



THE BEVERAGE PEOPLE

2015 SUMMER WINE NEWSLETTER AND CATALOG



TIRED OF BOTTLING

KEG YOUR WINE! By Joseph Hanson-Hirt

You've probably heard of kegerators and keezers, but what about winerators and weezers? Why do brewers get to have all the fun? All joking aside, there is a bit of truth to these questions. If beer can be kegged, why not wine? Every year, more and more wineries and restaurants are seeing the benefits of kegging their wines and serving them on draft systems. Either served "still" or "carbonated/sparkling", draft wine is available for a minimal investment.



"Draft wine" is wine that has been kegged and then served from the tap instead of the bottle. There are a few benefits to choosing draft wine over bottling. First, it saves a lot of time. Instead of filling many bottles, you just fill a keg. Second, I rarely finish a bottle of wine in one sitting so I like that I can pour myself how much wine I

want to drink. Third, one of my favorite things about draft wine is that it allows you to easily make various wine blends without committing all the wine to the cause. With draft wine I can blend in a pitcher or in the glass itself. And finally, you don't have to give up bottling entirely. Unless the wine is carbonated, you can quickly fill a wine bottle right off of the tap and use a corker to pop in a cork. This way you can still take bottles with you or share them with friends.

Draft Equipment

There isn't a whole lot of equipment necessary to set up a basic draft system. I like to split draft systems into two sides: the gas side and the beverage side. Here at *The Beverage People*, we have everything you need to set up a Carbon Dioxide (CO₂) draft system. For gasses other than CO₂ check in with your local gas company.

On the gas side you will need:

- Gas tank (Argon, Nitrogen, or Carbon Dioxide)
- Regulator (gas specific; be sure to get the proper regulator for your tank)
- Gas line (vinyl or silicone)
- Gas disconnect (stainless steel to prevent corrosion from sulfite and acid in the wine)

On the beverage side you will need:

- Keg (typically a 5 gallon stainless steel Cornelius keg)
- Beverage disconnect (stainless steel)
- Beverage line (vinyl or silicone)
- Tap/faucet (stainless steel)

Which Gas for What?

The bulk of the investment in a draft wine system will be the gas tank and regulator. The most important factor to consider when choosing

Keg Your Wine cont. pg. 3

MY PART TIME JOB

By Bob Peak

From Nancy Vineyard:

When I first started in 1980, managing Great Fermentations in Santa Rosa, it seemed that all the customers were older than me and certainly wiser. I received a lot of advice as I scrambled to fill in the gaps in my wine knowledge. I had roughly five years of winemaking under my belt – albeit some of that was with a commercial winery - but there was still a lot to learn. Those early days were always full of conversations. It's why, when you visit us, we ask you questions. Our questions tend to pull out the information we need to give you both advice and necessary equipment even if that means we can't sell you anything.

It's been a real boon to our customer service that Bob Peak became our retail point-man. His background in chemistry and laboratories, his home winemaking and grape growing and his "moonlighting" elevate our staff to supply that same service.

After I read his article for this year's newsletter, I was moved to write this introduction. We will not have Bob here forever, or me for that matter. (He and I are, surprisingly, getting older) He is always generous with sharing his knowledge, gauging his audience for the appropriateness of how "scientific" he can be. So here's how an "old guy" keeps current with his fermentation hobbies.

We have a "moonlighting" rule at **The Beverage People**, but it's very liberal. Because we want every store associate to learn and experience as much as possible in the wonderful world of fermentation, they are welcome to take on temporary and part-time assignments that relate to that world (as long as they don't compete directly with us!). Associates have taught private classes, conducted brewery tours, and organized fermentation festivals. My part-time job is writing the "Techniques" column for **WineMaker Magazine**.

As noted elsewhere in this newsletter, I began my association with this nationally-distributed magazine for home winemakers in 2008 by speaking at their first annual conference. This year in Portland, Nancy and I had productive and educational interactions with others in the home winemaking industry. Since the conference will be right here in Sonoma County in 2016, local home winemakers will have the same kind of access to knowledge and information without high travel expenses.

In particular, Nancy had some time to talk with Peter DeVivi, inventor and producer of **Winestix™** carboy oak addition products, shown right. Along with the roundtable discussion on oak that she provided to conference attendees, she was impressed with the aroma and design of the **Winestix™** oak products. The personal connection with DeVivi gave us the confidence to bring in these exciting new products (see page 20) after several years without having a good carboy oak stick product to offer. Everyone who has been looking for a really good carboy oak addition product will now



My Part Time Job cont. pg. 2

My Part Time Job continued from pg. 1

have more choices than ever.

The sticks are milled in a pattern that exposes a small amount of end grain for relatively rapid extraction and a larger amount of long grain for smooth character. The sticks are made in four different toast levels (light, medium, medium plus, and dark). As toasting of oak progresses through more exposure to heat, the flavor and aroma influence on wine also progresses. Lighter toasting emphasizes fresh oak notes and provides structure and body to the wine. As toasting gets darker, it progresses through flavors and aromas like caramel, vanilla, toffee, and coffee.

At dark toasting levels, expect characteristics of toasted oak, dark coffee, and a slight impression of sweetness from the caramelized wood. All four levels are made from two different sources of wood: New York State North American white oak (*Quercus alba*) and Allier French oak (*Quercus robur* and *Quercus petraea*). Both sources deliver lovely oak notes for your wine, but they differ in profile. American oak tends toward fruitiness with notes often described as coconut or honey. French oak is a bit more on the spicy side, with aromas reminiscent of cloves and cinnamon. At a use rate of just one stick per carboy and complete extraction expected in just four to six weeks, these products offer a diverse new palette of flavors for home winemakers.

At the same conference, I had time to talk with Dr. Richard Sportsman, founder and owner of **Vinmetrica**. Dr. Sportsman even attended my talk on Advanced Home Wine Lab Techniques and helped out with the Q&A afterwards. He provided me some data and additional research information that convinced me that we wanted to become a **Vinmetrica** dealer. The products available now are very exciting for home winemakers (see p. 21). Maintaining proper sulfite levels in your wine is critical to producing a sound, flavorful, non-oxidized finished beverage. Home winemakers have largely come to that understanding, but doing the testing to verify the levels of sulfite has sometimes proved a burden. Both the Vinmetrica SC-100A and the SC-300 offer rapid, reliable measurement of free SO₂. The SC-300 has the further convenience of a built-in pH meter and can be used to measure pH and TA (titratable acidity). Dr.

Sportsman has recently extended the use of the meters with the SC-50 accessory kit that allows measurement of malic acid to verify completion of malolactic fermentation.



acid to verify completion of malolactic fermentation.

As much as I appreciated learning about the current level of **Vinmetrica** technology at the conference,

I was even more excited by the further possibilities that can be derived from the same basic platform Dr. Sportsman has already put together. Next up he is planning a dissolved oxygen probe that will be of use for monitoring the presence of oxygen in wine during aging and at bottling, helping to protect against oxidation spoilage. (Home brewers will be able to use that probe to check fresh beer wort for adequate oxygenation when pitching yeast!) Since the meter can fundamentally use any millivolt or amperometric analytical process, Dr. Sportsman and I talked over various possibilities for additional specialty probes in the future - stay tuned.

Besides my conference involvement, editor Betsy Parks has asked me to write an occasional feature article for the magazine. After a few of those, she gave me the opportunity to take over as the *Techniques* columnist.

The other magazine columnists are also very helpful whenever I am stumped in their particular disciplines. Tim Vandergrift knows everything about kit wines and freely shares his knowledge. Alison Crowe is *The Wine Wizard* and she really is—along with being a successful commercial winemaker in Napa. She is always gracious with advice and information. Chik Brenneman is the head of experimental winemaking at UC Davis and is a great resource when it comes to setting up a trial project. Wes Hagen is a long-time vineyard manager and is always helpful with vineyard questions and the grape-growing impact on winemaking. Assistant editor Dawson Raspuzzi came on board about the time I started writing the column. He has been unfailingly helpful ever since, supporting me in my writing but even helping me hose off the wine equipment after a bootcamp session!

As you can see, even though I call it my part-time job, what I really have is a continuous learning opportunity. I feel like I am in a fellowship of men and women who are passionate about wine, knowledgeable about how it is made, and generous in sharing that knowledge with home winemakers. Their work encourages me to bring that same generosity of spirit to you, readers of this newsletter and friends of **The Beverage People**. So come on in or give me a call next time you have a puzzling question or just a burning curiosity about your homemade wine (or beer, or cheese, or mead...) after all, it's my day job!

NEW for 2015

WineStix™

Finally, a really good Carboy Stick is available. These smell and taste like the good old ones we used to have made by Innerstave, but they are sourced from a new company in New York. There are 4 toast levels with two oak sources, American or French. Use 1 stick per carboy. Packaged 2 sticks per bag. B91 **American Light**, B92 **American Medium**, or B93 **American Medium Plus** \$8.99 and B94 **American Dark** \$10.99. B95 **French Light**, B96 **French Medium**, or B97 **French Medium Plus** \$9.99 and B98 **French Dark** \$11.99

Vinmetrica Wine Analysis Test Equipment

TE164 VINMETRICA SC-300 -

Combination TA Titration, Free and Total SO₂, and pH Tester - The Vinmetrica SC-300 analyzer gives accurate SO₂, pH and TA values. Kit includes everything to perform ~50 sulfite tests & 30 TA tests:

SC-300 meter, SO₂ and pH electrodes, all reagents, transfer and sampling pipettes, syringes and two titration beakers \$399.99

TE162 VINMETRICA SC-100A - *Sulfite Tester* - The Vinmetrica SC-100A analyzer gives accurate SO₂. Kit includes everything to perform ~50 sulfite tests. SC-100A

meter, SO₂ electrode, all reagents, sampling and transfer pipettes, syringe and titration beaker \$269.99

TE161 VINMETRICA SC-50 - *Malic Acid MLF Tester* (SC-50 Kit is an add-on kit to either of the two kits above.)

The SC-50 analyzer gives reliable malic acid concentrations to determine MLF completion. Kit includes everything to perform 5 Malic Acid tests: the reagent set, 5 reaction vials, check solution, beaker, pipettes and conical tube. \$139.99

Keg Your Wine continued from page 1.

a gas is deciding whether or not you want your wine sparkling. For still wines, argon or nitrogen are better choices, as they are much less soluble into the wine than CO₂. Unfortunately, CO₂ will always carbonate the wine at least a little, even at room temperature. For sparkling wines, CO₂ is the right approach.

If you want the ability to do both still and sparkling wines but only want to own one gas, I would recommend CO₂. It's simple, not too expensive, and works well for still and sparkling wines. You will just have to accept that your still wines may be slightly pétillant from time to time.

Kegging the Wine

(See <http://www.thebeveragepeople.com/pdf/webbeerpdf/Kegging.pdf>)

You can think of the keg as one big wine bottle. Start with a cleaned and sanitized keg and siphon the wine into it. Once the keg is filled, place the lid back onto the keg.

Now it's time to purge the headspace of the keg. We need to displace and purge out the oxygen in that headspace with our gas of choice. Connect the gas side disconnect to the keg and turn the gas on. I usually have my regulator set to about 10 PSI when I do this. You will hear gas hiss into the keg. When it stops, turn off the gas and pull the pressure release valve on the keg. The keg will vent out gas for a few moments and stop. You will want to repeat this process between three and six times. When you are finished purging, make sure you allow gas into the keg one last time to blanket the wine. If you are worried about picking up oxidation while you siphon into the keg, make sure your wine has been properly sulfited and give the headspace of the keg a few extra purges for good measure. Now you are ready to serve your wine, carbonate it to turn it into sparkling wine, or just store it.

Still Wine

We keep our white and rosé wines in the kegerator and the red wines out. This allows us to focus on keeping our white and rosé wines chilled. If the red wine gets a little warmer than we want to drink it, we just put a pitcher of wine in the refrigerator until it cools to a more desirable temperature.

Sparkling Wine

For sparkling wines, there's an additional step of forcing gas into solution to make the wine sparkling and bubbly. To force gas into solution, the wine has to be cold. To keep the wine cold, you need a refrigerator or a freezer.

The procedure to make sparkling wines is the same regardless of the color and type of the wine. Once the wine is in the keg and the keg has been purged, the keg must be chilled. Store the keg for a day in the fridge. With the wine cold, now you can shake the keg to start forcing gas into solution. Another way to start forcing gas into solution is to roll the keg on its side on the ground for a while. I usually shake the keg until I get tired, so usually just a few minutes. Then put the keg back into the refrigerator and leave it hooked up to the gas with the gas open until it is carbonated to your taste, usually 3 days for minimal carbonation and up to three weeks to reach sparkling wine bubbles.

What Pressure to Carbonate?

When it comes to carbonating and then serving a keg there are a few factors: temperature, pressure (PSI), volumes of CO₂ and resistance. Balancing these factors can be tricky, but once you get a basic understanding of how all these factors influence each other, it's not too bad. Temperature and pressure both influence how many volumes of CO₂ you can drive into the wine. You want to carbonate to a

desired volume of CO₂ in the wine. This is in part driven by taste. Once you know how many volumes you are aiming for, you can decide on a serving temperature and then adjust the PSI on the regulator to get the desired volumes at that temperature. Then just adjust your serving line length to provide enough resistance to negate that pressure and serve smoothly without any foaming. I'm not going to get into the nitty gritty of that in this article, but anyone at *The Beverage People* can help you determine this.

Champagne or sparkling wines are typically carbonated to about 6 volumes of CO₂. Beers on the other hand are commonly carbonated to about 2.5 volumes. Use these numbers as reference points when thinking about what kind of carbonation you are looking for in your own wine. For a champagne-like carbonation, at 40°F you will need about 50 PSI to get about 6 volumes of CO₂ into solution. Most CO₂ regulators bought for homebrew systems have low pressure gauges that only go up to 30 PSI. Not a problem. *The Beverage People* carry replacement gauges that are 0-60 PSI, and are easily swapped out for the 0-30 PSI gauges. For beer-like carbonation, at 40°F you will only need about 12 PSI. For pétillant wines, just use whatever pressure you need to push the wine. With CO₂ on the wine, it will pick up a small amount of carbonation slowly.

All in all, draft wine is a great idea for home winemakers. It saves time and money. It keeps the wine fresher longer. It limits the amount of wasted wine. And it gives you some more options in terms of things you can do to your wine (still, sparkling, or somewhere in between, sweet or dry, etc.). I would recommend giving it a try. Remember, you can still fill bottles off the faucet and cork them as you need them!

NEW for 2015 cont.

WY52 **Viniflora® Freasy™ CH16** is a frozen culture of oenococcus bacteria for malolactic fermentation that should always be inoculated directly into the wine. Treats up to 66 gallons. No rehydration or reactivation is required. CH16 is alcohol tolerant to 16%. Use for wines which you may not have intended so much alcohol, but harvest got away from you!

QE19 Dipper for transferring grape must to press is very lightweight with a comfortable rolled steel handle. \$7.99



MS70 Spray Bottle, 32 oz., marked in ounces and milliliters. Use with sanitizer for a quick spritz on equipment or with water to mist your cheese cave to raise humidity. \$3.49





WineMaker[®]

M A G A Z I N E
C · O · N · F · E · R · E · N · C · E
SONOMA COUNTY • 2016

WineMaker Magazine Annual Conference

Nancy and Bob (along with Bob's wife Marty White) represented The Beverage People at the 2015 WineMaker Magazine Conference in Portland in May. At what is surely the best conference in the country for home winemakers, they staffed a table in the exhibit area, chatted with attendees, and participated in the program.

WineMaker Magazine first hosted a conference in 2008 in Sonoma County at the Double Tree Hotel in Rohnert Park. We have been there right from the beginning, with magazine publisher Brad Ring asking store founder Byron Burch to address the home winemakers on the subject of mead making. Byron was happy to accept and suggested to Brad that Bob Peak could present a talk on some aspect of the science of winemaking as well. Brad liked the idea, Bob presented a lecture, and either Bob



or Nancy has been back presenting at every annual conference since.

For 2015, Nancy led a series of round-table discussions with attendees on use of oak barrels and oak alternatives for home winemaking. Bob, with Marty's help, led the all-day Making Wine from Grapes bootcamp in the pre-conference Thursday section. Two hundred pounds of Black Seedless grapes imported from Mexico went into making a

batch of red wine and a separate batch of rosé (to demonstrate white winemaking techniques). Bob later presented slide shows on bottling and on advanced home wine lab

techniques. All three of them took turns at The Beverage People exhibit table interacting with attendees and discussing the latest in home winemaking products. The conference closed with the annual awards banquet on Saturday night with winners from the WineMaker Magazine annual competition recognized for their accomplishments.

At the Banquet, Brad Ring announced next year's location. We were excited to learn that they are coming back to Sonoma County again! Plan now to join us at the Hyatt Vineyard Creek Hotel on historic railroad square in Santa Rosa. The

conference will be on May 19, 20, and 21 of 2016. Go to www.winemakermag.com for details and to get the early-bird registration rate!

(Photo credit to WineMaker Magazine. Home winemaker receiving medal from Betsy Parks, Jannell Kristiansen, and Kiev Rattee. Brad Ring officiates from the podium.)

Online Ordering

Place your order at www.thebeveragepeople.com or call (707) 544-1867. We accept Visa, Mastercard, American Express, or Discover cards.

To place your order by check, please note the following, if you live in California, add 8.75% sales tax on non-food items.

Tax exempt Food items are: concentrates, sugars, purees, and flavorings. **All items shipped to points outside California are not taxable.**

Fastest Shipping in the Business:

We normally ship **UPS Ground** service the same day the order is received, if received by 1 pm. Ground service to Zones 2 and 3 receive one day service. Zones 4 and 5 receive 2 to 3 day service. Customers in Zones 6, 7 and 8 will normally receive their merchandise in 4 to 5 working days.



For faster service to Zones 5-8, and for perishables such as liquid yeast, we recommend **UPS Standard Air** service, or **UPS 2 DAY Air** service.

Add \$7.99 for standard shipping to California, Nevada, Oregon and Washington. All other states and out of the country will pay actual shipping.

Customers in Alaska and Hawaii please take note that *priority mail* service from the Post Office is recommended.

We will add \$0.30 per Gel pack when shipping refrigerated items.

About Us

The Beverage People is proud to operate both a retail and on-line-order supply firm for 35 years in the heart of the Sonoma County Wine Country.

Our staff wishes you the very best with your new hobby and look forward to hearing from you. Mention that you are a new customer, so we may give you a free article from a past newsletter to help answer your fermentation questions.

Our Summer Newsletter and Catalog is a publication of **The Beverage People**, America's most respected homebrewing, cheesemaking and winemaking supply company.

Unless otherwise noted, all material is copyright ©2015 The Beverage People.

Enhanced Winemaking Products Chart

	Name	Description	Purpose	Time of Application	Use Rate	Package
NUTRITION	Go-Ferm	Nutrient from inactivated yeasts Complete nutrient mix with minerals and vitamins	Yeast rehydration support Yeast nutrition during fermentation	Just prior to yeast inoculation 1/3 and 2/3 of fermentation	1.25 g per gal 1 g per gallon, twice	3 oz., 1 lb.
	Fermaid K				1 or 2 g per gallon, based on nutrient needs	2 oz., 8 oz., 1 lb.
	DAP	Simple nitrogen nutrient Yeast-derived nutrient, high in polysaccharides	Nitrogen supplement beyond Fermaid K Red wine color retention, smooth character	Near beginning of fermentation At first punchdown	100 g per 1,000 lbs. of must	50 g
	Opti Red		Inhibits white wine browning, preserves aromas	While racking juice	1 g per gallon of juice	50 g
	Optimum White	Yeast-derived nutrient, rich in glutathione and polysaccharides Inactivated yeasts rich in amino acids	Rehydration nutrient for ML bacteria for red wine	Prior to ML inoculation	50 g for 60 gal	50 g
	Acti ML		Rehydration nutrient for ML bacteria for white wine	24 hours before adding ML bacteria	20 g per HL (26 gal)	50 g
	Opti ML Blanc	Formulated from inactivated yeasts to meet peptide needs	Improve juice yield	At crusher	1 oz. per 200 lbs. of fruit	1 oz.
	Pectic Enzyme	Pectinase enzyme preparation	Red wine juice yield and pigment extraction	At crusher	10 g per 1,000 lbs. of grapes	10 g
	Lallzyme EX	Pectinase with hemicellulases	White wine juice yield and aroma enhancement	At crusher	10 g per 1,000 lbs. of grapes	10 g
	Lallzyme Cuvee Blanc	Pectinase with glycosidases	Soft round body for red wines	At first punchdown	50 to 250 g per 1,000 lbs. of red grape must	100 g
TANNINS	FT Rouge Soft	Quebracho wood tannin product	Protects white wine against oxidation and enhances mouthfeel	While racking juice off gross fruit lees	1 to 3 g for every 5 gal.	50 g
	FT Blanc Soft	Gall nut tannin product	Protects white wine against oxidation and improves color stability in aging	First or second racking after primary fermentation	1 to 6 g per 5 gallons (less near bottling)	50 g
	Tannin Complex	Oak and quebracho wood tannin product	Imparts a light oak nuance without smoky or toasty notes	After malolactic fermentation	½ to 4 g per 5 gal.	10 g, 100 g
	Tannin Refresh	Untoasted French oak tannin product	Finishing tannin to impart mid-palate character, oakiness	Up to 3 weeks before bottling	½ to 1 g (whites) or ½ to 3 g (reds) per 5 gal.	10 g, 50 g
	Tannin Riche	100% toasted French oak tannin product	Prevents colloid precipitation, imparts sweetness without sugar	Last product addition before bottling	1.5 to 5 mL per gal.	4 oz., 1 L
OTHER	Flashgum R Liquide	25% solution of Gum Arabic	Removes reduced sulfur aroma compounds	As soon as odor is detected in finished wine	0.4 to 0.6 g per gal.	10 g, 100 g
	Redulesse®	Yeast hulls rich in copper	Use with redulesse for sulfides, or alone for alcohol burn	During mixing or racking of wine	1 g per gal.	2 oz.
	Noblesse®	Yeast derived treatment product				

Winemaking Step by Step

EQUIPMENT

For most beginners, the hardest thing about making wine is simply figuring out, in advance, what equipment is going to be needed. This list should set most of these fears to rest. (*See the back of the catalog for rental equipment choices and rates.*)

You will need the following:

1. Siphon Hose and Racking Tube
2. Hydrometer and Test Jar
3. Acid Testing Kit
4. Sulfite Test
5. Crusher or Crusher/Destemmer
6. Press or Pressing Bag
7. Thermometer
8. Scoop with Handle
9. Funnel
10. Bottle Filler
11. Small Bucket or Pail
12. Punch Down Tool
13. Mesh Colander or Strainer

For every 75 lbs. of grapes:

1. 10 Gallon Food grade Bucket and Lid
2. One 5 gallon glass carboy (water bottle) with a fermentation lock and a #6 1/2 or #7 drilled rubber stopper. Or PET plastic carboy with a #10 drilled rubber stopper and fermentation lock.
3. Extra jugs, each with a fermentation lock and #6 drilled rubber stopper. These could be gallon size or smaller.
4. Twenty-five wine corks.
5. Two cases wine bottles.
6. Corker.

INGREDIENTS

1. Wine Yeast, 1 gram per gallon of must or juice. (see pg. 11 for recommendations)
2. Grapes, 16 lbs. per gallon of wine.
3. Tartaric Acid as needed.
4. Sulfite as needed.
5. Yeast Food as needed.
6. Fining Agent (optional)
7. Malolactic culture for some wines.

RED WINE PROCEDURES

- 1 **Crush (break the skins) and de-stem the grapes.** For most grape varieties, about 90% of the larger stems should be removed.
- 2 **Test for total acidity following the instructions in your acid testing kit.** If the acidity is less than .6%, add enough tartaric acid to bring it to that level. If you have a pH meter, also test the pH.
- 3 **Test for sugar with your hydrometer.** Correct any deficiencies by adding enough sugar to bring the reading up to at least 22° Brix or add water to bring the sugar down to a range between 22° and 26° Brix.
- 4 **When these tests and corrections have been completed, the must should be sulfited.** Estimating that you will get roughly one gallon of juice yield for every 16 lbs. of grapes, calculate the anticipated amount of juice. Using this estimate, add enough sulfite to give you a sulfur dioxide (SO₂) level between 50 and 130 parts per million (ppm). (See pages 12 & 13.) The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose. Extremely clean grapes may be fermented with little or no SO₂. (If using **Lallzyme EX®** enzyme, wait 15 or 20 minutes after sulfiting, then add enzyme.)
- 5 **Unless you have found it necessary to add more than 65 parts per million SO₂ in step 4, yeast should be added immediately.** If using more than 65 parts per million SO₂, you must wait six hours before doing so. Add 1 -2 grams of dry wine yeast per gallon evenly across the surface of the crushed grapes (now called “must”). Stir it in thoroughly after eight to twelve hours. Also, begin your nutrient program according to the instructions on page 10.
- 6 **The must should be stirred twice a day until fermentation begins.** The beginning of fermentation is obvious, as the grape skins are forced to the surface, forming a solid layer, called a cap. Once the cap has formed, mix it back down into the fermenting juice twice a day using your hand or a stainless steel punch-down tool until it is ready to be pressed. (If using **FT Rouge Soft Enological Tannin** and/or **Opti-Red® Specific Inactivated Yeast**, sprinkle them over the must and mix in at the first punch-down.)
- 7 **Throughout fermentation, the temperature of the must is usually between about 60 and 75°F.** For better color extraction from the skins, it is helpful to allow the temperature to rise at least once to the 80-90°F range. The fermentation itself generates some heat, which helps warm the must along with warm fall weather. If it is late in the season you may need a heater.
- 8 **When the wine has reached 0° Brix the grapes should be pressed to separate the wine from the skins.** This is usually about 1-2 weeks of fermentation at 70-80°F. During pressing, collect the wine into a bucket under the press and funnel the wine into secondary fermentors. Attach fermentation locks, and allow the containers to settle until all visible signs of fermentation have ceased (several days to a week or so). Top full when all activity ceases even if you have to add wine from another batch, or buy a similar wine, remember, you get to drink it later.



Winemaking Equipment from crush to bottle.



Crushing and stemming your grapes.

Time Line for Red Wine Fermentation.....

...5 to 14 days	...1 to 2 weeks	...after 1 month	...after 4 to 6 months	...after 6 months	...before new harvest
Active yeast fermentation of Must in primary fermentors	Pressed wine moved to secondary fermentors (leave a little room for foam for a day or two, then top up.)	Rack off gross lees and top up containers, add oak or cellaring tannins, if desired.	Rack off lees again, test for ML, add sulfite and store in cool place for aging, topping and sulfiting every couple months. If desired, add additional oak.	Rack off lees, add sulfite, fining or filtering, and keep containers topped up.	Rack to bottling container, add sulfite, cork and store.

9 Add an ML (malolactic) culture (optional) to the wine which, in the case of direct pitch strains like *Enoferm Alpha or Beta*, **is added to the secondary fermentors after pressing.**

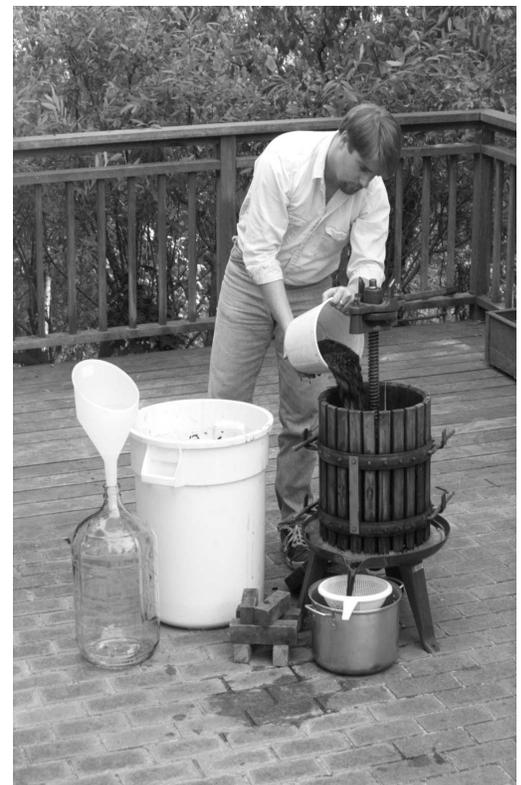
10 When the wine has begun to clarify in 1-2 weeks, rack the wine off the gross lees into clean, sanitized storage containers (glass, stainless steel, or oak). Top up the containers and let stand for a month. If ML fermentation is still active do not add sulfite during this time.

11 After one month, rack the wine away from the lees again, add sulfite to 25 or 30 ppm, and keep in topped up containers for four to six months. You must top up barrels, and visually inspect the carboys. This is a good time to add oak alternatives such as sticks or cubes. Add sulfite every few weeks. If you inoculated for ML, test the wine to be sure it is complete.

12 Rack off the lees again, and retest to see if the ML fermentation has finished. If completed, raise the sulfite to 20-30 ppm and store in a cool place for aging. If ML fermentation has not completed, keep the sulfite level below 20 ppm and warm the storage containers for a month to encourage completion. (If using *Tannin Riche Enological Tannin* from French oak, mix it with the wine during a racking at least 3 weeks before bottling.)

13 Usually during the summer (just before you need your storage containers for the next year's crush), **carefully rack the wine to a sanitary bottling container, then siphon into bottles and cork them.** Keep the bottles neck-up for one week to allow the corks time to expand, then move the cases to their side or upside down for storage. Bottling time is your last opportunity to make sure the wine will be bottle stable, so test and adjust the sulfite to 30 ppm. If this is a sweet wine, add *Sorbistat* to keep the wine from further fermentation. Most red wines will benefit from at least one year's additional aging.

White Wine Procedures, see next page.



Pressing the fermented red grapes.

WHITE WINE PROCEDURES

- 1 **Crush the grapes** to break the skins. It is not necessary to de-stem them, but it does not hurt if you happen to have a stemmer/crusher. Keep the grapes as cool as possible.
- 2 **Test for total acidity.** If the acidity is less than .65%, add enough tartaric acid to bring it up to that level.
- 3 **Test for sugar with your hydrometer.** Correct any deficiencies by adding enough sugar to bring the reading up to 20° brix for most varieties (22° for Sauvignon Blanc and Chardonnay.) If higher than 26° brix, add water to lower it between 22° and 26°.
- 4 **When these tests and corrections have been completed, the must may be sulfited.** Estimating that you will get roughly a gallon of juice from every 16 lbs. of grapes (varies with the variety), add enough sulfite to give you a sulfur dioxide (SO₂) level between 50 and 120 parts per million (ppm.) Note: The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose. Very clean grapes may get by with little or no sulfite.
- 5 **Stir in pectic enzyme (pectinase) at the rate of one ounce to every 200 lbs. of grapes, or use Lallzyme® Cuvée-Blanc.** Place the crushed grapes in a covered container to macerate from 2 to 12 hours. If left to stand longer than 2 hours at this stage, the crushed grapes should be refrigerated.
- 6 **The grapes are then pressed to separate the juice from the skins.** Funnel the juice into topped up containers, cover, and let stand for approximately 24 hours.
- 7 **Siphon the clear juice away from the layer of settlings (called "gross lees") into a glass, stainless steel, or oak fermentor which is filled no more than 3/4 full.** (If using FT Blanc Soft Enological Tannin, mix it with the juice during the transfer to the fermentor(s). This is also the time to add Opti-MUM White® Specific Inactivated Yeast if desired.) Yeast should be added, 1g per gallon and a fermentation lock attached to the fermentor. Add nutrients according to the instructions on page 10.
- 8 **When visible signs of fermentation end, the wine must be racked off the lees,** and placed in topped up storage containers (glass, stainless, or oak). Add sulfite, 30 - 40 ppm. and let stand for a month.
- 9 **Rack off the lees.** If the wine isn't clearing, fine with Sparkolloid or a Bentonite slurry. Clarity occurs by three months. Sulfite and store full containers in a cool place.

- 10 **In a couple of months, rack and sulfite the wine again, placing it back in topped up containers.** For oak flavor add oak sticks or cubes. If additional high-quality French oak character would benefit your wine, use Tannin Riche enological finishing tannin.
- 11 **In late Spring, before the onset of very hot weather, carefully rack the wine from the lees.** Test the wine for free sulfite content with a sulfur dioxide test kit to determine how much SO₂ is needed to bring the level to 30-35 parts per million.
- 12 **Siphon into bottles, cork them, and set them aside for whatever bottle aging is needed.** If you wish to sweeten the wine, do so with simple syrup (two parts sugar to one part water, boiled), and add 1/2 tsp. Sorbistat per gallon to inhibit any remaining yeast. White wines may be enjoyed 6 weeks after bottling.

Time Line for White Wine Fermentation.....

...1 to 2 weeks	...1 month	...2-4 months	In the spring
Active yeast fermentation of juice in primary fermentors about 3/4 full	Rack finished wine to clean fermentors, topped full. Settle out lees. Add sulfite.	Rack off lees and fine or filter. Add sulfite and cold stabilize. Oak additions.	Rack to bottling container, add sulfite, fill and cork bottles.

Fruit Wine Procedures, see next page.



Placing the wood blocks and press head into the press before pressing the grapes.

FRUIT WINE PROCEDURES

Use the following procedures for 5 gallons of Berry or Stone Fruit Wines:

Smash sound, ripe berries (or pit stone fruit), tie loosely in a straining bag and place in open top fermentor.

Heat 6 quarts **water with Corn sugar** and bring to a boil. Remove from heat, cool and pour into the fermentor over the fruit.

Add the remaining **water, Yeast Nutrient, Pectinase and Tartaric Acid**. Add 5 crushed **Campden Tablets**.

Cover with loose plastic sheet or lid and allow to cool and dissipate the sulfite, waiting for 12 hours or overnight.

Stir in the **Yeast**. Once fermentation begins, **stir or push** the pulp down into the liquid twice a day.

After 5-7 days, strain and press the pulp. Funnel the fermenting wine into closed fermentors, such as glass or plastic carboys, and attach a fermentation lock. *Note: if this fermentation is very active, you may need to divide the wine between two carboys so it won't foam out and spill.*

When bubbles are no longer actively rising through the wine, siphon the wine back together into one full carboy. **Optional: Fine with Sparkolloid see pg.15 for mixing Sparkolloid**, add 3 Campden Tablets and store for four weeks with an airlock.

Rack (siphon) away from the sediment, top full with a neutral wine and leave under airlock for 3 weeks up to 4 months.

For **bottling**, rack into an open container, and add 3 crushed **Campden Tablets**. Sweeten with **sugar syrup** to taste and add 1/2 teaspoon **Sorbistat** per gallon to stabilize. Siphon into bottles, cork, and set aside to age for at least 3 weeks.

Berry, Plum, or Cherry Wine Recipe

20 lbs. Blackberries or
15 lbs Raspberries or
15 lbs. Pitted Plums or
22 lbs Cherries or
15 lbs Sour Cherries
(omit acid addition for sour cherries)
12 lbs. Corn Sugar
4 gallons Water
2 1/2 tsp. Yeast Nutrient
2 1/2 tsp. Pectinase
8 tsp. Tartaric Acid
5 g Epernay II Wine Yeast

Original Brix: 20
Total Acid: .6-.65%

EQUIPMENT NEEDED FOR 5 GALLONS OF FRUIT WINE OR CIDER

1. 6.5 Gallon Food grade Bucket and Lid.
2. Nylon Bag to fit bucket.
3. One 5 gallon glass carboy (water bottle) with a fermentation lock and a #6 1/2 or #7 drilled rubber stopper. Or PET plastic carboy with a #10 drilled rubber stopper and fermentation lock.
4. Racking tube and flexible tubing.
5. Bottle filler
5. Corks or crown caps.
6. Two cases wine or beer bottles.
7. 25 pack of Campden Tablets
8. Corker or Capper

Optional:

1. Hydrometer (Saccharometer) and Test Jar
2. Acid Testing Kit

CIDER PROCEDURES

Crush the apples. Use only sound, fully ripe fruit. (*We rent an electric grinder and press.*)

Stir in **Pectinase** to accelerate break down of the fruit pectins. Use 1/2 oz. per 100-150 lbs. of fruit, with a contact time of 2-4 hrs, to achieve better runoff at press.

Press to separate the juice from the skins and other solids. Funnel the collected juice into closed containers, filled no more than 75% full. Add 5 crushed **Campden Tablets**. Settle the juice and wait for the sulfite to dissipate - 6 hours.

For each 5 gallons of juice, add 1-2 teaspoons of **Yeast Food (Fermaid K)**. Stir and add 5-10g of **Yeast**. Attach a fermentation lock, and allow fermentation to proceed.

When visible signs of fermentation end, the cider must be racked off the lees and placed in topped up glass or stainless steel storage containers. Let it stand for a month.

During the racking at the end of fermentation, add sulfite using 3 crushed **Campden Tablets**.

After a month, rack and sulfite again then rack it back into

topped up containers. Store for two or three more months.

Carefully rack away from the lees. If your cider is going into extended bottle storage, sulfite by adding 3 crushed **Campden Tablets**. Beverages such as this may often be enjoyed within two months of bottling. If you plan to drink some that soon, don't add additional sulfite to that portion at bottling time.

Siphon into bottles, cork or cap them, and set them aside for whatever bottle aging is needed. If you would rather sweeten the cider at bottling time, the following instructions will apply.

Sweetening

To sweeten 5 gallons of cider, boil 1 cup of cane sugar with 1/2 cup of water for 5 minutes. Only stir in 1/2 of this and taste before you decide to add the rest. You may like it at this level of sweetness. If not, by all means add more.

You will also add 1/2 tsp.

Sorbistat per gallon to stabilize the cider and prevent re-fermentation in the bottles. Force carbonation in a keg is also an option. See our beer catalog for instructions on kegging.

Cider Ingredients

100-150 lbs. Apples
or 5 gallons of juice
1 oz. Pectinase
2 teaspoons Yeast Food
10 g M-2 Yeast
25 pack Campden Tablets

Brix: 10-13
Total Acid: .6-.65%

JUICE TESTING FOR SUGAR, ACID, PH & NUTRIENTS

There are three tests deemed most essential in the majority of winemaking situations. By testing these three things: Sugar, Acid, and pH, you will have the minimum level of information needed to make wine. Instruments and kits are available at *The Beverage People* for testing these parameters at home. (See pg.14)

In addition to the three tests mentioned above you may also want to find out the level of nutrients in your juice. Adequate nutritional levels help ensure a healthy yeast fermentation, and also help avoid problems such as: stuck fermentations, or the rotten egg smell of Hydrogen Sulfide (H₂S.)

As far as nutrients are concerned, there are two tests a home winemaker would utilize: one for *Ammonia*, and one for *Assimilable Amino Nitrogen*. The results of these two tests are added together to determine the total amount of *Yeast Assimilable Nitrogen (YAN)* present in the sample. When these figures have been combined, the result (logically enough) is called *Yeast Assimilable Nitrogen Combined (YANC)*. It is this *YANC* figure, in combination with the sugar level of the must, that tells us the nutritional requirements of our juice. If you are interested in these numbers, you will need to use a commercial lab.

There are no home tests for nutrients, therefore you will want to crush your grapes and deliver a settled sample of juice to your nearest laboratory. (A 250ml bottle is the minimum volume requirement for most chemical analysis.) *There are three labs near the store: Vinquiry* in Windsor (707) 838- 86122, *Signature Wine Labs* in Santa Rosa (707) 838-3027, and *ETS* in Healdsburg (707) 433-7051 or St. Helena (707) 963-4806. *Contact them to find out information on cost. For Signature Wine Labs testing, drop off your sample and pay in advance at The Beverage People.* By sharing results with our staff, we can advise you on actions to take with your results.

Remember that you are sending juice, and that means it is subject to fermentation. A laboratory must receive your samples before fermentation begins! Unless you take your clarified juice to the lab yourself, you should use one of two storage methods:

Freeze the juice in the sample jar (with the lid loose) **or pasteurize the juice**, heating it up to 180°F., keeping it there for 2-5 min.

Do not boil. Cool, freeze, and ship via next day air. Talk over sampling and shipping with your chosen laboratory before you start.

Adjusting Nutrients

Because different strains of yeast have different nutrient requirements, talking about YANC levels can quickly turn complex. For our discussion here, we will consider the **natural juice level of YANC** in one of 3 levels: Low YANC < 125 ppm, Medium YANC 125-225 ppm or High YANC > 225 ppm.

The yeasts are also divided into three levels of nutritional need: Low, Medium and High-Very High (see table on page 11). Once you know your YANC level, it may influence your choice of yeast. Choosing one with an appropriate nutrient need will minimize your nutrient additions.

After your **Yeast** choice is made select a nutrient addition program from the following table: *Low, Medium or High YANC* level and then the **Yeast Nutrient** program of *Low, Medium or High-very High*.

Note: all of this advice is based on "moderate" sugar levels up to 22° Brix. For high-sugar musts, choose yeast both low in nutrient requirements and high alcohol tolerant. Increase the yeast pitch 50% and add both 1 gram DAP and Fermaid K per gallon of juice when 1/3 of the sugar has been fermented.

Yeast Nutrient Needs				
YANC LEVEL		Low	Med	H-VH
	LOW	A	B	E
	MEDIUM	C	D	E
	HIGH	C	C	D

Nutrient Programs

NOTE: When in doubt, use Program D.

A) Add enough DAP to bring your YANC up to 150 ppm about 8-12 hours after pitching yeast.

For program A, use these levels:
 50 ppm or less YANC, add 2 grams DAP per gallon.
 50-100 ppm YANC, add 1 1/2 grams DAP per gallon.
 100 -125 ppm YANC, add 1/2 gram DAP per gallon.
 125+ ppm YANC, add no DAP

In addition, about 1/3 of the way through

fermentation, add 1 g/gal. of Fermaid K (or Yeast Food).

B) Do all of program A, plus:

Add an additional 1/2 g/gal. DAP and do a second addition of 1 g/gal. Fermaid K when roughly 2/3 of the sugar has been consumed.

C) Add no DAP. Add 1 g/gal. Fermaid K about 1/3 of the way through fermentation.

D) Follow program C, plus add another g/gal. of Fermaid K about 2/3 of the way through fermentation.

E) Follow program A, plus add 1 g/gal. DAP and 1 g/gal. Fermaid K about 2/3 of the way through fermentation.

Which Nutrient...When?

Go-Ferm is an important nutrient used when building a yeast culture before the primary fermentation. Do not use during fermentation. See the web-site or package for complete instructions for use.

Opti-Red® (yeast derived nutrient) is added at the time of the first punchdown for red grapes.

OptiMUM-White (yeast derived nutrient) is added to white grape juice after racking off of the gross fruit lees near the beginning of fermentation.

Fermaid K (yeast food) is the go-to all-purpose nutrient for wine fermentations. Use at the rate of 1 oz. per 32 gallons at 1/3 drop in original brix. Repeat at 2/3 drop. Use with DAP if you know you need more nitrogen. Contains: ammonia salts, amino acids, sterols, unsaturated fatty acids, yeast hulls, vitamins, magnesium and pantothenic acid.

Diammonium Phosphate - DAP will raise the level of free nitrogen for a healthy fermentation. Contains only ammonium phosphate. Use varies, but 1 oz. per 32 gallons is a good starting addition.

Autolyzed Yeast is used to restart sluggish and stuck fermentations. Contains dried yeast providing amino nitrogen, B vitamins and yeast hulls from autolyzed yeast.

Yeast Hulls help prevent stuck and sluggish fermentations and with Autolyzed Yeast to restart fermentations. This is the pure cell wall membrane of whole yeast cells and is more concentrated than autolyzed yeast. Also used to absorb toxic compounds like copper sulfate.

YEAST RECOMMENDATIONS

Locate your grape variety or style, read about the yeast characteristics for the recommended strain(s).

We stock all of these during harvest.

Please read page 10 for **Nutrient** programs for fermentation.

To find fermentation specifics, read down	Assmann-Hausen	Beaujolais 71 B	Brunello BM45	CSM	Eperney 2	French Red (BDX)	ICV D254	M-2	RP15 "Rockpile"	ICVD21	Prise de Mousse	Rhone L2226	RC212	Steinberger	QA23	Uveferm-43
Varietal	Pinot Noir	Zinfandel Syrah	Sangiovese	Bordeaux	Zinfandel	Bordeaux	Chard Red Rhones	Chard, Cabernet	Syrah	Big Reds	White, Red	Rhone	Pinot Noir	German White	Dry Whites	Restarts, Zin, Late Harvest
Fruit Wines	YES	YES			YES						YES	YES	YES	YES	YES	
Enhances Fruit		YES			YES		YES	YES		YES					YES	
Enhances Mouthfeel	YES						YES	YES		YES					YES	YES
Sensory Effect *	EVC	Estery	EVC	EVC	EVC	EVC	EVC	Estery	Complex	Estery	Neutral	EVC	EVC	EVC	EVC	EVC
Reduces Vegetal Character	YES			YES	YES			YES								
Stabilizes Color	YES			YES		YES	YES		YES	YES		YES				
Cold tolerant					YES						YES			YES		
Use to Restart											GOOD	GOOD				EXCELLENT
Temperature Range F.	68-86	59-86	64-82	59-89	50-80	64-86	50-85	59-86	59-90	59-90	50-86	59-82	68-86	40-70	59-90	55-95
Vigor	Slow	Average	Average	Average	Average	Average	Fast	Fast	Average	Average	Fast	Fast	Average	Slow	Fast	Fast
Alcohol Tolerance %	15	14	16	14	15	16	16	16	17	16	18	18	16	14	16	18
High Alcohol Tolerant			YES			YES		YES	YES	YES	YES	YES	YES			YES
Nutritional Need **	Medium	Low	Very High	High	Medium	High	Medium	Medium	Low	Low	Low	High	High	Low	Low	Low
Reaction to Oxygen ***	Medium			Low			Medium		Low	High	High	Medium			Low	
Comments	Enhances spiciness	Fruit wines	Extended Macerations	Alternate to BDX	Can be stopped	Ideal Fermentor	Complex flavor Mineral Aromas	Complex	Red fruit, Mineral Tones	Bold Flavors Mouthfeel	Late Harvest	Late Harvest	Good Color	Easiest to Stop Fermenting	Aromatic	Restarts Very Well, Red Fruit Character

Notes

to Text

* Sensory Effect: EVC = Enhances Varietal Character, Estery = Enhances Fruitness, Neutral = No Enhancements

** See page 10 for Nutrient recommendations, especially for Medium and High Categories.

*** Also try additions of Oxygen with active stirring during fermentation to yeasts that react to O₂ additions.

Sulfite, Grapes and Winemaking

Sulfur has been burned in wine containers to purify them since the days of the Roman Empire, and probably much earlier. The ancients may not have known about the world of microorganisms, but they recognized that sulfur helped make their wines last longer. We now know that sulfur dioxide gas (SO_2) released by burning sulfur was the effective agent for retarding spoilage, and we have a more precise way of adding it these days. We make up solutions of sulfurous acid/water to known parts per million of SO_2 . These solutions are stored and added in tablespoons or milliliters to the volume of wine.

After more than 35 years of teaching home winemakers the importance of adding sulfite to wine and monitoring the results with various testing methods, we are concerned that people are still not testing or scheduling SO_2 additions often enough.

While we have seen improvement during these years, many wine samples are still reported with only a few parts per million of SO_2 . These wines may not even yet show the effects of oxidation, but given enough time in this unprotected state, the fruitiness will fade, browning will occur and the taste will become pruney and harsh. To avoid this you need to understand the basics of why sulfite works so well to protect your wine.

When you add sulfite to wine, sulfur dioxide ionizes to the sulfite ion, SO_3^- , and bisulfite ion, HSO_3^- . A small fraction remains in the “molecular” form, SO_2 . It is this molecular form that protects the wine from spoilage organisms and oxidation. As sulfite reacts with other wine components, it becomes “bound” to them and is no longer available to participate in producing “molecular” sulfite.

We cannot measure molecular sulfite directly. Rather, we measure “free” sulfite, and use a table of wine pH values to predict the amount of ‘molecular’ sulfite we will achieve.

This is why it is so important to frequently measure your free sulfite. No matter how high your total sulfite (within reason), it is only the free sulfite number that really counts. Don’t just guess and toss some sulfite in, analyze it first, then add it. To this end, we offer some advice on ways to keep up with testing your SO_2 .

Methods for Testing Free SO_2

Aeration-Oxidation(AO) Method for Free SO_2

This is the original primary laboratory method for sulfite measurement in wine that helps define what “free” SO_2 means. Advances in technology and simplification have brought a complete home-use aeration-oxidation (AO) system down to a price that makes sense for many hobbyists. (See page 21.) It uses the same technology and chemicals as a full laboratory setup, but at a fraction of the cost. The kit as packed contains sufficient supplies for numerous tests, except there is only one ounce (30 mL) of 25% phosphoric acid reagent. That is sufficient for three tests and has the advantage of shipping without a hazardous material shipping surcharge. If you can come in to our store, we can sell you a 250 mL bottle of 25% phosphoric acid to supplement your kit, but we cannot ship it. If you are outside the area, look into sourcing this reagent locally.

In the AO method, a wine sample is placed in a flask and phosphoric acid is added to force the sulfite ion into molecular SO_2 . A small air pump pushes air bubbles through the sample. Since sulfur dioxide is a gas, it dissolves in the air stream and transfers to a trapping solution. In the trapping solution, hydrogen peroxide oxidizes the sulfur dioxide into sulfuric acid. Also in the trapping solution is an acid-base indicator that changes color as the sample gas accumulates. After the 10 or 15 minute transfer period, the trapping solution is titrated with sodium hydroxide solution to measure the acid formed. The free sulfite level can be calculated from the titration results.

Ripper Method for Free SO_2

We sell the 10 pack box of Titrets, based on the Ripper method, but they are only recommended for white wine. The Ripper method is an iodine titration that is often faster, easier, and cheaper than A/O. It is limited by the chemistry involved. Any substance that reacts with iodine—including some tannins—will be measured as sulfite. Further, the acidification of the sample for the titration tends to release some sulfite bound to anthocyanins (color compounds) in red wine, making it appear “free” when it is not.

These Ripper limitations have been largely overcome through a combination of equipment and techniques from Vinmetrica. That company produces proprietary instruments for sulfite analysis (SC-100A, TE162, p. 21) and for sulfite plus titratable acidity (SC-300, see p. 14) that rely on amperometric titration with iodine instead of a visual endpoint or a straight oxidation-reduction (redox) detection. Allowing very rapid titration to overcome release of additional sulfites and showing a very sharp endpoint on the meter to improve precision, they have reduced the discrepancy between AO and Vinmetrica Ripper to only 2 to 3 mg/L (ppm) for most wine samples. Those differences are small

enough that the convenience and ease of use will make the Vinmetrica meters attractive choices for many users.

Laboratory Testing

If you would rather not do sulfite analysis yourself but you want to do a good job keeping up with your levels, a wine testing laboratory can do it for you. Find a commercial lab or perhaps a university lab near you to minimize shipping of samples. For those of you who live in Northern California Wine Country, we can make it very easy for you. Come by the store and pick up a free sample vial (or use your own screw cap container of 60 mL or more) and fill it all the way up with wine. You don’t want to lose sulfur dioxide gas into the headspace of a partially-filled container. Bring your vial back full and pay for the free SO_2 test here at the store. Our lab services partner, Signature Wine Laboratory of Santa Rosa, will pick up the sample and will test it using approved techniques. If you authorize them to (which we recommend) they will email us a copy of your report when they email it to you as well. Give us a call if you would like to discuss your results! (Signature gives a 15% discount to home winemakers which we pass along. Many other lab tests are available, too.)

Scheduling SO_2 Additions

Initial sulfite may be added at 50-65 ppm to grapes or juice that is free of rot or mold. The presence of a lot of mold, or grapes in otherwise bad condition, might require twice that amount. Under average conditions the information that follows should keep about 20 to 30 ppm of free SO_2 available throughout the wine’s cycle of production through bottling.

After ML fermentation is complete add 30 ppm, and five days later add 30 ppm again, and AGAIN one week later. Now get the wine tested for free SO_2 . The test results may surprise you, as the amount of SO_2 you have added seems like a lot, but has been working to clean up the wine after fermentation and will be dissipating at a rapid rate initially.

Above pH 3.5, you will notice that the amounts of free sulfur dioxide required become quite high. It is best to lower the pH by adding tartaric acid early in the fermentation cycle to lower the pH.

Continue testing every 6-8 weeks, adding SO_2 as required to keep at least 20-30 ppm. available in the wine.

Sources of SO_2

SO_2 is available as Campden tablets, effervescent Inodose metabisulphite tablets or by powdered sodium or potassium metabisulfite. A premeasured Campden Tablet equals 65 ppm in one gallon (13 ppm in a five gallon jug) and is very convenient for those making small amounts of wine. Crush the tablet to a powder to add it.

The 2 gram Inodose tablets add 528 ppm per gallon or 9 ppm per 60 gallons. The 5 gram Inodose tablets add 1320 ppm per gallon or 22 ppm per 60 gallons. The tablets can be dissolved in water to accurately dose carboys. Metabisulfite

powder is added in a liquid preparation to adequately disperse it, and because it is very potent. This is also the least expensive method and accurate to measure for any size container.

pH and SO₂

It is generally recognized that only a small amount of molecular SO₂ (.5 to .8 ppm.) needs to be present to provide bacterial stability in wine, but pH has an important effect on how much free SO₂ is needed in order to provide that amount, and that's why both pH and SO₂ need to be tested.

REGARD THE TABLE OF MOLECULAR SO₂ BELOW. The amount of free SO₂ needed is based on the pH of the wine. A fairly safe amount for protection of the wine is either .5 ppm for Red Wines or .8 ppm for White Wines. If you know the pH, simply make sure you have the corresponding level of free SO₂, or slightly more, present in the wine during storage and bottling.



THE BEVERAGE PEOPLE

Winemaking - Simplified SO₂ Additions
(USING SODIUM OR POTASSIUM METABISULFITE POWDER)

Prepare a 10% SO₂ Solution

Dissolve 100g metabisulfite into 1 liter distilled water. Stopper and use in 3 months or replace.
(Measure by weight or use a 4 oz. package minus one level teaspoon.)



Additions of 30 ppm to various wine containers using the 10% solution

*For 5 Gallons add 10 ml
(Use a 10 ml graduated syringe.)*





*For 30 Gallons add 60 ml
For 60 Gallons add 120 ml
(Use a 100 ml graduated cylinder.)*



SERVING HOME WINEMAKERS SINCE 1980

1845 Piner Rd. Suite D Santa Rosa, Ca 95403 (707) 544 2520
www.thebeveragepeople.com bevpeo@sonic.net

Molecular SO₂ needed for Stability

pH	White Wine	Red Wine
	.8 ppm.	.5 ppm
2.9	11 ppm.	7 ppm
3.0	13	8
3.1	16	10
3.2	21	13
3.3	26	16
3.4	32	20
3.5	40	25
3.6	50	31
3.7	63	39
3.8	79	49

Preparing Metabisulfite Solutions

10% Solution

Using a gram scale, **weigh out 100 grams of Sodium or Potassium Metabisulfite and dissolve in 1 Liter of water.** Tightly stopper and store labeled: poison. When adding your sulfite additions make sure you measure carefully.

Replace your solution every 3-4 months.

10% Solution of Metabisulfite

(Add ppm SO₂ to desired amount.)

Must/Wine (gallons)	10	20	25	30	40	50	75
	<i>(Add milliliters of 10% solution)</i>						
1	.6	1.3	1.6	2.0	2.6	3.3	4.9
5	3.3	6.6	8.2	9.9	13.1	16.4	24.6
10	6.6	13.1	16.4	19.7	26.3	32.9	49.3
25	16.4	32.9	41.1	49.3	65.7	82.1	123.2
60	39.5	78.8	98.5	118.3	157.7	187.2	295.7

3% Solution

Dissolve **four ounces of sodium or potassium metabisulfite powder**, in one gallon of distilled water. This is a weaker solution than the 10% solution given above. However, at this concentration, the solution is still quite strong and should be labeled: poison.

Replace your solution every 2 or 3 months.

3% Solution of Metabisulfite

(Add ppm of SO₂ to desired amount.)

Must/Wine (gallons)	10	21	33	43	65
	<i>(Add tablespoons of 3% solution)</i>				
1	.15	.32	.50	.66	1.00
5	.75	1.60	2.50	3.30	5.00
10	1.50	3.20	5.00	6.60	10.00

Removing Excess SO₂

If you ever need to lower your SO₂ due to a mistake in calculation try splash racking or stirring vigorously to aerate. If the FREE SO₂ is still too high do the following: for every 10 ppm free SO₂ you want to remove, add 1 ml. of 3% hydrogen peroxide per gallon of wine. An oxidative reaction occurs immediately. Use only fresh 3% Hydrogen Peroxide, available at the drugstore. Use this method to remove up to 100 ppm - any more than this and the wine will oxidize and lose its flavor.

Please Note: Avoid confusing the above two solution strengths. If you have a scale that weighs in grams, and have access to a pH meter, you should use the 10% solution instructions. Have on hand Pipets or Syringes graduated in .1 ml to .5 ml, 1 ml to 10 ml volumes and a Graduated Cylinder, with a volume of 100 ml, for large additions. Otherwise, use the weaker 3% solution, using household measuring spoons.

HOME WINE LAB TESTING...SUGAR, pH, ACID and Free SO₂

Having your wines tested at a commercial wine laboratory provides reliable, accurate information. But sometimes it's fun to do your own testing. Or maybe you live too far away to take advantage of commercial lab testing. Sugar, pH, Acid and SO₂ are readily addressable with home testing techniques.

SUGAR There are three principal methods for measuring sugar content at home: a refractometer, a hydrometer, or a Clinitest® kit. To make a harvest decision in the vineyard, the refractometer is the clear choice. Using the refractometer is very easy. First, calibrate it with a few drops of 20° brix reference solution. Then rinse the prism with distilled water and dry it with



lens paper or a clean paper towel. Squeeze the juice of one grape onto the prism, close the cover, and point the refractometer at a bright section of sky. Read the brix level, write it down, and go on to measure another grape until you have taken a representative sample of your crop. Be aware that you may estimate a little high, since you will probably not sample the immature, under-ripe, and second crop grapes that may find their way into your picking bins on harvest day. For a more thorough sample, collect 20 to 100 grapes in a zip-lock bag, crush them with your fingers, and measure the brix level of the resulting mixed juice.

Once fermentation begins, the refractometer can no longer be used, because alcohol confounds the refractive index measurement upon which the sugar reading is based. So, it is time to turn to your hydrometer. Originally invented by Hypatia of Alexandria, the hydrometer has a 1500-year history of reliable service. Gently place the hydrometer in a plastic or glass measuring jar (which minimizes the amount of sample needed), then fill the jar until the hydrometer floats. Spin it gently to free any attached bubbles, then note the reading at the liquid level on the hydrometer stem. Most hydrometers are calibrated in Balling (which is the same as brix), specific gravity, and

potential alcohol. Note that the third scale in no way measures alcohol directly—it is just a calculated estimate of alcohol potential based on a measurement of sugar content. Continue to take readings periodically as your wine ferments until you get to zero or below, indicating the end of fermentation.

Finally, when fermentation is all over and you want to assess the final “dryness” of your wine, turn to the Clinitest® kit. These tablets, produced for measuring sugar in urine for diabetic patients, can be adapted to measure low levels of sugar (up to one percent) in finished wine. Follow the kit instructions and compare the developed color with the chart provided. Wine is usually considered “dry” at a sugar level of 0.4% or below.

pH Wine pH is of interest primarily as a stability factor. As displayed in our molecular SO₂ table (see page 13), the effectiveness of free sulfur dioxide in protecting wine is strongly dependent on the pH. The lower the pH value, the more stable the wine in the long run. While low pH wines also taste sharper than high pH wines, the real driving force for flavor is TA—not pH. That fact highlights the value of doing both tests on your must and wine: TA for flavor



and pH for stability.

If you use the **MILWAUKEE MW102 pH Meter** (shown above) or **Vinmetrica SC-300** (shown below) for measuring TA, you can record the initial pH value of your wine in the same manner. Another pH measurement



option at *The Beverage People* is a hand-held pH meter. The **Waterproof pH Testr 20** from **Oakton** that has the feature of a watertight housing with 0.01 pH resolution. All pH meters, portable or benchtop, require calibration prior to use. Add our buffer set for a true two-point calibration for any of these meters. Calibrate with the pH 7 first, finishing with pH 4. That sequence maximizes the precision in the area of wine pH—at or below pH 4. After rinsing with distilled water, store the electrode in Storage Solution (pg. 21).

Note: while precision and accuracy are excellent with both kinds of meters, portable pH meters have inherently slower response times than a meter and electrode. As a result, a separate electrode pH meter is much more suitable for TA titrations than a portable hand-held meter. Either works well if you just want to measure pH.

ACID Commercial labs use a sophisticated autotitrator to execute the traditional winemaking method for Titratable Acidity. They report in grams per 100 milliliters—roughly equivalent to percent.

At *The Beverage People*, we offer several home tests for TA. The most popular is the **Country Wines** titration kit with phenolphthalein indicator and sodium hydroxide titrating solution. This is based on the primary lab procedure for the same test, which we also offer (see below). Executed carefully at the kitchen table, it can give precise and accurate results on white wine. Because the visual endpoint of the titration is pink, many users have a bit more difficulty seeing the endpoint in grayish-pink “red” must. If you use this kit for newly crushed



red grapes, take your juice sample quickly, before the full red color develops.

Our other three TA methods use full laboratory-scale equipment. The **Indicator Method Titration Kit** and the **pH Meter Titration Kit** both use a Class A buret to add measured amounts of 0.1 N Sodium Hydroxide

Wine Lab cont. page 15

solution to a wine sample. The indicator method uses the pink color change of phenolphthalein to determine the endpoint and is subject to the same red-wine limitations as the *Country Wines* kit. The pH Meter Method, on the other hand, uses the *MW102* digital pH meter from Milwaukee Instruments for endpoint detection. That meter is unaffected by the sample color. Even finished, dark red wines can be accurately measured for TA with this system. Detailed instructions are included with both kits.

The *Vinmetrica SC-300* is essentially equivalent to the *MW 102* method for titratable acidity and uses a digital pH meter. It has the additional capability, however, of running a separate free SO₂ measurement as described in the next section.

FREE SO₂ As described on page 12, the *Titrets* kit, employing the Ripper method,

is the simplest test for free sulfur dioxide. Unfortunately, it is only recommended for white wine and is not especially accurate even then.

More advanced systems for the Ripper method are produced by *Vinmetrica*. The *SC-100A* uses a platinum electrode for an amperometric titration with a digital endpoint. Noting the volume of titrant dispensed to reach the endpoint, the user can calculate the free sulfur dioxide level. The *SC-300* meter uses exactly the same electrode and method for the measurement of free SO₂ and has the further advantage of incorporating a fully functional digital pH meter and pH electrode. That means that the combined system can do all of the testing described here under pH, Acid, and Free SO₂, providing a comprehensive solution for home winemakers who want to set up a compact laboratory.

Our primary method for determining free SO₂, is aeration-oxidation as described

on page 12. The version available at *The Beverage People*, the *MT140*, contains all of the supplies and glassware needed to run the test on a basic level. For greater convenience and to extend the number of samples that can be analyzed, we recommend also purchasing the *TE114 Accessory Kit*. That kit includes an additional 250 mL bottle of 25% phosphoric acid (allowing 25 more sample analyses), a wash bottle for your distilled water to make it easy to dilute samples and rinse glassware, a second 10-mL serological pipet to reduce the need to rinse pipets during every analysis, and a 1-mL syringe to facilitate the color adjustment of the trapping solution that may be needed at the beginning of each testing cycle. Note that the accessory kit is an in-store purchase only as hazardous materials regulations prevent us from shipping the phosphoric acid.

PROCEDURES FOR FINING

Most wine will clarify during aging, with periodic rackings to remove sediments. To remove oxidation or reduce bitterness, fine with *Polyclar* or *Whole Milk*. To soften tannins, use either *Egg Whites* or *Gelatin*, followed by *Sparkolloid*.

Always add *Metabisulfite* when adding a fining agent, to prevent oxidation during the mechanical stirring needed to blend in the agent.

Two of the most commonly used fining (clarifying) agent are used as follows.

Sparkolloid is used at the rate of 1 to 1.5 grams per gallon, so to fine five gallons of wine, begin by measuring out 5 to 7.5 grams of dry *Sparkolloid*. Then take about 2 cups of water, stir in the *Sparkolloid*, and heat it on the stove in a saucepan.

Simmer gently (bubbles, but not boiling) for 15-20

minutes. Add the hot mixture into the wine. Stir gently, but thoroughly. Let stand three to four weeks and carefully rack away from the sediments of the *Sparkolloid* and the lees. It's a very fluffy sediment, so be prepared to lose an inch of wine.

Bentonite requires that a slurry be made up a **day in advance**. Measure out a 750 ml. bottle of water, and heat it to boiling. Slowly stir in 1 oz. of *Bentonite*. Mix it thoroughly for about one minute in a blender and funnel back into the 750 ml. wine bottle. Close with a silicone or rubber stopper and let it stand for a day. Shake up the slurry to thoroughly mix is back into solution and then thoroughly stir 1/4 cup into each five gallons of wine. Rack as usual after 1 to 2 weeks.

Fining Agent	Rate of Use	Best Used For	Preparation	When
Sparkolloid	5 - 7 g/ 5 gallons	All wines	Heat 1 - 2 cups of water with <i>Sparkolloid</i> , simmer 15 minutes and stir into wine.	Post fermentation three weeks before racking.
Bentonite	1/4 cup of slurry per 5 gallons (See directions above)	All wines	Slurry with juice or water in blender	Rack in 1-2 weeks Allow 3 weeks to settle before bottling.
Isinglass	1 Tablespoon/ 5 gallons	White wines that haven't clarified with <i>Sparkolloid</i> .	Soak in 2 Cups water with 1/2 teasp. Citric Acid for 30 minutes. Add to wine.	Prior to a racking.
Gelatin	1/4 oz./ 5 gallons	Red wines with excess tannin.	Dissolve in 10 oz. hot water, let sit for 10 minutes. Stir thoroughly into wine.	After fermentation up to three weeks before bottling.
Egg Whites	1/2 egg white/ 5 gallons	Red Wines with excess tannin.	Whipped to a soft froth with some wine and water then mixed in thoroughly.	In barrel/glass a month or more before bottling.
Polyclar (Divergan F)	2.5-12.5 g/ 5 gallons	White wines to remove oxidation reduce bitterness.	Thorough mixing Fluffy, difficult to rack off cleanly.	Before, during or after fermentation.
Non-Fat Milk	100-250 ml/5 gallons	White wines to reduce bitterness, adds sweetness.	Follow with <i>Bentonite</i> Fining	Rack after 4 days A month prior to bottling.
Whole Milk	100-250 ml/5 gallons	Reduce harshness absorb aldehydes.	Follow with <i>Bentonite</i> Fining	Rack after 4 days A month prior to bottling.

BARREL CARE

Care of a New Barrel

Brand new oak barrels are about as sanitary as they can be because the wood has been heated over direct fire in the process of making the barrel. This is done in order to bend the staves into place, and also to enhance various flavor accents (such as vanilla and caramel).

Swelling up a Barrel

Like any wooden container, however, a new barrel must be filled with water to make the wood swell and eliminate leaks. These leaks will often seal themselves in only a few hours, or a couple of days. However, the barrel should be continually refilled until the leaks stop, and the water should be changed each day to prevent off flavors caused by bacteria and or mold growth.

Acidifying a New Barrel

It is recommended that an acidic environment be created in a new barrel, which is about to receive wine for the first time. Dissolve in water 2 Tablespoons of *Citric Acid* for every five gallons of barrel capacity. Fill the barrel and check to make sure it isn't leaking. Drain the acid water and fill the barrel with wine.

Cleaning at each Wine Racking

Once a barrel has been used for wine storage, additional cleaning and sanitation measures are required. At each racking, rinse the barrel

thoroughly with water to remove debris. Follow by rinsing the barrel with an acid wash. Dissolve 2 Tablespoons of *Citric Acid* in five gallons of water, sloshing this mixture around the interior surfaces of the barrel for 5 to 10 minutes. Drain, and refill the barrel with wine.

Preparing for Storage

It is always best to keep a barrel full of wine. When this is not possible, start by removing the organic matter that has penetrated into the surface of the wood. This is done with a solution of *Proxycarb*, a sodium percarbonate based cleaner.

Use 4 oz. (or 8 Tablespoons) of *Proxycarb* for every 15 gallons of barrel capacity. Dissolve in a small amount of water, and funnel the mixture into your barrel. Fill the barrel the rest of the way with water. You may leave this mixture in the barrel for as little as 20 minutes or as much as 24 hours. If the barrel has VA (volatile acidity), double the amount of *Proxycarb* and leave for 24-48 hours.

Drain and rinse the barrel several times with water. Re-acidify the barrel using one ounce or 2 Tablespoons of *Citric Acid* for every five gallons of water. Slosh this all around and drain. Now prepare for storage.

Short Term Storage

If it will be less than two months before the barrel is used again, drain the barrel, and fill with a *Sulfite* and *Citric Acid* solution. Use one teaspoon of *Potassium or Sodium Metabisulfite* powder, along with 1/3 teaspoon of *Citric Acid* for every 15 gallons of barrel capacity. Add enough water to fill the barrel and bung the barrel tightly. Check to make sure sulfur can still be detected inside the barrel, replacing the solution if necessary. Rinse with water before refilling with wine.

Long Term Storage

If it will be more than two months before the barrel is used again, drain the barrel and leave it upside down overnight. Next burn a *Sulfur Strip* in it, hanging it down at least 6 inches below the bung on a wire. Replace the bung. Remove the sulfur strip after about 15 minutes, and bung the barrel tightly. Burning sulfur releases sulfur dioxide gas into the barrel's interior.

Repeat every two weeks (as needed) until a flashlight reveals no shiny dampness in the bottom of the barrel. Bung up the

barrel and store it in a dry place until needed, allowing enough time to soak up and acidify the barrel before the next use.

Cleaning Step by Step

1. Drain wine from barrel and hose out visible solids until clear.
2. Add 4 ounces (8 Tablespoons) of Proxycarb for every 15 gallons of barrel and fill with water, let stand 2 - 24 hours.
3. Drain out cleaner and rinse until water is clear.
4. Acidify barrel with one ounce (2 Tablespoons) Citric Acid for every 5 gallons water. Either make this into a volume to fill barrel, or just slosh around a 5 gallon volume and then drain.
5. No water rinse is required after the citric rinse.

COPPER TREATMENT

Burnt rubber? At Sonoma Raceway, it's a normal aroma. But if you smell it when you rack your wine, you have a problem. "Burnt rubber" is one of many unpleasant descriptors applied to the **volatile reduced sulfur (VRS)** compounds than can occur during the fermentation and aging of wine. Much easier to prevent than correct, these compounds interact with each other, and the wine, in very complex ways. Simply stated, if you detect this kind of aroma, fix it quick!

The simplest, and generally first, **VRS** to appear is **Hydrogen Sulfide, H₂S**. It is commonly described as smelling like rotten eggs (peuw!). Since humans can detect the smell when the concentration in wine is only one or two parts per billion, it doesn't take much to make the wine very unpleasant. While "over sulfuring" in the vineyard (by the vineyard manager) is the most frequently cited cause (by the winemaker), those of you who grow your own grapes and then make the wine have no one else to blame! (Try to go at least 35 days between the last sulfur application and harvest). But let's face it: a much more frequent cause is lack of nutrients—primary amino nitrogen or certain vitamins—during primary fermentation. You can address prevention of that problem by analyzing your juice nutrient level as described on pg 10.

But let's suppose the odor shows up anyway (which it may). The most conservative treatment is to aerate the wine during racking—splash it into the receiving vessel (but be sure your free SO₂ level is up where it should be prior to the splash racking—otherwise you may oxidize your wine, turning it brown and Madeira-like). A more effective solution is to treat with copper. When exposed to copper, the sulfide combines with

the copper to make copper sulfide, which is not soluble in wine. While some books will tell you to just run the wine over a sheet of copper, our experience has not found this technique highly effective. Instead, the direct addition of a small amount of 1% copper sulfate solution is usually quite effective. Add it at a rate of 3/4 of a milliliter (mL) for every gallon of wine. This will give you a maximum level of 0.5 ppm (mg/L), which is the level allowed in commercial wine. If you must treat the wine again to completely clear the sulfide aroma, you may want to remove residual copper by adding yeast hulls (at a rate of 5 grams per gallon), stirring frequently, and racking again in a few weeks. For the copper treatment alone, rack after a couple of days to leave the black copper sulfide behind (at part-per-million levels you may never see it, but it's there!).

If you have not promptly removed H₂S, your wine may go on to develop more complex **VRS compounds**. Next in line are the **mercaptans**: **methyl mercaptan** smells like burnt rubber or rotten cabbage and **ethyl mercaptan** smells like burnt matches or dirty ashtrays. These are not volatile enough to remove by aeration, but copper (just as for H₂S) still works. **To check for possible effectiveness, clean a copper penny in a mild acid solution (a little citric or tartaric in some water). Place your now-bright penny in a wine glass, add wine, and swirl. Let it stand for a minute or two, and the bad smell should go away if you have a copper-treatable problem. Follow the instructions in this article and your wine should clean up.**

So let's go back to the top: 35 days after last sulfur before harvest. Adequate nutrients. Aerate (with SO₂ present) if necessary. Treat with copper if the sulfide aromas don't go away.



2015 WINEMAKING EQUIPMENT

Grape Presses

Wooden cage with steel base on legs, lets you quickly and smoothly press fermented red grapes or crushed white grapes.

Model	Basket Number	Basket Diameter	Height	Capacity In Gal.	Retail Price
WE02	#25	10"	14"	5	\$350.00
WE03	#30	12"	17"	7	\$425.00
WE04	#35	14"	19"	12	\$525.00
WE05	#40	16"	21"	18	\$625.00
WE06	#45	18"	24"	25	\$750.00
WE07	#50	20"	26"	34	\$850.00
WE49	#30	(All Stainless Cage and Base and Legs)			\$875.00
WE27	#40	(All Stainless Cage and Base and Legs)			\$1095.00



Piston Top Basket Press with Hydraulic Ram on frame with wheels. Very easy to use, with tilt frame for draining. Similar one barrel capacity to a #50 basket press.

WE50 Piston, manual Hydraulic Press on wheels #50 20" x 26" \$2399.00

Water Bladder Press inflates with regular garden hose pressure, pressing the grapes against the stainless steel cage, while a lid retains the grapes. (Shown right.)

WE55	80 Liter	17"	23"	20	\$1395.00
WE46	160 Liter w/ wheels	21"	28"	40	\$2895.00



WE55 80L Bladder Press

Crushers

Crushers: Manual rollers crush by simply turning the flywheel supplied.

Dimensions of WE12 and 13 Bins: 21" x 32", WE35: 21" x 21"

WE12	Double roller grape crusher with paint finish.....	\$300.00
WE13	Double roller grape crusher, stainless	\$325.00
WE35	Boxed double roller grape crusher, stainless (OK for UPS).....	\$325.00

Crusher/Destemmers and Destemmer Only

Crusher/Destemmers: Manual and electric models are available, both will process around one ton per hour. Stainless steel models come with a stainless stem grate and stainless hopper. Dimensions of hopper are 16" x 30", except extended hopper with screw feed : 16" x 36"

WE14	Manual, paint grade crusher/destemmer.....	\$450.00
WE15	Manual, stainless crusher/destemmer.....	\$575.00
WE16	Electric 110V, paint grade crusher/destemmer	\$775.00
WE17	Electric 110V, stainless steel crusher/destemmer	\$925.00
WE22	Electric 110V, paint grade crusher/destemmer with screw feed (SF) and extended hopper (EXH).....	\$875.00
WE18	Electric 110V, stainless crusher/destemmer w/ (SF) & (EXH)	\$975.00
WE25	Electric 110V, ALL stainless crusher/destemmer w/SF & EXH (Shown right)	\$1295.00
WE25RR	Electric 110V, ALL stainless crusher/destemmer RUBER ROLLERS w/SF & EXH.	\$1350.00
WE34	Electric 110V, ALL stainless DESTEMMER ONLY, w/SF & EXH	\$1295.00
WE20	Support Stand for above units with stainless chute	\$250.00



WE25 Crusher/Destemmer



WE28 3 Spout Bottle Filler

Large Storage Tanks

Variable Capacity Stainless Wine Tanks - flat bottom - come with a lid, gasket, pressure relief valve and drain.

WE43	100 Liter Stainless tank (26 g.).....	\$400.00
WE40	200 Liter Stainless tank (52 g.).....	\$550.00
WE42	300 Liter Stainless tank (79 g.).....	\$650.00
WE44	400 Liter Stainless tank (106 g.).....	\$775.00
WE45	500 Liter Stainless tank (132 g.).....	\$895.00

Fillers

WE19	Plastic Model 3 Spout Bottle Filler.	\$159.99
WE28	All Stainless 3 Spout Filler Filler comes w/ drip tray (shown above).....	\$475.00
WE29	All Stainless 5 Spout Filler Filler comes w/ drip tray.....	\$625.00

Equipment is priced for pick up at the store. Call for a freight quote for delivery.

KITS AND JUICE

“Premium” Wine Equipment Kit

Complete with a ten gallon primary fermentor and lid, a six-gallon



PET Plastic Bottle secondary fermentor, an air lock and stopper, 25 Campden tablets, a siphon assembly, a bottle filler, Mini-Floor Corker, 25 Corks, Country Wine Acid Testing Kit, Hydrometer and Test Jar, a Bottle Brush, TDC cleaner, BTF Sanitizer and the book *Home Winemaking Step By Step*, Iverson.

BNW01\$224.99

(Note: For *White or Blush Wine*, kit includes 5 gallon PET Plastic Bottle in place of the bucket and lid.

Pure Italian Juice Wine Kits

Mosto Italiano® kits are aseptically packaged in plastic pails, that also serve as the primary fermentor. 23 liter kits are a complete package of ingredients to make 6 gallons. Ready in three months.

(R = red, W = white, B = blush)

CO30 **Cabernet Sauvignon** (R)\$119.99

CO31 **Chardonnay** (W)\$114.99

CO33 **Gewurztraminer** (W)\$109.99

CO39 **Pinot Grigio** (W)\$109.99

CO32 **Sangiovese** (R)\$119.99

CO37 **Zinfandel Blush** (B)\$109.99

CO34 **Shiraz** (R)\$119.99

CO35 **Zinfandel** (R)\$119.99



Canned Grape Concentrate

Choose your Varietal, 46 oz 68° Brix.

(CO06) **Burgundy** \$19.99 (CO03) **Cabernet Sauvignon**, \$19.99

(CO08) **Chardonnay**, \$18.99

(CO02) **Chenin Blanc**, \$16.99 (CO05) **Muscat** \$21.99,

(CO01) **Zinfandel** \$19.99 (CO07) **Petite Sirah** \$18.99

Seedless Fruit Puree

Each can of fruit puree from Oregon is seedless, with all the goodness preserved in the processing, full of aroma and a deep rich taste and color. Use one can in five gallons of beer, two



cans to flavor a mead or four cans to make wine.

The classic wine recipe using four cans of puree, will yield 24 wine bottles of superb fruit wine. Finish it with the addition of a

simple syrup just to smooth the flavor and intensify the berry taste. Reminds us of summer even in the dead of winter and tastes great for several years, if you can wait that long, but is ready to drink in three months. 49 oz. can.

FL44 **Raspberry Puree**\$19.99

FL47 **Blackberry Puree**\$21.99

FL46 **Apricot Puree**\$19.99

FL48 **Sweet Cherry Puree**\$14.99

FRUIT HANDLING

MS35 **Grape Picking Shears**,\$8.99

MS16 **Grape Picking Knife**, Plastic handle\$6.99

MS31 **Tote Bins for grapes**, Cross stacking, nesting tub Hold 30 lbs\$18.99

QE36 **Grape Masher. (Cap punch tool) 24" long**\$34.99

Mesh Pressing Bags:

PS31 **14" X 17"** w/drawstring \$6.99

PS16 **20" X 22"** \$5.99

PS15 **24" X 20"** w/drawstring \$11.99

PS20 **26" X 28"** w/drawstring\$14.99

QE39 **Stainless Coarse Mesh Strainer** 10 1/4"\$16.99

PS51 **China Cap Strainer**, 12" perforated stainless, cone shaped high-volume strainer for all fruits\$24.99

YEAST & BACTERIA

Dry Wine Yeasts

Choose your yeast strain from the information chart provided on page 11. Use one to two grams per gallon and see pages 4 and 6 for directions on how to use the yeast. (*Shelf life is 3-4 months*)

WINE YEAST	Varies	
	All \$2.29	\$18.99 up
	10 g	4 oz
Assmanshausen	WY38	WY37
Epernay 2	WY22	WY12
French Red	WY30	WY20
Prise de Mousse	WY23	WY13
Rhone #L2226	WY35	WY34
Beaujolais 71B	WY25	WY15
Brunello BM45	WY45	WY47
CSM	WY53	WY56
ICVD21	WY41	WY16
ICV D254	WY44	WY43
M2	WY50	WY49
QA23	WY65	WY67
RC212	WY55	WY57
RP-15	WY24	WY42
Steinberger	WY29	WY19
Uvaferm 43	WY28	WY18

Malolactic (ML) Bacteria Cultures

WY32 **ML Culture, Yeast #4007** 125 ml. inoculates 5 gallons directly. With instructions.\$7.99

WY51 **ML Culture, Enoferm Alpha Strain**, 2.5 g. pack inoculates 66 gallons directly. With instructions.....\$27.99

WY66 **ML Culture, Enoferm Beta Strain**, 2.5 g. pack inoculates 66 gallons directly. With instructions.....\$27.99

WY52 **ML Culture, Viniflora™ CH16**, 2.5 g. pack inoculates 66 gallons directly. With instructions.....\$27.99

Malolactic Prevention

WY60 **Lysozyme liquid “Lyso-easy”** 250 ml.\$30.99

SUPPLIES

A17 Ascorbic , 1 oz.	\$4.50
A05 Citric , 2 oz.	\$1.69
A14 Malic , 2 oz.	\$1.99
A10 Tartaric , 2 oz.	\$2.99
A24 Acid Blend , Citric, Tartaric & Malic, 2 oz.	\$1.99

Acid Reduction Agent

FN39 Potassium Bicarbonate (With Instructions) 4 oz.	\$ 4.99
--	---------

Sugar

AD15 Corn Sugar , 5 lbs	\$6.99
AD16 Corn Sugar , 10 lbs	\$11.99

Enzymes

QR04 Pectic Enzyme , 1 oz.	\$1.85
QR61 Lallzyme® EX Red Wine Enzyme 10 g	\$5.99
QR63 Lallzyme® Cuvee Blanc White Wine Enzyme 10 g	\$6.99

Yeast Nutrients

QR11 Yeast Nutrient , Diammonium Phosphate, 2 oz.	\$1.99
QR42 Go-Ferm® , Mixing instructions are included for preparing yeast starters. This is not a fermentation nutrient. 3 oz.	\$4.99
QR33 Autolyzed Yeast , 2 oz.	\$2.99
QR16 Yeast Hulls , 2 oz.	\$3.99
QR06 Fermaid K™ Yeast Food. Complete nutrient mix with trace minerals, use 1 oz. per 30 gallons. 3 oz.	\$3.99

Optimized Yeast Nutrients

QR72 Opti-Red® Yeast Derivative Nutrient , 50 g	\$4.99
QR74 OptiMUM-White® Yeast Derivative Nutrient , 50 g	\$5.99

Optimized Malolactic Nutrients

QR38 Acti-ML Nutrient for MLF for 66 gal. 50g.	\$5.99
QR35 Opti ML Blanc Nutrient for White or Rosé MLF for up to 66 gallons. 50g.	\$5.99

Sulfites

CS24 Sodium Metabisulfite , 4 oz.	\$2.99
CS20 Potassium Metabisulfite , 1 lb.	\$5.99
CS17 Campden Tablets , Pack of 25.	\$.99
CS16 Campden Tablets , Pack of 100.	\$2.99
CS33 2 g IO Inodose Effervescent SO₂ Tablets , 3 pack. One tablet delivers 9ppm SO ₂ in 60 gallons of must or wine.....	\$2.99
CS34 5 g IO Inodose Effervescent SO₂ Tablets , 3 pack. One tablet delivers 22ppm SO ₂ in 60 gallons of must or wine.....	\$3.59

Fermentors

Note: All Plastic Carboys take a #10 Stopper, All current Glass Carboys takes a #6.5 Stopper. Also see Breather Silicone Bungs which fit all of the Carboys without the use of an Airlock.

GL45 5 Gallon Plastic Better Bottle™	\$29.99
GL58 5 Gallon PET Plastic Bottle	\$27.99
GL59 6 Gallon PET Plastic Bottle	\$29.99
GL02 3 Gallon Glass Carboy	\$33.99

Note: Check the web for larger sizes of ingredients, cleaners and sanitizers.

GL01 5 Gallon Glass Carboy	\$37.99
GL40 6 Gallon Glass Carboy	\$48.99
GL04 6.5 Gallon Glass Carboy	\$49.99
P01 6.5 Gallon Plastic Bucket with Wire Handle	\$11.99
P02 Lid for 6.5 Gallon Bucket	\$2.99
P61 13 Quart Stainless Steel Pail with Bail Handle.....	\$21.99
P17 Poly Drum Liner , 6 mil, fits up to 60 gal.....	\$5.99
P04 10 Gallon Heavy-Duty Plastic Bucket with molded handles.	\$20.99
P05 10 Gallon Lid	\$7.99

20, 32 and 44 Gallon Buckets and Lids are available for pickup at the retail store.

Drilled Rubber Stoppers

	SKU	Top	Bottom	Price
#2	FST09	13/16"	5/8"	\$ 0.69
#6	FST12	1 1/16"	29/32"	\$ 1.09
#6.5	FST13	1 11/32"	1 1/16"	\$ 1.29
#7	FST14	1 7/16"	1 3/16"	\$ 1.39
#8.5	FST16	1 11/16"	1 7/16"	\$ 1.99
#9	FST17	1 3/4"	1 15/32"	\$ 1.99
#10	FST19	1 31/32"	1 5/8"	\$ 2.79
#10.5	FST20	2 5/64"	1 3/4"	\$ 2.79
#11	FST21	2 13/64"	1 7/8"	\$ 4.29
#12	FST23	2 1/2"	2 1/8"	\$ 4.79

Most sizes are available solid, at the same price.

Air Locks and Breather Bungs

FST04 Three Piece Fermentation Lock	\$1.29
FST05 S-Shape One Piece Fermentation Lock	\$1.29
FST47 Carboy Silicone Breather (fits all carboys)	\$8.99
FST42 Breather #11 Silicone - 2"	\$7.99
FST510 Breather #10, Silicone- fits PET plastic	\$7.99
FST49 Breather #9 Silicone - 1.5"	\$7.99
FST57 Breather #7 Silicone- fits glass carboys	\$4.99

Solid Barrel Bungs

FST29 Silicone Bung Solid #8 (Fits 1L Flask).....	\$2.99
FST40 Silicone Barrel Bung - Joined Size 45 x 54 mm..	\$7.99

Cleaning and Sanitizing

CS12 Soda Ash , Barrel cleaner 1 lb.	\$1.99
CS29 Sodium Percarbonate , All purpose cleaner 1 lb. ..	\$4.99
CS26 TDC™ Glass Cleaner , 4 oz	\$4.99
CS31 TDC™ Glass Cleaner , 1 Liter.	\$13.99
CS02 BTF™ Sanitizer , 4 oz	\$6.99
CS03 BTF™ Sanitizer , 32 oz	\$18.99
QE29 Bottle Brush	\$4.99
QE30 Carboy Brush	\$5.99
QE31 Double Ended Keg Faucet Brush	\$3.99
QE45 Bottle Washer -The Blast	\$13.99
QE09 90 Bottle Draining Tree	\$39.99
QE44 Carboy Draining Stand	\$8.99

Oak Alternatives

Liquid Oak Extract, from pure Dark French Oak, 4 oz.

B42 Use 2-3 oz. per 5 gallons. \$6.99

Oak Chips, 1 lb. Use up to 3 oz. per 5 gallons of red wine.

Specify: B46 **American Medium** \$5.99, B24 **French Medium** or B25 **French Dark**\$7.99

Oak Cubes, 8 oz. Use 2-3 oz. per 5 gallons. *Specify:* B44 **French Medium Plus** (Dark), or B32 **French Medium** \$12.99

WINESTIX™ Carboy Sticks Two per bag. Use 1 per carboy. *Specify:* B91 **American Light**, B92 **American Medium**, or B93 **American Medium Plus**\$8.99

B94 **American Dark**\$10.99

Specify: B95 **French Light**, B96 **French Medium**, or

B97 **French Medium Plus**\$9.99

B98 **French Dark**\$11.99

Chain-O-Oak™ Staves (Tank or Barrel Insert)

(30% surface of new oak in a 60 gallon barrel.)

B78 **American Medium** or B79 **American Dark** \$59.99

B74 **French Medium** \$69.99 or B75 **French Dark**. \$69.99

Cellaring Tannins

QR65 **FT Rouge Soft** - Enological Tannin, 100 g\$7.99

QR67 **FT Blanc Soft** - Enological Tannin, 50 g.....\$5.99

QR70 **Tannin Riche** derived from 100% Toasted French Oak. Adds finesse to average wine. Use 1/4 to 3g per 5 gallons of red wine, 10g ..\$5.99 or QR69 50g size. \$24.99

QR79 **Tannin Complex** derived from traditional oak and the Quebracho tree from South America. Use 1 to 6 g for every 5 gallons of wine, 50g..... \$10.99

QR77 **Tannin Refresh** Unique tannin product derived from untoasted French Oak. Increases complexity without the aromas of smoke or toast. Use 1/4 to 4 g for every 5 gallons of wine, 10g\$5.99 or QR78 100g size. \$39.99

Oak Barrels

Small American Toasted Oak Barrels:

B02 **American Oak, 2 gallon (SCT)**..... \$139.99

B03 **American Oak, 3 gallon (SCT)**..... \$169.99

B04 **American Oak, 5 gallon (SCT)**..... \$204.99

Vinegar Barrels are Paraffin/Wax Lined (P):

B10 **American Oak, 2 gallon (P)** \$124.99

B11 **American Oak, 3 gallon (P)** \$139.99

B12 **American Oak, 5 gallon (P)** \$149.99

Charred Oak Barrels for Spirits:

B49 **American Oak, 3 gallon (SCC)** \$169.99

B08 **American Oak, 5 gallon (SCC)** \$204.99

Barrel Spigots

Wood Spigots (see website for prices and sizes)

Racking Equipment

HS03 **5/16" i.d. hose per foot**.....\$.69

HS04 **3/8" i.d. hose per foot**.....\$.69

HS14 **7/16" i.d. hose per foot**.....\$.79

HS05 **1/2" i.d. hose per foot**\$.89

HS06 **1/2" i.d. Thick-wall hose per foot**\$1.09

FST02 **Hose Shutoff Clamp for 3/8" hose**\$1.69

FST03 **Hose Shutoff Clamp for 1/2" hose**\$2.99

QE11 **Racking Tube** 24" length fits **5/16" or 3/8" i.d. hose** . \$3.99

QE33 **Racking Tube** 22" length fits **7/16" or 1/2" i.d. hose** \$5.99

QE50 **Racking Tube** 30" length fits **7/16" or 1/2" i.d. hose** \$6.99

QE15 **Racking Tube Holder** fits **Tube QE11**\$2.99

QE35 **Racking Tube Holder** fits **Tube QE33**\$2.99

Auto-Siphon Racking Tubes:

QE07 **Mini-Auto-Siphon** for **5/16" or 3/8" hose** \$10.99

QE42 **Auto-Siphon** for **5/16" or 3/8" hose** \$14.99

QE43 **Auto-Siphon** for **7/16" or 1/2" hose** \$19.99

QE14 **Racking Tube Holder** fits **QE07 or QE42**.....\$3.99

QE16 **Racking Tube Holder** fits **QE43** \$3.99

Pumping Equipment

PS09 **Pump- diaphragm style**, 110V motor with 1/2" ports.

Also will need to add two PS48 **Hose Barb fittings** (\$2.99 each) to connect to 1/2" thick wall hose..... \$189.99

F31 **Filter/Strainer** for Pumps (Use with 1/2" hose) \$29.99

PS47 **1/2"Female Hose Barb** for F31 above. Need two... \$1.99

PS36 **Procon Brass Pump**, 4 GPM, 1/4 HP\$369.99

FX06 **Brass pump hose barb fitting**, 1/2"x1/2" \$2.99

PS35 **Procon Stainless Pump**, 4 GPM, 1/4 HP \$479.99

PB05 **Stainless pump hose barb fitting**, 1/2"x1/2" \$7.99

Fining Agents

FN06 **Sparkolloid™**, 1 oz. \$ 1.99

FN32 **Bentonite**, 2 oz. \$.99

FN07 **Isinglass**, 1 oz.. \$ 8.99

FN03 **Fining Gelatin**, 75 bloom, grade B, 1 oz. \$ 1.99

FN22 **Polyclar VT (PVPP)** (With Instructions) 1 oz. \$ 1.99

FN46 **Flashgum R® Gum Arabic Liquide**. 25% solution, 4 oz. \$ 6.99

Sulfur Reducing Agents

FN47 **Reduless®**, 10g. Yeast hulls with copper \$ 3.99

FN91 **Noblesse®**, 10g. \$ 4.99

TE24 **Copper Sulfate Solution (1%)**, 4 oz. \$ 4.00

Filtering

F05 **Buon Vino Super Jet Filter**, Plate & frame filter includes electric diaphragm pump \$450.00
(*Must use with F31 above. Filter prevents damage to pump*)

Pads for Super Jet Buon Vino (Set of Three):

F09 **8 Micron Coarse** ...\$4.99, F22 **2 Micron Medium** \$4.99

F21 **0.5 Micron Sterile** \$5.99

F03 **10" Cartridge Filter Housing**, Clear, poly housing, Use with 10" filters \$44.99

10" Filter Cartridges:

F10 **3 Micron Coarse** \$12.99

F11 **1 Micron Fine** \$12.99

F12 **.5 Micron Sterile** \$14.99

Hose Barb for Filter Housing *Need two. Specify size:*

PS02 Fits **3/8" hose** ...\$1.29 or PS03 Fits **1/2" hose**.... \$1.99

WINE LABORATORY

Sugar & Alcohol Testing

- TE40 **Economy Hydrometer** has Brix, Specific Gravity, and Potential Alcohol scales, 9"\$10.99
- TE42 **Deluxe Hydrometer 3 scale with Thermometer**
Use with the tall test jar below, 11"\$15.99
- TE39 **Hydrometer Proof and Traille**.....\$10.99
- TE65 **Residual Sugar Test Kit.** 36 tests.\$29.99
- TE23 **Refractometer,** 0-32° Brix, Automatic Temperature Compensation, boxed w/padded carrying case\$69.99
- TE32 **20° Brix Calibration Solution,** 2 oz..... \$3.99
- TE13 **Vinometer,** Estimates alcohol in dry wine\$7.99

Sulfite and Acid Testing Kits

- TE102 **Economy Aeration-Oxidation Free SO2 Test Kit**
See page 12 for list of supplies, Instructions included... \$119.99
- TE26 **Country Wines Acid Test Kit**\$11.99
- TE29 **Sodium Hydroxide Refill (Neutralizer)**
(for TE26) 4 oz., 0.1 normal\$5.49
- TE116 **Phenolphthalein Refill (Indicator)**
(for TE26) 1 oz.....\$4.49

TE103 **TA Titration Kit - INDICATOR Method Includes:**
Buret Stand, 10-mL Class A glass Buret with Teflon Stopcock,
Buret Clamp, 10-mL Syringe, 10-mL Graduated Pipet, Pipet
Safety Bulb, 250-mL Flask and 0.1 N Sodium Hydroxide,
Phenolphthalein Indicator solutions.....\$109.99

TE104M **TA Titration Kit - pH Meter Method Includes:**
the TA Titration Kit above minus the 250 mL Flask and adds the
Milwaukee pH meter, pH Buffer Kit and 400 mL Borosilicate
Glass Beaker.....\$249.99

Vinmetrica Wine Analysis Test Equipment

TE164 **VINMETRICA SC-300 - Combination TA Titration, Free and Total SO₂, and pH Tester** - The Vinmetrica SC-300 analyzer gives accurate SO₂, pH and TA values. Kit includes everything to perform ~50 sulfite tests & 30 TA tests: SC-300 meter, SO₂ and pH electrodes, all reagents, transfer and sampling pipettes, syringes and two titration beakers\$399.99

TE162 **VINMETRICA SC-100A - Sulfite Tester**
The Vinmetrica SC-100A analyzer gives accurate SO₂. Kit includes everything to perform ~50 sulfite tests. SC-100A meter, SO₂ electrode, all reagents, sampling and transfer pipettes, syringe and titration beaker.....\$269.99

TE161 **VINMETRICA SC-50 - Malic Acid MLF Tester (SC-50 Kit is an add-on to either of the two kits above.)** The SC-50 analyzer gives reliable malic acid concentrations to determine MLF completion. Kit includes everything to perform 5 Malic Acid tests: the reagent set, 5 reaction vials, check solution, beaker, pipettes and conical tube.\$139.99

pH Testing

- TE203 **Milwaukee pH Meter** Manual, portable pH Meter, Milwaukee model MW102, 0-14pH, ATC. Comes with 9V Battery, pH and Temperature Probes, and 4, 7 sachet buffer solutions. Resolution 0.01 pH and 0.1 degree C. Accuracy (25C) .02 pH..\$129.99
- TE203-RP **Replacement Electrode** for MW10\$49.99
- TE73 **Waterproof pH Testr20** Digital, battery operated, accuracy to 0.01 pH. Automatic temperature compensated, double junction electrode can be replaced.\$104.99
- TE35 **Replacement Electrode** for pH Testr20.....\$69.99
- TE206 **Complete pH Buffer Solutions Set** with 4 oz. each of pH 4.0 and 7.0 in jars. Store cool.\$6.99
- TE209 **Electrode Storage Solution** 2 oz.\$6.99
- TE72 **pH Buffer Capsules** pH 4.0. and 7.0 Capsules, to dissolve in 100ml. distilled water to calibrate your meter.\$3.99

Malolactic (ML) Testing

- TE20 **Malolactic Chromatography Kit,** 6 papers, 4 oz Solvent, 100 pipets, 3 Acid Standards, funnel and Instructions.....\$49.99
- TE17A **Replacement Solvent,** 4 oz.\$10.99
- TE22 **Replacement Paper, 3 Sheets**\$4.99

- TE18 **Replacement Acid Standards-**
Set of 3 (Lactic, Malic, Tartaric)\$8.99
- TE19 **Replacement Capillary Pipets,** 100 pack\$8.99

Labware

- Regular Test Jar for 10" Hydrometer.**
- TE55 **Plastic, 10"**\$4.99
- TE08-PMP **100 ml. Graduated Cylinder Plastic**
(Clear Polymethylpentene)\$10.99

Labware continued on next page

The image displays three pieces of Vinmetrica wine analysis equipment. At the top left is the SC-300, a large orange and white device with a digital display and multiple buttons, accompanied by two blue electrodes. To its right is the SC-100A, a smaller orange and white device with a digital display and a single blue electrode. At the bottom left is the SC-50, a small pink and white device with a digital display and a single blue electrode. The background is a light purple color.

VINMETRICA
SC-300

VINMETRICA
SC-100A

VINMETRICA
SC-50

- TE08 **100 ml. Graduated Cylinder Glass**\$12.99
- TE111 **250 ml. Graduated Cylinder Glass**.....\$14.99

Tall Test Jar for 11" Hydrometer

- TE56 **Plastic 1 1/2" x 14"**\$5.99
- TE12 **1 ml. Syringe,**\$.99
- TE28 **10 ml. Syringe,**.....\$1.25
- TE62 **10 ml. Pipet, Pack of 20**\$17.99
- TE36 **10 ml. Pipet, Each.**\$1.29
- TE231 **100 ml. Graduated Beaker Borosilicate glass.**\$2.99
- TE232 **400 ml. Graduated Beaker Borosilicate glass**\$4.99
- TE233 **1000 ml. Graduated Beaker Borosilicate glass**\$12.99
- TE86 **100 ml. Graduated Beaker Polypropylene**.....\$.99
- TE87 **400 ml. Graduated Beaker Polypropylene**.....\$1.99
- TE92 **1000 ml. Graduated Beaker Polypropylene**\$2.99
- TE83 **1000 ml. Polypropylene Beaker w/handle**\$10.99
- TE84 **2000 ml. Polypropylene Beaker w/handle**\$12.99
- TE85 **3000 ml. Polypropylene Beaker w/handle**\$20.99
- TE82 **125 ml. Borosilicate Erlenmeyer Flask. (#5 stopper)** . \$8.99
- TE10 **500 ml. Borosilicate Erlenmeyer Flask. (#6.5)**\$8.99
- TE09 **1000 ml. Borosilicate Erlenmeyer Flask. (#8)**\$14.99
- TE127 **2000 ml. Borosilicate Erlenmeyer Flask. (#10)**\$18.99

Thermometers

- TE50 **Wine Thermometer, 0-220°F., 1.75" Dial x 8" Stem, with pan clip, recalibratable, Stainless, USA**.....\$29.99
- TE90 **Must or Juice Thermometer, 2" Dial x 12" Stem, with pan clip, recalibratable, Stainless, USA**.....\$37.99
- TE37 **Floating Glass Thermometer, 8"(40-210°) F. and 0-100°C)**.....\$8.99
- TE81 **Fermometer Strip, Monitors temperature from 36 to 78°F., stick to tanks or carboys to read surface temperature**\$2.99

Wine Thieves

- TE49 **Wine Thief, Plastic, One piece**.....\$5.99
- TE48 **Wine Thief, Plastic, Assembled of 3 pcs**\$7.99
- TE51 **Wine Thief, Glass 12"**\$12.99
- TE77 **Glass Straight Wine Thief, 18"**\$49.99
- TE05 **Glass Angled D- Ring Wine Thief, 18"**\$59.99

Digital Scales

TE38 **Pico™ 0.1 to 500g, 0.005 ozs. to 1.1 lbs., perfect for winemaking additives** \$39.99

TE98 **Primo Digital Scale - 1g to 5Kg (also measures 1 oz. to 11 lbs.) NSF Listed** \$44.99



FINAL STEPS

Wine Handling

- QE34 **Orange Carboy Handle, 3, 5 and 6 gallon size** \$7.99
 - QE47 **Blue Carboy Handle, 6.5 gallon size** \$7.99
 - MS02 **Carboy Carrier, Nylon Web** \$14.99
 - P16 **10 Quart Plastic Pail, Pour out lip and Handle**..... \$12.99
 - P18 **14 Quart Plastic Pail, Pour out lip and Handle**..... \$20.99
 - P61 **13 Quart Stainless Steel Pail with Bail Handle** \$21.99
- All funnels are white, food-grade plastic.*
- QE37 **Barrel Funnel, 16"** \$19.99
 - QE24 **Carboy Funnel, 8" Anti-Splash** \$10.99
 - QE23 **Funnel, 10"** \$9.99
 - QE22 **Medium, 6" Bottle Funnel** \$4.99
 - QE21 **Small, 4" Bottle Funnel** \$2.99

Barrel Maintenance

- CS24 **Sodium Metabisulfite, 4 oz.** \$2.99
- CS20 **Potassium Metabisulfite, 1 lb.** \$5.99
- B39 **Sulfur Strips, 2 strips** \$.59
- B38 **Sulfur Strips Bundle of 70 strips** \$18.99
- B40 **Sulfur Disks aprox. 15 (5 g)** \$4.50
- B65 **Sulfur Disk Holder, Stainless Steel** \$15.99
- MS06 **Mildewcide, Barrel Coating, 16 oz.** \$9.99
- B13 **Hoop Nails, Pack of 20..** \$1.75
- B14 **Spiles for Barrels (Fills holes) Pack of 10** \$1.99

Bottles

(Note: actual shipping rates will apply)

- GL61 **Claret 750 ml. Green Push-Up 12/cs**\$11.99
- GL05 **Claret 750 ml. Flint Push-Up 12/cs**.....\$11.99
- GL66 **Burgundy 750ml. Antique Green 12/cs..**\$11.99
- GL16 **Claret 375ml. Flint (clear) 12/cs**\$12.99
- GL03 **Claret 375ml. Green 12/cs**.....\$18.99
- GL63 **Claret 375ml. Flint 12/cs Screw Top.**.....\$12.99

Corkers and Cappers

- BE01 **Double Lever Italian Corker**.....\$36.99
- BE19 **Mini-Floor Corker, Nylon Jaws**\$74.99
- BE21 **Heavy Duty Floor Corker, Chrome Jaws**\$179.99
- BE07 **Super "M" Standup Crown Capper**\$44.99
- BE05 **Emily Hand held Crown Capper**\$20.99

Bottle Fillers

- QE17 **Bottle Filler, for 5/16" or 3/8" hose** \$4.99
- QE02 **Bottle Filler, with spring for 5/16" or 3/8" hose.** ...\$4.99
- QE20 **Bottle Filler, for 7/16" or 1/2" hose** \$6.99
- WE19 **Plastic tray 3 Spout Bottle Filler,**\$159.99
- WE28 **Stainless Steel Model 3 Spout Bottle Filler, Includes bottle tray**.....\$475.00
- WE29 **Stainless Steel 5 Spout Bottle Filler, Includes bottle tray**.....\$625.00

Wine Corks and Bottle Closures

WC11	1 3/4" Chamfered Corks, 25 pack	\$10.99
WC06	1 3/4" Chamfered Corks, 100 pack	\$40.99
WC14	1 3/4" Twin Disk Corks, 100 pack	\$29.99
WC07	1 3/4" All Natural Corks, 100 pack	\$40.99
WC13B	1 3/4" Twin Disk Corks, 1000 pack	\$259.99
WC02B	1 3/4" All Natural Cork, 1000 pack	\$344.99
TC20	Plastic Champagne Stopper	\$.15
TC21	Champagne Wire	\$.10
TC18	28 mm. Black Top Bar Top Cork	\$.29
TC28	28 mm. Black Top Bar Top Cork, 100 pack	\$26.99
S01	28 mm. Metal Screw Cap	\$.20
S02	38 mm. Metal Screw Cap	\$.39
S03	28 mm. Plastic Polyseal Cap	\$.45
S04	38 mm. Plastic Polyseal Cap	\$.90
BE11	Crown Caps, 144 caps	\$4.99

Bottle Design

Bottle Sealing Wax Available in 7 colors \$12.99
 SL26 *Black*, SL27 *Burgundy*, SL28 *Gold*, SL29 *Silver*, SL31 *Blue*,
 SL30 *Red*, or SL32 *Green*.

Heat Shrink Plastic Sleeves, Apply to bottle neck with boiling water
 (212°F.) or heat gun. *Specify: SL18 Silver, SL33 Green, SL20 Gold,*
SL19 Burgundy, or SL49 Black.

Heat Shrink Sleeves quantity of 12 \$ 1.19

Gum-Backed Label Making Paper. L38--*White*,

8 1/2 x 11 solid sheet, 18 Sheets	\$7.49
L46 Removable White Matte Labels , Laser & Inkjet, 4" X 5", 4 per sheet, 12 Sheets	\$4.99
L47 Standard White Matte Labels , 4 " x 3.3", 6 per sheet 10 Sheets	\$2.99
MS15 Label Glue , 16 oz.	\$9.99
MS24 Iceproof Label Glue , 32 oz.	\$12.99
MS26 Manual Label Gluer , Glue Pot.	\$369.99

Finishing Supplies

MS42 Private Preserve™ , Nitrogen gas blend in a can	\$10.99
FN35 Wine Conditioner , Sucrose with Potassium Sorbate. Treats about 10 to 20 gal. to taste. 500 mL	\$7.99
FN18 Potassium Sorbate , 1/2 oz. treats 10 gallons. Stir into sweetened wine and bottle.	\$9.99
FN39 Potassium Bicarbonate , lowers acidity in wine/must. Treat wine with 3.4g per gal. to lower .1 TA, 4 oz.	\$4.99
MS33 Wine Agitator - The Whip, Nylon, Degasser, 15"	\$11.99

Miscellaneous

KEG58 Food Grade Lubricant , 4 oz.	\$5.99
MS03 Silicone Spray Lubricant , 10 oz.	\$11.50
MS09 Gondola Enamel , Food grade paint, 16 oz.	\$10.99
MS43 Wine Away™ 12 oz. Spray bottle	\$9.99
QE19 Stainless Transfer Dipper with handle, 2 qt.	\$7.99
MS70 Spray Bottle, 32 oz. Use with sanitizer	\$3.49

WINEMAKING BOOKS AND VIDEO

BK140 <i>Home Winemaking Step by Step</i> Iverson	\$17.95
BK20 <i>Micro Vinification</i> Dharmadhikari and Wilker	\$46.99
BK12 <i>Techniques in Home Winemaking</i> Pambianchi	\$ 21.99
BK40 <i>Modern Winemaking</i> Jackisch	\$49.99

BK54 <i>How and Why to Build a Wine Cellar</i> , Gold	\$20.00
MG13 <i>WineMaker Magazine</i> current issue	\$4.99
BK142 <i>Winemaker's Recipe Handbook</i> Massaccesi	\$ 4.99



ADDITIONAL BOOKS ON RELATED TOPICS

Grapes

BK80 <i>Great Grapes</i> , Proulx	\$3.99
-----------------------------------	--------

Cider

BK70 <i>Cider, Making, Using and Enjoying</i> , Proulx & Nichols	\$14.99
BK 165 <i>The New Cider Handbook</i> , Jolicoeur	\$39.99
BK79 <i>Making the Best Apple Cider</i>	\$3.99

Mead

BK77 <i>Making Mead</i> , Morse	\$18.99
BK05 <i>The Compleat Meadmaker</i> , Schramm	\$19.99

Other Hobbies

CH73 <i>The Cheesemaker's Manual</i> , Morris	\$39.99
BK32 <i>The Joy of Cheesemaking</i> , Druart and Farnham	\$14.99
CH74 <i>Making Artisan Cheese</i> , Smith	\$21.99
CH98 <i>Artisan Cheesemaking at Home</i> , Karlin	\$29.99
BK100 <i>American Farmstead Cheese</i> , Kindstedt	\$40.00
BK01 <i>Brewing Quality Beers</i> , Burch	\$7.95
BK84 <i>Making Vinegar at Home</i> , Romanowski	\$6.99
BK03 <i>Homemade Vinegar</i> , Watkins	\$7.99
BK36 <i>The Compleat Distiller</i> , Nixon & McCaw	\$25.00
BK76 <i>Home Sausage Making</i> , Reavis	\$16.99

The Beverage People
1845 Piner Rd. Suite 2
Santa Rosa, CA 95403
(707) 544-2520

Postmaster: Please deliver July 16-23

PRSRT STD
 U.S. Postage
 PAID
 DMS INC

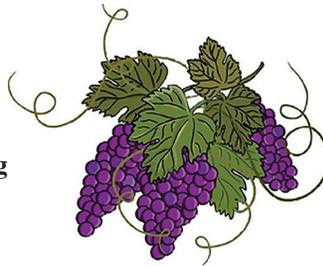


Our Hours:
Monday through Friday 10 - 5:30 Saturday 10-5

Two Winemaking Classes

Beginning Winemaking

If you are new to winemaking, or just want a refresher, plan to attend our **beginning winemaking class**. You will be given a step by step run through of the winemaking process with demonstrations of equipment and testing supplies. This will be an opportunity for you to get your questions answered and gain confidence in the ease of becoming a home winemaker. Held in the store classroom, class is on Saturday, **August 29th 2:00 - 4:30 pm**. **Class fee is \$30.00**, call to reserve your place in class.



Got Grapes?

Our grape listing book is a resource for both the winemaker and the grower. Local grape growers can list their grapes for sale. Winemakers can source their fruit by coming in to the shop and taking a look at the listings. If you would like to place a listing, please send us a list of grapes available, pricing, and any other information about your grapes you would like to include. Don't forget to provide your name, address and phone.

Essential Wine Analysis

Learn wine laboratory analysis choices and techniques led by our own Bob Peak with Toua Doherty from **Signature Wine Labs**. Toua and Bob will describe the types of testing offered by the lab and requirements for samples. **First 20 reservations receive a complimentary discount for lab services at Signature Wine Labs**. Held in the store classroom, class is on Wednesday, **August 19th from 6:00 - 7:30 p.m.** No fee, RSVP's requested.

Our local Harvest Fair Wine Competition

<http://www.harvestfair.org> for entry forms and bottles. Estimated entry dates are August 17-28. Sonoma County Fairgrounds 1350 Bennett Valley Rd. Santa Rosa. Entry is \$8.00, 2 bottles per entry.

Additional Wine Competition Deadlines

Based on information from 2015. Check websites for 2016.

Drop off entries to our store for all the following events.

Geyserville	http://amateur-wines.com	March 5
Marin County Fair	http://www.marinfair.org	May 22
Sonoma/Marin Fair	http://sonoma-marinfair.org	April 17
Orange County Fair	http://www.ocws.org	May 17
California State Fair	http://www.castatefair.org	April 18

**Sonoma County Cider Week is coming----
 November 2015. More details by August.**

Rental Equipment

CRUSHERS

Apple Mill, Grinder and Press, motorized	\$50.00
Grape Crusher, Manual	\$20.00
Grape Crusher/Destemmer, Manual	\$50.00

PRESSES

#30 7 gallon Basket	\$30.00
#35 12 gallon Basket	\$40.00
#45 25 gallon Basket	\$50.00

FILTERS/PUMPS

Transfer Pump Brass with hose	\$10.00
Transfer Pump Stainless with hose	\$20.00
Buon Vino Plate Filter includes one set of pads	\$35.00

BOTTLING

3-Spout Bottle Filler	\$15.00
Wine Bottle Corker	\$10.00
Glue Labeller, Manual	\$10.00

Rentals are 24 hrs. from noon to noon, and reservations are accepted up to 7 days in advance. We require a \$50 cleaning deposit on most equipment. Cancellations must be made by noon the day prior to your reservation. **Please do not leave phone messages.** Call 544-2520 during business hours to manage your reservation.