

# Foch & Millot Red Wine Instructions

These are popular local French-Hybrid grapes for making red wine. They are hardy (Foch being slightly hardier) and have moderately good disease resistance. Foch seems to make the fruitier wine while Millot provides more tannin for aging. Many winemakers blend them to make wine. The crushed fruit and juice travel together well without splashing.

**Clean your Fermentors.** Bring your food-grade plastic fermentor to put your whole grapes or crushed grapes into to carry home.

**Pick your Grapes.** It takes 14-16 lbs of grapes to make a gallon of wine. French-Hybrid grapes are made into wine, as are the vinifera varieties of grapes in Europe and California, by using straight grape juice. Seldom is there dilution with water as there is with most other fruit or with grapes like Concord and Niagara. You may also want to pick a few extra lbs so you have wine for 'topping up' as you rack the wine later on. To make 5 gallons of wine you'll want to pick 77-80+ lbs of grapes. When you pick your grapes discard and leaves, insects or bad grapes. The best grapes make the best wine.

Grapes are ready to pick when the sugar, acid level, and pH are determined to be optimal for making the best wine.\* These 3 tests are determined by using the hydrometer for sugar levels, an Acid Test Kit for acid levels, and a pH meter for determining the pH of the wine. These 3 readings vary from year to year because of the weather in a given year. It is not true that you should always wait until the sugar is highest to pick the grapes. Many winemakers pick the grapes when the pH is at the level desired. Optimum levels for pH are pH 3.1 – 3.2 for white wines and pH 3.3 – 3.4 for red wines. In California the pH of red wines will sometimes be picked higher. Another formula used is the *ratio* of Brix (sugar %) to TA (titratable acidity). In California researchers found most wines are in balance when the Brix:TA ratio is between 30:1 and 35:1. However, a level this high may be difficult to reach in the Midwest where the sugar level may be lower and the pH lower as well.

Another measure of ripeness in grapes is Brix times pH<sup>2</sup>. Harvest white grapes when this number is as close as possible to 200, and grapes for red wines when this number approaches 260.

Try to get the best grapes you can get. In particular try to buy grapes from a vineyard that has limited the size of their crop, arranged the foliage for best light exposure, and pulled leaves from around the grape clusters to increase exposure of the grapes to sun. High quality grapes make high quality wine.

Your best wine will be made when the 3 parameters discussed above are considered, and not sugar % alone.

After you pick your grapes (about 20-22 lbs in a 5 gallon plastic bucket), crush them. When you use our crusher, place the crusher over the 20-gallon fermentor, pour your grapes into the hopper till its full, and crank the handle to crush your grapes. When through, you can haul your crushed grapes into the vineyard to pull the remaining grapes from the stems. This can be done quickly by running fingers down the cluster and ripping the remaining grapes off. Try to destem about 90% of the grapes. You should be able to destem 75 lbs of crushed grapes in a quick 15 minutes. The more stems you leave in your wine the more tannin is provided.

**Sulfite your Wine next** with Campden Tablets or the powder form of Sodium or Potassium Bi-Sulfite. If you plan to add a malo-lactic culture (a way to promote a malic to lactic acid conversion, which has the effect of softening the acid flavor of the wine) you will want to keep your ppm of Sulfite on the low side at about 20-30 ppm of free SO<sub>2</sub> for must of pH 3.3-3.5 when the culture is added). If the pH is lower, add less SO<sub>2</sub> and more SO<sub>2</sub> if the pH is higher. In any case you'll want this malolactic conversion to take place before you bottle your wine. If you don't, it may occur in the bottle and produce a soft fizz in the wine – a sort of champagne accent. Sometimes, however, wild bacteria can produce undesirable malo-lactic flavors if it occurs in your wine after you bottle. The SO<sub>2</sub> level in wine may be tested by using a Titrette Testing Kit for SO<sub>2</sub>, available in winemaking stores.

**Adjust the Acid Level.** The acid level of wine is determined by using an Acid Test Kit. This is a simple titration kit that will give you an accurate reading of the grape juice before fermentation. Since acid level is very important to the flavor of the wine it is important to know what the level is. If you determine the acid is too high you have several options. The simplest is to dilute with water. However, this will also dilute the flavor and body of the wine. You can also settle out some tartaric acid by chill aging the wine during cooler weather. This precipitates cream of tartar out of solution. And as mentioned above, you can plan on having malolactic fermentation. Sometimes all three of these methods may be helpful. If the acid is too low, you can add tartaric acid (preferably) or acid blend to raise it. It is not usually low with French-Hybrid grapes.

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**Check the Sugar Level.** Check your current sugar level before fermentation with a hydrometer. Then adjust if necessary by adding simple sugar syrup. Directions for amounts are found in winemaking books.

**Add the Yeast.** In 8-12 hours you may add the yeast. There are a number of good wine yeasts available for red wines.

**RC-212, Lalvin 1116, Lalvin Red burgundy, and Wyeast liquid French Bordeaux are some of the good choices.**

Dry wine yeasts should be rehydrated in a pint of 100F water for 15 minutes, and then added to the wine must. Cover the fermentor with a loose fitting lid or a light plastic wrap – which will keep out the dust and insects. Fermentation should be evident within 12-24 hours. Usually the cap of skins will be pushed to the surface of the must. Stir these skins into the must twice a day for the length of time you desire to ferment in the primary, usually 3-6 days. Some winemakers feel Foch and Millot grapes should not have too much fermentation time with skin contact as this promotes herbaceous off flavors. Considering this, one could ferment on the skins for 2-3 days before pressing the juice from the skins.

**Press the Wine.** This may be done by using a traditional wine press or a nylon-pressing bag. For a small batch it may be easier to pour the must through a nylon bag and squeeze it until it's dry. With a larger amount it is easier and more efficient to use a wine press. After the wine is pressed it should be placed into a fermentor, such as a 5-gallon glass carboy, filled all the way to the top and fitted with a fermentation lock. For the rest of the time before bottling, the wine should *always* be filled as high as possible to allow no airspace over the wine. This helps prevent damaging oxidation and wine spoilage. Rack the wine several times until it is clear, and chillproof it if desired, and eventually bottle it.

\*For a very good discussion of ripeness of grapes and determining when to pick grapes for winemaking see *From vines to Wines* by Jeff Cox. This is an excellent book on winemaking with grapes.

**Malolactic Fermentation** Malolactic fermentation occurs when a *Leuconostoc* bacteria in the wine converts malic acid to lactic acid + CO<sub>2</sub>. Malolactic fermentation is done to lower the acidity of wines, to prevent the fermentation from occurring in the bottle with possible resultant off-flavors, and it also softens wine, adds complexity, and rounds it out. It is more commonly done with dry red wines but may also be done with many white wines.

MLF is not very tolerant of certain conditions. It does not like high alcohol, high sulfur dioxide levels, low temperatures and low pH. You will want to keep the amount of free SO<sub>2</sub> below 15 ppm if you add a MLF culture. Some winemakers may not add SO<sub>2</sub> until the MLF is complete.

To begin MLF a pure culture of *Leuconostoc oenos* is added to a wine with low sulfite levels near the end of the primary fermentation when sugar levels are below 5 Brix. This will usually occur within a week or two of fermentation onset. Small, fine bubbles will be evidence of MLF. One can also keep records of the wine's pH and when a shift occurs quickly from about 3.3 or 3.4 to about 3.6 MF can be assumed. The MLF is normally complete within 1-2 months. After this the wine is racked and fermentation procedures continued.

## **Foch Wine Styles**

Foch can produce several styles of wine. It can produce nouveau wines via carbonic maceration, blush style wines by pressing immediately after crushing, or more traditional, heavier wines by fermenting on the skins for several days.

**Nouveau wines.** To produce this lighter, fruity style of wine approximately 2-% of the total amount of grapes is crushed and added to the bottom of the primary fermentor. The rest of the grapes are added, whole cluster, to the bottom crushed part. The top of the fermentor is covered and the whole grapes allowed to ferment several days. Then the batch is pressed and allowed to continue doing a secondary fermentation.

**Blush wines.** The fresh grapes are crushed and pressed immediately as though they were white grapes. This imparts as little color as possible to the wine. Additionally, the grapes may be picked in the coolest part of the day to further minimize color extraction.

**Traditional Foch.** The grapes are crushed, de-stemmed, and then fermented as usual for 2-5 days. Some winemakers feel less herbaceous aromas are leached by fermenting the grapes for only several days.

**Other techniques:** Cold soak/maceration. Must is cooled to about 41-48F to slow down the onset of fermentation by indigenous yeast, and contact between skins and juice is promoted. The cold maceration is thought to improve color, body, and mouth feel of the resulting wine. The wine is then fermented as usual.

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