

## OAK IN WINE

Alan Baker – March 13, 2008

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### *How does Oak affect wine?*

An oak barrel, either as a maturation or fermentation vessel, alters the flavour of the wine it contacts, in two ways. First, the wine dissolves and absorbs the complexity of aromas and flavours from the oak and second, oak is a porous product through which air and liquids may slowly pass. Consequently, there is some loss of wine and some minute oxidation that is considered, in moderation, to enhance the wine. There is more to it than that but that is the essence of the use of an oak barrel.

That minute amount of air is thought to be so beneficial that some wineries are intentionally passing small amounts of air through their wines without using barrels, just bubbling it into their stainless steel tanks. Others feel that most air gets to wine when it is being racked, filtered and bottled and the air barrel seepage is not as big a factor as others might.

### *What kinds of Oak are available?*

There are many kinds, several different French oak types, Hungarian, American and even some Canadian. Nevers is the most popular French oak but is seldom used by home winemakers due to its extremely high cost.. The aroma and taste from American barrels imparts an impression of vanilla or sometimes sandalwood while French oak can be spicy. In any event oak develops greater complexity to a wine but it should not dominate. Experience shows that the Hungarian oak barrel, while well made, does not impart the same amount of oak flavour as does the American. The flavour and aroma is much more subtle and may requires some enhancement.

### *What about Toast in barrels*

Barrels are often toasted to generate more oak flavour. Before the barrel is finished its interior is roasted over hot coals, which creates the toasted flavour, and then the top of the barrel is inserted.

A Light toasting will most likely be used for white wine; a Medium toasting for elegant reds, Medium Plus for aggressive and a Heavy toasting which

will develop a lot of vanilla and / or coffee flavours. Some might consider the last to be over the top which some will compare to a 2 X 4.

### ***How Much Time Does the Wine Stay in Oak?***

A great deal of care is required with timeliness. While commercial wineries, with their giant Barriques of 200 liters or more can leave wine in them for several months or even years, one using a small barrel must taste and evaluate frequently, every couple of weeks, to be certain it does not become too overpowering and taste like 2 by 4. The smaller barrel has a much greater surface – to – volume ratio and therefore imparts oak to the wine much more rapidly and intensely. Of course, frequent tasting can be enjoyable but one must take care to keep topping up in order to be sure that the air that gets to the wine comes through the wood and does not lay on top of the wine surface.

### ***How does one Prepare a New Barrel?***

New barrels of well cured oak require nothing more than sulphiting and rinsing. They are made from wood that has been cured outdoors for some years. It may need to be swelled by filling with water and sulphite for a short while. New Casks of unseasoned and kiln dried wood need to have their course resins dissolved out before being entrusted with good wines. It is best to give them their first use with a lesser quality wine to leach out some of the harshness before better quality wine is inserted.

### ***How Much Of a Wine Should Be Oaked?***

In most cases only a portion of a type of wine should be oaked. This will permit the winemaker to have ample to top up the barrel and will also permit blending of the two portions to offset any over oaking or to perfect the amount of oak flavour desired in the finished, blended wine.

### ***What Special Features are Possible?***

Aside from merely aging a wine in oak, other processes may be undertaken. The grapes may be crushed and pressed in the normal fashion and the juice permitted to settle off the gross lees, then it is fined with Bentonite and racked before the yeast is started. As soon as the fermentation commences it can be racked into the barrel where it ferments until it has been completed.

Then it is racked again, rinsed out and put it back in again for a few months, stirring frequently to spread around any of the finer lees remaining to impart added flavour. The first barrel entry is called barrel fermentation and the last is referred to as “Sur Lees”.

### ***How Do You Care for Barrels?***

When a barrel is first received the staves must be swollen to tighten it up. This can be done usually by filling with water for a few days before wine is inserted. Naturally, it is best to start by inserting a white wine in the barrel and evaluate it very carefully as the oak flavour will be very pronounced. However, it is hard to find enough white wine to occupy a barrel year round. Therefore, it may be converted to red when all the white has been exposed or it must be left dormant until next year. That may be tricky. If it is cleaned up and left to dry, the staves and bands will become loose and it may become contaminated with bacteria. Some wineries do this but they smoke the barrel by burning a sulfur strip but that is fraught with difficulty for a home winemaker so it is easier to fill the dormant barrel with water, SO<sub>2</sub> to 1000ppm and 0.25% Citric Acid to prevent spoilage. This must be topped up frequently to protect the barrel over a long time. When it is needed again it is merely rinsed out and put back into production.

### ***What are the alternatives to Barrels?***

Both commercial and amateur winemakers frequently use oak chips or oak essence to replace barrel extractives. Many different approaches are possible. While it is nearly impossible for home winemakers to add minute amounts of air, other than through racking, it is possible to add oak flavours either through the use of oak chips, oak sticks and / or oak essence, all of which are available from the local wine store. All yield extractives rather quickly, perhaps within a week, but prolonged exposure will allow hydrolysis of wood lignins. When using any of these, care must also be taken to evaluate the amount of oak flavour that is imparted, as too much will detract from the wine, rather than enhance it.

About 1 – 3 grams of wood chips per 5 liters of wine noticeably improves wine quality. When using an oak stick one must use care to be able to readily remove it from the wine vessel. This can usually be accomplished by drilling a small hole and using a piece of thread to recover it. It may also

be necessary to plane off the edges to assure easier entry to or removal from a carboy.

An oak extract can be prepared by combining oak chips with a small amount of vodka. If it is contained in a sealed bottle it will likely retain its oak capability for as much as 10 years. Varying amounts of extract added to a series of wine samples can test the desired level of extract to use to develop the desired amount of oak aroma and flavour in a wine.

Many wineries use these practices when barrels are not available or are reaching their limit of benefit. The life of a barrel can be extended by using these alternatives.

### **Where can one obtain an oak barrel?**

Oak barrels may be purchased from Kevin Watson's farm in Ontario. Kevin has a supply of French, American, Canadian and Hungarian small barrels as shown on their website, [www.watsons.ca](http://www.watsons.ca). Some examples of barrels available and present costs are as follows:

American 19L	\$ 155.00	\$ 170.00
38L	180.00	\$ 195.00
French 30L	285.00	
Hungarian 55L	185.00	\$240.00
Canadian 30L	260.00	

Watsons will ship to Nova Scotia and the shipping cost will vary dependent on the size of your barrel but likely between \$ 25 and \$ 40 each

Whether you invest in a barrel, use wood chips or sticks or buy or make an oak essence extract, it can do wonders for wine complexity and enjoyment.