

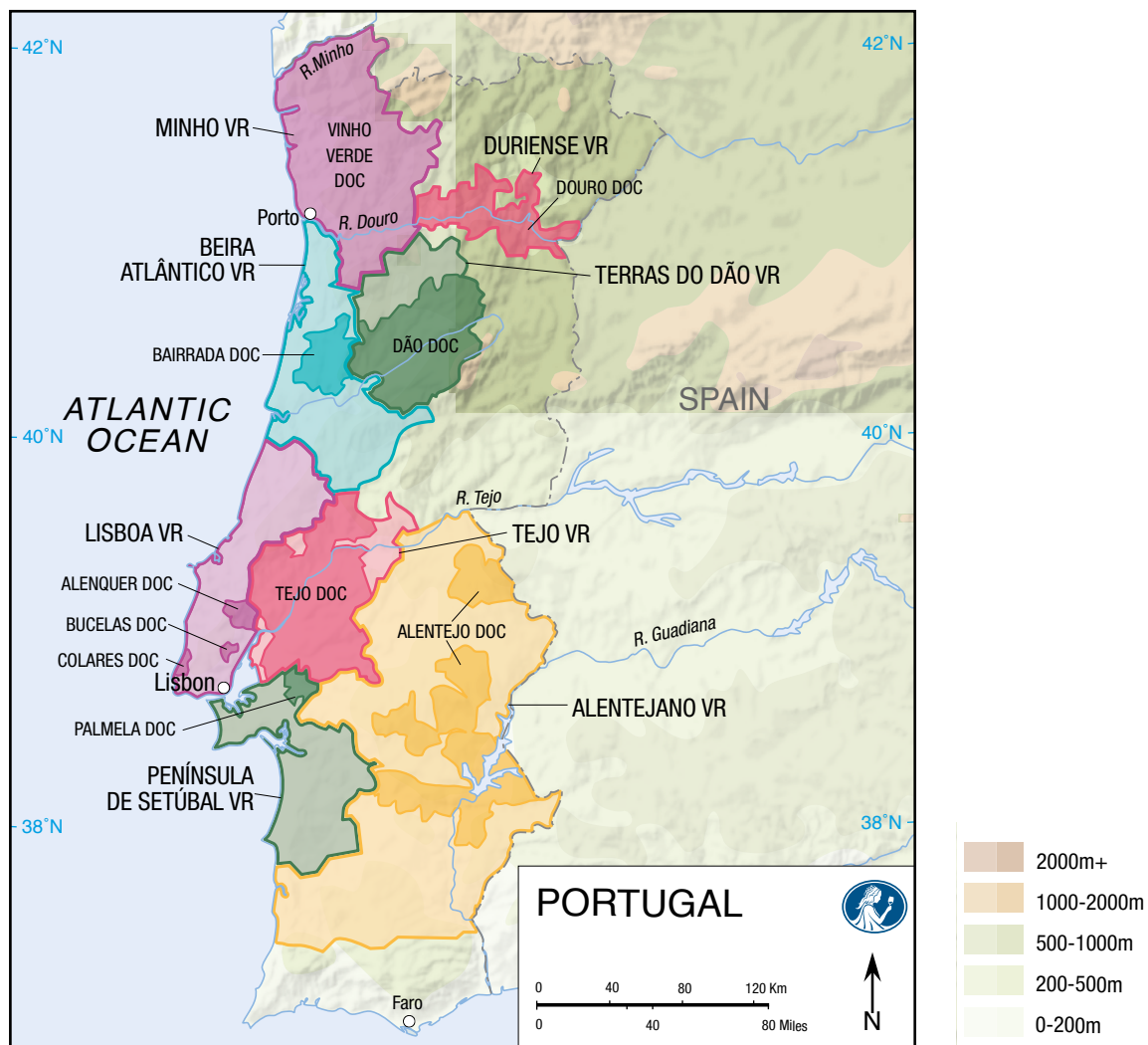
21. Portugal

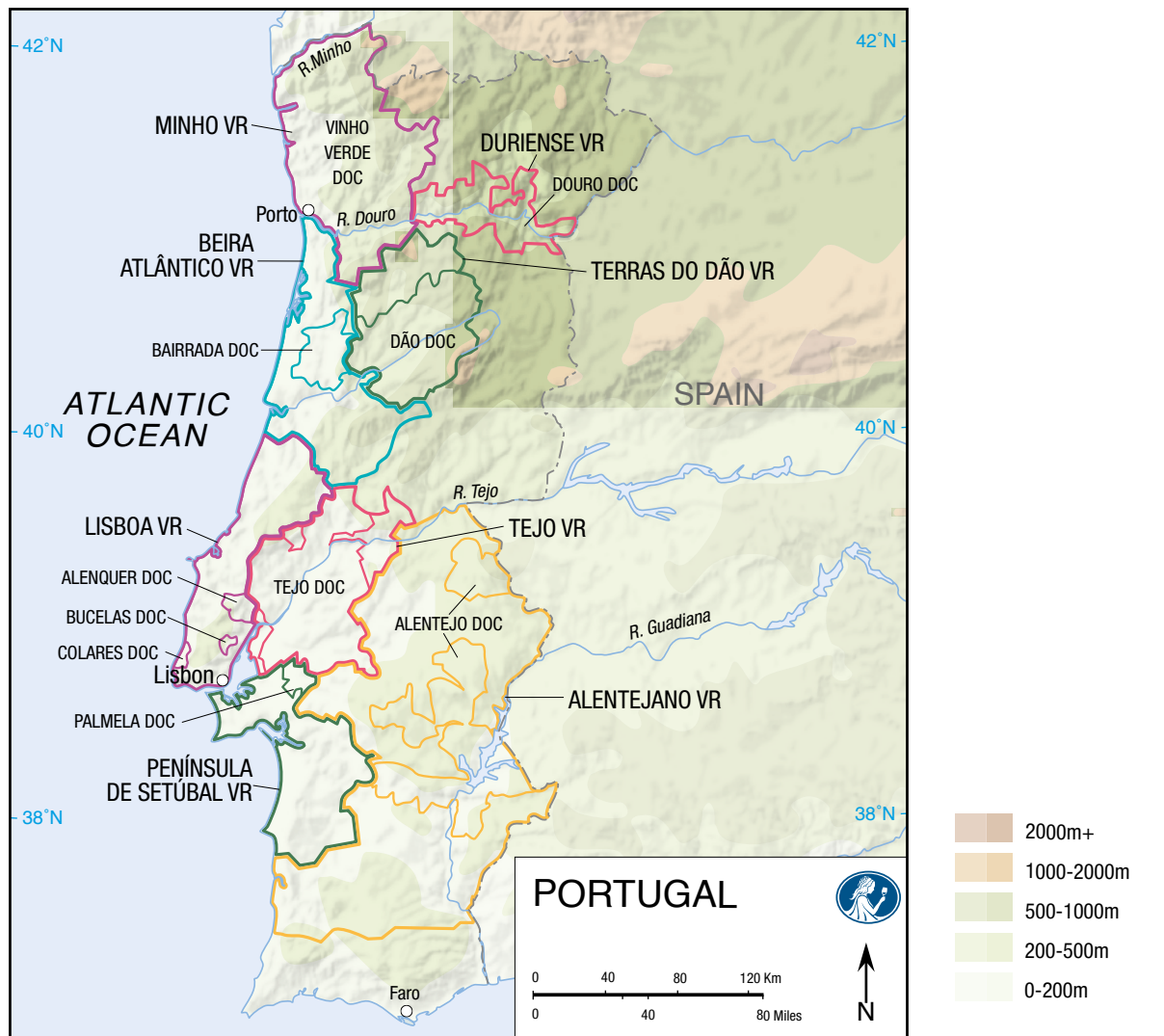
Portugal is the most westerly country of continental Europe, bordered on the west and south sides by the Atlantic, and on the north and east sides by Spain. Although Portugal is famous for its fortified wines (particularly Port and Madeira), most grapes are made into unfortified wines. More red wines are made in Portugal than white and, although international grapes such as Syrah and Cabernet Sauvignon are grown in a number of regions, Portugal boasts a wide variety of indigenous grapes capable of making high quality wines.

Grapes for wine have been cultivated in Portugal for many centuries. Historians believe wine was made in the Tagus and Sado valleys as far back as 2000 BCE, with vines planted by the Tartessians, who originated in what is now Andalucía in south-west Spain.

Phoenicians brought more vines, and grape growing and winemaking were further advanced by the Greeks, then the Romans.

In more recent history, Portugal has had an alliance with England for over 600 years, and became a major supplier of wine to England after the Treaty of Windsor, signed in 1386, and,





Second map to show topography within the regions

more recently, the Methuen Treaty of 1703. Through several centuries of on-off wars with France, England turned to Portugal when supplies of French wine were forbidden or taxed at punitive rates. The light, astringent reds from what is now the Vinho Verde region in the north-west corner of Portugal were eventually followed by Port from the Douro Valley, and then later the wines from around Lisbon.

However, events in the 19th and much of the 20th centuries dealt a number of blows to the Portuguese wine industry. Wine production was negatively affected during the Peninsular Wars and the Portuguese Civil War and around the same time French and Spanish wines started to become increasingly popular in the markets of Europe. From 1867, phylloxera devastated the industry and many Portuguese regions found it difficult to recover. The 40-year rule of prime minister Antonio de Oliveira Salazar, from 1932, also did little to promote quality wine production. Co-operatives were given preferential rights, leading to over 100 co-operatives being founded in the 1950s and '60s. However, the co-operatives were badly equipped and run and generally made high volumes of poor-quality wines, tarnishing the reputation of Portuguese wine. That said, two incredibly successful brands were launched within this period; Mateus Rosé in 1942 and Lanciers Rosé in 1944. In the late 1980s, Mateus

Rosé, together with a white version, made up over 40 per cent of Portugal's still, unfortified wine exports.¹ It does not have anywhere near the same dominance today.

The Carnation Revolution and a return to democracy in the mid-1970s followed by Portugal's accession to the EU in 1986 signalled the start of a new era. Restrictions on production and trade ceased and low-interest loans and grants encouraged many producers to make and market their own wines, generally to a much higher standard than those of the co-operatives.

Without government protection, co-operatives were forced to adapt their practices, and a number closed. Finance from the EU enabled the modernisation of Portugal's infrastructure, the initiation of research programmes and training, and investment in modern grape growing and winemaking equipment, such as temperature-controlled stainless-steel tanks.

In recent years, focus has been on export markets. To help the country recover from its recent debt crisis, the 2011–2014 bailout by the EU and IMF resulted in an austerity programme that made the further development of export markets imperative. Fortunately, Portugal's ability to provide ripe red wines and fresh white wines at inexpensive and mid-prices, whilst offering more engaged consumers a range of grape varieties that are rarely found elsewhere, has meant the wines have found a place on the world stage.

THE GROWING ENVIRONMENT AND GRAPE GROWING

Climate and Soils

The west of the Portuguese mainland is strongly influenced by the Atlantic, which brings cool, rainy weather particularly to the north west. Ranges of mountains protect many of the more inland northerly wine regions which, with a continental climate, enjoy warmer, drier growing seasons. In the warmer, drier south, the topography is characterised largely by rolling hills and plains.

The local climate and significant variations in soil composition can have an impact on the grape varieties grown and the styles of wines produced. Schist or granite are commonly found in mountainous regions, such as Vinho Verde, Douro and Dão, and on hilly outcrops in Alentejo. The wine regions further south near the coast such as Bairrada, Lisboa, Tejo and Península de Setúbal, have more varied soils: some areas have clay soils with a high limestone content, whereas other areas have sandy soils. There are also some fertile alluvial soils around riverbanks, for example in Tejo.

Vineyard Management

The area of vines planted in 2021 was 192,000 ha, representing a reduction of 84,000 ha in just over three decades.² A substantial number of high-producing vineyards on the most fertile alluvial soils, especially in Tejo, but also in Vinho Verde/Minho, have been grubbed up since Portugal joined the European Union in 1986. Replanting has been focused on higher quality planting material and sites (and has been restricted to avoid surpluses).

With a warm, sunny and dry climate together with a flat topography allowing mechanisation, Alentejo in particular has seen significant investment and vineyard growth. EU funds and the recruitment of consultant winemakers meant that Alentejo started to produce quality wines, in a soft, ripe style that was quickly popular on both domestic and export markets. This in turn encouraged further planting and investment. Compared to many Portuguese regions that are made up of many growers with small holdings, Alentejo has a

high number of estates with large, relatively young, vineyard holdings. Given its proximity to Lisbon, many of these estates are set up for tourism.

99 per cent of wine production takes place on mainland Portugal, the remainder from the islands of Madeira and the Azores (these islands will not be discussed further in this chapter). Over the decade to 2021, production of wine has varied between 600 million litres to 740 million litres depending on the weather.³ With climate change, drought has been a notable factor in recent years, especially in continental, inland regions such as the Douro, Dão and Alentejo. Extreme weather events can also be an issue in some areas and in some years; for example, the Douro has suffered from hail and storms in recent years and in 2017 yields in Dão were reduced by wildfires. Wet weather in the more coastal regions can increase the risk of poor fruit set and, later in the season, fungal disease. As in many other grape growing countries, the trunk disease esca and the vineyard pest European grapevine moth are common issues.

The majority of vineyards are pruned and trained to either cordon or replacement-cane, and VSP trellised. A significant number of old bush vines can be found in the Douro and certain areas of Alentejo, with a much smaller proportion found in Dão and Bairrada. These are usually planted in varietally mixed vineyards, producing 'field blend' wines. The vast majority of modern vineyards (established from the 1980s) are planted to one variety or in varietal blocks.

In the past, all regions required authorisation to irrigate but this is now not generally required. A degree of regulation may still exist at a regional level; for example, Douro producers must notify the IVDP (Instituto dos Vinhos do Douro e Porto) when they irrigate. Generally, irrigation is only to be used in scenarios where lack of water could jeopardise quality and cannot be used for boosting yields.

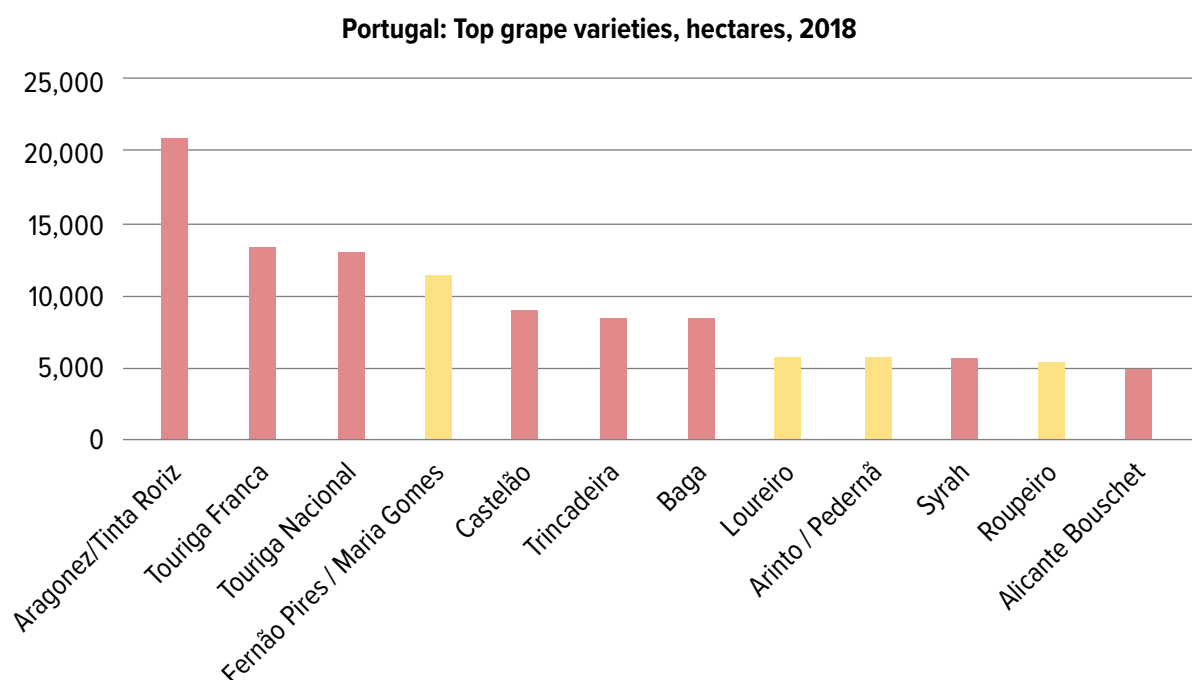
Around 4,000 ha of vineyards (around two per cent) are certified organic.⁴ This is a low proportion compared to some EU countries; however, a number of growers/wine producers tend their vineyards using organic methods but feel that the benefits of certification are not worth the cost. Production of organic wines is expected to grow in coming years with a number of vineyards in the process of conversion.

Grape Varieties

Portugal grows a wide variety of grapes, most of which are Portuguese in origin. Many of the grape varieties are grown in multiple wine regions around the country. However, the plantings for any grape variety may be concentrated in a particular wine region (e.g. Castelão is mainly grown in Península de Setúbal, but also to a lesser extent in Lisboa, Alentejo and Tejo).

Certain international varieties are allowed in some regions, such as Tejo, Alentejo, Bairrada, and in some sub-regions of Lisboa and Península de Setúbal, but not in the Douro, Dão or Vinho Verde. However, whereas, in the recent past, Alentejo, Lisboa and Tejo heavily relied on international varieties as part of their export strategies, now there is now a growing tendency to return to Portuguese varieties and some small, 'artisanal' producers are reviving native grapes that had fallen out of fashion. More details on each grape variety can be found under the relevant wine region section.

The majority of wines, both red and white, are blends of grape varieties, with relatively few exceptions; for instance, Baga in Bairrada, Encruzado in Dão and Alvarinho in the Monção e Melgaço sub-region of Vinho Verde.



Source: Instituto da Vinha e do Vinho.⁵ Note that substantial plantings of Tinta Roriz, Touriga Franca and Touriga Nacional are used for the production of Port.

WINEMAKING

Admission to the EU led to substantial modernisation of winemaking practices and equipment in Portugal. Protective winemaking techniques and the use of stainless steel tanks with easy temperature control helped to produce fruity wines, especially leading to improvements in white wines. De-stemming equipment led to significant improvements in tannin management for red wines, as did the introduction of French oak for maturation. This remains the primary type of oak (when used) for both red and white wines, though there is some American.

A small proportion of producers have retained some traditional techniques and in the last decade, have been joined by other producers keen to experiment with less widely used techniques. In the past, large (3,000–6,000 L) Portuguese oak and Brazilian hardwood *toneis* were commonly used and the tradition has been maintained by some high-profile wineries mainly in Bairrada. In line with worldwide trends, producers have become more restrained in their use of oak than in past decades, reducing the amount of new oak and/or time in wood and ageing wines in larger format oak. There has been a niche revival of



Traditional *toneis* in Bairrada

toneis-sized wooden vessels, though producers are typically buying new *foudres* (sizes vary, but typically around 2,000–2,500 L) and wooden fermenters from France, Italy and Austria.

There is also a little experimentation with Portuguese oak and chestnut barrels (both commonly used in the past).

Though associated with Port winemaking, fermenting and foot-treading in *lagares* (shallow fermenters often made from local material (schist, granite, marble), or now easy-to-clean stainless steel, is regularly practised among producers up and down Portugal.

Fermenting and/or ageing wine in clay vessels has risen in popularity across the country and fermenting wines on skins (red and white) in clay has even been enshrined with its own DOC Vinho de Talha in Alentejo, ('talha' being the local name for a clay amphora).⁶

A degree of pre-fermentation skin contact is not uncommon with premium Portuguese white wines (for texture and flavour intensity) and there has also been a revival of interest in fermenting white wines on skins. Natural wines have also seen some growth.

In general today's winemakers are typically more widely travelled and outward looking, which has paid dividends in terms of winemaking, packaging and marketing, whilst developing a keen appreciation for Portugal's strengths, especially its native varieties and traditional techniques.

WINE LAW AND REGULATIONS

As a member of the EU, Portugal follows a PDO and PGI system of geographical indications to protect its wine regions and wine styles.

DOC/DOP – Both the traditional term Denominação de Origem Controlada (DOC) and the more modern Denominação de Origem Protegida (DOP) are widely used for PDO wines. There are 31 DOCs in Portugal. Each DOC has its own regulations on grape growing and winemaking and all wines must be officially tested, tasted and approved.

VR – Vinho Regional (VR) is the widely used traditional term for PGI wines. There are 14 VRs in Portugal and their regulations are less stringent than those for PDOs. They often permit international varieties such as Cabernet Sauvignon and Chardonnay, whereas some PDOs do not, and in general allow a wider selection of grape varieties.

Vinho – This term is used for wines that are not of PDO or PGI status.

WINE BUSINESS

Grape growing in Portugal represents 35 per cent of the total national agricultural output, the highest in the world.⁷ The average total production in recent years has been 6.5 mhl, including fortified and sparkling wine, and it can be estimated that the average production of still, unfortified wine is approximately 5.5 mhl.⁸

Historically, Portugal has been and, to a significant extent, remains a land of small holdings, where grape growing was but one element of subsistence farming. The average size of vineyards in the Dão, Vinho Verde and Douro is still tiny today.

Until the Carnation Revolution in 1974, growers had a ready market for grapes (and wines). They were sold to negociants and the co-operatives who produced bulk wine, which was shipped to Portugal's former colonies in Africa, Angola and Mozambique. High-volume wine

brands like Mateus Rosé and Lancers and big brand Vinho Verdes like Casal Garcia are still largely sourced from growers who are divorced from the business of making and selling wine.

However, especially following access to EU subsidies and funding, negociants have themselves acquired vineyards in a move to diversify, increase quality and compete in non-traditional export markets. The most extreme example of this is Sogrape which, since the 1980s, has acquired leading Port brands and estates in Vinho Verde, the Douro, Dão, Alentejo and Lisboa. It is the biggest wine company in Portugal, with an annual revenue that exceeds the total of the next seven biggest producers combined.

Conversely, increasing numbers of growers have sought to add value to their grapes and become producers with their own estate (Quinta/Herdade) brand, especially in the Douro, Alentejo, Dão, Vinho Verde and on a smaller scale in Bairrada, Lisboa and Tejo. Co-operatives have, correspondingly, reduced in number, though in 2015 Portugal still had 67 active co-operatives.⁹ A new, small but influential trend is the rise of small-volume winemakers who own no vineyards. They carefully select vineyards, often old and neglected, in overlooked regions, or planted to unfashionable native varieties, to source their grapes.

In 2021, Portugal was the 10th largest wine producing country and 10th largest exporter of wine by volume.¹⁰ Portugal exported 2.6 mHL of unfortified wine in 2018 (total of 3.3 mHL if including all types of wine). Unfortified DOC wines made up 21 per cent of this volume but 25 per cent in value.¹¹

Steady growth both in volumes and value per unit volume has been seen over at least the past two decades for unfortified wines. The largest export markets by volume in 2022 (includes fortified and sparkling wines) are France, US, UK and Brasil by volume and value.¹² The promotional body [Wines of Portugal](#) was founded in 2010 with a focus on promoting and educating consumers and trade in export markets on Portuguese wines.

Domestic sales have also gradually increased over the last few years, caused by growth in average income compared to the years of recession before, and a significant rise in tourism to the country.

21.1. Vinho Verde

Vinho Verde DOC is in the north-west corner of Portugal. The region is bounded by the Atlantic on the west, by the River Minho forming the border with Spain (and Rías Baixas in Galicia) to the north, and by the mountains of Peneda-Gerês National Park to the east. It extends just beyond the River Douro in the south. Vineyard area in the DOC covers 16,200 ha and is split into nine sub-regions.¹³ (The Vinho Regional is called Minho and has identical boundaries to the DOC, though its production is much smaller.).

THE GROWING ENVIRONMENT AND GRAPE GROWING

Climate and Soils

Vinho Verde has a moderate maritime climate thanks to its Atlantic coast and a network of river valleys that funnel Atlantic winds inland. As the land gradually rises to the east, soils become poorer and the climate becomes more continental. Here warmer, drier sub-regions, such as Baião and Monção e Melgaço, lend themselves to later ripening grape varieties such as Avesso, and produce wines with more body and alcohol, notably Alvarinho. Rainfall is high, with as much as 1,500 mm falling throughout the year. Vintage variation can be marked, having



Vineyards in Vinho Verde overlooking the River Minho

implications for ripening and yield (production was around 936,000 hL in 2017 but only 731,000 hL in 2018). In the five years to 2021, Vinho Verde was the largest single producer of DOC wine in Portugal, ahead of Port and Douro DOC.¹⁴

Much of the vineyard land is on granitic bedrock with a shallow topsoil of decomposed granite with a sandy texture, providing good drainage. The natural fertility of the soil is low and therefore fertilisers, such as manure, are commonly needed.

Vineyard Management

With rainfall throughout the year, fungal diseases including rot and mildew are a problem. The traditional method of training vines was up trees to benefit from better air circulation. Some growers with small land holdings still have vines trained up trees, or on trellises over terraces, but most modern vineyards are now planted in rows, either single or double Guyot (replacement-cane) with VSP, or lyre system. All are trained relatively high from the ground to increase air circulation and reduce chance of rot. Summer pruning techniques are used, such as removal of lateral shoots, leaf removal and green harvesting for productive varieties, to enhance fruit ripening and improve air circulation through the canopy.

Grape Varieties

Large changes have been seen over the last few decades. In the late 1960s, over 80 per cent of production was red wines; in 2008, 70 per cent of the wine was white, and by 2019 proportions had moved to 82 per cent white, 13 per cent red and 5 per cent rosé.¹⁵



Cordon-trained vines supported by posts made from the local granite

The most widely grown grape variety is **Loureiro** (Loureira in Spain's Rías Baixas). It is grown throughout the region, but predominantly towards the coast. It is early-ripening and produces wines with medium (+) acidity and citrus, pear, floral and herbal aromas.

The second most widely grown is **Alvarinho** (Albariño over the border in Spain's Rías Baixas), which has citrus, peach and sometimes tropical flavours, often with medium (+) body and medium (+) to high acidity. Traditionally, it had been grown almost exclusively in the north of Vinho Verde, in a sub-region just south of the Spanish border, Monção e Melgaço. Now, recognition of Alvarinho's high quality has led to more plantings in other parts of the region and the admission of Alvarinho as a named grape variety on the wine label from 2016 onwards.

The third most planted grape variety is **Pedernã** (the local name for Arinto). It is mid-ripening and produces wines that are more neutral than Loureiro or Alvarinho, with subtle citrus and apple fruit and high acidity.

Other grapes varieties include Avesso and Trajadura. **Avesso** is a late-ripening grape and can fail to ripen fully unless weather conditions are relatively warm and dry. It tends to be grown inland in the south of the region, particularly in the sub-region of Baião, benefitting from the slightly warmer, drier conditions here. Avesso is lower in acidity than some of the other varieties, can be relatively full-bodied and displays citrus and stone fruit. **Trajadura** (called Treixadura in Rías Baixas in Spain) is low in acidity with apple and peach flavours. It is usually blended with varieties that have higher levels of acidity.

Vinhão (called Sousão in the Douro and Sousón in Galicia across the Spanish border) is by far the most planted black grape variety, producing deeply coloured wines with cherry fruit and characteristic high acidity.

WINEMAKING AND WINE LAW

Inexpensive, high-volume wines may use fruit sourced from across the region and a blend of varieties. The wines are made with protective methods and cool fermentation in stainless steel. Most Vinho Verde is bottled for release soon after the end of fermentation and carbon dioxide is often added at bottling to give a light spritz. The white wines are typically low in alcohol and medium (+) to high in acidity with apple, citrus and/or peach flavours, depending on the grape varieties used. Some wines may have a small amount of residual sugar. They are usually of good quality and are made by one of the region's co-operatives or large merchants.

Higher priced wines, often from smaller, boutique producers, tend to be still and there is a growing number of single varietal and single sub-region wines. A few producers use ambient yeasts, (mostly) old oak for fermentation and/or maturation and may choose to keep the wine on its lees for a few months to enhance complexity and texture. These wines are often mid-priced to premium and are generally of very good quality.

The name of the sub-region may appear on the label. The wine must have a minimum alcohol of 9% abv (rather than the standard of 8% abv for wines that do not mention the sub-region).

Single varietal Alvarinho from Monção e Melgaço must be made to lower maximum yields than those for wines from Vinho Verde in general and have a minimum alcohol level of 11.5% abv. Legislation permits only the sub-region of Monção e Melgaço to name Alvarinho on their labels as a single variety. From 2016, wines from other sub-regions may name Alvarinho on the label alongside the names of other grape varieties within the blend, providing that Alvarinho accounts for at least 30 per cent of the blend. Producers from subregions other than Monção e Melgaço must declassify their wine to Minho VR if they wish to label their wine as a single varietal Alvarinho.

WINE BUSINESS

Ownership of vines in Vinho Verde is very fragmented. About 17,250 grape growers cultivate 16,200 ha, so on average every grower owns less than a hectare. Most growers deliver their grapes to co-operatives or large merchants. There are only 400 growers who bottle their own wines. Significant producers include Anselmo Mendes and Quinta de Soalheiro.

Exports have gradually grown. In 2019, approximately 35 per cent of production was exported.¹⁶ The key markets by volume are USA, Germany, Brazil and France, with USA leading in terms of value of sales.

21.2. Douro

As well as being the best-known region in Portugal, the Douro region makes more wine than any other. Around 41,000 ha are registered for the production of DOC wines, either Porto DOC for fortified wines or Douro DOC for unfortified wines.¹⁷

The fortified wine, Port, has the greater historic renown, as its high alcohol and residual sugar enabled it to survive better when shipped to international markets. There had always

been unfortified wines from the Douro wine region, but Douro DOC was only established in 1982.

The first ambitious Douro red was made by Fernando Nicolau de Almeida, who worked at the time as a winemaker at Ferreira Port. Following a visit to Bordeaux, de Almeida returned to Portugal convinced that high quality unfortified wine could be made from Douro grapes. In 1952, he made the first vintage of Barca Velha, cooling the fermentation tanks with ice brought upriver from Matosinhos (the fishing port west of Porto city). He experimented with different grape varieties, different fermentation vessels and different types of oak for ageing the wine. Finally, he settled on Tinta Roriz (called Aragonez in other parts of Portugal or Tempranillo in Spain) to provide the majority of the blend, with local Portuguese grapes making up the rest. Barca Velha was not popular when it was first released, but now commands super-premium prices and can be ten times the price of good vintage port.

Despite de Almeida's efforts, production of high-quality Douro unfortified wine did not get underway generally until Portugal joined the European Community (now EU) in 1986, bringing the necessary finance to invest in modern winemaking equipment such as stainless-steel tanks with temperature control. A few Douro estate owners brought a court case to be allowed to export port from the estates (*quintas*) in the Douro. Up until then, all port wine had to be exported from Vila Nova de Gaia, where the major port shippers had their warehouse and bottling lines. The case succeeded, and kickstarted the development of a modern generation of unfortified Douro wines, many of which are estate (single *quinta*) wines.

THE GROWING ENVIRONMENT AND GRAPE GROWING

Climate, Soils and Vineyard Management

The demarcated region follows the course of the Douro river over around 100 kilometres (60 miles), starting as the river turns west at the border with Spain, and finishing just west of Mesão Frio (which is around 100 kilometres (60 miles) inland from Oporto). It is divided into three sub-regions, the Douro Superior (Upper Douro) in the east, the Cima Corgo in the centre, and the Baixo Corgo in the west. The western limit of the region is marked by the Serra do Marão, 1,415 metres at its highest point. This mountain shields the Douro region from the worst of the cooler, damper Atlantic weather, and means that overall the region has a warm continental climate. However, site location is important.

Generally, being westernmost (with more Atlantic influence), the Baixo Corgo is the coolest and wettest region (900 mm per annum), the Cima Corgo warmer and drier (700 mm per annum) and the Douro Superior is hot and arid (450 mm per annum). However, the Douro and its tributaries provide valley sides with a variety of aspects and altitudes, resulting in a huge range of microclimates.

The bedrock in the region is schist on top of which there is a shallow topsoil mainly made up of decomposed schist. Low in organic matter and stony in texture, the soil stores little water, however, because the schist bedrock splits into vertical layers the vine roots can break through it in search of water. This is particularly important given many of the Douro's hillside vineyards are not set up for irrigation and the dry, increasingly drought-prone climate. In 2019, the IVDP relaxed the regulations about irrigation which was not previously permitted except in extreme circumstances. Today, when hydric stress jeopardises quality (as distinct from quantity) and the vineyard is located in an area where irrigation is authorised, producers need only notify the IVDP if they irrigate.



Vineyards in the Douro Superior

The vineyard layout and vineyard management techniques are the same as those used in Port production; see the Port chapter of D5: Fortified Wines for details.

Grape Varieties

Douro wines are usually blends of grape varieties. Single varietal wines, typically of Touriga Nacional or Tinta Roriz, can be found but are relatively rare. The most common grapes are similar to those used in Port production; Touriga Nacional, Touriga Franca, Tinta Roriz, Tinta Barroca and Tinto Cão. For more details on the characteristics of each see the Port chapter of D5: Fortified Wines. **Touriga Franca** and **Touriga Nacional**, which tend to retain acidity well and tend to give ripe but not jammy flavours of black fruits, are popular lead grapes in blends. Touriga Franca tends to produce wines with medium body, medium alcohol and red and black fruits often within some floral character. Touriga Nacional has a high level of colour and tannins with black fruit flavours and floral notes, such as violet, rose or orange blossom. Plantings of **Sousão** have increased in the last few years (both for Port and Douro wines); its high acidity bringing freshness even in warm years. The DOC permits a large range of other Portuguese varieties.

The grapes used for Douro DOC white wine are traditional Portuguese varieties, many native to the Douro Valley. These include **Viosinho** (full-bodied with floral notes and stone fruit, but can lack acidity), **Rabigato** (high acidity, citrus and floral), **Gouveio** (called Godello in Spain, medium (+) acidity, citrus and stone fruit) sometimes with **Moscatel Galego Branco** (Muscat Blanc à Petits Grains) to enhance the intensity of aromas. They tend to be grown in

vineyards at the highest altitudes, providing cooler day and night-time conditions that help retain acidity.

Douro wines tend to be made from grapes blended from a range of sites, though some producers do make wines from a single vineyard plot. Producers are generally aiming for ripe but not over ripe grapes, and a blend of sites (along with a blend of grape varieties) can help achieve this aim despite variances in weather year on year. Aspect, altitude and distance from the coast can all influence site climate, with north facing aspects, higher altitude sites and vineyards to the west of the region all giving cooler conditions which can be advantageous in hot years.

WINEMAKING AND WINE STYLES

Douro DOC wines can be made as still red, rosé or white wines, or as sparkling wines. These wines range from inexpensive, good quality wines for early drinking to premium and sometimes super-premium priced wines that are very good and outstanding in quality with much greater intensity and complexity, sometimes from field blends of old vine (*vinhas velhas*) fruit. Now virtually all the Port houses make dry wines. Significant producers include Prats & Symington and Quinta do Vale Meão.

The grapes are usually destemmed as the high tannin levels in many Douro grape varieties means that additional tannin is rarely needed and producers do not want to risk green, unripe flavours. Fermentation tends to take place in stainless steel tanks that permit easy temperature control. Temperatures are relatively low for red wines (24–28°C / 75–82°F) to allow greater control over tannin extraction. Some producers still have wide shallow *lagares* (more typically used for Port) and may blend in a small proportion of wine fermented in *lagares* or start the fermentation in the *lagares*. The influence of fermenting wine in *lagares* may differ from producer to producer depending on what cap management is carried out and whether the *lagar* is temperature controlled. A benefit of fermentation in *lagares* is that it can be easier to monitor the level of extraction in an open *lagar* than a closed tank.

Wines for early drinking may be pressed off the skins once fermentation is complete. Post-fermentation maceration can be carried out on wines for longer ageing to further extract and soften tannins. Maturation traditionally took place in large oak vessels often made from Portuguese oak but, in modern times, smaller vessels such as *barriques* have become common, with French oak being preferred.

Similar to winemaking trends in other parts of the world, winemakers in the Douro are now increasingly using larger vessels (e.g. 400–500 L) and less new oak so as not to overpower the fruit flavours in the wines.

Inexpensive, fresh Douro white wines are fermented at cool temperatures in stainless steel and bottled for sale soon after. They tend to have light to medium aromas and flavours, medium to medium (+) acidity and tend to be of good quality. Moscatel Galego Branco is often used in these wines to enhance aroma intensity. Conversely, premium whites tend to be produced from grapes from old vines and are often fermented and matured in oak (new or old). These tend to have a greater intensity and variety of aromas and flavours plus greater body and texture. They are often very good quality with some outstanding examples.

A small volume of dry rosé wine is made, by limiting the maceration time on skins. These are mostly simple and for drinking young.

WINE BUSINESS

By far the largest proportion of Douro DOC is red wine (over 78 per cent of production). Although Port accounts for half of the region's total production, the amount of Douro DOC wine has grown from 330,000 hL in 2008 to 765,000 hL in 2021 (but 386,000 hL in 2018 due to smaller harvests overall, a result of rainy weather during flowering), and is over 30 per cent of the region's total DOC production. The VR Duriense produces much lower volumes (just over 6,000 hL in 2018) but is an option for producers who choose to use non-local varieties such as Chardonnay, Riesling and Syrah.¹⁸

There is a large choice of premium wines, many of which are made from estate-grown grapes and named after the *quinta*. Many of the well-known Port producers, including Symington, Quinta do Noval and Niepoort, make a range of Douro wines. The top wines often come from select estates or parcels, which have been earmarked for wine (as opposed to Port) production.

Inexpensive, high volume wines are often sourced from different *quintas* (which may belong to growers) and may be made by one of the region's 23 co-operatives.

Port production volumes and prices for grapes are controlled by the *Beneficio* (for more details see the Port chapter in D5: Fortified Wines). Such a control does not exist for Douro DOC wines, whose prices are influenced by the market. In any given vintage the prices grape growers receive for Douro DOC grapes is substantially below those earned for Port grapes. In years of surplus, prices drop even further, often to below the cost of production. Some producers and critics argue that artificial prices for Port grapes are subsidising the growing of grapes for unfortified wines.

In 2019, the domestic market accounted for 63 per cent of sales by volume. The main export markets by volume were UK, Canada and Germany.¹⁹

21.3. Dão

Dão DOC is located further south than Vinho Verde and the Douro, and inland from Bairrada. The VR Terras do Dão is not commonly used.

THE GROWING ENVIRONMENT AND GRAPE GROWING

The region is surrounded by mountains, protecting it from cool maritime weather conditions from the west, and warmer, more arid conditions from the east and the south. Overall, Dão has a Mediterranean climate with warm, dry summers and mild winters. Rainfall is relatively high (1,600 mm per annum in the west of the region, 1,100 mm in the east) but mainly falls in the autumn and winter.

The DOC and VR cover a large area, of which only approximately 5 per cent are planted with vines (around 13,500 ha); the majority of the land is home to pine and eucalyptus forests, which are thought to bring a signature note to the wines. The region itself has a mixed topography with a number



High altitude vineyards in the Serra da Estrela subregion of Dão

of hills, valleys and mountain sides, giving a range of aspects and altitudes. Most vineyards are located at around 400–500 m (but some are as low as 200 m and, in the easternmost Serra da Estrela subregion, as high as 900 m) providing a moderating influence on day-time temperatures and a high diurnal range.

The soils are mainly weathered granite with a sandy or loamy texture. They are low in organic matter and free draining, constraining vigour and meaning water stress can be an issue during ripening. Other hazards include hail during the summer, and spring frosts in flat, low-lying vineyards where mountain air descends and settles on the plains below.

Many vineyards are on gentle slopes, and although bush vines were traditional, most modern plantings are double or single Guyot (replacement-cane pruned) or cordon-trained with VSP trellising.

Harvest sizes vary significantly based on the weather during the growing season. 240,00 hL of DOC wine was produced in 2021, whereas only 161,000 hL was made in 2020.²⁰

GRAPE VARIETIES AND WINEMAKING

Around 80 per cent of production is red wine.²¹ The key black grape varieties are Jaen, Touriga Nacional, Tinta Roriz, and Alfrocheiro, often blended.

Jaen (called Mencía in Spain) produces wines with moderate acidity and flavours of raspberry and blackberry. As a single varietal wine, it sometimes made by carbonic maceration to produce a fruity wine for early consumption. **Touriga Nacional** has deep colour, high tannins and acidity and black fruit and floral or herbal notes. **Tinta Roriz** ripens earlier and has deep colour, medium to medium (+) tannins and a full body. Both can make single varietal wines which are capable of bottle ageing or are used to lend structure to a red blend. **Alfrocheiro** has medium tannin and body with strawberry and blackberry flavours. As a single varietal, it usually made in a soft, fruity style for early consumption, and is sometimes used for rosé production. Both Jaen and Alfrocheiro can soften and lend ripe fruity flavours to red blends. Overall, red wines from Dão tend to be less full-bodied and intense than those from the Douro, often with fresher flavours and higher acidity.

The red wines used to be excessively astringent and lacking in fruit from long periods of maceration followed by extensive maturation in old oak. Now, shorter maceration and ageing in oak is common. Use of new oak is typical, but some producers have started to reduce the proportion of new oak that they use. Dão red wines can range from good to outstanding in quality, and are typically mid-priced to premium, with a few super-premium examples.

Encruzado is the key white grape variety for high quality wines. It has medium to medium (+) acidity, can be full-bodied and has lemon and peach fruit sometimes with a floral note. It can either be fermented in neutral vessels to retain its fruit flavours or fermented and matured in oak vessels, sometimes with lees ageing and stirring, for texture. Oak-fermented examples in particular are capable of ageing well in bottle and can develop nutty characters. The wines are usually good to very good in quality, with a few outstanding examples, and mid- to premium priced. Other common white grapes, often blended together or with Encruzado, include Bical, Malvasia Fina (the same as Boal in Madeira), and Fernão Pires.

WINE BUSINESS

Dão is an area of small vineyard holdings farmed by around 30,000 grape growers. Over 90 per cent of vineyards have an area of less than 0.5 ha. After accession to the EU and the overturning of legislation that favoured co-operative production, Sogrape (Portugal's largest

wine producer) led the way in producing higher quality wines at all price points. There is now a growing number of quality-focused private companies (merchants and estates) in the region making premium wines, including a number of young winemakers attracted by the quality of fruit Dão can produce. Significant producers include Vinha Paz and Quinta da Pellada.

Only between 15 and 20 per cent of Dão wine is exported, with the principal markets being Canada, the USA and Brazil.²²

21.4. Bairrada

Bairrada is located to the west of Dão. Its proximity to the coast means that it has a maritime climate. Annual rainfall for much of the region is 800–1,200 mm (although some areas can experience up to 1,600 mm), mainly falling in the spring and autumn and this can be problematic for late-ripening grape varieties such as the local Baga.

THE GROWING ENVIRONMENT AND GRAPE GROWING

As in many number of other Portuguese wine regions, the DOC boundaries are much larger than the planted area, which is around 10,000 ha. There are fertile alluvial soils in the west, from river estuaries that have silted up, and limestone-clay slopes. In Cantanhede, an unofficial subregion in the warmer south, limestone-clay soils have attracted particularly intensive planting of Baga vineyards.

Vineyards were traditionally planted to high-trained, individually staked bush vines. However, recent plantings are trellised with the Guyot system (replacement-cane pruned) with VSP being the most common.

GRAPE VARIETIES AND WINEMAKING

Red Wines

Red wines make up around two thirds of production. **Baga** is the dominant black grape. It has high acidity and tannins with a medium body and cranberry, cherry and plum fruit. It can be astringent when young but becomes softer and more complex with bottle ageing.

Throughout much of the 20th century, Baga was grown at high yields and sold to co-operatives; the wines lacked fruit concentration and were unpleasantly astringent. Valued for its fresh acidity, a significant amount of Baga grown at high yields was also sold, and still is, for the production of Mateus Rosé. In the last 30 years, private companies have made wine with a focus on quality. Much greater understanding of how to treat Baga in the vineyard and winery has led to the production of very good and outstanding wines.

Baga is late ripening and productive, meaning that careful site selection and limiting yields are required to ensure full ripeness. The warmest sites are often those with south-facing aspects and protected from cool north winds by eucalyptus and pine forests. Baga is also thought to ripen best on the limestone-clay soils which provide the optimum balance of water retention and drainage to ensure that the vine has enough water to continue ripening throughout the growing season (photosynthesis can stop in drought conditions) but not so much as to become overly vigorous. These light-coloured soils (especially in Cantanhede, whose vineyards are strewn with white limestone pebbles and rocks) also reflect solar energy back onto the vines, aiding the ripening process. By comparison, the sandy soils are too dry and are often better suited to the grape varieties listed below. Green harvesting may also be



Limestone rocks in the vineyards of Bairrada

carried out to enhance the ripening of the remaining bunches (the fruit removed is sometimes used in sparkling wines which are relatively common in the region).

Traditionally, Baga wines were fermented on stems, which contributed to their reputation of wines best drunk after long ageing in bottle. Most modern producers de-stem, although there has been a return to using a proportion of whole bunch or adding back a proportion of stems to the ferment. This can be to give a fresher fruit character and enhance aromas (whole bunch) or give greater structure (use of stems) for wines that are designed to undergo long ageing. Fermentation vessels are mixed from stainless steel tanks to open concrete vats to traditional *lagares*. Maturation is most commonly carried out in large barrels (500–650 L) of French oak. Traditional producers still use large *toneis* often made from Portuguese oak or Brazilian hardwood. Other producers who choose to mature their wines in large vessels are using *foudres* made from French, Italian or Austrian oak.

The DOC also permits a range of other Portuguese varieties including Touriga Nacional, Alfrocheiro, Jaen and Camarate (a local variety producing full-bodied, medium tannin wines with red fruit flavours). It also permits some international varieties such as Cabernet Sauvignon and Merlot, which are well-suited to the maritime climate and soils that drain efficiently. These are often used in a blend with Baga to soften the tannin profile of the wine and bring more body.

Wines labelled Baga Clássico must contain a minimum of 50 per cent Baga, and a minimum of 85 per cent of any blend of Baga, Alfrocheiro, Touriga Nacional, Jaen and Camarate. Black grapes may also be used in the production of rosé wines.

White Wines

Producers' interest in making white wines is growing. **Maria Gomes** (called Fernão Pires in other parts of Portugal), **Bical**, **Arinto** and **Cercial** are the key white varieties. Maria Gomes is the most planted white grape variety in Portugal. It is early ripening, which is favourable in Bairrada's damp climate, and can produce high yields. Its wines display citrus and floral aromas. Bical is also early ripening, and the wines have peach and sometimes tropical fruit. Both Maria Gomes and Bical can have medium (+) acidity if picked relatively early, but lose acidity quickly if left on the vine longer. Arinto and Cercial both have apple and citrus flavours and may be used in blends to add acidity. A number of international varieties are also allowed including Sauvignon Blanc and Chardonnay. Inexpensive wines are usually sourced from the parts of the region with sandy soils and are fermented at cool temperatures in stainless steel with bottling for sale soon after. Mid-priced and premium wines are often sourced from the parts of the region with clay-limestone soils and may be fermented and matured for a short time in oak. Quality levels for the white wines of Bairrada are generally good with a few very good examples. Significant producers include Quinta das Bágeiras and Filipa Pato & William Wouters.

Bairrada is also the lead producer of traditional method sparkling wines in Portugal, which account for around 10 per cent of Bairrada's production. Both local grapes and Chardonnay and Pinot Noir are used.

WINE BUSINESS

The wine region is farmed by around 2,000 growers, and co-operatives and merchants are both common.²³ A small group of producers, called Baga Friends, have grouped together to promote high-quality wines made entirely from Baga.

Vintage variation means that Bairrada's production can fluctuate between 92,000 hL in 2017 and 50,000 hL in 2019. The local VR, Beira Atlântico, produces around 27,000 hL.²⁴ Its boundaries extend beyond those of Bairrada and therefore it can be used by producers who have vineyards outside the DOC. Others, notably Luis Pato and Filipa Pato, have used the Vinho Regional label because, although their vineyards fall within Bairrada DOC demarcation, they objected to the extension of the DOC to international varieties.

21.5. Alentejo

The large Alentejano region extends over much of south-eastern Portugal, with the Spanish border to the east and the Algarve's mountains to the south, with a total planted area of around 22,000 ha.²⁵ The DOC, Alentejo, is made up of eight non-contiguous sub-regions. Covering the same land, the Vinho de Talha DOC was introduced in 2010 for wines fermented on skins in *talha* (amphora), a traditional production method that is undergoing a renaissance.²⁶ The Vinho Regional, Alentejano, is commonly used by producers sourcing grapes from outside the eight sub-regions of the DOCs.

THE GROWING ENVIRONMENT AND GRAPE GROWING

The climate is Mediterranean, with hot dry summers and mild winters; the most inland parts of the region have the most extreme temperatures. Annual rainfall is around 500 mm in the



A high altitude vineyard of bush vines in Portalegre

south to 800 mm in the north, mainly falling in autumn and winter. With long periods of dry weather, drip irrigation is widely used.

The landscape is generally made up of plains and gentle slopes though there are mountains in the north, south and east of the region. There is a wide range of soils, including granite, schist and limestone with textures that range from sand to clay.

Most vineyards are trained and trellised to double cordon with VSP. Replacement-cane systems are gradually declining, due to the greater need for skilled labour during pruning; Alentejo is one of the most sparsely populated areas of Portugal.

Alentejo DOC comprises eight sub-regions with varying microclimates and soils. Generally speaking, the northernmost sub-regions in the Alto (Upper) Alentejo are less hot and dry. Within this part of the DOC, the sub-region of Portalegre has vineyards planted over 800 m, and the altitude together with its more northerly location means it is cooler than the rest of Alentejo, producing wines with fresher fruit and higher acidities. Unlike most of Alentejo, Portalegre's vineyards tend to be small, even orchard and garden-sized, and it retains a significant number of old field blend vineyards.

GRAPE VARIETIES AND WINEMAKING

A wide range of grapes are permitted in the DOC. For white and red wines, single varietal wines are the exception rather than the rule. Black grape varieties make up just over 75 per cent of plantings. The key black grape varieties are **Aragonez** (Tinta Roriz in other parts of Portugal and Tempranillo in Spain), **Alicante Bouschet** and **Trincadeira**, often produced as a

blend. Harvesting time is important for Aragonez; as an early ripening variety, if left on the vine it can become extra ripe, and it is thought that it best grows in cooler areas and sites. Alicante Bouschet is a red-fleshed grape contributing deep colour, acidity, tannins and red and black berry fruits to red blends.

Trincadeira is very susceptible to rot but grows well in the dry climate in Alentejo. It tends to produce high yields, which need to be limited if it is to fully ripen its grapes reliably. It has medium tannins and acidity and blackberry and spice flavours. **Touriga Nacional** is sometimes used in a blend with one or more of these grape varieties, generally bringing tannin and acidity.

Some international grape varieties are also permitted, and out of these **Syrah** is the most commonly used; Cabernet Sauvignon seems to be waning whilst plantings of Petit Verdot, which contributes colour, spice and tannin, are increasing. Wines range from inexpensive and fruity for early consumption to super-premium wines with concentrated fruit flavours, spice from maturation in new oak and the structure to age for a decade or more. Significant producers include Cartuxa and Mouchão.

Roupeiro is the most planted white grape variety. It retains acidity well and is susceptible to rot, both of which make it well suited to the warm, dry Alentejo. In youth, its wines have flavours of citrus and stone fruit, but they can lose their primary flavours quickly with age.

Arinto (called Pedernã in Vinho Verde) is also grown and used in blends for its ability to retain acidity. **Antão Vaz** is tolerant of drought and so is well suited to Alentejo's dry climate. It is made in a range of styles including early picked fresh wines; later picked, fuller-bodied wines (often oaked) with tropical fruits; and *talha* wines with evident skin contact influence. It can lack acidity in the warmest sub-regions of Alentejo (unless picked early) and therefore is sometimes blended with grapes with higher levels of acidity such as Roupeiro and Arinto.

Chardonnay and Viognier are also permitted, as are many other Portuguese and international grapes, with Alvarinho on the increase. White wines may either be fermented in stainless steel for fruity wines for early-consumption, or in barrels for wines with greater texture and longer ageing. Quality generally ranges from good to very good, with most wines inexpensive to mid-priced.

WINE BUSINESS

Commercially, Alentejo has larger sales in Portugal than any other Portuguese wine region, with 37 per cent of the domestic market by volume and 40 per cent by value in 2018. Its main markets are Brazil, Angola, USA and Switzerland.²⁷

Between 2017–2021, the production of Alentejo DOC ranged between 175,000–283,000 hL. Likewise, the production of Alentejano VR ranged from 413,000–572,000 hL.²⁸

Compared to many other Portuguese wine regions, Alentejo is an area of larger land holdings. With its high sunshine hours, dry summers, relatively flat topography and expansive plains and estates, Alentejo was seen as well suited to cost-effective, high-volume, mechanised viticulture and E.U. funding enabled producers to pursue this model. In 1995, there were 45 producers and 13,500 ha, whereas in early 2019 there were 285 producers and almost 22,000 ha.²⁹ Vineyards tend to be relatively young and sizeable.

Given its close proximity to Lisbon, the region is strongly focused on wine tourism. A number of estates having designer wineries with large cellar doors and often producing a range of other products on site such as olive oil and Iberian ham, a model pioneered in the

1990s by highly successful businessmen such as José Roquette of Esporão and João Portugal Ramos.

21.6. Lisboa

This long, thin region runs from Lisbon in the south to 150 kilometres (90 miles) further north. A coastal mountain range, the Serra de Montejunto, splits the region into two distinct areas. The total area under vine in 2018 was around 18,000 ha.

THE GROWING ENVIRONMENT AND GRAPE GROWING

The western side of the region runs alongside the Atlantic coast, and wet weather and strong winds make grape growing more challenging, though a number of producers have been attracted to these sites by the climate and clay-limestone soils, wishing to make lighter-bodied, fresher styles of wine. The eastern side of the region is more protected and better suited to the production of riper, fuller-bodied wines.

GRAPE VARIETIES, WINEMAKING AND DENOMINATIONS

A wide range of Portuguese and international varieties are grown and permitted in both the VR and DOCs. Since the major restructuring which followed Portugal's accession to the EU (in the bid to switch from quantity to quality-focused production), this diverse region is still finding its path. Relative newcomers Touriga Nacional and Aragonez and the historic local white grape Arinto are thought to be the Portuguese grape varieties with the highest potential for quality. Popular international varieties include Syrah, Cabernet Sauvignon, Pinot Noir, Sauvignon Blanc and Riesling.

Out of the DOCs, **Alenquer** and **Bucelas** are the best known, both on the eastern side of the coastal mountains. Alenquer makes full-bodied red wines in this sheltered location often from **Touriga Nacional** and **Aragonez**, though many black and white varieties are grown.



Vineyards in Bucelas

The wines tend to be good to very good and are usually mid-priced, with a few premium and super-premium wines. Bucelas, a small historic region, makes high acid wines from **Arinto**, which must be at least 75 per cent of the blend. Some are fermented in stainless steel and bottled soon after. In others, lees contact and/or oak may be used to enhance the texture of the wine. The wines tend to be good or very good and inexpensive to mid-priced.

Colares and Carcavelos are much smaller coastal DOCs of great historic importance, having been almost entirely subsumed by Lisbon's suburbs. The cool, foggy coastal climate and ungrafted old bush vines on the deep, phylloxera-free sandy soils of **Colares** are of particular interest to new winemakers that have started making fresh, high acidity red and white wines from rarely-seen, local grapes.

WINE BUSINESS

The vast majority of production comes from **Lisboa VR**, and, with its history of production of inexpensive wines for sale to Portuguese colonies, a further significant proportion is still sold without a geographical indication. Although there are also nine DOCs in the area (one of which is focused on grape spirit production), producers often choose to use the VR, the regulations allow more flexibility and the name 'Lisboa' is more recognisable than the names of the smaller DOCs. Between 2017–2021, the production of across Lisboa's DOCs was between 37,000–59,000 hL, whereas Lisboa VR produced between 770,000–1,087,000 hL.³⁰

With quality improving as re-structured vineyards are maturing and producers gain experience both in the vineyard and the winery, more wines are being certified (DOC or VR). A substantial proportion of certified wine (around 40 per cent) is made by one producer, Casa Santos Lima, which makes inexpensive and mid-priced brands and private labels for retailers, more than 50 per cent sold on the export market.³¹ Significant producers include Quinta de Chocopalha and Quinta do Monte d'Oiro.

21.7. Península de Setúbal

Península de Setúbal is located between the estuaries of the Tejo and Sado rivers, south of Lisbon. The vineyard area makes up 9,500 ha.³²

The general climate is Mediterranean, with hot, dry summers, and mild, wet winters. Mountains in the south of the region provide cooler sites at higher altitudes on clay-limestone soils. Much of the land in the region is flat and sandy, with more clay and schist further inland.

There are two DOCs in the area; Palmela DOC and Setúbal DOC, the latter for sweet, fortified wines from Moscatel varieties.

Palmela DOC mainly produces red wines. They must be made from at least 67 per cent **Castelão** (also known as Periquita). It produces wines that are deep in colour and full-bodied with red berry fruit. It is often matured in oak, which adds hints of spice. For concentrated, age-worthy wines, Castelão is best grown in the warm, sandy vineyards on the plains; on the limestone slopes, it tends to produce lighter wines more suited to early drinking. A variety of black Portuguese and international varieties are also permitted; with many of the international grape varieties such as Cabernet Sauvignon and Syrah better suited to the cooler, limestone and clay slopes. Whites are also produced; the main grape varieties are Fernão Pires, Moscatel and Arinto, but, again, a large range of Portuguese and international varieties are permitted. Overall, the wines tend to be of good quality with some very good examples, and mid-priced.

Península de Setúbal VR makes up a larger area including the peninsula and land further south, and encompasses the DOCs. It allows greater flexibility; for example, red wines can be made from a range of Portuguese and international varieties and there is no minimum limit for Castelão.

Production of Palmela DOC between 2017–21 ranged from 166,000–222,000 hL compared to 217,000–257,000 hL in Península de Setúbal VR (still wines only).³³

Two large producers have been major modernising influences in the region, namely José Maria da Fonseca (who created the highly successful Lancers and Periquita brands) and Bacalhôa Vinhos.

21.8. Tejo

Tejo is located inland from the Lisboa region, and is named after the Tejo river (River Tagus) that runs through it. In the past, production was focused on volume and vineyards on the fertile riverbanks were able to provide high yields. Following accession to the EU, a substantial number of vineyards on fertile soils were grubbed up. New plantings of higher quality grapes (see below) have been focused on less fertile soils to the north and south of the region.

It is the name of a VR and DOC; the VR covering a wider area, permitting a wider variety of grape varieties and larger maximum yields, and producing substantially more wine than the DOC. Production of Tejo DOC between 2017–21 ranged from 52,000–106,000 hL compared to 224,000–468,000 hL for VR wine (still wines only).³⁴

There is also considerable production of wine without a geographical indication.

Overall, the area has a Mediterranean climate with hot, dry summers and mild, wet winters (around 750 mm annual rainfall). However, there are variances in climate and soil over the region. The north has slightly higher rainfall with clay-limestone and schist soils and mainly produces red wines. Around the river, fertile alluvial soils mean that vine vigour needs to be carefully managed. This area mainly produces white wines. The south of the region is the driest and hottest and has poor sandy soils; it produces red and white wines.

The DOC and VR both allow a range of Portuguese and international varieties, the most common being Trincadeira, Castelão, Aragonez, Touriga Nacional, Syrah and Cabernet Sauvignon for red wines, and Fernão Pires, Arinto, Alvarinho, Sauvignon Blanc and Chardonnay for white wines. The majority of wines are made in a fruity style for early consumption; they tend to be acceptable to good in quality and inexpensive to mid-priced, but a growing number of higher quality, premium wines are starting to be produced. Significant producers include Quinta da Alorna and Fiuza & Bright.

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