SO<sub>2</sub>; measured in mg/L.

## TSO<sub>2</sub>

**Total Sulfur Dioxide:** includes both the free and bound forms of SO<sub>2</sub>; measured in mg/L.

## VA

**Volatile Acidity:** low molecular weight fatty acids and reported as acetic acid g/100mL; high levels are associated with spoilage. reported as acetic acid g/100mL.

## TTB/OIV REGULATIONS

VA (g acetic/100 mL)	
Red Wine	0.14
White Wine	0.12
Red Wine (grapes > 28 Brix)	0.17
White Wine (grapes > 28 Brix)	0.15
Ochratoxin	2 ppb
Benzoic Acid	1000 ppm (with Sorbic Acid)
Sulfites	
Maximum Total SO <sub>2</sub>	350 ppm
No “Contains Sulfites” on label	< 10 ppm Total SO <sub>2</sub>
Metals	
Copper (residual/total add)	0.5 ppm/ 6 ppm
Lead	150 µg/L
Iron	10 ppm
Additional California Regulations	TA (g tartaric/ 100 mL)
Minimum for red wine	0.4
Minimum for white wine	0.3
Minimum for other wine types	0.25





TOTAL SO <sub>2</sub>				
MOLECULAR SO <sub>2</sub>	SULFATE SO <sub>2</sub>	BISULFATE HSO <sub>2</sub>	UNSTABLE COMPOUNDS (sugars, organic acids, ketonic acids)	STABLE COMPOUNDS (acetaldehyde)
FREE SO <sub>2</sub>			BOUND SO <sub>2</sub>	

## UNIT CONVERSIONS

Here's a reference to help with conversions:

**0.58% = 0.58 g/100L = 5.8 g/L = 5800 mg/L = 5800 ppm**

## Hours

Monday – Friday 9 am to 5 pm

### HARVEST HOURS (beginning after Labor Day):

Monday – Friday 8 am to 6 pm; Saturdays 10 am to 4 pm

### Arriving outside of regular hours?

Leave your samples in the BWGA drop box! 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.

