Closed or Low Temperature Fermentation

Closed fermentation simply means fermenting your wine in a closed container, such as a glass carboy, with an airlock for the entire fermentation process, at a temperature lower than normal fermentation. The benefits are twofold.

First, you avoid any unnecessary contact between wine and oxygen from the air, which can prevent wine from developing its potential. A certain degree of aeration is required at the mixing stage for proper fermentation. This can be achieved by pouring the concentrated juice into the carboy and stirring well when the water is added.

The second major benefit of closed fermentation is that it lets you ferment juice at a temperature much lower than normal, with no risk of contamination. Research reported by the American Wine Society shows that much flavor and aroma is lost from juice fermented at high temperatures, the 21° to 24°C (70° to 75°F) range usually used. Studies show that the ideal temperature is around 12°C (55°F). However, trying this at home is not recommended unless you have a strictly controlled temperature environment and a suitable yeast strain. Consistent success can be achieved by fermenting your wines at 19°C (66°F), and yeast activity will be strong and healthy.

So why do wine kit instructions tell us to do the opposite? Because in the past, the major selling point for most wine kits was that you could produce wine in a few weeks or even 10 days. The manufacturer obviously wanted to see you back in the store soon for another kit. To finish a wine so fast, rapid fermentation was necessary, requiring quick multiplication of the yeast cells. That took lots of oxygen and warm temperatures. The trade-off was increased oxidation of the wine, and loss of aroma and flavor due to the high temperatures. In reality, sufficient oxygen levels can be obtained by opening the carboy and stirring the juice every day for the first week. This step is especially important if you use distilled water for wine-making, because it has virtually no oxygen. The only drawback is that fermentation will be slower than normal, taking anywhere from four to 10 weeks. But slower fermentation truly improves the quality of the wine. If you want to enjoy the benefits of low temperature fermentation, just follow these instructions.

1. Mix concentrated juice, water, bentonite and oak chips (if included) according to instructions, in a 23-litre glass carboy instead of a plastic bucket. Set aside about 1.5 litres (6 cups) of water to allow some head space in the carboy for the initial fermentation. This water can be added once you are sure that the juice is not going to foam up, but leave a little head room. Bring the must to room temperature.

2. Make a starter bottle containing about 125 mL (½ cup) of the wine must and the yeast package. Let it start fermenting at room temperature. This should take an hour or two. Add the starter to the carboy and give it a gentle stir to release suspended oxygen.

3. Fermentation should start within 24 hours. Once under way, allow the temperature to drop to 18° to 20°C (65° to 68°F), either by removing your heat source or by moving the carboy to a cooler location. As indicated, open the carboy every day or two to stir the must, ensuring adequate oxygen. Replace the airlock immediately.

4. When the specific gravity reaches 1.020, usually within 8 to 12 days, rack the must into a clean and sterile glass carboy. Do not attempt to use the same carboy by transferring the must into a bucket, washing the carboy, then transferring back to the carboy, as this will result in far too much exposure to air.

5. Continue the process according to instructions while keeping temperature low. Keep in mind that a low temperature means slower fermentation. Be patient.

One final note — this process is ideally suited to wine kits made with low concentrated juice, such as *Vintners Reserve™*, or with high volumes of fresh juice, such as *Selection™* and *Vineyard Select™* products. Other wine kits use a high concentration process which can strip the juice of nutrients, aroma and flavor. It is possible to ferment these products at low temperatures by adding yeast energizers, but the benefits are negligible as the very elements we are trying to preserve have already been lost in the manufacturer's concentration process.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™

Vacuum Filtration

When it comes to filtering wine, there are two distinct camps: those who think you should, and those who think you shouldn't. Those against filtering argue that too much of the body of the wine is lost to filtration, while subjecting it to the risk of oxidation. There is truth in this, but if wine is filtered properly, not only are both these perils avoided, the wine will actually be greatly improved.

The most common mistake made when filtering wine is the choice of filter pads. Many people assume that the finer the filter pad, the clearer the wine. They're wrong. The purpose of filtering wine is to remove yeast and other small particles in suspension. It doesn't matter how clear a wine looks, if it hasn't been filtered, there are particles in suspension. The best way to get rid of them is with filter pads, cartridges or disks that have pores only slightly smaller than the yeast particles, allowing the wine to flow freely through, while trapping the suspended solids. If you use finer pads, with smaller pores, the solids will quickly clog them, blocking the flow of the wine. As the wine is forced through, small tears quickly occur in the filter, allowing unfiltered wine and solids through. The result is a worse finished product than if the correct (coarse) pads had been used. Fine and sterile pads are intended to remove far smaller particles present in wine made directly from grapes or fruit. If you insist on using fine pads, do so only after filtering the wine with coarse pads. In any case, filtering is not a remedy for cloudy wine, as cloudiness is a sign of other problems that should be detected and treated before filtering.

It is not recommended to use a filter that pumps air into the carboy to force the wine out through filter pads. The wine is unnecessarily exposed to air, possibly causing oxidation.

The vacuum filtration method has three distinct advantages over other methods, and over not filtering at all.

First, with coarse pads, the wine is filtered smoothly and evenly, not pushed through the pads. Not even a drop of wine leaks out!

Second, the wine is never exposed to the air, as happens with all other filtering systems. A vacuum pump is attached to a clean and sterile carboy to remove the air. A hose connects the empty carboy to a filter housing, which is in turn connected to your carboy of wine. As the air is removed from the first carboy, a vacuum is created in the hose, the filter pads, and back to the wine, sucking the wine out of the carboy, through the filter pads, and down into the empty carboy from which the air was removed.

The third major advantage is that as the wine splashes down into the vacuum carboy, the carbon dioxide is released, greatly speeding up the maturation process. Once all the wine has been filtered, the hose is shut off and the vacuum pump sucks out any remaining CO_2. This is interesting to watch, as you can actually see the CO_2 bubbles collect in the wine and rise to the surface to be pumped out. The result is a wine that tastes far less "young" than we expect a new wine to taste due to some residual CO_2. The vacuum filtered wine should be left to rest in a carboy for a few days before bottling.

By using the vacuum filtration system with coarse pads, you can avoid the major pitfalls stressed by the "no filter" people and produce a brilliantly clear, commercial-quality wine. It will age faster due to the removal of CO_2, and better due to the removal of the suspended yeast and particles. If not removed, these solids can settle out in the bottle as sediment, and impart a yeasty taste to the wine over time.

There are now two types of vacuum filtration systems available to the home wine-maker. The first uses regular round filters and is the preferred system even if you must first put five gallons of water through the filter to remove the papery taste. Another system uses a removable cartridge-type filter, sufficient for two batches of wine (don't filter white and red with one cartridge!), that also requires flushing before using. However, particle retention is not as good with cartridges as round filter pads. Both systems are relatively expensive, and only the very prolific wine-maker could justify purchasing one. Most reputable beer and wine making retail stores offer vacuum filter systems on a rental basis, making them accessible to all.

For more information on the vacuum filtration system, drop in to your WINEXPERT retailer for a demonstration.

THE HOME WINE MAKING GUIDES™

Malolactic Fermentation

Malolactic fermentation is the conversion of malic acid to lactic acid, by lactic bacteria. This occurs after the alcoholic fermentation is complete. It does not generally occur in home made wine from concentrates as all bacteria are lost during the concentration process. The manufacturer then adds organic acids to maintain the wine's balance.

Wine kits, such as *Selection™*, that contain unconcentrated juice, and wine made completely from fresh juice can benefit from malolactic fermentation. Malic acid is extremely acidic and aggressive, and its presence in young wine is a reason why we age wine until it becomes more mellow. On the other hand, lactic acid is much less harsh.

Malolactic fermentation also lowers the general fruitiness of young wine. The combined effect of lowering fruitiness and acidity lets your palate more readily detect other tastes and aromas, contributing to a more complex wine.

For home made wines generally kept less than two years due to the low quantity of preservatives added to the kit, this means that a more supple red wine can be produced long before the wine starts to deteriorate. This holds for almost all red wines, particularly viniferas such as Cabernet Sauvignon, Merlot and Pinot Noir which have sufficient acid and fruitiness to age gracefully. One notable exception is the lighter reds, like Gamay and Bergamais, to drink young as their fruitiness is their main appeal.

In white wines, some of the more complex, long-lived varieties, such as Chardonnay, benefit from malolactic fermentation. But as a rule, most whites lose out in the process, notably the Riesling derivatives, which rely heavily on acid impact.

How to encourage malolactic fermentation

1. When the desired finishing gravity of your wine has been reached, do not add the stabilizing or clearing packs. Do not rack the wine off the sediment, either. Leave the wine, unstabilized and on the lees, in the carboy. The dead yeast cells actually nourish the lactic bacteria.

2. Move your wine to a warm place, 24°C (75°F), or apply a heat belt or blanket if you cannot move it. The lactic bacteria remain dormant at lower temperatures, even 18°C (65°F) would be too cold.

3. Stir wine once, enough to raise the sediment, and replace the airlock. Now leave the carboy for 1 to 2 weeks. Check regularly for signs of malolactic fermentation by turning off the light in the room and holding a flashlight behind the neck of the carboy. If there is malolactic activity, you will see tiny bubbles rising to the surface of the wine. Allow the process to finish naturally, then proceed on with the normal next steps. The extra time the wine sits on the sediment at this point will not harm the wine at all, and will add complexity and character.

4. If malolactic fermentation does not start, you can inoculate the wine with lactic bacteria. However, experience shows that it is delicate work, and many experts believe that if the process does not occur naturally it's probably because the malic acid level is already low.

How to prevent malolactic fermentation

1. As soon as the alcoholic fermentation is complete and the desired finishing gravity has been reached, proceed with the stabilizing and clearing steps according to the instructions with your wine kit.

2. Keep your wine cool after alcoholic fermentation is complete, it will be easier to clear.

3. Filter your wine promptly to remove yeast cells and any bacteria.

4. Age it as you normally would, then bottle.

Some wine making books say the wine's pH level is raised by malolactic fermentation, making it more susceptible to infection from bacteria found naturally in the grapes. This does not apply to wine made from kits, as the juice is pasteurized to remove all bacteria in the packaging plant.

Try malolactic fermentation yourself at least once so that you can experience the effects first hand, then make an educated decision about encouraging this process in future batches.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™

Cold Stabilization

What is it and why should I do it?

As the quality of today's premium wine kits has greatly increased in recent years, there's less of a gap between wine made at home and commercial wine. This is a good thing, as bouquet, body and flavor have all improved. At the same time, home wines are also exhibiting some of the less desirable characteristics of good commercial wine, notably bottle sediment. Retailers frequently hear customers complain "I followed the instructions to the letter, I filtered my wine and it was crystal clear so I bottled it, but now I have sediment in the bottles. So, what went wrong?"

Most probably, the answer is nothing went wrong. Wine, the result of the alcoholic fermentation of grape juice, is made of many different and complex substances that are invisible to the naked eye and dissolved in a liquid made up mostly of water and alcohol. Several reactions can happen in bottled wine stored in a cool basement, cold room, or wine cellar. The main reaction is the precipitation of insoluble matter. Although a natural process, many wine makers find it undesirable in a bottle of supposedly finished and stable wine.

Commercial vintners actually look for this precipitation as the wine becomes noticeably rounder and finer to the taste. The trick is to get the insoluble matter to precipitate before bottling, a process called cold stabilization. In white wines, tartrate crystals are the most common sediment. They precipitate, forming sediment at the bottom of the bottle, when free acids combine with potassium ions to form potassium bitartrate or tartrate. These hard, brownish crystals are also known as "wine diamonds" because their presence in a bottle invariably means a great wine! The sediment found in red wines is somewhat different as tartrates are in smaller quantities because there are fewer free acids in red wines. More common is a fine sludge-like sediment that is a combination of excess tannins, very fine tartrate crystals and color pigment. Red wines have a portion of their coloring matter in a colloidal state. In this form, the pigment is soluble at room temperature and the wine is clear, and insoluble at cold temperatures and the wine becomes cloudy.

While manufacturers do their utmost to produce kits that contain everything you need to produce stable, high quality wines, certain treatments, like cold stabilization and time, can't be put in the box. Although these treatments are not essential, they are worth the effort for the serious wine maker because the wine will be finer and remain stable longer. So if you plan to store your bottled wine in a spot that is cool at some point in the year, and you don't want sediment in the bottle, give it the cold stabilization treatment first, before the filtration and bottling, while the wine is still in the carboy. Proceed as follows.

Before filtering the wine, siphon it into a clean, sterile carboy. Cap with a rubber bung fitted with an airlock and let it settle in a cool, dark place such as an unheated part of the basement, on a cement floor, or in a cold room, for about two to four weeks. The longer the better. Then filter and bottle as usual. The colder the temperature, the quicker the process. This simple technique will not only eliminate red wine "chill haze" by precipitating sediment, it will improve the stability and enhance the taste of your red and white wines.

Remember, this phenomenon occurs only in high quality wines made from unconcentrated grape juice, like *Vineyard Select™*, and semi-concentrated grape juice, like *Selection™*. If you haven't cold stabilized your wine in the carboy, don't get discouraged at the sight of tartrate crystals in your bottles. It doesn't mean you have done something wrong — your wine may be even better!

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™

Choosing the Right Cork

When it comes to buying corks, home wine makers have a huge choice. But the explosion in popularity of wine making in recent years means cork producers can't meet the demand for natural cork. Cork producers have turned to alternatives. We'll review the four main types of corks available and point out positive and negative aspects of each.

1. Natural Corks

Natural corks are the cork of choice for commercial wineries. Made from a single piece of high quality cork cut from the bark of the cork tree, they come in an almost infinite number of grades, including "Diamond XXX," "Winery Grade #1," etc. They can be chamfered, meaning the ends are rounded for easier insertion, or non-chamfered. They can be coated with wax or silicon, which protects the cork from bacteria and makes the cork easier to insert on an automated bottling line like those used by commercial wineries. Good quality natural corks are ideal for wines to be stored for a long time, six years or more. However, natural corks are extremely expensive and consistent quality is a problem. It's not uncommon to find up to 25% of a bag of 1000 corks to be of poor or unusable quality.

2. Colmated Corks

Colmated, or filled, corks are essentially natural corks of lesser quality rejected during processing due to imperfections such as holes, cracks, etc. Imperfections are filled with a paste made of food-grade glue and cork dust. Unfortunately, when this paste sets, it shrinks, leaving an uneven surface. This can result in leaking bottles. The only advantage of colmated corks is that they are cheap and in plentiful supply. Many people feel these corks are the wine industry's revenge against home wine makers, who will buy their rejected corks.

3. Agglomerate Corks

An agglomerate cork is made from particles of cork pressed and glued together. Although they can be excellent, the quality of agglomerate corks varies widely. The general rule is the larger the particles of cork, the less glue is needed and the more flexible the cork. Conversely, the smaller the particles, the more glue is needed and less flexible the cork. Unlike natural cork, agglomerate corks have a perfectly uniform surface and will not leak. Reliable and available in consistent lots, agglomerate corks are good value for the home wine maker. The only problem is the wide range of quality, from poor to excellent, so it is important to purchase them from a reliable retailer.

4. Composite Corks

Composite corks, like Futura, are new on the home wine making front. A combination of agglomerate and natural cork, they offer the best of both. On each end of an agglomerate cork body there is a cap of natural cork. This means the cork has all the flexibility and uniformity of an agglomerate, but only the high quality natural cork comes in contact with the wine. This style of cork has been the choice of producers of champagne and sparkling wine for several years. The only drawback is that, as a manufactured product requiring extra labor, composite corks are relatively expensive. They are ideal, though, for wines to age over a long period.

How to prepare corks for use

Above all, don't boil them! Boiling makes corks brittle, which means a cork can break apart when you try to pull it out of the bottle. Just soak natural corks in hot water for about 20 minutes. Agglomerate corks just need to be wet. Don't soak them in a sanitizing solution, either. Their porosity makes it virtually impossible to sterilize them. Brew King has extensively tested corks soaked in water against sterilized corks and can find no advantage whatsoever to using a sterilizer. Using products like **sodium** metabisulphite is not recommended as they can gather in the airspace between the cork and the wine, causing that famous sulphur odor on opening the bottle.

Generally speaking, #8 corks should be used for 375 mL and 500 mL bottles, while #8½ or #9 corks should be used for 750 mL, 1 litre, and 1.5 litre bottles.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™

Making Wine from Fresh Grape Juice

These instructions are designed to help achieve the best results possible from fresh grape juice, like *Vineyard Select™* from Brew King. The first step, as with all wine making, is to properly clean and sanitize all equipment. Always use reliable, good quality products, such as *Aseptox™*, *Ecolox™* and *Chloroclean™*.

Preparing the wine must

The use of bentonite is strongly recommended, as this clay product will facilitate the future clearing of the wine by removing unwanted substances during fermentation. Mix 20 grams of bentonite in 250 mL (1 cup) of water and set aside. Pour juice into primary fermenter and add bentonite solution. If your wine is a type that benefits from oak aging, the addition of oak chips at this point will greatly enhance the taste of your finished wine. Add oak chips to 250 mL (1 cup) of boiling water, and add mixture to wine must.

Fermentation and yeast

Alcohol fermentation occurs when the yeast converts the sugars in the grape juice into alcohol. To make sure the must has enough sugar, measure the specific gravity with a hydrometer: it should read between 1.080 and 1.095. The choice of yeast type is based on its resistance to alcohol, its attenuation (the ability to complete fermentation) and its suitability to the type of wine you are making. Your retailer can help you make the right choice. Before adding the yeast, the must temperature should be between 20° and 24°C (68° and 76°F), then sprinkle the yeast on the surface of the must and stir gently. Measure and record the specific gravity and temperature daily. When the S.G. reaches 1.060 to 1.075, usually within a few days, give the must another gentle stir to mix in a little oxygen.

When the yeast is well fed, it will be more active and more likely to result in complete fermentation. To conserve the natural fruit aromas in your finished wine, it is recommended to lower the must temperature to about 18° to 20°C (65° to 68°F) for the remainder of the fermentation period. Be careful to avoid sudden temperature fluctuations, as they can cause stuck fermentation.

Secondary fermentation

Depending on the fermentation temperature, your must will reach a specific gravity of about 1.020 in five to 10 days. Once at this level, siphon the wine from the primary fermenter into a clean, sterile carboy, being careful to leave the sediment behind. Top up the carboy with water to within 7.5 cm (3 inches) from neck, then attach an airlock and bung. Keep the carboy full and avoid exposing it to sunlight, because that could affect the color and taste of the wine.

Racking and stabilizing

Fermentation should be complete within about two weeks, when the S.G. reads 0.996 or less. Siphon the wine into another clean, sterile carboy, again taking care not to disturb the sediment. At this point, stabilize the wine by adding 1 mL (¼ teaspoon) of potassium metabisulphite and 5 mL (1 teaspoon) of potassium sorbate. Stir vigorously and top up with water or a similar wine, then attach the airlock and bung. Siphon the wine again after a month and readjust the SO_2 by adding another 0.5 mL (⅛ teaspoon) of potassium metabisulphite. Re-attach the airlock.

Cold stabilization

Tartrate crystals and colloidal pigment are two substances that can precipitate in wines made from high quality fresh juice. Both sediments occur when the wine is subjected to cool or cold temperatures, such as storing in a wine cellar. To prevent sediment occurring in the bottles, cold stabilize the wine while still in the carboy. (See the separate pamphlet on cold stabilization for details.)

Clarification

After another two to three months in the carboy, the wine will be clear. However, it is still advisable to use a fining process to further clear the wine and precipitate any remaining particles. You can use gelatin for red wines and isinglass for white wines, following instructions and being careful to not use too much. Treatment takes one to three weeks to clear wine, less in cooler temperatures. Once the wine has cleared, siphon it to a clean, sanitized carboy.

Bottling and aging

For best results, we recommend filtering wine before bottling, or at the very least rack the wine again about three days before bottling. (See the separate pamphlet on vacuum filtration for more information.) If you don't filter the wine, a final dose of SO_2 is needed. Add 1 mL (¼ teaspoon) of potassium metabisulphite to the full carboy after racking. Bottle your wine in good quality wine bottles that have been sanitized, and use only good quality corks. (See the separate pamphlet on corks for details.) Wine made from fresh grape juice will improve greatly if allowed to mature in the bottle for six months to a year. Store bottles on their sides so the cork stays moist in a cool, dark place, away from excessive vibrations.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

The Home Wine Making Guides™

The Süssreserve Method of Sweetening Wine

Many wine makers are concerned that when a wine kit is fermented according to instructions, the resulting wine is too dry. Traditionally, there have been two methods to remedy this: add "simple syrup" (a mixture of sugar and water) or add a commercial wine "sweetener and conditioner." The problem with both methods is that you are adding something to your wine that was never intended to be there. There's no choice but to proceed by trial and error, never knowing how sweet the wine would become. Using either method dilutes your wine's flavor and risks restarting fermentation unless sufficient stabilizer was added. Some wine makers get around the problem by stopping the fermentation artificially before the wine reaches its terminal gravity and is dry. They add the stabilizer earlier than normal, leaving residual unfermented sugar in the wine. The technique carries risks. It's hard to gauge precisely when to stop fermentation, and there's a high risk of restarting fermentation as the amount of stabilizer in most wine kits is sufficient only to kill excess yeast once fermentation has completed. There isn't enough to wipe out a healthy, active yeast colony. So, what is the best way to sweeten your wine?

The Süssreserve (or sweet) method is used by German wine makers, long famous for their sweet wines. The principle is that you set aside a small quantity of the grape juice before fermentation, and add it back in when fermentation is complete to sweeten the wine and lower the alcohol. The advantage of this method is that the wine stays totally natural, with nothing added that could dilute it or add an undesirable sugary taste. To use this method at home, just set aside some of your concentrate or juice before mixing ingredients on Day 1. How much varies from kit to kit depending on various criteria. Here are some basic instructions.

If you are using an all-concentrate, 28-day style kit, keep out 250 mL (1 cup). If you are using a juice/concentrate, 15-litre style kit, keep out about 500 mL (2 cups) of juice. Keep in mind that the starting gravity will be lower than that stated in the instructions. Store the juice in the freezer in an air-tight container like *Tupperware™*. Once your wine has finished fermenting, add the stabilizing and antioxidant packages as you normally would. Add your clearing agent, and move the carboy to a cool place. Allow your wine to clear as normal, then rack it into a clean, sterile carboy, leaving room at the top to add your *Süssreserve*. Add half of your thawed reserve with 5 mL (1 teaspoon) of bentonite dispersed in water, and stir well. Taste your wine to see if it is sweet enough. Continue to add and stir your remaining reserve until you reach your desired sweetness level. The bentonite, a type of clay, is a clearing agent that will help remove any remaining yeast in suspension in the wine. The bentonite may give your wine a slightly cloudy appearance for a day or two, but this will quickly settle out. We strongly recommend filtering your wine with a good quality wine filter, preferably a vacuum system.

If you don't want the extra handling, Brew King now packages *Süssreserve* in the appropriately sweet wine kits. Known as F-packs, the packs are in *Selection™* and *Vintners Reserve™* wine kits, in pre-measured, pre-bentonited doses. The kit instructions tell you exactly when and how to use them. Remember that F-packs are included only in the kits for wines that are traditionally sweeter.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™

Treating Common Wine Making Problems

The four most common problems encountered by amateur wine makers are: the wine won't clear, the fermentation is stuck, spoilage due to bacterial infection, and oxidation due to exposure to the air. Let's look at each problem individually. With some, the wine is salvageable, but others can only be prevented.

Wine won't clear

No wine will clear until fermentation is complete, as the clearing process happens when the yeast dies or becomes dormant once all fermentable material has been consumed. If clearing is a problem, first check that all fermentation is complete, and the only way to do this is with a hydrometer. If you use the calendar to tell you when your wine is finished, you'll run into problems. As seasonal variations in temperature affect how long it takes your wine to ferment, use a hydrometer!

Assuming everything went well during fermentation, the next most common reason for wine not clearing is temperature. Many people mistakenly leave a heat belt or blanket on their wine after fermentation is complete. This will slow the clearing process and may even prevent it. When your wine has finished fermenting, move it immediately to the coolest spot possible. The cooler the wine, the faster it will clear.

If your wine is cool and still won't clear, you can use a second, stronger clearing agent such as bentonite or sparkolloid. As these products tend to remove a little color and body from the wine, use them only as a last resort. Then you must filter your wine to remove all traces. Don't use filtration as a remedy for cloudy wine, as cloudiness is a sign that something is wrong and should be treated first. Filter only relatively clear wine.

Stuck fermentation

Wine can stop fermenting before the desired finishing gravity has been reached. This can happen when the yeast is in poor condition. With the progress in recent years, it's rare to come across yeast that isn't strong and reliable, but using old, expired yeast is taking a major risk. Simply adding fresh yeast will fix the problem.

More commonly, a stuck fermentation will occur because of sudden change in the temperature. Temperature fluctuations of about 5°C (10°F) are enough to stop fermentation, especially when nearly complete. The lower the gravity, the higher the alcohol content, the more likely a stuck fermentation will occur. Sometimes adding yeast energizer, stabilizing the temperature and adding some oxygen with a good stir of the must will be enough to get the yeast going again. As a last resort, a starter bottle should do the trick. Pour 500 mL (2 cups) of the must into a 1-litre pop bottle. Add a new package of yeast and 15 mL (1 tablespoon) of sugar and bring the solution to room temperature. Once fermentation is strong and healthy, add the starter to your stuck wine and stir well.

Another reason for stuck fermentation is that the yeast may have been killed by bacterial infection. If this is the case, the wine will probably have a bad taste and aroma. Unfortunately, nothing much can be done. Any new yeast introduced will be attacked by the same bacteria. More on this below.

Spoilage or vinegar

Problems with wine due to outside influences are usually caused by bacterial contamination or insects, such as fruit flies, which will turn the wine into vinegar. Poor cleaning of equipment is almost always the cause. Everything that comes into contact with your wine, including fermenting vessels, spoons, hydrometers, thermometers, racking tubes, bottles, etc., must be thoroughly sanitized before each use with metabisulphite or a product like *Aseptox™*. In some cases, lactic bacterial infection can be treated with sulphur dioxide, followed by the proper fining treatment. Ask your retailer for advice. Wine can turn into vinegar by coming into contact with a source of acetic acid bacteria, or "acetobacter." The most common source is the fruit fly (drosophila), which is attracted to the fermenting wine. Fruit flies carry acetic acid bacteria on their legs. Unfortunately, once the wine has been contaminated, there's no remedy. So be vigilantly clean with your equipment, sanitizing before and after use, to avoid fruit flies. Just one can ruin a whole batch of wine.

Oxidized wine

When wine is excessively exposed to air, it turns a brownish or orange tinge, and acquires a metallic off-taste. Our wine kits already contain antioxidants. But excess racking, poor filtering techniques, failure to top up carboys, or just prolonged exposure to the air can result in oxidized wine. In amateur wine competitions, this is the most commonly observed fault. If the wine is only mildly oxidized, it can be treated by adding a little sulphur dioxide and Vitamin C, followed by fining with casein (skim milk powder). If the wine is excessively oxidized, filter it through activated charcoal to strip the color. The wine will be lifeless and characterless, good only for blending, coolers, punch, etc.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

The Home Wine Making Guides™

Storing and Aging Wine

One of the most common questions asked by amateur wine makers is "How long will my home made wine last once it is bottled?" Although there is a lot of misinformation around insisting that wine must be consumed within six months to a year, the truth is that your wine can last many years if treated and handled properly.

The idea that home made wine will not last more than a year in the bottle comes from the fact that many manufacturers put only a minimal quantity of preservatives in their kits.

There are several ways to prolong the life of your bottled wine, but the first step is to leave it in the carboy as long as possible. Bottling is hard on the wine, exposing it to the air and forcing the antioxidant to work right away. There are some simple things that you can do to get the full aging potential from your wine.

1. Let your wine age as long as possible, three months or more, in the carboy with the airlock in place. Not only will your wine age better, it will have time to stabilize.

2. Filter your wine with a good quality vacuum filter system to remove all spent yeast in suspension. If your wine is to be stored long without filtering, the spent yeast will probably precipitate out, producing bottle sediment and possibly a yeasty flavor. It's important to use a vacuum filter to ensure the wine is not unnecessarily exposed to air.

3. Use the best corks you can find. There are rarely any bargains. Cheap corks have imperfections that will let the wine leak out and air in. See the separate pamphlet on cork grades and varieties for more information and consult your specialty retailer.

4. After bottling, handle the bottles correctly. Leave them standing for a week after bottling to allow the corks to set in place, ensuring a proper seal. Then store the bottles on their sides, so the cork stays wet. If the bottles remain upright too long, the cork will dry out and shrink slightly, allowing harmful air into the bottle.

5. Store your bottles in a cool, dark place away from excessive vibrations. Heat, such as in an attic in summer, will spoil aging. Also avoid major temperature fluctuations, as between night and day. A constant temperature of about 12°C (53°F) is ideal. Sunlight is harmful, gradually stripping the color. Don't place bottles near the washing machine, to avoid vibrations. Find a place that's cool, dark and quiet, where you would want to sleep, and put your wine to bed there!

By taking these measures, it's not uncommon for wine made from a good quality kit like *Selection™* or *Vintners Reserve™* to last and mature many years in the bottle. You can also add extra preservatives — potassium metabisulphite and potassium sorbate — at bottling time, if you plan to keep the wine for more than three years. See your retailer for more help on this approach, and note that if you take this option, the wine should not be consumed within the first year.

One of the real joys of wine making is sampling your wine over a period of time, say every two months, and watching it mature to its fullest potential. This will also give you experience to judge how long to keep future batches.

For assistance, contact your WINEXPERT retailer, who will be happy to help you.

THE HOME WINE MAKING GUIDES™