

Winemaking Step by Step

EQUIPMENT

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

You will need the following:

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

For every 75 lbs. of grapes:

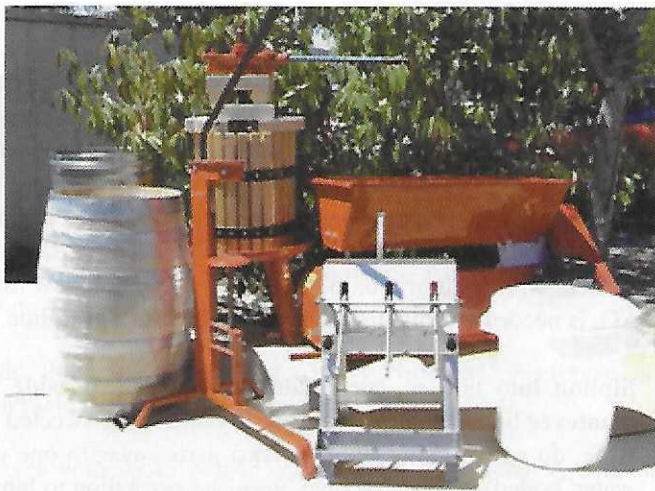
1. 10 Gallon Food grade Bucket and Lid
2. One 5 gallon glass carboy (water bottle) with a fermentation lock and a #6 1/2 or #7 drilled rubber stopper. Or PET plastic carboy with a #10 drilled rubber stopper and fermentation lock.
3. Extra jugs, each with a fermentation lock and #6 drilled rubber stopper.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

INGREDIENTS

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

RED WINE PROCEDURES

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



Winemaking Equipment from crush to bottle.



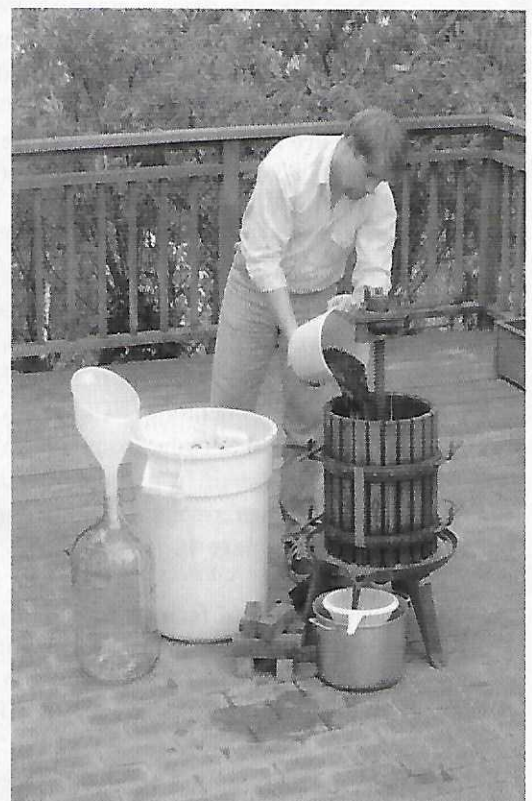
Crushing and stemming your grapes.

Time Line for Red Wine Fermentation.....

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

- 9 **Add an ML (malolactic) culture** (optional) to the wine which, in the case of direct pitch strains like *Enoferm Alpha or Beta*, **is added to the secondary fermentors after pressing.**
- 10 **When the wine has begun to clarify in 1-2 weeks, rack the wine off the gross lees** into clean, sanitized storage containers (glass, stainless steel, or oak). Top up the containers and let stand for a month. If ML fermentation is still active do not add sulfite during this time.
- 11 **After one month, rack the wine away from the lees again,** add sulfite to 25 or 30 ppm, and keep in topped up containers for four to six months. You must top up barrels, and visually inspect the carboys. This is a good time to add oak alternatives such as sticks or cubes. Add sulfite every few weeks. If you inoculated for ML, test the wine to be sure it is complete.
- 12 **Rack off the lees again,** and retest to see if the ML fermentation has finished. If completed, raise the sulfite to 20-30 ppm and store in a cool place for aging. If ML fermentation has not completed, keep the sulfite level below 20 ppm and warm the storage containers for a month to encourage completion. (If using Tannin Riche Enological Tannin from French oak, mix it with the wine during a racking at least 3 weeks before bottling.)
- 13 **Usually during the summer** (just before you need your storage containers for the next year's crush), **carefully rack the wine to a sanitary bottling container, then siphon into bottles and cork them.** Keep the bottles neck-up for one week to allow the corks time to expand, then move the cases to their side or upside down for storage. Bottling time is your last opportunity to make sure the wine will be bottle stable, so test and adjust the sulfite to 30 ppm. If this is a sweet wine, add Sorbistat to keep the wine from further fermentation. Most red wines will benefit from at least one year's additional aging.

White Wine Procedures,
see next page.



Pressing the fermented red grapes.