NASHOBA
VALLEY WINERY

Tour Guide

Manual

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VALLEY WINERY

Welcome to the Tour Guide Staff at Nashoba Valley Winery. The tour pages that follow will serve as a guideline for you. They were not written with the intent for you to memorize them however should you choose to do that you may assist you in answering questions presented during the tour. Everyone develops their own unique style and this will certainly assist you in doing just that. The manual will serve as a good reference for you as you learn about the process of wine making as well as what happens here at Nashoba Valley. It will also afford you enough information to conduct an informative and fun filled tour.

As far as the attachments are concerned you should follow the Open/Close procedures. The Glossary and the Fun Facts/Quiz are for you to use at your discretion. Feel free to add to the Glossary for your own information purposes or make up your own Fun Facts and/or Quiz.

It has been our experience that people are happy when they are around wine whether it be tasting, drinking or simply talking about it. Just as the winemaker facilitates the process of making the wine you have the opportunity to facilitate the enjoyment of all of our visitors as you bring them through your tour. Each one is different and each little group develops their own personality so have fun and enjoy the moment.

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Welcome (Press Room)

It is always critical to extend a warm welcome to your tour group by introducing yourself and making them know that you care about their experience. Try to engage them with questions about whether they have been here before of if it is a special occasion for anyone. Make it fun by pouring the guest of honor or someone that is asking questions an extra ounce of wine on the initial pour. This sets the tone and helps everyone to loosen up for an enjoyable interactive tour. You can evaluate yourself by the response that you are getting from our guest. Begin getting personal interaction and your tour will be much more enjoyable for both you and your visitors. Always try to adjust your tour to the expectations of the people on your tour

(*As you are passing out the glasses of wine)*

Welcome to Nashoba Valley Winery and thank you for touring and tasting with us. For the next 45 minutes or so we will walk you through the wine making process and share with you more of our fine wines. But before we get into that allow me to tell you about Nashoba Valley Winery and what happens here throughout the year.

(***An easy way to cover everything is to start at the entrance and work your way down to the Winery. Much of the tour should be an info commercial for all of the things the winery grows, makes, sells and offers for entertainment.)***

FARM HOUSE

As you drove in from the main road you may have noticed the old farmhouse at the entrance. That is actually our 5 Star restaurant called J's. The food is outstanding and all of the meals are paired with our wines, making for a very interesting and unique dining experience. The menu changes seasonally and seating is by reservations only.

PAVILION

The next building is the outdoor pavilion where we have a good part of the summer and fall booked with weddings. If you are planning a wedding or know of someone who is be sure to consider us. Just as you go into the smaller portion of our shop there is a section set up with wedding information and we have a wedding planner on site who does an outstanding job working with couples to ensure all of their needs are met as well as making suggestion from her many years of experience. The pavilion is also available for Corporate functions and other large gatherings.

GARAGE

Between J's Restaurant and the Pavilion is a small building where all of our beers are produced and bottled. While the building is only about 800 square feet, it efficiently host a 15 barrel (465 gallon) New World Brewing System and storage for about 60 barrels of beer or about 900 gallons at a time which represents about 430 cases of beer... Here at Nashoba Valley we not only make great wines but we also have a unique selection of beers as well as spirits. Our brewer, Tom Knight, makes the highest quality beers and he is very creative when it comes to experimenting with new types of brews.

Welcome (continued)

WINERY

The winery is open year round about 360 days a year and there is a wealth of information in our brochure so if you haven't picked one up on your way in I'll make sure you have one at the end of the tour. There is even more information on our website which has almost all of the information that you would ever want to know about us and offers you the opportunity to purchase our wines on line for shipping to over 20 states. Our web site is a great place to find our current information about "pick your own fruit", festivals and events. Almost all of our festivals are free to attend to if you want to get the most enjoyment out of Nashoba Valley we strongly recommend that you sign up for our email as our emails often have special promotions for discounts and events that are not always available to the general public.

Please be sure to check it frequently since we have so many other events here such as cooking demonstrations, food and wine pairings and many other educational events year round. You will also notice the tables set up on the porch as well as the picnic tables out on the grounds. Those are for your use and we invite you to come with your picnic or cheese and crackers to sit and enjoy our beautiful setting with good friends or family. You can even purchase a bottle of wine in the shop and we will uncork it for you. We sincerely hope you will come back time and time again. You are always welcome!

History (Press Room)

Where we've come

Nashoba Valley Winery was founded in 1978 by Jack Partridge. Jack was a city planner in Somerville, Massachusetts, who enjoyed making wine from his home grown apples as a hobby. His family and friends liked it so much they convinced him into making this a full time family run business. From his basement in Somerville, Nashoba Valley re-located to Damon Mill in Concord, Massachusetts where the winery operated from 1979 until 1984.

Where we are

Today we are still situated on 52 rolling acres that Jack purchased in 1984 where we now grow apples, peaches, nectarines, plums, grapes, other small fruits as well as vegetables and herbs for our restaurant and hops for our beer. With over 80 different varieties of apples http://nashobawinery.com/orchard/varieties.html, 18 different varieties of peaches and nectarines http://www.nashobawinery.com/orchard/peach.html and 5 different varieties of grapes (Vignole, St. Croix, Lemberger, Chardonnay and Cabernet Franc). While the production of wines from traditional New England fruit remains our focus, with the addition of grapes, we now produce not only great estate grown fruit wines but estate grown grape wines. Our first release of an estate grown grape wine was in 2008 with the release of Vignole. In addition to producing 26 varieties of wines, 12 different spirits and over 10 different beers, many seasonal, we keep a very busy schedule throughout the year and offer a lot of different types of entertainment and educational experiences.

Planning

Great wine starts with great fruit and we plan and work very hard to grow varieties that will yield the absolute best quality for our wines in our climate. While many of our apple trees in our orchard are dedicated to pick your own varieties such as McIntosh and Cortland, we also grow many heirloom varieties that are dedicated solely to the production of wines and cider. One of our favorite apples for the production of wines is the Baldwin apple which was developed in Wilmington, Massachusetts. On an average we use approximately 50 tons (100,000 lbs) of fruit grown on our farm in the production of wine and spirits. The balance of other fruit purchased used is from local farms or from farms in New England. When mother nature does not cooperate our yields are not in line with our production requirements, fruit will be acquired directly from farms in Massachusetts, Maine, Rhode Island and upstate New York. On occasion we are required to import fruit from other states but all fruit used in our operations are 100% grown in the United States. We will not make wine from fruit that is not grown in this country. For an average year, 90 % of all fruit used is either grown on site or grown on farms that within a 2 hour drive of the winery.

Once the fruit is harvested, we hand sort/inspect the fruit as it is processed and depending on the type of fruit being processed, the fruit is wash, crush, destemmed or processed into either juice or must. Most of our wines are produced in batches of about 1000 gallons so it takes approximately 6 to 7 tons of fruit to make 1,000 gallons of wine. Over the course of harvest we will process approximately 144 tons of fruit just for our wines to make approximately 23000 gallons of wine or about 8000 cases of wine that we produce each year. Depending on the year and the volume of apples that we are able to harvest, an additional 20 to 50 tons of fruit may be processed for our spirit operations so you can get a sense of the magnitude and volume. This is in addition to the 40 tons of fruit that is harvested in our pick your own operations.

Processing and Pressing

We are fortunate to have great staff people working at the winery and great equipment to assist them in making wine. Lets talk about some of this machinery and how it all works.

Moving Fruit

The first step in processing fruits getting it from one point to the next point. A very handy appliance is our conveyor which is adjustable by speed and height. We can use this equipment to load fruit into the power washing or into the de-stemming as well as for loading whole berries such as blueberries and cranberries directly into the top of tanks. It is often run at a slow speed which allows us to hand sort fruit on their way to being processed.

POWER WASHER

Apples and pears are conveyed into a good nature scrubber which not only removes dirt and dust from the fruit but it also removes any soft spots or bruised parts on the fruit as well as leaves that might still be attached to the stems. If you look inside you can see 3 long rollers with stiff bristle . These spin at about 200 revolutions per minute as water is spayed from above by pressure washer nozzles. After the fruit has been scrubbed it empties into another conveyor where it will be transported to our hammermil.

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HAMMERMILL

The red appliance on top of the tapered tank is a hammermill which will chop the fruit much like a food processor turning fruit into quarter inch pieces much like the consistency of chutney. The hammermill consist of about 20 blades rotating at a very high speed that slices the fruit in a single pass into small ¼ inch chunks of fruit. Theses pieces then fall into the tapered collection tank where they are then pumped into our squeeze press

Good Nature Squeeze Press

This press is used for our more difficult fruit to press such as apples, pears and peaches. The press looks and works much like an accordion with the center metal plate moving to the left and to the right pressing the processed fruit that has been loaded into the press bags. With the center plate located to either the left or right side, process fruit is pumped into filter bags placed in between each of the separation plates. With the bags about ¾ filled, the hydraulic pistons are engaged which moves the center plate to the side of the press where the fruit has been loaded. As more and more pressure is applied, juice is squeezed from the fruit keeping the solid particles trapped in the bags. The press is equipped with controls which allow us to determine the amount of pressure that we want to apply. While the small compartments of the press bags do not hold nearly as much volume of processed fruit as our other press but the benefit is that uniformed pressure is applied to very thin layers of fruit allowing the juice to drain more efficiently. When the center plate moves to one end it presses the fruit in that end while opening the bags to be emptied and filled on the other side. As the juice is forced out of the filter bags it is filtered and the relatively clear juice drains into the stainless steel container underneath the press. When the press has gone through the cycle the winemaker will take the open side of the press and empty the pressed pomace. The sections of the press that contain the pomace is dumped by a hydraulic piston for composting and once emptied is available to be re-filled.. While the volume in each press cycle is much smaller than the volume that can be fit into the Bucher press, the speed of the press cycle and the yield of juice results in a shorter overall press time per gallon of juice. Each cycle takes only a few minutes and the juice is collected in the pan underneath the bags. Operations of this press can be viewed at http://www.youtube.com/watch?v=04HAyxxda_4

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The process varies for other fruit varies. Some fruit, such as blueberries and cranberries are placed whole into a tank and they are fermented with the skins on and without any processing. Towards the end of fermentation, the berries are transferred to our bladder press for pressing. This is done with assistance from the conveyor.

DE STEMMER

Other fruit, like grapes, have to be removed from the stems which is done by our destemmer/crusher. Whole clusters of grapes are conveyed into the mahine where a small auger moves the clusters into a horrizonal cylendar that has perferated holes the size of grapes. In the center is a shaft with paddles that move the grape clusters in one direction while the cylendar moves in the opposite direction. Grapes are caught in the holes of the cylender an are torn off of the stems. The whole grapes fall out the bottom of the cylender into a crusher while the stems are pushed out the open end of the cylender. From this point the grapes are pumped into either a tank or directly into our bladder press.

BLADDER PRESS

The Bladder Press, manufactured by Bucher, is basically a horizontal tank with a rubber membrane attached to the inside of the tank. The tank is filled with fruit when the bladder is deflated. Once filled air is pumped into the bladder inflating it which results in fruit being pressed to the opposide side of the tank. On this side of the tank are small perforated cannels which allows juice to escape from the tank and fall into the collection tank below. Once the fruit is loaded into the press, the entire operation is controlled by an on-board computer which inflates the bladder and the deflates it allowing for the solids to be tumbled by rotating the horizontal tank to break up the solids. This process is repeated about 6 times with each press cycle. Each cycle is programed based on the operators experience and usually more air and thus greater pressure is put onto the fruit during each subsequent cycle. The goal is to slowly and gently extract as much juice as possible without extracting bitterness from the seeds and skins by over pressing the fruit. Different fruit are put through different cycles to obtain the best quality of juice from a particular fruit. Better quality juice will yield a higher quality wine.

Clarification – Stabilization (Tank Room)

Basically what we have done up to this point is either made juice or processed whole fruit into tanks.

Cold Settling – For white wines, the next step is to cold settle and clarify the juice. Most of the tanks in the winery have dimpled jackets around them which allow food grade chilled glycol to chill the tank without coming in contact with the wine as the dimpled jacked is on the outside of the actual stainless tank holding the juice. In cold settling of juice, the temperature is lowered to about 35 degrees and left to settle much like orange juice pulp settles in your refrigerator. Once we have determined that the juice is clarified and the solids have settled to the bottom of the tank, the clear juice is racked off of the lees (solids) to another tank to be warmed up so that we can add yeast to the wine at a temperature that will allow the yeast to live and multiply. Generally, yeast used for wine making cannot tolerate temperatures below 50 degrees so it is important to manage temperature.

Fermentation - The process of turning juice into wine is actually simple chemistry. Single cell plants of the genus *Saccharomyces* consume sugar in grape or other fruit juice and transform it into approximately equal parts of alcohol and carbon dioxide. It is the single celled plants that we commonly call *yeasts* that are the real winemakers. If there is an art to winemaking, and there certainly is, then it begins with the art of controlling yeast. It is the art of selecting the appropriate yeast, introducing it at the correct moment, feeding and nurturing it so as to coax it into living, reproducing and dying in a prescribed manner, and then cleaning up after it so as to preserve the fruit of its labor. It is the art of controlling its temperature, the amount and kind of air it is allowed to breathe, and feeding it the sugar and other nutrients it needs to flourish and give the results that we intend to occur. Controlling yeast and the process of fermentation is the real art of making wine.

An important factor during fermentation is controlling temperature as yeast generate heat in the process of consuming sugar. As heat increase the speed of fermentation will also increase and while heat can help extract flavor and color from the skins of fruit, it can also cause many off flavors in wine and negatively impact the quality if it is not managed. All of our jacketed tanks are connected to thermostats which can be set to automatically to control the temperature of the wine. If the winemaker is not diligent in his monitoring of the process of fermentation an unhealthy environment can quickly evolve increasing the risk of a slow, incomplete, stubborn or even stuck fermentation. Anytime yeast are not maintained in the environment that is intended, unintended results and flavors can result. There is an incredible amount of activity going on inside the tank and managing the process and controlling yeast is an art. Happy yeast make good wine!!! The actual amount of alcohol produced by yeast is determined by the starting amount of sugar in the juice and whether the yeast ferments or is allowed to ferment all of the sugars in the juice.

GAS – As mentioned previously, in addition to heat, another by-product of fermentation is CO2. As the wine is fermenting it is continually creating CO2 which would create an incredible amount of pressure inside the tank so we allow the CO2 to escape simple appliances called air locks which allow the pressure inside the tank to be release but without allowing oxygen to enter the tank. While oxygen is required for the aerobic stage of yeast development and oxygen is used in barrel aging of wine, generally our goal throughout the process of making wine is to keep the wine from being exposed to air.

COLOR AND ALCOHOL

The color in wine is determined by the amount of time and process that occurs while the juice is in contact with the skins of the fruit. The color in wine result from the skins of the fruit being in contact with the juice and the amount of time, temperature and alcohol level of the juice/wine. The longer the time, the higher the heat and alcohol the greater the extraction of color.

So during fermentation we are not only determining the amount of alcohol the yeast will produce or that we allow the yeast to produce but we are also controlling color and other characteristics of taste that can be developed or eliminated by clarification or extraction from skins. Pink / rose wine can be produced by removing the skins/ pomace from the juice/must soon after pressing or during fermentation. White wines can be made from pigmented grapes by removal of skins, pulp and seeds before juice fermentation.

Wines are termed **still or sparkling depending upon the amount of CO_2** they contain or retain in the bottle not by the amount of CO2 produced during fermentation. With sparking wines generally carbon dioxide is created in the bottles through a secondary fermentation or may be added artificially. Both **table and sparkling wines** tend to have alcohol contents between **7 and 14 percent**.

To produce the bubbles in Champagne, a technique referred to as the *methode traditionnelle* or traditional method is used. In this method, the base wine (still wine) which will become Champagne is bottled with a small amount of yeast and sugar to trigger a second stage of fermentation in the wine while in the bottle. This fermentation gives off some gas within the bottle, which acts as carbonation. Other methods include doing the same process in large stainless tanks of by infusing the wine with carbon dioxide gas. The method often determines both the quality and the price of the finished product. At Nashoba we make both carbonated wines in the traditional method and with artificial carbonation and you will notice a significant difference in price.

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Clarification

After fermentation, white wines are racked off the solids that have settled to the bottom of the tank and red wines (or wines fermented on the skins) are transferred to a press to extract the juice and remove other solids. At this point the juice is usually transferred to other stainless tanks to be further clarified by natural settling. Additionally, fining agents may be added to aid in clarification of the wine and may also be used to adjust or alter either its: clarity, color, bouquet and/or flavor. It does so by causing certain elements in the wine or must to collect together and fall-out as a settling.

Some will confuse finings to mean a clarifier. There is some truth to this meaning in the sense that finings can be added to a wine for the purpose of clarification, but there is so much more finings can do than just clarify.

Here is a list of possible reasons why a fining agent might be added to a wine:

- To reduce harsh or bitter flavors.
- To help reduce unwanted aromas.
- To strip out browning pigmentation caused by oxidation.
- To increase the wine's general stability.
- To help along the fall-out of yeast cells after fermentation.
- To drop out permanently suspended particles.
- To add luster or polish to a wine's appearance.

All of the above are effects that certain finings can have on a wine. Some finings may affect a particular wine in just one way while other fining agents may have several different types of effects on a given wine. The situations and solutions can vary greatly. A typical fining agent used on white wines is Bentonite clay which is a natural product that is commonly used in any wine as a general clarifier. Effective in dropping out yeast cells and excessive tannin making the wine more stable in warmer storage temperatures. Also used to reduce harshness in the wine's bouquet and to lighten a its color.

Aging (Aging Room)

If you're at least a casual wine drinker you probably already know that wine is aged which is essentially leaving the wine alone in a barrel, tank or bottle for a period of weeks, months or years is the process of aging. This time is a resting period occurring after fermentation that allows the wine to mature or change through an endless series of natural changes, Intentionally keeping a wine for a period of time so that the flavors harmonize and the wine begins to soften and open up. There is no one correct period of **aging** for wine as all wines will age differently and at different rates. As a winemaker, it is our responsibility to develop, manage and adjust our aging period for each wine as they develop.

The main aging casks are stainless steel and wooden barrels.

First let's talk about steel. Stainless steel barrels have virtually no effect on the flavor of the wine they contain. Other added benefits of Stainless steel are that it requires less maintenance and lasts far longer then wood. Generally, a lot more white wines are aged in steel then reds as we are generally trying to preserve the fruit characters of white wine Exceptions are Chardonnay, Baldwin Apple and Fume Blanc which is really Sauvignon Blanc aged in oak. More and more frequently, you will fine Chardonnays with the notation Aged in Stainless as the trend has been to get away from bigger oaked Chardonnay. Stainless steel is being used more and more as winemakers want to present a wine that is more fruit forward, fresher, livelier and less of the oak and malolactic characteristics. You see this more and more in Sauvignon Blanc and Chardonnays which are now being sold without barrel aging. When wine is aging in stainless steel it's actually aging in its own environment. By that I mean that the actual flavors of the fruit are the only flavors that you should taste in the wine. Some examples of stainless steel aged wine are Peach, Plum, Strawberry Rhubarb, Gravenstein and Cherry. When you taste the Cherry for instance you experience a little pucker from the tartness followed by the strong and dominant flavor of Cherry. Again it is a winemaker's preference as to how he will age his wines based on the style and flavor he intends to produce.

Aging wine in wooden barrels allows for a certain amount of oxygen and wood to react with the wine inside causing the wine to gain additional flavors and characteristics. If you think that it's just as easy as throwing some wine in a wood barrel, putting a stop in it and walking away then guess again. Barrels are produced with different wood from different forest and are dried in different manners and for different times. The winemaker has to decide what kind of barrel to choose, American oak, Eastern European, French oak, the level of toasting, wood thickness, barrel size, whether the heads are toasted etc.. We could spend hours discussing wood, origins, toast, and aging but with like most things wine, there is a science to it.

So you might be wondering, why oak? Long story short, people did try to use other woods but they do nasty things to the wine, like turn it yellow, where as oak has more positive effect. Oak has a neutral smell, it's grain allows for a slow wood flavor extraction and it also allows just the right amount of oxygen to interact with the wine. Oak's high tannin content benefits the wine and helps prevent decay of the barrel (tannin deters wood-boring insects and mold). 99% of the time white oak is used over red or black.

The first difference in American, Eastern European and French is, American oak barrels are made from oak wood grown in America, Eastern European generally in Hungry and French oak barrels are made with wood grown in France, easy! Moving on, they are technically a different species of oak from one another and grown in different climates and conditions which causes a different reaction to the wine inside, imparting different flavors. Traditionally winemakers swear by French oak, like wine, wood from different regions in France can produce different characteristics in the wine. That's something we don't see that here in the U.S. and the majority of wood comes from Virginia, Missouri, Kentucky, Oregon, and Ohio. It does however seem that American oak is making it's way into winery's for other another reason, economics. Typically American oak barrels cost about half as much as French, $400 - $500 vs. $1000. Alright, for my next trick I'm going to reveal to you what you probably started wondering a couple paragraphs ago. What is the main flavor differences between American and French barrels?
American oak tends to be more intensely flavored than French oak with more sweet and vanilla overtones and are typically used for bold, powerful reds like Syrah, Zinfandel and Cabernet. The sawing, rather than splitting, of American oak also enhances the differences between the two styles due to the rupture of the xylem cells in the wood which releases many of the vanillin aromatics. French oak is a bit tamer and more versatile allowing winemakers to age a wide variety of wines in it with more subdued woody/Smokey undertones imparting into the wine. Now what's going to make things a bit trickier for us on our big blind tasting exam day is that American barrels are now being made similarly to that of the French barrels which probably provide less difference then they use to. We have been changing over to all American Oak barrels with a medium toast level but aged for 3 years rather than 2 years. I guess what it all comes down to is preference. You could probably ask 10 different winemakers what they use and get a 50/50 split. It seems that you just sort of go with what you like and what works best for you.

Our barrels are number and identified by the number. We know where it came from, when it came in, what went into it, when the wine was tested and tasted, when it was bottled and what went into the barrel next. You can see on the barrel a letter prefix followed by a series of numbers. This is how we track each barrel. The letter prefix tells us where the Oak came from. You will notice an A, an EE or a FR as a prefix this tells us whether the oak is American, Eastern European, or French.

Tannin is a substance that comes from the seeds, stems and skins of grapes. (For a taste of heavy-duty tannin, try a strong cup of tea.) Additional tannin can come from the wood during barrel aging in the winery. It is an acidic preservative and is important to the long term maturing of wine.

Aging (continued)

Through time, tannin (which has a bitter flavor--"mouth shattering"?) will precipitate out of the wine (becoming sediment in the bottle) and the complexity of the wine's flavor from fruit, acid and all the myriad other substances that make up the wine's character will come into greater balance. Generally, it is red wines that are the ones that **can** (but do not have to be) produced with a fair amount of tannin with an eye towards long term storing and maturation. The bad news is that you shouldn't drink it young since it will taste too harsh (and probably cost too much, besides). The good news is that (with a little luck) after a number of years, what you get is a prized, complex and balanced wine.

The Oak barrel also affects the wine in other ways. It removes sweetness, extracts tannins and gives the wine a heavier body and it also softens the wine. When you hear of someone talking about heavier body it merely means the texture of the wine in your mouth feels heavier or thicker as opposed to the light feel from wine aged in stainless steel. Some of the wines we age in oak are Dry Blueberry, Chrysleton, Chardonnay, Dry Pear and our port styles Amora and Azule. We also make a Blueberry Merlot and Renaissance which are blended wines aged separately and blended before bottling. Most of the reds spend between 1 and 3 years on oak while our whites tend to be less than 12 months.

Distilled Spirits

In 2003 we received the first Farmers' Distiller's license ever issued in Massachusetts and I believe there are currently only 4 licenses issued. Stills do not make alcohol, but concentrate it instead. Because of this, the beginning of distillation begins not with the still, but with the fermentation that precedes it. One of the key elements separating different types of spirits is the fruit or grain that is fermented to produce the base alcohol. For example, bourbon is made mostly with corn, while single malt scotch is made entirely from barley.

Distillation takes advantage of the fact that alcohol has a lower boiling point than water. At sea level, water boils at 212 degrees F, while alcohol boils at 172 degrees F. Therefore, if an alcoholic product is heated to between 172º F and 212º F, the alcohol will boil away and leave the water and other substances behind. The vapor rises out of the boiling pot and into either a coil or a second pot, where it is cooled and condensed into a more concentrated alcohol liquid. In essence, a still does not make alcohol it just separates it from the other substances in a liquid.

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Classic whiskey stills are made of copper, because of the metal's even heating properties. We have all seen a pot of water on the stove just before it begins to boil you can actually see the vapor rising and that is basically what is happening here. The vapors rise and fall and continue to rise and fall until they are light enough to pass through this cross piece and down through the cooling section in a spiral motion and emptying into this small 5 gallon stainless steel container. As a point of interest, it takes 75 Gallons of liquid to make 5 gallons of distillates.

Brandy

Brandy derives it's name from the Dutch word *brandewijn* meaning "burned wine" and is a liquor distilled from wine or other fermented fruit juices. Most brandy is 80 proof (40% alcohol)and has been enjoyed for centuries as a cocktail and cooking ingredient. This spirit is not the one to be chosen based solely on price because a low-quality brandy can ruin an otherwise great cocktail.

Vodka

Vodka can be made from any types of grains and even potatoes or APPLES. Distillation process consists of multiple distillation and charcoal filtering till it is reduced to Neutral Grain Spirit ("without distinctive character, aroma, taste, or color." according to US law). The NGS is diluted by water to get the needed alcohol level. Most vodkas are made from potatoes or grain, however we make our Vodka out of 100% apples. The hallmark of a good vodka is it’s tastelessness or neutrality. We achieve this by triple distilling and charcoal filtering.

Gin

Gin can be made from any types of grains or fruit like APPLES just like Vodka. After original distillation, it is re-distilled with Juniper berries and other herbs such as Cardamom, Cassia, Fennel etc. The primary flavor is derived from Juniper berries.
Gin is an British slang name from Genever, the Dutch word for juniper. Gin on the other hand is called “Perfect 10”. The reason for the name Perfect 10 is because we combine 10 different botanicals: juniper berry, elderberry, lemon and orange peel, allspice, cloves, nutmeg, cinnamon, anise and fennel. These botanicals are put into, for lack of better terms, giant tea bags and they are set at different stages in the stack of the still. As the vapor rises and falls it picks up the flavors from the botanicals and the same principal applies for the rising and falling until it is light enough to pass through the cross piece and into the cooling system. We

Flavored Brandy:
Using wines or other fermented fruit juices of various fruits produces a number of flavored brandies, each with their own distinct taste. Apricot, cherry and peach brandies are popular for many cocktails. Other flavored varieties include Silk, Kirsch, a delicious cherry brandy, and Calvados, an apple specialty from Normandy.

Eau-de-vie:
Eau-de-vie is a French term for fruit brandy and translates to *water of life*. The fruit flavor is typically very light and the spirit is clear, colorless and unaged. Eau-de-vie is made from a variety of fruit, most common are apple (*de pomme*), pear (*de poire*, peach (*de peche*), pomace (*marc*) and yellow plum (*de mirabelle*). It is typically served chilled as a digestif and is used as a base spirit for liqueurs such as Canton and St. Germain.

Grappa is a fragrant grape-based pomace brandy of between 37.5% and 60% alcohol by volume (75 to 120 US proof) of Italian origin, similar to Spanish orujo liquor, Serbian, Croatian, Bosnian and Montenegrin lozovača or komovica or Chacha Republic of Georgia and Portuguese aguardente. Literally "grape stalk", most grappa is made by distilling pomace and grape residue (mainly the skins, but also stems and seeds) left over from winemaking after pressing.

Rum
Rum is made by distilling fermented sugar canes to 95% alcohol. In United States, most of the Rum comes from Caribbean Islands. Rum is bottled at 80 proof.India produces the best rum in the world. India lacks the marketing and production capability to compete world wide. In India Rum is bottled at 85.6 proof.

Tequila
Tequila is made from fermented Agave Tequilana Weber (``blue" variety) mash and legally must be produced in Jalisco (Mexico). Tequila produced outside of Jalisco is known as "Mezcal". Tequila and Mezcal are bottled at 80 proof

our version of cognac called Northern Comfort, as well as a Grappa made from grape skins. If there are no questions here we will move into our bottling room.

Final racking, filtering and sweetening

This is the final stage in the bulk wine process is to rack and sterile filter the wine to insure that all yeast and solids are removed from the finished product. Additionally, sugar will be added to the selected level to produce the style of wine being created. A final step, especially with grape wines, is to cold stabilized the wine as grape wines tend to be high in tartaric crystals which tend to precipitate out with temperature change. While such precipitation does not affect the quality of the wine, visually it can cause concern to the consumer so to avoid any issue or concerns, the wine is held at 30 degrees for about 5 days to force the precipitation of tartaric out of solution.

Bottling (Bottling Room)

The next step in the wine making process is bottling. Our bottling line will do approximately 25 bottles per minute, that's one every 2 ½ seconds. So you can imagine the noise level in here is pretty high as the bottles are constantly in motion. As the bottle travels into this first section it gets filled with Co2. Remember one of the most important things is not to mix the wine with oxygen, so the Co2 displaces the oxygen, preventing oxidation. Then the bottle travels to this next stage. Here the bottle is filled to the very top and then an inch is siphoned off to allow room for a shot of nitrogen and room for the cork to be inserted.

This next piece is a section that we are not currently using and the bottles just pass through it. The section is called a Screwcapper. At the moment we are not doing any screw caps but don't be fooled by the common perception of screw caps as inferior. Screw caps reseal the bottle tighter than recorking or using a bottle stopper. Once again remember that oxygen and wine do not mix. I like you enjoy the ceremonial aspect of opening a bottle of wine. I enjoy the uncorking process and I love the sound of the cork popping out of the bottle. One day we will probably have to start using screw caps and there is a good reason for that. I'm sure all of you who have purchased a bottle recently have noticed a lot more screw caps

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Bottling Room (continued)

and especially synthetic corks. What is happening is the Supply and Demand factor is way out of sync. There are a lot more wineries today and there are a lot of home wine makers but more importantly there are a lot more people that are enjoying the wonder of wine. Here is where everything gets way out of line. A cork tree is actually from the oak family. The way cork is harvested is with a cut around the base of the tree and another around the tree at the bottom of the first branch which is usually about 10 to 12 feet up. Then the cork is slit down from one cut to the other and peeled off for processing. Herein lies the problem. It takes another 7 to 10 years for the cork to grow back to a point where it can be harvested again. Since we can't hurry mother nature to keep up with the demand we have found other alternatives. So you can plan on seeing more and more screw caps and synthetic corks.

This last piece of the bottling line will put the foil top on the neck of the bottle and it will be heat shrunk on and then it passes to the labeling of the back and the front of the bottle. Once that is done the bottle comes out onto this tray and someone puts them into cases upside down. The reason they go in upside down is to wet the cork and keep it moist to seal the bottle. If anyone has tasted wine right off the line you know it doesn't taste as good as the one you bought in the store. We've taken it out of the environment that its been in for weeks and in some cases months or even years and it's not real happy. So we put the wine in a climate controlled warehouse for a period of one or two months. This is called Bottle aging and after a short time the wine is released and enjoyed.

Are there any questions? If not lets step through this door and taste some more wine and if you think of something while we are doing that feel free to ask.

Thank you all for coming and I hope you all will come back to visit us. Your enjoyment is what winemaking is all about.

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Tasting

Here we want to go through the logistics of finishing out the tour. Ask them to rinse their glass after each tasting and remind them the glasses are theirs to take home. Tell them you have chosen 3 more wines for them to taste and ask them not to wander off until they get 2 more tickets to go to the main bar to have 2 of their choosing.

Talk about the wines that you are pouring for them and give them any information you can, such as possible pairings with food or whether it was aged in oak or stainless steel, etc. Encourage more questions as they are tasting. At this point everyone has developed a comfort level with one another, since you spent the last 30 to 45 minutes talking about the one thing we all have in common. After the second pour start passing out the tickets for the last two tastings. If your group is large don't hesitate enlisting someone to help by passing the water bottle or passing out the tickets. Naturally you will want to reward them with an extra ticket.

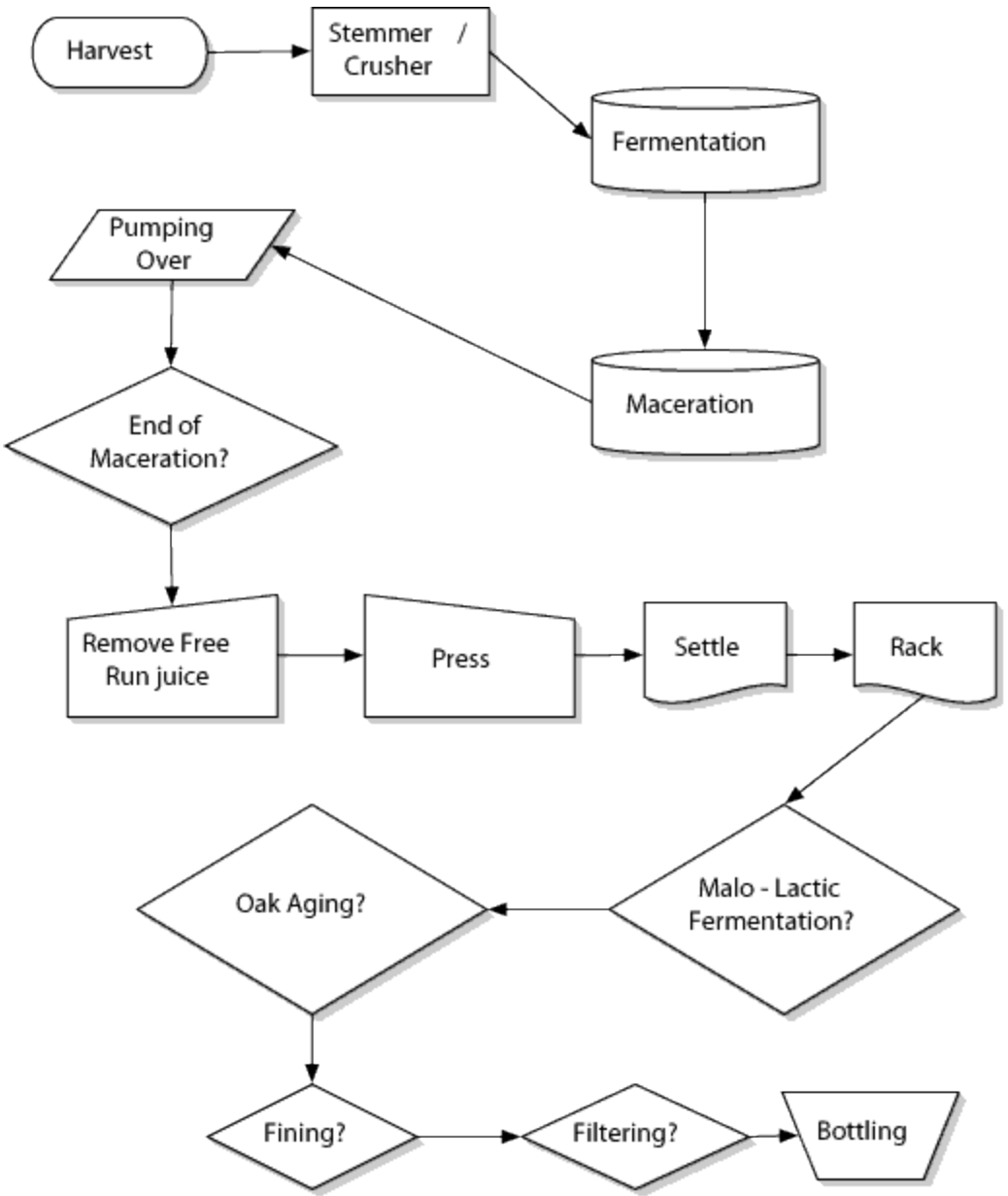
After your third pour at this bar, start to straighten it out and do a quick cleanup so the next group coming through will be off to a fresh start.

A lot of times there are special occasions or people who are in small groups that take pictures. If you have an extra moment offer to take a picture so the person taking the pictures can be included.

Bottom line is we want them to feel comfortable, have an enjoyable visit (buy lots of wine) and we want them to come back again.

Good Luck and Have Fun!

Typical Flow Chart for Making Red Wine



The Steps:

Harvest - The grapes are picked when they are ripe, usually as determined by taste and sugar readings.

Stemmer Crusher - This removes the stems from the grape bunches, and crushes the grapes (but does not press them) so that they are exposed to the yeast for fermenting, and so the skins can better impart color to the wine.

Fermentation - Yeast turn the sugar in the wine primarily into Carbon Dioxide, Heat and Alcohol.

Maceration - This is how long the must (juice and grape solids) is allowed to sit, picking up flavor, color and tannin. Too long and the wine is bitter, to short and it is thin.

Pumping Over - Skin and other solids float to the top, and need to be pushed back down to stay in contact with the must. This "cap" can be punched down with a tool, or you can pump must form the bottom over the cap and submerge it that way.

End of Maceration? - The winemaker must decide if the must has sat long enough.

Remove Free Run - The best quality wine is made just from the juice portion of the must. It is removed and the rest of the drier must (now called pomace) is sent to the press.

Press - This squeezes the remaining juice out of the pomace. If you do it too hard, or too many times, you get low quality wine.

Settle - The juice, now wine, needs to settle after this ordeal.

Rack(ing) - Moving the wine from one barrel to a new barrel allows you to leave solids and anything that might cloud the wine, behind.

Malo-Lactic Fermentation - This secondary fermentation can turn the tart malic acid (of green apples) into the softer lactic acid (of milk). Many, but not all red wines go through this step.

Oak Aging - Oak is expensive, if the wine is not meant to age for years, the winery may put the wine in oak for only a short time, or not at all.

Fining - A process that helps to remove anything that may be making the wine cloudy.

Filtering - A process that removes any fining agents, or other undesirable elements in the wine.

Bottling - This is done carefully so that the wine does not come in contact with air. Finer wines may be stored for several years in bottles before they are released.