The Process of Wine Making At

CasaVin'Arte

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The Equipment

Primary Fermentation Bucket

Purpose: All initial ingredients are mixed and primary fermentation takes place in this bucket. We use this for increased surface area for the yeast to interact with the sugars in the juice.

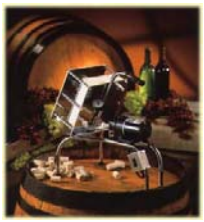
6, 5, or 3 Gallon Carboys

Purpose: Clarifying and fining. After primary fermentation is complete, your wine is "racked" into a carboy for secondary fermentation, clarification and fining. While the plastic isn't necessarily bad for your wine, it is preferable to have it in the glass.

Drill with Paddle

Purpose: Degassing and Mixing. Once your wine has completely fermented, you will vigorously stir the wine to drive off the excess CO_2 produced during the fermentation and to thoroughly mix the lees (sediments) back into the wine to catalyze the clarifiers.

Filter



Purpose: Once your wine has stabilized and clarified you will run it through a three-pad filter machine to remove all sediments.

Bottler

Purpose: The Enol Master 4-bay bottling system is the state-of-the-art piece of equipment that allows you to easily and safely transfer your wine into the bottles. The capturing of air in the wine during the bottling process, and the resultant oxidation of the wine is what turns good wine into vinegar. The Enol Master utilizes a vacuum chamber to withdraw the air from the wine as it is bottled.

Automatic Corker

Purpose: The Ferrari (And Yes…it is that Ferrari!) automatic floor corker represents a new age in winemaking convenience and style. This corker will allow you to cork 30 bottles of wine in just minutes.

The Wine Kit

Description: The kits come complete with all the additives & yeast needed for the particular variety. Using "state of the art" aseptic, nitrogen purged packaging methods, all of the acids, pH, sugars & tannin levels are perfectly balanced and the kits require no additional testing. Most kits yield six gallons, or approximately 27 bottles, of wine.

The Juice: For a more detailed explanation of how the juice is processed into the kits, please visit www.winexpert.com. Winexpert contracts to purchase grapes from growers the world over by specifying conditions at harvest (acid, pH, brix, and color) and organoleptic qualities (flavor and aroma). These specifications are very rigid, for although the grapes may change radically from harvest to harvest, the kits must maintain very high levels of consistency, so consumers can make repeat purchasing decisions. From there they bring the juice to the perfect balance of brix (sugar) and ph (acid) levels which ensures that you will make outstanding wine every time, if proper technique and equipment is used.

The Additives:

Bentonite: A 'fining' agent, bentonite is a colloidal clay. It occurs naturally and is flocculated by the colloids in wine which have opposite charges to bentonite. It is commonly used by all winemakers during the clarification process.

Potassium Metabisulfite: Potassium metabisulfite is added to wine to inhibit bacteria and yeast growth, as well as slow down oxidation. This is what prevents your wine from "turning". We add 2 grams to your wine, which will give you about 2-years of effective shelf life.

Potassium Sorbate: Potassium sorbate is used to slow down yeast growth and inhibit fermentation, thus "stabilizing" your wine prior to bottling.

Clarifiers (Isinglass for whites or Chitosan for reds): Chitosan is a non-proteinaceous fining agent derived from Chitosan extracted from shellfish. It works by a process of molecular adsorption where chitosan has an electric charge which attracts oppositely charged particles clouding the wine or wash, by binding with them and pulling them out of suspension. Isinglass is a substance obtained from the swimbladders of fish (especially sturgeon), and produces the same effect for whites.

Flavorings: Depending on the varietal and type of kit, you also may be adding oak chips, oak powder, elderflowers, or F-Packs (flavoring packs) to your wine in order to give your wine its distinct flavor.

The Process

Process #1 – Starting the Batch ~ 1/2 -Hour

Note about Sanitization: Because wine making involves the fermentation of organic compounds, it is very easy to grow bacteria and mold within the wine. Thus sanitizing everything that comes in contact with your wine is extremely important and failure to do so is the number one reason wine batches turn out bad. In sink #2 we have provided a solution of water and sodium metabisulfite that winemakers use to sterilize their equipment. Simply dip all things coming into contact with your wine in this solution to sanitize them. No rinsing is required.

➢ Step 1: Sanitize Bucket, Lid and Large Measuring Bucket

- Dip each into sulfite solution. Place bucket and lid in right-hand sink.

➢ Step2: Mix Bentonite Solution

- Draw out 2 liters of R/O purified water into large measuring bucket.
- Place water in microwave and set for 3:00 minutes to warm.
- Pour content of warmed water into bucket.
- Sanitize large white spoon.
- Gradually mix contents of package number one, the bentonite, with the warm water.
- Because bentonite is a clay (see Additives on previous page), it will clump if not gradually stirred in.
- Sprinkle a little and stir well until contents of package sufficiently mixed in and no clumps appear.

➢ Step 3: Add Juice

- Using black decapper tool, remove cap from bladder of juice.
- Carefully pour contents of bladder into the bucket.
- Once juice is added, remove bag and fill bag about 1/4 - 1/3 full with R/O water.

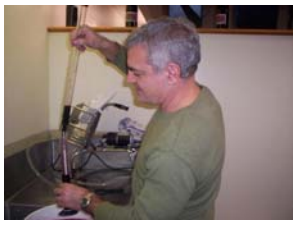
- Rinse bag using water until all juice is rinsed and add to bucket.

➢ Step 4: Add Remaining Water and Stir

- Using the R/O water fill to ridge line inside of bucket for 6-gallon kits, or 5 and 3-gallon marks on the side of the bucket for 5-gallon kits or 3-gallon kits respectively.
- Using large white spoon, stir juice vigorously to ensure proper mixture of water, juice and bentonite for approximately 3 minutes.

➢ Step #5: Measuring Starting Specific Gravity (sg)

- Sanitize wine thief, test jar, and hydrometer.
- Draw out sample of juice into test jar leaving about 2 inches at the top.
- Drop hydrometer into the sample and read specific gravity reading.
- Record reading in vintner's notes in your file.
- Pour juice sample back into bucket and place testing equipment in sulfite water.



The Science

Specific Gravity: A measure of the density of a liquid. Specific Gravity is based upon the density of water, which is 1.0. Your juice will be denser than water. Alcohol is less dense than water. As the fermentation takes place and the alcohol content rises, the specific gravity will lower. This initial reading will tell you the potential alcohol content of the wine, based upon the initial sugar level which affects the density of the juice.

➢ Step #6: Pitch the Yeast, Cover and Rack

- Cut the top off of your packet of yeast and distribute evenly across the top of the surface.
- Do Not Stir!
- Sanitize a bubbler, pour a little R/O water into the bubbler, add a Camden tablet (metabisulfite), cover and screw into the gasket in the lid.
- Place lid on bucket and press firmly on all sides to ensure good closure.
- Place on rack.

➢ Step #7: Primary Fermentation

- Mother Nature does all the hard work here!

The Science

Fermentation: Fermentation is the energy-yielding anaerobic metabolic breakdown of a nutrient molecule, such as glucose, without net oxidation. Fermentation yields lactate, acetic acid, and ethanol. Fermentation refers to the fermentation of sugar to alcohol using yeast, but other fermentation processes include the making of yogurt. The science of fermentation is known as zymology.

When fermentation of grapes occurs the density of the liquid decreases as sugar is changed to alcohol. The change is easily monitored by wine makers using a hydrometer. A hydrometer is an instrument used to determine specific gravity. By monitoring the density of the liquid you are able in effectively monitor the fermentation process.

Process #2 – The First Rack ~ 15 Minutes

- **Step #1 – Measure Specific Gravity**
  - After 5-7 days measure the specific gravity of your wine.
  - If the sg reads 1.010 or less you are ready to "rack" your wine into a glass carboy.
- **Step #2 – Transfer into Carboy**
  - Ensure a clean and sterilized carboy and pump is used.
  - Use supplied pump to pump the wine from your bucket into the carboy.
  - Keep intake hose just below the surface of juice and follow down as it pumps.
  - When you have reached about 1 gallon left to go, tilt the bucket so as to get the juice and leave the sediments behind.

- **Step #3 – Add Oak or Elderflowers**
  - Using sterilized funnel, add desired amount of oak chips, oak powder, or elderflowers.
- **Step #4 – Bung, Label & Rack**
  - Sanitize rubber bung and screw bubbler into opening. Place bung in opening of carboy.
  - Label carboy with your name, today's date, and the words "First Rack".
  - Place carboy on rack.
  - Leave bucket for staff to clean.

Process #3 – Stabilization ~ 45 Minutes

- **Step #1 – Measure Specific Gravity**
  - After 7 days take sg reading of your wine and record.
  - Continue daily readings until sg reads between 0.994 and 0.997 (depending upon the wine), and remains there for 2 consecutive days.
  - Once this happens the fermentation is now complete and you are ready for stabilization.

The Science

Degassing: It is not uncommon for wine to absorb carbon dioxide, the gas created as a byproduct of fermentation. This especially tends to occur when fermentation slows to the point that bubbles escape the airlock at a rate slower than one bubble every 15 minutes. The positive pressure of CO_2 in the headspace between the wine and the airlock bears equally on the wine and the liquid inside the airlock. Some of that CO_2 is simply absorbed into the wine. The act of degassing seeks to drive off this excess CO_2.

- **Step #2 – Degassing**
  - Using the pump you used in Process #2, remove wine from your carboy to a small 1-gallon jug until level is just below the neck of the carboy.
  - Place carboy on floor. Sterilize stirring paddle and secure into drill.
  - Starting at the bottom of your carboy and using slow up-and-down motions, whip wine for 15 minutes.
  - Shake contents of 1 gallon jug 5-6 times to remove gasses.

- **Step #3 – Mix in Sorbate and Metabisulfite**
  - Sterilize a measuring cup, spoon, and funnel.
  - Draw out ½ cup of R/O water.
  - Stir in contents of package #2 (Potassium Metabisulfite) and Package #3 (Potassium Sorbate) into ½ cup water.
  - Pour contents into your batch of wine.
- **Step #4 – Mix in Clarifying Agent**
  - Using scissors cut corner of each package of clarifying agent (Chitosan for red wines and Isinglass for white wines), and pour into your batch of wine.
  - If no F-Pack is supplied, mix for 5 minutes with the drill and the paddle.
- **Step #5 – Add Contents of F-Pack (If needed)**
  - If your kit contains an F-pack, remove the cap with the black decapper and pour into your batch.
  - Using the drill and paddle, mix for 5 minutes.
- **Step #6 – Add Back the Wine That Was Removed**
  - Once the froth has settle out, carefully and slowly add back the contents of the 1 gallon jug you removed previously.
  - Mix contents for 1 minute.
  - Dip bung in sulfite water and place in carboy.
  - Rack wine.

Process #4 – Second Rack ~ 15 Minutes

Note about Timing: At this point the timing of the second rack will depend upon the type of kit you are using. Four-week kits should be racked at the third week – six-week kits should be racked on the fourth week – eight-week kits should be racked on the sixth week. The timing of this process is not as critical as in the other processes; however, there is a minimum amount of time that should be allowed for many kits before the second rack.

- **Step #1 – Transfer into Carboy**
  - Ensure a clean and sterilized carboy and siphon is used.
  - Use supplied hand siphon to siphon the wine from your carboy into the new carboy. (Do not use automatic pump!)
  - Keep intake just below surface of juice and follow down as it pumps.
  - When you have reached about 1 gallon left to go, tilt the carboy so as to get the juice and leave the sediments behind.
  - Do not get siphon into the lees and oak at the bottom of the carboy.
- **Step #2 – Bung, Label & Rack**
  - Sanitize rubber bung and place bung in opening of carboy.

- Label carboy with your name, today's date, and the words "Second Rack".
- Place carboy on rack.
- Leave used carboy for staff to clean.

Process #5 – Filtering ~ 25 Minutes

➢ Step #1 – Set-Up Filter Machine

- Ensure filter machine is clean and sterilized.
- Load three supplied filter pads in between four plastic inserts.
- Ensure pads and inserts are flush in the machine.
- Tighten filters using tightening bolt at the top.
- Ensure intake hose to round filter, round filter to pump, pump to filter and output hose connection are firm and all clamps are in place.

The Science

Filtration: A brilliantly clear wine is more appealing than a cloudy or hazy one. The cloudy or hazy wine may taste fine, but it does not look *finished*. This is why virtually all commercial wines are filtered. Sterile filtration is the ultimate act of clarifying a wine, leaving it sparkling clear and pleasing to look at and virtually incapable of re-fermenting.

Filtration removes yeast, bacteria, and grape or fruit debris from the wine. This not only renders the wine instantly clear , it also makes the wine more stable because yeast or bacteria that could feed off residual sugar have been removed. As a result, the amount of SO2 and other chemical preservatives can be reduced.

➢ Step #2 – Filter Wine

- Ensure a clean and sterilized carboy is used.

- Place intake hose in your wine and output hose into the clean carboy.
- Flip switch on filter machine and let a pint or so of wine run through the filter machine into the new carboy.
- Turn off filter machine and re-tighten filters. (Note: Pads lose volume as they get wet, so they will need to be re-tightened.)
- Turn filter machine back on.
- Keep intake just below surface of juice and follow down as it pumps.

Important: Watch pressure valve for sharp spikes in pressure. If this happens it typically means the pads have become clogged and you should shut off the machine immediately!

- When you have reached about 1 gallon left to go, tilt the carboy so as to get the juice and leave the sediments behind.
- Do not get siphon into the lees and oak at the bottom of the carboy if there is a lot still remaining after the second rack.

➢ Step #3 – Bung, Label & Rack

- Sanitize rubber bung and place bung in opening of carboy.
- Label carboy with your name, today's date, and the words "Filtered".
- Place carboy on rack.
- Leave used carboy for staff to clean.

Process #6 – Bottling ~ 1 Hour

➢ Step #1 – Bottling

- Remove Clean and sterilized bottles from washer and place on bottle tree.
- Place wine on counter to the left of the bottling machine.
- Ensure bottling machine clean and sterilized and most residual water removed from the lines and hose.
- Remove bung from carboy and place hose with plastic insert all the way into the carboy.
- Turn on bottling machine and wait for pressure to reach 40.

Note: The pressure may need to be adjusted based upon the wine. If pressure does not reach 40 or exceeds 55, please seek staff assistance to adjust pressure.

- Remove one bottle from the tree, place mouth on first bottling line, push up and place onto bottling surface.
- Allow bottle to fill. It will automatically stop.
- Once bottle has been filled and bubbles have dissipated, promptly remove bottle from filler.
- Hold a cork to the top of the bottle and check to ensure that there is a finger's width of distance between the bottom of the cork and the fill level.
- Place a shrink-wrap caplet over the bottle and ensure that caplet completely cover the fill line.

Note: If the fill level is not correct, please seek staff assistance to adjust to proper fill level.

- Once proper fill level established load all 4 bottling lines with bottles and remove promptly when filled, placing them on the cart.
- Because of the lines and the machine there may be some bottles with too high or too low fill levels. Use sanitized pipette to even out to proper fill levels.
- When the level in the carboy gets under a gallon or so, you will need to tip the car boy to get the most wine from it.
- Once all wine that can be run through the filler has been run, shut off machine.
- Using drain line in the vacuum chamber, fill any partial or unused bottles with wine trapped in the vacuum chamber.
- Over the sink, using a sterilized funnel, pour remaining wine from carboy into unused bottles.
- Set bottles aside not filled with the filler for clear markings as these may have trapped O2.

Step #2 – Corking

- Place 30 corks into large measuring cup; dip briefly into sulfite solution and bring to corker.
- Depress green button on bottom of corker to turn on machine.

- Ensure that no corks are in machine. If there are pull lever towards the wall and release until corks have been ejected.
- Load corks into top of tube on corker.
- Push down on bottle holding mechanism, place one bottle squarely on mechanism and gently raise bottle until mouth fits securely within corking hole.
- Pull lever towards the wall and release once to load cork into position and a second time to cork the bottle.

- Push down on holding mechanism and remove the corked bottle.
- Inspect to make sure that cork sits flush with the top of the bottle.
- Repeat process until all bottles are corked.
- Depress red button to turn off machine.

Step #3 – Heat Shrink Caplets

- Turn on heat shrink and let warm for ~5 minutes.
- Choose caplets from under the counter and place one caplet firmly atop each corked bottle.
- Place first bottle on the bed of the heat shrink, slide bottle firmly to the top of the machine, pull bottle back slightly, count until 4. and slide bottle back from the heat.
- Inspect caplet for proper placement on top of bottle.
- If caplet bubbles or otherwise does not sit, remove and repeat with another caplet.
- If you continue to have difficulty with the caplets seek staff assistance.
- Repeat until all corked bottles have caplets.

Alterations to Process

Sweetening the Wine

- You can make the wine to your sweetness taste preferences by adding a wine conditioner.
- This is added after the wine has been stabilized and clarified.
- This cannot be added after bottling.

Sulfite Levels

- You will initially add 2 grams of potassium metabisulfite, which will give your wine a shelf life of about 2 years.
- If you plan on keeping your wine for longer than 2 years, please inform the staff and we can help you adjust the sulfite level to give you longer shelf life.
- If you or a family member is sensitive to sulfite levels and you would like to lower the added amount, please let us know. However this will severely affect the shelf life of your wine. No added sulfite will yield a wine that will only last from 30-60 days.
- All wine contains natural sulfite levels.

Oak and Other Additive Levels

- As this is your wine, you can adjust the levels or additions of oak and other additives to your taste.

Splitting Batches

- If you and a partner are making a batch, but have differing tastes with regards to dryness, oakiness, or sweetness, you can split the batch up and make each half to your taste.

Selection Speciale Kits

- Because of the unique nature of the Special Kits (Sparkling Wine, Ice Wine, Vidal, Port, and Sherry), the above process will be slightly different depending upon the wine being made.

Labels

- Casa Vin'Arte offers custom graphic design of labels for your wine.
- Please allow for a minimum of 2 weeks for production of wine labels.
- Unless waived, all designs require an approved proof prior to production.
- Casa Vin'Arte offers full custom design of labels including incorporation of customer supplied art and photography, pre-printed label designs with the ability to personalize, and printing services for customer supplied labels.
- Please inquire about pricing.

Bottles

- Most customers choose to purchase their wine bottles from Casa Vin'Arte.
- However, we do offer as a courtesy to our customers the ability to clean and sanitize customer supplied wine bottles.
- Size and shape restrictions do apply.