

Wine Making Basics
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Some Initial Decisions To Make & Some Basic Information To Aid In Making Those Decisions:

- **A decision must be made at which level of the process you will start.** You obviously need some raw material from which to make the wine. You will need to decide if you want to be involved in the growing, caring and then picking & processing of that raw material or if you would rather have some or all of that done by others and you get involved in a later step of the process. Some leave the growing and harvesting to others and purchase their raw material and then pick up on the process from there. Most people, especially if the raw material is grape, will skip even more of the processing and buy fresh juice or even sometimes partially fermented juice. Doing that allows one to avoid the expense and mess of pressing to separate the solid from the liquid. A disadvantage usually occurs here however if a darker colored wine is desired in that you most likely lose the chance for what is called ‘skin contact time’. It is this skin contact that mostly gives red wines their darker color and some of its complexity. After this initial ‘skin contact time’, the process for a red wine is essentially the same as it is with a white wine.

More equipment will be needed if you grow and/or process raw fruit into raw liquid from which to make the wine. This will require more investment in both time and money. Our recommendation for the beginning winemaker, in most cases, would be to let someone else do the growing and processing. Purchase fresh juice or a concentrate kit for your initial batches. If you decide you are really into the activity to stay you can get as much more involved and invested as you desire. Better to know you really want to continue as a winemaker before making too much investment in additional equipment, supplies and maybe even property. There are many commercial wineries today whose owners started out as home hobbyists.

- **A decision must be made on the kind or style of wine you would like to make?**
 1. Do you want grape wine (called wine) or wine from some other fruit (called fruit wine) flower, vegetable or whatever. It does depend on who you ask, but many purists (and even government definitions) consider the definition of wine is that it must be made from grapes. For most people, fruits such as blackberries, raspberries, cherries, apples, pears and peaches also merit eligibility as acceptable raw material from which to make wine. Things like dandelions, tomatos and beets garner less credibility as worthy wine raw material, but again that depends on the individual. If wine is defined as having sugar, (whether natural, added or a combination) converted to alcohol by yeast fermentation, then many raw materials can fit the category. If there ever can be resolution to that argument, we choose to leave that to others at another time.
 2. Do you want to make white wine or red wine? The process is essentially the same for both except that before red wine liquid is separated from the solids, the liquid is allowed ‘skin contact time’ in order to pull more color. The ‘skin contact’ is usually 4-5 days and then pressing takes place. After that the process for whites and reds is pretty much, though not always, the same.

3. Do you want to make sweet, semi-sweet/semi-dry or dry wine? Almost any wine can be made at any of these sugar levels. For the most part that is a decision fairly easily made by the winemaker. Many agree that certain raw materials or certain varieties within a specific group of raw materials, are better if made at a particular sweetness level. For example most would agree that wine made from Cabernet Sauvignon grapes is best if made dry and also with contact with oak while wine made from Concord grapes is best if made sweet and with no contact with oak. But to reiterate, that is a winemaker's decision.
4. Do you want the alcohol content to be low, medium or rather high? Most 'table wines' are about 11% – 13 % alcohol. They cannot exceed 14% at which point they are pushed into a different category such as port.
5. Do you want oak in your wine? Traditionally oak barrels are used but there are oak alternatives that may be better, especially for smaller batches. The alternatives, like oak powder or chips are also less expensive. To use oak is a wine making style decision.
6. Some of the common wine styles are; table wine, port, oaked, dry, semi-dry, semi-sweet, sweet, real sweet, sur lie, late harvest, ice wine and wine that has purposely been put through a malo-lactic fermentation. There are more albeit less common wine styles. A wine can include more than one wine style.

Basic supplies and equipment:

- **Container or Containers** - glass jugs are common. Plastic can be used for some parts of the process but usually not for long term holding of the wine as they allow too much oxygen to enter, resulting in a flawed or ruined wine. Stainless steel is a very good container as it is inert, durable and easily cleaned and sanitized. Having one extra empty good container can save time when 'racking' the wine. You will also need some bungs and airlocks. It is a convenience to have the container that is used in the beginning or primary fermentation to be of a larger volume than there is juice. This allows for ample head space for the rather vigorous churning and foaming. A fairly large plastic container can work nicely in this situation. The 'new wine' should be transferred to a more inert container when the fermentation slows down. However, it is advisable to make the transfer before fermentation is completely finished. This offers protection against getting oxidation.
- **Hydrometer** - A hydrometer and a hydrometer jar are the most important pieces of equipment. They are used to measure sugar content of juice. This sugar content is very important to know so that you can get your desired alcohol level. It is imperative that the sugar level be measured in the juice **Before Fermentation Starts**. That way you will always have an accurate base amount of sugar from which to accurately calculate how much additional sugar you may want to add at a later time.
- **Acid Tester** - An acid testing kit is very beneficial.
- **Chemical & Other Additives** - The most common chemical recommended is potassium metabisulfite. Potassium sorbate is also important in bottling a sweet wine. Never use sorbate without also using metabisulfite. There are numerous other chemicals or additives from which to choose. It will be beneficial to become knowledgeable about some of them at least.
- **Racking** - Tubing used for racking. Racking is the process of siphoning the clear liquid off the sediment. This is a major part of the clarification process. It is important to avoid over-racking your wine. Two to three rackings before bottling should suffice.

- **Yeast** - Wine yeast and possibly yeast nutrient. You can rely on wild yeast, but cultured yeast is more consistent.
- **Enzymes** - Pectic enzymes help give yield, clarify and in some cases improve color and other things. There are different enzymes for different fruits and different situations.
- **Sugar** - If the fruit is naturally short on sugar for the particular alcohol level you want sugar can be added. Grape wine is usually best around 11%-13% alcohol. Other fruits can be in that range also but many think they are usually better if a little lower in alcohol. 10% is commonly desired. Regular cane sugar from a grocery store is most often used. If you must add sugar, add only enough to get the desired alcohol level even if you want a sweet wine. Sugar for sweet taste should be added just before bottling and preventive measures taken to keep fermentation from starting up again.
- **Raw Material** - Of course you will need raw material from which to make the wine.
- **Written Materials** - A good basic book can be very beneficial. Recipes are often used with with great success. Recipes don't factor in any variation in fruit due to having come from different locations or the affects one year's climate compared to another year can have. Still, recipes, especially for fruit wines are commonly used with good even great success.
- **Other Equipment** - Bottles, corks, corkers, labels, capsules, other instruments, other chemicals, and other pieces of equipment may be desired and/or helpful, but the above basic items will go a long way toward producing good wine.

Making the Wine:

- **Primary Fermentation** - For white wines it usually means separating the liquid from the solids. It involves breaking up the fruit (crushing) very soon after the fruit was picked. It is not usually necessary to destem the fruit, in fact it may be beneficial to crush with the stems present. This process will have been done for you if you buy juice or a concentrate. Then yeast and maybe some other additives are added and you wait for fermentation to begin. It may also be desirable to do some adjustment of the acid level. If the acid is too high, there are ways to reduce it. Likewise, if the acid is too low, it can be raised. If skin contact is to be done, then you will want to do that in a wider mouth container. Skin contact is usually done for a few days (stir up the batch at least once per day) and then the liquid is separated from the solids. This separation can be done by pressing or by draining or siphoning off the liquid. Pressing will give more yield, but a press may be more costly. You can use a press bag and do it by hand. This is harder, messier and won't give as much yield, but it is much less expensive than buying a press. After the the liquid is separated from the solids, the process is basically the same whether the wine is red or white.
- **Enjoy the Action** - Really do nothing but watch and enjoy while fermentation is taking place, but smell for problems. There really is little that can go wrong during fermentation.
- **Racking** - A short while after fermentation is complete you will rack for the first time. This is a process done mostly for clearing by siphoning the clear liquid off the sediment (mud) that has settled to the bottom. You may not get away from every bit of sediment the first time, so another racking or two may be done after a few months interval. Avoid racking too often. Two or at most three times should be sufficient.

- **Sulfur Dioxide** - It is recommended that after fermentation is done, sulfur dioxide be added in the correct amount. This helps preserve the wine. Some don't want to use chemicals, and that is a personal decision, but we recommend at least using 'meta'. About 25 - 45 parts per million (ppm) is recommended depending on the wine. A workable rule of thumb is to use ¼ teaspoon of 'meta' **per each five gallons** at each racking assuming racking is done only two to three times.
- **Patience** - While it is true that technically you have wine as soon as fermentation is done, you will get a better wine by waiting at least six months before bottling. Fermentation usually takes from one to four weeks but occasionally may take longer.
- **Sweetening for Taste** - If you want to make a sweet wine add the desired amount of sugar for taste shortly before bottling (consumption). Use potassium sorbate along with the metabisulfite to help prevent a restarting of the fermentation process.
- **Bottling** - You may or may not choose to bottle into smaller wine bottles. One major advantage to a wine bottle is that if deterioration of the wine takes place because of a partly full container, you lose only a fraction of your batch. Those who consume by drawing out of their larger containers are asking for spoilage to take place by having wine in a partly full container. A good adage to follow is that a container is either completely full or completely empty. Typical wine bottle sizes include 187 milliliters, 375 ml, 500ml, 750 ml (the most common), 1.5 liter and 3 liter, 4 liter & gallon jugs.
- **Clean & Sterile** - Using clean and sterile equipment is a requirement to making good wine. Use good cleaners that preferably are low in suds. Metabisulfite is an adequate disinfectant when used in greater levels than is added directly to wine. Use about 1200 parts per million (ppm) in water when using as a disinfectant. Also putting some citric acid into the water will acidify the water and make the 'meta' more effective.

Wine making can be a great hobby. Many home winemakers make wine that is as good as any in the world. It becomes a great conversation topic, makes great gifts, gives satisfaction, and can keep costs of wine per bottle low, especially after some of the basic & reusable equipment is purchased. One can start from scratch and make a 6 gallon batch of wine (will yield around 30 bottles) from a concentrate or fresh juice for about \$175 to \$200.