



# THE BEVERAGE PEOPLE

2006 Summer Wine Supplies and Beverage People News

Beer  
Soda  
Cider

Wine  
Vinegar  
Mead

and  
now  
Cheese

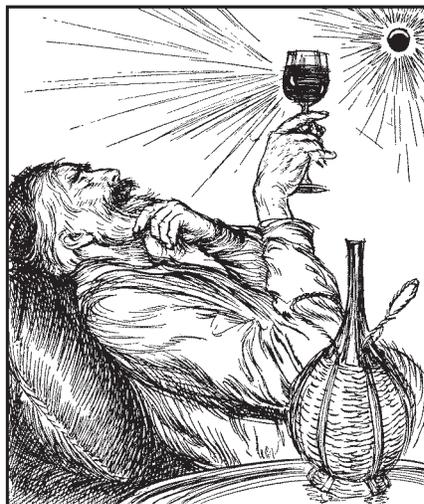
## Dr. Frank E. Nococcus and his Wine Monster (Lysozyme to the Rescue!)

by Bob Peak and Robyn Burch

Better known among home winemakers as malolactic bacteria, *Oenococcus oeni* bacteria are mostly a friendly beast. Winemakers like to introduce selected strains of *Oenococcus oeni* to most of their red wines (plus, often, Chardonnay). In the resulting malolactic fermentation, the bacteria consume malic acid (the tart acid typical of apples) and excrete lactic acid in its place (the mild acid of yogurt or cheese). Since lactic acid is only half the acid strength of malic, the overall Total Acidity (TA) of the wine is significantly reduced. The flavor rounds out, the aroma mellows, and the wine is generally improved.

However, there are times that the work of *Oenococcus* is not welcomed by the winemaker. Some wines, especially Chardonnay, may have a brighter, fresher flavor profile if the wine only undergoes partial malolactic fermentation. In other cases, the winemaker wants to prevent or stop the fermentation entirely, perhaps making a nouveau-style light-bodied red wine like Gamay Beaujolais. Finally, even after fermentation, eliminating residual *Oenococcus* may help prevent development of undesirable volatile acids, histamines, and other off aromas or flavors.

So, what's a winemaker to do about the beast? Until now, about the best advice we could give home winemakers who wanted to prevent or stop malolactic fermentation was "get your sulfite level up and keep it there". Although sulfites do suppress microbial growth, they are also less effective as pH goes up, as temperatures rise and with exposure to air. High pH wines present a particular difficulty for stabilization, because you have to increase the amount of sulfite to be effective.



Now, however, a natural product to delay or prevent malolactic fermentation (MLF), used by commercial winemakers for several years is available in a home-winemaker size. *The Beverage People* are pleased to announce *Lallyzyme* "Lyso-easy"™ liquid **lysozyme** in a 250 mL bottle. At that size, it can treat from 26 gallons to 130 gallons, depending on the application.

**Lysozyme**, isolated from egg whites, kills gram positive lactic acid bacteria, including *Oenococcus oeni*, *Pediococcus*, and *Lactobacillus*, while having no effect on *Acetobacter*, *Brettanomyces*, or yeast.

*The usual applications of the product are as follows:*

- To inhibit MLF until sugar fermentation is complete
- To entirely prevent MLF after sugar fermentation
- To provide pre-bottling or storage microbial stability, with proper free SO<sub>2</sub>

To inhibit the onset of MLF, apply it at the rate of 100 to 125 mL per hectoliter (26 gallons) of wine. To prevent MLF, use 200 mL. To stabilize wine after MLF, use 50 to 100 mL. **Lysozyme** has **no antioxidant properties**, so proper use of sulfite is still important.

See *Wild Beast* pg. 2.

## Drag Strip or Wine Cellar? (Copper to the Rescue)

by Bob Peak

Burnt rubber? At Infineon 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 that 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, H<sub>2</sub>S. It is commonly described as smelling like rotten eggs. 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—primarily amino nitrogen or certain vitamins—during primary fermentation. You can address prevention of that problem by analyzing your juice nutrient level (see **SAP** and **SNAP**, pg. 12) and making additions of a complex, vitamin-containing nutrient like **Fermaid K** a regular part of your winemaking.

But let's suppose the odor shows up anyway (which it may). The most conservative treatment is to aerate the

See *Sulfide* pg. 2.



**WILD BEAST** cont. from page 1.

**Lysozyme** is stable at room temperature for up to 18 months, but once the bottle is opened, you either must use it or throw out what remains.

Before you can be sure that adding **Lysozyme** is necessary, you need to test the progress of MLF with one or another of the standard tests, the most familiar being *Chromatography*. You can purchase the supplies to run six tests for \$39.95. Purchasing additional paper allows you to run additional tests with the remaining supplies for a long time. This test takes 8 - 12 hours.

A faster home test, also sold at the store is called *Accuwin QuickTest ML Kit*. The test takes only a few minutes, and requires interpretation of a spot of color against a color standard. Some people don't view this color change as well as others.

A third choice is to have a wine lab run a *chromatography* test from a sample you deliver to them.

The newest test is called the *Reflectoquant*. You bring your 4 oz. sample to *The Beverage People* and test it yourself with the **RQFLEX2™** tester. This method costs \$8.95 a test and \$3.95 for additional tests done at the same time. Testing takes about 5 minutes.

Red wines need to be decolorized by fining with *Polyclar*, which we have you do prior to the test and this adds about 5 minutes more to the test. If you want to save time, or have multiple samples to run, you can get some *Polyclar* and add 1/2 tsp. to a 2 oz. wine sample, shake and let settle. Pour off the pink wine to a new sample container and bring the decolorized sample for the test.

Use the following chart for the correct dosage for your particular application.

<b>Application</b>	<b>Dosage (LYSO-EASY)</b>
To delay the onset of MLF	100 -125 mL/26 gal.
To prevent any MFL	200 mL/26 gal.
To stabilize wine after MLF for storage or bottling	50-100 mL/26 gal.

Please note that in white wines, **Lysozyme** should be removed by bentonite fining before bottling to prevent protein haze.

If you need to tame the savage *Oenococcus* beast in your wine, get *Lallyzyme Lyso-easy* from *The Beverage People*.  
 WY60..... (250 mL/\$25.95)

**SULFIDE** cont. from page 1.

wine during racking—splashing it into the receiving vessel (being sure your free SO<sub>2</sub> level is where it should be prior to the splash racking—otherwise you may oxidize your wine, turning it brown and Madeira-like). A more effective solution is to treat with copper. When exposed to copper, the sulfide combines with the copper to make copper sulfide, which is not soluble in wine.

While some books will tell you to just run the wine over a sheet of copper, my 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. Plus you are adding a measured amount of copper and can repeat this treatment safely if one treatment isn't enough.

**Add copper sulfate solution 1% 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 Hydrogen Sulfide (H<sub>2</sub>S), 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 H<sub>2</sub>S) 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.

If your problem goes on even longer without treatment, you may get into the disulfides. Dimethyl sulfide resembles cooked asparagus or canned corn, diethyl sulfide is reminiscent of brand new tires, dimethyl disulfide brings the delights of onion aroma to your wine, and diethyl disulfide brings garlic aroma. (A related compound, methyl ethyl sulfide, is used to give the familiar warning aroma to natural gas.) Now you are really in trouble. Old Italian country winemaking treated disulfides by extracting the wine with a portion of olive oil, then skimming off and discarding the oil. Since the olive oil that remains in the wine

may go rancid, drug-store mineral oil would be a more modern choice. But don't expect a miracle: if you are trying to clean up your wine with oil it has gone very bad, indeed.

Just to make a few of you old timers feel better, Nancy had brought in a sample of her Pinot today, (June 9) she had racked it off some stinky H<sub>2</sub>S

sediment, which wasn't making the wine smell bad. However, after racking, within a few days the stirred up lees had affected the wine aroma. We also had a friendly customer at the counter with his sample of smelly Sauvignon Blanc that he was prepared to throw out after 2 copper treatments.

After smelling Jack's Sauvignon Blanc and realizing how the smell correlated to her Pinot, Nancy grabbed a bottle of copper sulfate and somewhat overdosed the two samples, which effectively removed the smell from both wines. Voila! Now the wines can be treated and instantly improved.

**A final word about avoiding stinky wine... allow at least 35 days after last sulfur before harvest. Use adequate nutrients. Aerate (with SO<sub>2</sub> present) if necessary. Add Copper. Repeat as needed.**

## MORE CHEESE RECIPES

Hopefully, some of you reading the spring flyer were inspired to make some of our beginner cheese recipes. We tasted several customers' fresh chevres and they were excellent. If you missed out on that publication, we have added it to our website at the "What's New" section, at the bottom of the home page.

Our newest ventures have led Nancy Vineyard to **Feta** and Bob Peak to make **Manchego**. Now we introduce two new steps to the cheesemaking process. Feta is stored in a brine solution as a preservative and flavoring step. Manchego is flavored in brine briefly (in a strong brine solution) and then set in storage to develop a rind which, besides protecting the cheese, adds flavor. This rind also gains flavor by rubbing it with olive oil while it ages.

Our cheesemaking supplies are in stock, and available for online ordering from the pdf - **2006 Beer Catalog, page 23**. You can however, come in or call us for advice and we can send you what you need. After you start with one or more of these cheeses, you won't stop until you've tried Camembert, Swiss, Brie, or Blue Cheese.

### BOB'S MANCHEGO

In Spain, where **Manchego** originated, various milk combinations are used. To compensate for the otherwise milder flavor of cow's milk, I make my Sonoma County **Manchego** with the addition of **Lipase** enzyme. That enzyme, available in powder form at *The Beverage People*, introduces a stronger, more robust flavor and aroma to cow's milk cheese (making it more like sheep's milk cheese, this can also be added to the Feta recipe, for a stronger flavor).

This recipe makes a small wheel, about 12 ounces when complete. Double everything for a larger, 1 1/2-pound wheel.

#### Ingredients

1 gallon Whole Cow's Milk  
1/4 tsp. Mesophilic II culture, dissolved in 1/4 cup water  
1/4 tsp. Thermophilic B culture, dissolved with the Meso II  
1/2 tsp. Calcium Chloride solution in 1/4 cup water  
1/4 tsp. Lipase powder. Dissolve in 1/4 cup water and let stand 20 minutes.  
1/4 tsp. liquid Rennet in 1/4 cup water.  
Salt for brine  
Cold water for brine  
Olive oil

#### Equipment

Kettle with water bath  
Perforated Ladle  
Curd cutting knife  
Stainless steel whisk  
Cheese press with basket  
Nylon cheese netting or Cheesecloth  
Glass or stainless steel bowl for brine

#### Method

1. Gently warm milk to 86° F. using a kettle in a water bath.
2. Add the calcium chloride, stir.
3. Add Meso II and Thermo B cultures, stirring gently. Cover the pot and hold at 86° F for 45 minutes.
4. Add the lipase and the rennet. Stir gently for one minute. Cover and let set for 30 minutes at 86° F.
5. When curd shows a **clean break (\*)**, cut into 1/2" cubes.
6. Cut the curds into rice-size pieces by stirring with a stainless steel whisk 30 min.
7. Heat the curds to 104° F at a rate of two degrees every five minutes. This will take 45 minutes all-together. Stir gently with the ladle while heating to keep curds from matting.
8. Let the curds settle for 5 minutes and pour off excess whey.
9. Moisten a piece of nylon netting or cheesecloth large enough to double-line your press basket. Wring it out and double-line the basket.
10. Ladle the curd into the basket. Fold netting in on top and press at light pressure (about 15 lbs.) for 15 minutes.
11. Remove the cheese from the press, unwrap, rewrap, and place upside-down back in the basket.
12. Press lightly again for 15 minutes.
13. Repeat rewrapping and pressing for 15 minutes.
14. Rewrap and press moderately hard (30 lbs.) for 6 hours.
15. Make a saturated brine large enough to hold your cheese. (Keep adding salt to water until no more will dissolve – about 1 lb. for every half gallon of water.)
16. Unwrap the cheese and float it in the brine for 6 hours at 55° F. Turn over two or three times during the six hours.
17. Remove the cheese from the brine and pat dry with paper towels or cheesecloth.
18. Place on aging mat. Age at 55° F. Turn once per day.
19. After a week or so, when the surface is dry, rub it with olive oil. (If mold spots appear, scrub them off with a vegetable brush dipped in white vinegar and salt.)
20. After 30 days or more, you may eat the cheese. To save some of it, cut into quarters, oil them individually, and wrap in cheese paper. Refrigerate.
21. **Disfrute su queso! (Enjoy your cheese!)**

#### (\*) Clean Break

Performing the **Curd Test**: Insert the blade of a long knife at a 45° angle, to the center of the coagulated milk and gently lift the curd upward, resulting in a very clean straight line. If the curd is too soft, wait 5 minutes or so before cutting the curd.

### Bob's top 5 reasons why "I like to make Manchego":

5. I like to eat Manchego, and my homemade cheese is as delicious as any I've ever tasted.
4. Among the hard cheeses, Manchego provides "quick" gratification by aging "only" 30 days in the cellar.
3. It's fun to say "mahn-CHAY-go".
2. It is great as both a snacking cheese and a cooking cheese.
- AND #1. Instead of waxing it, you can olive-oil the rind for aging. So, making it here, you can use locally-grown olive oil on your locally-made cheese! (I use Saint Gregory of Sinai Monastery Lake County estate olive oil – I highly recommend it!)

Nancy with Margaret Morris, author of *The Cheesemaker's Manual* visiting BP last February.



### NANCY'S FETA

Using the water bath method, warm 1.5 gallons Cow's milk to 86°F. and add 1/4 tsp. MT1, Meso II or Aroma B powdered Culture and stir thoroughly. Allow the milk to ripen for 45 minutes to 1 hour.

Add 1/2 tsp. Calcium Chloride dissolved in 1/4 cup of water and stir. Then stir in 1/2 tsp rennet dissolved in 1/4 cup water and let the mixture rest 30-45 minutes or until the curd breaks properly doing the **curd test (\*)**.

Cut the curd into 1/2" cubes and let them rest for 5 minutes. Gently stir for 20 minutes at the same 86°F. (For a firmer curd, heat to 90°F. before stirring.) Settle the curd a few minutes and then drain off as much of the floating whey as possible. Ladle the curd into two basket molds over a drain pan. Every couple hours drain off whey and flip the cheese in its mold, for 6-8 hours total. Remove the firm cheese to float in the brine (see box below). Keep in brine 2 days. Rinse if too salty.

#### Brine Solution for Feta Cheese

Refrigerate 2 cups of whey, collected after making any mild cheese. Prepare a brine made from 14 oz. of salt in 1 gallon water. Heat some of the water to dissolve the coarse salt then cool with the additional water. After this is cool, add the cold whey which will add acid to the brine.

(Alternatively, add 2 Tablespoons of white vinegar, if no whey is at hand.) Store in a two gallon ziplock plastic bag in the frig. Use for Feta and other brined cheeses. This is about 10° Baume or 1.074 SG.

# 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.

### 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
5. Crusher or Stemmer/Crusher
6. Press
7. Corker
8. Thermometer
9. Pressing Bag (optional)
10. Funnel
11. Bottle Filler
12. Small Bucket

### 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.
3. Extra glass 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.
2. Grapes, (16 lbs.) per gallon of wine.
3. Tartaric Acid as needed.
4. Sulfite as needed.
5. Yeast Food (5 grams per 100 lbs.)
6. Fining Agent, such as Sparkolloid.
7. ML Starter 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 .7%, 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 22-24% (22-24 °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 (SO<sub>2</sub>) level between 50 and 130 parts per million (ppm). (See pages 8 and 9.)  
The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose.
- 5 **Unless you have found it necessary to add more than 65 parts per million SO<sub>2</sub> in step 4, yeast should be added immediately.** If using more than 65 parts per million SO<sub>2</sub>, you must wait six hours before doing so. Add also 1-2 grams of yeast food for every gallon of must. Add 1 -2 grams of dry wine yeast evenly across the surface of the crushed grapes (now called "must"). Stir it in thoroughly after eight to twelve hours.
- 6 **The must should be stirred twice a day until fermentation begins.** The beginning of fermentation will be obvious, as the grape skins will be forced to the surface, forming a solid layer (called a "cap").  
Once the cap has formed, it should be pushed or "punched" back down into the fermenting juice twice a day until it is ready to be pressed. You may use your hand or a stainless steel punch-down tool to push down the cap.
- 7 **At some point, while fermenting on the skins, the must temperature should be allowed to go as high as 80 or 90 °F., at least briefly.** This will help extract color from the skins. The rest of skin fermentation should take place at 60-75°F.
- 8 **Add a ML culture** (optional) to the wine about half to two thirds through fermentation. You will add this at the end of fermentation if you have the *Enoferm Alpha* or *Bacchus* strains of bacteria.
- 9 **When the desired level of color has been achieved** (usually from five to fourteen days of active fermentation) **your wine should be pressed to separate the wine from the skins.** Funnel the wine into secondary fermentors, filling them 3/4 full. Attach a fermentation lock, and allow the containers to



Winemaking Equipment from crush to bottle.



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, stored 3/4 full	Rack off gross lees and top up containers	Rack off lees again, test for ML, add sulfite and store in cool place for aging, topping and sulfiting every couple months.	Rack off lees, adjusting sulfite, fining or filtering, or just topping up	Rack to bottling container, adjust flavor with oak extract, add sulfite, cork and store. ...Usually in time for next harvest.
...5 to 14 days	...1 to 2 weeks	...1 month	...4 to 6 months	...1 to 3 months	

set until all visible signs of fermentation have ceased (several days to a week or so.)

See "Procedures" cont. next page.

**10 At the end of fermentation, when no more bubbles are coming up through the lock, rack the wine off the gross lees.**

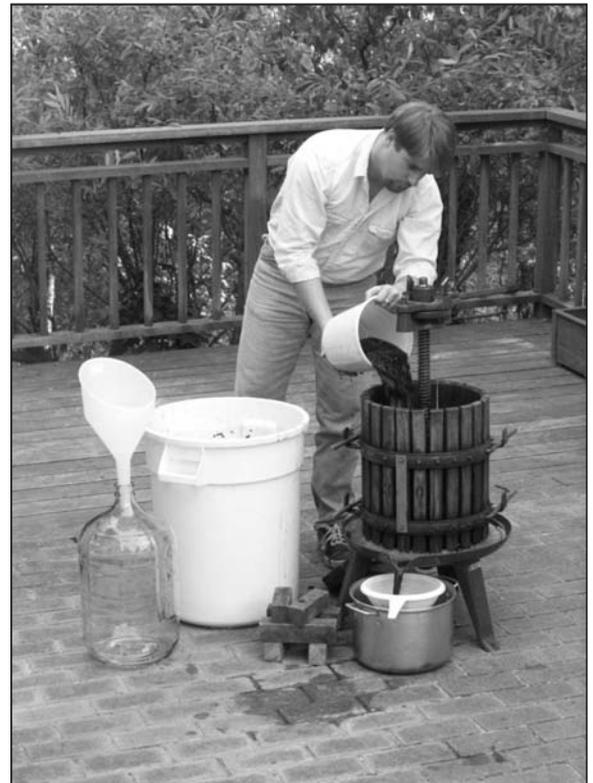
Place wine in storage containers (glass, stainless steel, or oak). Top up the containers and let stand for a month.

**11 One month later, 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, from respiration, and visible inspect carboys. This is a good time to add oakboys or oak chips. Add sulfite every few months. If you innoculated for ML, test the wine to be sure it is complete.**

**12 Around May or June of the following year, you might want to fine the wine for clarity (following the instructions supplied with your fining agent.) Optional treatment would be the more aggressive clarification via filtration. If the ML fermentation hasn't finished, keep the sulfite level below 20 ppm and warm the storage containers for a month to encourage completion.**

**13 By late July or August (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, cork them, and lay them down for bottle aging.**

At bottling time, adjust the sulfite to at least 30 ppm, if you plan to store the wine. If possible store your filled bottles on their sides. Otherwise, store them with the corks down. Most red wines will benefit from at least one year's additional aging.



Pressing the fermented red grapes.

# White Wine Procedures

- 1 **Crush the grapes** to break the skins. It is not necessary to de-stem them. Keep the grapes as cool as possible.
- 2 **Test for total acidity.** If the acidity is less than .7%, 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% (20 ° brix) for most varieties (22-23% for Sauvignon Blanc and Chardonnay.)
- 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 (SO<sub>2</sub>) level between 50 and 120 parts per million (ppm.).  
The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose.
- 5 **Stir in pectic enzyme at the rate of one ounce to every 200 lbs. of grapes.** Place the crushed grapes in a covered container to stand from 2 to 18 hours (longer for the “big, less fruity” varieties. 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 into a glass, stainless steel, or oak fermentor which is filled no more than 3/4 full.** Yeast should be added, a gram a gallon and a fermentation lock attached to the fermentor. Add also a 1/4 oz. of yeast food for every 5 gallons of juice.
- 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 sulphite, 20 - 30 ppm. and let stand for a month.
- 9 Rack off the lees and fine with a sparkolloid or bentonite slurry. Sulfite and store full containers in a cool place.
- 10 **In February or March, rack and sulfite the wine again, placing it back in topped up containers.** This is a good time to filter the wine if you are going to do so.

11 For oak flavor add Oakboys™ or Liquid Oak Extract now. **In late April or early May, 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 SO<sub>2</sub> is needed to bring the level to 30-35 parts per million.

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. Stabilizer per gallon to kill any remaining yeast. Light, fruity, white wines may be enjoyed within two months 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 keep cool. Add Oakboy. ...2 to 4 months	Rack to bottling container, add sulfite, fill and cork bottles. ...In the spring
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Placing the wood blocks and press head into the press before actually pressing the grapes.

# Fruit Wine Procedures

Use the following procedures for 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 and other ingredients except Sodium Bisulfite and Yeast and mix well.

4. Add 5 tablespoons of Sodium Bisulfite stock solution and mix well. (See pg. 9 for stock sulfite recipe.)

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

6. Stir in the Yeast.

7. Once fermentation begins, stir or push the pulp down into the liquid twice a day.

8. 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 or it will foam out and spill.

9. When bubbles are no longer actively rising through the wine, siphon the wine back together into one full carboy. Fine with Sparkoloid (see pg. 10 for mixing Sparkoloid), add a teaspoon per gallon of sulfite stock solution and let set for four weeks under the airlock.

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

11. For bottling, rack into an open container, and add 1 1/2 teaspoons sulfite solution per gallon. Sweeten with sugar syrup to taste and add 1/2 teaspoon Wine Stabilizer per gallon.

12. Siphon into bottles, cork, and set aside to age for at least 3 weeks.

## Recipes

### Blackberry or Loganberry Wine

20 lbs. Blackberries or  
12 1/2 lbs. Loganberries  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient

2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
9 tsp. Tartaric Acid  
5 grams Epernay II Wine Yeast

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

### Blueberry Wine

15 lbs. Blueberries  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
9 tsp. Tartaric Acid  
5 grams Epernay II Wine Yeast

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

### Raspberry Wine

15 lbs. Raspberries  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
9 tsp. Tartaric Acid  
1 1/4 tsp. Grape Tannin  
5 grams Epernay II Wine Yeast

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

### Cherry Wine

22 1/2 lbs. Sweet Cherries or 15 lbs. Sour Cherries  
12 lbs. Corn Sugar  
5 gallons Water

2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
9 tsp. Tartaric Acid  
(Omit Acid with Sour Cherries)  
1 tsp. Grape Tannin  
5 grams Epernay II Wine Yeast  
Original Brix: 20  
Total Acid: .6-.65%

### Plum Wine

15 lbs. pitted Plums  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
7 tsp. Tartaric Acid  
5 grams Epernay II Wine Yeast

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

### Cranberry Wine

15 lbs. Cranberries  
1 lb. Raisins  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
5 grams Epernay II Wine Yeast

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

### Apricot Wine

17 1/2 lbs. Apricots  
12 lbs. Corn Sugar  
5 gallons Water  
2 1/2 tsp. Yeast Nutrient  
2 1/2 tsp. Pectic Enzyme  
5 Tbl. stock Sodium Bisulfite solution (initially)  
9 tsp. Tartaric Acid  
1 tsp. Grape Tannin  
5 grams Epernay II Wine Yeast

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

# Sulfite Procedures

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<sub>2</sub>) 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<sub>2</sub>. These solutions are stored and added in tablespoons and or milliliters to the volume of wine.

After almost 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<sub>2</sub> additions nearly 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.

Time after time, wine samples are coming back with only a few parts per million of SO<sub>2</sub>. These wines may not even yet show the effects of oxidation, but given enough time in this unprotected state, the fruitiness will fade, browning will occur and the taste will become pruney and harsh. To avoid this you need to understand the basics of why sulfite works so well to protect your wine.

When you add sulfite to wine, sulfur dioxide ionizes to the sulfite ion, SO<sub>3</sub><sup>-</sup>, and bisulfite ion, HSO<sub>3</sub><sup>-</sup>. A small fraction remains in the “molecular” form, SO<sub>2</sub>. 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 now have three ways for you to keep up with testing your SO<sub>2</sub>.

## The Reflectoquant Free SO<sub>2</sub> Test

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, very small bottle, with a fresh sample of wine.** (187ml 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 \$8.95 for one test, and an additional \$3.95 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.

Additionally you can track changes to your SO<sub>2</sub> with the *Titret*® Kit. Although not very accurate in terms of the quantity of SO<sub>2</sub>, in red wines, they do work in white wine and these tests will also show changes as the level of SO<sub>2</sub> diminishes even

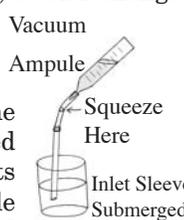
in red wines. These are vacuum sealed, graduated ampules that come with an inlet bead-valve that allows you to titrate slowly by squeezing the valve. You have to keep the inlet tube submerged or the vacuum will be broken by air entering. *The kit instructions recommend a holder which made the test more difficult to execute.* Follow the instructions given here, as their kit instructions are not helpful.

Another testing method, which like Titrets uses the Ripper Test Method, is the *Acidometer*® Kit by Vinoferm. Using the graduated cylinder supplied and a solution that combines starch and iodine, (the Iodic solution), titration is a simple matter of dripping in the iodic solution until the color end point is achieved.

## The Titret Kit

Begin the test by inserting the loose plastic inlet sleeve over the tapered end of the glass ampule. Bend the plastic sleeve 90 degrees to break the tip of the ampule. As you do this hold on tightly at the junction of the sleeve and the ampule to prevent the sleeve from sliding off. Next locate the glass bead/valve inside the plastic inlet sleeve. Squeeze this bead to open the passageway for the vacuum in the ampule to pull wine inside the tube. As you squeeze, a color change will occur turning the sample inside the tube dark blue/black. Continue squeezing until a white wine turns light pink or clear.

In the case of red wines, it will return to the original sample color. The titration is finished at this point and the ampule is stood up on its flat end. Let the contents of the ampule settle and then read the liquid level at the graduated line of the vial. This is the amount of free SO<sub>2</sub> present in the wine.



## The Acidometer Kit

The *Acidometer* method uses the graduated cylinder to hold the sample wine or juice, while the Iodic solution is dripped in to achieve a color that is blue for white wines and a dark bluish red (blood red) for red wines. Once the color change is observed, you multiply the reading from the graduated cylinder by 10 to get the free SO<sub>2</sub> number. It is as accurate as a Ripper method test can be.

To reduce the false high reading, you must quickly reach the titration point because the iodine solution will react over time with the bound form of SO<sub>2</sub>. The light source is also important to accurately observe the color change. Use a bright white background with a high intensity lamp. Also use a 10 ml. graduated pipet, to fill the cylinder and stopper

## Molecular SO<sub>2</sub> needed for Stability

pH	.8 ppm.	.5 ppm
	White Wine	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

the cylinder with a solid #2 rubber stopper, for mixing in the iodine solution. Iodine will stain your fingers and clothes, so use with caution.

### Scheduling SO<sub>2</sub> Additions

Initial sulfite may be added at 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<sub>2</sub> available throughout the wine's cycle of production through bottling. Add sulfite for white wines at every racking.

Test your SO<sub>2</sub> 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<sub>2</sub>* table on the previous page 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.

### pH and SO<sub>2</sub>

It is generally recognized that only a small amount of molecular SO<sub>2</sub> (.5 to .8 ppm.) needs to be present to provide bacterial stability in wine, but pH has an important effect on how much free SO<sub>2</sub> is needed in order to provide that amount, and that's why both pH and SO<sub>2</sub> need to be tested.

Regard the *Table of Molecular SO<sub>2</sub>* to the left. The amount of free SO<sub>2</sub> 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 SO<sub>2</sub>, or slightly more, present in the wine during storage and bottling.

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<sub>2</sub> high enough to have a negative effect on the wine's flavor. It is best not to approach the problem that way. Instead, the pH should be lowered early in the life of the wine by the addition of Tartaric or Phosphoric Acid.

### Sources of SO<sub>2</sub>

SO<sub>2</sub> is available as *Campden tablets*, effervescent *Efferbaktol® granules*, 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 Efferbaktol® powder pouches add 528 ppm per gallon or 9 ppm per 55 gallon barrel. They effervesce to disperse evenly in the container. They are perfect for working in barrels and tanks, but cannot be divided to accurately dose 5 gallon carboys. Potassium 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. **Make a strong 10% solution if your additions are to larger vessels, and a weak 3% solution for carboys and jugs.**

### Preparing a Strong 10% Stock Solution

Using a gram scale, weigh out 100 grams of Potassium Metabisulfite and dissolve in 1 Liter of water. Tightly stopper and store labeled: "poison"! For additions of sulfite in large lots, you will prefer to use the information provided in the following table. Just make sure that your 10% stock solution is fresh and measured carefully. *See notes below left.*

10% Solution of Metabisulfite							
<i>(Desired final SO<sub>2</sub> concentration in ppm.)</i>							
Must/Wine	10	20	25	30	40	50	75
<i>(gallons)</i>	<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
50	32.9	65.7	82.1	98.6	131.4	154.3	246.4

### Preparing a Weak 3% Stock Solution

Dissolve four ounces of sodium or potassium metabisulfite powder, (a package size readily available in retail stores) in one gallon of warm water. This is weaker than the 10% solution given above, in fact it is about a 3% solution.

At this concentration, the solution is still quite strong and should be clearly labeled and kept out of reach of children. This stock solution will remain at relatively full strength for up to six months if the jug is kept capped.

3% Solution of Metabisulfite					
<i>(Desired final SO<sub>2</sub> concentration in ppm.)</i>					
Must/Wine	10	21	33	43	65
<i>(gallons)</i>	<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 SO<sub>2</sub>

**If you ever need to lower your SO<sub>2</sub>** because you doubled the dosage or made some other wildly uncaredful calculation, do the following: for every 10 ppm free SO<sub>2</sub> you want to remove, add 1 ml. of 3% hydrogen peroxide per gallon of wine. This is an oxidative reaction that occurs immediately. Use only fresh 3% Hydrogen Peroxide, available at the drugstore. Use this method to remove up to 100 ppm, more than this and the wine will oxidize and lose its flavor.

**Please Note:** Avoid confusing the 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 Pipettes 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.

## Fining Procedures

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

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 away from the lees in about 10-14 days

**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
<b>Sparkolloid</b>	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.
<b>Bentonite</b>	10-40 g/ 5 gallons	White wines	Slurry with juice or water in blender.	Add to must prior to fermentation.
<b>Isinglass</b>	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.
<b>Gelatin</b>	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.
<b>Egg Whites</b>	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.
<b>Polyclar</b> (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.
<b>Non-Fat Milk</b>	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.
<b>Whole Milk</b>	100-250 ml/5 gallons	Reduce harshness absorb aldehydes,	Follow with Bentonite Fining	Rack after 4 days A month prior to bottling.

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# Sugar, Acid and pH Testing

## Procedures

### SUGAR

There are two methods to measure the percent sugar (Brix): hydrometry and refractometry. A hydrometer will also be used to track the progress of fermentation. Note that a refractometer will not read accurately after fermentation begins.

Ripe grapes will reach a Brix of 21 and above for white wines and 23 and above for red wines. Overly ripened grapes are just as troublesome as underripened grapes, so it is important to monitor the maturing process closely.

#### **Testing with a hydrometer.**

Crush grapes collected from throughout your vineyard and strain out a volume of juice sufficient to float a hydrometer in its test jar, or approximately, 4 oz. of juice. Pour the juice into the test jar and twirl the hydrometer in the juice to release any CO<sub>2</sub> gases in solution. Now you will let the hydrometer settle into the liquid, reading the paper scale where the juice contacts it at its surface. (For accuracy, read the level at the liquid level, not the interface of liquid on the hydrometer, as this point is actually slightly higher than the surrounding liquid owing to an increase of pressure from the tool against the liquid.) Measure from the scale what total of sugar is present. There are usually three scales on a hydrometer. Measure fruit and wine juice from the Brix or Balling scale which is equivalent to percent sugar.

#### **Testing with a refractometer.**

Alternately, and especially for those of you growing your own grapes, a refractometer will be used to measure sugar in the field. From the juice of a single grape, a sugar reading can be taken along with the readings from other representative grapes in the vineyard to yield the average percent of sugar. You can check for accurate refraction with standardized sugar solution by placing a drop of 20° Brix solution on the prism, reading the scale in the background. If it is not reading 20, then adjust the set screw to read 20. An ATC (for Automatic Temperature Compensating) Refractometer will compensate for temperature changes.



*The refractometer, and sampling tube.*

### ACIDITY

The "TA" or total acidity of grapes is as important to the flavor balance of wine as the grape sugar content. The balance of flavors produced in perfectly ripened fruit makes not only the best flavored wine, but the least troublesome wine to produce. Therefore tracking changes to the TA in ripening fruit is as important as monitoring the change in sugar.

Immature fruit is usually excessively acidic, burning and even acrid tasting while overripe fruit tastes flabby and soft, lacking the sparkle of crisp fruit. At the point where both sugar and acid are balanced for the wine style, the harvest can commence.

Ideally, the total acidity of grapes would not exceed .9% and also would not be less than .5%. Excessively high or low acids can be corrected, but never provide the exact flavor of perfectly ripe fruit.

#### **Acid Testing Kits for TA**

Several different kits are on the market that measure Total Acid, Malic Acid, even Lactic Acid. Mainly, we suggest you check your juice initially with one of 3 different Total Acid Test Kits. Your choice of kit will depend on your comfort level and budget. We will be happy

to go over your choices with you, but here is a basic introduction to the different kits.

The simplest kit to use is made by *Accuvin*, which comes with 10 tests, but is the most expensive and least able to see the results in red wine. You simply add the juice to the vial supplied and allow for a timed response that will then compare to a color chart and read the Total Acid result.

The *Acidometer*, by *Vinoferm* titrates via a graduated cylinder and Blue Hydroxide solution. Your answer can be checked with the supplied litmus paper. This is also simple to run and does several tests before needing replacement solution. Does a better job with red wines.

The least expensive TA test is supplied by *Country Wines* and titrates with Clear .1N Sodium Hydroxide and Phenolphthalein indicator solution. Once you have learned the technique, it is a simple test and can be the most accurate test we have available if you add a pH meter to check your results. The pH will prove neutralization once the solution reads 8.2.

#### **Acid Testing Kits for Malic Acid**

*Accuvin* also makes a kit with ten tests for checking the quantity of **Malic Acid** present in the wine. This allows you to track the progress of ML fermentation, using your cellaring skills to increase ML activity if necessary or shutting down the fermentation when it is undesirable.

We also have in-house **Malic Acid** test available using our Reflectoquant meter. You bring us a wine sample, and we set you up with a simple test that measures the intensity of light reflected off the measurement paper strip supplied for each test. Each test takes only a few minutes. The price for the set up, including one test strip is \$8.95, multiple tests done at the same time are an additional \$3.95 each.

### pH

Although Total Acidity is the best measure of a wine's flavor balance, pH is really the best measure of a wine's stability. The two scales are not correlative because the acids in grapes are weak acids and also because of the presence of potassium ions. Most wines have an acceptable pH ranging from 3.1 to 3.6. The problems associated with too low pH are usually poor quality fermentations, especially Malolactic fermentation. In addition, high pH indicates a wine susceptible to bacterial spoilage, particularly at a pH above 3.7.

#### **Testing for pH**

To test your juice or wine with a pH meter, first make sure you are working with a degassed sample. The presence of CO<sub>2</sub>, as is also the case with testing TA, interferes with the test results.

Meters require calibration to buffer standards prior to every use. Make fresh solutions after several uses to avoid errors. Let the electrode stand in the pH7 buffer for several minutes and then follow the meter instructions to calibrate that sample. Repeat for pH4 and then repeat with the juice or wine, it will be useful later when doing SO<sub>2</sub> additions to preserve the wine. *Note: if you leave your meter unused for several months, it may not calibrate.* You can avoid this, by routinely soaking the electrode in buffer pH4. Place a cotton ball soaked in buffer pH4 inside the cap for storage.

**Note:** Make your own buffer solution of 3.56 pH by mixing 50 ml of deionized water with one teaspoon of Potassium Bitartrate. Mix well and then calibrate the meter.

# JUICE TESTING FOR SUGAR, ACID, PH AND NUTRIENTS

## The Testing Program

Our SAP and SNAP Panel testing program is a collaboration between ourselves and *Vinquiry*, the commercial wine laboratory in Windsor. Here's how the program works:

(1) Before picking your grapes, you purchase from *BP* either a **SAP** or a **SNAP** testing panel for your wine. We give you a numbered voucher to take to *Vinquiry*, along with a 225 ml. sample bottle for the juice.

(2) When your grapes are crushed, you deliver the voucher and the sample bottle full of clear, settled juice to *Vinquiry* at 7795 Bell Road, Windsor, CA 95492.

(3) *Vinquiry* sends the results to us and to you, so we can help you interpret the results.

## The SAP Panel

This is the more basic panel. It includes Sugar, Total Acid, and pH tests. These are the three tests deemed most essential in the majority of winemaking situations.

By testing these three things: Sugar, Acid, and pH, the SAP panel provides the minimum level of information that a serious home winemaker will generally want to have.

There are, however, a couple of additional tests that will enable winemakers to zero in on Nutrients, an area whose importance has only recently begun to be understood. That brings us to the SNAP Panel.

## The SNAP Panel

In addition to the three tests of the SAP Panel, the SNAP Panel provides detailed information in the area of nutrients. 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 could 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.

## 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.

We also divide the yeasts into three levels of nutritional need (see table on page 13). **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.

With your yeast choice comes your selection of a nutrient addition program from the following table by first choosing 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				
		Low	Med	H-VH
YANC LEVEL	LOW	A	B	E
	MEDIUM	C	D	E
	HIGH	C	C	D

## Nutrient Additions

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

For **program A**, use these levels:

50 ppm or less *YANC*, add 2 grams DAP per gallon.

50-100 ppm *YANC*, add 1 1/2 grams DAP per gallon.

100 -125 ppm *YANC*, add 1/2 gram DAP per gallon.

125+ ppm *YANC*, add no DAP

In addition, about 1/3 of the way through fermentation, add 1 g/gal. of Fermaid K (or Yeast Food).

**B)** Do all of **program A**, plus:

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

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

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

fermentation.

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

## Which Nutrient, When

Add **Fermaid K** (Yeast Food) at the rate of 1 oz. per 32 gallons early in fermentation and prior to ML. Provides a complete and balanced food for yeast. 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 pure 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.

## Costs

The **SAP Panel** (TE98) is priced at \$26.00, and the **SNAP Panel** (TE99) is priced at \$72.00. If you are ordering by mail, there is no additional shipping and handling charge when combined with a mail order that meets our minimum free shipping. If ordering separately, the charge for sending the bottle and voucher is \$4.00. Vouchers are non-refundable, and must be used the harvest they are purchased. You are responsible for delivering your samples to *Vinquiry*.

## Handling & Shipping Juice

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

Freeze the juice in the sample jar (with the lid loose). When the sample is solidly frozen, reseal it and ship via next day air.

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. **Indicate which storage method used to *Vinquiry*.**

# Yeast Recommendations

Locate your grape variety or style, read about the yeast characteristics for the recommended strain(s). Remember that the option is always to use what is freshest and available to you, if all of these strains are not in supply. We try to stock all of these during harvest. See page 18, for instructions on rehydrating dry yeast. See page 12 for Nutrient programs for yeast.

To find fermentation specifics, read down Varietal	Assmannshausen	Beaujolais 71B	Bravello BM45	CSM	Eperney 2	French Red (BDX)	ICV D47	M-2	Montrachet	P. Champagne	Prise de Mousse	Rhone L2226	RC212	Steinberger	Simi White	Wadenswill 46
Fruit Wines	YES	YES			YES						YES	YES	YES	YES		
Enhances Fruit		YES			YES		YES	YES				YES			YES	YES
Enhances Mouthfeel	YES						YES	YES							YES	YES
Sensory Effect*	EVC	Estery	EVC	EVC	EVC	EVC	Neutral	Estery	Complex	Neutral	Neutral	EVC	EVC	EVC	Estery	EVC
Reduces Vegetal Character	YES			YES	YES			YES							YES	
Stabilizes Color	YES			YES		YES						YES				
Cold tolerant					YES						YES			YES		YES
Use to Restart							GOOD			GOOD	GOOD	GOOD				GOOD
Temperature Range F.	68-86	59-86	64-82	59-89	50-80	64-86	59-68	59-86	59-85	59-80	50-86	59-82	68-86	40-70	59-85	50-86
Vigor	Slow	Average	Average	Average	Average	Average	Average	Fast	Average	Fast	Fast	Fast	Average	Slow	Slow	Fast
Alcohol Tolerance %	15	14	16	14	15	16	14	16	16	17	18	18	16	14	14	14
High Alcohol Tolerant			YES			YES		YES	YES	YES	YES	YES	YES			
Nutritional Need**	Medium	LOW	Very High	High	Medium	High	LOW	Medium	Very High	Medium	LOW	High	High	LOW	Medium	Medium
Reaction to Oxygen***	Medium			LOW			Medium		Medium		High	Medium				
Comments	Enhances spiciness	Fruit wines	Extended Macerations	Alternate to BDX	Can be stopped	Ideal Fermentor	Sur Lees Spicy aromas	Complex	High H2S Formation	Vigorous	Late Harvest	Late Harvest	Good Color	Easy to stop	Mouthfeel	Late Harvest

## Notes

### to Text

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

\*\* See page 12 for Nutrient recommendations, especially for Medium and High Categories.

\*\*\* Also try additions of Oxygen with active stirring during fermentation to yeasts that react to O<sub>2</sub> additions.

# GREAT OAK FLAVOR, WITHOUT A BARREL

There are several methods of adding oak flavor and aroma without using a barrel.

Oak staves and sticks take about six weeks to three months for full extraction, extracts are instantaneous and oak chips take only 48 hours.

Oak **chips** are made from full size staves, with all the normal drying and kilning but chipped for easy addition to any size container. They can even be added into the must during fermentation. Use about 3 oz. per 5 gallons. They impart great flavor, but aren't heavy in the aromatic department.

Chain of Oak™ **staves** can be added any time after fermentation to tanks or barrels which have lost their



oak-i-ness. This **Innerstave** innovation, consists of separate oak staves that tie together with nylon ties, which then folds into a barrel. The bung opening must be at least 2". These are also appropriate for use in stainless tanks. One chain treats 60 or so gallons. They can also be used in smaller

barrels if the bung opening is 2", by using less than all 17 staves. We carry both French and American staves.

Also see our lineup of Oak **sticks** for use in Carboys. Use one stick per 5 gallons. After extraction, the stick can be removed and or the wine racked off the stick. Leftover sticks are great on the barbeque.

Finally, the most expensive additive is Liquid Oak **Extract**. A highly concentrated product, liquid oak can be added all the way up to bottling, for making fine tuning adjustments or just finishing a wine that seems lacking in aroma. See page 19 for all these products and small American and French barrels. See below for our method of making your own liquid oak extract using oak chips.

## HOMEMADE OAK FLAVORING

*Homemade Oak Extract is a sound alternative to barrel storage. The marriage of flavors takes place in glass or stainless steel storage containers instead of barrels and therefore needs to be racked at least as frequently as a barrel to slowly introduce oxygen. Other than maintaining that program, the effects of oak flavor and aroma will very nearly match the tastes imparted from storage in oak cooperage. To make up your extract you will need a few supplies, as well as the oak chips.*

### You will need:

8 oz. Oak Chips, Plain or Toasted	1 yd. Cheesecloth
25 oz. Vodka (or Everclear)	Small Funnel
2 Quart Mason Jars with Lids	.5 ml Pipet or Syringe
100 ml Graduated Cylinder	5 Clean Wine Glasses

**To make the extract**, fill one Mason jar with the oak chips and fill the jar completely with vodka. Cover and let stand for 24 hours. Line a funnel with several layers of folded cheesecloth and place over the second Mason jar. Pour in the oak and vodka mixture, stand until well drained. You will normally collect approximately 10 to 12 oz. of Liquid Oak Extract. You may further clarify this liquid by straining a second time through a paper coffee filter. Pour the extract into a clean bottle and store until needed.

**Trial additions: measure 100 ml of wine into the graduated cylinder** and add .5 ml liquid

oak extract. Pour 1 oz. of this flavored wine into a wine glass and mark .5 ml. Add 1 oz. of wine to the graduated cylinder. Add another .5 ml liquid oak extract. Pour 1 oz. of this second flavored wine into a second wine glass and mark .85 ml. Add 1 oz. of wine to the graduated cylinder and repeat this process 3 more times to give you five wine glasses marked .5, .85, 1.1, 1.28, and 1.41 ml. Now taste and smell these different wines until you decide which amount is the most desirable.

Now, **to treat five gallons of wine**, multiply your favorite amount (in ml) by 188. For example: your favorite sample wine glass holds is the sample with 1.28 ml added. Multiply 1.28 x 188 = 241 ml. Add this extract per 5 gallons of wine you are flavoring. Taste it now and again in three weeks. The wine will appear to have lost some of its fruitier flavor and aromatic components, but after several weeks, the extract will "marry" to the wine and the fruit will reappear. We recommend you do the extract addition several weeks before bottling, in case you want to increase the amount of oak by making a second addition.

<b>Sample</b>	<b>Dosage</b>	<b>Add to 5 gallons</b>
Glass #1	.50 ml	x 188 = 94 ml.
Glass #2	.85 ml	x 188 = 160 ml.
Glass #3	1.10 ml	x 188 = 207 ml.
Glass #4	1.28 ml	x 188 = 241 ml.
Glass #5	1.41 ml	x 188 = 265 ml.

# Barrel Care Procedures

## 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 rancidity 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 a Barrel 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 a Barrel 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 completely. Now prepare for storage.

## Short Term Storage

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

## 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.

## 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.

## Grape Growers Wanted

We keep a book at our shop giving information provided by grape growers with small lots of grapes for sale to amateur winemakers. The program has effectively bridged the gap between the grower needing to find a home for some excess crop and the winemaker looking for a supply to harvest.

If you would like to place a listing, please send us a list of grapes available, with your **name, address and phone number.**

Please **also indicate:**

The estimated Picking Date

Varietals available

Minimum/Max avail

Price with/or without picking

Age of vines, location of vineyard.

## Competitions for Winemakers

*Marin County Fair*, Entries due last week of May or so. Contact Marin County Fairgrounds. We normally deliver the entries for you, if you have sent in forms and money in advance.

*Orange County Fair*, Entries due June 1st., Contact Jim Graver, chairman of Orange County Wine Society 714 708 1636. Again, we normally deliver the entries for a small fee, but you must send in the forms in advance.

*HomeWinemakers Classic*, Napa County, contact via the web at [www.drycreek.org](http://www.drycreek.org). This is a limited competition and fills up. So contact them in April to be included. Event tickets are on sale at the store, Mark your calendar now for the Classic 2004: Saturday, July 17, 2004, 4:30 -7:00, St. Supéry Winery.

*California State Fair*. Contact fair [www.bigfun.org](http://www.bigfun.org). Deadline for entries is July 7. Entries accepted at The Beverage People.

*Harvest Fair of Sonoma County*. Contact fair office at 545-4203, we have forms. Deadline for entries is the last week of August. Opportunity for local winemakers to judge, contact Robert Bennett, 433-4574 to be included on a panel. Deliver entries direct to fair.



# 2006 Winemaking Supplies Catalog

## 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	\$275.00
WE03	#30	12"	17"	7	\$325.00
WE04	#35	14"	19"	12	\$400.00
WE05	#40	16"	21"	18	\$450.00
WE06	#45	18"	24"	25	\$550.00
WE07	#50	20"	26"	34	\$650.00

**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.*

WE54	Piston, manual Hydraulic Press on wheels #40	16" x 21"	\$1575.00
WE50	Piston, manual Hydraulic Press on wheels #50	20" x 26"	\$2175.00
WE51	Piston, electric Hydraulic Press on wheels #50	20" x 26"	\$3150.00

**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	\$1175.00
WE46	#54 with wheels	21"	28"	42	\$2200.00

## Crushers and Stemmer/Crushers

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

*Dimensions of WE12 and 13 Bins: 21" x 32", WE30 and 35 Bins: 21" x 21".*

WE12	Double roller crusher with Paint finish	\$225.00
WE13	Double roller crusher with all stainless hopper <i>(Shown right.)</i>	\$275.00
WE35	Boxed roller crusher, stainless with removeable supports	\$300.00
WE30	Boxed APPLE crusher, stainless hopper, cutting knives, removeable supports	\$300.00

**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	\$400.00
WE15	Manual, stainless stemmer/crusher	\$525.00
WE16	Electric 110V, paint grade stemmer/crusher <i>(Shown middle right.)</i>	\$675.00
WE17	Electric 110V, stainless steel stemmer/crusher	\$750.00
WE22	Electric 110V, paint grade stemmer/crusher with screw feed and extended hopper <i>(Dimensions of Bin: 18" x 35")</i>	\$775.00
WE18	Electric 110V, stainless stemmer/crusher with screw feed (SF) and extended hopper (EXH)	\$900.00
WE25	Electric 110V, ALL stainless stemmer/crusher, w/SF & EXH <i>(Shown bottom right)</i>	\$1100.00
WE33	Electric 110V, ALL stainless stemmer/crusher (Rubber Rollers), w/SF & EXH	\$1250.00
WE20	Support stand for above stemmer/crushers	\$250.00

## Large Storage Tanks

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

WE43	100 Liter Stainless tank (26 g.)	\$375.00
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.)	\$675.00
WE45	500 Liter Stainless tank (132 g.)	\$900.00
WE41	600 Liter Stainless tank (158 g.)	\$1000.00
WE53	300 Liter Stainless tank / Bottom cone, 3 legs	\$1375.00
WE49	600 Liter Stainless tank / Bottom cone, 3 legs	\$1600.00
WE47	800 Liter Stainless tank / Bottom cone, 3 legs	\$1750.00

## Filters/Pumps

F05	3 Plate Filter/Pump (3 gal.min.) BUON VINO™	\$375.00
WE60	10 Plate Filter/Pump (11 gal. min.)	\$1000.00
WE10	6 Plate Filter/Pump (11 gal. min.)	\$700.00
WE62	Pump, 3/4" ports all S/S 110V, .5 HP, not self priming, (11 gal. min.)	\$250.00
WE61	Pump, 1" tri-clamp ports all S/S, on cart, with forward/reverse/bypass, 110V	\$825.00



#50 Piston Press



Roller Crusher



WE16 Stemmer/Crusher



WE25 Stemmer/Crusher

Equipment is priced for pick up at the store. The basket presses sized #25 to #40 can be broken down for shipping via UPS. All other equipment should be picked up at the store. Call for a freight quote for delivery of any large pieces of equipment.

# INGREDIENTS

## Ingredient Kits for Winemaking

Two cans of concentrate of your choice are included with instructions for 5 gallons of wine. Choose from the list below, and we include the yeast, sugar, acid blend, and a pack of wine labels.

- BDW02 .....\$34.95  
**Choose your flavor** or use this list to order individual cans  
 (C002) **Chenin Blanc** or (C004) **Chablis**, .....\$10.95  
 (C006) **Burgundy** or (C005) **Ruby Cabernet**.....\$12.95

## 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.

- C030 **Cabernet Sauvignon (R)** ..... \$109.95  
 C031 **Chardonnay (W)** ..... \$94.95  
 C032 **Sangiovese (R)** ..... \$109.95  
 C039 **Pinot Grigio (W)** ..... \$94.95  
 C034 **Shiraz (R)** ..... \$109.95



- C035 **Zinfandel (R)** ..... \$109.95  
 C036 **Sauvignon Blanc (W)** ..... \$84.95  
 C038 **Montepulciano (R)** ..... \$109.95

## Seedless Fruit Puree

Each 49 oz. 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**.....\$15.95  
 FL45 **Blackberry Puree**.....\$14.95  
 FL46 **Apricot Puree**.....\$13.95

# EQUIPMENT KITS

## Wine Equipment Kit



Complete with a ten gallon primary fermentor and lid, a six-gallon glass secondary, an air lock and stopper, 25 Campden tablets, a siphon assembly, a bottle filler, two lever hand corker and 25 corks, Acid Testing Kit, Hydrometer and Test jar, a bottle brush and the book *Winemaker's*

*Recipe Handbook*. BNW01..... \$119.95

## Mead Equipment Kit

Includes a 7-gallon glass primary and 5-gallon glass secondary fermentor with stopper and airlock, a siphon assembly, bottle filler, an Acid Test kit, Hydrometer and Test jar, the "Emily" Capper, caps, a spoon, sanitizer, a bottle brush and the book *Making Mead* by Morse. BN60..... \$119.95

## Meadmaker's Ingredient Kit

9 lbs. of our clover honey with yeast, nutrients, acid blend, sulfite, priming sugar and instructions, makes 5 gallons of sparkling mead. BN50 .....\$39.95

# SUPPLIES

## Acids

- A17 **Ascorbic**. 1 oz. .... \$1.85  
 A05 **Citric**. 2 oz. .... \$ .95  
 A14 **Malic**. 2 oz. .... \$ .95  
 A10 **Tartaric**. 2 oz. .... \$1.95  
 A24 **Acid Blend**. (Citric, Tartaric & Malic). 2 oz. .... \$1.25

## Fermenting & Preserving Aids

- AD15 **Corn Sugar**. 5 lbs ..... \$5.95  
 QR04 **Pectic Enzyme**. 1 oz. .... \$1.85  
 FN18 **Potassium Sorbate**. 1/2 oz..... \$ .99  
 FN35 **Wine Conditioner/Stabilizer**. 500 ml. .... \$3.95  
 QR11 **Yeast Nutrient (DAP)**. 2 oz. .... \$1.50  
 QR33 **Autolysed Yeast**, 2 oz. .... \$1.50  
 QR16 **Yeast Hulls**, 2 oz. .... \$2.95  
 QR06 **Fermaid K™** Yeast Food. Complete nutrient mix with trace minerals, use 1 oz. per 30 gallons. 3 oz. .... \$2.95  
 QR50 **Yeast Nutrient for Meads**. (Our special blend) Use 2 oz. per 5 gallons. 2 oz. .... \$1.75  
 QR38 **Acti-ML** (Nutrient for MLF - 66 gal.) 50gr. .... \$5.95  
 WY60 **Lysozyme liquid "Lyso-easy"** 250 ml. .... \$25.95

## Wine Yeast & Malolactic

### YEAST

Choose your yeast from the information given on page 13. Use one gram per gallon. Shelf life is 3 to 4 months, if kept refrigerated much of that time. To make a starter: Boil 4 oz. of distilled water, cool to 100°F, add dry yeast and agitate for 10 minutes. Then spread over juice or grape must. Stir in and stir again in 24 hours.

<b>10 grams</b>	.....	\$1.50
WY27	<i>Pasteur Champagne</i> (all-purpose yeast)	
WY23	<i>Prise de Mousse</i> (low foam, yeast for whites)	
<b>10 grams</b>	.....	\$1.95
WY38	Assmanshausen (Pinot Noir, Zinfandel)	
WY25	Beaujolais 71B (Fruity, aromatic reds)	
WY45	Brunello BM45 (Sangiovese, Macerations)	
WY53	CSM (Cab Sauv., Merlot, Cab Franc)	
WY22	Epernay 2 (Fruit wines and Blanc de Noirs)	
WY30	French Red (Cabernet, Merlot, Zinfandel)	
WY44	ICV D47 (Full-bodied White Wines)	
WY50	M2 (Premium Chardonnay and Cabernet)	
WY26	Montrachet (All-purpose if no sulfur used)	
WY29	Steinberger (Riesling and Gewurztraminer)	
WY35	Rhone #L2226 (Syrah, Rhone)	
WY55	RC212 (Pinot Noir, other blush wines)	
WY31	Simi White (French White) (Chardonnay)	
WY28	Wadenswil 46 (Pinot, Riesling)	

### MALOLACTIC

WY32	ML Culture, <i>MCW Strain</i> . 2 gram pack inoculates 5 gallons directly. May be built up to treat up to 500 gallons. Comes with instructions. ....	\$15.95
WY51	ML Culture, <i>Enoferm Alpha Strain</i> . 2.6 gram pack inoculates 60 gallons directly. With instructions .....	\$22.95

### Fining Agents

FN06	<b>Sparkolloid™</b> 1 oz. ....	\$ 1.75
FN32	<b>Bentonite</b> 2 oz. ....	\$ .69
FN07	<b>Isinglass</b> 1 oz.. ....	\$ 3.95
FN03	<b>Fining Gelatin</b> (75 bloom, grade B) 1 oz. ....	\$ .99
FN16	<b>Tannin</b> . 1/4 oz. ....	\$ .95
TE24	<b>Copper Sulfate Solution</b> . 4 oz. ....	\$ 4.00
FN22	<b>Polyclar VT (PVPP)</b> (With Instructions).1 oz. ....	\$ 1.95
QR28	<b>Calcium Carbonate</b> (With Instructions).1 oz. ....	\$ .69
FN39	<b>Potassium Bicarbonate</b> (With Instructions).4 oz. ..	\$ 2.95

### Cleaners & Sterilants

CS25	<b>One Step Cleaner</b> 1 lb. ....	\$4.95
CS12	<b>Soda Ash</b> (Barrel cleaner) 1 lb. ....	\$1.50
CS29	<b>Proxyclean®</b> (Barrel Wash) 1 lb. ....	\$4.95
CS24	<b>Sodium Metabisulfite</b> 4 oz. ....	\$2.25
CS20	<b>Potassium Metabisulfite</b> 1 lb. ....	\$4.95
CS17	<b>Campden Tablets</b> Pack of 25. ....	\$ .95
CS16	<b>Campden Tablets</b> Pack of 100. ....	\$2.95
CS33	<b>Efferbaktol SO<sub>2</sub> Granules, 2 grams</b> .....	\$1.00
CS35	<b>Efferbaktol SO<sub>2</sub> Granules, 5 grams</b> .....	\$1.50
B39	<b>Sulfur Strips</b> 2 strips .....	\$ .59
B38	<b>Sulfur Strips</b> Bundle of 70 strips .....	\$17.95
CS31	<b>TDC™ Glass Cleaner</b> 1 Liter.....	\$13.25

CS03	<b>BTF™ Iodophor Sanitizer</b> 1 Liter .....	\$13.95
QE29	<b>Bottle Brush</b> .....	\$4.50
QE30	<b>Carboy Brush</b> .....	\$4.95
QE31	<b>Long Handled Nylon Scrub Brush</b> .....	\$18.95

## EQUIPMENT

### Transferring

QE11	<b>5/16" Racking Tube</b> . ....	\$3.95
FST02	<b>Hose Shutoff Clamp for 5/16" hose</b> . ....	\$.69
QE33	<b>1/2" Racking Tube</b> . ....	\$4.95
FST03	<b>Hose Shutoff Clamp for 1/2" hose</b> . ....	\$1.25
QE17	<b>Bottle Filler for 5/16" hose</b> . ....	\$4.95
QE20	<b>Bottle Filler for 1/2" hose</b> . ....	\$5.95
PS26	<b>Transfer Pump</b> , phenolic head, electric .....	\$139.00
F01	<b>Filter/Strainer</b> for Pumps (Use with 1/2" hose) .....	\$16.95
PS36	<b>Procon Brass Pump</b> , 4 GPM, 1/4 HP .....	\$285.95
PS35	<b>Procon Stainless Pump</b> , 4 GPM, 1/4 HP .....	\$395.95

PS04	<i>Pump hose barb fitting</i> , 3/4" x 1/2" barb. Plastic .....	\$1.99
PS05	<i>Pump hose barb fitting</i> , 3/4" x 5/8" barb. Plastic .....	\$1.99
PS04	<i>Pump hose barb fitting</i> , 1/2" x 1/2" barb. Brass .....	\$2.95
PB05	<i>Pump hose barb fitting</i> , 1/2" x 1/2" barb. Stainless steel .....	\$10.95



PS35 Procon Stainless Pump with PB05 fittings

### Funnels:

QE24	<b>9" Carboy</b> .....	\$9.95
QE23	<b>10" Barrel</b> .....	\$9.95
QE22	<b>6" Bottle</b> .....	\$4.95
QE21	<b>4" Bottle</b> .....	\$2.95

### Mesh Pressing Bags:

PS32	<b>12" X 19"</b> .....	\$4.95
PS16	<b>20" X 22"</b> .....	\$5.95
PS15	<b>24" X 24" Apple pressing</b> .....	\$10.95

### Miscellaneous

KEG58	<b>Food Grade Lubricant</b> . 4 oz. ....	\$3.95
MS09	<b>Gondola Enamel</b> . Food grade paint. 16 oz. ...	\$10.95
MS42	<b>Private Reserve™</b> . Nitrogen gas .....	\$9.95
MS32	<b>Grape Picking Shears</b> . ....	\$16.95
MS16	<b>Grape Picking Knife</b> . Plastic handle .....	\$6.95
QE36	<b>Grape Masher</b> . (Cap Punch Tool) 24" long .....	\$29.95
MS34	<b>Wine Degasser/Lees Stirrer</b> . 16" long .....	\$19.95
MS41	<b>Food Grade Shovel</b> 14" x 17" x 42" .....	\$46.95
MS33	<b>Wine Degasser/Blender</b> . Nylon whip to stir or de-gas wine, use with a drill. ....	\$10.95
MS43	<b>Wine Away™</b> . 12 oz. Spray Bottle.....	\$8.95

## Filters

**F05 Buon Vino Super Jet Filter.** Plate & frame filter includes pump and will process 30 to 45 gallons per set of pads. Change pads and continue. Pump is also useful alone for racking wine. ....\$375.00



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

F09 **5-7 m. Coarse** ...\$3.95

F22 **0.8 m. Fine** .....\$3.95

F21 **0.5 m. Sterile** ....\$4.95

F23 **25 Backing Papers for Filter Pads** ..... \$4.95

## F03 10" Cartridge Filter Housing.

Best for early cleanup of wine and larger volumes than the *Buon Vino*. Choose a cartridge from list below. The smaller the micron rating, the more sediment is removed. Clear, poly housing \$34.95

### 10" Filter Cartridges:

F10 **3 micron Coarse** .....\$12.95

F11 **1 micron Fine** ..... \$12.95

F12 **.5 micron Sterile** .....\$14.95

F41 **.5 micron, reuseable Sterile**.....\$44.95

**Hose Barb for Filter Housing.** *Need two. Specify: PS02 3/8" hose.* or PS03 1/2" hose.....\$1.29



## Containers

P16 10 liter Plastic Pail, with Pour out lip and Bail Handle.  
.....\$7.95

P01 **6.8 Gallon Plastic Bucket** with Wire Bale Handle,  
Graduation marks in half gallons & Locking lid. ....\$13.50

P17 **Poly Drum Liner** (4 mil, 60 gall.) .....\$4.95

P04M **10 Gallon Heavy-Duty Plastic Bucket**  
with molded handles. ....\$20.95

P05 **10 Gallon Lid** .....\$5.95

20, 32 AND 44 GALLON SIZES and lids are available at the store.

QE44 **Carboy Draining Stand.** .....\$8.95

QE34 **Carboy Handle.** 3, 5 and 6 gallon size .....\$6.95

QE47 **Carboy Handle.** 7 gallon size .....\$6.95

## Glass Carboys EASIEST TO SANITIZE

GL02M **3 Gallon Glass Carboy.** .....\$21.95

GL01M **5 Gallon Glass Carboy.** .....\$26.95

GL40M **6 Gallon Glass Carboy.** .....\$28.95

GL04M **7 Gallon Glass Carboy.** .....\$28.95

In-store prices: 17.95, 21.95, 24.95 and 24.95 for the 3.5, 6 and 7 gallon carboys.

## Plastic Carboys Lightweight, NO TASTE NO ODOR NO O2

GL45M **5 Gallon BETTER BOTTLE Carboy.** ..\$24.95

## Oak

*Oak Chips, 1 lb sacks*

B46 **American Medium Toast.**

.....\$5.95, or

*Specify: B24 French Medium*

**Toast or B25 French Dark**

**Toast.** .....\$6.95

*Carboy Oak Stick Inserts*

B80 **American Medium.** \$20.95,

B82 **American Dark.** \$21.95,

B81 **French Medium** \$24.95, or B83 **French Dark.** .....\$25.95

*Chain-O-Oak™ Barrel Stave Inserts, 17 staves and ties*

B78 **American Medium.** \$45.95, B79 **American Dark** \$49.95,

B74 **French Medium** \$49.95 or B75 **French Dark.** .....\$54.95

*New Oak Barrels: (Kiln Dried)*

B04 **American Oak, 5 gallon** ..... \$149.95

B05 **American Oak, 10 gallon** ..... \$189.95

B06 **American Oak, 15 gallon** ..... \$209.95

*New Oak Barrels: (Air Dried)*

B47 **American Oak, 26 gallon** - medium toast..... \$325.00

*Used French Oak Barrels: (Shaved and Rebuilt from full size barrels, with new Hoops) (Barrels come with medium toast.)*

B84 **French Oak, 10 gallon** ..... \$285.00

B85 **French Oak, 15 gallon** ..... \$305.00

B43 **French Oak, 20 gallon** ..... \$315.00

B48 **French Oak, 30 gallon** ..... \$325.00

*Small American Oak Barrels:*

B01 **American Oak, 1 gallon** ..... \$89.95

B02 **American Oak, 2 gallon** ..... \$95.95

B03 **American Oak, 3 gallon** ..... \$104.95

*Vinegar Barrels are paraffin lined (P):*

B10 **American Oak, 2 gallon (P)** ..... \$85.95

B11 **American Oak, 3 gallon (P)** ..... \$95.95

B12 **American Oak, 5 gallon (P)** ..... \$119.95

## Bungs & Barrel Supplies

FST44 **Silicone Bung "R"** (30 X 44 mm) (#8-#9 size).....\$5.95

FST40 **Silicone Bung** (47 X 54 mm) (#11 size).....\$6.95

B16 **Redwood Bung** (specify diameter).....\$2.95

B21 **Hardwood Bung** (specify diameter) .....\$3.95

B37 **Barrel Wax** 4 oz. ....\$3.25

MS06 **Mildewcide Barrel Coating**, 16 oz. ....\$6.95

**Spigots:** Wood. B29 **4"** \$5.95 B30 **6"** \$7.95, or B31 **7"** ....

Additional spigots 2 1/2" to 12" in length are available. ....\$8.95

B13 **Hoop Nails Pack of 20.** ....\$1.25

B14 **Spiles for Barrels** (Fills holes) Pack of 10 .....\$1.75

B42 **Liquid Oak Essence.** 4 oz. size treats 5-10 gallons of red wine, 10-15 gallons of white wine. ....\$5.95



## Fermentation Locks

FST04	<b>Three Piece Fermentation Lock</b>	.....	\$1.19
FST05	<b>Fermentation Lock Red Top</b>	.....	\$1.19
<b>Breather Bungs, Waterless Silicone Air Lock and Bung:</b>			
FST42	(fits most carboys)	.....	\$4.95
FST47	(fits 5 gallon glass or plastic carboys)	.....	\$7.95
FST46	(#9)	.....	\$5.95
FST45	(fits 2", #11 size)	.....	\$6.95

## Drilled Rubber Stoppers

#	Code	Top	Bottom	Price
2	FST09	13/16"	5/8"	\$ .60
6	FST12	1 1/16"	29/32"	\$ .95
6.5	FST13	1 11/32"	1 1/16"	\$ 1.00
7	FST14	1 7/16"	1 3/16"	\$ 1.20
8	FST15	1 5/8"	1 5/16"	\$ 1.35
8.5	FST16	1 11/16"	1 7/16"	\$ 1.45
9	FST17	1 3/4"	1 15/32"	\$ 1.55
10	FST19	1 31/32"	1 5/8"	\$ 1.75
10.5	FST20	2 5/64"	1 3/4"	\$ 1.85
11	FST21	2 13/64"	1 7/8"	\$ 1.95
11.5	FST22	2 15/32"	2"	\$ 2.50
12	FST23	2 1/2"	2 1/8"	\$ 2.70
13	FST24	2 11/16"	2 9/32"	\$ 2.95

Most sizes are available solid, at the same price.

## SIPHON HOSE

Sold by the FOOT

HS03	<b>5/16"</b> i.d.	.....	\$ .59
HS04	<b>3/8"</b> i.d.	.....	\$ .59
HS05	<b>1/2"</b> i.d.	.....	\$ .79
HS06	<b>1/2"</b> i.d. thick wall.	.....	\$ 1.09
HS07	<b>5/8"</b> i.d. thick wall.	.....	\$1.19
HS08	<b>3/4"</b> i.d. thick wall.	.....	\$1.29

## Bottling Supplies

BE01	<b>Italian Lever Corker.</b>	.....	\$28.95
BE19	<b>Mini-Floor Corker. Nylon Jaws</b>	.....	\$64.95
BE03	<b>Heavy Duty Floor Corker. Brass Jaws</b>	.....	\$125.00
QE09	<b>90 Bottle Draining Tree.</b>	.....	\$29.95
WE19	<b>Plastic Model 3 Spout Bottle Filler.</b>	.....	\$139.95
WE28	<b>Stainless Steel 3 Spout Bottle Filler.</b>	.....	\$325.00
WE23	<b>Stainless Steel 3 Spout Bottle Tray.</b>	.....	\$45.00
WE29	<b>Stainless Steel 5 Spout Bottle Filler.</b>	.....	\$375.00
WE24	<b>Stainless Steel 5 Spout Bottle Tray.</b>	.....	\$55.00
WC06	<b>1 1/2" Twin Disk Corks, 100 pack</b>	.....	\$17.95
WC14	<b>1 3/4" Twin Disk Corks. 100 pack</b>	.....	\$24.95
WC08	<b>1 3/4" Supreme Corq® Corks. 100 pack</b>	.....	\$26.95
WC13B	<b>1 3/4" Twin Disk Corks. 1000 pack</b>	.....	\$195.95
TC26	<b>All-Plastic Wine Bottle Cork</b> ea.	.....	\$.15
TC20	<b>Plastic Champagne Stoppers</b> ea.	.....	\$.12



Stainless Bottle Filler  
Three Spout (WE28)



Heavy Duty  
Floor-Model Corker (BE03)



10 Plate Wine Filter  
(WE60)



Transfer Pump (PS26)

TC21	<b>Champagne Wires</b> ea.	.....	\$ .09
TC18	<b>28 mm Black Top Bar Top Cork</b> ea.	.....	\$ .29
TC28	<b>28 mm Black Top Bar Top Cork 100</b>	.....	\$ 26.95
S01	<b>28 mm Metal Screw Caps</b> ea.	.....	\$.15
S02	<b>38 mm Metal Screw Caps.</b> ea.	.....	\$.25
S03	<b>28 mm. Plastic Polyseal Caps</b>	.....	\$.35
S04	<b>38 mm. Plastic Polyseal Caps</b>	.....	\$.85

**Bottle Seal, Wax** Available in 6 colors ..... \$8.95  
SL26 *Black*, SL27 *Burgundy*, SL28 *Gold*, SL29 *Silver*, SL31 *Blue*  
or SL30 *Red*, SL32 *Green*. 1 lb., Melt to make decorative seal.

**Heat Shrink Plastic Sleeves.** Apply to bottle neck with hot water  
(180°F. or heat gun. *Specify:* SL18 *Silver*, SL33 *Green*, SL20 *Gold*,  
SL19 *Burgundy*, SL09 *Blue* or SL49 *Black w/ Gold Band*. OR for  
*Burgundy bottles Oversize Sleeves are SL01 Maroon, SL02 White,*  
SL03 *Black*. Sold by the Dozen ..... \$ 1.19

**Decorative Wine Bottle Labels.** Blank with room to write.  
25 per pack, Gum Back. .... \$2.95

MS15	<b>Label Glue 16 oz.</b>	.....	\$6.95
MS24	<b>Iceproof Label Glue 32 oz.</b>	.....	\$13.95
MS26	<b>Manual Label Gluer Glue Pot.</b>	.....	\$249.95
BE07	<b>Super "M" Crown Capper</b>	.....	\$37.95
BE10	<b>Plain Crown Caps 1 gross (144 caps)</b>	.....	\$3.50
GL27M	<b>Green or GL54M Flint Bottles 375ml. 12/cs.</b>	...	\$16.95
GL12M	<b>Green or GL50M Flint Bottles 750ml. 12/cs.</b>	...	\$16.95

## Tapered Corks, Solid

Size	Code	Top	Bottom	Price
#9	TC05	23.8mm	18.6mm	..... \$ .20
#14	TC06	31.8mm	25.8mm	..... \$ .60
#16	TC07	34.9mm	27.9mm	..... \$ .75
#17	TC23	35.9mm	29.9mm	..... \$ .85
#18	TC08	38.1mm	30.9mm	..... \$ .90
#20	TC09	41.3mm	34.1mm	..... \$ 1.05
#22	TC10	44.5mm	37.3mm	..... \$ 1.35
#24	TC11	47.6mm	40.5mm	..... \$ 1.40
#26	TC12	50.8mm	43.6mm	..... \$ 1.85

# WINE LABORATORY

## Sugar & Alcohol Testing

- TE40 **9" Economy Hydrometer** has Brix, Specific Gravity, and Potential Alcohol scales. .... \$7.95
- TE42 **10 1/2" Hydrometer with Thermometer.**  
Needs the tall test jar. .... \$16.95
- Precision Hydrometers (Brix only). 9"**  
*Specify range: TE43 -5° to +5°, TE44 -1° to 11°, TE45 9° to 21°, or TE47 20° to 50°* ..... \$20.95
- TE39 **9" Hydrometer Proof and Traillie** ..... \$7.95
- TE65 **"Santa Rosa" Residual Sugar Kit. 36 Tests**  
(with instructions). .... \$21.95
- TE15 **Replacement Reagent Tablets for Residual Sugar Test Kit (36 pack).** ..... \$19.95
- TE07 **Replacement .5 ml. Pipet.** ..... \$ .75
- TE14 **Replacement Test Tube.** ..... \$ .75
- TE23 **Refractometer, 0-32° Brix, ATC, boxed.**..... \$89.95
- TE32 **20° Brix Solution.** Sugar solution to standardize the refractometer. 2 oz. .... \$2.50
- TE13 **Vinometer.** Measures alcohol in dry wine ..... \$7.95

## Labware

- Regular Test Jar for 9" Hydrometer.**
- TE55 **Plastic.** ..... \$4.95
- TE53 **Glass.** ..... \$10.95
- TE08 **100 ml. Graduated Cylinder Pyrex.** ..... \$13.95
- Tall Test Jar for 10 /12" Hydrometer.**
- TE56 **Plastic.** ..... \$5.95
- TE54 **Glass.** ..... \$21.95
- TE07 **1 ml. Pipet. Each.** ..... \$ .75
- TE06 **10 ml. Pipet. Pack of 10.** ..... \$8.95
- TE62 **10 ml. Pipet. Each.** ..... \$1.25
- TE86 **100 ml. Graduated Beaker Polypropylene.**..... \$9.95
- TE87 **400 ml. Graduated Beaker Polypropylene.** ..... \$1.95
- TE92 **1000 ml. Graduated Beaker Polypropylene.** ..... \$2.95
- TE83 **1000 ml. Polypropylene Beaker w/handle.** ..... \$10.95
- TE84 **2000 ml. Polypropylene Beaker w/handle.** ..... \$11.95
- TE85 **3000 ml. Polypropylene Beaker w/handle.** ..... \$13.95
- TE10 **500 ml. Pyrex Erlenmeyer Flask.** ..... \$10.95
- TE09 **1000 ml. Pyrex Erlenmeyer Flask.** ..... \$12.95

## Sulfite and Acid Testing Kits

- TE26 **Country Wines Acid Test Kit** ..... \$8.95
- TE29 **Sodium Hydroxide Refill (Neutralizer) (for TE26)**  
4 oz., 0.1 normal ..... \$4.95
- TE58 **Phenolphthalein Refill. (Indicator) (for TE26)** 3 dram ..... \$1.95



- TE61 **Accuvin Titratable Acid (10 tests)**..... \$25.95
- TE30 **Acidometer, Precision Acid Test Kit** ..... \$19.95
- TE66 **Blue Hydroxide Refill (for TE30) (100 ml.)**  
..... \$5.95
- TE82 **Iodic Solution Tests free SO<sub>2</sub> with the TE30 Acid Kit components. (100 ml.)** ..... \$11.95
- TE02 **Titrets® Free SO<sub>2</sub> Test Kit. Pack of 10.**  
..... \$18.95



## pH and ML Testing

- TE60 **Accuvin pH (10 tests)** ..... \$22.95
- TE73 **Waterproof pH Tester20 DJ. ATC. Digital, battery operated, accuracy to 0.01 pH. Auto temperature compensated, double junction electrode can be replaced.** ..... \$89.95
- TE69 **Replacement Electrode for Waterproof pH Testr2 (old model)**..... \$39.95
- T35 **Replacement Electrode for Waterproof pH Testr20. (new model)** ..... \$54.95
- TE72 **pH Buffer Capsules.**  
(pH 4.0. and 7.0) One each capsule, to dissolve in 100ml. distilled water to calibrate your meter. .... \$1.95



*Kit for testing Malolactic Fermentation*

- TE20 **Malolactic Chromatography Kit. With 7 papers and 4 oz Solvent**..... \$39.95
- TE17 **Replacement Solvent. 4 oz.**..... \$10.95
- TE22 **Replacement Paper 5 Sheets.** ..... \$3.95
- TE19 **Replacement Pipets. (100).** ..... \$6.95
- TE67 **Accuvin Malic Acid. (10 tests)** ..... \$30.95

## Thermometers

- TE38 **Spot Check Probe Thermometer. 0-220°F, Recalibratable, Type 304 Stainless, 1" Dial x 5" Stem** ..... \$9.95
- TE90 **Must or Juice Thermometer. 0-220°F, Recalibratable, Type 304 Stainless, 2" Dial x 12" Stem, comes with clip.**  
..... \$32.95
- TE91 **Floating Glass Thermometer. 12" (0-220° F. and -15-100°C).** ..... \$14.95
- TE37 **Floating Glass Thermometer. 8" (40-210° F. and 0-100°C).** ..... \$8.95
- TE81 **Fermometer. Monitors temperature from 36 to 78°F, glue-backed to read the surface temperature of carboys.** ..... \$2.95

## Wine Thiefs

- TE49 **Wine Thief. Plastic. One piece.** ..... \$4.95
- TE48 **Wine Thief. Plastic. Assembled of 3 pcs** ..... \$7.95
- TE52 **Wine Thief Glass. Pyrex. (37/8" by 15")** ..... \$18.95
- TE59 **Wine Thief. Angled 24" w/"D" Ring Handle and tough Borosilicate Glass.** ..... \$46.95

## WINEMAKING BOOKS AND VIDEO

BK56 *Making Table Wine at Home*  
Cooke & Lapsley. UC Davis text.  
..... \$ 19.95  
BK140 *Home Winemaking Step by Step*  
Iverson. .... \$17.95  
BK20 *Micro Vinification*  
Dharmadhikari and Wilker. .... \$34.95  
BK142 *Winemaker's Recipe Handbook*  
Massaccesi. .... \$ 4.95  
BK40 *Modern Winemaking*  
Jackisch. .... \$39.95  
BK44 *Knowing and Making Wine*  
Peynaud. .... \$89.95

BK61 *Complete Handbook of Winemaking*  
American Wine Society. .... \$14.95  
BK54 *How and Why to Build a  
Wine Cellar*, Gold..... \$20.00  
BK59 *A Handbook For Must and Wine  
Analysis* A cookbook approach to analy-  
sis, for home labs.  
Barrus & Evans. .... \$24.95  
MG11 *Practical Winery and Vineyard  
Magazine*, current issue. .... \$3.95  
BK109 *Making Wine at Home,  
"The Video"*, Cutler,  
1 hour and 15 min. .... \$29.95



## GRAPE GROWING, CIDER, CHEESE, VINEGAR, MEADMAKING BOOKS

### Grapes

BK80 *Great Grapes*, Proulx .....\$3.95  
BK71 *Wine Grape Varieties in California*  
UC Extension..... \$30.95  
BK129 *Vineyard Simple*, Powers..... \$24.95  
BK67 *The Backyard Vintner*, Law ..... \$19.95

### Cider

BK70 *Sweet & Hard Cider*, Proulx & Nichols .  
..... \$14.95  
BK72 *Making Cider*, Deal .....\$9.95  
BK79 *Making the Best Apple Cider* .....\$3.95

### Mead

BK77 *Making Mead*, Morse .....\$14.95  
BK51 *The Compleat Meadmaker*, Schramm ..... \$19.95

### Other Fermentations

BK84 *Making Vinegar at Home* .....\$4.95  
BK03 *Homemade Vinegar* .....\$8.95  
CH73 *The Cheesemaker's Manual* ..... \$34.95  
BK74 *Making Cheese, Butter, Yogurt* .....\$3.95  
BK75 *Cheesemaking Made Easy* ..... \$16.95  
BK76 *Home Sausage Making* ..... \$16.95  
BK36 *The Compleat Distiller* ..... \$25.00

## ORDERING

**Questions?** Retail hours are 10:00 to 5:30 Tuesday through Friday and Saturday 10:00 to 5:00.

We are also open on Mondays from August through December. We're always ready to answer questions for our customers.

### Ordering Instructions:

For the most personal service, call our TOLL FREE ORDER LINE, (800) 544-1867, which may be used with your Visa, or Mastercard.

To place your order by check, please note the following, if you live in California, add 8% sales tax on non-food items. **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 re-

ceived, 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 overnight Air service, or UPS 2 DAY Air service. **For items totaling less than \$50.00, add \$6.00 for shipping to California, Nevada, Oregon and Washington.** All other states, add \$8.00. Additional rates are quoted at [www.ups.com](http://www.ups.com), or call our toll free 800 number.

Customers in Alaska and Hawaii please take note that priority mail service from the Post Office is recommended for packages up to 15 lbs. Heavier packages without perishables can be sent more economically via ground, parcel post.

Shipments to Alaska, Hawaii and out of country we must add shipping charges to these orders, regardless of free shipping offers.

The Beverage People is proud to operate both a retail and mail order supply firm for over 26 years at the same location 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.

The Beverage People News is a publication of The Beverage People, America's most respected homebrewing and winemaking supply company. Unless otherwise noted, all material is copyright ©2006 The Beverage People.



**The Beverage People**  
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Santa Rosa, CA 95403

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*Our Hours: January through July : T-F 10 - 5:30,  
and Saturday 10-5  
August through December - Also Open on Mondays*

## Wine Equipment Rentals

### CRUSHERS

Apple Mill, Grinder and Press, motorized \$45.00  
Apple Mill, motorized (without press) \$45.00  
Grape Crusher, manual \$20.00  
Grape Destemmer/Crusher, manual \$45.00

### PRESSES

#30 7 gallon Basket \$25.00  
#35 12 gallon Basket \$30.00  
#45 25 gallon Basket \$40.00

### FILTERS/PUMPS

Transfer Pump Brass \$10.00 / Stainless \$20.00  
Buon Vino Plate Filter \$30.00

### BOTTLING

3-Spout Filler \$10.00  
Wine Corker \$10.00  
Glue Labeller \$10.00

**Rentals are for 24 hrs. from noon to noon, reservations accepted up to 7 days in advance. Call 544-2520 to make your reservation.**

## Fall Winemaking Class

Phone *The Beverage People* at 707 544-2520 to reserve a place in our winemaking classes. There is a \$20.00 fee. You will get your questions answered, go over equipment and processes. Space is limited, so call today. Class will meet Saturday, August 19 at 2 pm. Bring a bottle of your wine to critique, class is held outdoors at the retail store.

## What's New and Exciting!

We have changed our *synthetic cork* offering to Supreme Corq. This is an injection molded cork, rather than extruded, as other synthetics, enclosing the core material completely, and producing a rounder, smoother cork. Supreme Corqs are a closure that virtually eliminates TCA (2,4,6-trichloroanisole), leakage, evaporation, crumbling and cork dust traditionally associated with tree-bark closures. Natural colored & chamfered, with a grape cluster print WC08 #9 x 1.5" in packs of 100 for \$26.95. Packs of 1000 are also available.



**Supreme Corq™**



Probably the most exciting new product, besides cheesemaking supplies, (see our beer catalog) is the addition of a beautiful, affordable *digital scale* that can weigh in grams or ounces. Comes with batteries and reads 1/10th ounce to 11 lbs. or one gram to 5000 grams. (TE01) is \$42.95.

You can read all about *Lysozyme* in this issue, it's the wonder-treatment for unfinished or unwanted MaloLactic Fermentations (MLF). See pages 1-2. (WY60) 250 ml. Liquid *Lyso-easy* is \$25.95.

Also new in fermentation products, we have added *ICVD47*, a yeast for barrel fermented white wine or for enhancing mouth feel and aroma in any Chardonnay fermentation. Try it in place of French White for a different effect. (WY44) is available in 10 grams at \$1.95. We also have 4 oz. or 500 gram packages in the store.

Continuing a tradition in re-coopered barrels, our local firm *Recoop* is now supplying a *45 gallon French Oak barrel (B45)* in the traditional bordeaux shape and priced very reasonably at \$335.00. Note, these barrels must be picked up at the store, they are too large for UPS shipping.

Several customers have raved about their satisfaction with the *Mosto Italiano* pure juice product, (C038) *Montepulciano* which makes 6 gallons of great red, table wine. Bob made this kit last winter and entered it in a spring competition, the *International HWBTA* and won a *Bronze Medal*. Get your winemaking started early with this kit or enjoy our Italian white juice, *Pinot Grigio* (C039).

Speaking of winning; for the second time, Bob Bennett of Healdsburg has won *BEST OF SHOW* at the *International HWBTA*. Bob is coordinator of the local *Sonoma County Harvest Fair Amateur Wine Competition* and helps with *GENCO*, an amateur winemaking club that meets at the Healdsburg Library.

Having never spilled a drop of wine, we couldn't understand the need for *Wine Away*, the ingenious stain removing spray from *Wine Epic*. Yeah right. Actually, we are happy to add this to our accessories, because spilling wine makes *Bacchus* happy. The 12 oz. bottle (MS43) is a well-spent \$8.95.