



Vineyards of Oakville

— Napa Valley

THE NAPA VALLEY is perhaps the best known of the Californian regions— but it would be true to say that its reputation has been based more on the quality of its wine rather than the volume of its production.

After all, it produces less than 5% of the total Californian winegrape tonnage. The Napa has always specialised in red wine production and two-thirds of the 14,000 ha of vineyards are used for this purpose. Commercial viticulture arrived relatively late in the Napa; it was not until the late 1800s that a small industry was established. The major vineyard expansion did not take place until the 1970s and 1980s when the area increased by more than three-fold and the number of wineries increased from 20 to 200. There is a high proportion of young vineyards (aged less than 15 years) in the Napa because large areas were replanted during the late 1980s and 1990s as older vineyards on AxR1 rootstock succumbed to type B phylloxera.

The valley is approximately 50 km long but less than 3 km wide in places. It extends in a roughly north-west direction from the Carneros district at the southern end to the town of Calistoga at the northern end. Traditionally, most vineyards have been planted on the valley floor, perhaps because the deep alluvial soils did not require irrigation. In more recent times, there has been expansion on hillsides on both western and eastern sides of the valley and these new plantings are generally drip-irrigated.

The climate of the Napa Valley region is strongly influenced by its proximity to the Pacific Ocean to the west, and particularly San Pablo Bay to the south. As a result of the intrusion of cold air and fog from San Pablo Bay, the southern end of the valley is much cooler than the northern end. It is said that, on a hot day, there can be a 10°C temperature



**PETER
DRY**

VINEYARDS OF THE
WORLD

gradient on the floor of the valley from south to north. Add in the effect of altitude and it should be apparent that there will be a huge range of mesoclimates throughout the region. This climatic difference has a profound effect on the varieties grown; for example, Pinot Noir and Chardonnay dominate plantings in Carneros but late maturing varieties can ripen at Calistoga. Like all regions in northern California, the Napa has a higher ratio of sunshine hours to temperature than comparable Australian regions due to the influence of the cold northern Pacific waters, and a very slow decline of temperature from summer to autumn, resulting in relatively warm autumns¹.

By New World standards, the Napa is relatively specialised in terms of varieties. For example, Cabernet Sauvignon (30% of total vineyard area), Chardonnay (24%) and Merlot (18%) collectively account for three-quarters of the planted area. Pinot Noir (6%), Sauvignon Blanc and Zinfandel (5% each) are next in importance. Minor varieties include Cabernet Franc (2%), Chenin Blanc, Petite Sirah², Sangiovese (between 1 and 2% each), Shiraz, Riesling and Semillon (<1% each).



The University of California Oakville research station vineyard

Varieties with the largest percentage of non-bearing vines are Shiraz, Petit Verdot, Sangiovese, Merlot, Viognier and Pinot Noir.

In terms of wine quality it could be argued that much of the Napa's reputation rests on the Cabernet Sauvignon wines vinified from grapes grown in the centre of the valley near Oakville and Rutherford.

In the 1990s there were about 2,300 ha in the Oakville AVA³. The 200 ha To-Kalon vineyard owned by Robert Mondavi is one of the largest in this AVA. The main varieties grown in the Oakville AVA are Cabernet Sauvignon, Merlot, Chardonnay, Sauvignon Blanc and Zinfandel. Cabernet Sauvignon is typically harvested in the first week of October.

Although Oakville is only 15 km north of the town of Napa (MJT = 19.1°C⁴), it is significantly warmer. With respect to temperature, the climate of Oakville is probably similar to Australian regions such as Langhorne Creek and Margaret River. However, the annual rainfall of 880 mm⁴ is higher than that of some comparable Australian regions. Furthermore, precipitation is very winter-dominant; only 10% falls in the period from April to September.

The best soils of the Napa are the deep, well-drained gravelly silt-loams and loams. Oakville and the adjoining Rutherford AVA have the largest area of these soils on the valley floor at an altitude of 30 to 40 metres. Although well-drained, the clay content is sufficiently high to provide them with good water-holding properties and, as a result, irrigation may not be essential.



The Mondavi To-Kalon vineyard, Oakville

Most new vineyards have 2.4 metre rows with 1.8 metres between vines and a VSP trellis. There is a small amount of lyre trellis but very little Smart Dyson, GDC or Scott Henry. Older vineyards tend to have 3.6 metre rows. On the VSP, movable foliage wires are used (most have two pairs with one fixed at the top) but there is still much hand tucking. Hand-pruning and -harvesting are standard with some pre-pruning by machine. Spur pruning is most common with 20% or so of vines cane-pruned. The preferred row orientation in new vineyards is east-west: this is said to limit the proportion of bunches directly exposed to the afternoon sun.

The intensity of canopy management practised in the Napa is very high by Australian standards: for example, a typical Cabernet Sauvignon vineyard with VSP trellis, yielding 10 to 12 t/ha of high quality fruit, would have 15 or fewer shoots/metre achieved by a combination of relatively severe hand pruning and shoot thinning on one or two occasions. In addition, there would be leaf and lateral shoot removal in the bunch zone, and bunch thinning at early veraison. The net effect of these manipulations is a very high proportion of exposed bunches.

The cost of bare land suitable for vineyards in the Napa is extremely high, and is 10 to 15 times more expensive than prime land in the Barossa. Vineyard development and operating costs are also relatively high: for example, a typical 2.4 metre × 1.8 metre planting with VSP, minor erosion control, some drainage but no frost control will cost US\$35,000 to 40,000 for the first three years of development. Operating costs are two to four times higher than those in a comparable Australian vineyard due to the high inputs of hand labour. These higher costs are partly offset by the prices received for premium fruit: in 2000, Cabernet Sauvignon was worth US\$3,000 to US\$4,000 per tonne.

PETER DRY is a senior lecturer in the Department of Horticulture, Viticulture and Oenology, The University of Adelaide. E-mail: peter.dry@adelaide.edu.au.

1. Gladstones, J.S. (1992) *Viticulture and Environment*. Winetitles
2. The so-called Petite Sirah is a mixture of Durif and Peloursin
3. American Viticultural Area
4. Halliday, J. (1993) *Wine Atlas of California*. Angus and Robertson.