



# Basic Winemaking Using Frozen Juice or Must

## Kit Includes:

- 1x Small Wine Cap Punch (WE531)
- 1x Plastic bucket with Spigot (FE345)
- 1x Plastic bucket without Spigot (FE340)
- 1x Lid for Plastic Bucket (FE350)
- 1x 6gal Better Bottle plastic carboy (FE314)
- 1x 1gal Glass Jar w/ Screw Cap (FE300 & FE301)
- 1x #6 Stopper w/ Hole (FE420)
- 1x #10 Stopper w/ Hole (FE470)
- 2x #000 Stopper (FE400)
- 2x 3-Piece Airlock (FE370)
- 1x Sterile Siphon Starter (R550)
- 1x 24" Plastic Spoon (BE422)
- 1x 8" Plastic Funnel (BE490)
- 1x 3-Piece Sample Taker (MT350)
- 1x Hydrometer w/ 14" Sample Jar (MT300 & MT332)
- 1x Floating Thermometer (MT400)
- 1x 24"x24" Mesh Bag (BAG24)
- 4ft 3/8" Vinyl Tubing (R320)
- 1x 3/8" Bottle Filler w/ Removable Spring (B411)
- 1x Hand Corker (W405)
- 1x 2oz Packet PBW (CL25)
- 1x 8oz StarSan (CL26)
- 1x 20 gallon White, Food Grade Plastic Fermenter w/ Lid (WE508 & WE509)



## Getting Started

Congratulations on your purchase of a new Winemaking Equipment Kit from MoreWine! Our winemaking kits are designed to help you make World Class wine at home. Unlike other equipment kits, this kit is designed specifically for working with frozen juice (whites) or must (reds) from Brehm Vineyards. Over years of winemaking, we've found the Brehm Vineyards product to be a far superior starting material than the concentrate kits – and indeed much of the fresh fruit – that we see most folks start out with. This kit is designed to accommodate 2 pails of Brehm red must or 1 pail of white juice - enough to yield 5-8 gallons of wine.

These instructions are designed to give you a step by step walkthrough of how to use the equipment that you've just purchased. For a more complete overview of the winemaking process, please see our Guides to Red and White Winemaking. These comprehensive guides to the winemaking process are available both as a free PDF download from our website, as well as in an attractive, bound, printed version for about \$20.

Lets start out by making sure that you have everything that was supposed to arrive with this kit, then we'll go over the basic winemaking process and how to use the equipment that you've just purchased. Review the list above, and please contact us at the toll free number on the bottom of this page.

## The Winemaking Process

Overall, the winemaking process is pretty straightforward. The juice or *must*\* will be fermented with yeast, which convert the sugars into alcohol and CO<sub>2</sub>, then separated from the grape solids (if necessary). A secondary fermentation with Malolactic Bacteria can also be performed at the winemaker's discretion. Next the wine will be transferred from the fermentation vessel into a sealed storage container to age for a period of several months up to a year. During the course of aging the wine it will need to be transferred off of any sediments that drop out of the wine – a process known as *racking* – which will help to clarify the wine. During this time the winemaker may elect to adjust the acidity of the wine, add oak, and/or work with a variety of other additives that can alter a wine's body, mouthfeel and aromatic profile. At the end of the aging period, which is determined largely by the winemaker's own taste (we encourage you to be patient, your wine will continue to improve with aging!), the wine will be stabilized and then transferred to bottles. Pretty simple, right? So now let's take a look at how the equipment in this kit will be used to turn your must or juice into wine! Remember, these instructions are a basic overview – for more complete information about all the steps and stages of winemaking, please refer to our Guide to Red or Guide to White Winemaking.

**\*Note:** In winemaking, a pre-fermentation mixture of grape juice, skins, seeds and pulp is referred to as **must**. Because the juice from all grapes is essentially clear, red wines will get all of their color, as well as a large portion of their aroma and flavor, from being fermented in contact with the skins and other solids. This is one of the major differences between the fermentation of red and white wines – white juices are separated from the grape solids prior to fermentation whereas reds are separated after the ferment.

### Step 1: Fermentation

#### For this step you will need:

- 20gal plastic fermenter & lid (WE508 & WE509, **for red wine**)
- **OR** 6gal Better Bottle & Plastic Funnel (FE314 & BE490, **for white wine**)
- Small Wine Cap Punch (WE531, *for red wine*)
- Plastic Spoon (BE422)
- Sample Taker (MT350)

- Hydrometer & Hydrometer Jar (MT300 & MT332)
- Floating Thermometer (MT400)
- Plastic Bucket w/out Spigot (FE340)
- StarSan (CL26)

You will want to refer to the document that came included with your Brehm Vineyards Frozen Must or Juice for specific instructions about thawing your pail in preparation for fermentation. Once the juice/must is thawed you are ready to move on to the following steps.

Fill the plastic bucket to the 2.5gal mark with water. Add 1/2oz of StarSan (measure using the built-in measurer on the bottle) to the bucket and mix with the plastic spoon. This is the solution that you will use to sanitize yourself and any equipment that will come in contact with the juice or must. **Sanitation is extremely important in winemaking, without it you risk introducing yeast and bacteria to the juice or wine that could impart undesirable flavors and aromas.** For a complete overview of sanitization in winemaking, please see our online guide. Suffice to say that preparing a bucket of sanitizer is the first step in any stage of the winemaking process. Finally, we recommend using a sponge or scotch-style scrub pad for sanitizing. A great choice is our White Scrub Pad (CE27).

The next step is to sanitize your fermenter. Again, this kit is designed to yield you 5-8gal of wine. For red wine, you will want to work with 2 pails of Brehm frozen must, and you should wind up with about 8gal of wine. For white wine, 1 pail of Brehm juice will yield about 5gal of wine. If you are doing a red, you will ferment in the 20gal plastic tub (WE508). Whites will be fermented in the 6gal Better Bottle (FE314). For the white fermenter, use your sponge or scrub pad to wipe sanitizer over the entire inside surface of the tub, even the parts that you don't expect the must to reach. Allow the fermenter to sit for 60sec and then repeat. You can discard the sanitizer that collects in the bottom or simply dump it back in your bucket. For the Better Bottle, using the plastic funnel (BE490), pour about 1gal of sanitizer into the bottle. Place the funnel in the bucket with the remaining sanitizer in it. Pick up the better bottle and swirl the sanitizer around until it has reached the whole interior surface, then dump the sanitizer back into the bucket. You can leave the better bottle inverted on top of the bucket until you are ready to move on and it will remain sanitized. Do not be concerned with any foam that

is left in your fermenter – StarSan as either liquid or foam will not impart any flavor or aroma into the wine and it is 100% safe to consume.

Next transfer your juice or must to the fermenter. For red must, simply dump the pails into the white fermenter – easy. For white juice, use the funnel to pour the juice into the better bottle – also easy. You'll want to have about 1 quart of hot water handy for each pail of either must or juice you're working with. Use this hot water to rinse any remaining sediment out of the pail and into your fermenter – this sediment is usually crystallized acid or sugar that is very important to have in the ferment.

At this point we want to take a sample of the must/juice to check the sugar levels. Since the Hydrometer (MT300) will not be accurate if the sample has suspended solids in it, with red must it is very useful to have a stainless kitchen colander handy for this. Pull apart your Sample Taker (MT350) and drop it into the sanitizer. Next sanitize the colander and push it down on the surface of the must so that you push any solids out of the way and have only juice in the bowl of the colander. Use your sanitized Sample Taker to draw a sample of juice and transfer it to the Hydrometer Jar (MT334). For whites, simply draw a sample out of the better bottle. Go ahead and fill the hydrometer jar up to about 1" from the top. Sanitize the hydrometer and drop it into the jar – note that some liquid will overflow, so we recommend doing this part over a sink. Read the hydrometer per its included instructions and record the reading in your notes. Many hydrometers have multiple scales that can represent the amount of sugar present in your juice. In winemaking we use the Brix scale. Typical sugar levels in a juice pre-fermentation are between 20 and 28 Brix. You can refer to the Guides to Red and White Winemaking for more info on interpreting the hydrometer reading. Before you discard the sample, we recommend that you remove the hydrometer and use a sharpie to mark the level of the liquid in the jar – now you have a fill line to work with in the future. Consider pouring some of the juice into a glass and tasting it, the rest of the juice can go back in the fermenter. Now cover the must/juice until you have your yeast ready to go. For red must, sanitize the lid for the fermenter (WE509) and place it on top; for white juice, sanitize the #10 stopper (FE470) and the airlock (FE370). Fill the body of the airlock to the line with sanitizer and fit the stopper and airlock on top of the better bottle.

Next you want to add your yeast to the fermenter.

Follow the instructions provided by the manufacturer/retailer of the yeast for preparing it. If you purchased yeast from us, please refer to the Guide to Yeast Rehydration online for detailed instructions. Once the yeast is ready, add it to the fermenter. For red must, you'll want to mix it in thoroughly with the Wine Cap Puncher (WE531); for white juice, pick up the better bottle and give it a good swirl. Now either place the lid loosely over the top of the white tub, or fit the stopper and airlock back in place on the better bottle and wait for the magic to start – fermentation should begin in 12-24 hr.

**\*Note:** During the fermentation of red wine, the CO<sub>2</sub> being released by the yeast will cause the skins to rise up to the surface, producing a “Cap.” This cap should be re-submerged (“punched down”) 2-3 times per day. Punching the cap alleviates the heat that it can trap in the fermenting must, ensures liquid contact with the solids for extraction of color and flavor, and prevents the cap from oxidizing. At the height of fermentation there is so much CO<sub>2</sub> being produced that you will see the cap re-form within minutes of it being punched down! Punching down can drop to 1-2x daily towards the end of fermentation.

Fermentation should progress for anywhere from 7 to 21 days, depending on a variety of factors. Depending on the style of wine you are making, you may elect to add nutrients for the yeast during the course of the fermentation (we highly recommend this no matter what kind of wine you are making!). When you suspect that the wine is done fermenting, check the sugar levels again with the hydrometer. Because the hydrometer works based on the density of the liquid, and the alcohol which is now present is less dense than water, you will want the hydrometer to read between -1 and -2 Brix to indicate that all the sugar has been consumed. To confirm that the wine is completely fermented, you may elect to use a Residual Sugar Test Kit (MT918).

## Step 2 – Pressing (Red Wine Only)

**This step will require:**

- Both buckets (FE340 & FE345)
- Better Bottle (FE314)
- Glass Jar (FE300)
- Both Stoppers, #6 and #10 (FE420 & FE470)
- Both Airlocks (FE370)
- 24"x24" Mesh Bag (BAG24)
- 4' length of 3/8" Tubing (R320)

- Punch down tool (WE531)

Once fermentation is over for a red must, you will need to separate the wine from all of the solids. This process is called pressing and on a larger scale would require the use of a wine press. However, for this small amount you can get by with just a bucket, a mesh bag, some tubing and your punch down tool.

Start, as always, by mixing up a bucket of sanitizer in the bucket w/out the spigot. Place the stoppers, airlocks, tubing, your punch-down tool and mesh bag in the sanitizer. Remove the spigot from the other bucket and add it to the sanitizer along with the nut and washer that came off with it. Sanitize the Better Bottle and the Glass Jar, and seal them up with the stoppers and airlocks full of sanitizer. Finally, sanitize the bucket with the spigot, reattaching the spigot when you're finished.

Place the bucket on a level surface a few feet off the ground. A chair works very well for this and you can use towels under the bucket to help level it. Position the Better Bottle under the spigot of the bucket (make sure the spigot is open) and toss the stopper and airlock back in the sanitizer bucket. Slip the 3/8" tubing over the end of the spigot so that the other end hangs down to the bottom of the Better Bottle. Next line the bucket with the mesh bag, folding the top back over the rim of the bucket to hold the bag in place.

Using a sanitized bowl, pitcher or small bucket, start transferring your must over to the bucket. You will see the juice start to run out of the spigot and into the Better Bottle. Continue to transfer must to the bucket until it is about 1/3 full of solids. Fold the bag inside the bucket and use your punch down tool to press down on the solids, squeezing out the wine that is trapped in them. Be careful not to press so hard as to break the seeds as this can lend a harsh flavor to the wine. When you've extracted all the wine that you feel that you can, or that you care to, pull the bag out of the bucket and empty it. These skins make great compost, but be careful as the seeds in the pressed solids are still quite viable – depending on where you dump the solids you could wind up with grapevines! Repeat this process until you have emptied the fermenter. Please note that between the Better Bottle and the 1gal Glass Jar you have room for 7gal of liquid. You may yield up to 8.5gal of liquid

from 2 pails of Brehm must, so you may want to invest in a second glass jar, stopper and airlock. As each container fills, seal it off with a stopper and airlock. Try to maintain only about 1-2" of space between the surface of the wine and the bottom of the stopper.

## Step 3 – First Racking

### You will need:

- Both buckets (FE340 & 345)
- 4' length of 3/8" tubing (R320)
- Sterile Siphon Starter (R550)

About 1-3 days after pressing – or after fermentation has finished if you're doing a white wine – you will want to transfer the wine off of the sediment that has settled out of the wine and has collected on the bottom of your container(s). This sediment is mostly comprised of dead yeast cells and grape solids, and if left in contact with the wine for an extended period of time they will start to impart offflavors. In winemaking, any sediments that collect at the bottom of the container are called "*lees*." We recommend racking early, within a few days of the end of fermentation/pressing, because the lighter lees which take longer than a few days to settle out can be very beneficial to a wine. Waiting too long to rack for the first time removes the possibility of working with these "*fine lees*."

Start by placing your Better Bottle on either a table or a chair and letting it settle for a couple of hours, which will allow any sediment that is stirred up while moving it to settle back down. At the same time, if you are making a red wine and have one or two 1gal jars of wine, put them in the fridge upright. A great trick here is to put the Better Bottle / 1 gal jars in place the night before you wish to rack, allowing them to settle back down overnight. If you do this then there is no need to put the 1gal jars in the fridge.

As usual, you'll want to make up a bucket of sanitizer in the bucket without the spigot (starting to see what this bucket is for?). Remove the white sanitary filter from the Sterile Siphon Starter (R550) and place the starter in the sanitizer, along with your 4' length of tubing. We recommend sucking sanitizer into the Siphon Starter; don't worry if you get some in your mouth – other than tasting a bit tart it is perfectly safe to consume. Be sure to sanitize the outside of the Siphon Starter as well, as most of the stainless steel will be in contact with your wine at the next step (remember, good sanitiation is critical for good winemaking!). Place the

4' length of tubing and the spigot from the bucket in the sanitizer to soak. Next sanitize the inside of the bucket with the spigot, reattach the spigot and make sure it is closed when you are finished.

Position your Better Bottle on a table or chair so that it will be above the bucket with the spigot – if you put the Better Bottle on a table, put the bucket on a chair; if you put the Better Bottle on a chair, put the bucket on the floor. Making sure that you have the little red cap on the end of the racking cane, put the Sterile Siphon starter in the Better Bottle and seal the carboy hood (orange part) in place. In a red wine, it will be difficult to see how deep into the carboy the racking cane is sitting, but you can tilt the cane in place so that the tip of it is next to the carboy wall and you should be able to see it. From there you'll have to estimate its position when it is vertical. You want to position the cane so that the tip is resting just above the level of your sediment by sliding the cane up or down in the hood. This way you'll draw your wine from just above the sediment but leave the lees behind. Make sure that the tubing from the racking cane is hanging inside the bucket. Now get the white sanitary filter that you removed earlier. Along the edge of the filter there should be a directional arrow imprinted. Place the filter into the open port of the carboy hood with the arrow facing downward, or into the Better Bottle. Take a big, deep breath, and blow through the filter. The pressure you create at the top of the liquid will force it up the cane and out down the tubing. Once this flow starts, a natural siphon will keep it going. When the siphon is finished and the Better Bottle is (mostly) empty, sanitize the lid for the bucket and cover your wine.

Now clean out the Better Bottle with hot water, and PBW if necessary. Be sure that the water is not over 140F as the plastic bottle is not rated as food grade above this temperature. If there are deposits which won't come off with just hot water, put a tablespoon of PBW in the bottle and fill it with fresh hot water. Let the PBW soak for 1 hour and then rinse the bottle thoroughly with hot water until the rinse water no longer has a "soapy" feel. The PBW should be able to take care of any organic crusties or deposits. We recommend against using a carboy brush on the interior of your Better Bottle, as it is possible to damage the inner coating that helps keep the bottle impervious to oxygen.

Once the Better Bottle has been cleaned, and re-sanitized, it is time to transfer the wine back into it.

This time you will use gravity rather than a siphon, and run the wine out of the spigot of the bucket. Put your bucket up on the table or chair where the Better Bottle sat in step one and position the bottle underneath it. Attach your 4' length of tubing to the spigot on the bucket, directing the other end into the Better Bottle, and open the spigot. Because of the volume that was lost when you discarded the sediment, the wine in the bucket will not completely fill the Better Bottle. If you are making a white wine, you should make up this volume with either an inexpensive bottle(s) of commercial wine of the same varietal, or in a pinch you can use distilled water. For reds, you should have at least one 1gal jug of wine. Take this wine and gently pour it into the Better Bottle until the wine is at a level where it will be 1-2" below the stopper. Put the stopper in place and seal the hole in the center with one of the small #000 stoppers from your kit.

If you have more red wine in the 1gal jug consider transferring it down into bottles. Having kept the jug in the fridge will help keep the sediment compacted to make pouring off of it easier. Once you have filled as many bottles as you have wine for, anything left over should be discarded (boo!) or consumed (yay!). You can close up any wine bottles that you just put wine in with either a traditional cork and the corkscrew that came with your equipment kit, or with a T-Cork (W450 – recommended). Congrats – you just racked wine!

## Step 4 – Aging

For this step you don't need anything but some patience and possibly your sample taker every once in a while.

Aging the wine will last for 4-12 months. During this time you will probably want to rack the wine 1-3 more times to help with clarity, and you may choose to add oak or other additives depending on your palate and the style of wine that you are making. Additionally, you will probably want to test the wine to measure its acidity and sulfite levels a few times during this period. Please refer to our Guides to Red and White Winemaking for more information about the ins and outs of the aging phase of winemaking.

Towards the end of the aging phase, many winemakers elect to either fine or filter their wine. Fining is the process of clarifying the wine through the addition of a powder or liquid designed to chemically interact with the components of the wine that contribute to a lack of clarity. This interaction causes the impurities to

“clump up” and drop to the bottom of the container, allowing the wine to be racked off of them. Fining is generally considered to be easier than filtration and is certainly less expensive due to the lack of a need to purchase extra equipment. However, any fining or filtering process will have some effect on a wine’s color, aroma and flavor intensity, and fining tends to have a more significant effect than filtering does. Now, all of that being said, most first-time winemakers do not fine or filter their wines at all – there is no technical reason why these processes are required and the only downside to not performing them is the chance for a slight lack of clarity in the wine. As always, for complete information regarding both fining and filtration please refer to the Guides to Red and White Winemaking.

## Step 5 – Bottling

For this step you’ll need:

- Both Buckets
- 4’ length of tubing
- Bottle filling wand (*B411*)
- Corker (*W405*).
- You’ll also need to save or purchase 1 case of wine bottles per 3 gallons of wine that you’re bottling and you’ll need to purchase corks. Also, a second pair of hands is super helpful on bottling day. Our experience is that there is never a shortage of friends and family who are willing to help you bottle in exchange for one or two to take home!

At some point you are going to decide that your wine has aged long enough and that it is time to bottle it. There is no set length of time for aging a wine, and we realize that it is something of a moving target for the first time winemaker to try to make a decision about when to bottle. Just know that exactly when you bottle the wine is not a super-critically timed event. In many commercial facilities, the decision to bottle is driven by an impending need for the container which is storing the wine in bulk, i.e: it is harvest time again. As home winemakers we’ll see that this is often the driving force behind when we schedule our bottling runs as well. Luckily, the process of bottling the wine is extremely simple.

Start by preparing your wine for racking by putting the Better Bottle in place and allowing it to settle. Next – yeah, you guessed it – mix a batch of sanitizer in the bucket without the spigot. The next step is to sanitize

your bottles. It is handy to have a place to put the bottle, inverted, after it has been sanitized. Because bacteria fall, not fly, as long as the bottle remains inverted it will remain sanitary, even if the sanitizer all drains out. The two easiest ways to store sanitized bottles are A) on a Bottle Tree (*B509*) or in the dishwasher. The bottle tree is nice as it allows you to set up to bottle anywhere; however the dishwasher is also nice because it is free. If you are going to use the dishwasher, just remember to run it the night before so that everything inside is nice and clean. Sanitize your bottles by leaving them in contact with your sanitizer for the prescribed period of time (1 minute for StarSan) and set them aside.

Now it is time to get ready to rack into the bucket with the spigot. Sanitize the bucket, spigot and siphon starter, and drop the 4’ of tubing and the bottling wand into the sanitizer now as well. It is not necessary to sanitize your corks, despite what you may have read elsewhere.

Making sure that the spigot is first closed; rack your wine into the bucket. When you’re done, set the Better Bottle aside and move straight to filling the bottles. Place the bucket up on a table or the counter top. Affix your 4’ length of tubing over the tip of the spigot and insert the filling wand into the other end. Open the spigot on the bucket and grab your first bottle. Put the wand down into the bottle and press down so that the tip of the wand is pushing against the bottom of the bottle. Wine should begin to flow into the bottle. Once the wine enters the neck of the bottle, remove the wand and check the fill-level. The ideal fill level will be to the point where you have 1/2” - 3/4” of space between the surface of the wine and the bottom of the cork. This space is important as it will absorb any expansion of the wine due to warming. After a few bottles you will get the hang of exactly where to stop and move on to the next bottle.

As you finish filling each bottle, set it aside for your helper to put the cork in. Working with the hand corks, we recommend using 100% whole piece natural corks. While more expensive than some of the other options, they are much easier to work with when using a hand corkscrew. Using the corkscrew is simple – place a cork in the opening of the body of the corkscrew, place the corkscrew on top of the bottle, and press downward on both levers. The depth of insertion of the cork is adjusted with the two nuts at the top of the corkscrew. We recommend trying this out a few times on an empty bottle to get the hang of it and to get the corkscrew

adjusted (if necessary) ahead of time.

Once you've bottled and corked all your wine, you're finished. Congratulations – you've just made your first batch of wine. Here are a couple of follow up tips:

- Store the wine bottles upright for 3-5 days after bottling. This will allow the cork to re-expand fully in the neck of the bottle and make a better seal. After that, store bottles upside down or on their side to keep the cork moist.
- All wines suffer from a period of "unease" immediately after bottling. This period is called "Bottle Shock" and will last from 4-8 weeks. There is nothing that can be done about it except to wait. Don't be alarmed if you open a bottle 3 weeks after bottling day and the wine tastes different in some way.
- With red wines, the wine will lose some of its tannin intensity during the first year or so in the bottle. You may want to keep this in mind when choosing when to bottle the wine – a wine that is slightly overly tannic at bottling will often soften out to being "just right" after 6 months to a year.
- All wines will benefit from at least some continued aging after bottling. The light white wines will typically improve for about 6 months and a heavy, tannic red wine can continue to improve for several years. Be patient and watch your wine evolve.
- We strongly encourage you to keep notes in a winemaking log book. Write down your starting and final Brix levels, TA and pH info if you have it, the date of any procedure or process and finally any other notes - especially tasting notes - that you may have. If you have a problem during the winemaking process these notes and information may be important in helping us figure out what is going wrong and how to address it.
- Winemaking is messy, no two ways about it. Keep this in mind when figuring out where you're going to set up and work.
- We really recommend reading through our Guide to Red or Guide to White Winemaking before you get underway. These instructions are designed to show you how to use the equipment you just purchased, not to give a full education on the ins and outs of winemaking. We wrote these guides as accessible, yet thorough, instructions

on the winemaking process as a whole, and there are very few folks whose wines won't benefit from the winemaker being familiar with these texts.

Shameless Plug: Working with Brehm fruit is ideal for home winemakers for several reasons:

- It gives you access to fruit from vineyards that are generally not available to home winemakers – indeed there are hundreds of commercial wineries that would love to access to this fruit!
- It allows you to spread out the work and the cost of making your wines across the entire year, instead of having to devote so much money and energy to it in September and October.
- There is less equipment necessary for working with these smaller lots and with fruit that has already been processed ahead of the ferment.
- Chemical analysis of the fruit has already been performed, again reducing the time, investment and degree of expertise required to make great wine! (Note that due to the lack of consistency within large lots of red must, Brehm's published numbers may not match yours exactly. While you may be able to make a better wine by performing the analysis yourself and adjusting the must, for most first-time winemakers this is not necessary.)

Finally, please feel free to contact us with any questions you have during the process. You can contact our customer service center at 800-600-0033 or by email at [info@morewinemaking.com](mailto:info@morewinemaking.com).