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TRICKS OF THE TRADE, OR THE FINER POINTS OF FERMENTING

WINEMAKING can be a simple affair. Take bunch of grapes, squash and leave to ferment. Voila, you have wine – of sorts. But if winemaking was that simple you would have a lot less written on the topic and a lot less choice in a bottle shop. Winemaking techniques, and the skill of the winemaker to deftly use them, are paramount in deciding the quality and the style of a wine. Some varieties require minimal intervention to shine. This is especially true of riesling, which requires a cool fermentation in stainless steel to retain its primary fruit aromas. On the other hand, varieties such as chardonnay can accommodate a whole gambit of winemaking techniques. Walking through the process you come across a number of options that can determine the final style and quality of the wine, which starts as soon as the grapes are received into the winery.

In some fastidious cellars grapes don't even see a fermenting vessel, as the first step is to sort them out manually and discard unwanted, damaged or unripe grapes. Removing 'mog', or matter other than grapes, is also done. This normally consists of leaves and other debris caught up in the picking process.

Some grapes simply don't have the right amount of ripeness or concentration when they are picked, so partially drying them is an option. Italy has a great reputation for doing this and wines such as the sweet white Passito wines of Pantelleria or Recioto from Soave are delicious examples. But above the Shakespearean city of love, Verona, is where the most famous wine is made from raisined/ dried grapes, that of Valpolicella.

Two types are made: the dry Amarone and the traditional sweet Recioto della Valpolicella. To make an Amarone style the grapes are harvested in late

September or early October. In the so-called appassimento process, traditional producers use bamboo racks to dry the grapes. This takes place in well-ventilated lofts of the winery for up to 120 days after picking. These days most producers dry their grapes in specially designed, temperature-controlled, humidified rooms to control the process as nature doesn't always oblige with the right conditions to dry the grapes perfectly and you chance getting them infected by botrytis.

During this period the grapes lose about

bunches including stems. Normally stems are taken out by a de-stemming machine to leave only the berries. This technique is used with pinot noir, and a growing number of other varieties such as shiraz, to provide more tannin from the stems as well as additional aromas and flavours. In short, it gives the pinot more complexity and structure. Critically, the stems, like the grapes, must be ripe and not green. Stems also help the fermentation process by aerating the cap and allowing the heat to escape, naturally cooling the ferment.

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30 to 40 per cent of their original weight. In February or March of the following year the grapes are crushed and de-stemmed and fermented. Drying the grapes increases the potential alcohol up to 15 per cent and produces a silky, rich, intense wine. In Australia we have played around with this technique with producers in the King Valley, Hilltops and McLaren Vale regions using different methods to dry a range of grape varieties. Fermenting the grapes provides the winemaker with a number of options. Selection of yeast can play a role in developing a wine style. While most yeast belongs to the *Saccharomyces cerevisiae* genus, there are hundreds of different strains that can be matched to the grape variety and help deliver certain flavours or control the fermentation temperature or influence the colour of a wine.

Whole bunch fermentation is, as it sounds, the fermentation of whole

Sharing some similarities with whole bunch fermentation is the technique of carbonic maceration. With this technique the whole berries are fermented initially in an anaerobic environment and undergo an intracellular fermentation followed by a normal fermentation. The resulting wine is more aromatic with less tannins. Renowned as the technique that makes Beaujolais so fruity, it can also be used with other varieties to produce forward, fruity, easy-drinking wines.

Cap management is a critical step in making red wine. The cap is the floating mass of skins and stalks that rise to the top of a fermenting vessel. This cap needs to be put into contact with the fermenting must below to extract phenolics that provide colour, flavour and tannins to red wines. Plunging by hand is the most time-honoured method, but is labour-intensive. Heading down boards laid across the vat is another method,

as is pumping and spraying juice over the cap to allow the winemaker to cool the fermentation. The whole process can also be mechanised by the use of a rotary fermenter, which periodically churns up the fermentation and is the most effective tool for complete extraction.

Wines can benefit from sitting on their lees (dead yeast cells and other particles) and this is a technique used with chardonnay. The French call it *sur lie* and you see this term used on the label of wines from the Muscadet in the Loire Valley. *Batonnage*, another French term, means stirring these lees while the wine is in barrel. This builds the flavour and complexity in a white wine. You find aromas of toast, yeast and bread dough in these wines.

Maturation in new oak barrels was, and probably still is, all the go. Choice of cooperage, length of seasoning of the oak staves and type of oak are all factors. Toasting the insides of the barrels achieves less oak lactones pick-up, fewer tannins, and higher smoky aromas. You can order your barrel light, medium or heavily toasted. There is also renewed interest in traditional methods such as using larger oak barrels, old barrels with neutral flavours and even maturation in cement.

Finally, the degree of fining and filtration in red wines is another choice. Fining is the process of removing unwanted particles that could make the wine cloudy, and they do this by adding substances like egg whites, isinglass and bentonite to coagulate these particles and let them sink to the bottom of a tank or barrel. Some winemakers will choose the most delicate methods of fining and filtration or not bother at all. Wines labelled as unfiltered will probably throw a heavier deposit over time but retain all their flavours.

