

Winemaking Instructions

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Before we begin our presentation let us remind you that our product is NOT A CONCENTRATE. You don't add water. Imagine pressing or squeezing vinifera grapes and collecting the run off. That is our product. The juice is not chemically or physically manufactured like concentrates. Therefore our winemaking method may seem different. It is **easier** than making wine from concentrate and you don't need different packages of dubious nature. It reflects the traditional winemaking method of professional wineries.

Equipment

Most winemakers already have the necessary equipment needed.

- 20 L (5 U.S. gallon) glass carboy and gallon jug
- siphoning equipment including a plastic hose, rigid J tubes and a sediment excluder.
- airlocks and rubber bungs
- hydrometer (measures sugar content or specific gravity ~ S.G.)
- 57 g or 2 oz. of potassium metabisulphite $K_2S_2O_5$ (a sterilant).

Kamil Juices sells all of the equipment seen in these instructions, as well as a full range of filter machines and filter supplies. If you cannot find the specific sterilizers or sweeteners mentioned, email us and ask for details on pricing and shipping to your area. Please include your full address in the email to speed the shipping quote.

Sterilization

"*Cleanliness is next to godliness.*" This phrase also holds true for winemaking. Dissolve 2 oz. of potassium metabisulphite into a one (1) gallon jug of hot water. This makes a re-useable disinfecting solution that will last up to 6 months if kept tightly capped. Sterilize all equipment that will touch the wine or juice by rinsing it with this metabisulphite solution. After sterilizing your equipment, always rinse your equipment twice with cold water.

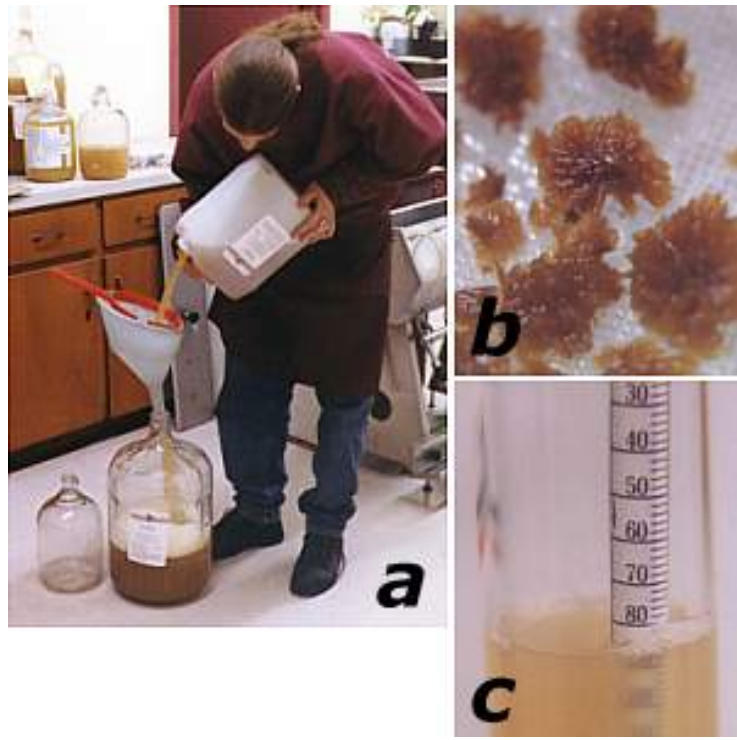


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Our pure fresh grape juices come packed in 11L (2.87 US gal) food grade sterile plastic containers. Each and every canister is labelled. The label contains the winery and country of origin, the varietal information and an independent chemical analysis. The analysis is complete with pH, Total Acid and Brix parameters. The grapes harvested for our juices are picked at the peak of their ripeness which is determined by that year's harvest conditions. This means our pure fresh juices are balanced by mother nature. There is absolutely **NO NEED** to add water or acid blend, like you do with concentrates.



Pouring the Juice

After all your equipment has been sterilized and rinsed with water, open the canister and pour the juice into your carboy (a). The "seedlike" sediments (bitartrates b), need not be added to the vessel and can be excluded by using a strainer when pouring the juice into your carboy. Leave 7-8 inches of space at the top of the carboy or demijohn, and place the balance of juice into either gallons jugs or leave in one of the plastic canisters. When full of juice, the gallon jugs must also have 3-4 inches of space below the neck.

Take a specific gravity reading using the hydrometer (c). It should usually be anywhere from 1070 - 1092. Taking the specific gravity gives us information about the sugar content of the juice. It is read by pouring juice into the hydrometer's plastic cylinder and allowing the hydrometer to float freely. In figure (c) you can see the level of the liquid meets the scale at approximately 1086. The 1080 is visible and the 1090 line is submerged in the juice.

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Making a Yeast Starter

Make a yeast starter by pouring approximately 100 ml (3 oz.) of juice and 100 ml (3 oz.) of **luke warm** water into a large glass mug. Sprinkle the yeast into this solution and allow the yeast to proliferate for about 30 minutes at room temperature. After the 30 minutes have elapsed, pour 3/4 of the yeast "slurry" volume into the carboy and 1/4 into the over flow vessels. The overflow containers could be a couple of gallon jugs or the 11 L plastic canister. *Sacchromyces bayanus* is the yeast strain that we prefer using. With them we never experience stuck ferments or fermentation of prolonged duration.

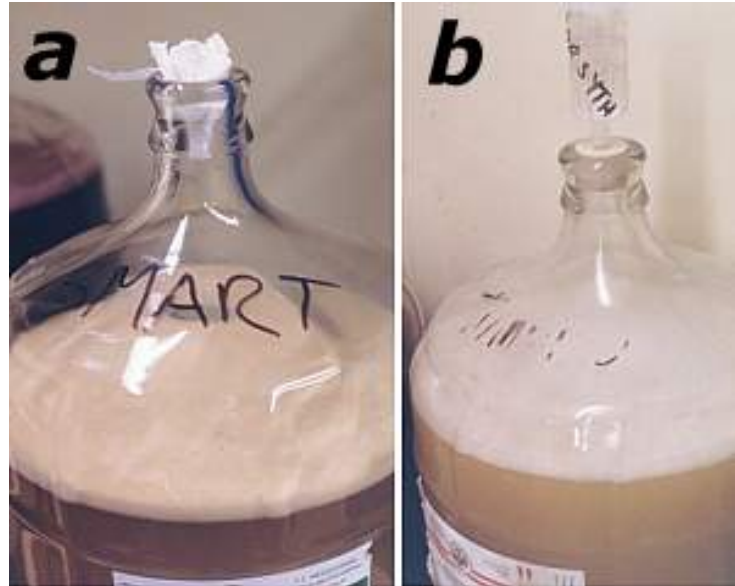
The red juices require the addition of pectic enzyme to aid in later clarification. Add the pectic enzyme in the powder form to the red juice before adding the yeast for best results. Pectins (polysaccharide moieties), are naturally found in fresh juice and derived from the skins. It constitutes much of the haze in young wine. The pectic enzyme breaks down the pectin and ensures that the haze will settle to the bottom during subsequent cold storage aiding in natural clarification.

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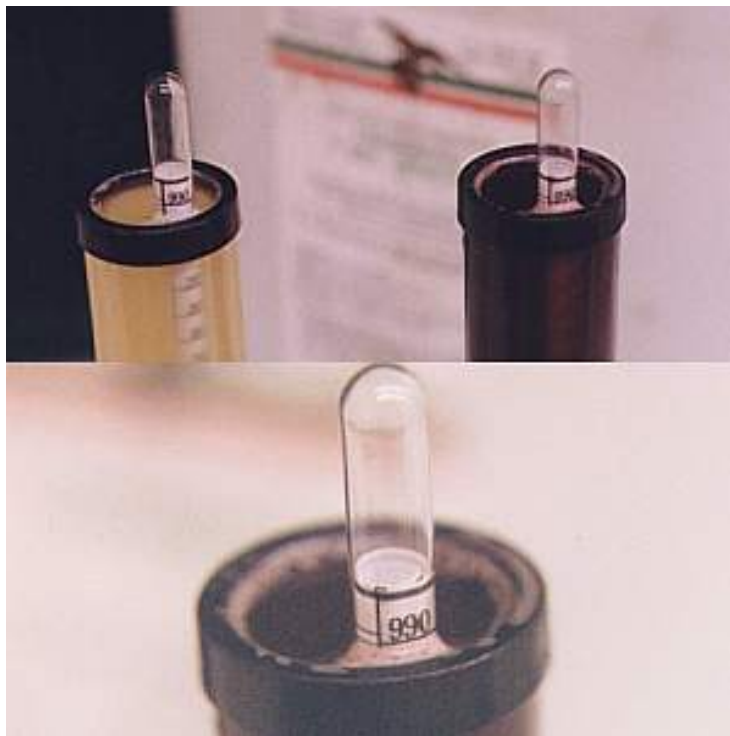
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the fermentation

The Fermentation

Allowing the yeast access to oxygen at the beginning of fermentation during the growth phase helps the yeast produce its own lipids. Lipids are an essential component of the yeast cell membrane, necessary for the budding and growth of the yeast cells in the early stage of fermentation and for the protection of the yeast cell from alcohol toxicity in the latter stage of fermentation. To provide the yeast with oxygen it needs to multiply (please see the manufacturer's explanation [Lalvin](#)), place only a paper towel in the neck of the bottles for the first 24 - 48 hrs, (a) until the must is seen actively "bubbling." Then place airlocks filled with fresh clean water, on the carboy and gallon jugs for the rest of the fermentation (b). The picture on the left illustrates the carboy with juice 12 hours after the addition of the yeast. The picture on the right shows the juice in the carboy 48 hrs after the addition of the yeast. An airlock filled halfway with water is placed on top of the carboy.

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The Specific Gravity

The fermentation should occur at a constant temperature of 21 C (72 F) and will take anywhere from 7 - 12 days in total. Start to monitor the progress of the fermentation by taking readings with the hydrometer at day 5. When the specific gravity is below 1000, (i.e. 995), then proceed with the racking (siphoning). If not, allow the wine to ferment longer until it reaches a specific gravity (S.G.) below 1000. If the wine takes longer it is a good idea to gently "swirl" the carboy to move the viable yeast around the must inside. Remember that the closer the specific gravity is to 992 the drier the wine will be, because less residual sugar remains. For example, a wine with an S.G. of 997 will taste "sweeter" than a wine with an S.G. of 994. Always read the S.G. below the meniscus level on the hydrometer.

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Once the specific gravity (S.G.), is below 1000, siphon the wine off of its sediments into sterilized pails or another carboy (this is called racking).



Racking the wine

Stabilize the wine using the stabilizer (80% potassium metabisulphite and 20% ascorbic acid (a.k.a Vit C)). A dosage of one level teaspoon of stabilizer (dissolved in 90ml (3 oz.) of hot water) per 5 gallons of wine is used. This helps to prevent oxidation and bacterial infection of the wine. The optional addition of oak chips can be done now at the end of the racking, to add a new dimension to the taste of the wine. Or the oak chips can be added with the yeast prior to the start of fermentation. The fermenting vessels should be cleaned and the wine siphoned back into them. Now the carboy is filled **right to the top**. Never top up your carboy with water. This dilutes the wine and makes it thin. We provide you with a volume of juice that is more than a 20 L (5 gallon) carboy can hold. It allows you to top up the carboy with the extra volume of wine in your gallon jug. After the carboy is topped up a smaller container such as a wine bottle is necessary for the left over wine you have. This smaller bottle must also be filled to the top. The airlocks must have fresh water added. The wine should be placed in a very cold spot, like the garage (in the winter) or a fruit cellar, but not lower than 0°C (32° F). It sits at this low temperature until the next racking which occurs 3 - 4 weeks later.

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Cold stabilization and fining

After three weeks in the cold, the wine is siphoned again. This is known as the second racking. On the left you can see the accumulation of sediment on the bottom of the carboy. It is also quite normal to see crystal deposition on the sides of the carboy. This is the precipitation of potassium bitartrate which is a naturally occurring substance in grape juice. The longer a wine is aged in the cold, the more crystals will fall out. This means fewer crystals will precipitate in your wine bottles. To achieve clarity in a shorter period of time you can use gelatine (1/2 level tsp dissolved in 2 oz. of boiling water per 5 gallons) and kieselsol finings (1 oz. per 5 gallons added 10 minutes after gelatine) in the white wines. They are added to the freshly siphoned wine at the second racking. After one additional racking (3 - 4 weeks later), the white wine will be visibly clearer. If you do not wish to add finings, the white wine can take as long as 6 to 7 months (with rackings every 4 weeks) to clear, when stored at 5°C (40° F). Racking every 3 - 4 weeks, red wine will clarify without the addition of finings in about 6 months at a storage temperature of 5°C (40° F). The picture above illustrates the state of the wine before (with only the finings added) and after filtration. Both wines are three months old.

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[Bottling the wine](#)[Optional equipment](#)[Review of our method](#)inshelp@kamiljuices.com**Bottling the wine**

When your wine is clear, it is ready to bottle. Taste the wine, and sweeten it (optional) to your taste using a sweetener / conditioner that can be found at any winemaking store. Never add table sugar or nutrasweet. Your wine will referment and become fizzy. If you need to sweeten; start by adding 1 oz. of sweetener per 5 gallons of wine and do not exceed a maximum dosage of 5 oz. for the whole 5 gallon batch. The wine must be stabilized a second time (1 level teaspoon per 5 gallons of wine) just prior to bottling. Age the wine to the desired varietal characteristics.

Optional Equipment

Optional equipment such as floor corkers, shrink tops and labels allow you to finish off your winemaking experience with a professional look. Why not, you already have a professional quality wine in your bottles. The possibilities of winemaking don't end there. It is possible to purchase filtering machines that cut the total winemaking time in half and speed production of clear wine. Eye catching blank label styles are available for those who are creative with a laser or inkjet printer. A good wine rack for your finished bottles provides stable storage and decent protection for your investment.



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Review of our winemaking method

In total our home winemaking method takes as little as 3 - 4 months to make wine. It involves:

- 1) - pouring the juice into your carboy and adding yeast
- 2) - fermenting until a desired specific gravity (i.e. 995)
- 3) - siphoning the wine and stabilizing at the end of the fermentation
- 4) - cold stabilizing by subsequently storing the wine in the cold; 5°C (40° F).
- 5) - racking every 3 - 4 weeks until the wine is clear.
- 6) - bottling the wine.

It is a very simple procedure that doesn't require water, sugar, package A,B,C F etc. What's more, it is pure and natural, just the way mother nature intended all wines to be. We believe in using the least amount of stabilizer possible and keeping the finished, bottled wine in cold storage (i.e. 40°F). When serving the wines, like red for instance, you can bring them to room temperature just before serving. If you don't store your wines in cold temperatures they may get fizzy. In this case you may want to add more stabilizer to prevent this from happening. You are the judge, you are the winemaker.

In any case....CHEERS AND ENJOY YOUR WINE!

We hope that these instructions are thorough enough for most winemakers. If you have any questions about the preceding steps, or something seems odd or out of place please email us at instruction_help@kamiljuices.com with your concerns and he will be happy to explain.

This concludes the winemaking instructions.

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