

29. Argentina

Argentina has established itself as an important producer of wines, making similar volumes to Chile, Australia and South Africa. It has a strong domestic market (due to generations of European immigration with wine-drinking habits) and has had success in exporting its wines, particularly Malbec. The combination of high altitude and low latitude sites with a good supply of irrigation water makes it highly suitable for grape growing. The most important varieties are Malbec and the pink Criolla varieties.

The area now known as Argentina was subject to colonisation in the sixteenth century by the Spanish from its neighbouring colonial activity in Chile, Peru and Paraguay. The indigenous peoples were forced into labour for the Spanish, taken as wives by the Spanish, killed or driven away.

The first recorded vineyard in Argentina was planted in the 1550s by Spanish settlers. Despite the high altitude and arid landscape, viticulture quickly established itself as an important part of the local economy and soon grew. Argentina declared independence from Spain in 1816 and soon began attracting European immigrants, particularly from Spain, Italy and France, bringing their winemaking traditions and vines with them. A viticultural research centre and school was established in 1851. As a result, many important European varieties, including what has become its signature variety Malbec, arrived in Argentina before the phylloxera epidemic struck. This encouraged a further significant wave of European immigrants who had lost their livelihoods to phylloxera in the late 1800s and early 1900s.

For much of the 20th century, Argentina was isolated from the rest of the world, affected by a series of political and economic crises. However, very high domestic wine consumption sustained the industry (European immigrants brought with them their wine drinking culture), which focused on producing large amounts of inexpensive wine, mainly from the high-yielding criolla pink varieties such as Cereza, Criolla Grande and Criolla Chica, and the white Pedro Giménez.¹ Planted by the earliest settlers, these dominated plantings until relatively recently and remain important on the domestic market to this day.

Domestic consumption began to fall dramatically in the 1970s and, aided by the return to democracy and an open economy in the 1980s and early 1990s, Argentinian wine producers, most notably Nicolás Catena, started to look to export markets and shift focus from quantity to quality. With the help of considerable foreign investment (aided in turn by parity between the dollar and peso) and the arrival of famous wine consultants such as Michel Rolland, Alberto Antonini and Paul Hobbs, the Argentinian wine industry began a process of modernization.

Argentina burst on to the world wine scene when a weak peso in the early 2000s made their goods relatively cheap on export markets. Despite currency fluctuations and further economic and political upheaval in the years since, Argentina is now among the top wine-producing and exporting countries in the world. In the period 2017-2021, Argentina was the sixth largest producer of wine in the world (average 12.5 million hectolitres of wine per year) making it part of a group with Australia and Chile that were regularly the fifth to seventh largest producers in that period.² This success has been driven mainly by the huge popularity of Malbec. However, Argentina is increasingly recognised as being able to produce high quality Cabernet Sauvignon, red blends and Chardonnay amongst others.

29.1. The Growing Environment and Grape Growing CLIMATE

Argentina's main wine-producing regions stretch for over 1,500 kilometres (930 miles) from Salta in the north to Rio Negro in the south, between approximately 24 and 38°S.

The combined influence of altitude and latitude is essential. At low latitudes, the influence of altitude is essential to ensure that it is not too hot for viticulture. Therefore, with the exception of Patagonia in the south, the vineyards are in the foothills of the Andes in the west of the country. The lowest are around 500 metres above sea level and many are above 1,000 metres (with the highest said to be at around 3,300 metres). Even at the highest altitudes, however, most vineyards are planted on flat or gently sloping sites.

One of the key effects of altitude is the wide diurnal temperature range, over 20°C (36°F) in many places. The cooler night-time temperatures extend the growing season and allow the grapes to retain acidity and aromas. The combined effect of low latitude and high altitude also results in intense sunlight, and a relatively high proportion of ultraviolet radiation (due to the high altitude). This leads to grapes with higher levels of tannins and anthocyanins.

The vast majority of Argentina's wine regions have a continental climate (there is a tiny number of plantings in coastal areas). They lie in the rain shadow of the Andes, even in Patagonia several hundred kilometres away, and so rainfall levels are very low, in some places less than 200 millimetres per year. In such desert-like conditions, irrigation is essential for viticulture. However, the dry air reduces the risk of disease, as do the often strong winds which blow down from the mountains along the valleys.

One such wind is the *zonda*, a hot, dry powerful wind which occurs mainly in late spring and early summer. It lowers humidity and can induce water stress in the vine, and, if it is particularly strong, can affect flowering and fruit set or damage grapes (depending on the time of the year) and therefore reduce yields, sometimes substantially. Trees, particularly poplars, may be grown to act as windbreaks.

What rain there is usually falls in the summer and hail is a constant threat, significantly reducing yields in some years. Many producers use netting to protect their vines but covering



Nets used to minimise hail damage in Mendoza

a large vineyard area is very expensive, and so only the most prized sites may be netted. Many growers in Mendoza own vineyards in different parts of the province to minimize the risk of hail damage to their entire crop. Frost is a significant problem in some areas of Mendoza, usually in flat areas or at the bottom of slopes. This is a problem throughout the region, both in the higher and lower altitudes.

Despite the protection from the Andes, Argentina is affected by the El Niño phenomenon, which occurs every two to ten years. This brings much higher than average rainfall – and more hailstorms – which can damage crops, significantly increase the risk of disease and reduce harvests. In 2016, it resulted in a reduction of over 25 per cent across the country and nearly 40 per cent in Mendoza.³

SOILS

Most of Argentina's vineyards are planted on alluvial soils deposited by the rivers flowing down from the Andes. The texture of these soils varies. Because of the alluvial origin, larger stones with calcareous deposits tend to dominate the higher altitudes closer to the Andes. The middle areas are dominated by gravel, sands and silts. Deeper loamy-clay soils, which are richer in nutrients can be found in the lower areas. Because of the dry, continental climate, there is little organic matter from decomposed flora and fauna. This results in particularly poor soils in the higher altitude areas. Poor soils are optimal for naturally low yielding vines and high-quality viticulture.

As investment in Argentinian wine has increased, so has interest in how subtle differences in the texture and composition of the soil affect the characteristics and flavours in the wine. Deposits of calcareous soils have been identified in areas such as Gualtallary and Paraje Altamira in the Uco Valley and the Pedernal Valley in San Juan, which are increasingly seen as sources of high-quality wines.

VINEYARD MANAGEMENT

In 2021, Argentina had around 200,000 hectares under vine.⁴ In the 1970s and 1980s, the area under vine was considerably higher – over 300,000 hectares. However, faced with rapidly falling domestic demand, a vine-pull scheme was introduced. Unfortunately, this included thousands of hectares of Malbec just before its potential in Argentina was recognised. Despite this, almost 30 per cent of vineyards are over 40 years old or more and wines produced from old vines, particularly Malbec, Bonarda and Sémillon, are increasingly prized for their concentration and complexity.⁵

Rainfall is so low in most of the country that irrigation is essential. Rivers, such as the Mendoza and its tributaries, deliver pure meltwater from winter snow and glaciers in the Andes. This is collected and distributed by a network of dams and irrigation channels, much of which dates back to the 16th century. The water is distributed regularly and can be stored in reservoirs until the wine producer chooses to use it.

Many vineyards are irrigated by flood irrigation. When required, water is released on to the vineyard: the amount is roughly equivalent to a heavy summer rainstorm. Some vineyard owners consider this the most suitable form of irrigation for Argentina's free-draining soils as it allows water to drain deep into the soil. As a result, and also because it is relatively cheap to operate, this remains the most widely used irrigation system in Argentina, used in around 70 per cent of vineyards.

However, in recent years, there has been an increase in the use of drip irrigation systems. When planting new vineyards on sloped land, installing drip irrigation is often cheaper and easier than levelling the vineyard to make it suitable for flood irrigation. In other cases, there may not be sufficient sources of above-ground water (e.g. canals and rivers) for flood irrigation (water for drip irrigation is pumped from boreholes). The increased efficiency of water usage and enhanced control of water application are also benefits of using drip irrigation. Water shortages can be an issue in some years in Mendoza, La Rioja and San Juan, and so drip irrigation is also the most sustainable option.

For both flood and drip irrigation the typical and traditional timing of water application is to give larger amounts in the winter (to replicate winter rainfall) and then low amounts in the growing season (every couple of days to every couple of weeks, depending on whether drip or flood irrigation is used) to ensure roots grow at depth to find water and so that the vine focuses on fruit development rather than vigorous growth of shoots and leaves.

Traditionally vines were trained on a high pergola system (known as *parra*) in order to raise the grapes away from the heat of the ground and provide shade for the fruit. This system is still widely used, particularly in the warmer areas for varieties such as Torrontés that need shade to retain acidity and aromas. It is also common for high vigour and high yielding varieties such as Criolla Grande and Chica, Cereza and Pedro Giménez. However, VSP is becoming increasingly common as it enables the use of modern canopy management techniques and drip irrigation.

Although phylloxera is present in Argentina, it has not caused any significant problems (there are many hypotheses behind this including the sandy nature of many of the soils and the arid climate) and, as a result, the vast majority of vines are ungrafted. However, grafting has become increasingly common because of the risk from nematodes in the soil and because some rootstocks provide increased tolerance to drought.

Because of the limited threat of fungal disease, there is little need for spraying. Argentina is therefore an ideal location for organic and biodynamic viticulture. Although the number of vineyards that are adopting these practices is increasing, the number of vineyards certified organic remains relatively low.



Channels bring water for flood irrigation to the vineyards

Traditionally, grapes were harvested by hand by casual labourers. However, the cost of living has risen considerably in Argentina in recent years and many fewer people are prepared to take on such low-paid work. Mechanical harvesting is therefore becoming more common.

Viticulture in Argentina has undergone considerable modernisation since the arrival of foreign investment. As well as the shift to drip irrigation, there have been considerable improvements in canopy management. There is also better understanding of clonal selection, led by the work of Dr Nicolás Catena and Aldo Biondolillo on Malbec, and how picking grapes at different stages of ripeness can achieve particular styles of wine. Considerable research has been conducted into how different soils affect the style of wine with single- vineyard wines increasingly common. Also, producers are constantly searching for new areas in which to grow grapes and vineyards are being planted higher up in the mountains, further south and closer to the Atlantic Ocean.

29.2. Grape Varieties and Winemaking

Historically, Argentinian wine production was dominated by high-yielding pink criolla varieties, notably Cereza, Criolla Grande and Criolla Chica (known as País in Chile). They have pink skins when fully ripe and produce wines that are lightly coloured. They have long been used to make inexpensive wines for the domestic market. With the shift to quality wine production, plantings have been falling, but these varieties still make up 20 per cent of the total vineyard area and Cereza comfortably remains Argentina's second-most planted variety, after Malbec.⁶

Until the late 1980s, Argentina had more white grapes than black, as white wines were much more popular than reds in the domestic market. However, from the 1990s, with the shift in focus to quality wine production, the proportion of black grapes rose rapidly and they now represent around 53 per cent of plantings.⁷

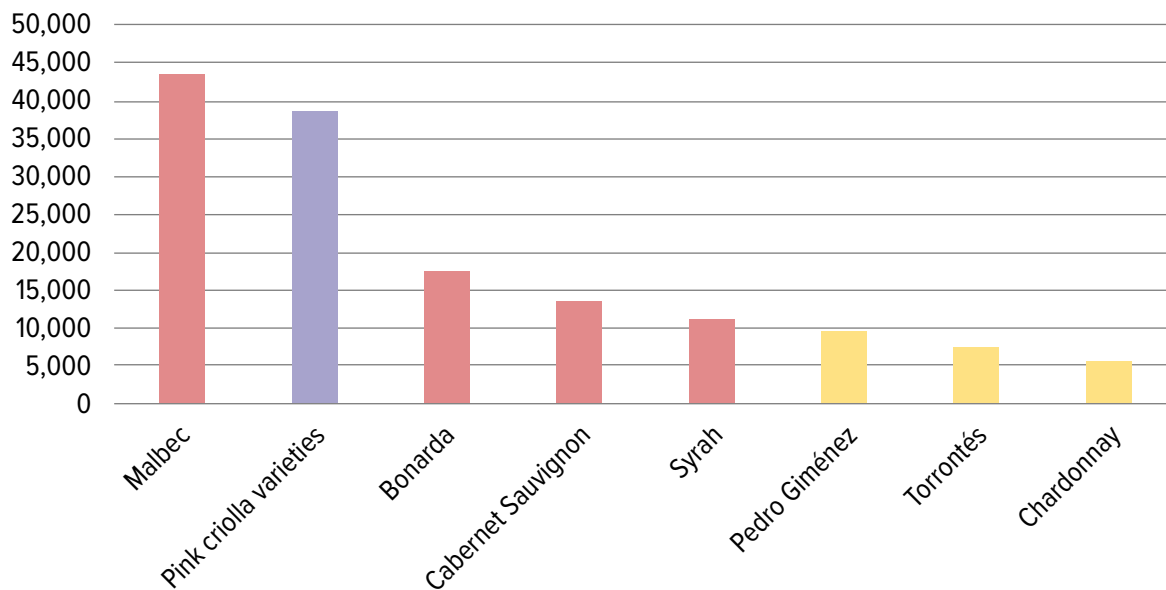


Pink varieties such as this are widely grown in Argentina

KEY BLACK VARIETIES

Malbec

Argentina's signature variety makes up 22 per cent of the total vineyard area.⁸ Plantings increased almost 350 per cent between 1995–2018, initially reflecting a domestic change in focus to high-quality black grape varieties and then driven on by its huge success on the export market.⁹

Argentina: main varieties, hectares, 2021

Source: Instituto Nacional de Vitivinicultura¹⁰

Malbec is a vigorous, mid-ripening grape. In warm, sunny conditions it produces deep-coloured, full-bodied wines with high levels of soft tannins, high alcohol and flavours of ripe blackberry and black plum. This style of wine became hugely successful on the export markets and has been the key factor in the rise in popularity of Argentinian wine abroad.

Malbec can produce a wide range of styles of wine, from inexpensive or mid-priced, lighter, fruity wines to be drunk when young to structured, age-worthy wines which can command premium and super-premium prices. Malbec is still used in blends, usually with Bordeaux varieties, Bonarda and also with Syrah. Again, these blends range from inexpensive to some of Argentina's most expensive wines. It is also being used to produce fresh, fruity rosés.

There is increasing understanding of how different microclimates can affect style: Malbec from cooler sites (e.g. high altitude or relatively high latitudes) tends to have lower alcohol, medium (+) acidity, firm, medium (+) tannins and fresh fruit flavours often with a mixture of red and black fruit characteristics, and floral or herbal aromas. Those from warmer sites (e.g. relatively low altitudes and latitudes) are usually fuller-bodied with riper fruit characteristics, lower acidity and softer tannins. Producers with vineyards in more than one area often blend wines to take advantage of those different characteristics. However, wines from single vineyards are increasingly common as producers want to highlight the style and quality of wines coming from certain sites.

Cuttings of Malbec taken in France arrived in Argentina before phylloxera devastated the vineyards in France contributing to a diversity of high quality of planting material, which has further been honed by clonal research and massale selection. In general, Malbec clones in Argentina have been found to have smaller berries and bunches and softer tannins than those in France.

Bonarda

Bonarda is Argentina's second most planted black variety. It is often called Bonarda Argentina to distinguish it from the various unrelated Bonardas of Italy. It is a late-ripening variety and mainly planted in San Juan and the warmer areas in Mendoza. High-yielding, it is used to produce large volumes of inexpensive wines, mainly for domestic consumption. When yields are limited, it can produce wines with more intensity and structure.

Bonarda typically displays a deep colour, red and black fruit flavours, medium (+) acidity, and medium tannins and alcohol. Oak can overwhelm Bonarda and so if oak is used, it tends to be in the form of large and/or old vessels. Bonarda's fruity nature and colour intensity also make it a popular blending partner, usually with Malbec or Cabernet Sauvignon.

Recently, some producers have started making more complex wines with riper, black fruit flavours and spicy characteristics, particularly from lower-yielding vineyards and old vines, such as those found in Maipú, Luján de Cuyo and the east of Mendoza. Many of these wines are still mid-priced with only a few premium-priced. Though exports are increasing, Bonarda is yet to come out of Malbec's shadow on the export market. Over 75 per cent of production is still consumed domestically.¹¹

Cabernet Sauvignon

Cabernet Sauvignon is more susceptible to extremes of temperature and fungal disease than Malbec and so careful site selection is important. Typically blended with Malbec in some of Argentina's top wines, it is increasingly being used to make premium-priced single varietal wines. There is considerable competition with Cabernet Sauvignon from other countries, but Argentinian examples tend to show ripe high tannins, blackcurrant and blackberry fruit and spicy notes without a marked herbaceous character.

Syrah

Syrah is successful in the hotter sites of Mendoza and San Juan (it is more widely planted here even than Malbec), where it produces full-bodied wines with high alcohol and ripe, black fruit flavours. In cooler areas, it can produce more elegant wines with fresher fruit and firmer tannins.

Tempranillo tends to produce wines with medium tannins and a medium-full body with red fruit aromas and spice from oak maturation. Merlot has traditionally been used for Bordeaux-style blends but vineyard area is decreasing. Although not in the top ten varieties, Pinot Noir plantings are increasing and it is proving particularly successful in Patagonia and the high-elevation vineyards of the Uco Valley, producing concentrated, fruity wines. It is also thought that Cabernet Franc has considerable potential in Argentina, producing a distinctive, concentrated style of wine whether as a single variety or in a blend with Malbec. Petit Verdot and Tannat plantings are also on the increase.

Red winemaking in Argentina has been greatly influenced by the Spanish, French and Italian immigrants of the 19th and early 20th centuries: they were traditionally fermented and matured in large oak barrels, sometimes with a hint of oxidation. However, with the arrival of foreign investment and foreign winemakers, there was a shift to a more modern international style. Later harvesting, temperature-controlled fermentation and maturation in new oak barrels (typically French) led to full-bodied, ripe, fruity wines with prominent oak flavours.

Nowadays, producers are increasingly harvesting earlier for fresher fruit, higher acid and lower alcohol. Some are also experimenting with techniques such as natural fermentation,

whole bunch/berry fermentation, gentler extraction techniques and maturation in a variety of vessels (including new barrels, old wooden vats, and concrete tanks or eggs), often blending together parcels of wine that have been treated differently.

In recent years, there has been significant growth in the production of super-premium priced wines with lengthy ageing potential, both blends and single varietals, including those from Catena Zapata, Viña Cobos and Achaval Ferrer.

A number of good quality dry rosés are starting to emerge, mainly from Malbec. Rosés were often a by-product of red wine production, but it is now increasingly common for the grapes to have been grown, harvested and processed exclusively for rosé wine production.

KEY WHITE VARIETIES

Although plantings have fallen significantly as producers have switched their focus to red wine, **Pedro Giménez** (not the same as Pedro Ximénez in Spain) remains the most planted white grape in Argentina. It is a relatively neutral grape which has traditionally been used to produce simple, inexpensive wines for domestic consumption.

However, Argentina's potential to produce high-quality white wines is starting to be recognised, in particular in the coolest areas, such as some of the highest altitude sites in the Uco Valley. By picking grapes earlier and fermenting them at cooler temperatures, producers are making fruitier wines with higher acidity and lower levels of alcohol.

Torrontés

There are actually three different varieties called Torrontés: Torrontés Riojano, Torrontés Sanjuanino and Torrontés Mendocino. References in these materials to Torrontés are to Torrontés Riojano, arguably the best of the three and Argentina's second most planted and most distinctive white variety.

A native, natural cross of Muscat of Alexandria and Criolla Chica thought to date back to the 18th century; the wines often have a strong, floral aroma reminiscent of Muscat. A vigorous high-yielding variety, it is widely planted in Mendoza, San Juan and La Rioja. However, because it is an early ripening grape variety, the heat meant it often became over-ripe, resulting in overly alcoholic wines lacking in acidity and with a bitter finish.

More recently, investment and improvements in both grape growing and winemaking have increased its profile. Reducing yields, earlier harvesting and careful temperature control during fermentation have produced wines which are fruitier (lemon, grapefruit, peach) rather than overtly floral, and fresher with lower levels of alcohol.

Torrontés has proven particularly successful in Cafayate (Salta), but increasingly good-quality wines are coming from other cooler, higher vineyards, in particular in the Uco Valley.

Most Torrontés is intended to be drunk young but some producers are fermenting small amounts in oak to blend in with unoaked wine to produce more age-worthy wines. Whilst it has usually been made into single varietal wines, some producers now blend it with other varieties, in particular Sauvignon Blanc. Fragrant, sweet, late-harvest wines are also found.

Chardonnay

As elsewhere, Chardonnay is widely planted and produces wines in a full range of styles. Premium wines from cool sites in the Uco Valley tend to have medium (+) to high levels of acidity, with ripe stone and tropical fruit. Subtle spice notes come from maturation in oak, with producers using a small proportion of new oak or entirely old oak, to not overpower the fruit characteristics.

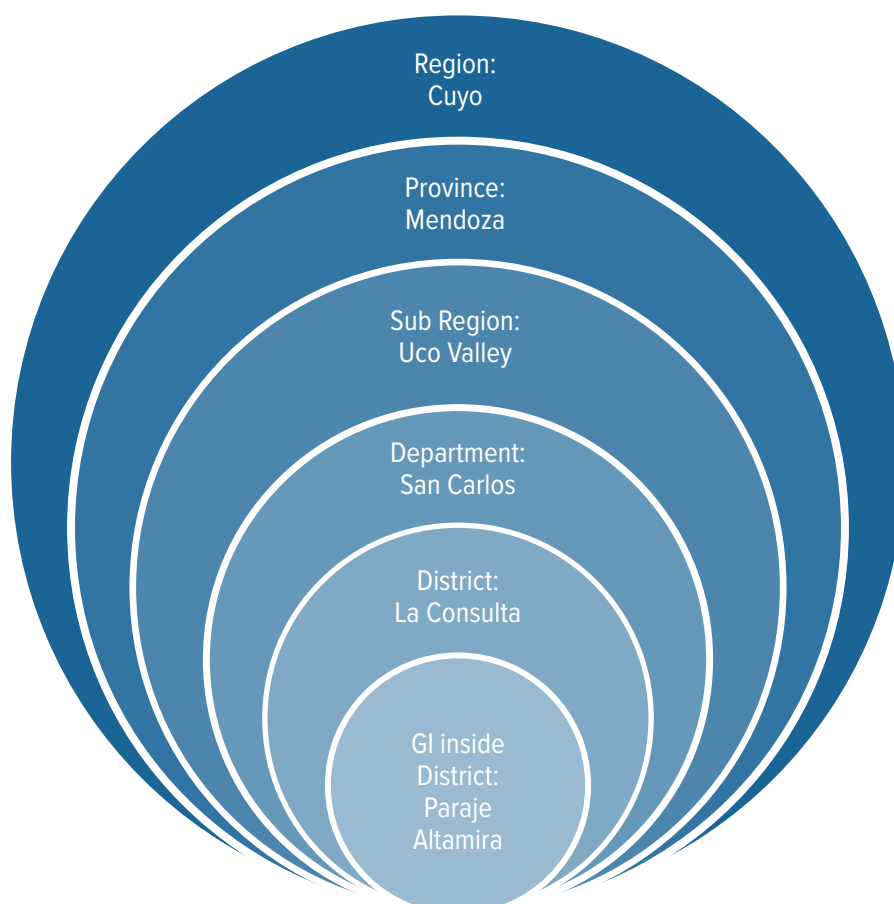
Sémillon and Chenin Blanc have traditionally also been important sources of inexpensive white wine for the domestic market, although some producers are now looking to produce better-quality wines from them. Other white varieties showing promise are Sauvignon Blanc and Viognier.

29.3. Wine Law and Regulations

Argentina has a three-tier system of geographical indicators:

- IP (Indicación de Procedencia): these can cover large geographical areas, though not the country as a whole;
- IG (or GI, Indicación Geográfica) for wines that meet a certain quality made from a specific geographical area that is considered capable of producing quality wines; and
- DOC for wines from a specific geographical area with legislated winemaking criteria – so far, only two have been created: Luján de Cuyo and San Rafael, both in Mendoza, and only a very small number of producers use this category.

A significant number of GIs have been created with several more under consideration. To date, most GIs correspond to political divisions. There can be multiple levels of division from regions (the largest) to GIs within districts (the smallest) as illustrated below. (Note that there is not always a GI in every level shown here.)

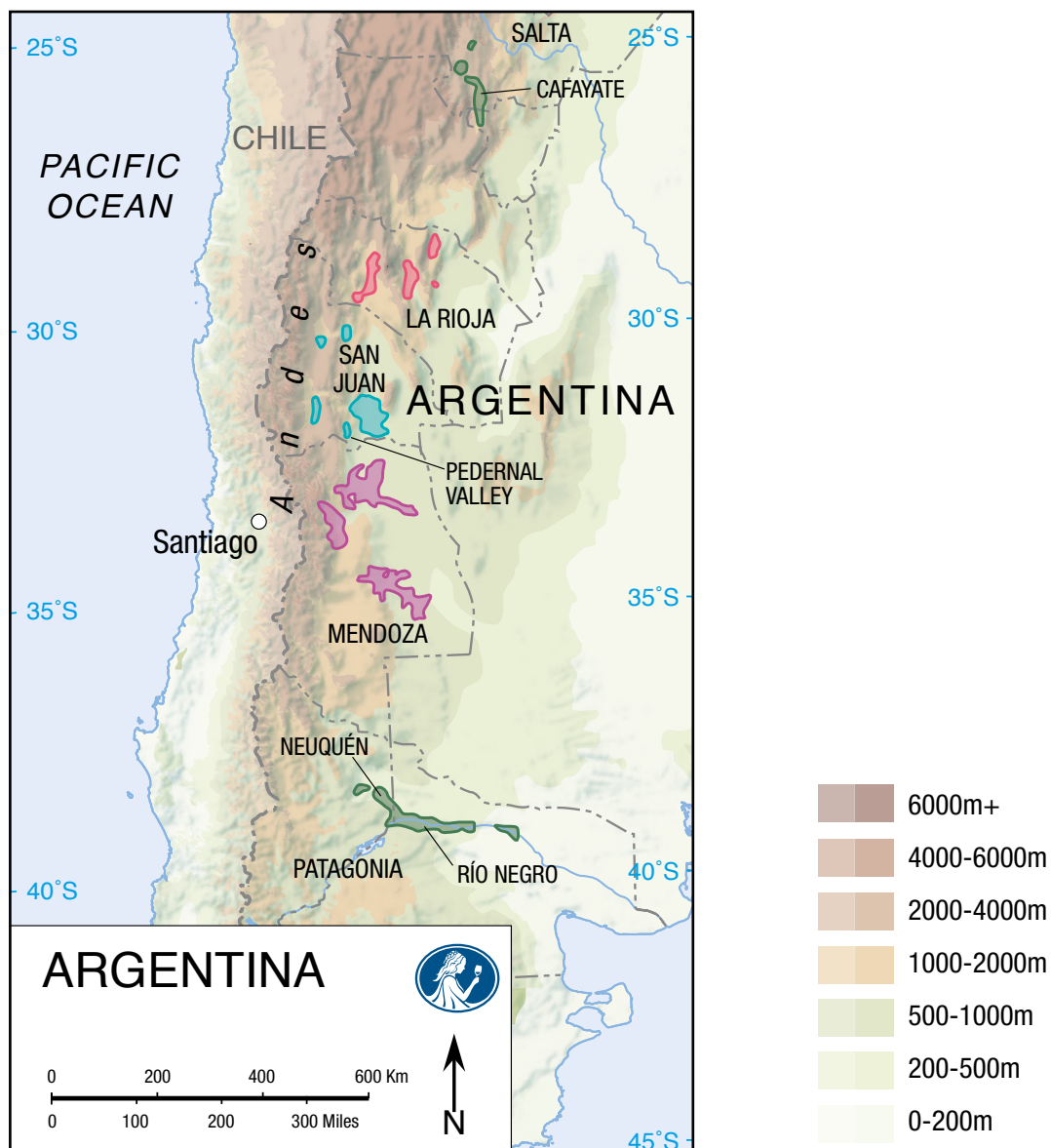


More recently, a number of GIs have been created based not on political divisions but on specific characteristics such as climate or soil, including Paraje Altamira in San Carlos.

Under Argentinian wine law, wines labelled with a GI or DOC must be made exclusively from grapes grown in that area. If a vintage is mentioned on the label, at least 85 per cent of the wine must come from that vintage. Similarly, if a single varietal is named, the wine must contain at least 85 per cent of that variety. Where two or three varieties are mentioned on the label, they must together make up at least 85 per cent of the blend.

Wines labelled as *Reserva* must have been aged for 12 months for reds or six months for whites and rosés. *Gran Reserva* wines must have been aged for twice as long.

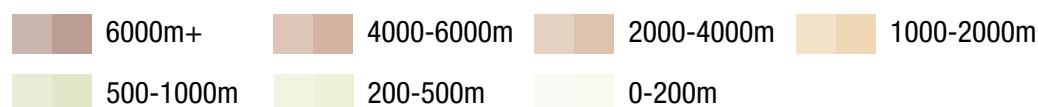
29.4. Wine Regions



The Mendoza, San Juan and La Rioja provinces form a large regional GI called Cuyo.

MENDOZA PROVINCE

Mendoza is by far the largest wine-producing province in Argentina, both in terms of area under vine and volume produced. It accounts for about 70 per cent of the total Argentinian vineyard area and two-thirds of total production.¹² The main vineyard area is situated at the base of the Andes, in the valley of the River Mendoza which supplies essential water for irrigation. However, viticulture is increasingly



extending into the foothills of the Andes. Mendoza's vineyards range from around 500 metres above sea level in the eastern plains to over 1,500 metres in the upper parts of the Uco Valley.

Black varieties account for 55 per cent of plantings, pink varieties 25 per cent, and whites 20 per cent.¹³ Malbec is the dominant grape variety, with plantings having more than doubled since 2000. It currently makes up 22 per cent of vineyard plantings.¹⁴

Mendoza is home to Argentina's only two DOCs and has more GIs than any other province. One GI covers the whole province and most of the departments also have their own GI. Within individual departments, an increasing number of smaller GIs are being recognised.

The vineyard area can broadly be split into five separate divisions: Northern, Eastern, Central, Uco Valley (Valle de Uco) and Southern, each with its own distinct characteristics (apart from Uco Valley these are not registered GIs). Grapes from different areas are often blended together to take advantage of those characteristics.

Northern and Eastern Mendoza

Situated on plains in the Mendoza River valley, these are relatively low areas (around 500 – 700 metres above sea level). Water for irrigation can be sourced from the Mendoza River (for Northern Mendoza) and the Tunuyán River (for Eastern Mendoza). The warmer conditions and availability of water means that these areas can produce large volumes of inexpensive wine. However, some higher quality wines are also produced, usually from lower-yielding vineyards, in particular from Tempranillo and Bonarda.

Central Mendoza

This is also known as the 'Primera Zona' because it has the longest history of producing high-quality wine in Argentina. It is home to many of the country's leading producers, even if many of them also have vineyards elsewhere. The vineyards lie between 600 and 1,100 metres above sea level, allowing for the production of a wide range of wines from different varieties and in different styles. As elsewhere in Mendoza, Malbec is the dominant grape variety, but Cabernet Sauvignon, Syrah and Tempranillo perform well. There are also increasing amounts of high-quality white wines coming from the cooler areas.

The two most prestigious wine-producing departments in Central Mendoza are Luján de Cuyo and Maipú

Luján de Cuyo – South-west of the city of Mendoza, where the Mendoza River valley emerges from the Andes foothills, this is the higher half of the Primera Zona with vineyards situated between 900 and 1,100 metres above sea level. Over half the vineyards are planted with Malbec and the area is particularly famous for its old Malbec vines.

DOC Luján de Cuyo was the first DOC to be created in Argentina. Wines must be aged for a minimum of 24 months with at least 12 months in oak. In practice, it is only used by a very small number of producers and typically only for Malbec.

Within GI Luján de Cuyo, there are also a number of increasingly well-known smaller district-level GIs, including Las Compuertas and Agrelo. The highest vineyards within the area (for example, in Las Compuertas) tend to produce fruity, full-bodied reds from Malbec and the other Bordeaux varieties. They have medium (+) acidity, due to the wide diurnal range, and firm tannins, giving them considerable potential for ageing. The best wines can therefore command premium prices and above. There are also some elegant, balanced whites from Chardonnay and Sauvignon Blanc. The lower clay-soil vineyards (for example, in Agrelo) produce riper red wines, with very good and outstanding examples having the structure to give them potential for ageing. There are some fruity, full-bodied whites, particularly from Sémillon.

Maipú – Maipú lies to the east of Luján de Cuyo to the south and east of the city of Mendoza. The vineyards are lower, ranging from around 900 metres above sea level on the border with

Luján de Cuyo down to almost 600 metres further east; the sites therefore tend to be warmer. Maipú has a large population of old vines, and the Malbecs are intensely fruity and full-bodied with higher alcohol and softer tannins than elsewhere in Mendoza. The lowest, warmest sites produce large volumes of inexpensive wines but are also a source of higher-quality Cabernet Sauvignon, Tempranillo, Syrah and old vine Bonarda.

Uco Valley

In the foothills of the Andes straddling the valleys of the Tunuyán River and its tributaries, the Uco Valley is home to the highest vineyards in Mendoza, stretching from 850 to well over 1,500 metres above sea level.

The high altitude (especially given latitudes here are higher than most other areas of Mendoza, and much higher than those in Salta province) means cooler temperatures and a wider diurnal range. This in turn means the grapes accumulate sugar less quickly and retain acidity and fresh fruit flavours, whilst the intensity of the sunshine gives grapes with deep colour and ripe tannins. As a result of this potential for quality, there has been huge investment from leading winemakers, both from within Argentina and beyond, and the vineyard area has almost doubled this century.

As elsewhere, the Uco Valley is dominated by black grape varieties, particularly Malbec, but some producers believe its coolest high- altitude sites have great potential for producing premium white wines too. The recent investment means that these are amongst Argentina's most modern and technologically-advanced vineyards. Although the rivers provide water for irrigation, drip irrigation is more commonly used here.

GI Valle de Uco crosses three departments: Tupungato, Tunuyán and San Carlos, each of which has its own GI.

Tupungato – Tupungato is the most northerly and highest of the departments, situated at the foot of the Mount Tupungato volcano. It produces fresh but full-bodied reds from Malbec, Cabernet Sauvignon, Cabernet Franc and Pinot Noir as well as crisp, elegant whites from Chardonnay and Sauvignon Blanc.

Tupungato's most recognised district is Gualtallary, a long, narrow strip of vineyards between 1,100 and 1,600 metres above sea level, which is increasingly being recognised as producing high-quality, distinctive and complex wines, both red and white. It is in the process of being recognised as a GI on the basis of its distinctive limestone soils. The Malbecs from Gualtallary, particularly, those grown at high altitudes are thought to be lighter in body and higher in acidity than many in Argentina, and have red and black fruit flavours often with a herbal characteristic. Blends of Malbec and Cabernet Franc are also common.

Tunuyán – To the south of Tupungato, Tunuyán covers a wider range of altitudes. At the lower and warmer end of the valley, it produces fuller-bodied, structured yet fruity red wines, whereas the higher sites are some of the coolest areas in Mendoza and suitable for premium white wines and Pinot Noir.

San Carlos – The most southerly of the three departments, San Carlos is increasingly recognised for its old vine plantings and the quality of its red wines, especially Malbec, Cabernet Sauvignon and, in the lower, warmer areas, Syrah. It includes the GI of Paraje Altamira, which, based on an alluvial fan, includes a variety of soils, though a high presence of

calcium carbonate and a stony topsoil are hallmarks of the GI. It covers an area between 1,000 and 1,200 metres above sea level. With lower altitude than Gualtallary, its Malbecs are thought to be more intense, and fuller bodied, though with the acidity and tannin structure to age well.

Southern Mendoza

There is a further area of vineyards to the south of Mendoza province mainly in the department of San Rafael. They are over 200 kilometres (125 miles) south of the city of Mendoza and, although the vineyards are lower (between around 450 and 850 metres above sea level), the more southerly location means that the summers are cooler and longer, resulting in slower sugar accumulation and good acid retention. However, it is particularly prone to summer hailstorms.

Southern Mendoza does not enjoy the same reputation as some of the more prestigious parts of the province. Whilst its grapes are often sent away to be used in blends, high-quality wines are made there. Reds tends to be more medium-bodied than those made from further north and show more red fruits. Malbec, Cabernet Sauvignon, Syrah and Bonarda are the most important grape varieties. The signature white grape is Chenin Blanc, which is increasingly being used to produce well-balanced, fruity wines.

San Rafael is the only other DOC in Argentina but the GI, which also covers the whole department, is more widely used on labels.



Stony topsoil in Paraje Altamira

SAN JUAN PROVINCE

To the north of Mendoza, San Juan has the second largest area under vine in Argentina, although it is not even a third of that in Mendoza.

The vineyards stretch from 600 to over 1,500 metres above sea level. The lower sites are hotter than much of Mendoza with a lower diurnal range and tend to produce inexpensive wines, particularly from the high-yielding pink varieties. As these have fallen out of fashion, the area under vine in San Juan has actually been falling, unlike in the other provinces.

However, San Juan is now starting to develop a reputation for better-quality wine. Alongside the usual Malbec and Bonarda, Syrah has quickly become the province's most widely planted black grape, now covering double the vineyard area of Malbec. Many of the highest quality wines are being produced from high altitude sites in the foothills of the Andes, for example in the GI of Pedernal Valley (1,250–1,500 metres above sea level) close to the border with Mendoza, where the higher diurnal range leads to higher acid levels and fresher fruit flavours.

LA RIOJA PROVINCE

North of San Juan, La Rioja is the third largest wine-producing province in Argentina. The focus is mainly on high-volume, inexpensive wines made from grapes grown in the Famatina Valley, in particular Torrontés, Cabernet Sauvignon, Malbec and Syrah. Much of that wine is made by the large La Riojana co-operative, which is the single largest producer of Fairtrade certified wines in the world.

To avoid confusion with the Spanish region of the same name, wines intended for export are labelled as 'La Rioja Argentina'.

SALTA PROVINCE

Salta is the most prominent wine-producing province in the far north of Argentina. Although it is the fourth largest wine-producing province in the country, production is tiny compared to Mendoza. However, in recent years, it has been attracting significant investment from both Argentinian and foreign winemakers.

The vineyards are mainly situated along the valley of the Calchaquí River, which provides essential water for irrigation in the desert-like conditions.

Lying between 24° and 26°S, Salta's vineyards are some of the closest to the Equator anywhere in the world. However, the low latitudes are offset by altitude: the vineyards range from around 1,500 to over 3,000 metres above sea level.

These are extreme conditions for growing grapes. At such low latitudes and high altitudes, sunlight is intense, leading to grapes with high levels of anthocyanins and tannins. The mountains surrounding the valley provide shade for the vineyards in various part of the day, hence shortening the exposure to such extreme sunlight. The strong *zonda* wind often blows down the valleys from the mountains. Vines are therefore forced to protect themselves from the conditions, resulting in thicker skins and lower yields. This, coupled with the wide diurnal range, produces highly concentrated and full-bodied wines which are also extremely fragrant and fresh.

The dominant black variety is Malbec which produces wines that are full-bodied with medium (+) acidity, high alcohol and ripe black fruit characteristics, with a distinctive herbal or floral lift. Other significant black varieties are Cabernet Sauvignon, Bonarda and Syrah, whilst Tannat is also showing considerable promise.

The principal white variety is Torrontés. Torrontés has proved particularly successful in GI Cafayate, a district in the south of the province, where, in vineyards at around 1,700 metres above sea level, it is producing aromatic, usually un-oaked wines.



High altitude vineyards in Salta experience intense sunshine

PATAGONIA REGION

Around 700 kilometres (430 miles) south of Mendoza City at around 38° to 39°S, the wine-producing areas of Patagonia are markedly different to those in the foothills of the Andes. Altitude is much lower than further north, with the highest vineyards only around 400 metres above sea level. However, due to the higher latitude, temperatures are relatively low, sunlight is less intense and the growing season is longer. Rainfall levels are low – at less than 200 millimetres per year, even lower than in Mendoza – meaning irrigation is essential.

Patagonia is starting to get a reputation as a producer of high-quality wines, particularly from Pinot Noir, Cabernet Franc, Merlot, Sémillon, Chardonnay and even Germanic white varieties such as Riesling. Malbec is still the most planted variety, and generally produces wines with a floral character.

Constant winds, particularly in Neuquén, blow across the arid Patagonian plateau from the Andes. Whilst these help to produce healthy and thick-skinned grapes, the winds can be strong enough to disrupt flowering and damage vines. Barriers are needed to protect vines and many vineyards are sheltered by rows of poplar trees.

There is a GI covering the whole of Patagonia but production is focussed mainly in the province of Río Negro, with a small number of wineries in neighbouring Neuquén.



Lines of trees form wind barriers in Neuquén

Río Negro province

Wine has been produced along the Río Negro valley for around 100 years resulting in significant stocks of old vines, most notably Sémillon, Pinot Noir and Malbec. Most of the viticulture takes place at the upper end of the valley, where the elevation ranges from 180 to 270 metres above sea level. It is capable of producing elegant, well-balanced Pinot Noir, Malbec, Merlot, Sauvignon Blanc and Riesling.

Neuquén province

This is a relatively new wine-producing region; only planted around the start of this century. There are only a small number of vineyards, which are situated close to where the Neuquén River joins the Río Negro – the lack of available water means the vineyard area cannot currently grow any further. This is a slightly warmer, more arid area than Río Negro producing riper styles of wine. The main grape varieties include Malbec, Pinot Noir, Merlot and Sauvignon Blanc.

29.5. Wine Business

Production levels have remained steady over the last couple of decades, but there can be marked fluctuations in production volumes year on year, partly according to the effects of El Niño.

Export volumes show more of a trend. In 2020, Argentina exported 4 million hL of wine.¹⁵ The USA is the main export market, as it has been for many years. It accounts for 21 per cent of the export market by volume and 27 per cent by value. The next largest export markets are the UK, Canada and Brazil.¹⁶ Other Latin American countries remain important trading partners, thanks to the MERCOSUR free trade agreement.

Argentinian wine enjoyed an export boom in the first decade of the 2000s. Thanks to a weak peso, it quickly gained huge popularity, especially in the USA, for its inexpensive but good quality wines, particularly those made from Malbec. In the decade to 2021, the volume of wine exported saw significant variation. These variations were due to a combination of factors including inflation, low yields in some years (for example the heavy rain of the *El Niño* year 2016) and restrictions on foreign investment. However, the value of exports has remained more constant, averaging US\$840 million per year.¹⁷

Around 60 per cent of exported wines by volume are single-varietal Malbecs and Argentina's signature grape remains an integral part of its export strategy.¹⁸ Events such as the annual Malbec World Day (organised by the promotional body, [Wines of Argentina](#)) seek to promote and retain interest in an increasingly diverse range of wines. However, it is acknowledged that it would seriously affect the Argentinian wine industry if Malbec fell out of favour with consumers and, as a result, many producers are looking to diversify into different varieties and styles of wine.

An organisation called COVIAR (which brings together national and local governments, growers, producers and professional bodies) is overseeing 'Strategy 2020' to promote Argentinian wine further, both on the domestic and export markets. Wines of Argentina has been working to modernise the image of Argentinian wine, in particular to attract millennials.

However, exports still only account for just over 20 per cent of production. Therefore, the domestic market remains crucial, despite the enormous reduction in consumption in the past fifty years (from a peak of 90 L per person per year in 1970 to around 21 L in 2020).¹⁹ Rises in inflation have resulted in a decrease in purchasing power and domestic consumers are generally choosing to drink less but buy higher quality products.

The size of vineyard holding varies considerably. Vineyards up to 10 ha account for 29 per cent of the total vineyard land and vineyards of 25 ha and above for 45 per cent (which includes 12 per cent where the holding is more than 100 ha).²⁰ Many vineyards are still family-owned. A number of these family businesses have grown to become some of Argentina's leading producers: e.g. Bodega Catena Zapata and Familia Zuccardi.

FeCoViTa (a collective of 29 co-operatives) and Grupo Peñaflor (which owns Trapiche and Finca Las Moras amongst others) are amongst the world's highest-volume producers, and account for a significant proportion of Argentinian wine production.

In the past few decades, there has been considerable investment in Argentinian wine, both creating new vineyards and buying up existing ones. Some of this has come from within Argentina but significant amounts have come from other countries, in particular from France, Spain and Italy but also from Chile.

References (all websites retrieved June 2023)

- 1 'Criolla' is a collective name for grape varieties that have been commonly grown in South America since the arrival of the conquistadores. However, Criolla Grande and Criolla Chica are also the names of individual grape varieties. Criollas, Robinson J. and Harding J, *Oxford Companion to Wine* 4th Edition, 2015: Oxford.
- 2 [*State of the World Vine and Wine Sector 2021*](#), OIV, 2022
- 3 Barnes, A., 2016, [*El Niño hampers Argentina's 2016 wine harvest*](#), Decanter
- 4 This figure is for grapes being turned into wine and must. [*Informe Anual de Superficie 2021*](#), Instituto Nacional de Vitivinicultura
- 5 As above
- 6 As above
- 7 As above
- 8 As above
- 9 As above
- 10 As above
- 11 [*Informe de Variedad Bonarda Año 2021*](#), Instituto Nacional de Vitivinicultura
- 12 [*Informe Anual de Superficie 2021*](#), Instituto Nacional de Vitivinicultura)
- 13 As above
- 14 As above
- 15 [*State of the Vitiviniculture World Market April 2019*](#), OIV
- 16 [*Mercado Externo de Productos Vitivinícolas 2021*](#), Instituto Nacional de Vitivinicultura
- 17 As above
- 18 As above
- 19 [*Consumo per Capita de Vinos – Años 1963–2020 – Argentina*](#),)
- 20 [*Informe Anual de Superficie 2021*](#), Instituto Nacional de Vitivinicultura