Winery case study in oak selection and use

Stephen Webber
De Bortoli Yarra Valley

Selecting a cooperage and the associated barrel style is critical in the production of premium wine. A long with cork it is one of the aspects of winemaking that winemakers have little control over. If the oak is raw, tainted or poorly made, it can ruin the efforts of growing and winemaking for that vintage. Correct selection of oak can give great complexity and seamlessness to wine.

Cooperage selection
De Bortoli Yarra Valley is a medium-size user of barriques, and purchases 650 French and 700 American per year. It runs a 5,500 barrel program consisting of 215 and 225 L barriques. For the last 7–8 years De Bortoli has established a relationship with five cooperages in order to obtain a consistent supply of quality oak, and it has increased oak purchases by 10–15% per year with those suppliers. With regular visits to the cooperages, and a good relationship, the barrel quality has improved over that time.

Generally one additional cooperage is trialled each vintage and this is assessed for points of difference, or whether it contributes something special. So far nothing has stood out from what is already purchased. De Bortoli are looking for American oak with the characteristics of French Oak at the cost of American oak.

Forest and toasting level
Most winemakers see far greater difference between cooperages than between forest type. Greater use of grain selected barrels particularly for Cabernet Sauvignon and Chardonnay, e.g. tight or medium grain from the centre of France, is being made. However, De Bortoli do specify no Limousin oak in these blends and prefer Tronçais oak type for Pinot Noir.

Toasting level is quite different between cooperages. Getting to know each cooper’s interpretation of medium and heavy toast levels is critical.

The most important aspect of the De Bortoli cooperage and barrel style selections is the use of supplies from at least two and generally three cooperages for each of the premium blends.

Seasoning/immersion bending
It is found that the longer the seasoning the more subtle the oak character in the resulting wine. So long as green characters are absent, it has been found that for premium Chardonnay the best new oak is three-year old seasoned; however as second-month oak. It is found that for premium Chardonnay there is more oak for the dollar with 18–24 month seasoned oak than with 24–36 month oak.

It is found that immersion bending takes out some of the aggressive characters in oak and simulates, to a large extent, three-year air drying.

Oak, wine style and price
Matching wine style, oak type and oak costs has been the most difficult task. Oak is classified into three categories:

- **French oak** $800–$1000
- **Premium American oak** $450–$650
- **Budget American oak (Bourbon Casks)** $300–$350

The company’s costing philosophy is fairly stringent. New French oak is used only on wines with a wholesale price of greater than $150/dozen. This can range from 30–80% of the total blend.

Premium American oak is used only on wines with wholesale greater than $96/dozen. This can range from 30–60% of the total blend. American oak, with less overt vanillin characteristics, is generally sought in this category. The immersion-bent barrels seem to take some of these characters away and give some subtleness.

Budget American oak is used in combination with tank staves for all other wines requiring oak. For these the company would look to spend less than 20 cents/litre on oak inputs. Strong and obvious oak intensity is sought to gain maximum oak for the dollars spent.

In general the company tries to take a pragmatic approach to expenditure on oak and is always looking at ways of spending less on oak inputs for wines retailing at less than $15. One of the largest costs is the labour required to handle large oak numbers. Micro-oxidation, to simulate barrel maturation in older oak, will hopefully alleviate some of these expensive handling costs.

Pre-treatment of barrels
Barrels received into the winery are put onto nine-barrel pallets. They arrive shrink wrapped and where possible are left in plastic to avoid drying out before use. Driving hoops is avoided. All barrel lots are assessed for toast, odour and general condition, and every barrel is assessed before use.

Bourbon barrels are stacked and filled with a ferment, where possible, to attempt to seal up any leakers. None of these are rinsed before use. Where bourbon barrels are filled with finished wine, the hoops are driven and the barrel pressure tested with hot water.

Premium French and American barriques are treated depending on the wine or juice going into them. Some are pre-rinsed using hot or cold water to take out any shavings and read out and others are filled without rinsing.

Red wine colour
New barrels tend to give better colour in red wine. The tannins released from a new barrel stabilises wine colour better than any added tannin. It is also found that clarified wines going into barrels hold better colour than turbid wine, and this may be attributed to some binding of colour with solids.
Barrel fermentation
In the last 20 years, barrel fermentation has played an important part in most wineries just as it does at De Bortoli. Chardonnay in barrel, and the subsequent lees contact post-fermentation, generally integrates oak with fruit extremely well and is our company's preferred oak treatment. Similarly where red wines are not finished off in the barrel, secondary fermentation is completed in the barrel to achieve oak integration. However, it is found that if red wine post-malolactic fermentations is good enough, it will integrate just as well as barrel fermented red wine. This allows wines to be macerated post-fermentation as well as clarify the wines prior to maturation.