

MACEDON RANGES COOL CLIMATE VINEYARDS AND WINES



**EXPLORING THE UNIQUE CLIMATE
OF THE MACEDON RANGES**

MACEDON RANGES
WINE
*naturally
cool*



MACEDON RANGES COOL CLIMATE

Vineyards and Wine

Nothing in the world quite compares to the wine from the Macedon Ranges, and this in part is because of its climate.

Due to its unique geographical position, at high altitude, the Macedon Ranges wine region is the coolest wine region on mainland Australia. The distinctive climatic conditions of the region translate into the character, expression and personality of wines it offers – delicate Sparkling wine, refined Chardonnay, aromatic Pinot noir and complex cool climate Shiraz.

The Macedon Ranges is a young wine region, dating back to the 1970s, less than one hour from Melbourne. The first vines were planted in the region at the time that Burke and Wills passed through in August 1860. The modern Macedon Ranges wine industry began to develop in the late 1960s with plantings at Virgin Hills by Tom Lazar and by Gordon Knight (Granite Hills) at Baynton in 1971. This was followed in 1977 by Gordon Cope-Williams' plantings at Romsey, Bob Nixon's planting of Gisborne Peak Winery at Gisborne South in 1978 and the establishment of Hanging Rock, Rochford, Portree and Roseberry Hill in 1983. Now there are over 40 vineyards in the region which continues to develop and grow. Discover just how cool this region is and how its climate shapes the diversity and exceptional quality of wine styles.





WHY ARE THE MACEDON RANGES VINEYARDS

so cool?

Wondering what makes the Macedon Ranges such a cool place? It's all thanks to the region's topography: the extinct volcanoes of the Great Dividing Range in the South and West, the granite boulders of the Cobaw Range in the North and the slate and gold-bearing gravels to the North West. The region's 40+ vineyards are cradled between 300 and 800 metres above sea level. It really is no wonder this region remains so cool throughout the year.

The region is so cool it often snows in winter, but it's what happens in spring and summer that brings the wonderful cool climate characteristics to the wines. The vines come to life, following their winter dormancy, between mid-September and mid-October. This is when the buds burst and the first leaves appear. Spring then brings the main growth phase with mild temperatures and reliable rainfall.

Flowering generally occurs in December and the regular rainfall ensures healthy growth of the vine and development of the grape berry. In summer the grapes ripen gently, between February and April, as very hot days are rare and night time temperatures remain cool. The region generally picks during the Autumn months from late March to early May, resulting in cool harvest temperatures.





WHY IS BEING COOL SO GOOD

for grapes and wine?

Our cool temperatures, in particular our cool nights, provide a distinctive point of difference to other Australian wine regions. These cool nights allow our grapes to retain a high natural acidity and freshness. This natural acidity gives longevity to our wines and a softer, more integrated mouthfeel.

Thanks to our altitude and coolness, we also have a long and slow ripening period, which helps retain delicate aromas in our wines. In cool climates like the Macedon Ranges, early aromas like floral and citrus for Riesling, or strawberry and cherry for Pinot noir are retained until harvest. By comparison, in hot regions, the floral, citrus and red berry aromas are often lost, and jammy, cooked flavours may develop.





SO, JUST HOW COOL *are our vineyards?*

The Macedon Ranges wine region is in the company of many well-known cool grape-growing regions, like Champagne in France or Marlborough in New Zealand. The coolness of grape-growing regions around the world is measured according to the Winkler Index which measures the amount of Growing Degree Days (GDD). These are calculated by taking 10 degrees (below which there is no growth) off each day's average temperature and adding these values from October to April (or April to October in the Northern Hemisphere). Regions with GDD below 1389°C were defined (by Winkler in 1974) as Group I = Cool Climate.

The Macedon Ranges has a GDD value of 1217°C. When compared with other recognised cool climate regions in Australia, this makes the Macedon Ranges the coolest wine region on the mainland.

HOW DOES THE MACEDON RANGES COMPARE TO OTHER AUSTRALIAN WINE REGIONS?	HOW DOES THE MACEDON RANGES COMPARE TO OTHER COOL CLIMATE WINE REGIONS ACROSS THE WORLD?
Tamar Valley TAS 1159	Rheingau DE 1042
Macedon Ranges VIC 1217	Champagne FR 1050
Yarra Valley VIC 1343	Wairarapa NZ 1075
Grampians VIC 1408	Burgundy FR 1164
Alpine Valleys VIC 1476	Alsace FR 1186
Mornington Peninsula VIC 1514	Okanagan CA 1189
Adelaide Hills SA 1530	Macedon Ranges AUS 1217
Orange NSW 1551	Marlborough NZ 1235



STUDYING THE GRAPE-GROWING CLIMATE IN THE *Macedon Ranges*

The Macedon Ranges Vignerons Association contracted GrapeLinks – a viticultural researcher to conduct a long-term temperature study across 28 vineyards in the region. This field work aimed to equip vignerons with information to optimise grape production, demonstrate the climatic diversity of the region, and explore possibilities for new vineyard sites and their best-adapted varieties.

HOW DID WE MONITOR THE VINEYARDS?

Small electronic data loggers (Tinytag) were inserted at the bunch zone. Most vineyards had additional loggers in south facing shelters to eliminate canopy effects. They measured the temperature hourly from flowering to veraison (onset of berry ripening) and veraison to harvest. Data were assessed for the the average degree hours (degree hours divided by number of days) which the grapes spent below 15°C (night coolness) and above 35°C (heatloads).



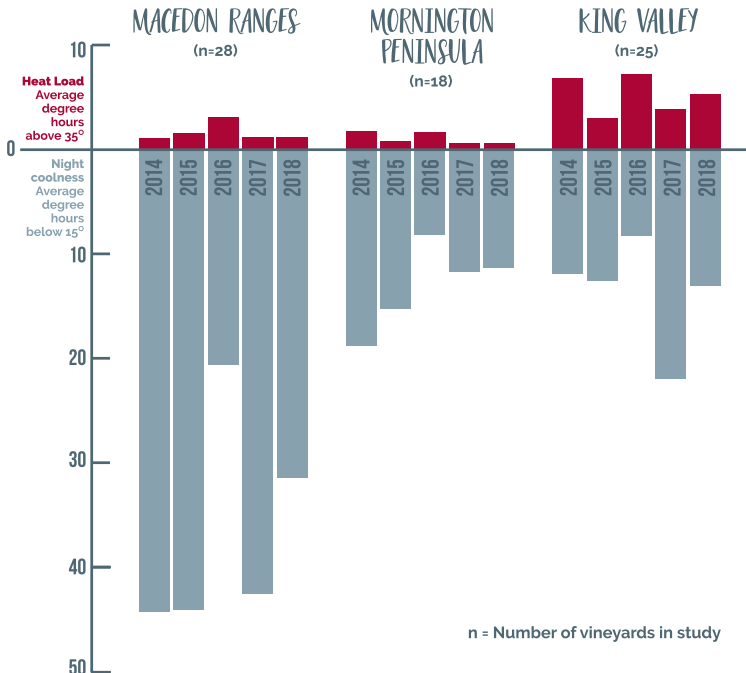


OUR CLIMATE COMPARED WITH OTHER REGIONS

in Victoria

WONDERING HOW WE STACK-UP AGAINST OTHER GRAPE GROWING REGIONS?

The results from this field work enabled us to compare our average regional night coolness and heat loads with vineyards of the Mornington Peninsula and King Valley, from veraison to harvest, over 5 years. The results are graphed below. The year 2016 was unusually warm, even in the Macedon Ranges. Still, the coolness of the nights exceeds other regions in all years.





Exploring our MICRO CLIMATES

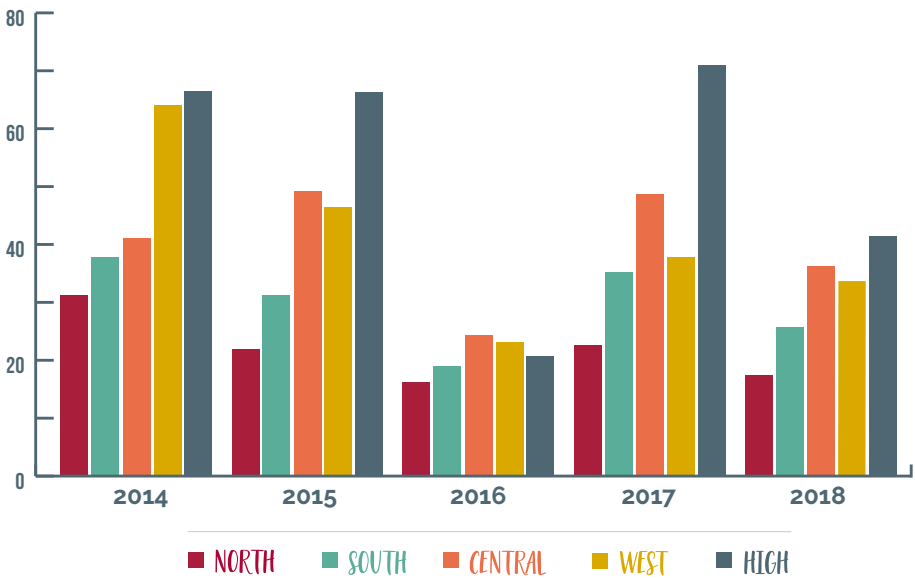
The Grapelinks data analysis found that vineyards in the Macedon Ranges are most strongly characterised by nighttime coolness during the grape ripening phase.

This field-work identified five distinct geo-climatic zones in the Macedon Ranges:

- **High vineyards** at 650-800m altitude on the Great Dividing Range from Mount Macedon to beyond Trentham (see regional map) have the coldest hours during the ripening period and low heat loads during summer.
- **Central vineyards** can be cold with air down-flowing from surrounding ridges.
- **Western vineyards** on the north western side of the Great Dividing Range have somewhat milder summer nights and warmer days as some are sheltered from cold westerly winds.
- **Southern vineyards** south of Mt. Macedon are warmer due to the closeness to the ocean.
- **Northern vineyards** are exposed to northerly winds, they have the lowest amount of cold degree hours.

These geo-climatic zones help to demonstrate the climatic diversity, which may lead to the very diverse wine styles of the region, and can also point to potential new vineyard sites and new exciting site-adapted varieties.

The adjacent graph shows the Average Cold Degree Hours during ripening in the Macedon Ranges for 2014-2018. Note: 2016 was an unusually hot year for the region with early harvest and the Western vineyards harvested very late in 2014.



Average Cold Degree Hours during ripening

Average cold degree hours is measured by the accumulated degree hours below 15°C divided by the days of the ripening period.

GEO-CLIMATIC ZONES

OF THE MACEDON RANGES

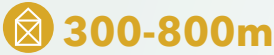
The zones identified by the GrapeLinks study demonstrate the climatic differences that lead to our diverse wine styles



Coollest region in mainland Australia



Wineries



Vineyard altitudes



Temperature drop for each 200m increase in altitude



Tonnes grape crush for the region



Wineries produce over 100 tonne



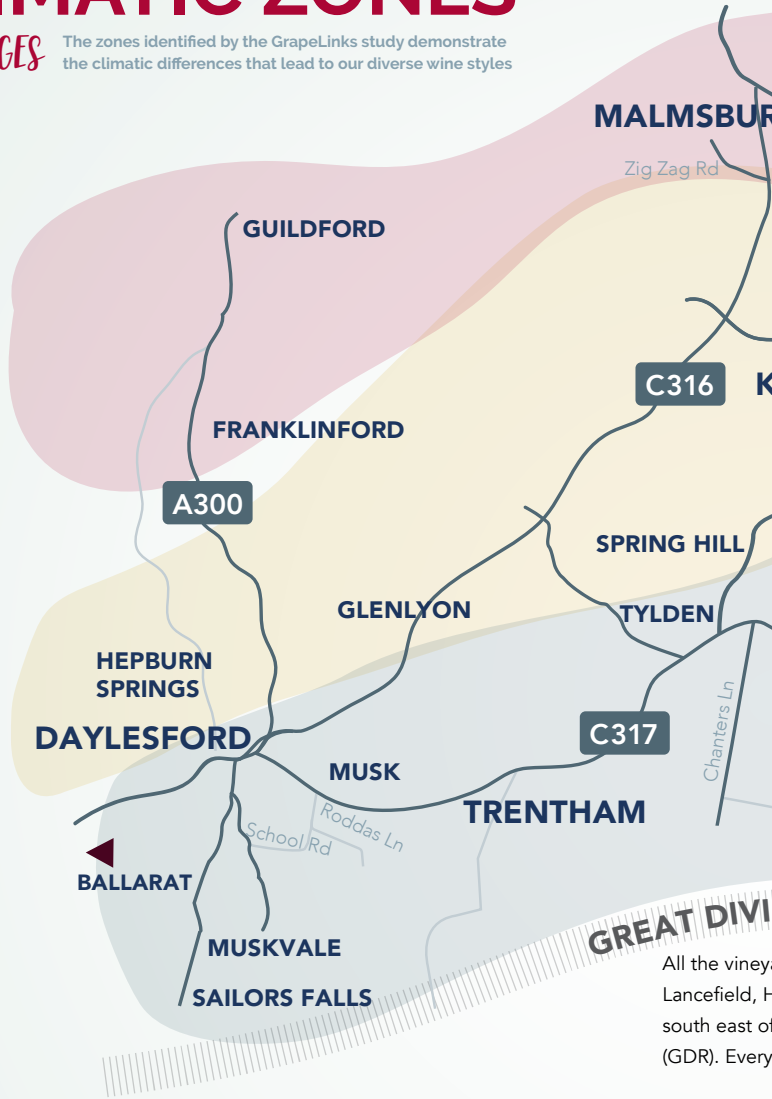
Wineries produce under 100 tonne



Main soils, volcanic lava, granite, non-marine sedimentary rock, alluvial soils



Grape varieties



HIGH VINEYARDS

650-800m altitude along the Great Dividing Range. Coldest sites during the ripening period.

WESTERN VINEYARDS

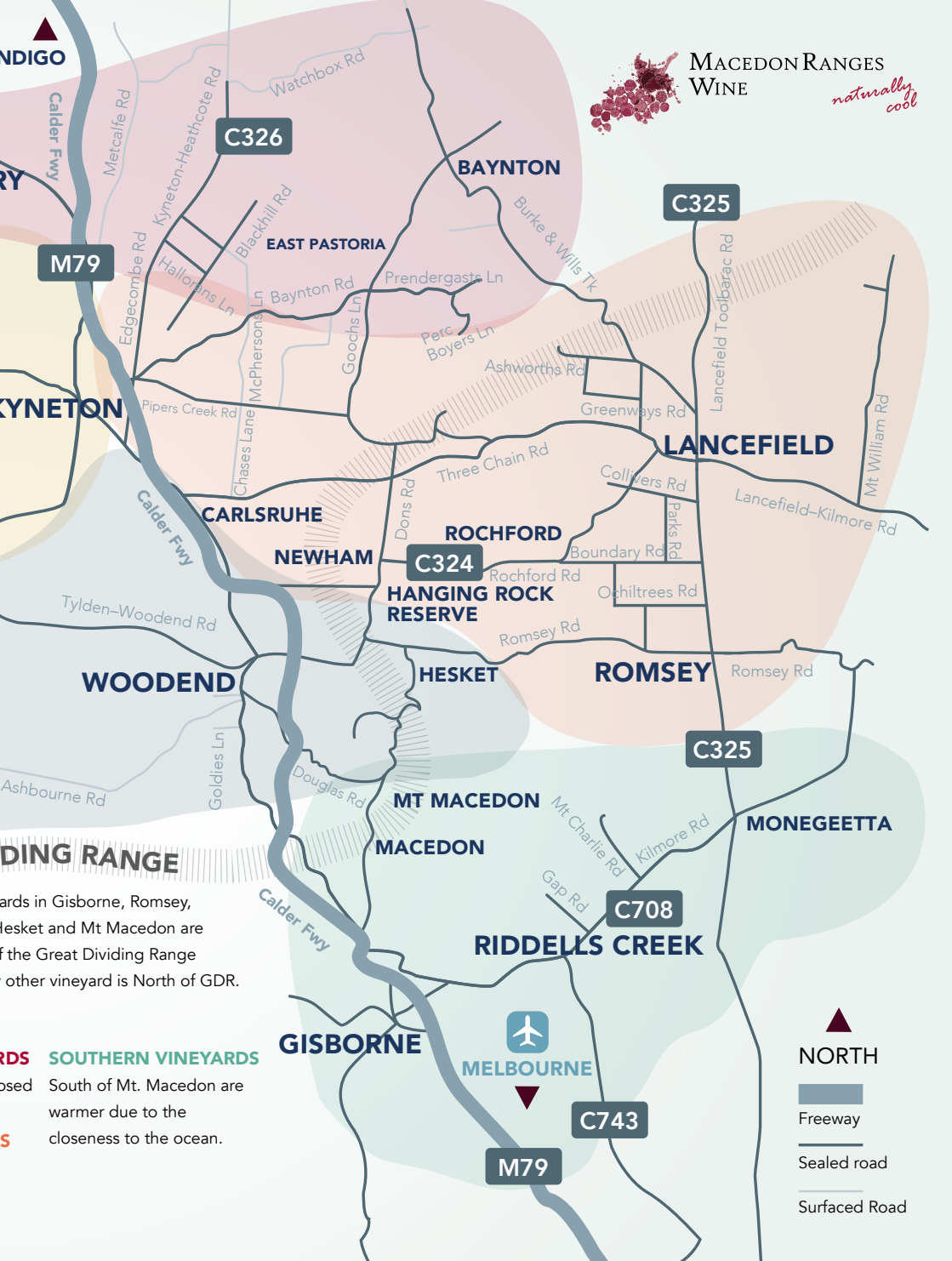
North-west side of the Great Divide. Milder summer nights and warmer days, some are sheltered from cold westerly winds.

NORTHERN VINEYARDS

Vineyards which are exposed to northerly winds.

CENTRAL VINEYARD

Can be cold with air down-flowing from surrounding ridges.



ards in Gisborne, Romsey, Heskett and Mt Macedon are part of the Great Dividing Range. Another vineyard is North of GDR.

NDIGOS South of Mt. Macedon are warmer due to the closeness to the ocean.



Our WINES

WINES FROM THE MACEDON RANGES SHOW A RARE FINESSE AND PERFUME

Wine critic, James Halliday says: "Despite the varietal spread, the cool climate has a unifying influence on the style of wines. They are more perfumed than their warmer region counterparts: they are usually in the light to medium bodied spectrum; and finally, the natural acidity not only preserves the freshness of the wines but increases the length of the palate, aftertaste and longevity of the wine."

The Macedon Ranges is one of only a few wine regions in Australia in which the wineries are predominantly family-owned and operated, lovingly producing signature wines, some using age-old techniques. As a result, we offer wine that is limited in quantity and exceptionally high in quality.

Wine styles in the Macedon Ranges vary across the geo-climatic zones. Chardonnay, for example, varies from elegant, lightly structured and potentially long-lived wines, sometimes showing quartz, minerally flavours that can be expected from plantings at altitude. To more full flavoured styles from the warmer sites in the lower altitude south of the Divide and in the more northerly parts of the region.

The predominance of Chardonnay and Pinot noir in the vineyards confirms the suggestion that this is an extremely good region for the production of "Macedon" sparkling wine. The intense flavours and high natural acidity of the base wines encourage the use of both traditional and newer winemaking processes to produce wines with great character and individuality.

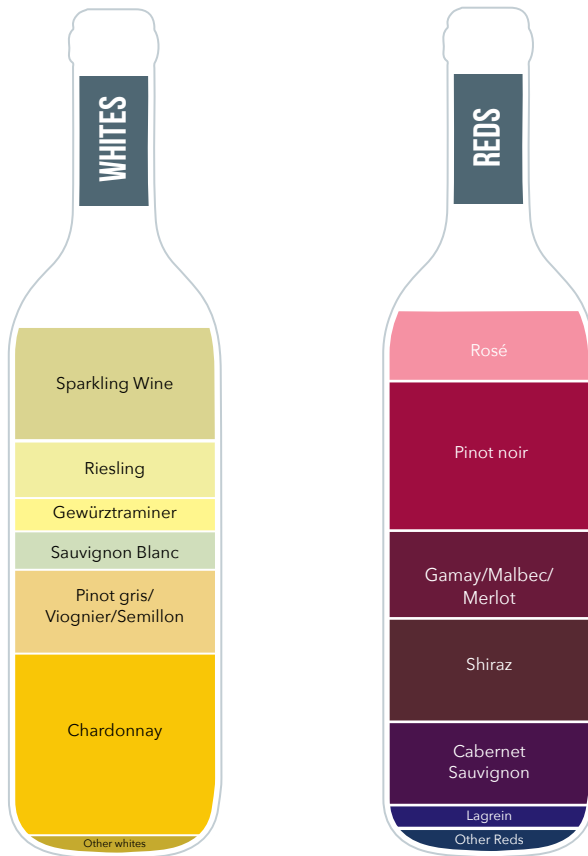
Riesling, Gewürztraminer and other aromatic varieties of the Macedon Ranges produce exceptional floral aromas and naturally preserve a high amount of acidity.

Given that Shiraz is generally found in warm to hot regions, where it is considered to do best, it may come as a surprise to learn that the north of the region is eminently suitable for its cultivation. The Macedon Ranges was the first region to introduce consumers to the striking pepper, spice and blackberry aromas and flavours of genuinely cool climate Shiraz. At times strikingly similar to the wines of the northern Rhone Valley of France, this style has added a third dimension to Shiraz in Australia.



Our Main VARIETIES

The wineries of the region offer a wide spectrum of varieties and blends. The below infographic shows the proportion of wine varieties produced in the vineyards across the region.





Aromas and flavours of OUR WINES

WHAT CAN WE EXPECT WHEN TRAVELLING AROUND THE SUBZONES OF OUR REGION?

Riesling grapes of the Macedon Ranges produce exceptional floral and citrus aromas in their wines and naturally preserve a high amount of acidity. **Gewürztraminer** has pink-skinned berries that produce wines of intensely scented rose and lychee aromas. When grapes are picked at the right time wines have a sturdy acidity.

Pinot gris, **Viognier**, **Semillon** and **Sauvignon blanc** have also been produced successfully in the region. Other newer white varieties in the region include: **Grüner Veltliner** and **Pinot blanc**.

Chardonnay and **Pinot noir** are the predominant grapes in the Macedon Ranges. There is a diversity of styles of **Chardonnay**. They are all elegant, well structured and potentially long-lived wines, sometimes showing quartz mineral flavours. The **Pinot noirs** of the region are presented as elegant table wines (with barrel ageing) or as a refreshing **Rosé** wine. Fragrant and lighter bodied in the cooler vintages, yet more robust in warmer years, our **Pinot noir** wines have always a distinct cool climate varietal character.

The intense flavours and high natural acidity of **Chardonnay** and **Pinot noir** in the base wines for the **Sparkling Wines** deliver great character and individuality.

Our **Shiraz** wines have complex, earthy, dried herbal, mineral and black pepper notes. The striking black pepper aroma comes about from a molecule in the grape skins that will disappear with heatloads or drought stress. Macedon Ranges **Shiraz** is capable of presenting this exciting sensation year after year.

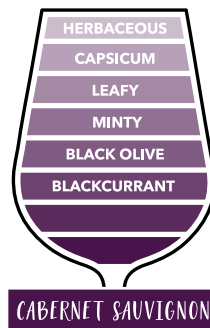
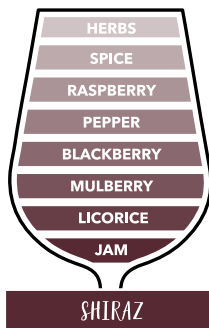
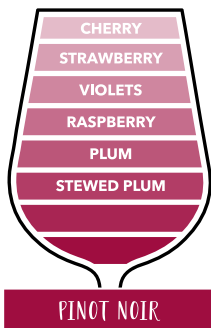
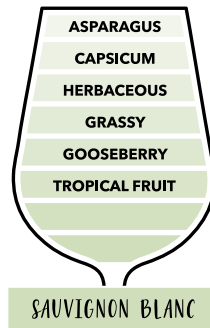
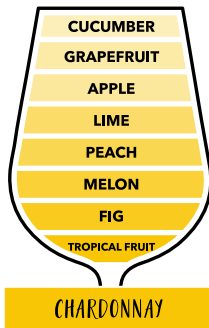
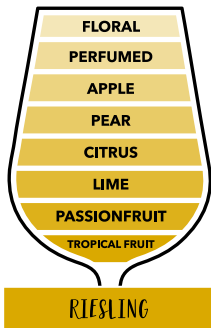
Other red varieties grown in the Macedon Ranges are **Cabernet sauvignon**, **Merlot**, **Malbec**, **Gamay** and Italian cool climate varieties like **Barbera**, **Lagrein** and **Tempranillo**.



Flavours of WINE

Each variety has its own early and later ripening aroma spectrum. Generally, in wines of the Macedon Ranges, more delicate aromas are expressed.

Below are the aroma spectra of some common varieties grown in the Macedon Ranges, according to Iland and Gago, 1997. Aromas developing in wines at early ripening stages (top) to during later ripening (bottom).





WHY OUR WINES ARE *so special...*

Grapes from the Macedon Ranges are handpicked, hand sorted, gently pressed and fermented in small batches and blended to perfect taste. They are produced by small artisan wineries and will be there in years to come, as the climate will be cool and the wines will remain delicious.

This document has been produced to show the uniqueness of the region, the peculiarities of its geo-climatic zones and the diversity and quality of the wines.



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