Case Study: A Large Producer’s Perspective

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Introduction
Southcorp Wines is Australia's largest wine company whose brands have a strong presence on the domestic market; and through the major brands of Penfolds, Rosemount, Lindemans and Wynns, has a major focus on the export market.

Southcorp sources Merlot from most major wine growing regions of the mainland. Of the tonnes crushed in 2001, fruit sourced from the Sunraysia/Robinvale regions accounting for approximately 27% while 21% was grown in the Limestone Coast. Overall, Southcorp Wines used 21.6% of the Merlot grown in Australia in 1998 (ABS, 1998). The tonnage of Merlot produced in Australia rose from 13,881 in 1998 to 51,269 tonnes in 2000 (ABS, 1998 and 2000) an increase of 369%. It should be mentioned that 2000 had exceptionally low crops, particularly in the Limestone Coast.

Merlot is used both as a varietal wine (Lindemans Bin 40, Cawarra Merlot, Penfolds Rawson’s Retreat, Rosemount Diamond Label, Lindemans Padthaway Merlot, Coldstream Hills Merlot, Ryecroft McLaren Vale Merlot, to name a few of Southcorp Wines’ major products) and as a blender (Wynns Coonawarra Estate Cabernet Shiraz Merlot, Lindemans Coonawarra Pynus, Rouge Homme Cabernet Merlot, Rosemount Cabernet Merlot). Many of Southcorp’s products that are labelled as the varietal Merlot have had phenomenal growth. Cawarra Merlot, Rosemount Merlot and Ryecroft all appear in the top 15 selling Merlots (AC Nielsen, 2001). In terms of growth, Southcorp Wines has positioned itself well to take advantage of the 68% growth (the greatest of varietal reds) currently being experienced on Merlot sales (AC Nielsen, 2001).

Marketing
It is important to define what consumers look for when they are buying Merlot, and to compare that with what the winemaker strives to achieve from a quality direction.

To a winemaker, ‘Merlot’ is definitely a variety. However to a consumer, it is worth considering Merlot as a ‘generic’ because emotions emanating from the name have long been associated with ‘softness’. The image is encapsulated by the United States brand ‘Marilyn Merlot’—soft, round—one can almost hear the finish of the word ‘Merlot’ as Marilyn Munroe stands above the ventilator with her dress swirling in the updraft. It is a sexy name. Robert Parker refers to Merlot based wines in Pomerol as being “generally softer in tannin, more opulently fruity and lush, and apparent tannin and higher in alcohol than wines based primarily on Cabernet Sauvignon” (Parker, 1998). Jancis Robinson (1994 ) states that Merlot in Pomerol produces wines “perceptively lower in colour, acid and tannin”, yet there are many interpretations in what Merlot should be.

Parker (1998) refers to the Moueix (of Petrus fame) philosophy of earlier harvesting of Merlot to preserve the wines stability and acidity, and shorter maceration to give the wines more elegance. Whereas Michel Rolland of Bon Pasteur believes in harvesting as late as possible to obtain an element of over-ripeness with extended maceration to produce wines of profound colour, richness and aging potential. The challenge then is for a winemaker to deliver the expectations of the consumer, while forever trying to improve the breed. Regardless of both of these winemaking philosophies, Australian wine lovers would hardly regard Petrus and Bon Pasteur as ‘soft’ in the Australian sense of the world—indeed as the greatness of these wines is derived from their longevity and richness.

In Australia, the Wine Industry Journal has run two exposes on Merlot in 1988 and 1996.

In 1988 winemakers used the following descriptors to describe Merlot:
“Merlot provides sweet, black cherry fruit characters and a soft round palate”
“…The wine is a complex style with good, soft tannins…..”
“The Merlot provides rich, spicy and plummy characters and the palate is soft and round with rich flavours, good acidity and lowish tannins”.

But by 1996 winemakers were beginning to use different descriptors:
“The palate is dominated by plummy fruit with a fair interplay of spicy oak, acid and broad soft abundant tannins”
“(It) is a big style, displaying ripe, chocolatey fruit characters. It has a firm tannin finish with the robust flavour of the Merlot grape.”
“An aromatic style, quite floral with rich fruitcake, a dash of leather, and ripe fine tannins…” “The palate is quite broad but intense”
“The tannins are fine grained and persistent”.

In 1996, the word “soft” is still used but it can be sensed that winemakers are trying to enrich the image of the variety. More recently, James Halliday wrote in The Australian (2001) of the dilemma of trying to define the characteristics of an ideal Merlot. The unique challenge is to define clearly the range of acceptable Merlot fruit characteristics. ‘Thick, mocha, fudge, black cherry’ may be desirable characteristics, however, it is equally important to accept that there are many successful styles that have an element of ‘boiled snow peas’ or ‘olivaceousness’, characters some may consider as from fruit that is not entirely ripe.

It is worth drawing the comparison with fruit expectations of Cabernet Sauvignon in the 1980s when many wines from younger, perhaps more shaded vineyards produced very commercially and competitively successful wines that had an element of herbaciousness that probably would not be recognised as desirable attributes today.

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One can expect that the vines producing the 37,000 extra tonnes of Merlot in 2000 compared with 1998, may take time to reach the maturity to produce great wines.

The market reality is that for Australian Merlot to out compete the large Merlot regions of the Languedoc-Roussillon region of France, Chile and the US; Australian winemakers should not deviate too much from the successful formula of generosity of fruit, flavour and approachability. However, as with our success stories with Chardonnay, Cabernet and Shiraz, an Australian reputation for producing truly ‘great’ Merlot will not be gained from it being soft and early maturing. Perhaps at the peak of wine quality, it may be said that texture, seamlessness, integration and regionality are of greater importance than pure varietal characters.

**The Limestone Coast**
The Limestone Coast in the South East of South Australia encompasses Coonawarra, Bordertown, Padthaway, Robe and Wrattonbully. Southcorp Wines sources Merlot from all these areas and a comparison will be made viticultural and stylistically between all these areas, (excluding Wrattonbully because of its vine immaturity). Wines produced either wholly or partly from these areas include:

- **a) Varietal Merlots**
  - Lindemans Padthaway Reserve Merlot,
  - Lindemans Bin 40 Merlot,
  - Rosemount Estate Diamond Label Merlot.

- **b) Blends**
  - Lindemans Coonawarra Pyrus,
  - Lindemans Padthaway Cabernet Merlot,
  - Rouge Homme Coonawarra Cabernet Merlot,
  - Wynns Cabernet/Shiraz/Merlot,
  - Lindemans Padthaway Cabernet Merlot,
  - Rosemount Diamond Label Cabernet Merlot.

Other Merlot wines of note from Coonawarra would include Katnook, Leconfield and Brands.

The attributes sought after for good Merlot would include:

- Varietal fruit character. Fruit with which the consumer is able to identify as providing a distinct character. Sweet, ripe plummy fruit nose, tobacco and earthy characters are good descriptors of ripe Merlot, while more marginal areas such as Coonawarra can add an element of leafiness.
- Palate. The palate must deliver what the consumer expects: typically a well-structured palate, not astringent, but with good fruit sweetness length and texture. These attributes exist across all price structures. Hard green tannins from over extraction are not desirable.

**Comparisons with Cabernet Sauvignon**
It really is the mid palate of Merlot which makes it such a useful blender. Although Merlot is often seen as a wine to mask the astringency of Cabernet, the attributes of sweet fruit, if made well, complement a good rich ripe Cabernet rather than cover up for any deficiencies in the wine.

Merlot is seen as a cool climate variety. Again Jancis Robinson sees it as an early maturing variety where it buds, flowers and ripens at least one week before Cabernet. This would then make it an important variety in areas like Coonawarra where two recent years of the last five could be called cool. Generally it is found that the conditions required to fully ripen Cabernet are also the conditions required to fully ripen Merlot. Historically, in cooler years like 1995 and 1997, a greater percentage of Merlot in Pyrus has been used, for example, than in a warmer year like 1994.

However as the fruit resource has matured, more Merlot has come on stream and we have a greater ability to select premium parcels for blends from warm ripe years such as 1998 and 2000.

Merlot is a variety that needs special viticultural attention. Shading both from the canopy and intra bunch leads to ‘tomato leaf’ characters, or herbaciousness. The challenge is to produce consistency in fruit quality.

**Viticulture**
A brief discussion on the viticulture of the four regions. In all cases, the main Merlot clone is D3V14 either on its own roots or grafted onto other *vitis Vinifera* varieties, most commonly Riesling. Riesling may be regarded as a good rootstock because of its low vigour. Robe has some Merlot grafted to rootstocks, primarily as phylloxera insurance.

- **Coonawarra**
  - Coonawarra's rainfall is approximately 638mm, of which 209mm falls in the growing season.
  - Sunshine hours are 1621.
  - Soil type where our Merlot is grown is red to red-brown Terra Rosa over limestone, normally on what would be termed central or southern Coonawarra.
  - Vines are trained either to single wire or two-wire vertical, and then machine hedge pruned with hand clean up to give around 65–120 buds per vine.
  - Supplementary water may be added via overhead irrigation. The average yield from 1997 to 2000 was 7.6 t/ha from an average of 103 buds/vine.

- **Padthaway**
  - Padthaway is slightly warmer than Coonawarra. Average rainfall is 550 mm of which 210 mm falls in the growing season.
  - Sunshine hours are 1731.
  - Soil type in the north is loamy red soil over limestone similar to that of the Terra Rosa soil type, to heavy sandy loam, to clay loam in the South.
  - Vines are trained to either single wire or two-wire vertical to leave 80–120 buds per vine.
  - Supplementary watering may be applied through drip irrigation.

- **Bordertown**
  - Average rainfall at Bordertown is around 520 mm, again with a dry growing season.
  - Soil type is red and brown loam to sandy loams.
  - Vines are trained to single wire with a pair of movable foliage wires. Pruning would normally leave 65–80 buds per vine.
  - Drip irrigation is employed as determined by neutron probes.

- **Robe**
  - The climate at Robe is best described as cool - maritime. Rainfall is 628 mm and has maximum temperatures cooler than Coonawarra, but with less diurnal fluctuation. Robe is windy, although the Woakwine range to the west offers some protection further assisted by windbreaks.
  - The soil is described as Terra Rosa but is more sandy than in Coonawarra.
  - Drip Irrigation is used.
Figure 1. The growth of 3 year-old Merlot vines in McLaren Vale, South Australia in 1999 prior to the application of Molybdenum foliar sprays and again in 2000, six months after the initial treatment.

Figure 2. Examples of Merlot clone D3V14 grafted onto Cabernet Sauvignon clone LC10 expressing Green-Vein (GV) foliar symptoms of leafroll disease (A-D) indicated by arrows (C), and Red-Vein (RV) symptoms (E-F), compared with symptomless vines (S).
Figure 3. Examples of foliar abnormalities on Merlot vines exhibiting GV+RV+GC symptoms, compared with symptomless Merlot vines (S) during the spring (A), early summer (B). The delayed cane maturity with black pustules occurring from mid-summer onwards (C), foliar symptoms during the harvest period (D) and unlignified rubbery canes in autumn (E) are also characteristic of infected vines. Examples of zig-zag growth are indicated by arrows.

Figure 4. The effect of different combinations of virus disease symptoms on the yield (A), numbers of bunches (B), average bunch weight (C) and average berry weight (D) of Merlot clone D3V14 grafted onto Cabernet Sauvignon clone LC10 vines that were pruned to approximately 40 buds per vine.
Figure 5. The effect of different combinations of virus disease symptoms on the sugar concentration (A), pH (B) and tartaric acid content (C) of Merlot berry juice. The mean total anthocyanins of wine from each of the virus disease combinations are also compared (D).

Figure 6. Examples of symptomless Merlot clone D3V14 (A) compared with the same clone in commercial source areas contaminated with GV+RV+GC (B) and RV (C). Similarly, a leafroll disease contamination in commercial Cabernet Sauvignon clone LC10 planting (D) showing a mixture of symptomless and adjacent vines with GV symptoms. The arrows indicate vines contaminated with virus diseases.
Phenological comparisons

Predictably, warmer regions have earlier budburst. True to other literature, Merlot has bud burst on the average of 7 – 10 days before Cabernet in Padthaway and Bordertown, but tends to be similar in Coonawarra.

However, things are not so clear with Flowering and Veraison.

In Bordertown for example, Flowering over the last three years of both Cabernet and Merlot has been within four days. In Coonawarra, Merlot flowering was later in the last three years than Cabernet.

A comparison of veraison shows a much more scattered data. The general trend is for Merlot to go through Veraison later in the cooler areas such as Coonawarra, however the comparison with Cabernet is no longer as valid. Future research may wish to correlate the relationship of the period from veraison to harvest date with quality for a given crop level. Growing Degree Days are likely to be a good indication of flavour potential.

Coonawarra is an example where attention to canopy management will lead to early maturation. This is essential in cooler years. It would be expected that the last of the Merlot to be harvested would be before the last of the Cabernet Sauvignon.

The key to maturing Merlot in regions like Coonawarra is to have it ripe by the second week in April. The best wines rarely come from the late part of vintage, as the wines lose acid and are more prone to the possibility of rain.

Harvesting criteria

The two primary tools used to determine harvest date are Baume and grape flavour, as assessed on the vine. pH and acid are important but not as much as flavour.

The greatest ripe fruit flavours usually appear at 13 to 13.5 Baume. If the fruit has to hang on the vine for a great deal of time to reach this degree of sugar, we see acids drop remarkably with a corresponding increase in pH. Fruit allowed to hang too long suffers from tired fruit characters.

One would expect a good correlation between yield and harvest date, however this is not always the case across the four areas. Warmer regions such as Bordertown are able to ripen larger crops to the specified sugar levels earlier.

Fermenter performance

Southcorp Wines uses three main types of fermenter at Coonawarra; rotary fermenters, Potter-type static, and static fermenters, traditionally flat-bottomed but recently being replaced with those with swept-arm emptying devices. Static fermenters have traditionally been pumped over twice per day. Rotary fermenters are spun according to the rate of phenolic uptake. A Ganimede fermenter was installed for the 2001 vintage.

Typically, rotary fermenters are rotated according to phenolic extraction as determined through daily tastings during vintage. Static fermenters have been pumped over at least twice daily.

An analysis of fermenter type to final wine quality has not been conclusive and relates more to the original fruit quality than to a particular fermenter type. Generally in recent years, substantially more Merlot has been directed to static fermenters.

Initial results on fermenting Merlot in a Ganimede fermenter have been very encouraging.

Across all varieties, there is generally no preference of rotary versus static, however rotary fermenters are able to extract more quickly, which may have some implications for barrel fermentation. To preserve the fine tannin structure in Merlot, careful programming and tasting of rotary fermenters is required to avoid over extraction.

Fermentation management

AWRI 796 and BM45 are the main yeast inoculums for Merlot at Coonawarra.

Some pH adjustment would normally be required at the start of primary fermentation.

Malo is inoculated either on skins or after pressing.

All Southcorp fermentation management is determined through taste, and as a result there are no set rules.

An examination of fermentation methods would indicate:
- Rotary fermenters and Potter type static fermenters are pressed before dryness.
- Extended maceration has been successful on fruit that is inherently ripe. Care needs to be taken as green fruit characters are often enhanced on skins.
- Fermentation temperatures are dependent on wine style and fermentation rate, and the rate of flavour uptake.
- Merlot does not usually produce rich flavours early in the fermentation in contrast to the best Cabernets. 1998 and 2000 were exceptions.
- Extractive tannins are not seen as an attribute of quality Merlot.
- The judicious use of exogenous tannins can improve the texture and length of ripe Merlot.

Post-fermentation management

All pressing is via pneumatic presses.

Oak

All Merlots are fermented and racked separately so that assessment can be made before classification and blending. Although some oak fermentation of Merlot is done, it is not general practice.

Fine-grained French oak, particularly 1-year-old oak complements varietal Merlot, and care needs to be exercised with the amount of new oak. Wines are matured for 10–20 months as determined organoleptically. Rich long Cabernet Merlot blends, for example Pyrus, which would normally contain 10–35 percent Merlot, responds very well to New French oak.

Merlot descriptions by region

The four areas produce quite individual styles.

Coonawarra

The best fruit produces medium-full wines with plum and tobacco characters—they are wines of interest. Typically these would come from vineyards which have tighter bunches, and chewy skins. The richest Merlot, like Pinot is able to have fully ripened bunch stalks. In contrast, Vineyards which have typically large bunches, large berries and ripen late in the season would show leafy or tomato leaf characters. Although this character is often present in commercial Merlot from all over the world, it is not regarded as a flavour of premium wine.
Padthaway
Padthaway Merlot displays an earthiness, but is reliably rich with attractive sweet fruit. Tannins may be softer than Coonawarra, although quite firm wines from the Southern part of Padthaway occur. As with many red wines from this region where cropping level is moderate, the fruit matures 1–2 weeks before Coonawarra, which puts it in less danger from rain.

Bordertown
Merlot from this region from more mature vines produces quite strong Merlot with a typical regional mintiness. These wines are important backbones of some of the more commercial blends.

Robe
Some excellent Merlot has been produced from the Robe Vineyard in 2000 and 2001. These wines have vibrancy of colour and flavour.

The future of Merlot
Southcorp Wines sees Merlot as very important in its marketing mix.
For Australia to be successful as a supplier of quality Merlot the following needs to be embraced:

- Clonal selection. D3V14, the clone that most growers have (that is those who have Merlot and not Cabernet Franc!) has tendencies to produce very large berries with thin skins, as well as all the viticultural problems relating to leaf-roll virus. This is not an easy task as the ability to source alternative material is very difficult.
- Consumers need educating about Merlot. They relate positively to the word ‘soft’, however descriptors such as ‘textured’, ‘velvety’, ‘seamless’ may be better ways of marketing Merlot of quality. Any wine must have clear fruit definition and life.
- The focus needs to be in the vineyard. Particularly in cooler regions it is essential to balance fruit loads and not overcrop. Fruit thinning may be required at veraison to keep berry size small, while controlled irrigation can limit vegetative growth without excessively stressing the vine up until harvest. Fruit exposure is important to reduce green flavours.
- In the winery, it is necessary to make wines that are distinctively different. The temptation is to make a wine which is a ‘Cabernet Clone’. The success of Pinot Noir is an example of wines that are very different to normal Australian reds. The use of Burgundian techniques in making Merlot may be appropriate.
- Australian winemakers need to react to a change in the consumption patterns of consumers. The red wine shortage of the late 1990s has possibly created a demand for earlier drinking red wines. The image of Merlot is ideal to fill this demand.
- Merlot will continue to be an excellent blender to complement rich, ripe Cabernet.
- As with our ability to make world-class Shiraz and Cabernet at a reasonable price point, Australia’s reputation for producing Merlot will only be through making wines of substance.

References