

World avocado production prospects

# Portugal

Soon to be a new large-scale  
EC producer



## Acknowledgements

The authors would like to thank all the professionals who contributed to writing this country profile.

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# The avocado in Portugal

The very youthful Portuguese industry currently occupies only a very modest place on the world avocado market (hitherto exporting less than 10 000 t). The cultivation area, estimated at between 2 600 ha and 2 800 ha in early 2023, is concentrated in Algarve and to a lesser degree in Alentejo, regions with a Mediterranean climate though nonetheless favourable for this tropical crop. The industry, which has a good technical level, is built on a hybrid model of small to medium plantations and a few facilities extending over hundreds of hectares, all meeting the high social and environmental standards in force in the European Community. Despite a recent slowdown in the planting rate, the exportable potential should make very quick progress, nearing 40 000 t by 2030.







## History

### A boom in the latter half of the 2010s

Hass cultivation Hass cultivation, and avocado cultivation in Portugal more generally, is very recent. In his tour of the Iberian Peninsula and the Mediterranean in the early 1950s, the famous prospector and avocado crop specialist Wilson Popenoe found only a few Mexican race trees in the country, mainly in the Lisbon botanical garden. It would not be until the early 1980s that the first assessment programme for the avocado and other tropical crops in the Portuguese climate context was created, in the framework of a Portuguese-German project. A few Fuerte, Hass, Reed and Bacon trees were planted in the Patação horticulture & fruticulture research station near Faro and Tavira, under the aegis of the Algarve General Directorate for Agriculture. At the end of these conclusive tests, some initial commercial orchards were planted, especially in the centre of the province (Algoz, Silves, Messines), at the initiative of a few pioneers (Joaquim Mourinho, Foral nurseries, etc.), with the support between 2007 and 2013 of a regional plan promoting this emerging crop. Nonetheless, the surface areas and planting dynamic remained very limited until 2013 (less than 300 ha registered at this time, all situated in Algarve). Growth started to accelerate significantly

thereafter. This lucrative fruit crop, whose market was taking off at both European and world level, attracted a growing number of the region's farmers seeking alternatives to cultivating the orange, the reigning traditional crop of the region, though unprofitable (with a host of small orchards abandoned). A godsend for the smallholders in this minifundio region, with small-scale orchards of this high added-value crop, which is furthermore fairly simple in technical terms, enabling them to sustain or revive their farms. Surface areas, from around 650 ha in 2017, saw a genuine boom over the following years, with the establishment of a few projects, of limited number but on a large scale in other regions, adding to the growth in Algarve. The Portuguese cultivation area was around 2 500 ha to 2 800 ha by late 2022, according to our estimate. Nonetheless, the dynamic seems to have slowed down recently. The market seems more uncertain, while the crop is being singled out in Algarve by some environmentalist groups, in a context of growing tensions over water resources (a structural downward trend in rainfall, with the exception of the last few years, exponential development of tourism and expansion of irrigated fruticulture).



## Portugal in a few figures:

- **Population:** 10.4 million in 2022  
(source Eurostat)
- **GNI/capita:** US\$35,799/year  
(source World Bank - 2021)
- **Agriculture:** 2.2 % of GDP  
(source World Bank - 2021)
- **Value of main agricultural exports:** €1,689 million  
(source Portuguese Ministry of Agriculture - 2020)

### Main agricultural export products: (source Comtrade - 2021)

- **Strawberry:** €239 million
- **Orange:** €100 million
- **Pear:** €96.3 million
- **Tomato:** €77.6 million
- **Almond:** €50 million
- **Kiwifruit:** €48.6 million
- **Blueberry:** €37.5 million





# Cultivation area concentrated in Algarve

More than three-quarters of the 2 500 ha to 2 800 ha cultivation area are concentrated in the Algarve region, in the far South of the country, less than 30 km from the coast. Despite a very northern latitude for a tropical crop, Algarve does have climate assets for Hass cultivation. Although not on the Mediterranean coast, the climate is Mediterranean, though with some significant differences. The remoteness of this region protects it from the continental masses of polar air (protective role of the Serra de Caldeirão, which separates the east of the region from the rest of Portugal), and enables it to harness the oceanic air flow coming from the West. The rainfall is higher (around 500 mm to 600 mm in a normal year, with a dry period from April to September), and the winters milder, although there is a frost risk (minimum average temperatures around 6°C in January and February). The insolation (around 3 000 hours per year), solar radiation and average temperatures are among the highest in Europe. There are some regional climate differences between the windward coast (Barlavento to the west of Faro), which is cooler, windier and wetter than the leeward coast (Sotavento de Faro to the Spanish border). Hence the bulk of Algarve's





plantations are situated between the centre of the region and the Spanish border, with the districts of Silves, Faro and Tavira encompassing two-thirds of the cultivation area. Irrigation is essential, with pressure on the water source having increased in recent years. In the East, the water supply is provided mainly by two dams (Odeleite-Beliche system, with a total capacity of approximately 150 hm<sup>3</sup>), and in the West primarily by pumping from the Querença-Silves aquifer, one of the biggest in Portugal. The rest of the cultivation area lies further north, in the Setúbal district which belongs to the Alentejo Litoral region. This zone, slightly wetter than Algarve, has a higher risk of frost or the occasional heatwave, and is also windier. However, in terms of real estate, large swathes of land are available, unlike in Algarve where minifundios are predominant.

## Strengths:

- Medium to high technical level.
- Proximity to the EC market.
- Very low sanitary constraints.
- Water constraint growing but still moderate.
- High social and environmental standards.

## Challenges:

- Climate risk in some zones (frost).





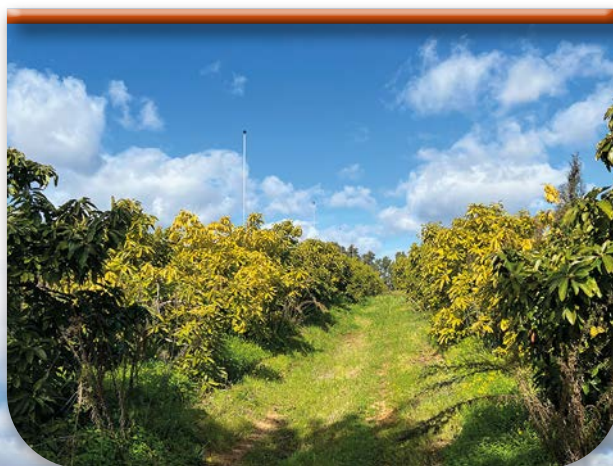
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## roduction system

### Two distinct production systems, both fairly modern

Small and medium plantations, typical of Algarve's mini-fundio agricultural model, are by far the most numerous. According to our estimates, there are fewer than ten large plantations of 100 ha to 300 ha in the country (5 in Algarve and 3 outside of Algarve). Similarly, there are not many farms over 50 ha, with the bulk of avocado growers working with a few hectares up to around fifteen hectares. Nonetheless, the big plantations represent more than half of total surface areas according to our estimate. The technical level varies, especially according to the plantation size, but overall it is relatively good. The big plantations use cutting-edge technologies, while the smaller and medium ones, mostly recent, have adopted the basic modern techniques. This is the case in particular for irrigation, essential both in Algarve and further north (water requirements around 5 500 m<sup>3</sup>/ha to 6 500 m<sup>3</sup>/ha according to the professionals consulted, and the 2021 Agro.Ges study, slightly lower than for citrus-es). Use of water-saving irrigation systems is practically systematic, with fertigation highly developed. The plant stock is generally high-quality, often originating from Spanish nurseries specialising in the avocado. Clonal plants are predominant (Dusa, Torre Canyon and above all Duke 7), with the oldest and smallest plantations often employing Topa Topa for its good cold tolerance. The planting density is generally 300 to 420 trees per hectare, with 6 x 4 m highly widespread. Use of pollinating varieties is practically systematic (Bacon variety, plus more recently Zutano and Ettinger). There are few sanitary problems in this relatively dry country where avocado cultivation is a recent development. The main pest present is a mite (*Oligonychus perseae*), though recent years have seen the appearance of a red spider from the Tetranychidae family, and an airborne fungus which also sometimes attacks the young plantations. They are generally managed by integrated control, with

use of synthetic phytosanitary products extremely limited. There are some *Phytophthora* hotspots. The rate of frost protection systems (low-volume sprinklers or windmills) is variable. The few large plantations in Alentejo are fully equipped, while only some of Algarve's growers have invested in these devices, particularly advisable for low-lying areas, especially in the cooler Barlovento zone. According to a 2019 study, approximately a quarter of farms protected their most exposed orchards. The production potential is good, with an average of around 12 t/ha to 14 t/ha in the long term for the big plantations, and slightly less for the smaller ones (9 t/ha to 10 t/ha). The direct production cost varies according to the production systems in place, but it is relatively competitive (very wide range, going from approximately €5 000 to €8 000/ha). While tensions over water have increased, its cost remains an asset, as do labour costs (minimum wage slightly over €700/month).





# Varieties and production calendar

## Hass and some green pollinating varieties

The bulk of the Portuguese stock comprises Hass, probably more than 90 % of surface areas. The main green varieties are Bacon for recent plantations (planted for their pollinating function), as well as Reed, Fuerte or Zutano, generally originating from older plantations. The Hass harvest period runs from late November/early December to late April/early May. Production in the East of the region is earlier than in the cooler western part (approximately 10 to 15 days).

Avocado – PORTUGAL – Production calendar

Varieties	O	N	D	J	F	M	A
Hass							
Bacon							



## Outlets

### A product primarily intended for export

Portuguese avocado production is mainly sold outside the country. The local market remains relatively modest in size. According to our estimate, drawn up based on Customs sources for imports and exports, as well as professional data for production, it represents around 10 000 t per year (i.e. approximately 1 kg per capita). Its significant progress over recent years apparently slowed in 2022, with the return to annual inflation of around 10 %. The avocado remains a relatively expensive product, in a country where purchasing power remains considerably below the EC average (€18 000/capita on average in 2021, according to Eurostat, as opposed to €27 900 for the EU27 average). Nonetheless it is present in all the supermarkets, generally through segmentation based on two references: medium-sized loose fruits (16-18-20), and an entry-level net bag of small fruits (size 24-26). Hass is tending to replace the green varieties, which nonetheless represent the core range when the prices are right. Besides domestic production, the market is also supplied by imports from Spain during the winter season (6 000 t to 7 000 t per year) and South Africa, and from Peru in the counter-season (direct imports approximately 1 500 t in 2020 and 2021). There is no processing industry in the country (no oil factories, freezing units or guacamole manufacturing). The sorting waste is used on the local market.



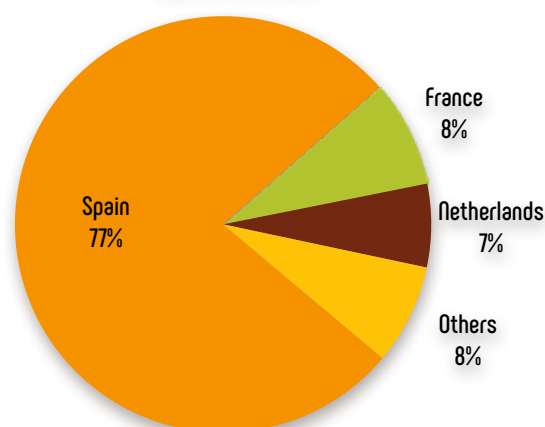


# Exports

## 10 000-tonnes mark set to be broken in 2022-23

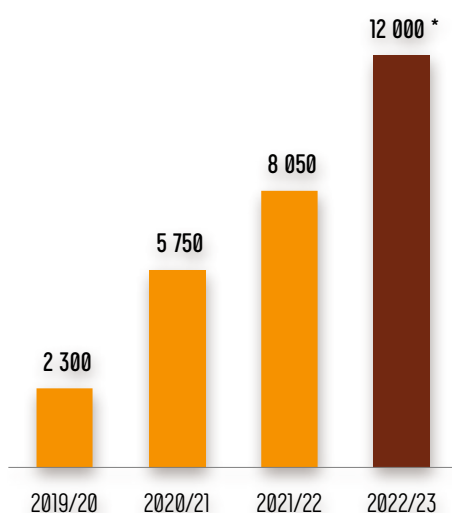
Export volumes remain relatively modest, but are rising rapidly. They went up from approximately 2 000 t in 2019-20 to 7 000 t in 2021-22, and should exceed approximately 10 000 t in 2022-23 (figures calculated according to professional sources.) The flow is aimed practically exclusively at the EC market and the UK, with the proximity of these big consumption centres of course being one of the country's major assets. Paris, Western Germany and Southern England can be reached in 24 hours or less via road logistics. The certification level is high, with the fruits also compliant with the high production standards in force in the EU27 (pesticide residues, social standards, etc.). Regarding the market players, trading is provided mainly by two structures. The Spanish agricultural cooperative TROPS, which has a warehouse in Tavira, is predominant. Fruit from partner growers is currently shipped to the Vélez Málaga site, for packing and trading. The other big player is Global Avocados, which places both its own production and that of partner growers, and has a packhouse in Tavira. A few smaller-scale operators, often working the avocado alongside other fruit products such as citrus, are also present (Frutas Mourhino, etc.).

Avocado - PORTUGAL - Main destinations  
2020/2022 average  
(source: Eurostat)



Avocado - PORTUGAL - Exports

(\* estimate | in tonnes | professional sources, Cirad)





# Exportable potential projection

## Steep short-term growth, reaching 40 000 tonnes in 2030

Our production projection is based on the following hypotheses:

### Situation in early 2023

2 700 ha planted, 60 % on large plantations (average export potential 13 t/ha, smoothed over several campaigns), and 40 % on smaller farms (9.5 t/ha).

### Hypothesis for young orchards production prime

First exportable production in the 3<sup>rd</sup> production cycle, gradual production increase to reach full potential in the 6<sup>th</sup> cycle.

### Hypothesis for evolution of planting rate over the coming years

The planting rate in Algarve has slowed down. This is a recent but significant shift. On the one hand, pressure on the water resource has increased (see introductory paragraph), prompting growers to be highly cautious, in a context of heightened vigilance by the authorities and civil society. On the other hand, real estate tensions are rising. The new developments expected in this region should come primarily in zones already classed as horticultural and with access to water, often in the framework of conversions of old unprofitable citrus orchards. There are potentially large surface areas involved (13 000 ha of citrus in Algarve), but we also need to consider the climate limitation due to orange trees having a higher cold tolerance than avocado trees. Furthermore, these projects should be small to medium-scale, given the minifundio particularities in Algarve (small plots, small or medium farmers with limited investment capacities, in a context of more uncertain economic returns). Hence we assume that the planting rate will remain limited in this region over the coming years. In Alentejo, the real estate constraint – plus the water constraint in some zones – is lower. However, there is a lack of perspective in terms of the climate risk, which is an argument for caution. So we favoured a limited overall expansion hypothesis, excluding possible exceptions (300 ha/year).

The projection built on these hypotheses shows a rapid surge in production, due to the large surface areas planted at the end of the 2010s. The harvest could be around 25 000 tonnes from 2025-26, exceeding 30 000 tonnes in 2027-28 and 40 000 tonnes in 2030-31. The proposed figures are of course highly dependent on how the climate situation develops (evolution of rainfall, and extreme winter or summer temperatures).

Avocado - PORTUGAL - Projected exportable potential  
(in 000 tonnes | source: Cirad)

