



# Frontenac Wine Recipe

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## Recipes for 1 Gallon

FRUIT	WEIGHT	WATER	SUGAR	ACID BLEND	TANNIN	YEAST
Frontenac	16-17 lb.	some years	none	none	none	RC212, Pasteur Red,

Frontenac makes a big, red wine whose aroma and flavor are dominated by cherry notes, with lesser hints of blackcurrant and general red fruit. Other flavors noticed are notes of grass, green bean, evergreen, tar, and even chocolate.

The main consideration in making Frontenac wine is the high initial acidity, which should be lowered in making most wine styles. This is usually done by: adding water to dilute, malolactic fermentation, adding potassium bicarbonate, and chill proofing to remove excess tartaric acid. All 4 practices may sometimes be needed.

**BUT, FRONTENAC MAKES AN OUTSTANDING SWEET PORT WINE, TAKING ADVANTAGE OF ITS NATURAL ACIDITY.**

**IMPORTANT:** The above recipes should also include the following ingredients:

**Pectic enzyme** - None, tends to make a mess.

**Yeast**— See above, or Cotes de Blanc for rose style.

**Yeast Nutrient** - usually not needed.

**Campden Tablet** - ¼ - 1 tsp/gallon (varies with pH)

(Certain yeasts require a **yeast starter to be made** before adding to the must. Check on the package!)

## DIRECTIONS

1. Crush grapes, remove most of the stems.
2. Add crushed **Campden tablet**, or **Sodium (Potassium) Metabisulfite** powder.
3. 6-6 hours after step 2, add rehydrated **wine yeast**; or add prepared yeast starter. Use a primary fermentor large enough to allow for foaming (2-3 gallons excess). Food grade plastic makes a good fermentor. Cover with plastic wrap.
4. Stir three times daily. Ferment on skins 2-5 days. Longer is **not** recommended. Towards end of primary fermentation, introduce a Malo-Lactic culture (MLF). The addition of a MLF nutrient is also recommended. To do this keep the amount of SO2 low, and add the culture without racking so the yeast lees may provide nutrients for the culture. When primary is through, press the grapes, and put the juice into your secondary fermenter.
5. Once the malo-lactic culture has finished the TA (total acidity) of the wine may be checked again, and potassium bicarbonate may be judiciously added to lower the acid further. Note: final acidity should fall in the 0.9—1.4% range.
6. Fill the Secondary completely up, allowing just enough space to attach the fermentation lock without the wine touching the rubber stopper. Fill fermentation lock half way with water. From this time forward till bottling, the Secondary Fermentor **must always** be kept full to the top. **Glass** is the preferable Secondary, with wood barrels next and plastic a very, very distant third. Plastic will oxidize the wine.
5. Fermentation should cease in 2-8 weeks, at 70 F., or above. Wine should be racked (syphoned) from sediment 3 weeks after placing in Secondary, and then again twice at monthly intervals after fermentation has stopped. Add ½ Campden tablet/gal. at these last two rackings, but not at bottling. If closely monitoring SO2 levels, keep at 30 ppm at bottling.
6. Increased aging potential and improved flavor characteristics can be achieved through barrel aging or contact with oak chips, cubes, or staves. This will add complexity to Frontenac wine. These may be added while the wine is in the secondary.
9. **Frontenac wine will benefit from chill proofing.** To do this store the wine in secondary at 50°F temps for several weeks. Rack the wine from the colored tartrate sediment. This is easily done and will definitely help lower the acidity.
10. Wine may be sweetened if desired, **but do not add Potassium Sorbate if a malo-lactic fermentation was used. It can result in off flavors.**
11. Wine is now aged till ready, which can take a year or more. Suit your own taste. Drink when good!
12. You can be more accurate with your measurements by using these instruments: **Hydrometer** for sugar and alcohol levels, **Acid Titration Kit** for acid levels, and **SO2 Titration Kit** for sulfite levels.

**Acidity Note:** See info on Page 2 for dealing with high acidity in Frontenac.

**Comments:** We recommend you make a yeast starter ahead of time. Directions on most yeast packets. Also, it is a good idea to add a small amount of nutrients for many wine grapes, to ensure complete fermentation.

## Acidity in Frontenac Wine

Much of the following is from Anna Katharine Mansfield of the UMinnesota Enology Project Leader, in an article on “Making Wine with Frontenac.”

Frontenac can have high Total Acidity. For this reason, **malolactic fermentation** is encouraged, and further deacidification **with potassium bicarbonate** is occasionally performed. At the research winery, standard practice to decrease acid includes inducing malolactic fermentation with a strong culture when the primary fermentation is almost, but not quite, finished. Since high acid may stress lactic acid bacteria (LAB) culture, other fermentation parameters are optimized as much as possible—MLF is induced in the primary fermenter without racking, for instance, and yeast lees are stirred thoroughly to re-suspend them in the wine at inoculation, providing nutrients for the LAB. The fermenter is kept as close to 70°F as possible, and LAB nutrient (not DAP) is used at a rate of 1.5 g/gal if MLF appears sluggish.

Once MLF is complete, the TA of the wine measured again, and wines that are still deemed to be too acidic are treated with a conservative amount of **potassium bicarbonate**. The wine is then put into cold stabilization, and TA checked in a couple weeks - if it's still high at that point, another small bicarbonate addition is made, with the total amount still kept below the 15g/gal recommended on the label. It's important to note that bicarbonate additions are made incrementally, rather than all at once, to insure that the acid reduction can be fine-tuned to prevent excessive deacidification or production of off-flavors. Final acids higher than those acceptable in traditional wines can work well in Frontenac; because it is naturally low in tannin, the wine can support higher finished TA's and still present a balanced palate structure. Lack of tannins makes acid the primary wine component giving Frontenac aging potential, so a TA of 9g/L or so is appropriate for reds meant for aging. Calcium carbonate additions for deacidification are generally not recommended, primarily because the off-notes produced are usually deemed unpleasant by consumer panels.

Both increased aging potential and improved flavor characteristics can be achieved through barrel aging or contact with oak chips or staves. Oak-derived aroma and flavor compounds can round out and soften the aggressive one-note cherry typical to Frontenac, producing a more complex wine suitable for consumption with heavier dishes. Enological tannins, which can be added before or after fermentation, are now widely available, but determining the correct rate of addition is a matter of trial and error. All tannin additions require extra aging to allow components to integrate; even so, many tannin-enhanced wines exhibit a disharmonious mouthfeel, where the tannins seem divorced from the rest of the palate, and the whole wine a bit clunky. As more tannin products are available and more winemakers experiment with them, this option may become more approachable, but the inexperienced should approach it with caution.

As a general rule, aroma and flavor characteristics in Frontenac are dominated by a bold cherry note, with lesser hints of black current and general red fruit. Trained sensory panels have also identified notes of grass, green bean, evergreen, tar, and in some cases, chocolate.

Commercial production efforts hint at Frontenac's flexibility in various styles. As mentioned above, rosé-style whites have been successfully produced from must allowed 0-8 hours skin contact time, and have proven popular in the commercial market. Though darker than traditional rosés, the wine color is jewel toned and strikingly deep, with no hint of tapering to an insipid salmon. Cool (55°F) fermentation with an aromatic yeast, like Cotes de Blancs, is recommended. The nose and palate showcase a bright, Bing cherry note that is enhanced by an off-dry finish and moderate acidity. Depending on the fruit, sugar levels from bone dry to moderately sweet have shown appropriate balance and customer acceptance.

# Frontenac Port Making

## Old Fashioned Authentic Style

### Winemaking Techniques & Tips

## Frontenac Port.

Frontenac has been making port-style wines of very high quality. In port production, fermentation is stopped by adding grape neutral spirits or brandy while the sugar content is still high, which results in a wine with higher sugar and 18-22% alcohol. When doing this the winemaker must have brandy on hand to immediately add to the wine when it reaches the desired sugar level in the primary fermenter. This might occur at 1 pm, 4 pm, or 3:30 am. Be prepared! It may also be helpful to use a yeast with a low alcohol tolerance so the wine yeast may be more easily stopped by the addition of alcohol.

“In Frontenac ports the higher acid levels balance the increased sugar beautifully, deepening the typical fruit notes into lush shades of cherry, raspberry, black current, and stewed fruits. Some ports exhibit pronounced chocolate notes.”\*  
**Determining sweetness level.** The reason you may be up at 3:30 am as mentioned above is that you want to catch the fermenting wine with enough natural Frontenac sugar in solution to have it as sweet as *you* like it. The only way to do this is to keep tasting it until the sweetness level is perfect, then adding enough brandy to get the alcohol content high enough to stop the fermentation. It only took us 3 attempts to get it right. Having extra brandy on hand is a good idea, if only for consolation at 3:30 am. Another method is to buy some commercial port you like, measure it's sugar content with a hydrometer, then plan on stopping your fermentation at the same brix (sugar level) with alcohol.

#### \*\*Blending Formula.

$$\% \text{ alc./vol. of blended wine} = \frac{(A \times C) + (B \times D)}{(C + D)}$$

Where:

- A = %alc/vol. of first wine
- B = % alc/vol. of second wine
- C = volume of first wine
- D = volume of second wine

**Frontenac in the vineyard.** Frontenac is an easy grape to grow. It is hardy, vigorous, productive, and moderately disease resistant. However, like many red wine grapes it makes a better wine if it is not over cropped. It is tempting to allow a grapevine to produce as many grapes as it capable of. However, research has shown that limiting the production of grapes will often produce a better wine. Allowing a moderate crop of Frontenac grapes will often result in lower herbaceous flavors, lower acid, and higher sugar. The crop may be limited by pruning, flower cluster or grape thinning near blossom time, or culling the crop at veraison. Experiment with different crop loads and determine for yourself which vines make the better wine.

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