Meeting productivity and price requirements
Angus Kennedy and Tim James
BRL Hardy

Regional strengths
Each of the viticultural regions of Australia has, in the past, produced wines of various styles and at various price points. Many continue to do so but over time it has become apparent that regions are beginning to specialise in sections of the market. In very general terms this is a settling-out period where there is a recognition of what fruit from a particular region may be best suited for; for example Semillon, Shiraz and Chardonnay in the Hunter, Riesling, Shiraz and Cabernet from the Clare Valley, Semillon and Shiraz from the Barossa and Riesling from Eden Valley.

It is well understood that Australia has a way to go to explore all of its viticultural possibilities. There is still a lot of work to be done on clones, and more work to be done on varieties that are not widely planted in Australia as yet—Tempranillo, Viognier, Sangiovese and Nebbiolo to name a few. There are also regions that are still to be developed.

As winemakers in Australia become more aware of the various styles being produced around the world, so they continue to experiment and change. One only has to look at the vast changes that have occurred in the last 20 years to appreciate that winemakers are continuing to evolve the wine styles of this country. They are now examining what is here, in the ground, and yielding fruit.

Price determinants
This paper will look at what has been driving and will drive the pricing mechanism, and how the industry can provide the best methods to ensure that there is a stable, enduring and profitable future. Obviously supply and demand are the determinants of the price of grapes and wine. This will always be so. The demand for a wine can be created in many ways, but the most enduring method is to over-deliver in terms of quality (or be perceived to be doing so). To provide good value to a consumer means producing a product that delivers good value for money. This may be for a ‘drink now’ proposition, for maturing, or for investment.

Grapegrowing is no different. There is a customer, a winery, and the need to know that a customer will come back next year and buy fruit at the right price. A grower will want his contract to be renewed for another three or five years. A supply of fruit continues to grow so wineries will become increasingly fussy about the quality of the fruit that is taken in.

Export
Irrespective of the supply situation, the focus on quality will continue to occur in Australia because of our success on the international scene (see Figures 1 and 2).

This is illustrated by the recent rapid change in the mix of domestic and export sales of wine for Australia. The domestic sales numbers are growing at 0.2 compound % p.a. while international sales have been forging ahead at 17.4 compound % p.a. The 20-fold increase in export sales from 1976 to 1996 has occurred at a time when generally there has been a change in wine drinking habits with people drinking more high quality wine than ever before (Strategy 2025, The Australian Wine Industry, Winemakers’ Federation of Australia). Wineries therefore want better quality fruit.

Valuation of the crop
Before discussing productivity, the methods of setting the value of a particular batch of grapes need to be examined. A part of the existing method is to look at last year’s ‘weighted average by variety’, as a guide, then to look at the total supply situation for that variety, its demand by the particular winery or wineries purchasing, and then to negotiate the level. Other factors that may affect this are: the existing mix that a grower may have, or the need to place some Doradillo. The matrix for current price determination can be very complex, so this paper will discuss only some of the more obvious aspects.
Other industries
Payment for grain is based on a quality rating and has been so for a number of years. This work is now done by using near infra-red spectroscopy (NIRS) where a protein grading system is used. The sugar industry uses a similar system and in sugar cane, the sugar yield is determined using NIRS as well. This means that growers with adjacent properties, growing the same crop, often receive different payments.

Methods of valuation
The NIRS methods used in both of these industries has proved to be one that both grower and processors have trust in. As well as being quick, this method does not destroy the sample.

Baume/Brix
Baume has been, and still is, used in many regions as a 'quality'-based payment system. Alone, except in the making of fortifieds, this can be a most misleading value. Most often the best table wines from a particular variety in a particular area are made from those grapes that achieve the desired Baume level earliest. This means that physiological maturity has been achieved, the vines are in good balance, and the flavour profile is that which a winemaker prefers. If the Baume level is reached by letting grapes hang on the vine and achieve sugar level increases due to dehydration, then this is generally the best fruit for making good table wine. (Botrytis styles may not fit this model).

Perhaps Baume could be made more useful if linked to other factors such as end-wine quality, colour, flavour, depth.

End-wine quality
End-wine quality would appear to be the best method. For example if a grower's fruit ends up in a $30 bottle of wine there could be a bonus system in place to ensure that the grower is rewarded for such quality. But the difficulties with this method are numerous:

- Can a winery keep batches separate from the crusher onwards?
- Do growers trust the assessment?
- Do growers have faith in the ability of the winery to convert their fruit into the best possible product?

One thing that is certain—a winery will be endeavouring to make the best possible wine from the fruit it receives, and within the bounds that its equipment is capable of. Knowing also that the label integrity program requires that all batches are traceable means that a grower should be able to see where his grapes have gone.

Colour
A another method for price determination, specific at this time to reds, is colour. Although this varies from variety to variety it can still be a good gauge of quality within a variety.

NIRS
Near infra-red spectroscopy is diffuse reflectance spectroscopy operating in the spectral region near infra-red. Linking Brix, pH and colour together using NIRS appears to have some benefit. It seems that pH, colour and Brix can be evaluated simultaneously on raw homogenates using the visible through NIR i.e. 250 to 110 mm. (Dr Bob Dambergs February 1999). Dr Bob Dambergs from BRL Hardy and Mark Gishen from the AWRI will be presenting results on the use of NIRS as a measure of quality, in the near future.

Orlando have also been involved in this research.

There have been many benefits in the research to date, but the ultimate aim from a company and industry perspective is to be able to assess fruit quality, either at the weighbridge prior to winery processing or in the vineyard at or about the time of harvest. While this method appears to be concentrating on reds, because of the easy indicator of colour, there is also interest in white fruit evaluation.

If the timing of reaching required Baume levels is an important factor in fruit quality then this may also be linked back with some of the other indicators to provide guidance. The challenge with this approach is the same as in many methods of quality measuring—sampling.

It is already known that due to juicing in machine harvested loads, the sample taken from a bin at the weighbridge may not give the best indication of colour or Brix. Unless a portable field unit can be developed and many more people employed, it will be difficult to cover all vineyards just prior to harvest.

Dr Dambergs has run NIRS on finished wine and related those results back to winemaker quality assessments and wine show results. There has been a remarkably good fit with these separate methods. The time is not too distant when winemakers and grapegrowers should have some better methods of determining grape quality prior to processing. This should be linked, if possible, to final wine quality and lead to a change in the total amount of money paid to grower—perhaps either up or down from the agreed median price.

Operating costs
Each region best understands the costs of operating a vineyard in that area. The factors must include general land value for viticulture, the climatic pressures and their effects on operating costs, availability of water and many other factors as well. The bottom line is—what is the final price point that the wine made from these grapes will best fit, and thus provide an ongoing, successful enterprise for the grower and the winemaker.

Productivity
Productivity is the next step in looking at providing sustainable quality.

Yields
The most recent contracts have seen changes to the level of expected yields. For example in the Riverland 20 tonnes per hectare for reds and 25 tonnes per hectares for whites is the current expectation. But there is also a need for some fruit at levels near 15 tonnes per hectare for reds, and 18–20 tonnes per hectare for whites. The industry needs to be competitive in the mid-range varietal area in the domestic and international markets.

Contracts in other areas such as Langhorne Creek have been based on 12 to 15 tonnes per hectare, McLaren Vale on 12 tonnes per hectare and A delaide Hills on 7 to 10 tonnes per hectare. These cropping levels are obviously based on climatic and other factors and ultimately reflect the final price/quality expected for the wine.

Table 1 indicates that there is healthy competition in the overseas market, particularly at the lower end. When one considers that Spain is now opening up the previous restrictions on irrigation in some areas and that Italy and some of the older Eastern block countries also have large areas of vines, then Australia does need to be concerned at its level of costs.

New Zealand and Australia are at a major disadvantage
with regard to their relative distance from the major wine markets of the world. Research and development effort therefore is being directed more towards quality, the maintenance of our ‘clean and green’ image and efficiency. It is necessary to look at grape and wine flavour and complexity.

Grape prices
The 1998 Vintage Statistics for the Barossa Valley are from the Phylloxera and Grape Industry Board of SA and have been used here to demonstrate the argument (Table 2).

Even based on the low end of 1998 Chardonnay prices of $940/tonne the base bottle price for a large company would need to be $15 per bottle on the shelf.

Barossa Valley wine begins its retail life in the mid-range of premiums and increases from there. From a grape-growing perspective, quality needs to be the driver in all districts. Much early viticultural research was based on increasing yields, lowering the cost of inputs, and disease prevention and eradication. The current direction is aimed at producing quality fruit at all price points and minimising chemical inputs.

As illustrated in Figures 3, 4 and 5 (Chardonnay and Shiraz) the very lowest price points are above $15 for both

Table 1. Grape price review. Source: Peter Dawson, BRL Hardy

<table>
<thead>
<tr>
<th>REGION</th>
<th>VARIETY</th>
<th>GRAPE PRICE</th>
<th>GRAPE RETURN/VALUE</th>
<th>RETAIL/ VALUE PER BOTTLE</th>
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<tbody>
<tr>
<td>LANGUEDOC</td>
<td>Chardonnay</td>
<td>$1,100</td>
<td>$12,870</td>
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<td></td>
<td>Cabernet</td>
<td>$600</td>
<td>$1,226</td>
<td>$716</td>
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<tr>
<td>BORDEAUX</td>
<td>Cabernet</td>
<td>$1,550</td>
<td>$14,715</td>
<td>$11,661</td>
</tr>
<tr>
<td></td>
<td>Semillon</td>
<td>$1,226</td>
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<td>$21,305</td>
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<td>Pinot Noir</td>
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<td>$23,530</td>
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<td>CHAMPAGNE</td>
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<td>$9,720</td>
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<td></td>
<td>Cabernet</td>
<td>$810</td>
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<td>Chardonnay</td>
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<td>Shiraz</td>
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<td>$17,400</td>
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<td>ADELAIDE HILLS</td>
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<td></td>
<td>Shiraz</td>
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<tr>
<td>RIVERLAND</td>
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<td>$1,280</td>
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<td></td>
<td>Merlot</td>
<td>$1,150</td>
<td>$1,610</td>
<td>$1,220</td>
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Table 2. Barossa Valley 1998 statistics. Source: Phylloxera and Grape Industry Board of South Australia

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Grape price at farmgate $ per tonne</th>
<th>Baume</th>
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<td>Lowest $</td>
<td>Highest $</td>
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<td>Shiraz</td>
<td>600</td>
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Table 3. These 1998 vintage statistics for the Riverland are from the Phylloxera and Grape Industry Board of South Australia

<table>
<thead>
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<th>Varieties</th>
<th>Grape price at farmgate $ per tonne</th>
<th>Baume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lowest $</td>
<td>Highest $</td>
</tr>
<tr>
<td>Chardonnay</td>
<td>415</td>
<td>1350</td>
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<tr>
<td>Shiraz</td>
<td>600</td>
<td>1513</td>
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Summary

Quality, quality, quality

If, through changes in viticultural practices, appropriate quality at higher cropping levels is achieved, that will be a bonus. But at present the industry needs to be very aware of existing cropping levels in many vineyards. Grapegrowers need to keep abreast of the quality requirements of winemakers.

Reward for quality

Winemakers need to ensure that they understand the cost of operating vineyards at lower yields and what the returns provided is 0.5% of GVP. There is some way to go in order to maximise research efforts.

References


Editors note: This paper was presented by Tim James in July 1999, in Tanunda. The paper was presented again in September, at the Mildura Arts Centre, by Angus Kennedy. Mr James’ paper focused on the Barossa region and Mr Kennedy’s on the Riverland. The text of these presentations is substantially the same, but Mr Kennedy’s tables and figures are included here for comparative purposes.