



THE BEVERAGE PEOPLE

2008 Summer Wine Supplies and Beverage People News



Beppeo posing as Prosperity Cat and beckoning passers-by to come in and do business.

FENG SHUI

By Robyn Rosemon

RECENTLY ONE OF OUR LOYAL CUSTOMERS FABIANO RAMACI EXCLAIMED, "IT'S SO... FENG SHUI IN HERE NOW." His observation perfectly reflects our current efforts on improving the company inside and out. We have been hard at work making the retail flow better. Knowledge is flowing out into the community, as we teach more classes with larger capacity, and as we attend wine, beer and cheese conferences. We also continue to take in knowledge and experience to become better teachers of fermentation.

Gabe Jackson joined us just before the 2007 grape harvest and continues to help the company's flow of information through his dedicated work on our Internet site. His work continues to improve customer's access to information and products. Also we would like to congratulate him for a homebrew accomplishment. He brewed a German - Style Kölsch that placed 3rd in the Western Regional Competition and therefore has a chance to medal at the national judging at the American Homebrewers Competition in Cincinnati, Ohio. All of these positive changes flowing in and out of the company are making a noticeable difference for us as well as our customers.

Feng Shui Cont. pg 3.

Sharing Grapes Along the Sacramento River

By Robyn Rosemon and Bob Peak

Customers often comment how it must be fun to work here and we agree with them. Besides having fun at work, we also enjoy joint fermentation projects outside of the store. Years ago, The Beverage People used to share grapes during harvest. They often made Chenin Blanc from grapes that were grown in the Clarksburg, California region. Chenin Blanc is known for its wonderful crisp and fruity wines. But it has steadily gone out of fashion over the years and little or none is grown here in Sonoma County these days.

Although Chenin Blanc was once a popular wine, oaky Chardonnay began to dominate the white wine market in the 80's and 90's, pushing Chenin Blanc off the shelf. So last summer when Bob heard a customer say that he regularly buys Chenin Blanc from the Clarksburg district, he asked him if we could join him. The Clarksburg district extends along both sides of the Sacramento River, from Walnut Grove up to Clarksburg itself. The river frontage makes for a cooler climate than the Sacramento Valley in general and produces some of the best Chenin



Chenin Cont. pg 2.

WINE CHEM 101

By Bob Peak

A few months ago, *Winemaker* magazine publisher Brad Ring invited Byron Burch to speak about meadmaking at the magazine's first annual home winemaking conference. They both thought my degree in chemistry might combine well with my experience as a Beverage People partner to bring some wine science to the masses—and Wine Chem 101 was born.

To my surprise, every one of the room's 100 seats was occupied on a Saturday morning at the Doubletree Hotel in Rohnert Park—for a chemistry lesson! The hour lecture and discussion covered several of the most important chemistry characteristics of grape juice, wine, and winemaking. I will now continue the dialog, one topic at a time for the always-popular Beverage People News and catalog.

Before we get into the specific chemistry of wine, it's important to review a little bit about the study of chemistry itself. Chemists usually talk about chemical reactions in "equilibrium" terms. That is, we look at what goes into a reaction and what comes out of it, without considering very much the amount of time it takes. We treat it as though the reaction happened instantly, much like adding vinegar to baking soda and getting the immediate acid-base reaction that results. As an analogy, if recipes were written the way chemical reactions usually are, we would bake a cake by telling you the ingredients and baking temperature, but ignoring the time. A cake just comes out. For most chemical reactions most of the time, ignoring time like this has no significant consequences.

Not so for wine chemistry. Many of the important chemical reactions in wine take time to occur. It may take hours for color extraction in a rosé, several days for alcoholic fermentation, months to complete the cold stabilization of tartrates, and years to produce the character we call "aged." Whenever we talk about time as a variable in chemical reactions, the field we are studying is "kinetics". Although some chemists devote their research careers to that, I'll mostly treat these chemical reactions of wine as equilib-

Wine Chem 101 Cont. pg 2.



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rium situations.

So why chemistry? Without knowing some of the chemistry of wine, a home winemaker may be flying blind—or at least wearing dark glasses with the lights off. Things go in—grapes, yeast, nutrients—and wine comes out. Sort of. With a little chemistry, you can greatly improve your odds of producing excellent wine every vintage. And if you memorize a few of these chemistry facts, you can amaze your friends next time you go wine tasting!

There are hundreds of chemical compounds that have been identified in wine, beyond those in grapes to start with. For our chemistry discussion, though, I want to concentrate on a few of the most significant components of wine. As we displayed with our graduated-cylinder graphic in last year's newsletter, wine is mostly water. After the 85-90% water, there is some 10-15% alcohol (ethanol), 0.4 –0.7% fixed acids, 1-2% other organic molecules, and less than one-half of one percent minerals, usually reported as "ash".

We will skip over water chemistry for this discussion, and begin with the production of alcohol from grape sugars. This conversion—the one we call "fermentation"—is obviously the most important chemical reaction a hobbyist encounters in pursuing the miracle that is winemaking. First, there is the sugar. Cane sugar, sucrose, is a 12-carbon molecule consisting of two six-carbon rings which are held together by a fairly weak bond. Sucrose is the sugar we most often encounter in daily life and is present in many fruits and vegetables. However, under acid conditions, the weak bond holding the two rings together will break. The two resulting six-carbon molecules are themselves sugars: glucose and fructose. Since each of these contains six carbon atoms, they are collectively called "hexoses" (hex- for six and -ose for sugar). Because wine grapes are high in acid (low in pH), these two are the sugars of grapes, generally in about a 50-50 mix.

Both glucose and fructose have the same chemical formula:



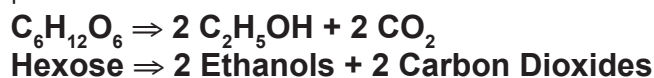
Although the molecules differ in structural details, that feature is not significant for this discussion and we can generally treat them as identical in chemical reactions. *One small exception with regard to wine is that most wine yeasts are considered "glucophilic" or glucose-loving. That means a stuck fermentation, with only a little bit of sugar left to ferment out, will contain primar-*

ily fructose. So what is left near the end is exactly the sugar that is most difficult to restart.

Ethanol, the alcohol of wine, is a two-carbon compound



So for fermentation, we need to take our six-carbon sugar down to a two-carbon alcohol. In basic chemical notation, it is simple and looks like this:



The reaction products, by weight, are 51.1% ethanol and 48.9% carbon dioxide. The 51.1% by weight would calculate out as 59% by volume, relative to the water in the finished wine. Actual yield of alcohol is a bit lower, due to evaporation during fermentation and conversion of alcohol to other byproducts. We usually use a figure of 55% as a reasonable practical predictor of alcohol in a finished wine. *So, degrees brix (percent sugar by weight) times 0.55 (55%) equals alcohol by volume in the finished wine.* For example, at 20° Brix, 20 x 0.55 = 11% alcohol by volume.

Of course, real life is never as simple as the chemical equation displayed above and the yeast does not just jump from six-carbon sugars to two-carbon alcohol. The yeast itself is using energy from these chemical reactions to live and reproduce. There are fifty or more enzyme-mediated reactions going on within the yeast cell during the cascade from sugar to alcohol. I will not review them all here, but will cover a few major steps along the way. First, the six-carbon ring is broken into two three-carbon pyruvates. From there, if oxygen is present, yeast can oxidize the pyruvates all the way down to carbon dioxide and water—no alcohol! That is why fermentation is carried out with little or no oxygen present, after the initial build-up of yeast. The rapid evolution of carbon dioxide—and a fermentation lock on whites and rosés—keeps the environment essentially oxygen-free. Under those conditions, each three-carbon pyruvate is further converted into a two-carbon acetaldehyde. One carbon dioxide molecule is ejected with each acetaldehyde. Then each acetaldehyde is itself reduced to an ethanol molecule. Now we have a solution of alcohol and water, maybe with a little sugar left in it. Sounds like a pretty boring beverage—so what gives wine its zing? In a word -Acid.

But to keep this overview from overwhelming our readers, I'll save the discussion of Acid for our next installment, part B of Wine Chem 101.

Chenin cont. from page 1.

Blanc grapes in California.

In keeping with tradition, all of us at The Beverage People decided to join in and share 1,000 pounds of Clarksburg Chenin Blanc for 2007's harvest. Early one sunny September morning Bob, Gabe, Gabe's wife Jane, and Bruce (the customer and friend who knows the grower) took a trip to get the grapes. Meeting in the parking lot of the Walnut Grove public library right beside the Sacramento River levee, they followed the vineyard manager out to the grapes. (The other participating Beverage People had volunteered to stay and operate the store while Bob, Gabe, and Jane got to experience the grape picking adventure. We were eagerly

awaiting the Chenin's arrival.)

The grapes were dense and heavy on the vines. They were a beautiful golden-green color and so ripe that sticky juice ran out, even with gentle handling. The heavy crop meant three pickers needed only about two hours to gather half a ton. That's not as bulky as you may think—at about 125 lbs. per 32-gallon plastic fermenter, we only needed eight of them for the whole load. With six tubs in Nancy's truck (with Gabe driving) and two more in Bob's Honda Pilot, they headed back to Sonoma County before noon. Bob's 250 lbs. went to his house, with the rest going to Nancy's house for further team processing.

After the Beverage People's workday wrapped up, Bob and his wife Marty White crushed and pressed their grapes, leaving the

sulfited juice in demijohns to settle overnight in the wine cellar. Meanwhile, the big crew assembled at Nancy's house. While Byron went out for pizza, everyone else took a turn at the crusher, including Robyn's kids. Then they all took turns at the press, following the usual white-wine process of pressing the juice immediately after crushing the grapes. Gabe and Jane took a couple of carboys of juice, Robyn and Eddie a few more, and they left Nancy with the rest. Nancy and Gabe inoculated with yeast immediately, but Robyn and Eddie left their juice to settle overnight like Bob and Marty's. The next morning, at their respective houses, Robyn and Bob racked the juice off of the gross fruit lees and inoculated with yeast in carboys and

Chenin cont. page 3.

Feng Shui cont. from page 1.

More and more winemakers are taking the time to check their wine's stability, especially before bottling, using the mini-lab, Reflectoquant tool. We encourage you to bring in wine samples to make sure your wine is finished with Malo-Lactic Fermentation, enough Free SO₂ is present and doesn't have any lingering sensory issues like cloudiness or stinky H₂S.

YOU WILL ALSO NOTICE CHANGES in the shop layout for some supplies. If you can't find something in its usual place, don't be afraid to ask. In preparation for this year's busy harvest we rebuilt the front counter, providing a new, longer counter top which will allow room to add a second cash register and credit card terminal. With our already cramped retail space you might imagine the difficulty in finding the space to do that. Fortunately with a little creativity and brute strength we were able to drastically improve the look and feel of the shop. ***We agree with Fabiano that the layout is more feng shui and love the response that we are getting from our customers.***

As more and more fermentation hobbyists come through our doors we continue to need more space to accommodate them. In February we leased a 3rd warehouse. We did the majority of our spring classes

there and it is currently housing much of our bottle stock for this bottling season.

We look forward to having this extra space for this year's harvest and next year's set of spring classes. Look for class dates in our winter flyer some time in December. With so many changes in the store it is truly amazing that we also found time to do things outside the store.

Answering questions, writing newsletters and teaching classes are some of the ways that we share knowledge with our customers. Another way is attending festivals and conferences. At this year's 2-day Artisan Cheese Festival in Petaluma, Bob and I demonstrated making 30-minute Mozzarella, Paneer, and Queso Fresco cheeses. The demonstrations were set up in a large white tent that was full of hundreds of people and cheese related exhibits. Another large ballroom housed additional cheese, beer and wine tasting booths.

Besides the packed audience, we faced a 6-burner Dacor propane demonstration range set on a stage in one corner of the tent. Bob and I realized with a little trepidation that we were to stand on the stage, under the big slanted mirror, behind the beautiful stove and teach people how to make cheese. Once the nerves wore off we had a great couple of days teaching cheese making. We plan to do it again next year, so put this on your

must-do calendar.

After having so much fun at the Artisan Cheese Festival, in May, we moved on to the WineMaker Magazine first annual conference in Rohnert Park. Byron gave a talk on meadmaking for winemakers and Bob talked about wine chemistry and kitchen table trials. The conference gave us the opportunity to meet winemakers from around the USA and Canada and enjoy the give- and- take about our favorite hobbies. Keep the dates, May 15, and 16 in mind for next year when the second annual conference will be held in Napa. After that you may have some travelling to attend the third conference.

We also like to contribute to the flow of information by giving away something with some permanence, so for all of our customers and conference attendees, we had a refrigerator magnet made, filled with useful tips for home winemakers. The information is quick and accurate and is meant to act as a reminder of some hard to remember facts. We enjoyed making it and hope you will find it useful.

THE NEXT TIME YOU ARE FEELING like you want to make a trip to The Beverage People - it may just be the magnetic force and feng shui pulling you in - give in to the process - come on in and say hi and while you're here pick up a magnet or two.

Chenin cont. from page 2.

demijohns. Everybody tried a different yeast strain, with Nancy using Prise de Mousse, Gabe trying out ICV D254, Robyn opting for Epernay 2, and Bob going with his favorite white-wine yeast—M2.

On the way in to work, Bob dropped off a juice sample at Vinquiry for a SNAP panel (see p. 12 for a discussion of this test panel). The sugar came in at 22.5° Brix, pH was 3.42, and Titratable Acidity (TA) was 0.52. With ammonia at 20 mg/L and assimilable amino nitrogen 132 mg/L, we had a medium-level YANC of 152 mg/L. With the medium-demand Epernay 2, M2, and D254, Robyn, Bob, and Gabe followed Beverage People Program D—1 gram per gallon of Fermaid K at 1/3 of fermentation, plus another gram at 2/3. With the low-demand Prise de Mousse, Nancy could go with a lower nutrient program.

Of the other figures, the brix and pH were just fine, with no attention needed. The TA, however, was slightly low. At 0.52 g/100 mL, it represented a classic opportunity

for winemaker's choice—or winemaker's dilemma. About 0.65 g/100 mL is considered ideal, but there is nothing absolute about that. Any particular wine might be better (or worse) with a moderately higher or lower TA. To add acid or not? Robyn chose not to acidify at all. She was more interested in having the lower acid as her objective was to make an early drinking wine. Bob added most of a calculated adjustment, raising the TA to 0.634 with tartaric acid. Gabe and Nancy adjusted to the target 0.65.

Fermentation went on over the next few weeks, with a couple of rackings each. Wines were all checked periodically for sulfite, with everybody aiming for about 30 ppm free SO₂ (see p. 8-9 for the 32 ppm recommendation for a 3.4 pH white wine). Bottling started in April, and is still not quite wrapped up as we write these words. It has been a great educational experience and lots of fun to compare notes as our wines have developed. Among other lessons, we discovered how easy it is to add several small lots, 200-500 lbs, to get to something like the

half-ton quantity that many growers would like to sell. Combining our efforts to pick, crush, and press, we each got a batch of wine that would have been much more effort to do alone - and it allowed us to make a reasonable trip out of the county in pursuit of a less-common grape variety. So if you have been considering making something different, but don't want to make too much of it, put together a team and work on it together. We're sure you will find it fun and rewarding, just as we have.

So how are the Chenin Blancs? Early indications are quite positive. Bob and Marty, early bottlers, have won a bronze medal at HWBTA and a silver award at the Sonoma-Marin Fair. Nobody else has sent their wine in for competition, but all are tasting very good. Typical Chenin Blanc fruity and floral aromas are followed by crisp flavors of green apple, white peach, and lemon zest. Robyn's no-acid addition version seems smoother, with the acid-adjusted versions showing more crispness. Which of the four came out best? Ask us after we honor the Beverage People's shared Chenin Blanc tradition by having a picnic and trying them all side by side!

Winemaking Step by Step

EQUIPMENT

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

You will need the following:

1. Siphon Hose and Racking Tube
2. Hydrometer (Saccharometer) and Test Jar
3. Acid Testing Kit
4. Sulfite Test Kit
5. Crusher or Stemmer/Crusher
6. Press
7. Corker
8. Thermometer
9. Pressing Bag (optional)
10. Funnel
11. Bottle Filler
12. Small Bucket
13. Punch Down Tool

For every 75 lbs. of grapes:

1. 10 Gallon Food grade Bucket and Lid
2. One 5 gallon glass carboy (water bottle) with a fermentation lock and a #6 1/2 or #7 drilled rubber stopper.
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 as needed.
6. Fining Agent, such as Sparkolloid.(optional)
7. ML Culture for some wines.

Red Wine Procedures

- 1 **Crush (break the skins) and de-stem the grapes.** For most grape varieties, about 90% of the larger stems should be removed.
- 2 **Test for total acidity following the instructions in your acid testing kit.** If the acidity is less than .6%, add enough tartaric acid to bring it to that level. If you have a pH meter, also test the pH.
- 3 **Test for sugar with your hydrometer.** Correct any deficiencies by adding enough sugar to bring the reading up to at least 22°Brix or add water to bring the sugar down to a range between 22 and 26°Brix.
- 4 **When these tests and corrections have been completed, the must should be sulfited.** Estimating that you will get roughly one gallon of juice yield for every 16 lbs. of grapes, calculate the anticipated amount of juice. Using this estimate, add enough sulfite to give you a sulfur dioxide (SO₂) level between 50 and 130 parts per million (ppm). (See pages 8 and 9.)
The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose. Extremely clean grapes may be fermented with little or no SO₂.
- 5 **Unless you have found it necessary to add more than 65 parts per million SO₂ in step 4, yeast should be added immediately.** If using more than 65 parts per million SO₂, you must wait six hours before doing so. Add 1 -2 grams of dry wine yeast evenly across the surface of the crushed grapes (now called "must"). Stir it in thoroughly after eight to twelve hours. Also, begin your nutrient program according to the instructions on page 12.
- 6 **The must should be stirred twice a day until fermentation begins.** The beginning of fermentation is obvious, as the grape skins are forced to the surface, forming a solid layer, called a cap.
Once the cap has formed, mix it back down into the fermenting juice twice a day using your hand or a stainless steel punch-down tool until it is ready to be pressed.
- 7 **Throughout fermentation, the temperature of the must is usually between about 60 and 75°F.** For better color extraction from the skins, it is helpful to allow the temperature to rise at least once to the 80-90°F range. The fermentation itself generates some heat, which helps warm the must along with warm fall weather. If it is late in the season you may need a heater.
- 8 **Add an ML culture** (optional) to the wine about half to two thirds through fermentation or in the case of direct pitch strains like *Eno-ferm Alpha* or *Beta*, add to the fermentors after pressing.
- 9 **When the wine has reached 0° Brix the grapes should be pressed to separate the wine from the skins.** This is usually about 1-2 weeks of fermentation at 70-80°F. During pressing, collect the wine into a bucket under the press and funnel the wine into secondary fermentors. Attach fermentation locks, and allow the containers to



Winemaking Equipment from crush to bottle.



Crushing and stemming your grapes.

Time Line for Red Wine Fermentation.....

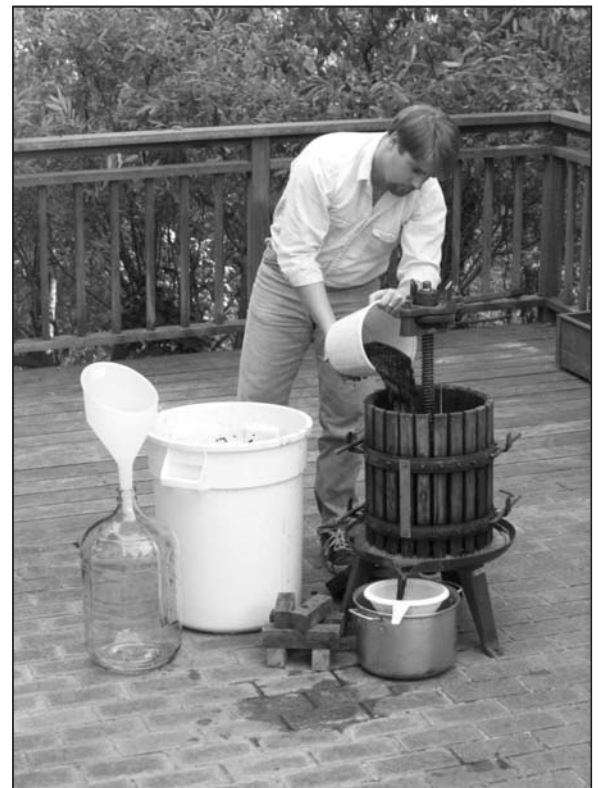
Active Yeast Fermentation of Must in Primary Fermentors	Pressed wine moved to Secondary Fermentors (leave a little room for foam for a day or two, then top up.)	Rack off gross lees and top up containers	Rack off lees again, test for ML, add sulfite and store in cool place for aging, topping and sulfiting 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	

settle until all visible signs of fermentation have ceased (several days to a week or so). Top full when all activity ceases even if you have to add wine from another batch, or buy a similar wine, remember, you get to drink it later.

White Wine Procedures, see next page.

- 10 **When the wine has begun to clarify in 1-2 weeks, rack the wine off the gross lees** into clean, sanitized storage containers (glass, stainless steel, or oak). Top up the containers and let stand for a month. If ML fermentation is still active do not add sulfite during this time.
- 11 **After one month, rack the wine away from the lees again**, add sulfite to 25 or 30 ppm, and keep in topped up containers for four to six months. You must top up barrels, and visible inspect carboys. This is a good time to add oakboys™ or oak chips. Add sulfite every few months. If you inoculated for ML, test the wine to be sure it is complete.
- 12 **Rack off the lees again**, and retest to see if the ML fermentation has finished. If completed, raise the sulfite to 20-30 ppm and store in a cool place for aging. If ML fermentation has not completed, keep the sulfite level below 20 ppm and warm the storage containers for a month to encourage completion.
- 13 **Usually during the summer** (just before you need your storage containers for the next year's crush), **carefully rack the wine to a sanitary bottling container, then siphon into bottles and cork them**. Keep the bottles neck-up for one week to allow the corks time to expand, then move the cases to their side or upside down for storage.

Bottling time is your last opportunity to make sure the wine will be bottle stable, so test and adjust the sulfite to 30 ppm. If this is a sweet wine, add Sorbistat to keep the wine from further fermentation. Most red wines will benefit from at least one year's additional aging.



Pressing the fermented red grapes.

White Wine Procedures

- 1 **Crush the grapes** to break the skins. It is not necessary to de-stem them, but it does not hurt if you happen to have a stemmer/crusher. Keep the grapes as cool as possible.
- 2 **Test for total acidity.** If the acidity is less than .65%, add enough tartaric acid to bring it up to that level.
- 3 **Test for sugar with your hydrometer.** Correct any deficiencies by adding enough sugar to bring the reading up to 20° brix for most varieties (22° for Sauvignon Blanc and Chardonnay.) If higher than 26° brix, add water to lower it between 22° and 26°.
- 4 **When these tests and corrections have been completed, the must may be sulfited.** Estimating that you will get roughly a gallon of juice from every 16 lbs. of grapes (varies with the variety), add enough sulfite to give you a sulfur dioxide (SO₂) level between 50 and 120 parts per million (ppm.).
The amount needed will depend on the condition of the grapes, with moldy grapes getting the most concentrated dose and very clean grapes may get by with little or no sulfite.
- 5 **Stir in pectic enzyme 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 nutrients according to the article on page 12.
- 8 **When visible signs of fermentation end, the wine must be racked off the lees,** and placed in topped up storage containers (glass, stainless, or oak). Add sulfite, 30 - 40 ppm. and let stand for a month.
- 9 Rack off the lees. Fine with a sparkolloid or bentonite slurry if clarity is not satisfactory. Sulfite and store full containers in a cool place.
- 10 **In a couple of months, rack and sulfite the wine again, placing it back in topped up containers.** This is a good time to filter if the wine has not clarified with finings

adequately on its own. For oak flavor add Oakboys™ or Liquid Oak Extract now.

- 11 **In late Spring, before the onset of very hot weather, carefully rack the wine from the lees.** Test the wine for free sulfite content with a sulfur dioxide test kit to determine how much SO₂ is needed to bring the level to 30-35 parts per million.

Siphon into bottles, cork them, and set them aside for whatever bottle aging is needed. If you wish to sweeten the wine, do so with simple syrup (two parts sugar to one part water, boiled), and add 1/2 tsp. Sorbistat per gallon to inhibit any remaining yeast. 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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Fruit Wine Procedures, see next page.



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, Yeast Nutrient, Pectic Enzyme and Tartaric Acid and optional Grape Tannin.** Add 5 tablespoons of **Sodium Metabisulfite stock solution** and mix well. (*See pg. 9 for stock sulfite recipe.*)
- 4 Cover with loose plastic sheet or lid** and allow to cool and dissipate the sulfite, waiting for 12 hours or overnight. Stir in the **Yeast**.
- 5 Once fermentation begins, stir or push** the pulp down into the liquid twice a day.
- 6 After 5-7 days, strain and press the pulp.** Funnel the fermenting wine into closed fermentors, such as glass or plastic carboys, and attach a fermentation lock. *Note: if this fermentation is very active, you may need to divide the wine between two carboys or it will foam out and spill.*
- 7 When bubbles are no longer actively rising** through the wine, **siphon the wine back together into one full carboy.** Fine with **Sparkolloid** (*see pg. 10 for mixing Sparkolloid*), add a teaspoon per gallon of **sulfite stock solution** and let set for four weeks under the airlock.
- 8 Rack (siphon) away from the sediment,** top full with a neutral wine and leave under airlock for 3 weeks up to 4 months.
- 9 For bottling, rack into an open container,** and add **1 1/2 teaspoons sulfite solution** per gallon. Sweeten with **sugar syrup** to taste and add 1/2 teaspoon **Sorbistat** per gallon to stabilize. **Siphon into bottles, cork, and set aside to age for at least 3 weeks.**

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 (SO₂) 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 SO₂. 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 SO₂ 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 SO₂. 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, SO₃⁻, and bisulfite ion, HSO₃⁻. A small fraction remains in the “molecular” form, SO₂. 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 SO₂.

The Reflectoquant Free SO₂ 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 SO₂ with the *Titret*® Kit. Although not very accurate in terms of the quantity of SO₂, in red wines, they do work in white wine and these tests will also show changes as the level of SO₂ diminishes even

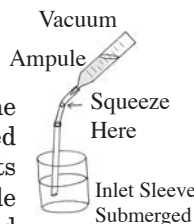
in red wines. These are vacuum sealed, graduated ampules that come with an inlet bead-valve that allows you to titrate slowly by squeezing the valve. You have to keep the inlet tube submerged or the vacuum will be broken by air entering. *The kit instructions recommend a holder which made the test more 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 SO₂ 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 SO₂ 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 SO₂. 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 SO₂ 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 SO₂ 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 SO₂ available throughout the wine's cycle of production through bottling. Add sulfite for white wines at every racking.

Test your SO₂ 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 SO₂* 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 SO₂

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

Regard the *Table of Molecular SO₂* to the left. The amount of free SO₂ needed, is based on the pH of the wine. A fairly safe amount for protection of the wine is either .5 ppm for Red Wines or .8 ppm for White Wines. If you know the pH, simply make sure you have the corresponding level of free SO₂, or slightly more, present in the wine during storage and bottling.

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 SO₂ 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 SO₂

SO₂ 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 60 gallon barrel. They effervesce to disperse evenly in the container. They cannot be divided to accurately dose 5 gallon carboys. Metabisulfite should be made into a liquid preparation before use, to adequately disperse it, and because it is very potent. This is also the least expensive method and accurate to measure for any size container.

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.

Use one of the following solutions to add metabisulfite to your wine. Make a 10% solution if your additions are to larger vessels like barrels and tanks, or a 3% solution for carboys and jugs.

Preparing a 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

(Desired final SO₂ concentration in ppm.)

Must/Wine	10	20	25	30	40	50	75
(gallons)	(Add milliliters of 10% solution)						
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 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

(Desired final SO₂ concentration in ppm.)

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

Removing Excess SO₂

If you ever need to lower your SO₂ because you doubled the dosage or made some other wildly uncareful calculation, do the following: for every 10 ppm free SO₂ 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.

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
Sparkolloid	5 - 7 g/ 5 gallons	All wines	Heat 1 - 2 cups of water with Sparkolloid, simmer 15 minutes and stir into wine.	Post fermentation three weeks before racking.
Bentonite	10-40 g/ 5 gallons	White wines	Slurry with juice or water in blender.	Add to must prior to fermentation.
Isinglass	1 Tablespoon/ 5 gallons	White wines that haven't clarified with Sparkolloid.	Soak in 2 Cups water with 1/2 teasp. Citric Acid for 30 minutes. Add to wine.	Prior to a racking.
Gelatin	1/4 oz./ 5 gallons	Red wines with excess tannin.	Dissolve in 10 oz. hot water, let sit for 10 minutes. Stir thoroughly into wine.	After fermentation up to three weeks before bottling.
Egg Whites	1/2 egg white/ 5 gallons	Red Wines with excess tannin.	Whipped to a soft froth with some wine and water then mixed in thoroughly.	In barrel/glass a month or more before bottling.
Polyclar (Divergan F)	2.5-12.5 g/ 5 gallons	White wines to remove oxidation reduce bitterness.	Thorough mixing Fluffy, difficult to rack off cleanly.	Before, during or after fermentation.
Non-Fat Milk	100-250 ml/5 gallons	White wines to reduce bitterness, adds sweetness.	Follow with Bentonite Fining	Rack after 4 days A month prior to bottling.
Whole Milk	100-250 ml/5 gallons	Reduce harshness absorb aldehydes,	Follow with Bentonite Fining	Rack after 4 days A month prior to bottling.

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Sugar, Acid, and pH

by Bob Peak

Our SNAP and SAP laboratory panels, offered in cooperation with Vinquiry in Windsor, have been very successful for the last several years (see next page). But sometimes it's fun to do your own testing. Or maybe you live too far away to take advantage of SAP and SNAP. There really is no equivalent home test for the "N"—nitrogen—in SNAP. But the SAP Tests—sugar, acid, and pH—are readily addressable with home testing techniques.

For the 2006 harvest, my wife Marty and I decided to give several home kits and techniques a try. We used the SAP panel from Vinquiry as our reference and ran our own tests to match on our home-grown pinot noir and chardonnay. We did not have the Vinquiry results in hand prior to running our own tests. In the interest of full disclosure, I should note that both Marty and I have bachelor's degrees in chemistry and she also has a master's in chemical engineering, but no such education is needed for Beverage People test kits!

SUGAR

The harvest home test for sugar is a brix refractometer, which is the same instrument Vinquiry uses (although theirs is digital and ours is analog). We crushed the pinot noir grapes and stirred the must before taking a sample with a thief. We crushed, soaked up, and pressed the chardonnay before taking that juice sample. (The split samples for Vinquiry were collected at the same time.) Use of the refractometer is very easy. First, it is calibrated with a few drops of 20 degree brix reference solution. Then it is rinsed with distilled water, and a few drops of grape juice are placed on the prism. Our results were 24.2 brix for the chardonnay and 26.0 brix for the pinot noir. Vinquiry said 24.1 for chardonnay



and a matching 26.0 for the pinot. Conclusion: using a refractometer at home can provide very reliable harvest sugar readings.

ACID

Vinquiry uses a sophisticated autotitrator to execute the traditional winemaking method for Titratable Acidity. They report in grams per 100 milliliters—roughly equivalent to percent. The lab results on our juice samples came in at 0.809 grams per 100 mL on the Chardonnay and 0.760 on the pinot.

At The Beverage People, we offer three home tests for TA. The most popular is the little Country Wines titration kit with its phenolphthalein indicator and sodium hydroxide titrating solution. This is based on the primary lab procedure for the same test. Executed carefully at the kitchen table, it gave us a result of 0.81 on the chardonnay and 0.62 on the pinot noir. The close correlation on the white juice (and less success on the red) probably reflects the difficulty of seeing the pink endpoint in the grayish-pink "red" must.



Next, we tried the Precision Acidometer. This kit includes a blue indicating solution which is itself also the basic titrating material for neutralizing the acid during analysis.

The first few additions, still reflecting acid conditions in the juice, turn green. As you continue to add, the solution is neutralized when it is (not quite) blue—almost the same color as the indicator solution alone. Since this has the "not quite" feature, it's a good idea to write down your results as you get close, since you will mostly know for sure right after you go too far. The kit also includes litmus paper to verify the neutrality of the titrated sample. If a drop on the litmus paper turns red, it is still acid. No color change means neutral (the end point) and

blue means basic—you went too far with that addition. With the green-to-blue color change and litmus paper for verification, the endpoint seems a little easier to pin down than the Country Wines endpoint.

With this kit, results are in grams per liter, so you need to divide by 10 to match the reporting units by other methods. For the chardonnay, we got 7.9 (0.79) and for the pinot noir 6.8 (0.68). Both are close enough to Vinquiry's results that we would probably not do anything different in fermenting the wine based on these answers.



Finally, we ran the simplest of the tests, the Accuvin dipsticks. Once again reporting in grams per liter, we got 9 (0.9) on both samples. Good enough to tell us that we did not need to add any acid to these juices.

pH

Vinquiry uses a pH meter integrated with their autotitrator for this test. Laboratory results were 3.38 for the chardonnay and 3.43 for the pinot noir. Using the pH Tester 20 meter that we carry at The Beverage People, Marty and I measured 3.32 on the chardonnay and 3.36 on the pinot. At less than one tenth of a pH unit difference on each, these results are very comparable and the home results are certainly adequate for winemaking judgments.



Accuvin also has a dipstick test for pH. On those, we measured 3.6 for both juices. While in the ballpark of anticipated results, these may not be accurate enough for all winemaking decisions. The procedure is, however, simple and inexpensive.

Note: Always calibrate your pH meter before using. Use the buffer solution pH 7 first, then calibrate to pH 4 then calculate the wine pH. Rinse the probe in DI water after each set point and after use. If your meter is sluggish, leave off and soak the probe in 4 pH buffer overnight. and/or replace the batteries.

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				
YANC LEVEL	Low	Med	H-VH	
	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.

Costs

The **SAP** Panel (TE98) is priced at \$45.00, and the **SNAP** Panel (TE99) is priced at \$95.00. If you are ordering by mail, there is no additional shipping and handling charge. 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*.**

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.

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 17, for instructions on **Rehydrating** dry yeast. Please read page 12 for **Nutrients** programs for yeast.

To find fermentation specifics, read down	Assmannshausen	Beaujolais 71B	Brussels BM45	CSM	Eperney 2	French Red (BDX)	ICY D254	M-2	VQ15 Rockpile	P. Champagne	Prise de Mousse	Rhone L2226	RC212	Steinberger	Simi White	43
Varietal	Pinot Noir	Zinfandel Syrah	Sangiovese	Bordeaux	Zinfandel	Bordeaux	Chard Red Rhones	Chard, Cabernet	Chard, Cabernet	Chard Cabernet	White, Red	Rhone	Pinot Noir	German White	Chard	Restarts, Zin, Late Harvest
Fruit Wines	YES	YES			YES			YES			YES	YES	YES	YES		
Enhances Fruit		YES			YES		YES	YES							YES	
Enhances Mouthfeel	YES						YES	YES							YES	YES
Sensory Effect *	EVC	Estery	EVC	EVC	EVC	EVC	EVC	Estery	Complex	Neutral	Neutral	EVC	EVC	EVC	Estery	YES
Reduces Vegetal Character	YES			YES	YES			YES							YES	
Stabilizes Color	YES			YES		YES	YES		YES			YES				
Cold tolerant					YES						YES		YES			
Use to Restart										GOOD	GOOD	GOOD				EXCELLENT
Temperature Range F.	68-86	59-86	64-82	59-89	50-80	64-86	50-85	59-86	59-90	59-80	50-86	59-82	68-86	40-70	59-85	55-95
Vigor	Slow	Average	Average	Average	Average	Average	Fast	Fast	Average	Fast	Fast	Fast	Average	Slow	Slow	Fast
Alcohol Tolerance %	15	14	16	14	15	16	16	16	16	17	18	18	16	14	14	18
High Alcohol Tolerant			YES			YES		YES	YES	YES	YES	YES	YES			YES
Nutritional Need **	Medium	Low	Very High	High	Medium	High	Medium	Medium	Low	Medium	Low	High	High	Low	Medium	Low
Reaction to Oxygen ***	Medium			Low			Medium		Low		High	Medium				
Comments	Enhances spiciness	Fruit wines	Extended Macerations	Alternate to BDX	Can be stopped	Ideal for	Complex flavor Mineral Aromas	Complex	Rich, Balanced	Vigorous	Late Harvest	Late Harvest	Good Color	Easiest to Stop Fermenting	Mouthfeel	Restarts Very Well, Red Fruit Character

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 O₂ 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 - Oakboys** - 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 18 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.

Sample	Dosage	Add to 5 gallons
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. Dis-

solve 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 *Sodium Percarbonate*, a sodium percarbonate based cleaner.

Use 4 oz. (or 8 Tablespoons) of *Sodium Percarbonate* 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 *Sodium Percarbonate* 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 less than **two months** before the barrel is used again, drain the barrel, and fill with a "*Sulfite*" and *Citric Acid* solution. Use one teaspoon of *Potassium or Sodium Metabisulfite* powder, along with 1/3 teaspoon of *Citric Acid* for every 15 gallons of barrel capacity. Add enough water to fill the barrel and bung the barrel tightly. Check to make sure sulfur can still be detected inside the barrel, replacing the solution if necessary. Rinse with water before refilling with wine.

Long Term Storage

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

Repeat every two weeks (as needed) until

a flashlight reveals no shiny dampness in the bottom of the barrel. Bung up the barrel and store it in a dry place until needed, allowing enough time to soak up and acidify the barrel before the next use.

Cleaning Step by Step

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

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.

Home Winemakers Festival, Kelseyville, Lake County, contact via email at edandchar@earthlink.net. Annual food, wine, music festival with home winemaking competition. June, 20(ish), 1 p.m. - 5 p.m., Main Street. For 2009 dates, call 707 277 8172.

California State Fair. Contact fair www.bigfun.org. Deadline for entries is mid June. 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. Note, as this is a local event, please deliver entries directly to fair.



2008 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	Basket Height	Capacity In Gal.	Retail Price
WE02	#25	10"	14"	5	\$300.00
WE03	#30	12"	17"	7	\$375.00
WE04	#35	14"	19"	12	\$475.00
WE05	#40	16"	21"	18	\$575.00
WE06	#45	18"	24"	25	\$675.00
WE07	#50	20"	26"	34	\$775.00
WE27	#40	(All Stainless Cage and Base and Legs)			\$975.00

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"	\$1995.00
WE50	Piston, manual Hydraulic Press on wheels #50	20" x 26"	\$2500.00
WE51	Piston, electric Hydraulic Press on wheels #50	20" x 26"	\$3600.00

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	\$1200.00
WE46	#54 with wheels	21"	28"	42	\$2700.00

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	\$250.00
WE13	Double roller crusher with all stainless hopper <i>(Shown right.)</i>	\$325.00
WE35	Boxed roller crusher, stainless with removeable supports	\$300.00
WE30	Boxed APPLE crusher, stainless hopper, cutting knives, removeable supports	\$450.00

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

WE14	Manual, paint grade stemmer/crusher	\$475.00
WE15	Manual, stainless stemmer/crusher	\$575.00
WE16	Electric 110V, paint grade stemmer/crusher <i>(Shown middle right.)</i>	\$750.00
WE17	Electric 110V, stainless steel stemmer/crusher	\$850.00
WE22	Electric 110V, paint grade stemmer/crusher with screw feed and extended hopper	\$850.00
WE18	Electric 110V, stainless stemmer/crusher with screw feed (SF) and extended hopper (EXH)	\$950.00
WE25	Electric 110V, ALL stainless stemmer/crusher, w/SF & EXH <i>(Shown bottom right)</i>	\$1350.00

Large Storage Tanks

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

WE43	100 Liter Stainless tank (26 g.)	\$450.00
WE40	200 Liter Stainless tank (52 g.)	\$600.00
WE42	300 Liter Stainless tank (79 g.)	\$700.00
WE44	400 Liter Stainless tank (106 g.)	\$800.00
WE45	500 Liter Stainless tank (132 g.)	\$900.00
WE41	600 Liter Stainless tank (158 g.)	\$1200.00
WE53	300 Liter Stainless tank / Bottom cone, 3 legs	\$1450.00
WE47	500 Liter Stainless tank / Bottom cone, 3 legs	\$1600.00
WE49	600 Liter Stainless tank / Bottom cone, 3 legs	\$1800.00

Filters

F05	3 Plate Filter/Pump (3 gal.min.) BUON VINO™	\$449.95
WE10	6 Plate Filter/Pump (11 gal. min.)	\$900.00
WE60	10 Plate Filter/Pump (11 gal. min.)	\$1200.00



#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 #35 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.

EQUIPMENT KITS

“Premium” Wine Equipment Kit



Complete with a ten gallon primary fermentor and lid, a six-gallon Better Bottle® secondary, an air lock and stopper, 25 Campden tablets, a siphon assembly, a bottle filler, Mini-Floor Corker, 100 Corks, Country Wine Acid Testing Kit, Hydrometer and Test Jar, a Bottle Brush and the book *Home Winemaking*

Step By Step. BNW01 \$224.95
(Note: For **White Wine**, kit includes 5 gallon Better Bottle® in place of the bucket and lid, please identify **RED** or **WHITE WINE** on order.)

Mead Equipment Kit

Includes a 6 - gallon Better Bottle® primary and 5-gallon Better Bottle® 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 \$139.95

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

INGREDIENTS

Canned Ingredient Kits for Winemaking



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

BNW02 (with C002, C004, or C006) \$39.95

Premium Kit BNW04 (with C003, C005, C006 or C008)..... \$49.95

Choose your flavor

(you may also choose from these items for purchasing individual cans)

(C002) **Chenin Blanc**, (C004) **Chablis**, (C006) **Burgundy** \$12.95
(C003) **Cabernet Sauvignon**, (C005) **Muscat**, (C001) **Zinfandel** or (C008) **Chardonnay** \$18.95

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**.....\$16.95
FL47 **Blackberry Puree**.....\$18.95
FL46 **Apricot Puree**\$18.95
FL48 **Cherry Puree**\$14.95



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

Dry WineYeasts

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 rehydrate: 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 now and stir again in 24 hours.

10 grams \$1.95
WY27 **Pasteur Champagne** (All-purpose yeast)
WY23 **Prise de Mousse** (Low foam yeast for Whites)
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 D254** (Chardonnay)
WY50 **M2** (Premium Chardonnay and Cabernet)
WY29 **Steinberger** (Riesling and Gewurztraminer)
WY35 **Rhone #L2226** (Syrah, Rhone)
WY55 **RC212** (Pinot Noir, other blush wines)
WY31 **Simi White** (French White) (Chardonnay)
WY24 **VQ15 “Rockpile”** (Syrah, Zinfandel)
WY28 **Uvaferm 43** (Fast, High Alcohol Reds) **New!**

MaloLactic Cultures

QR38 **Acti-ML**. (Nutrient for MLF for 66 gal.) 50gr. \$5.95
WY32 ML Culture, **MCW Strain**. 2 g. pack inoculates 5 gallons directly. May be built up to treat up to 500 gallons. Comes with instructions. \$17.95
WY51 ML Culture, **Enoferm Alpha Strain**, 2.6 g. pack inoculates 60 gallons directly. With instructions..... \$26.95
WY66 ML Culture, **Enoferm Beta Strain**, 2.6 g. pack inoculates 60 gallons directly. With instructions..... \$26.95

Acids

A17 Ascorbic. 1 oz.	\$2.50
A05 Citric. 2 oz.	\$ 1.50
A14 Malic. 2 oz.	\$ 1.95
A10 Tartaric. 2 oz.	\$2.95
A24 Acid Blend. (Citric, Tartaric & Malic). 2 oz.	\$1.95

Sugar, Nutrients & Preserving Aids

AD15 Corn Sugar. 5 lbs	\$6.95
QR04 Pectic Enzyme. 1 oz.	\$1.85
FN18 Potassium Sorbate. 1/2 oz.....	\$.99
FN35 Wine Conditioner/Stabilizer. 500 ml.	\$6.95
WY60 Lysozyme liquid "Lyso-easy". 250 ml.	\$29.95
QR11 Yeast Nutrient (Diammonium Phosphate). 2 oz.	\$1.95
QR33 Autolysed Yeast. 2 oz.	\$2.95
QR16 Yeast Hulls. 2 oz.	\$3.95
QR06 Fermaid K™ Yeast Food. Complete nutrient mix with trace minerals, use 1 oz. per 30 gallons. 3 oz.	\$3.95
QR38 Acti-ML. (Nutrient for MLF for 66 gal.) 50gr.	\$5.95
QR50 Yeast Nutrient for Meads. (Our special blend) Use 2 oz. per 5 gallons. 2 oz.	\$1.95
MS42 Private Reserve™. Canned inert gas.....	\$10.95

Fining Agents

FN06 Sparkolloid™ 1 oz.	\$ 1.95
FN32 Bentonite 2 oz.	\$.69
FN07 Isinglass 1 oz..	\$ 4.95
FN03 Fining Gelatin (75 bloom, grade B) 1 oz.	\$ 1.95
FN16 Tannin. 1/4 oz.	\$.95
TE24 Copper Sulfate Solution (1%). 4 oz.	\$ 4.00
FN22 Polyclar VT (PVPP) (With Instructions). 1 oz.	\$ 1.95
QR28 Calcium Carbonate (With Instructions). 1 oz.	\$.69
FN39 Potassium Bicarbonate (With Instructions). 4 oz. ..	\$ 2.95

EQUIPMENT AND SUPPLIES

Air Locks and Breather Bungs

FST04 Three Piece Fermentation Lock	\$1.29
FST05 Red Top - One Piece Fermentation Lock	\$1.29
FST42 Breather style -Silicone - fits inside glass carboys	\$4.95
FST47 Breather style -Silicone - fits outside all carboys	\$8.95
FST46 Breather style -Silicone - 1.5"Bottom, #9 size and Better Bottle® plastic carboys	\$5.95
FST45 Breather style -Silicone - 2", Barrels	\$7.95
FST41 Breather style -Silicone - 2", Dalco Dual™	\$4.95

Barrel Supplies

FST48 Silicone Bung Solid (1.5" Bottom, #9 size and Better Bottle® plastic carboys).	\$6.95
FST40 Silicone Bung Solid (44 X 55 mm) (#11 size).	\$6.95
FST44 Silicone Bung Drilled (44 X 55 mm) (#11 size).	\$4.95
B21 Hardwood Bung (specify diameter)	\$4.95
B37 Barrel Wax 4 oz.	\$3.95

MS06 Mildewcide Barrel Coating, 16 oz.	\$6.95
B13 Hoop Nails Pack of 20..	\$1.25
B14 Spiles for Barrels (Fills holes) Pack of 10	\$1.75

Spigots

Spigots: Wood. SP31 **2.25"** \$3.95, SP32 **6"** \$4.95, or SP35 **8"** \$10.95 Additional spigots 2 1/2" to 12" in length available.

Fermentation Containers

P16 10 liter Plastic Pail, with Pour out lip and Bail Handle.	\$8.95
P01 6.8 Gallon Plastic Bucket with Wire Bale Handle, Graduation marks in half gallons & Locking lid.	\$13.95
P17 Poly Drum Liner (4 mil, 60 gal.)	\$5.95
P04M 10 Gallon Heavy-Duty Plastic Bucket with molded handles.	\$20.95
P05 10 Gallon Lid	\$6.95
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
MS02 Carboy Carrier, Nylon Web	\$12.95

Glass Carboys

GL02 3 Gallon Glass Carboy.	\$27.95
GL01 5 Gallon Glass Carboy.	\$31.95
GL40 6 Gallon Glass Carboy.	\$34.95
GL04 7 Gallon Glass Carboy.	\$36.95

Plastic Carboys LIGHTWEIGHT, NO TASTE NO ODOR NO O₂

GL45 5 Gallon BETTER BOTTLE® Carboy. ..	\$26.95
GL13 6 Gallon BETTER BOTTLE® Carboy. ..	\$28.95

Oak Products

Oak Chips, 1 lb sacks

B46 American Medium Toast. \$5.95, or 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
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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
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New Oak Barrels: (Kiln Dried)

B04 American Oak, 5 gallon	\$189.95
B05 American Oak, 10 gallon	\$204.95

New Oak Barrels: (Air Dried)

B47 American Oak, 26 gallon - medium toast.....	\$335.00
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Recooped French Oak Barrels: (Shaved and Rebuilt from full size barrels, with new Hoops) (Barrels come with medium toast.)

B84 French Oak, 10 gallon	\$300.00
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Recoopered French Oak Barrels Continued:

- B85 French Oak, 15 gallon \$315.00
- B86 French Oak, 20 gallon \$325.00
- B48 French Oak, 30 gallon \$335.00

Small American Oak Barrels:

- B01 American Oak, 1 gallon \$99.95
- B02 American Oak, 2 gallon \$104.95
- B03 American Oak, 3 gallon \$104.95
- B05 American Oak, 5 gallon \$189.95

Vinegar Barrels are paraffin lined (P):

- B09 American Oak, 1 gallon (P) \$89.95
- B10 American Oak, 2 gallon (P) \$104.95
- B11 American Oak, 3 gallon (P) \$114.95

Liquid Barrel:

B42 **Liquid Oak Essence.** Extracted from pure Dark French Oak Chips, in alcohol, this 4 oz. size treats 5-10 gallons of red wine, 10-15 gallons of white wine.\$5.95

Racking and Pumping

- QE11 5/16" Racking Tube. \$3.95
- FST02 Hose Shutoff Clamp for 5/16" hose. \$1.50
- QE33 1/2" Racking Tube. \$4.95
- FST03 Hose Shutoff Clamp for 1/2" hose. \$2.95
- QE17 Bottle Filler for 5/16" hose. \$4.95
- QE20 Bottle Filler for 1/2" hose. \$5.95
- PS26 Transfer Pump, phenolic head, electric \$149.95
- F01 Filter/Strainer for Pumps (Use with 1/2" hose) \$18.95
- PS36 Procon Brass Pump, 4 GPM, 1/4 HP \$295.95
- PS35 Procon Stainless Pump, 4 GPM, 1/4 HP \$425.95

- PS04 Pump hose barb fitting, 3/4" Female Garden Hose Thread x 1/2" barb. (For PS26 Pump). Plastic . \$2.95
- FX06 Pump hose barb fitting, 1/2" x 1/2" barb. Brass \$2.95
- PB05 Pump hose barb fitting, 1/2" x 1/2" barb. Stainless steel \$10.95



PS35 Procon Stainless Pump with PB05 fittings

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.\$449.95



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, cartridges are one use.....\$39.95

10" Filter Cartridges:

- F10 3 micron Coarse\$12.95
- F11 1 micron Fine \$12.95
- F12 .5 micron Sterile\$14.95
- F41 .5 micron, reusable Sterile.....\$44.95



Hose Barb for Filter Housing. Need two. Specify: PS02 3/8" hose. or PS03 1/2" hose.....\$1.99

SIPHON HOSE

Sold by the FOOT

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

Funnels:

- QE24 Carboy Funnel, 8" Anti-Splash \$10.95
- QE22 Medium 6" Bottle Funnel \$4.95
- QE21 Small 4" Bottle Funnel \$2.95

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"	\$ 1.85
10.5	FST20	2 5/64"	1 3/4"	\$ 1.95
11	FST21	2 13/64"	1 7/8"	\$ 2.35
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"	\$ 3.45

Most sizes are available solid, at the same price.

Miscellaneous

KEG58 Food Grade Lubricant. 4 oz.	\$3.95
MS03 Silicone Spray Lubricant. 10 oz.	\$9.95
MS09 Gondola Enamel. Food grade paint. 16 oz. ...	\$10.95
MS32 Grape Picking Shears.	\$12.95
MS16 Grape Picking Knife. Plastic handle	\$6.95
QE36 Grape Masher. (Cap punch tool) 24" long.....	\$29.95
MS43 Wine Away™. 12 oz. Spray bottle.	\$9.95
MS42 Private Reserve™. Nitrogen gas in a can	\$10.95
MS33 Wine Agitator/Blender. Nylon whip to stir or de-gas wine, use with a drill.	\$10.95
MS34 Wine Degasser. 16" Stainless	\$19.95

Mesh Pressing Bags:

PS32 12" X 19"	\$4.95
PS16 20" X 22"	\$5.95
PS15 24" X 24" Apple pressing	\$10.95

Stainless Single Mesh Sieve-Strainer:

QE39 10 1/4" Diameter.	\$18.95
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Cleaners and Sanitizers

CS12 Soda Ash (Barrel cleaner) 1 lb.	\$1.95
CS29 Sodium Percarbonate (Cleaner) 1 lb.	\$4.95
CS24 Sodium Metabisulfite 4 oz.	\$2.95
CS20 Potassium Metabisulfite 1 lb.	\$5.95
CS17 Campden Tablets Pack of 25.	\$9.95
CS16 Campden Tablets Pack of 100.	\$2.95
CS33 Efferbaktol SO₂ Granules, 2 grams	\$1.00
CS35 Efferbaktol SO₂ Granules, 5 grams	\$1.50
B39 Sulfur Strips 2 strips	\$.69
B38 Sulfur Strips Bundle of 70 strips	\$18.95
CS31 TDC™ Glass Cleaner 1 Liter.....	\$13.95
CS03 BTF™ Iodophor Sanitizer 1 Liter	\$14.95
QE29 Bottle Brush	\$4.95
QE30 Carboy Brush	\$5.95
QE31 Long Handled Nylon Scrub Brush	\$14.95

Bottling Supplies

BE01 Double Lever Italian Corker.	\$34.95
BE19 Mini-Floor Corker. Nylon Jaws	\$79.95
BE03 Heavy Duty Floor Corker. Brass Jaws	\$149.95
QE09 90 Bottle Draining Tree.	\$38.95
WE19 Plastic Model 3 Spout Bottle Filler.	\$149.95
WE28 Stainless Steel 3 Spout Bottle Filler.	\$400.00
WE23 Stainless Steel 3 Spout Bottle Tray.	\$50.00
WE29 Stainless Steel 5 Spout Bottle Filler.	\$475.00
WE24 Stainless Steel 5 Spout Bottle Tray.	\$55.00
WC11 1 3/4" Chamfered Corks. 25 pack.....	\$8.95
WC06 1 3/4" Chamfered Corks, 100 pack	\$34.95
WC14 1 3/4" Twin Disk Corks. 100 pack	\$24.95
WC08 1 3/4" Supreme Corq® Corks. 100 pack.....	\$26.95
WC07 1 3/4" Corks. 100 pack.....	\$36.95
WC13B 1 3/4" Twin Disk Corks. 1000 pack.....	\$205.95



Stainless Bottle Filler
Three Spout (WE28)

Heavy Duty
Floor-Model Corker (BE03)



Transfer Pump (PS26)



TC26 All-Plastic Wine Bottle Cork ea.	\$.15
TC20 Plastic Champagne Stoppers ea.	\$.12
TC21 Champagne Wires ea.	\$.10
TC18 28 mm Black Top Bar Top Cork ea..	\$.29
TC28 28 mm Black Top Bar Top Cork 100.....	\$ 26.95
S01 28 mm Metal Screw Caps ea.....	\$.15
S02 38 mm Metal Screw Caps. ea.	\$.25
S03 28 mm. Plastic Polyseal Caps	\$.35
S04 38 mm. Plastic Polyseal Caps	\$.85

Bottle Seal, Wax Available in 9 colors \$8.95
SL26 *Black*, SL27 *Burgundy*, SL28 *Gold*, SL29 *Silver*, SL31 *Blue*,
SL30 *Red*, SL32 *Green*, SL41 *White*, or SL34 *Purple*. 1 lb.

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*, or SL09 *Blue*. Also for *Burgundy bottles Oversize
Sleeves* are SL01 *Maroon*, SL02 *White*, SL03 *Black*. Sold by the
Dozen

Gum-Backed Label Making Paper. *White* L38, *Blue* L39 or *Green*
L40. 18 Sheets, 8 1/2 x 11. \$6.95
MS15 **Label Glue** 16 oz. \$6.95
MS24 **Iceproof Label Glue** 32 oz. \$13.95
MS26 **Manual Label Gluer** Glue Pot. \$349.95
BE07 **Super "M" Crown Capper**

BE10 Plain Crown Caps 1 gross (144 caps)	\$3.95
GL03 Green or GL16 Flint Bottles 375ml. 12/cs.	\$14.95
GL11 Green or GL05 Flint Bottles 750ml. 12/cs.	\$12.95

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	\$.89
#17	TC23	35.9mm	29.9mm	\$.95
#18	TC08	38.1mm	30.9mm	\$.95
#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 **Economy Hydrometer** has Brix, Specific Gravity, and Potential Alcohol scales. 10" \$8.95

TE42 **Deluxe Hydrometer 3 scale with Thermometer.** Use with the tall test jar below. 11" \$16.95

Precision Hydrometers (Brix only).

Specify range: TE43 **-5° to +5°**, TE44 **-1° to 11°**, TE45 **9° to 21°**, or TE47 **20° to 50°** \$20.95

TE39 **Hydrometer Proof and Traile**..... \$10.95

TE65 **"Santa Rosa" Residual Sugar Kit.** 36 Tests (with instructions). \$26.95

TE23 **Refractometer**, 0-32° Brix, Automatic Temperature Compensation, boxed \$89.95

TE32 **20° Brix Solution.** Sugar solution to standardize the refractometer. 2 oz. \$3.00

TE13 **Vinometer.** Measures alcohol in dry wine \$7.95

Labware

Regular Test Jar for 10" Hydrometer.

TE55 **Plastic.** 10" \$4.95

TE08 **100 ml. Graduated Cylinder Glass.** \$14.95

TE111 **250 ml. Graduated Cylinder Glass.** \$18.95

TE112 **500 ml. Graduated Cylinder Glass.** \$23.95

Tall Test Jar for 11" Hydrometer.

TE56 **Plastic.** 1 1/2" x 14" \$5.95

TE54 **Glass.** 1 1/2" x 12" \$15.95

TE07 **1 ml. Pipet.** Each. \$.95

TE62 **10 ml. Pipet.** Pack of 20. \$17.95

TE36 **10 ml. Pipet.** Each. \$1.25

TE86 **100 ml. Graduated Beaker Polypropylene**..... \$.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.** \$14.95

TE10 **500 ml. Pyrex Erlenmeyer Flask.** \$10.95

TE09 **1000 ml. Pyrex Erlenmeyer Flask.** \$15.95

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** \$24.95

TE66 **Blue Hydroxide Refill** (for TE30) (100 ml.) \$8.95

TE82 **Iodic Solution** Tests free SO₂ with the TE30 Acid Kit components. (100 ml.) \$12.95

TE02 **Titrets® Free SO₂ Test Kit.** Pack of 10. \$18.95



pH and ML Testing

TE60 **Accuvin pH** (10 tests) \$22.95

TE73 **Waterproof pH Tester20 DJ.** Digital, battery operated, accuracy to 0.01 pH. Automatic 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



TE67 **Accuvin Malic Acid.** (10 tests) \$30.95

TE20 **Malolactic Chromatography Kit.** With 7 papers, 4 oz Solvent, 100 pipets, 3 Acid Standards and Instructions.. \$39.95

TE17 **Replacement Solvent.** 4 oz. \$10.95

TE22 **Replacement Paper 5 Sheets.** \$3.95

TE19 **Replacement Pipets.** (100). \$6.95

Thermometers

TE38 **Instant Read Dial Top Thermometer.** 0-220°F., Recalibratable, Stainless, 1" Dial x 5" Stem \$9.95

TE50 **Wine Thermometer.** 0-220°F., 1.75" Dial x 8" Stem, with pan clip, recalibratable comes with pan clip, Stainless... \$24.95

TE90 **Must or Juice Thermometer.** 2" Dial x 12" Stem, all the same as TE50 but larger. \$34.95

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 tanks or carboys. \$2.95

Wine Thiefs

TE49 **Wine Thief.** Plastic. One piece. \$5.95

TE48 **Wine Thief.** Plastic. Assembled of 3 pcs \$7.95

TE52 **Wine Thief Glass.** Pyrex. (3/4" by 15") \$18.95

TE59 **Wine Thief.** Angled 24" "D" Ring Handle and tough Borosilicate Glass. \$46.95

Digital Scale

TE01 **Escali™.** 1-5000 grams, ounces to 16 and pounds 1 to 11, perfect for winemaking additives..... \$42.95



Escali™
Scale

WINEMAKING BOOKS AND VIDEO

- BK140 *Home Winemaking Step by Step* Iverson. \$17.95
 BK20 *Micro Vinification* Dharmadhikari and Wilker. \$46.95
 BK12 *Techniques in Home Winemaking* Pambianchi. Newly revised, advanced home winemaking text. \$ 21.95
 BK61 *Complete Handbook of Winemaking* American Wine Society. \$14.95
 BK142 *Winemaker's Recipe Handbook* Massaccesi. \$ 4.95
 BK40 *Modern Winemaking* Jackisch. \$39.95
 BK54 *How and Why to Build a Wine Cellar*, Gold. \$20.00
 BK59 *A Handbook For Must and Wine Analysis* A cookbook approach to analysis, 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
 BK129 *Vineyard Simple*, Powers \$24.95
 BK67 *The Backyard Vintner*, Law \$19.95

Cider

- BK70 *Cider, Making, Using and Enjoying*, Proulx & Nichols \$14.95
 BK79 *Making the Best Apple Cider* \$3.95

Mead

- BK77 *Making Mead*, Morse \$16.95
 BK05 *The Compleat Meadmaker*, Schramm \$19.95

Other Fermentations

- BK84 *Making Vinegar at Home*, Romanowski \$4.95
 BK03 *Homemade Vinegar*, Watkins \$8.95
 CH73 *The Cheesemaker's Manual*, Morris \$39.95
 BK74 *Making Cheese, Butter, Yogurt*, Carroll \$3.95
 BK74 *Making Artisan Cheese*, Smith \$19.95
 BK75 *Home Cheesemaking*, 3rd Ed., Carroll \$16.95
 BK76 *Home Sausage Making*, Reavis \$16.95
 BK36 *The Compleat Distiller*, Nixon & McCaw \$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 received, if received by 1 pm. Ground service to Zones

2 and 3 receive one day service. Zones 4 and 5 receive 2 to 3 day service. Customers in Zones 6, 7 and 8 will normally receive their merchandise in 4 to 5 working days.

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

Add \$6.00 for standard shipping to California, Nevada, Oregon and Washington. All other states, add \$8.00. See exceptions on order form, next page.

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. These are the exact charges that USPS charges for priority mail.

The Beverage People is proud to operate both a retail and mail order supply firm for over 28 years at the same location in the heart of the Sonoma County Wine Country.

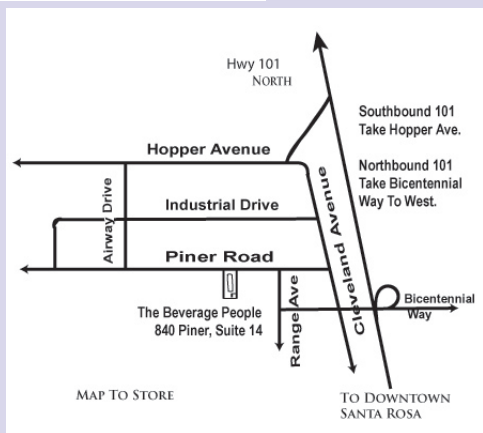
Our staff wishes you the very best with your new hobby and look forward to hearing from you. Mention that you are a new customer, so we may give you a free article from a past newsletter to help answer your fermentation questions.

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T-F 10 - 5:30, and Saturday 10-5
Also Open on Mondays- August through December

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	\$35.00
#45 25 gallon Basket	\$45.00

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 beginning winemaking class. There is a \$20.00 fee. You will get your questions answered, and gain information about equipment and processes. Space is limited, so call today. Class will meet Saturday, August 23 at 2 pm. Bring a bottle of your wine to critique, class is held at the retail store.

New Stuff!

The new strain of yeast we are bringing in this year is **Uvaferm 43**, selected for its ability to restart stuck fermentations and its high alcohol tolerance. Another amazing characteristic of this yeast is its low nitrogen demand, meaning you will experience less H₂S production, for a cleaner aroma. 43 also contributes a berry and cherry aroma and improved mouthfeel due to higher glycerol concentration. WY28, 10 g. is \$1.95.

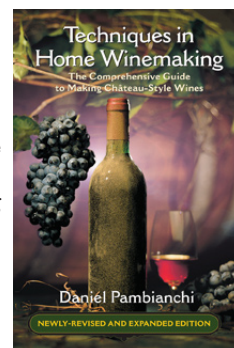
In addition to the 10g. packaging of wine yeast for up to 10 gallons of wine, we also supply 4 oz. (112g.) packaging for customers making more than about 75 gallons and up to 120 gallons. In addition there are 1 lb. (450g.) packs for up to 7 full barrels of wine. Don't look for these larger packs in the print catalog. (Space limits that option.) For pricing, please call the store or refer to the online catalog at thebeveragepeople.com.

We held our tri-annual rental equipment sale in January and everything marched out with a new owner after 12 minutes. So, of course, we now have all new **Equipment for Rent** this year. We are not changing the rental rates, see sidebar this page - but in this economic climate - we expect to see a lot of rental activity. Remember to call to reserve your equipment as soon as you can, up to one week in advance to assure availability.

We now stock the **Supreme X2 Corks** which have more resilience than regular plastic corks. They are also more oxygen permeable for aging red wines. Use for short term storage of white wines, up to a year. WC08 \$26.95.

Techniques in Home Winemaking

This newly-revised edition of Daniel Pambianchi's *Comprehensive Guide to Making Chateau-Style Wines* is a welcome addition to the winemaking literature. His troubleshooting guide alone is worth the price of the book as it addresses all varieties of problems in an easily accessible format. There are also detailed instructions on making Pinot Noir, traditional method, sparkling wine, Port, and Icewine-style wines. Easy-to-read charts and tables. BK12 \$21.95



Daniel Pambianchi is the founder and CEO of Cadenza Wines Inc., which operates Maleta Winery, a small commercial winery in Niagara-on-the-Lake, Ontario, producing a wide range of premium wines. He is a regular columnist for WineMaker magazine.