



THE WINE ENHANCEMENT JOURNEY

By Bob Peak

Winemaking often seems like a journey. Sometimes it is a walk down suburban sidewalks, sometimes it is a safari in a wild jungle, and sometimes it is the challenging passage down the gritty streets of a big city. No matter how your winemaking journey goes, think of The Beverage People as your outfitter: we make sure you have everything you need for an enjoyable and rewarding trip. One way to think of that trip is to divide it into stages. Grape handling and primary fermentation get you started, aging in bulk in the cellar fills out the middle part (known as *élevage*, if your journey is in French), and getting the wine adjusted for bottling finishes things up. Two years ago, we introduced a new group of professional grade products, focusing on the beginning and end of the journey. Those enzymes, tannins, and specialized yeast nutrients have been very successful and we are delighted to continue offering them (See the 2011 Summer Wine Newsletter and Catalog at www.the-beveragepeople.com if you missed the previous article.)

After using these products in our own wines, we realized that we were missing a few opportunities. For some wines, particularly whites for malolactic fermentation, we could improve the launch. In that middle part—the *élevage* or cellaring—we could offer some new enhancements for many wines. Finally, we recog-

nized that our wines were sometimes going to the finish without the final touch that could raise a good wine to a great wine. With those opportunities in mind, we are proud to introduce another new group of wine enhancement products for 2013. In the descriptions below, you will find products to help malolactic fermentation, contribute progress in cellaring, and achieve a better finish. Check these out before you launch your next wine safari!

Early in the Journey: White Wine Malolactic Nutrient (also suitable for rosés)

Opti ML Blanc. Malolactic fermentation in Chardonnay is often the most difficult to finish. Lallemend has formulated this new yeast-based product for the specific peptide needs of white and rosé wines. Improved bioavailability of needed components stimulates the growth of selected malolactic bacteria, shortening the duration of ML fermentation and assisting completion.

Use Rate: 20 g/hL or a bit less than 1 gram per gallon. **How to Use:** Mix the desired amount of *Opti ML Blanc* into a small amount of water or wine and add to the wine 24 hours before adding your malolactic bacteria culture.

See **ENHANCEMENT JOURNEY CONT.** pg. 3.

Hard Cider – Make Your Own

BY KIMI WILKINSON AND JOSEPH HANSON-HIRT

*Sonoma County is not just home to great wine grapes, but to great apples as well. Whether you have recently inherited a few apple trees, or have had a small orchard for some time, one eventually may consider making hard cider. Also, with the gaining popularity of commercial cider, we have seen a resurgence of interest in home production. There are many small local producers of ciders that are bringing the craft back to farmhouse ciders such as **Applegarden Farm** in Tomales, CA. You too can create your own artisanal cider right at home - with our help of course. Also see <https://cydermarket.com/california.html> for other producers of juice and hard cider beverages.*

You can make hard cider from freshly pressed juice from apples or pears; or purchase fresh apple juice at the market. When searching for juice from the store try to find unfiltered, and preservative-free juice (pasteurized is ok). If you are pressing apples, it is important to use sound, ripe fruit. To obtain the juice the fruit will have to be ground and then pressed. Our apple mill, which is a combination electric grinder and manual press can be rented for 45 dollars a day. (See the back of the catalog for full rental policy.) This apple mill takes about 30 minutes to process 100 pounds of apples. 100 pounds will yield 3.5 to 5.5 gallons of juice. It's helpful to enlist a few friends for this stage.



Scan the QR code to view our website article: **Notes on the Use of Different Yeasts for Fermenting Apple Cider.** Our clear favorite yeast was M-2.

See **HARD CIDER CONT.** pg. 2.

NEW WINEMAKER'S SCALE

We've added a second digital scale from Escali - the new PICO HP. This smaller scale has a highly precise resolution that winemakers will love. Weighs in grams from .1g - 500g or ounces from 0.005 ozs. to 1.1 lbs.

TE38 Pico HP \$39.99



NEW WINE YEAST

New dry wine yeast - QA23, for Sauvignon Blanc is very good at developing the passion fruit character of the fruit. Also a good yeast for *Chardonnay*, *Gewürztraminer* and *Pinot Blanc*. **WY65 QA23** 10g \$1.99
or **WY67 QA23**, 4 oz. \$21.99

Collecting and testing your juice

If you are crushing your own apples, you have the option of using the enzyme pectinase for a higher juice yield. Keep in mind that using pectinase is not necessary, but can increase yield. If you choose to use it, grind into buckets and stir in ½ ounce for every 100-150 pounds of fruit. Cover and wait 2-4 hours before pressing. After collecting your juice, but prior to fermentation, the juice can be sulfited in order to inhibit wild yeasts and bacteria and to minimize browning. The recommended dosage of sulfites is 65 ppm which is 1 *Campden Tablet* per gallon of juice

The juice can be left as is to make a traditional cider or the sugar levels can be adjusted using alternative sugar sources to increase final alcohol percentage. To raise brix by one degree in five gallons, add one cup of *Corn Sugar* (8 oz. by weight). Raising the brix by one degree will translate to a potential increase in alcohol of ½%. Alternatively, adjuncts like brown sugar, molasses, honey, fruit purees and concentrates can be used to increase brix. Cane sugar, or sucrose, is not recommended because it creates an unpleasant burning sensation if used in too high of concentrations. Always retest with your hydrometer after sugar additions.

Another parameter of flavor you can control is the amount of acid that is present in your juice. To find out how much acid (Total Acidity or TA) is in your juice use our *Country Wines Testing Kit* (TE26 \$9.99). This kit uses a simple titration method to find the total level of acid in your juice. The desirable level is .6-.65%. If you are below this number, you should add *Tartaric or Malic Acid*. One ounce of tartaric acid added to five gallons will raise acidity by .15%. If acidity is higher than .65%, retaste after fermentation and if it's too tart, then add 3.4g of potassium bicarbonate per gallon of juice to lower TA by .1%. Settle for several weeks or a month and rack.

Ferment and clarify the cider

For a healthy fermentation add a yeast nutrient. Add 2g *Fermaid K* per gallon to the juice at the first signs of fermentation (first bubbles coming through the airlock). For the yeast, you have several choices. *Epernay II* is a good general fruit wine yeast that enhances fruit, but the winner in our experiment to find the best yeast for cider was *M-2*. *Prise de Mousse* champagne yeast is also a good choice, but will not contribute as many esters (aromatic compounds) and will ferment at lower temperatures. We have many other wine yeasts listed on page 18 that you can try as well.

Fill your containers no more than ¾ full of juice, and after about 1-2 weeks, fermentation should be done. You will know fermentation is done when bubbling slows, foam dissipates and clearing begins. Now transfer the clear

cider off the sediment with a siphon hose and fill a container that will top up fully to prevent oxidation. If you do not have enough cider, you can add boiled and cooled non-chlorinated water. Do a second sulfite addition to 35ppm (1/2 *Campden Tablet* per gallon) and let sit for a month. This addition will reduce the chance of oxidation or spoilage. After a month rack and sulfite to 35ppm again and store for 2-3 months. Alternatively, you could bottle the cider even with some haze and carbonate per our next instructions, omitting any further storage or sulfite additions.

Bottling choices

To bottle a **dry, uncarbonated (still) cider** follow these instructions. When you are ready to bottle, if there is any sediment remaining on the bottom of your container go ahead and rack the clear cider into another vessel. Add 35ppm of sulfite, stir and fill the bottles and cap them. The cider benefits from aging for two months, but if you really can't wait two months and would rather drink it as soon as it is bottled, you can omit the sulfite.

To make a **dry, carbonated (sparkling) cider**, rack into an open container. Simmer 1 cup of water and ¾ cup of *Corn Sugar* together for five minutes. Stir the syrup gently into the bucket. Now add 1 gram per gallon of *Prise De Mousse* yeast and gently stir in. After thoroughly mixing in the priming sugar and the yeast, fill bottles capable of handling pressure, such as beer or champagne bottles. Cap and store at room

temperature in the cases while it carbonates for 10 days to 2 weeks.

If you wish to make a **still cider that is sweetened**, make a simple syrup of 2 parts cane sugar to 1 part water boiled for 5 minutes. Make about a cup worth of simple syrup and carefully add 1 tsp at a time until you like the level of sweetness. Don't add sugar too hastily without tasting. You can easily add sugar, but you cannot remove it. Once the level of sweetness is where you like it, you must add ½ tsp. of *Sorbistat* per gallon, which is a stabilizer. If this critical step is not taken, your cider will become dry and carbonated instead of uncarbonated and sweet. This version can be bottled in wine bottles if you like.

Lastly, you can make a **sweet and sparkling cider**. This isn't so difficult as it expensive because you will need to have a kegging system. First sweeten to taste following the previous instructions and add the *Sorbistat*. Then transfer to a soda keg and force carbonate the cider. See the beer catalog for kegging procedures.

Alternatively, if you don't have a kegging system but you want a **sweet and carbonated cider**, you can try adding a non-fermentable sweetener such as stevia to taste. First add the stevia, then add the priming sugar and yeast as directed for carbonation above, but do not add *Sorbistat*. Bottle and cap as above.

You can estimate the alcohol percentage of your cider if you test a sample of juice with a hydrometer. Keep a record of this original brix measurement and then subtract the remaining brix when fermentation is complete. ex. (Original brix) 15 minus (final brix) = X. Multiply X by 55% to estimate ABV%.

Through the Middle Passage: Cellaring Tannins

We have been offering sacrificial tannins to help get a great start: FT Rouge Soft and FT Blanc Soft. We have also been offering Tannin Riche for the finishing stages of wine in need of a bit more mouthfeel, oak character, or richness. We had the tannins covered for the beginning and the end. We are now outfitting the middle of the transit with an exciting new pair of tannin products.

Tannin Complex. For Red Wines.

Derived from both traditional oak and the exotic South American tree Quebracho, this blend is more thoroughly polymerized (and therefore less reactive) than more aggressive tannin products. During wine aging, it helps protect against oxidation while enhancing tannin structure and aiding color stability. After cellaring is mostly complete, it can further be applied (like **Tannin Riche**) as a finishing tannin three to six weeks before bottling.

Use Rate: 1 to 6 grams for every 5 gallons of wine for cellaring; use a reduced rate closer to bottling (about ½ to 2 grams for every 5 gallons). **How to Use:** For best integration with the wine, apply in the cellar. At the first or second racking after primary fermentation, mix the powder into the wine as you transfer it. For finishing, add during another racking a few weeks prior to bottling. Thorough mixing will improve results.

Tannin Refresh. For White, Rosé, and Red Wines.

This unique tannin product is derived from untoasted French oak. Because of its origin and method of production, it imparts a light oak nuance without smoky or toasty character. It can be used when wine is aged in older neutral barrels or in tanks or carboys. It is effective in protecting against oxidation and it also helps preserve color when present. In any wine, it can increase the complexity of the finish.

Use Rate: ½ to 4 grams for every 5 gallons of wine. **How to Use:** If the wine is to undergo malolactic fermentation, wait until that is over before adding **Tannin Refresh**. If malolactic fermentation is not applied, add the tannin at the end of alcoholic fermentation. Mix measured dose gradually with the wine during the first racking. Continue with a normal cellaring and racking program for the rest of the aging period.

Arriving in Style: Solving Odor Problems and Smoothing Out the Finish

You may get close to bottling time and find that a wine has a swampy stink or a burn of alcohol heat. Or maybe the wine is adequate, but would benefit from a touch of sweetness. Maybe you even have experience with a white or rosé that, in previous vintages, has thrown some sediment in the bottle. Bring those wines to a stronger, safer conclusion with these new products.

For Sulfur Stink or an Alcohol Burn:

Reduless®.

For many years, we have offered copper sulfate solution to assist in removing reduced-sulfur aromas from *Hydrogen Sulfide* (H₂S) and *Dimethyl Sulfide* in funky or swampy-smelling wines. At times, there has been concern about residual copper levels in the wine if the dose is not carefully measured or if more than one treatment is required. Now **Reduless**, combining yeast hulls with copper, provides a self-removing treatment for these sulfur odors. The product is OMRI certified organic and provides a simple treatment process for funky, reduced wines. **Use Rate:** 10-15 g/hL or 0.4 to 0.6 g per gallon. **How to Use:** Mix **Reduless** in 10 times its weight in water (that is, use 10 mL of water for every gram of **Reduless** you will be adding to your wine). Mix gently and add immediately to the wine. Stir the wine gently, allow to settle, and rack off in 72 hours. The problem (and the **Reduless** residue) will be left behind.

Noblesse®.

This is another yeast-derived product that can be used alone or combined with **Reduless**. Besides acting to clear up the reduced sulfur aromas, it can also reduce aggressive character or the burning sensations caused by high alcohol levels or fruit defects. Immediate improvement may occur and action may continue over a period of three to five months.

Use Rate: 30 g/hL or about 1 gram per gallon. **How to Use:** Mix in 10 times its weight of water (use 10 mL of water for every gram of **Noblesse** you will add to the wine). Add during mixing or racking. The product is partially soluble, so stir the wine to assure good contact.

To Stabilize Wine and Provide a Touch of Sweetness:

Flashgum R Liquide. For White and Rosé wines.

Gum Arabic (*the basis for flashgum*) is a natural product harvested from Acacia trees. With a long history of assisting with wine quality and stability, it is now available to home winemakers in this easy-to-use 25% solution. It helps prevent colloid precipitation and cloudiness in light-colored wines, reduces astringency, provides a fuller mouthfeel, and imparts an impression of sweetness (without the instability of sugar additions).

Use Rate: 40 to 132 mL/hL or 1.5 to 5 mL per gallon. (TTB commercial legal maximum is 87 mL/hL or 3.3 mL per gallon). **How to Use:** This should be the last product added to the wine before bottling. Since it may interfere with filtration, wine to be filtered before bottling should have trials done before treating the whole batch. If not filtering, add **Flashgum R** prior to bottling.

Now that you have our new products in mind for outfitting your winemaking adventure, check out the sequence for all the tannin products on page 20. Use them early, use them for élevage, use them late. Whatever you choose, we are confident your wine will be better for it!

See ENHANCED PRODUCTS DOSAGE CHART pgs. 4-5.

Enhanced Winemaking Products Chart



	Name	Description	Purpose	Time of Application	Use Rate	Package Sizes
NUTRIENTS	Go-Ferm	Nutrient derived from inactivated yeasts	Yeast rehydration support	Just prior to yeast inoculation	1.25 g per gal	3 oz.
	Fermaid K	Complete nutrient mix with minerals and vitamins	Yeast nutrition during fermentation	1/3 and 2/3 of fermentation	1 g per gallon, twice	3 oz., 1 lb.
	DAP (Diammonium phosphate)	Simple nitrogen nutrient	Nitrogen supplement beyond Fermaid K	Near beginning of fermentation	1 or 2 g per gallon, based on nutrient needs	2 oz., 8 oz., 1 lb., 5 lb.
	Opti Red	Yeast-derived nutrient, high in polysaccharides	Red wine color retention, smooth character	At first punchdown	100 g per 1,000 lbs. of must	50 g
	Optimum White	Yeast-derived nutrient, rich in glutathione and polysaccharides	Inhibits white wine browning, preserves aromas	While racking juice	1 g per gallon of juice	50 g
	Acti ML	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
	Opti ML Blanc	Formulated from inactivated yeasts to meet peptide needs	Rehydration nutrient for ML bacteria for white wine	24 hours before adding ML bacteria	20 g per HL (26 gal)	50 g
ENZYMES	Pectic Enzyme	Pectinase enzyme preparation	Improve juice yield	At crusher	1 oz. per 200 lbs. of fruit	1 oz.
	Lallzyme EX	Pectinase with hemicellulases	Red wine juice yield and pigment extraction	At crusher	10 g per 1,000 lbs. of grapes	10 g
	Lallzyme Cuvee Blanc	Pectinase with glycosidases	White wine juice yield and aroma enhancement	At crusher	10 g per 1,000 lbs. of grapes	10 g

Look in the Time of Application column
for the following codes to determine times for addition.

FT: Fermentation Tannin

CT: Cellaring Tannin

LT: Late Tannin or Finishing Tannin



	Name	Description	Purpose	Time of Application	Use Rate	Package Sizes
T A N N I N S	FT Rouge Soft	Quebracho wood tannin product	Soft round body for red wines	At first punchdown <i>FT</i>	50 to 250 g per 1,000 lbs. of red grape must	100 g
	FT Blanc Soft	Gall nut tannin product	Protects white wine against oxidation and enhances mouthfeel	While racking juice off gross fruit lees <i>FT</i>	1 to 3 g for every 5 gal.	50 g
	Tannin Complex	Oak and quebracho wood tannin product	Protects against oxidation and improves color stability in aging	First or second racking after primary fermentation <i>CT</i>	1 to 6 g per 5 gallons (less near bottling)	50 g
	Tannin Refresh	Untoasted French oak tannin product	Imparts a light oak nuance without smoky or toasty notes	After malolactic fermentation <i>CT</i>	½ to 4 g per 5 gal.	10 g, 100 g
	Tannin Riche	100% toasted French oak tannin product	Finishing tannin to impart mid-palate character, oakiness	Up to 3 weeks before bottling <i>LT</i>	½ to 1 g (whites) or ½ to 3 g (reds) per 5 gal.	10 g, 50 g
O T H E R	Flashgum R Liquide	25% solution of Gum Arabic	Prevents colloid precipitation, imparts sweetness without sugar	Last product addition before bottling	1.5 to 5 mL per gal.	4 oz., 1 L
	Reduless®	Yeast hulls rich in copper	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
	Noblesse®	Yeast derived treatment product	With reduless for sulfides, or alone for alcohol burn	During mixing or racking of wine	1 g per gal.	2 oz.

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 (Saccharometer) and Test Jar
3. Acid Testing Kit
4. Sulfite Test Kit (in-store testing is available)
5. Crusher or Stemmer/Crusher
6. Press
7. Corker
8. Thermometer
9. Pressing Bag (optional)
10. Funnel
11. Bottle Filler
12. Small Bucket
13. Punch Down Tool

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.

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.



Crushing and stemming your grapes.

Time Line for Red Wine Fermentation.....

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.
...5 to 14 days	...1 to 2 weeks	...after 1 month	...after 4 to 6 months	...after 6 months	...before next harvest

- 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 visible inspect 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 and very clean grapes may get by with little or no sulfite.
- 5 **Stir in pectic enzyme (pentinase) at the rate of one ounce to every 200 lbs. of grapes, or use Lal-lyme® 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.** Fine with a sparkolloid or bentonite slurry if clarity is not satisfactory. 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.** This is a good time to filter if the wine has not clarified with fining adequately on its own. 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.....

Active Yeast Fermentation of Juice in Primary Fermentors 3/4 full ...1 to 2 weeks	Rack finished wine to clean Fermentors, topped full. Settle out lees. Sulfite ...1 month	Rack off lees and fine or filter. Add sulfite and cold stabilize. Add Oak ...2 to 4 months	Rack to bottling container, add sulfite, fill and cork bottles. ...In the spring
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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:

- 1 Smash sound, ripe Berries (or pit Stone Fruit), tie loosely in a straining bag and place in open top fermentor.
- 2 Heat 6 quarts **Water with Corn Sugar** and bring to a boil. Remove from heat, cool and pour into the fermentor over the fruit.
- 3 Add the remaining **Water, Yeast Nutrient, Pectinase and Tartaric Acid**. Add 5 crushed **Campden Tablets**.
- 4 Cover with loose plastic sheet or lid and allow to cool and dissipate the sulfite, waiting for 12 hours or overnight.
- 5 Stir in the **Yeast**. Once fermentation begins, **stir or push** the pulp down into the liquid twice a day.
- 6 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.*
- 7 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.

- 8 Rack (siphon) away from the sediment, top full with a neutral wine and leave under airlock for 3 weeks up to 4 months.
- 9 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. 6.6 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

- 1 Crush the apples. Use only sound, fully ripe fruit. (We rent an electric grinder and press.)
- 2 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.
- 3 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.
- 4 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.
- 5 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.
- 6 During the racking at the end of fermentation, add 3 crushed **Campden Tablets**. (Optional: Fine with Sparkolloid see pg. 15 for mixing Sparkolloid)
- 7 After a month, rack and sulfite again then rack it back

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

- 8 Carefully rack away from the lees. If your cider is going into extended bottle storage, add 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.

- 9 Siphon into bottles, cork or cap them, and set them aside for whatever bottle aging is needed. If you wish to sweeten, do so at bottling time with simple syrup (two parts sugar to one part water, boiled), if you do this 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 page 24 in our 2013 beer catalog for instructions on kegging.

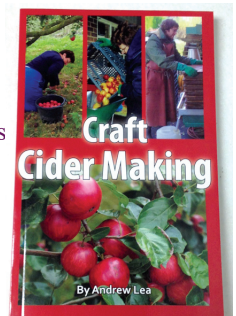
Cider Ingredients

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%

Great information about growing apples and making good cider!

BK47..\$15.99



JUICE TESTING FOR SUGAR, ACID, PH & NUTRIENTS

Your Testing Program

Crush your grapes and deliver a settled sample of juice to your nearest laboratory (a 250 ml bottle is the minimum volume requirement for most chemical analysis.) We have three labs near the store, V inquiry in Windsor (707) 838- 8612, Scott Labs in Petaluma (707) 765-7666, and ETS in Healdsburg (707) 433-7051. Contact them to find out information on cost as well as possible shipping options.

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.

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. No home tests are available for these parameters.

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 (see table on page 11). LOW, MEDIUM AND HIGH-VERY HIGH. 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

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.

Shipping Juice

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 do 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. In any case, talk over sampling and shipping with your chosen laboratory before you start.

Which Nutrient...When?

Go-Ferm is an important nutrient used to support yeast when building a culture prior to adding to a fermentation. It is not a fermentation nutrient. 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 the 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, also see article on **yeast rehydration** page 1, 2.

To find fermentation specifics, read down	Assmannshausen	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	NEW! QA23	Uveferm 43
Varietal	Pinot Noir	Zinfandel Syrah	Sangiovese	Bordeaux	Zinfandel	Bordeaux	Chard Red Rhones	Chard, Cabernet	Syrah, Zinfandel, Lush reds	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	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	YES
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				EXCEL-LENT
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	Can be used to ferment any wine	Good Color	Easiest to Stop Fermenting	Good production of aromas	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 30 years of teaching home winemakers the importance of adding sulfite to wine and monitoring the results with various testing methods, we are convinced that people are still not testing or scheduling SO_2 additions often enough.

Over the past several years we have had a chance to prove this point for customers by employing the testing device called Reflectoquant®. This tester uses a small sample of wine and a test strip that is then treated with two reagents and stored for several minutes before reading by the meter. The actual reading is done by light reflection.

While we have seen improvement during these years, many wine samples are still coming back 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 prune 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. Winery laboratories are often equipped with elaborate blown-glass apparatus for this test that costs hundreds of dollars for a set. Now we have good news for home winemakers. 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 p. 21). The simplified method uses the same technology and chemicals as a full laboratory setup, but at a fraction of the cost. Note that the kit as packed contains just once ounce (30 mL) of 25% phosphoric acid reagent. That is a sufficient quantity for just three tests, but it has the advantage of shipping without a hazardous material shipping surcharge. If you can come in to our store, we can provide you with a 250 mL bottle of 25% phosphoric acid to supplement your kit, but we cannot ship it. If you are outside the Northern California wine country area, look into sourcing this chemical reagent locally.

In the aeration-oxidation method, a wine sample is placed in a small flask and the phosphoric acid is added to force the sulfite ion over into the form of molecular SO_2 . A small air pump pushes a stream of air bubbles through the acidified sample. Since sulfur dioxide is a gas, it dissolves in the air stream and transfers through a tube to a trapping solution. In the trapping solution, hydrogen peroxide oxidizes the sulfur dioxide (which is sulfurous acid) into sulfuric acid. That combination—the transfer in an air stream and oxidation to sulfuric acid—gives the test method its name. 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.

Reflectoquant - Free SO_2 Testing

For those of you able to bring a sample to us or to a laboratory, you can use the reflectoquant test. You will need **A FULL, small bottle, with a fresh sample of wine.**

(187 mL is more than plenty). Just drop off your sample to the lab for their technicians to test or bring it here and run the test for yourself. We charge \$10.99 for one test, and an additional \$5.99 for each additional test done at the same session. It only takes about 10 minutes to set up, pay and run your test, with additional tests taking about 5 minutes.

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. Add sulfite for white wines at every racking.

Test your SO_2 level at least after fermentation and ML, after rackings and several times while in barrels or tanks and again before bottling. Follow the pH/molecular SO_2 table below for recommendations for additions. Wines that will be consumed within three months of bottling will not normally need a sulfite addition at bottling time as long as they are stored in a cool place until served.

Above pH 3.5, you will notice that the amounts of free sulfur dioxide required become quite high. Adding enough to create an appropriate level may raise the total SO_2 high enough to have a negative effect on the wine’s flavor. It is best not to approach the problem that way. Instead, add tartaric acid early in the fermentation cycle to lower the pH. **(But avoid an excessively high TA)**

Sources of SO_2

SO_2 is available as Campden tablets, effervescent Inodose 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. You have to crush the tablet to a powder to add it.

The 2 gram Inodose tablets add 528 ppm per gallon or 9 ppm per 60 gallon barrel. They effervesce to disperse evenly in

the container. They cannot be divided accurately to dose 5 gallon carboys. Metabisulfite should be made into a liquid preparation before use, 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.



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.)

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

Molecular SO₂ needed for Stability

pH	.8 ppm. White Wine	.5 ppm Red Wine
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

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 ABOVE. 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.

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						
		<i>(Add ppm SO₂ to desired amount.)</i>						
Must/Wine	10	20	25	30	40	50	75	
(gallons)	<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				
		<i>(Add ppm of SO₂ to desired amount.)</i>				
Must/Wine	10	21	33	43	65	
(gallons)	<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, ACID, and pH

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, acid, and pH 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. There are also precision hydrometers available if you have a special interest in a particular sugar concentration range.

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.

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 accu-



rate 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 two 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 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 HI208 bench-top meter from Hanna Instruments for endpoint detection. That meter, which includes a stability indicator to sharpen endpoint detection, 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.

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.



Laboratories use a pH meter integrated with their autotitrator for this test. If you use the **Hanna HI208 pH meter** for measuring TA, you can record the initial pH value of your wine in the same manner. Other pH measurement options at *The Beverage People* include two models of hand-held pH meters. The **pHep meter** from Hanna has a 0-14 pH range, digital readout, and 0.1 pH resolution. The **Waterproof pH Testr 20** from Oakton adds the feature of a watertight housing and offers 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 bench-top meter and electrode. As a result, a bench-top pH meter is much more suitable for TA titrations than a portable meter. Either works well if you just want to measure pH.

FINING PROCEDURES

Sparkolloid™ and Bentonite are the two most common all-purpose fining (clarifying) agents used by home wine-makers.

Either may be used with success, and in the somewhat unusual circumstance that the wine doesn't clear with the first agent, the other will generally work.

Here's how they are used...

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 1-2 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, and thoroughly stir the hot mixture into the wine. Let stand

three weeks and carefully rack away from the lees.

Bentonite requires that a slurry be made up a day in advance. Measure out 750 ml. of water, and heat it to boiling. Slowly stir in 1 oz. of Bentonite. Mix it thoroughly for about one minute in a blender, funnel it into a 750 ml. wine bottle, stopper it up and let it stand for a day.

Shake up the slurry, and then thoroughly stir 1/4 cup into each five gallons of wine. Rack as usual after 1 to 2 weeks.

To remove oxidation or reduce bitterness, fine with Polyclar. To soften tannins, use either egg whites or gelatin, followed by Sparkolloid.

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

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 Sparkolloid, 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 Sparkolloid.	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 Bentonite Fining	Rack after 4 days A month prior to bottling.
Whole Milk	100-250 ml/5 gallons	Reduce harshness absorb aldehydes.	Follow with Bentonite 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** per 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.)

For a more thorough approach to removing VRS compounds and

their aromas, follow the instructions with **Reduless** (and, optionally, **Noblesse**) on pg. 3. This is the mildest and surest way to chemically remove these annoying sulfur compounds.

If you are a traditionalist and you have a sulfur problem, you may want to use the tried-and-true copper addition. 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.**



2013 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	\$340.00
WE03	#30	12"	17"	7	\$425.00
WE04	#35	14"	19"	12	\$475.00
WE05	#40	16"	21"	18	\$600.00
WE06	#45	18"	24"	25	\$675.00
WE07	#50	20"	26"	34	\$795.00
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. *Size shown to right is similar to a #50 basket press.*

WE50 Piston, manual Hydraulic Press on wheels #50 20" x 26" \$2395.00

Water Bladder Press inflates with regular garden hose pressure, pressing the grapes against the stainless steel cage, while a lid retains the grapes. *(Not pictured.)*

WE55	#42	17"	23"	20	\$1350.00
WE46	#54 with wheels	21"	28"	42	\$2600.00



WE50 #50 Piston Press

Crushers and Stemmer/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.....	\$250.00
WE13	Double roller grape crusher, stainless	\$300.00
WE35	Boxed double roller grape crusher, stainless (OK for UPS).....	\$325.00

Stemmer/Crushers: 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 stemmer/crusher.....	\$475.00
WE15	Manual, stainless stemmer/crusher	\$525.00
WE16	Electric 110V, paint grade stemmer/crusher	\$750.00
WE17	Electric 110V, stainless steel stemmer/crusher.....	\$850.00
WE22	Electric 110V, paint grade stemmer/crusher with screw feed and extended hopper.....	\$825.00
WE18	Electric 110V, stainless stemmer/crusher with screw feed (SF) and extended hopper (EXH).....	\$950.00
WE25	Electric 110V, ALL stainless stemmer/crusher, w/SF & EXH (Shown middle right).....	\$1195.00
WE20	Support Stand w/ stainless chute	\$200.00



WE25 Stemmer/Crusher



WE28 3 Spout Bottle Filler

Large Storage Tanks

Variable Capacity Stainless Wine Tanks - flat bottom - come with a lid, gaslet, 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.).....	\$600.00
WE44	400 Liter Stainless tank (106 g.).....	\$700.00
WE45	500 Liter Stainless tank (132 g.).....	\$850.00

Fillers

WE19	Plastic Model 3 Spout Bottle Filler.	\$149.99
WE28	All Stainless 3 Spout Filler Filler comes w/ drip tray (shown above).....	\$400.00
WE29	All Stainless 5 Spout Filler Filler comes w/ drip tray	\$500.00

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, 100 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 Wine**, kit includes 5 gallon PET Plastic Bottle in place of the bucket and lid, please identify **RED** or **WHITE WINE** on order.)

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)

C030 Cabernet Sauvignon (R)	.....\$114.99
C031 Chardonnay (W)	.....\$94.99
C033 Gewurztraminer (W)	.....\$94.99
C039 Pinot Grigio (W)	.....\$94.99
C040 Pinot Nero (R)	.....\$99.99
C032 Sangiovese (R)	.....\$109.99
C036 Sauvignon Blanc (W)	.....\$94.99
C034 Shiraz (R)	.....\$109.99
C035 Zinfandel (R)	.....\$104.99



Canned Grape Concentrate

Choose your Varietal, 46 oz 68° Brix.

(C006) Burgundy \$19.99	(C003) Cabernet Sauvignon, \$19.99
(C008) Chardonnay, \$18.99	
(C002) Chenin Blanc, \$14.99	(C005) Muscat \$21.99,
(C001) Zinfandel \$19.99	(C0007) 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

FRUIT HANDLING

MS35 Grape Picking Shears,	.....\$10.99
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"	.....\$19.99
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)

	10 g	4 oz
YEAST	All \$1.99	\$18.99
Assmanshausen	WY38	WY37
Epernay 2	WY22	WY12
French Red	WY30	WY20
Prise de Mousse	WY23	WY13
Rhone #L2226	WY35	WY34
		\$21.99
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, Wyeast #4007 125 ml. pack inoculates 5 gal-	
lons 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

Malolactic Prevention

WY60 Lysozyme liquid "Lyso-easy" 250 ml.\$29.95
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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
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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 SO ₂ Tablets, 3 pack. One tablet delivers 9ppm SO ₂ in 60 gallons of must or wine.....	\$2.99

Fermentors

Note: All Plastic Carboys take a #10 Stopper, All current Glass Carboys takes a #6.5 Stopper. Some older carboys take a #7 Stopper. Also see Breather Silicone Bungs which fit all 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	\$28.99
GL02 3 Gallon Glass Carboy	\$33.99

Note: Call or check the web
for larger sizes of all dry ingredients, cleaners and sanitizers.

GL01 5 Gallon Glass Carboy	\$40.99
GL40 6 Gallon Glass Carboy	\$48.99
GL04 6.5 Gallon Glass Carboy	\$49.99
P01 6.6 Gallon Plastic Bucket with Wire Handle, Graduation marks in half gallons	\$11.99
P02 Lid for 6.6 Gallon Bucket	\$2.99
P17 Poly Drum Liner, 6 mil, 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"	\$ 0.99
#6.5	FST13	1 11/32"	1 1/16"	\$ 1.19
#7	FST14	1 7/16"	1 3/16"	\$ 1.29
#8	FST15	1 5/8"	1 5/16"	\$ 1.55
#8.5	FST16	1 11/16"	1 7/16"	\$ 1.79
#9	FST17	1 3/4"	1 15/32"	\$ 1.69
#10	FST19	1 31/32"	1 5/8"	\$ 2.59
#10.5	FST20	2 5/64"	1 3/4"	\$ 2.79
#11	FST21	2 13/64"	1 7/8"	\$ 3.99
#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
FST41 Breather #11 Silicone - 2", Dalco Dual™	\$7.99
FST510 Breather #10, Silicone- fits PET plastic	\$6.99
FST49 Breather #9 Silicone - 1.5" Dalco Dual™	\$7.99
FST57 Breather #7 Silicone- fits glass carboys	\$4.99

Solid Barrel Bungs

FST48 Silicone Barrel Bung Solid #9 (R Size)	\$6.99
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	\$5.99
CS03 BTF™ Sanitizer, 32 oz	\$17.99
QE29 Bottle Brush.....	\$4.99
QE30 Carboy Brush	\$5.99
QE31 Long Handled Nylon Scrub Brush	\$14.99
QE45 Bottle Washer -The Blast	\$13.99
QE09 90 Bottle Draining Tree	\$39.99
QE44 Carboy Draining Stand	\$8.99

Oak Alternatives

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

B42 Use to taste, 4 oz. could treat up to 2 gallons. \$5.99

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

B46 **American Medium** \$5.99

B24 **French Medium** \$7.99

B25 **French Dark** \$7.99

Oak Cubes, 8 oz. Use 2-3 oz. per 5 gallons.

Specify \$12.99

B44 **French Medium Plus** (Dark), or B32 **French Medium**

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

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

B78 **American Medium** \$45.99, B79 **American Dark** . \$49.99

B74 **French Medium** \$49.99 or B75 **French Dark** \$54.99

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. \$21.99

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 50g size. \$24.99

Oak Barrels

Small American Toasted Oak Barrels:

B01 **American Oak, 1 gallon (SCT)**..... \$114.99

B02 **American Oak, 2 gallon (SCT)**..... \$124.99

B03 **American Oak, 3 gallon (SCT)**..... \$159.99

B04 **American Oak, 5 gallon (SCT)**..... \$199.99

Vinegar Barrels are Paraffin/Wax Lined (P):

B10 **American Oak, 2 gallon (P)** \$114.99

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)** \$159.99

B08 **American Oak, 5 gallon (SCC)** \$199.99

Oak Barrel (Air Dried New Oak)

B47 **American Oak, 26 gallon, medium toast** \$359.00

Barrel Spigots

Wood Spigots by length (Check the website for other sizes):

SP32 **3"** opening fits 1/2" hole size \$4.99

SP33 **5 7/8"** opening fits 11/16" hole size \$9.99

SP35 **8"** opening fits 15/16" hole size \$10.99

SP39 **Nadi #2** (9" w/ wood wedge to tighten)

opening fits 1" hole size \$18.99

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

QE11 **Racking Tube Holder for 5/16" or 3/8" hose**..... \$3.99

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

QE33 **Racking Tube Holder for 7/16 or 1/2" hose** \$4.99

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

Auto-Siphon Racking Tubes:

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

QE43 **Auto-Siphon (AS) for 7/16" or 1/2"** \$18.99

QE14 **(AS) Racking Tube Holder for 5/16" or 3/8"** hose \$3.99

QE16 **(AS) Racking Tube Holder for 7/16 or 1/2" hose** . \$3.99

Pumping Equipment

PS26 **Transfer Pump**, s/s head, phenolic impellers ... \$184.99

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 **Nobless®**, 10g. \$ 4.99

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

Filtering

F05 **Buon Vino Super Jet Filter**, Plate & frame filter includes pump \$495.00

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**, Comes w/backing papers \$5.99

F23 **25 Backing Papers** for Filter Pads \$4.99

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
TE43 Precision Hydrometer (Brix only)-5° to +5°	\$21.99
TE39 Hydrometer Proof and Traille	\$10.99
TE65 Residual Sugar Test Kit. 36 tests.	\$26.99
TE23 Refractometer , 0-32° Brix, Automatic Temperature Compensation, boxed w/padded carrying case	\$74.99
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	\$124.99
TE26 Country Wines Acid Test Kit	\$9.99
TE29 Sodium Hydroxide Refill (Neutralizer) (for TE26) 4 oz., 0.1 normal	\$5.49
TE116 Phenolphthalein Refill (Indicator) (for TE26) 1 oz.....	\$3.99
TE103 TA Titration Kit - INDICATOR Method Laboratory grade kit employing phenolphthalein indicator and a Class A glass buret with a Teflon stopcock.	\$109.99
TE104 TA Titration Kit - pH Meter Method Laboratory grade kit employing a bench-top digital pH meter with magnetic stirrer and a Class A glass buret with a Teflon stopcock.	\$395.99

pH Testing

TE74 Hanna pH Meter Digital, battery operated Hanna 98107 - Manual 2 point calibration, .1 Accuracy at 68°F (20°C).....	\$69.99
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 Waterproof pH Testr20.....	\$66.99
TE101 Hanna HI 208 bench-top pH meter with built-in magnetic stirrer, two Teflon-coated stir bars, BNC combination electrode with temperature sensor. Automatic two- or three- point calibration with stability indicator. Suitable for pH and TA measurement on wine samples.....	\$289.99
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 One of each capsule, 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.....	\$39.99
TE17 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 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
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
TE10 500 ml. Borosilicate Erlenmeyer Flask.	\$8.99
TE09 1000 ml. Borosilicate Erlenmeyer Flask.	\$14.99
TE127 2000 ml. Borosilicate Erlenmeyer Flask.	\$18.99

Thermometers

TE50 Wine Thermometer , 0-220°F., 1.75" Dial x 8" Stem, with pan clip, recalibratable, Stainless, USA.....	\$28.99
TE90 Must or Juice Thermometer , 2" Dial x 12" Stem, with pan clip, recalibratable, Stainless, USA.....	\$36.99
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

TE01 Escali™ 1 to 5000g, 0.01 oz. to 11 lbs.,.....	\$39.99
TE38 Pico™ 0.1 to 500g, 0.005 ozs. to 1.1 lbs., perfect for winemaking additives	\$39.99

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.....	\$11.99
P18	14 Quart Plastic Pail, Pour out lip and Handle.....	\$19.99
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 approx. 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	
(also available in green GL03).....		\$17.99
GL63	Claret 375ml. Flint 12/cs Screw Top.....	\$14.99

Corks 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" Crown Capper	\$44.99
BE05	Emily Crown Capper	\$18.99

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	\$5.99
WE19	Plastic tray 3 Spout Bottle Filler,	\$149.99
WE28	Stainless Steel Model 3 Spout Bottle Filler, Includes bottle tray	\$400.00
WE29	Stainless Steel 5 Spout Bottle Filler, Includes bottle tray	\$500.00

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	\$26.99
WC07	1 3/4" All Natural Corks, 100 pack.....	\$36.99
WC13B	1 3/4" Twin Disk Corks, 1000 pack	\$215.00
WC02B	1 3/4" All Natural Cork, 1000 pack	\$329.00
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
Also for Euro-neck Burgundy bottles Oversize Sleeves are:		
SL01	Maroon, or SL03 Black.	
Oversize Heat Shrink Sleeves	quantity of 12	\$ 1.49
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	\$6.99
FN18	Potassium Sorbate, 1/2 oz. treats 10 gallons. Stir into sweetened wine and bottle.	\$.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

WINEMAKING BOOKS AND VIDEO



BK140 <i>Home Winemaking Step by Step</i> Iverson.....	\$17.99	BK54 <i>How and Why to Build a Wine Cellar</i> , Gold.....	\$20.00
BK20 <i>Micro Vinification</i> Dharmadhikari and Wilker.....	\$46.99	MG13 <i>WineMaker Magazine</i> current issue	\$4.99
BK12 <i>Techniques in Home Winemaking</i> Pambianchi	\$ 21.99	BK142 <i>Winemaker's Recipe Handbook</i> Massaccesi	\$ 4.99
BK40 <i>Modern Winemaking</i> Jackisch	\$44.99		
BK44 <i>Knowing & Making Wine</i> , Peynaud.....	\$110.00		

ADDITIONAL BOOKS ON RELATED TOPICS

Grapes

BK80 <i>Great Grapes</i> , Proulx	\$3.99
BK129 <i>Vineyard Simple</i> , Powers	\$24.99
BK67 <i>The Backyard Vintner</i> , Law	\$19.99

Cider

BK70 <i>Cider, Making, Using and Enjoying</i> , Proulx & Nichols	\$14.99
BK47 <i>Craft Cider Making</i> , Lea.....	\$15.99
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
BK166 <i>The Home Creamery</i> , Farrell	\$16.99
BK100 <i>American Farmstead Cheese</i> , Kindstedt	\$40.00
BK01 <i>Brewing Quality Beers</i> , Burch	\$7.99
BK84 <i>Making Vinegar at Home</i> , Romanowski	\$4.99
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

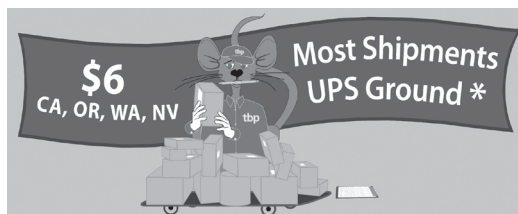
ORDERING

Place your order ONLINE at www.thebeveragepeople.com or call our TOLL FREE ORDER LINE, (800)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 8.5% 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 \$6.00 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.

ABOUT US

The Beverage People is proud to operate both a retail and on-line-order supply firm for 33 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.

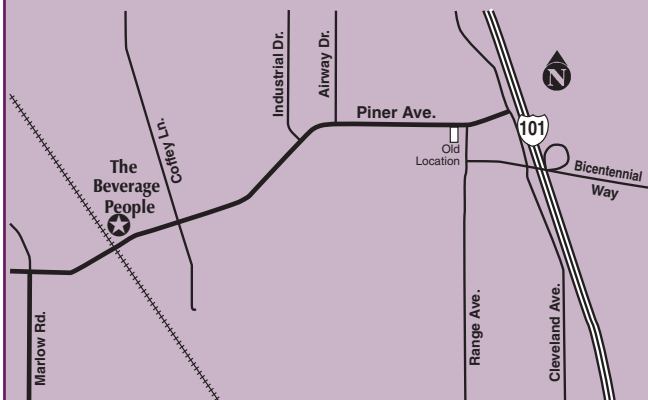
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The Beverage People
1845 Piner Rd. Suite D
Santa Rosa, CA 95403

Postmaster: Please deliver August 5-11.

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Our Hours:

Monday through Friday 10 - 5:30 Saturday



Rental Equipment

CRUSHERS

Apple Mill, Grinder and Press, motorized	\$45.00
Grape Crusher, Manual	\$20.00
Grape Crusher/Destemmer, Manual	\$45.00

PRESSES

#30 7 gallon Basket	\$25.00
#35 12 gallon Basket	\$35.00
#45 25 gallon Basket	\$45.00

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	\$30.00

BOTTLING

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

Rentals are for 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. Cancellation must be made by noon the day prior to your reservation. Call 544-2520 to manage your reservation.

Fall Winemaking Class

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.

Purchase your class at (707) 544-2520. Class is held at the store classroom, 2:00 pm September 7 and will last approximately 2 and 1/2 hours. Class fee is \$30.00 payable to *The Beverage People*.

Harvest Fair Competition

Deadline for entry forms and bottles is August 19-30, Drop off from 8-5 weekdays at the Premium Office of the Sonoma County Fairgrounds 1350 Bennet Valley Rd. Santa Rosa. An entry is \$8.00 and consists of 2 bottles.

BUILD YOUR DREAM LAB...

Get your hands on our latest laboratory testing supplies... We now sell an aeration oxidation kit and titration kits for pH and Total Acid!
see pg. 22

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 looking 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.

(707) 544-2520 www.thebeveragepeople.com (800) 544-1867