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# **Wine Economics Research Centre**

## **Wine Policy Brief No. 25**

### **Australia's declining winegrape varietal distinctiveness**

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# Australia's declining winegrape varietal distinctiveness

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# Australia's declining winegrape varietal distinctiveness

Kym Anderson and Signe Nelgen

Australian winegrowers are well aware of the need to adjust from time to time to on-going changes in their economic environment and in the climate of their region (as most-recently exposed by Remenyi et al. 2020). One possible adjustment is to alter the winegrape varieties in their vineyard. Another is to invest in another wine region (e.g., a cooler one, so the producer can grow the same varieties there as the climate of that region becomes more like that of their current region). Such adjustments are altering the varietal mix of each region and hence the national varietal mix, as well as the total bearing areas of each region.

How this is altering the uniqueness of Australia's vineyards depends also on the nature and extent of similar adjustments elsewhere in the world. To get a sense of that, we have compiled a new edition of a book and its underlying global database first published seven years ago (Anderson and Nelgen 2020). Apart from revising and expanding the 2000 and 2010 datasets used for the first edition (Anderson 2013), the new edition includes global data for 2016 (the latest year for which data for EU countries are readily available). It also introduces new indexes of internationalization of varieties and, perhaps of most interest, it includes key climate variables for each of the world's 700+ winegrape-growing regions.

This article summarizes a few of the findings for Australia. After a brief word on the sources of data, it examines changing shares and the country of origin of varieties, varietal intensity and similarity indexes, and emerging varieties. It concludes that Australian vineyards have a long history of making major changes to their varietal mix but, in doing so, they have become less diversified/more concentrated in terms of top ten share and country of origin of their varieties, and less differentiated from the rest of the world in terms of rising shares of red varieties and French varieties – notwithstanding the increasing experimentation by numerous (especially smaller) winegrowers with alternatives to the mainstream varieties. The article finishes by addressing the question of whether this is good or bad news for Australia's vignerons.

## Sources of data

The most important source for updating winegrape bearing area data for the global database is EUROSTAT, because it provides data by region and variety for the European Union's member countries for 2015. That is the vintage targeted for other Northern Hemisphere countries, while 2016 was targeted for Southern Hemisphere countries (bearing in mind that harvesting is late in the calendar year in the north and early in the calendar year in the south).

A challenging task in compiling the global database was to decide on a common varietal name for variously named varieties with the same DNA. This challenge was reduced greatly when Robinson, Harding and Vouillamoz (2012) published a detailed guide to commercially grown 'prime' varieties and their various synonyms. The 'prime' name is chosen by those authors according to the name used in what they consider its country or region of origin. In addition, we drew on the *Vitis International Variety Catalogue* of the Julius Kühn-Institut in Geilweilerhof, Germany for additional prime names.

Australia's official area data had been compiled by the Australian Bureau of Statistics (ABS) until the 2015 vintage, but ceased thereafter. Hence we assumed the varietal mix in 2016 was the same as in 2015 but lowered each varietal area by 1.4% so they summed to the nation's 2016 total bearing area. The ABS data include only the largest 40 or so varieties. However, annual estimates of the winegrape crush by every variety and source region have been assembled by Wine Australia. That allowed us to estimate the area for minor varieties,<sup>1</sup> and thereby expand the number of varieties from 40 to 146. While those added varieties account for only 1.25% of the total bearing area for Australia in 2016, they provide an insight into the relative importance of what Higgs (2019) calls the next 100 'Rare Ozzies' (see also Halliday 2018).

While the database has details for each of Australia's wine regions, this paper focuses just on national averages and thus also leaves climate variables for a future article. In addition to shares, we also show varietal intensity indexes, defined as a variety's share of a country's winegrape area divided by that variety's share of the global winegrape bearing area.

### **Changing shares and country of origin of varieties**

In 1990, just prior to the trebling in Australia's winegrape bearing area and boom in commercial premium bottled still wines (see Anderson 2015), the majority of Australia's vineyards were planted to high-yielding multi-purpose varieties. Three of the top five varieties have since expanded their share (Syrah, Cabernet Sauvignon and Chardonnay), but most of the top 20 as of 1990 have shrunk greatly in importance (Figure 1). The ones that have displaced them in the top ten list are Merlot, Sauvignon Blanc and Pinot Noir (Figure 2).

In addition to changing shares, during those three decades the extent of varietal concentration has increased dramatically, in at least 3 ways. One is the top eight varieties in 1990 accounted for 70% of the national area but by 2016 they comprised 85%. Such concentration is happening elsewhere too: half the world's plantings were accounted for by 21 varieties in 2000 but, by 2016, that number had dropped to 16.

Secondly, the importance of red varieties has overtaken that of whites. Again this trend is global, with red's share rising from 46% in 1990 to 56% in 2016, but for Australia the red share has risen from 37% to 64% over that period.

Thirdly, the country of origin of varieties in Australia is now much less varied. Spanish varieties dominated to the mid-1970s before they were eclipsed by French varieties, which rose from 20% in the decade around 1960, and 50% in the decade around 1990, to 90% today (Figure 3). Again this is an extreme example of what is happening globally. In 2000, French and Spanish varieties dominated the global landscape, accounting for almost three-fifths of the world's winegrape vineyard area, with Italian varieties boosting that share to 70%. By 2016 that share had risen slightly to 72%, but French varieties rose from 29% to 39% while Spain's share fell from 29% to 21% (and Italy's remained at 12%). That might suggest Spanish and Italian varieties are under-represented in Australia compared with the rest of the world. However, only 20% of the global area of Spanish and Italian varieties (and just 9% of Portuguese varieties) are in other countries whereas 70% of plantings of French varieties in 2016 were outside of France.

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<sup>1</sup> For each of the smaller red and white varieties not separately showing in the 2015 ABS data, we calculated for 2015-17 (to help even out seasonal variations) their share of the total tonnes of missing red and white winegrape varieties. We then assumed the average winegrape yield per hectare was the same for each variety within the missing red and missing white winegrape variety categories for each region. That allowed us to use those shares to divide the ABS's aggregate areas of 'Other red' and 'Other white' varieties for each region into estimates of bearing area for minor varieties.

## Varietal intensity and similarity indexes

Another way of capturing the distinctiveness of Australia's varietal choices, is to measure varietal intensity indexes (VII): the ratio of a variety's share of national area to its share of the global bearing area. Table 1 lists those varieties for which Australia has a VII of at least 2. Its top three varieties are there, but its next three key varieties are absent because they are closer to one: Merlot (VII of 1.1), Sauvignon Blanc (1.6) and Pinot Noir (1.5). Leaving aside the top three, the total share of the rest of those 25 varieties is just 13%. Furthermore, the VIIs of the top 3 have all fallen between 2000 and 2016, from 10.7 to 7.3 for Syrah, from 4.4 to 3.6 for Cabernet Sauvignon and from 4.2 to 2.6 for Chardonnay. Indeed of all top 14 varieties for which there were more than 1000 hectares in Australia in 2016, there are only two whose VII has risen since 2000 (Sauvignon Blanc and Colombard).

Only a small fraction of those changes can be explained by Australia's share of the global area becoming larger. The much more important reason for the VII falling for most of the key varieties in Australia is that the country's mix of varieties is becoming more similar to the global average. That is summarized in a varietal similarity index (VSI) that is like a correlation coefficient that ranges from 0 (no similarity) to one (identical): Australia's index has risen from 0.46 in 2000 to 0.63 in 2016. Only three other countries had a higher VSI in 2016, namely France (0.78), the United States (0.70) and Chile (0.64).

Not only is Australia now more similar to the rest of the world in its varietal mix, but so too are all the other New World countries apart from cool New Zealand (Figure 4). Australia is the most concentrated in its signature variety though, again apart from New Zealand (Figure 5). So why did Australia's VII fall for Syrah when the importance of it in Australia's varietal mix has risen since 2000? The reason is that Syrah has become more important in numerous other countries as well: its share of the global vineyard area rose from 2.1% in 2000 to 4.0% in 2016. As a result, Australia's share of Syrah's global area has fallen from 29% to 21% and so Syrah's VII for Australia has dropped from 10.7 to 7.3 over that period.

## Emerging varieties in Australia

Much Australian wine writer and media attention is directed to emerging varieties. Their definition is arbitrary, but attention here focuses on those whose bearing area is expanding but as of 2016 was below 0.6% of the national total. The most-rapidly expanded of them since the turn of the century, and now leading the group, are Viognier, Tempranillo and Durif. The next-most important, Cot (Malbec) and Sangiovese, also expanded a little, followed by Prosecco, Vermentino and seven other Italian varieties plus Tribidrag (Synonyms: Zinfandel, Primitivo) that have expanded from almost no area in 2000. The total area of the 27 shown in Figure 5 was just 3.1% of Australia's total vine area in 2016 though, up from 1.0% in 2000; and only four of them (Durif, Lagrein, Moscato Giallo and Viognier) have a VII above 1.5 so, as a set, their contributions to diversifying and differentiating Australia's overall varietal mix are modest to date – notwithstanding the increasing experimentation by numerous (especially smaller) winegrowers with these and other alternatives to mainstream varieties.

## Conclusion

The above data reveal that Australian vignerons have a history over recent decades of making major changes to their varietal mix. In doing so, however, they have become less diversified/more concentrated in terms of top ten share and varietal country of origin, and less differentiated from the rest of the world in terms of rising shares of red varieties and of French varieties.

Does this matter? The increasing concentration (a) on reds may be simply because of China's rising demand for imported wines, and (b) on major 'international' varieties may be partly because producers find it easier to market those familiar varieties thanks to France's strong reputation with them. Or is it also because those key varieties do well in a wide range of growing environments, or are more drought- or salt-tolerant, or have been found to be desirable for blending with other varieties that grow well in the same regions?

The question of whether Australia's mix of varieties is less than ideal for the terroir of its various regions is not a new one. Hickinbotham (1947) believed seven decades ago that Australia's hot regions were not focused enough on varieties from warmer parts of Europe. Four decades ago Dry and Smart (1980) suggested that if the addition of acid had been outlawed in Australia, its hot regions would have been forced to at least add 'improver' varieties to their varietal mix. More recently, McKay et al. (1999) felt that varieties from the warmer parts of Italy were under-represented in Australia.

Regardless, climate changes are going to encourage producers to consider a wider range of varieties (Smart and Collins 2020), and Australia's varietal mix is so concentrated on a few varieties that there remains plenty of scope to further explore alternatives to currently planted varieties.

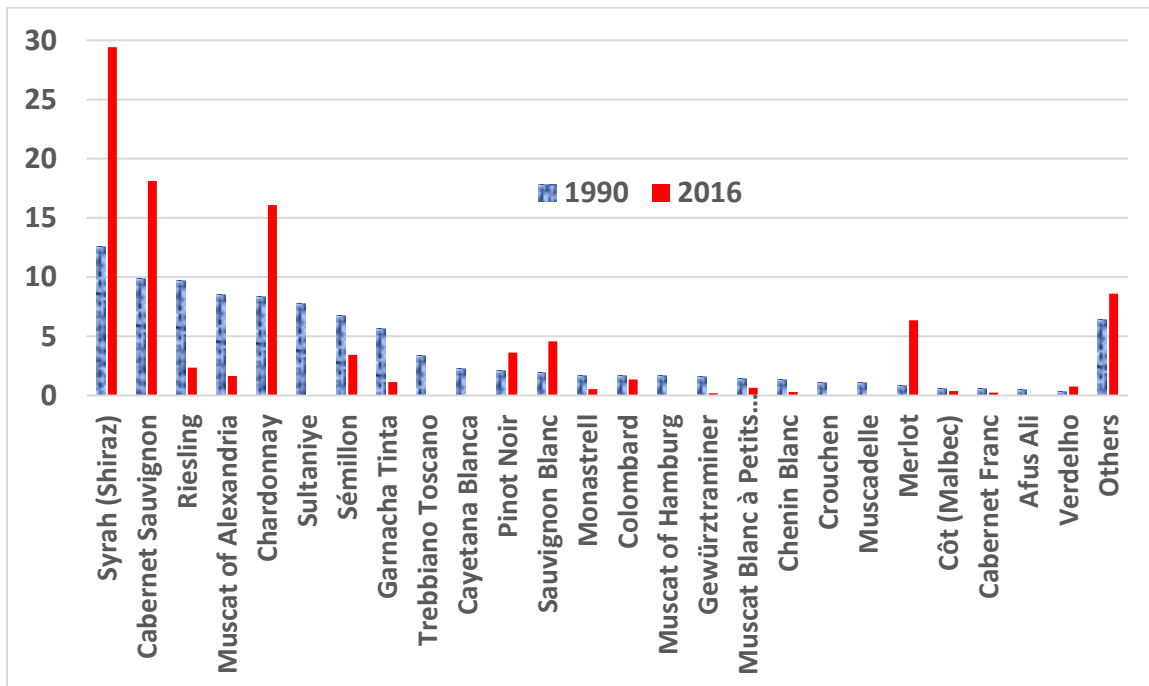
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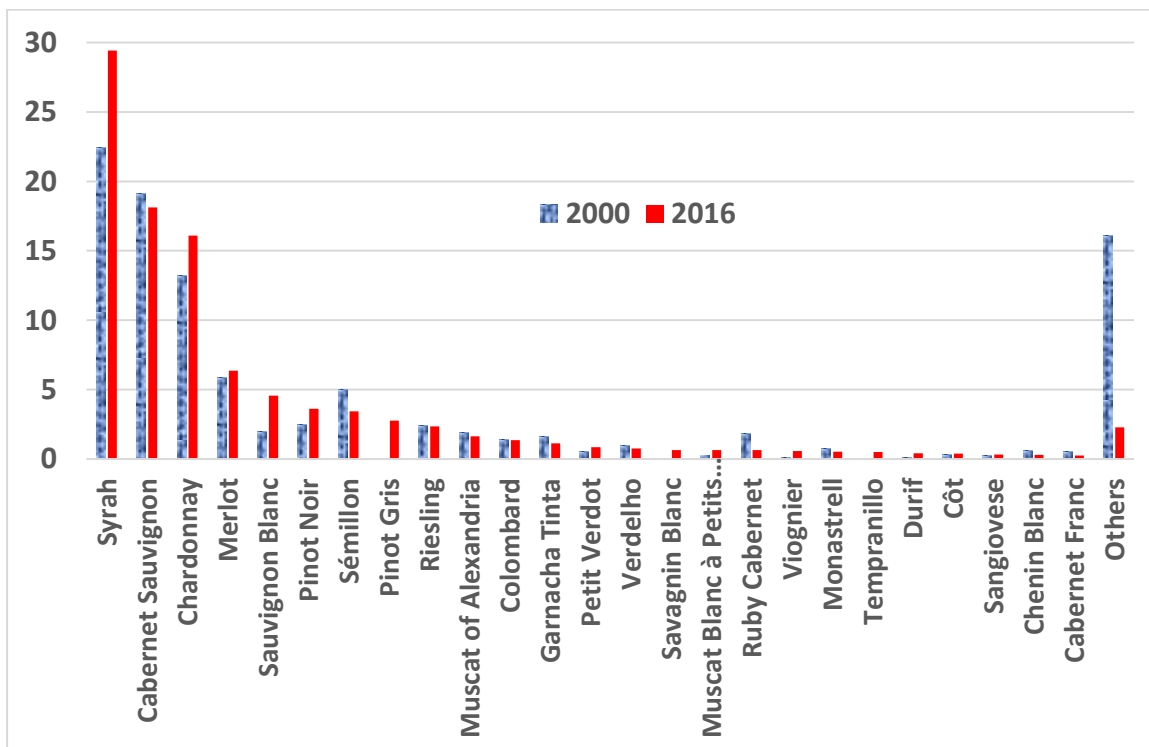


Figure 1: Shares of 1990's top 25 varieties in Australia's winegrape bearing area, 1990 and 2016 (%)



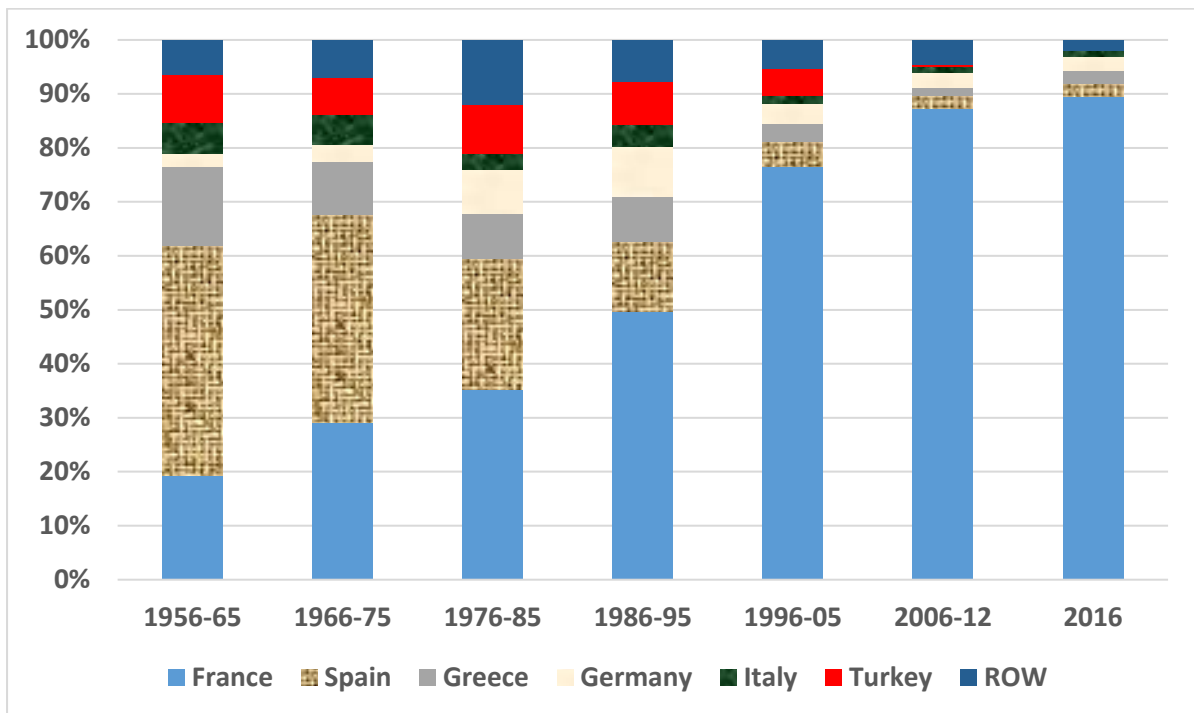
Source: Compiled from data in Anderson and Nelgen (2020).

Figure 2: Bearing area of 2016's top 25 winegrape varieties, Australia, 2000 and 2016 (ha)



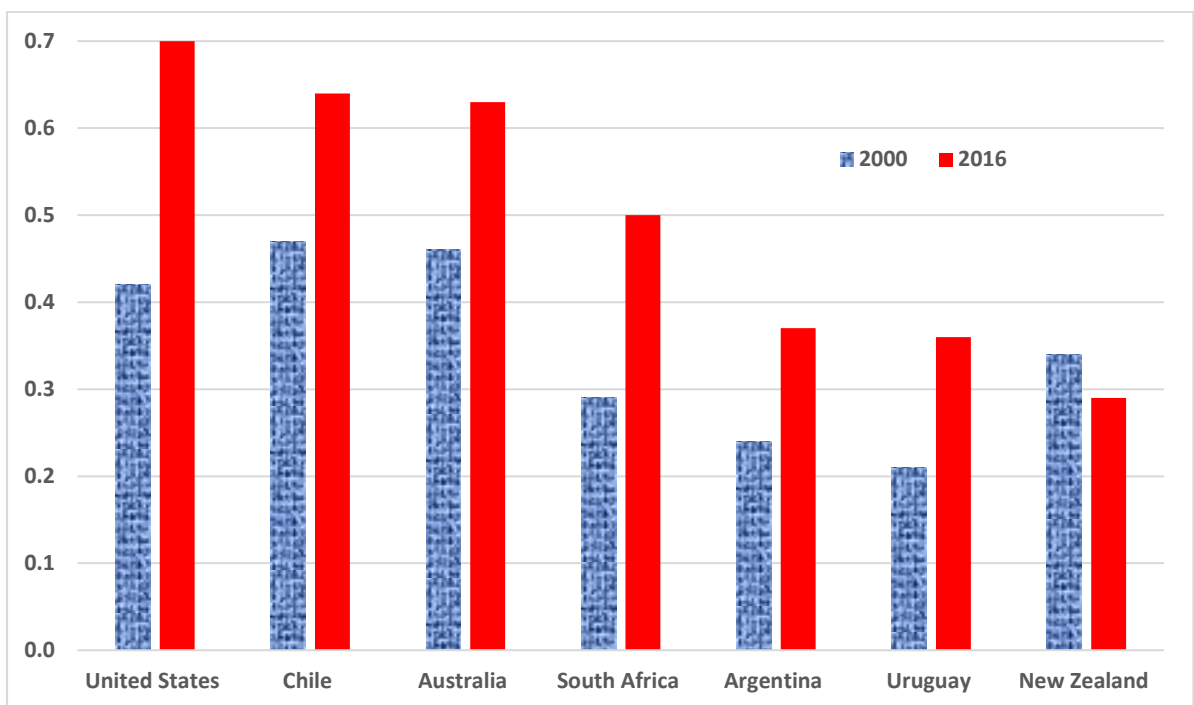
Source: Compiled from data in Anderson and Nelgen (2020).

Figure 3: Shares of Australia's winegrape area by varietal country of origin, 1956 to 2016 (%)



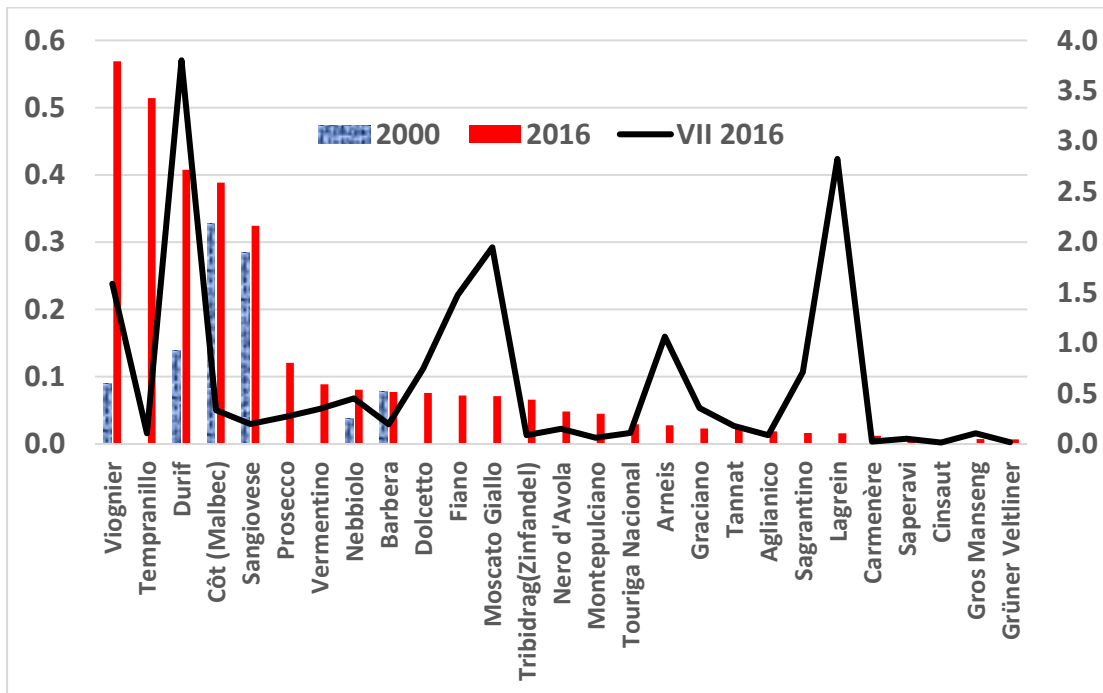
Sources: Compiled from data in Anderson (2015) and Anderson and Nelgen (2020).

Figure 4: Varietal Similarity Index (VSI) of each New World country with the world, 2000 and 2016



Source: Compiled from data in Anderson and Nelgen (2020), which also provides the algebraic formula for the VSI.

Figure 5: Shares in total bearing area and varietal intensity indexes<sup>a</sup> of main emerging varieties, Australia, 2000 and 2016 (%)



<sup>a</sup> The Varietal Intensity Index is defined as a variety's share of a country's winegrape area divided by that variety's share of the global winegrape bearing area.

Source: Compiled from data in Anderson and Nelgen (2020).

Table 1: Top 25 varieties in terms of their Varietal Intensity Index,<sup>a</sup>  
Australia, 2016

	Australian share (%)	World share (%)	VII
Canada Muscat	0.09	0.00	33.9
Cienna	0.05	0.00	33.9
Tyrian	0.03	0.00	33.9
Sun Muscat	0.02	0.00	33.9
Tarrango	0.01	0.00	33.9
Lambrusco	0.04	0.00	32.5
Verdelho	0.77	0.03	22.7
Savagnin Blanc	0.66	0.05	13.0
Sémillon	3.44	0.42	8.2
Syrah	29.40	4.04	7.3
Muscat à Petits Grains Rouge	0.18	0.03	5.7
Ruby Cabernet	0.64	0.12	5.4
Crouchen	0.04	0.01	5.0
Petit Verdot	0.84	0.18	4.7
Durif	0.41	0.11	3.8
Chardonnay	16.10	4.50	3.6
Muscat Fleur d'Oranger	0.02	0.01	3.6
Marsanne	0.12	0.04	3.0
Lagrein	0.02	0.01	2.8
Cabernet Sauvignon	18.11	6.93	2.6
Pinot Gris	2.76	1.08	2.5
Muscat of Alexandria	1.65	0.78	2.1
Muscadelle	0.07	0.03	2.1
Colombard	1.35	0.67	2.0
Moscato Giallo	0.07	0.04	2.0

<sup>a</sup> The Varietal Intensity Index (VII) is defined as a variety's share of a country's winegrape area divided by that variety's share of the global winegrape bearing area. This table ignores 14 very minor varieties each with less than 6 hectares, half of which are only grown only in Australia. The uniquely Australian seven are Cabernet Sanzey, Caverdella, Morrastel Bouschet, Rubienne, Saint Macaire, Shalistin and Taminga.

Source: Compiled from data in Anderson and Nelgen (2020)