

# SECTOR STUDY: FRESH CITRUS



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# 1. Citrus fruit

Citrus is a group of juicy and flavourful fruit known for their health benefits, specifically their high vitamin C content. The genus *Citrus* includes oranges, lemons, limes, grapefruits, mandarins, clementines, tangerines, bergamot, pomelo, and other varieties, and are dietary staples in countries across the world.

From oranges and lemons to grapefruits and easy peelers, they are in high demand globally. They are consumed fresh and in a variety of different processed forms, making them a versatile and valuable commodity in the food and beverage industry.



**Oranges**



**Easy peelers**



**Lemons**



**Grapefruit**

- Oranges: Known for their sweet, juicy flesh, oranges are typically peeled and eaten fresh or squeezed for juice. They are a popular snack and a staple at breakfast.
- Easy peelers: A broad category including mandarins, satsumas, clementines, tangerines, easy peelers are smaller and sweeter than oranges, and with a softer, looser skin allowing for easier peeling. Easy peelers are popular snacks, particularly for those “on the go” and often included in salads and desserts.
- Lemons: Often used as key ingredients or garnishes in meals, particularly in restaurants, lemons are essential in cooking and baking. They are also commonly served with water and tea, cut into slices or squeezed for their tart, acidic flavour.
- Grapefruit: Larger and more bitter than oranges, grapefruit is frequently consumed as a breakfast fruit, or juiced for their distinct flavour.
- Limes: Similar to lemons in their tartness, limes are widely used in cooking, baking and beverages.
- Pomelo: The largest citrus fruit, they have a mild, sweet-tart flavour and are often eaten fresh or added to salads.

This report focuses primarily on oranges, lemons, grapefruits and easy peelers.

In 2023, global citrus production was more than 217 million tonnes (FAOSTAT, 2025). While in 2022 oranges made up almost half of the citrus production (46%), in 2023 easy peelers gain in importance and both categories represent 36% of global citrus production, reaching respectively 77 and 79 million tonnes.

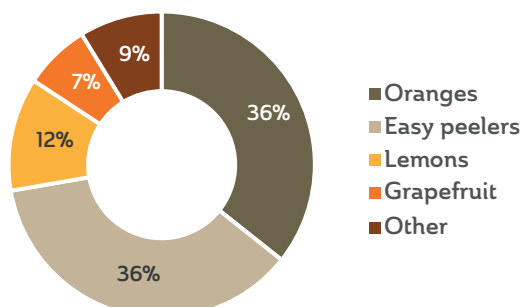


Figure 1: Citrus segment volumes in production in 2023. Source: COLEAD based on FAOSTAT. ( “Other” category refers to every other citrus type, including kumquats, bergamot, etc.)

## 2. Demand

Over the past decade, the volume and value of trade in fresh citrus have seen consistent growth, albeit at a low level. While all sectors have grown, growth is primarily driven by lemons and particularly by easy peelers.

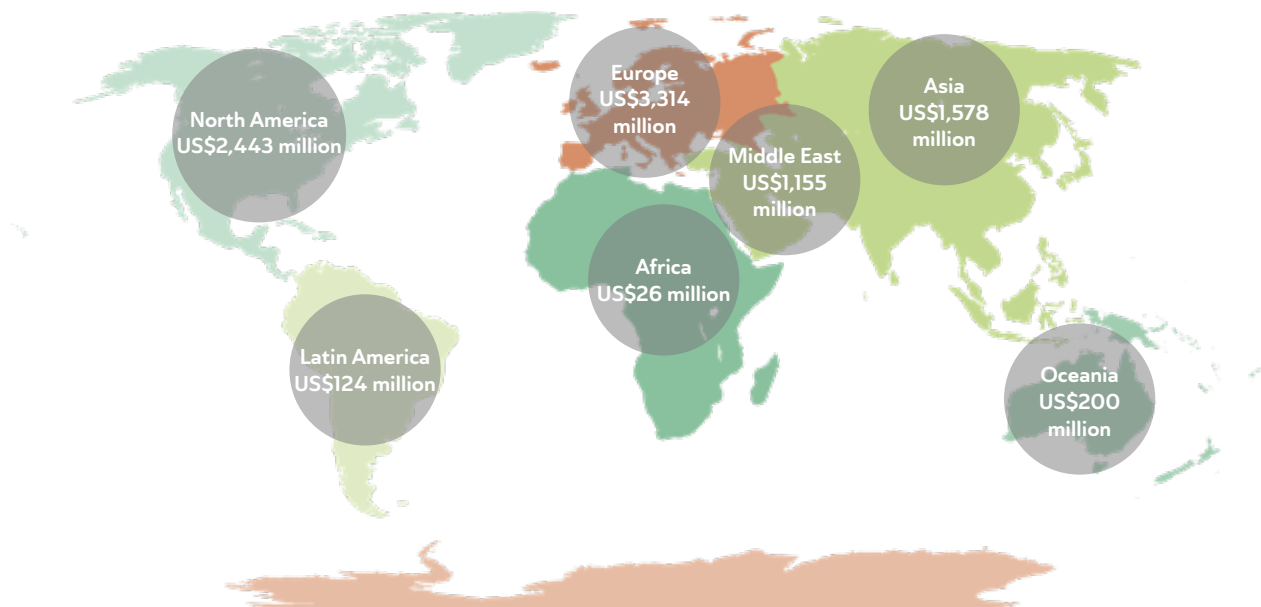


Figure 2: Value of imports per region from extra-regional countries (US\$ million), 2023. Source: COLEAD based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

### 2.1 Regional demand

#### Europe

Europe is the largest importing region for citrus fruit. Imports have been stable over the last 10 years. Oranges remain the main imported citrus fruit, followed by easy peelers, with the share of lemons increasing slightly (Figure 3).

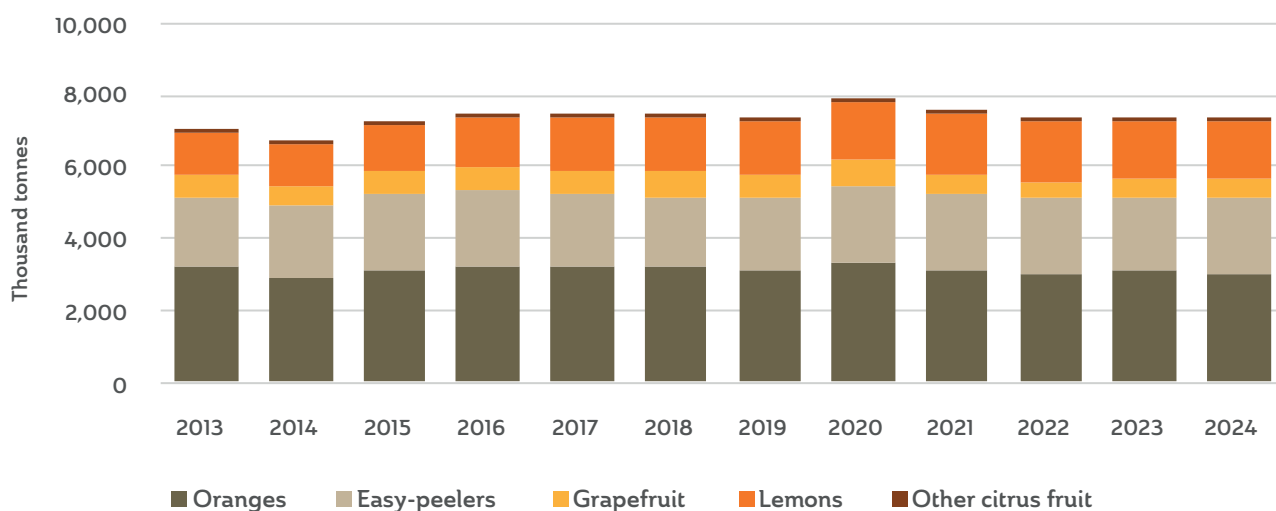


Figure 3: Imports of citrus (HS heading 0805) in EU27+UK per type of citrus (2013–2024). Source: COLEAD based on Eurostat and UK Trade Info.

France, Germany and the United Kingdom import significant volumes, together accounting for a third of fresh citrus imported to Europe in the past five years (Figure 4). The Netherlands re-exports a major share of the citrus it imports. In 2022, 90% of imported citrus was re-exported to other countries in the region, while Germany for example, re-exported only 20%.

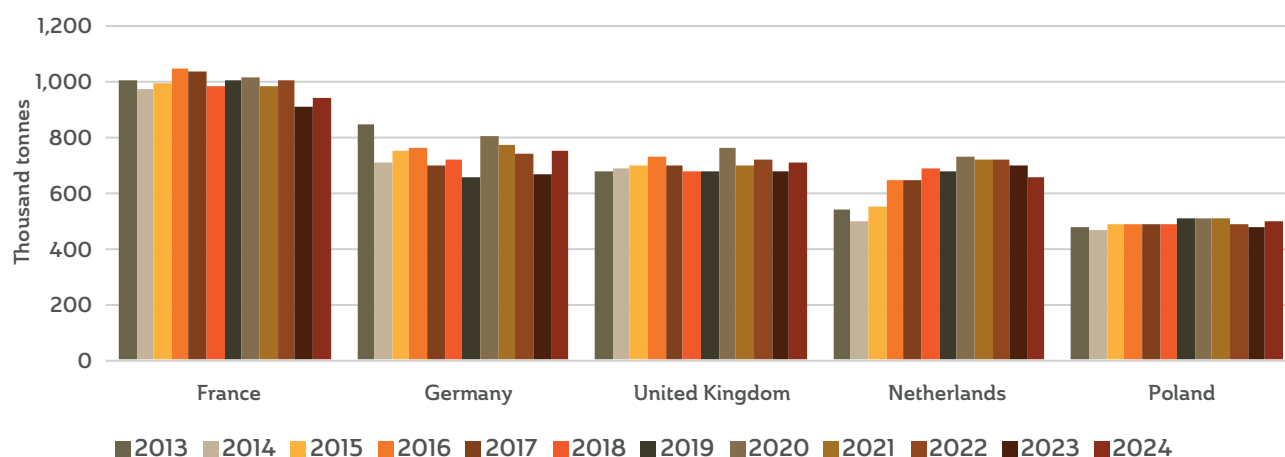


Figure 4: Top five EU27+UK markets for citrus (HS heading 0805) imports (2013–2024). Source: COLEAD based on Eurostat and UK Trade Info.

## Asia

Asia is the third largest importing market, after Europe and North America. It is also a large citrus producing region, especially from China and India. For example, China is the leading producer of easy peelers and grapefruit, while India is a large producer of orange and lemon.

Most of this production is consumed locally, and trade in citrus is small compared to production. To put that in perspective, China produces 48 million tonnes of citrus annually, but in 2023 it exported only 1 million tonnes and imported <0.5 million tonnes. In the Asian region, imports fluctuated between 2.5 million and 3 million tonnes in the last decade. Oranges are historically the main imported product, followed closely by easy peelers. However, in 2023 the easy peelers share had increased significantly, representing 44%, while oranges were only 39% (Figure 5).

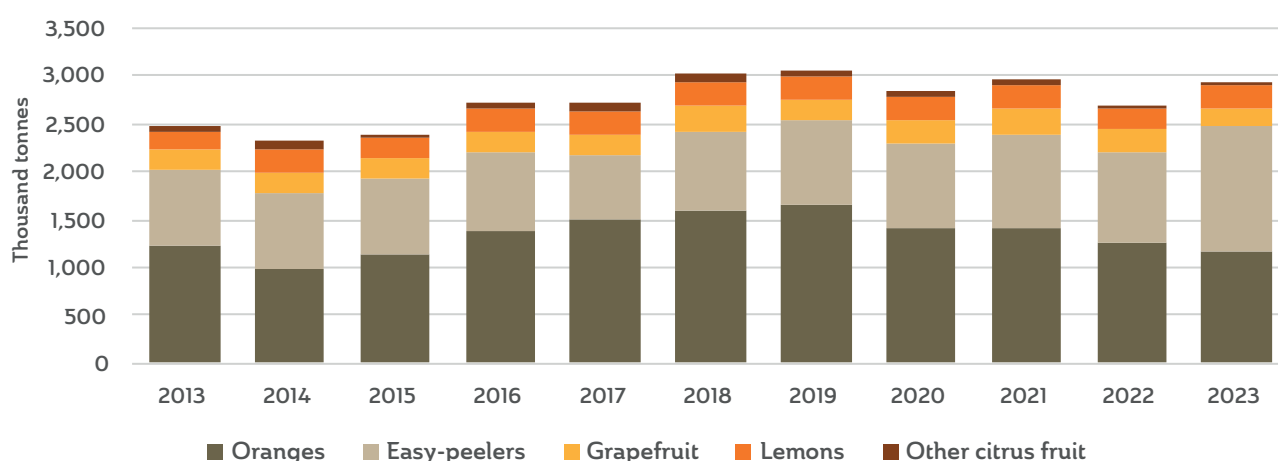


Figure 5: Imports of citrus (HS heading 0805) in Asia per type of citrus (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

China is the leading importer of citrus in Asia, with a peak of more than 700,000 tonnes between 2017 and 2019, decreasing to 450,000 tonnes in 2023. Hong Kong and Japan complete the top three. Together, they represent less than a third of the region's imports, showing the diversity of smaller importers in the region instead of just one or two countries dominating (Figure 6).

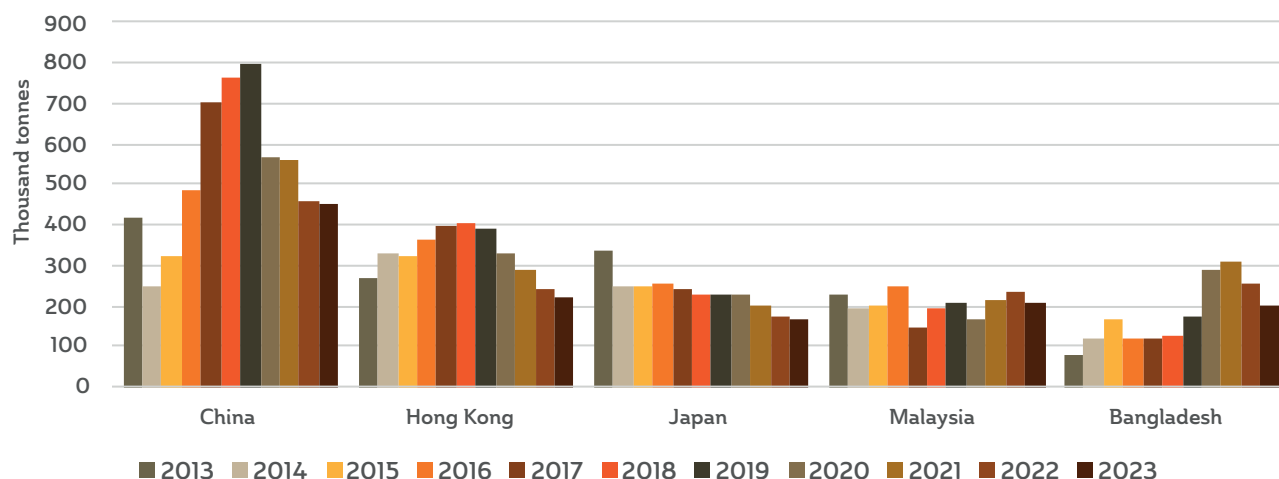


Figure 6: Top five Asian markets for citrus (HS heading 0805) imports (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

## USA

The USA is a major citrus producing country, mostly for local consumption, with additional volumes exported from Mexico. However, orange producers in both countries have struggled with climate events such as hurricanes, with citrus greening and other citrus diseases. Consequently, imports have been growing since 2015, and reached 1.5 million tonnes in 2023. In contrast to Asian and European imports, the main imported citrus fruit in the USA is lemon (>50%), followed by easy peelers (30%).

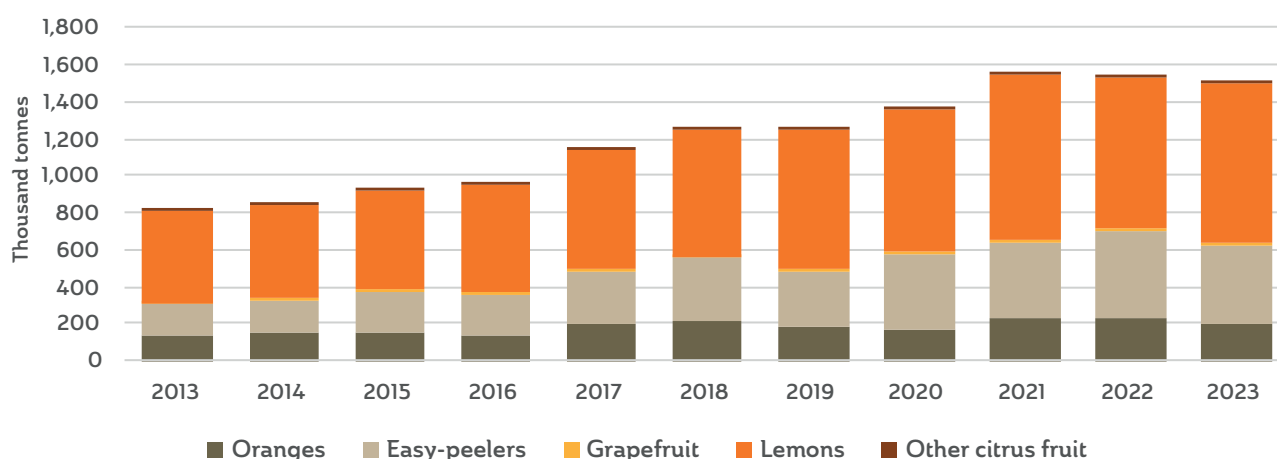


Figure 7: Imports of citrus (HS heading 0805) into the USA per type of citrus (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

### Middle East

As oranges are not a major crop in these countries, phytosanitary regulations are less stringent compared to producing countries such as China, Europe and the Americas. They are also open to lower classes of fruit and to odd sizes. This means, however, that the market is prone to dumping, especially when European markets are experiencing an oversupply of fruit. Imports of citrus have fluctuated between 1.7 and 2.0 million tonnes, with a drop to 1.6 million tonnes in 2023. Oranges are the main imported citrus fruit, followed by lemons (Figure 8).

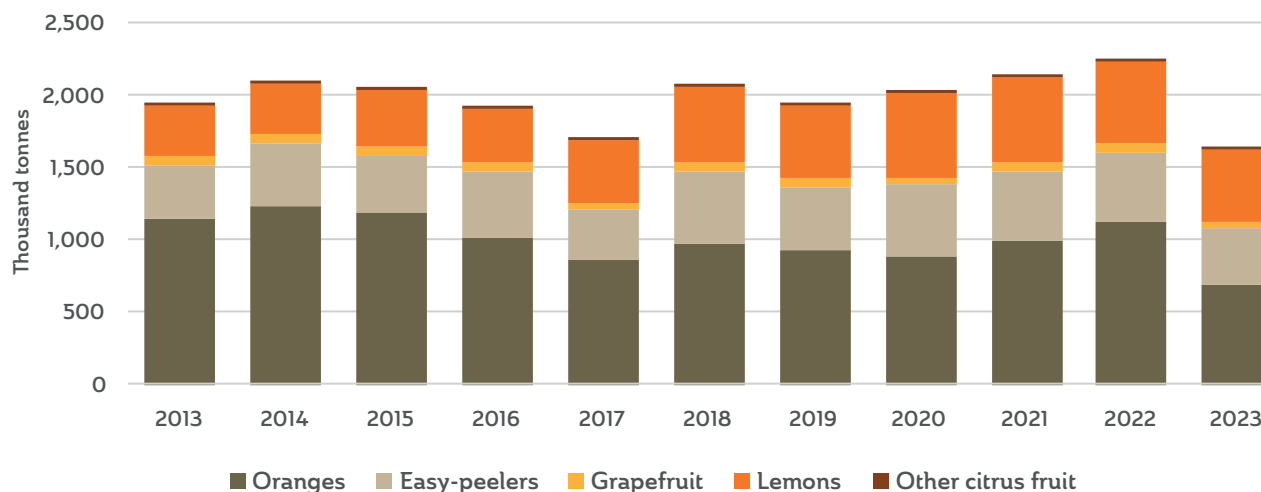


Figure 8: Imports of citrus (HS heading 0805) in the Middle East per type of citrus (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

Iraq, Saudi Arabia and the United Arab Emirates are the largest importers of citrus fruit in the Middle East, that together represent 70% of all imports in the region. Iraq, in particular, has shown strong growth in its demand for citrus fruit in recent years, with a drop in 2023, while Saudi Arabia's citrus imports have slowly decreased (Figure 9).

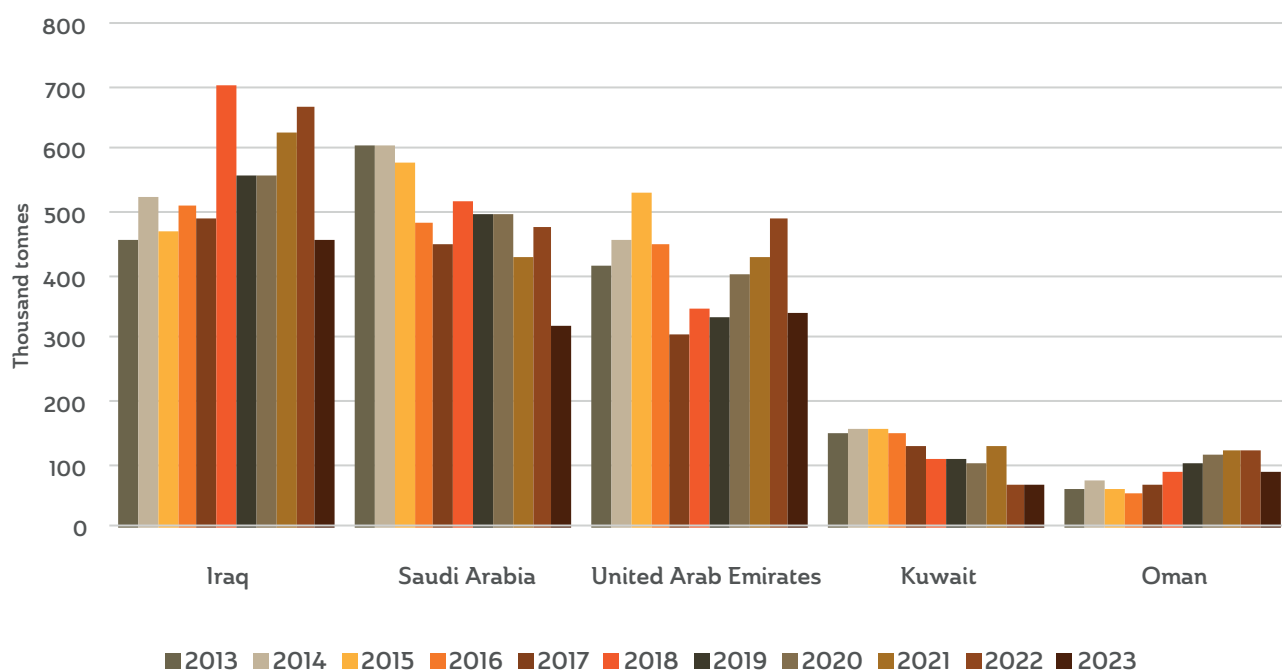


Figure 9: Top five markets for citrus in the Middle East (HS heading 0805) imports (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.



## Africa

Trade in citrus in Africa remains relatively small, but has grown significantly since before the COVID-19 pandemic, going from importing in average of 234 thousand tonnes between 2013 and 2020 to an average of 100 thousand tonnes more in the following three years (Figure 10). Oranges are the main import, although easy peelers are gaining market share.

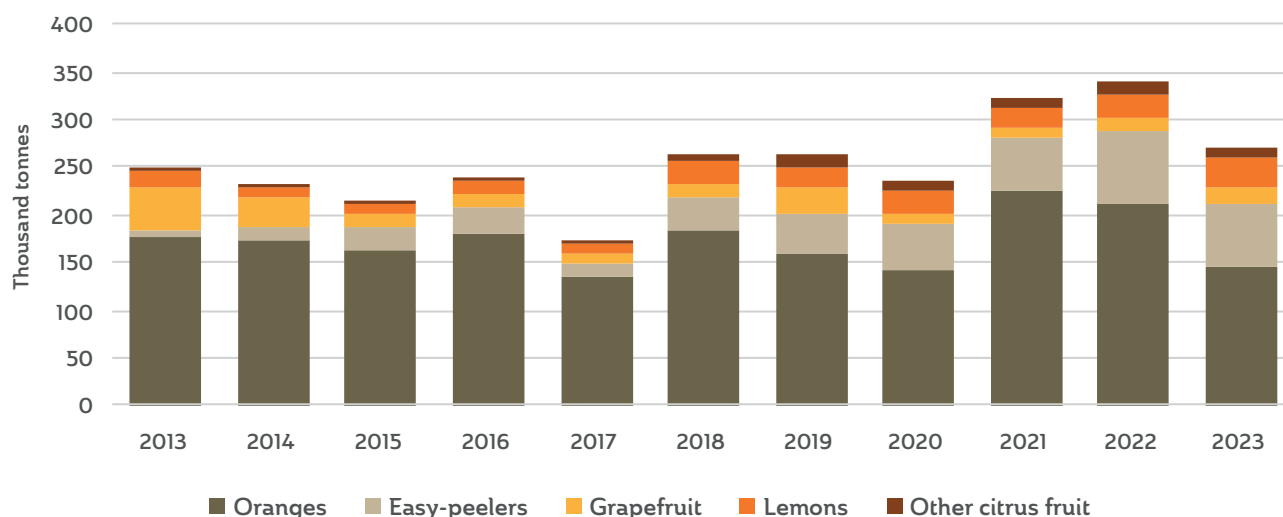


Figure 10: Imports of citrus (HS heading 0805) in Africa per type of citrus (2013–2023). Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

The largest importers of citrus are South Africa, Kenya, Senegal, Sudan and Mauritania, although imports fluctuate significantly over the years (Figure 11, Table 1).

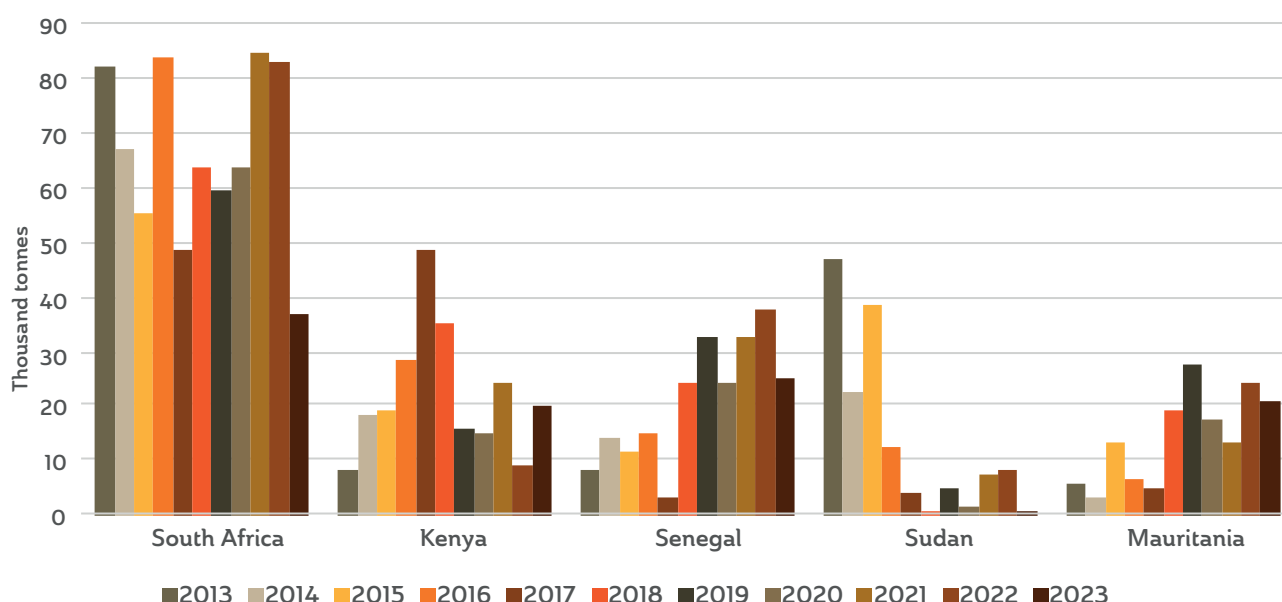


Figure 11: Top five main African markets for citrus (HS heading 0805) imports (2013–2023). Source: COLEAD based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

Table 1: Top 20 African importers of citrus in 2023. Source: COLEAD, based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

Importing country	Imports in 2022 (tonnes)
South Africa	36,448
Senegal	24,659
Côte d'Ivoire	21,646
Mauritania	21,066
Kenya	19,838
Mozambique	12,895
Zambia	11,991
Burkina Faso	9,830
Mauritius	9,592
Eswatini	8,880
Rwanda	8,493
Botswana	7,672
Mali	7,557
Djibouti	7,277
Namibia	6,889
Nigeria	5,327
Angola	4,895
Algeria	4,636
Egypt	3,674
Gabon	3,520

A recent survey on fresh fruit consumption in Africa across 30 countries (Sagaci Research, 2024<sup>1</sup>), indicated that 81% of 16,300 respondents consume fruit at least 2–3 times per week. Bananas (66%) are most popular, particularly in East Africa, followed by oranges (56%), widely consumed in countries like Botswana, Kenya and Tanzania, with apples (44%) the third most popular fruit. The consumption of oranges highlights potential for increased citrus fruit consumption across the continent.

Most African markets have less stringent controls on imported fruit, with buyers open to fruit of different size and quality. For example, oranges grown in Ghana are more likely to be small, green and with blemishes.

<sup>1</sup> <https://sagaciresearch.com/2024-insights-into-fresh-food-consumption-in-africa/>



Figure 12: Ghanaian oranges tend to be mostly green, with blemishes. *Image: Sense*

## 2.2. Market trends

Consumer demand depending on the type of citrus.

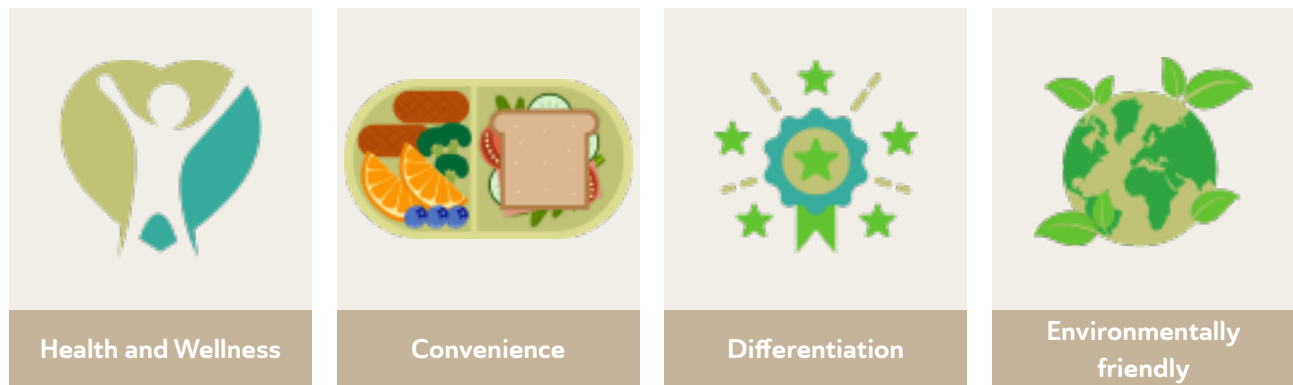
**Oranges:** During the Covid-19 pandemic, there was a notable increase in consumption, as consumers sought to boost their vitamin C intake, but the market has since stabilised. Import trends show stable demand, with major importing regions including Europe and North America continuing to source large volumes of fresh oranges and orange juice.

**Easy peelers:** The easy peeler segment is experiencing strong growth due to rising consumer demand for convenient and flavourful citrus options. Mandarins, clementines and other easy peelers are increasingly popular as snacks and in salads, especially for the convenience shopper. Opportunities exist in expanding into new markets.

**Lemons:** Lemon consumption has remained relatively stable. Changing prices also seem to have very little effect on demand. It seems as if most shoppers buy lemons in consistent, small quantities, irrespective of the price. However, there is a growing trend in the culinary industry and among health conscious consumers who add lemon to their diets that is driving increased use. Seedless lemons are also growing in popularity.

**Grapefruit:** Grapefruit is decreasingly popular, particularly amongst younger shoppers who find the fruit too bitter, and many are unsure of how to eat it. Despite this, there are seasonal increases in demand, during the summer months when grapefruit is popular in salads and cocktails.

Several macro-level trends are driving demand for citrus fruit.



### Health and wellness

The citrus market is driven by the rising demand for fresh produce. Growth is propelled by health concerns and increased awareness of the benefits of fresh food, particularly fruit, in both emerging and developed countries. Citrus fruit is valued for low calories, high fibre and, natural sweetness. These are important factors in preventing and treating diabetes and obesity, which are an increasing health issue globally.

### Convenience and differentiation



Image: Marks & Spencer, UK website

Convenient, healthy snacks grab attention from shoppers, and citrus fruit, especially easy peelers, are perfectly positioned to meet this demand. There is also a rise in preference for convenient pre-cut fruits and vegetables, ready to eat and can be eaten on the go.



Image: Marks & Spencer, UK website

Fruit is increasingly enjoyed in lunch boxes and as a quick snack on the go. Seedless fruits offer a more pleasant experience. Seedless oranges, clementines and even lemons are an opportunity to offer more value to shoppers and to differentiate in the category.

Oranges are such a large share of the citrus market that there is a real incentive for retailers to bring new news to the shelf, with retailers innovating in numerous ways.



Image: Die Süssi Susi, DE website

Some retailers are exploring new fruit brands. In the UK, Jaffa borrows from the variety as well as the association with Jaffa orange biscuits, with oranges and clementines available with this novel branding. In Germany, Süssi oranges have been introduced by Rewe to bring attention to the sweetness and flavour of this specific variety.

Fruit is a key ingredient in lunchboxes. Smaller fruits are packed more easily, so retailers have introduced mini-fruits and hand sized oranges to cater to this need.



Image: Waitrose UK, website

Some retailers are drawing attention to the larger sizes of oranges, available in the UK, the Netherlands, Belgium, Germany and elsewhere.



Image: Albert Heijn, NL website

Many shoppers around the world are concerned about the sugar content of juice. Squeezing their own juice at home allows them to enjoy a natural and delicious indulgence. To cater to this need, retailers offer juicing oranges.



Image: Woolworths, South Africa website

Natural produce is so in demand that retailers have begun to experiment with packaging, and signal that fruit is worth paying a little extra for. In select UK supermarkets, clementines are packaged in premium packaging with leaves attached, to highlight that the fruit is natural.



Image: Onixcitrus, ES, website

Blood oranges offer a visually attractive variation on oranges. They have been previously seen in small quantities, they are now available in more retailers. In the UK, retailers are playing with naming and are marketing as “blush oranges”. New citrus variants are also constantly being developed, such as Onix™, a pigmented orange that features striking external and internal colours, and with its refreshing flavour and delicate aroma, it has already gained ground in Germany, Spain and the UK.

## Organic market and environment friendly

Retail sales of organic produce have experienced a slowdown over the past few years, leading many retailers to anticipate flat or slightly reduced demand for 2024. While the market for organic products remains stable, the rising cost of living globally has made the price premium associated with organic goods a significant barrier for many consumers.



Image: McGrocer DE, website

Organic fruit occupies a niche segment in the market, and its availability remains limited. Stringent phytosanitary requirements often necessitate the use of pesticides to combat plant diseases, or postharvest treatment of fruit, that is not acceptable under organic farming principles. There is, however, a growing push toward more environmentally sustainable agriculture, with governments actively supporting organic farming as a means to reduce pollution and risks to the health of wildlife and humans alike, that also offers new opportunities for producers.



The European Commission's Farm to Fork strategy aims to achieve 25% of all European Union (EU) farmland under organic production by 2030. The European organic market faced challenges in 2022 with inflation driving some consumers to cut back on organic purchases, but awareness of environmental and health benefits associated with organic products remains strong.

In developed markets, campaigns have put the spotlight on issues caused by shoppers and retailers who accept only perfectly uniform fruits. This leads to rejection of fruit that is otherwise perfect for consumption. In the fruit shelves of European supermarkets this has created an opportunity for "wonky fruit" that doesn't meet mainstream quality standards. Waitrose UK offers odd sized fruit and vegetables including oranges in a dedicated organic produce brand called Wholegood.

Shoppers are increasingly interested in environmentally friendly retail concepts. In the citrus market, this is reflected with examples of compostable packaging.

## 2.3. Buyer requirements

### Quality standards

Exporting citrus fruits to the EU requires that specific marketing standards are met. These include minimum requirements for the fruit, maturity indicators (minimum juice content, minimum sugar content, and the sugar/acid ratio), and provisions concerning sizing. These criteria ensure that citrus fruit meet the expectations of European consumers and buyers, providing a benchmark for quality to gain and maintain access to this competitive market.

For fresh produce, exporters to the EU must adhere to defined classification characteristics, categorised into Extra Class, Class I or Class II, that come with specific tolerances to ensure the product's quality and marketability within the EU. For citrus fruits, the [United Nations Economic Commission for Europe \(UNECE\) Standard FFV-14](#) governs marketing and commercial quality control.

#### "Extra" Class

Citrus fruit in this category must be of the highest quality. Fruit must be characteristic of the variety and commercial type, and must be free from any defects, except for very slight superficial flaws that do not affect the overall appearance, quality, shelf life or presentation of the produce.

#### Class I

Citrus fruit in this class must be of good quality, true to their variety and commercial type. However, minor defects are permissible if they do not compromise the overall appearance, quality, shelf life or presentation of the fruit. Defects may include slight irregularities in shape, minor variations in colour including mild sunburn, or slight skin imperfections that do not affect the flesh.

#### Class II

This category includes fruit that do not meet criteria for higher classes but still fulfil minimum quality requirements. Fruit may exhibit more noticeable defects, provided that they do not

detract from the essential characteristics, quality, shelf life or presentation. Permissible defects include irregularities in shape, variations in colour including sunburn, or skin imperfections that do not affect the flesh.

### Maturity indicators

These are important to achieving a delicious product for consumers.

Table 2: Key maturity indicators for exporting citrus fruit. Source: UNECE Standard FFV-14.

	Minimum juice content (%)	Minimum sugar content (Brix°)	Minimum sugar:acid ratio	Colouring
Lemons	20			Must be typical of the variety. Fruit with a green (but not dark green) colour is allowed, provided it satisfies the minimum requirements as to juice content.
Satsumas, Clementines, Other mandarin varieties / hybrids				
Satsumas	33		6.5:1	Must be typical of the variety on at least one third of the surface of the fruit.
Clementines	40		7.0:1	
Other mandarin varieties and hybrids	33		7.5:1	
Oranges				
Blood oranges	30		6.5:1	Must be typical of the variety. However, fruit with light green colour not exceeding one fifth of the total surface area of the fruit is allowed, provided it satisfies the minimum requirements as to juice content.
Navels	33		6.5:1	
Other varieties	35		6.5:1	
Grapefruit				
All varieties	35			Must be typical of the variety. Fruit with a greenish colour (green in Oro Blanco) is allowed, provided it satisfies the minimum requirements as to juice content.
Oro Blanco	35	9		

## Sizing

Size is specified by the [UNECE standards](#) and are determined by the maximum diameter of the fruit's equatorial section and by count. The minimum size requirements are as follows.

Table 3: Size of citrus fruit suitable for export. Source: UNECE Standard FFV-14.

Fruit	Diameter (mm)
Lemons	45
Satsumas, other mandarin varieties and hybrids	45
Clementines	35
Oranges	53
Grapefruit	70

Additionally, to ensure size uniformity, size variation within produce in the same package should be minimal, with specified tolerances within each size range.

## 2.4. Labelling, packaging and transport

Each country has its own import requirements, or in some cases covering regions such as the European Union. For example, the “[United Nations Economic Commission for Europe](#)” (UNECE) [Standard FFV-14](#) states that all packages must be clearly marked with the following information: exporter information, nature of the produce (e.g. lemons or oranges), origin, commercial specifications (such as class and size code), and an optional official control mark.

To ensure that citrus fruit arrives in optimal condition when exported from the country of origin to the EU and the USA, packaging must be clean and uncontaminated. Requirements for the EU can be accessed here – [EU Labelling and Packaging Guidelines](#) and the [EU Packaging and Packaging Waste Directive](#) mandates that packaging should be minimized, designed for reuse or recycling, and free from hazardous substances.



Image: Trade visit, Lidl UK

- **Cartons:** Citrus fruit are typically packed in ventilated cartons, crates or bins that allow for air circulation, essential for maintaining freshness and preventing damage, spoilage and preserve freshness during transit.
- **Pallets:** Wooden pallets are predominantly used for shipping citrus fruit, with plastic pallets making up only about 2% of shipments. Wooden pallets are preferred for their durability and ability to support heavy loads, and are insisted upon in the USA.
- **Paper interleaving:** Not strictly required, but it extends shelf life and is in demand by buyers in the EU, Asia and the Middle East.

The choice between road, air and sea transport depends on cost, delivery time and any specific requirements of the shipment, but most citrus is transported via sea freight because it allows for larger shipments and more cost-effective delivery. The regulations for all freight are the same, however, especially when it comes to refrigeration and phytosanitary controls. To the EU, citrus fruit is transported in refrigerated containers, and shipping takes 2–4 weeks, depending on the origin and destination.

## 2.5. Regulations, sustainability and certification

The fresh citrus industry is a complex global network where food safety, quality management, sustainability, and certification are key. Multiple requirements must be met for legally exportation to most markets. In many cases, buyers demand sustainability and certification requirements that might not be required by law.

### Phytosanitary controls

Citrus fruit, like all fresh produce, are subject to phytosanitary regulations, and due to diseases such as false codling moth and citrus black spot, the rules are strictly enforced. This is especially true in the European Union where Spanish growers have an organised and influential lobby group. Asian countries that produce citrus are likewise concerned about the spread of these and other diseases. So, while regulations are less severe than in the EU, measures are still required to open and retain market access. Regulations are periodically updated, with implications for the cost of production and logistics.

Phytosanitary controls on citrus fruit are extensive, specific, and challenging for many suppliers, and include traceability, phytosanitary inspections, pesticide residue tests, and food safety regulations.

### Supplier registration

Product traceability is a key pillar in phytosanitary regulations. Only [registered origins](#) that are free from key citrus diseases, are eligible for becoming agreed origins to the EU, the USA and many countries in Asia such as Japan and Korea. Certificates are issued to orchards, packhouses and cooling facilities, and without these, products are discarded at arrival at the importing country.

### Product traceability

Product traceability is compulsory, that requires clear labelling of products at each leg of the logistics chain, that records the supplying orchards, packhouses and cooling facilities. Failure to show full traceability will likely lead to bans that affect the entire sourcing origin. Read more in this [EU Product Traceability Booklet](#).

### Integrated pest management systems

Individual orchards registered to supply fruit are required to have integrated pest management systems in place. Learn more from the [South African industry](#).

### Phytosanitary certificates

Receiving ports inspect phytosanitary certificates. Exporters are thus required to have reliable systems in place to assess compliance with the phytosanitary regulations of importing countries. For example, this might require the fruit shipment to be separated from other fruit shipments going to other destinations.

### Cleaning and sterilisation

Before packaging, citrus fruit must undergo thorough postharvest procedures, including washing, drying, and sterilisation. Citrus fruit exported to the EU, China, the USA and Japan

undergo cold sterilisation. This involves pre-cooling the fruit for a few days, then further chilling for up to 24 days, depending on the importing country and the specific product. For example, lemon exports to China must be chilled to 3°C for 19 days. All other citrus fruits exported to China require<sup>2</sup>: pre-cooling at –0.60C for 72 hours (all citrus except lemons), with cold treatment of at –0.6°C or below for 24 days. Procedures differ by importing country, with each specifying a required temperature and period of chilling that is testing prior to receiving approval. The cooling procedures, in some cases, can be carried out during shipping. But in any case, costs must be carried by individual companies, or collectively by exporters in a country.

### Pesticide regulations

Citrus is prone to diseases, but there are limitations on pesticide use. The EU regularly updates the list of maximum residue levels (MRLs) for the pesticides that it allows in food products. See the full list of maximum residue levels at this site:

<https://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/start/screen/mrls>

### Food safety measures

Contaminants are substances that are not intentionally added to food or other products. They pose potential threats to health, so are controlled in most buying countries. The [EU sets limits](#) for contaminants in foodstuffs as it does for MRLs.

### Sustainability and certification

The EU has been at the forefront of implementing sustainability and packaging requirements, aimed at reducing environmental impacts and promoting principles for a more circular economy. The [EU's Farm to Fork Strategy](#), part of the European Green Deal, sets ambitious goals for sustainability in agriculture. These include reducing the use of pesticides and fertilizers, enhancing biodiversity, and promoting organic farming. This requires that citrus producers must adopt sustainable farming practices that align with EU standards, such as integrated pest management (IPM), water conservation, and soil health management.

Retailers are increasingly expected to offer sustainably produced citrus, with clear labelling to inform consumers about the environmental and social impact of their purchases. Certification is not required by law, but the following is a list of the most common certification types that are requested by buyers of fresh fruit.

- [Global Good Agricultural Practices \(GAP\)](#) sets standards for primary production and the supply chain across a wide range of products, including fruit, flowers, fish and animal feed. These standards are supported by a robust third-party certification system developed in collaboration with industry stakeholders and integrated with advanced IT systems. This approach contributes to six key impact areas: food safety, environmental sustainability, workers' well-being, animal welfare, supply chain transparency, and capacity building.
- [International Featured Standards \(IFS\)](#) oversees the standardised inspection of product safety and quality for producers of food and other goods (e.g. cosmetics and packaging

<sup>2</sup> The South African Department of Agriculture, Land Reform and Rural Development outlines the cold treatment requirements for China: [https://www.dalrrd.gov.za/images/Branches/AgricProducHealthFoodSafety/PlantProductionHealth/PlantHealth/export-from-sa/specialexportprotocols-prog-dir/china/amended-protocol-of-phytosanitary-requirements-for-the-export-of-south-african-citrus-fruits-to-chin\\_p61510.pdf](https://www.dalrrd.gov.za/images/Branches/AgricProducHealthFoodSafety/PlantProductionHealth/PlantHealth/export-from-sa/specialexportprotocols-prog-dir/china/amended-protocol-of-phytosanitary-requirements-for-the-export-of-south-african-citrus-fruits-to-chin_p61510.pdf)



materials) and services (e.g. logistics and trading). The IFS Food Standard evaluates both products and production processes to assess a food producer's capacity to deliver safe, authentic and high-quality products in line with legal requirements and customer specifications. It supports businesses in meeting increasing market demands for transparency and traceability, while enhancing product integrity and operational efficiency. Audits are conducted by qualified IFS auditors from independent, accredited certification bodies.

- British Retail Consortium Global Standards (BRCGS) is a leading global brand that supports confidence in the supply chain through its internationally recognised Global Standards. These Standards cover areas such as food safety, packaging materials, storage and distribution and consumer products. They establish benchmarks for good manufacturing practices and offer assurance that products are safe, legal and of high quality. The BRCGS Global Standard for Food Safety provide a comprehensive framework for managing product safety, integrity, legality and quality, along with the necessary operational controls within the food and food ingredient manufacturing, processing and packaging sectors.
- SEDEX Members Ethical Trade Audit (SMETA) is the world's most widely used social audit, enabling businesses to assess and improve working conditions and environmental performance within their operations and supply chains. It focuses on key areas such as labour standards, health and safety, environmental impact and ethical practices. SMETA is designed to help protect workers from unsafe conditions, excessive working hours, discrimination, low wages and forced labour.
- Business Social Compliance Initiative (amfori BSCI) offers a recognised methodology for identifying and addressing risks related to workers' rights in global supply chains. It supports businesses in exercising human rights due diligence more efficiently and in promoting responsible practices among their business partners. Central to amfori BSCI is a common Code of Conduct, which outlines key values and principles aimed at improving company policies and practices, such as responsible purchasing and contract management.
- The Rainforest Alliance certifies crops that have been produced in accordance with a comprehensive sustainability standard that includes detailed environmental, social and economic criteria. Farms achieve certification by meeting stringent requirements that promote practices benefiting both people and the planet. Certified farms are recognised for nurturing the land, reducing pesticide use, combating climate change, treating workers fairly, and fulfilling a wide range of sustainability measures aimed at creating a more sustainable and equitable world.
- "Fairtrade" is a globally recognised and trusted sustainability label that promotes fairer trade for food producers. Products carrying the FAIRTRADE Mark meet rigorous, independently audited Standards covering social, economic and environmental criteria. These Standards apply to farmers, workers, traders and other supply chain partners. Fairtrade supports farmers and workers directly through local teams that provide guidance on farm management, sustainability and safe working conditions, while also implementing impact programmes on issues such as climate change, gender equality, youth in farming, and child labour.
- "Organic" is a process that verifies agricultural products are grown and processed according to specific standards that promote environmental sustainability, biodiversity and the absence of synthetic inputs such as chemical fertilizers, pesticides and genetically modified organisms (GMOs). Certified organic farming also emphasises soil health, animal welfare, and traceability throughout the supply chain. Organic certification is provided by accredited certification bodies that inspect and audit farms and processing facilities to ensure compliance with established organic standards. These standards may vary by country or region.

## 3. Supply

### 3.1. Variety

Citrus is a group of fruit that include several species and a wide range of varieties, that have different flavours, uses, and regions of origin. Below is an overview of the main commercialised citrus varieties and from where they are mostly sourced.

#### Oranges

- Navel oranges: known for their sweet flavour, being easy to peel, seedless, and having a visually distinctive 'navel' at one end.
- Valencia oranges: valued for their high juice content and balanced sweet-tart flavour, and are primarily used for juice production.
- Blood oranges: characterised by their deep red flesh and sweet, berry-like flavour, often used in salads, desserts, and in beverages.

#### Primary sources

- Brazil: A leading producer of Valencia oranges, mostly for juice exports.
- Spain: one of the largest producers of Navel and Valencia oranges, particularly in regions like Valencia and Andalusia.
- USA: Florida and California are known for both Navel and Valencia oranges, with Florida focusing on juice production and California on fresh fruit.
- Egypt: a major producer of Navel oranges, especially for export to Europe.
- Italy: famous for blood oranges (Tarocco, Moro and Sanguinello varieties), particularly from Sicily.

#### Easy peelers

- Mandarins are the parent group of clementines, tangerines and satsumas:
  - Clementines: a popular small, seedless and sweet variety of mandarin.
  - Tangerines: similar to clementines but with a slightly tarter flavour and some contain seeds.
  - Satsumas: known for their delicate, sweet flavour and loose skin, making them very easy to peel.
- Minneolas: a cross between a tangerine and a grapefruit with a not-too-sweet tart taste.

#### Primary sources

- China: the largest global producer of mandarins, supplying both domestic and international markets.
- Spain: the leading producer of clementines and other easy peelers, particularly from Valencia.
- Morocco: renowned for high-quality clementines and mandarins, mainly exported to Europe.
- South Africa: a major supplier of easy peelers, particularly to the EU and USA during their respective off-seasons.
- USA: California produces several easy peelers including clementines and tangerines.

## Lemons

- Eureka lemons: the most common lemon variety, known for its tart juice and thin, smooth skin.
- Lisbon lemons: similar to Eureka, with a slightly thicker skin and more robust flavour.
- Meyer lemons: a cross between a lemon and an orange, sweeter and less acidic, with a thinner skin.

### Primary sources

- Spain: the largest exporter of lemons to Europe, particularly Eureka and Lisbon varieties.
- Argentina: a major producer of lemons, especially for juice and oil production, with significant exports to the EU and USA.
- USA: California and Arizona are known for producing Eureka and Lisbon lemons, mainly for the domestic market.
- South Africa: an exporter of lemons during the European off-season, with an increasing presence in both EU and USA markets.

## Grapefruit

- Red/pink grapefruit: known for a sweet-tart flavour and vibrant colour, often eaten fresh or juiced.
- White grapefruit: slightly bitter than red/pink varieties, commonly used in juices and cocktails.
- Oro blanco: a sweeter, seedless hybrid of grapefruit and pomelo, with a thick, greenish-yellow skin.

### Primary sources

- USA: Florida and Texas are major producers of red and pink grapefruit, with Florida known for juicy, sweet produce.
- South Africa: a significant exporter especially to Europe during its off-season.
- Mexico: produces both red and white grapefruit, primarily for the USA market.
- Turkey: a growing exporter of grapefruit to Europe, particularly red varieties.

### 3.2. How products reach the market

The value chain is relatively short, with producers in the tropics selling directly to either retailers, or to wholesale importers for further distribution to retailers. Large, professional growers in supplying countries have integrated packhouse and export operations. Many are closely connected to retailers in developed markets, allowing for consumer-ready packaging to already be filled and ready at the packhouse in the exporting countries.

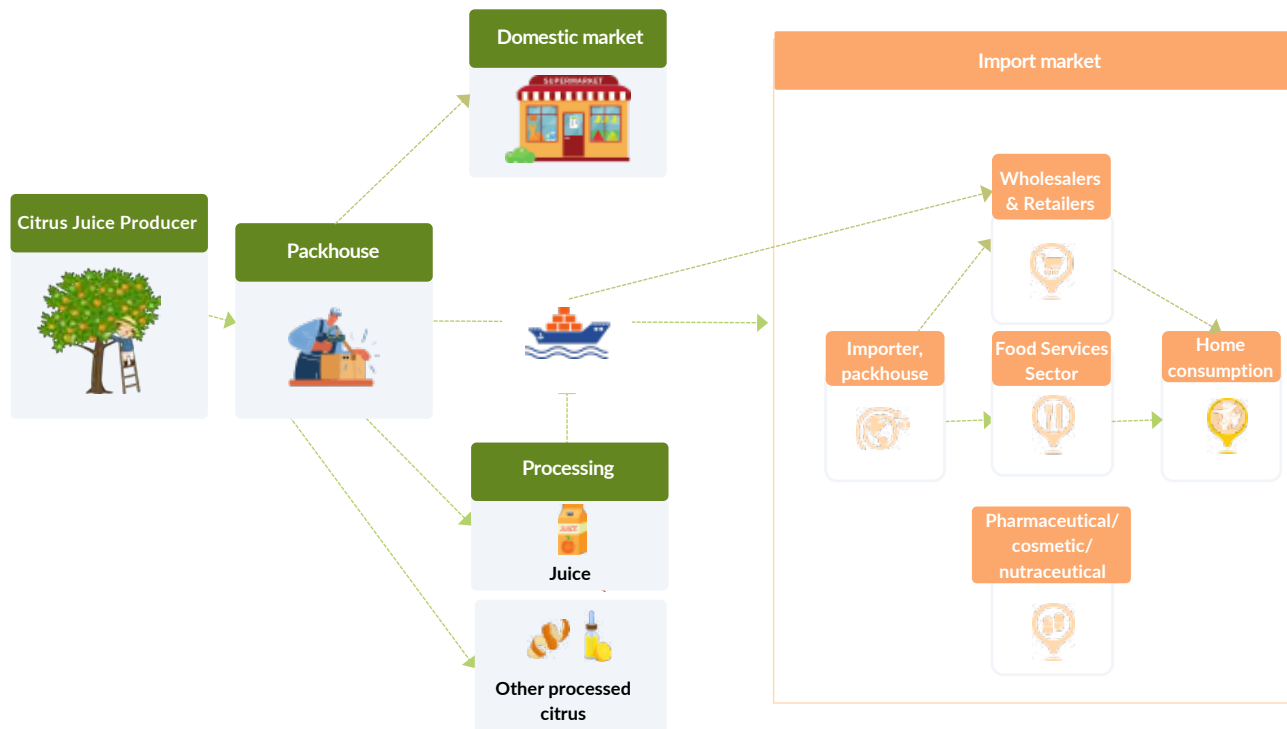


Figure 13: The fresh citrus value chain

Smaller growers supply fruit to independent packhouses, which then manage the treatment, packing, logistics, final regulatory screening and marketing. In some case, fruit is exported directly to importers in developed markets.

Some citrus, like lime, pomelo or kumquat are considered “exotic” fruit and so follow a slightly different route to markets, via specialty importers who deal in a wide range of other produce that is considered suitably exotic, such as dragon fruit, star fruit and papaya, among others.

International or regional bodies such as country specific Citrus Associations and Export Control Boards offer vital assistance. They help exporters navigate the complexities of global trade, offering guidance on best practices, market trends, and compliance with international standards.

### 3.3. Supplying markets

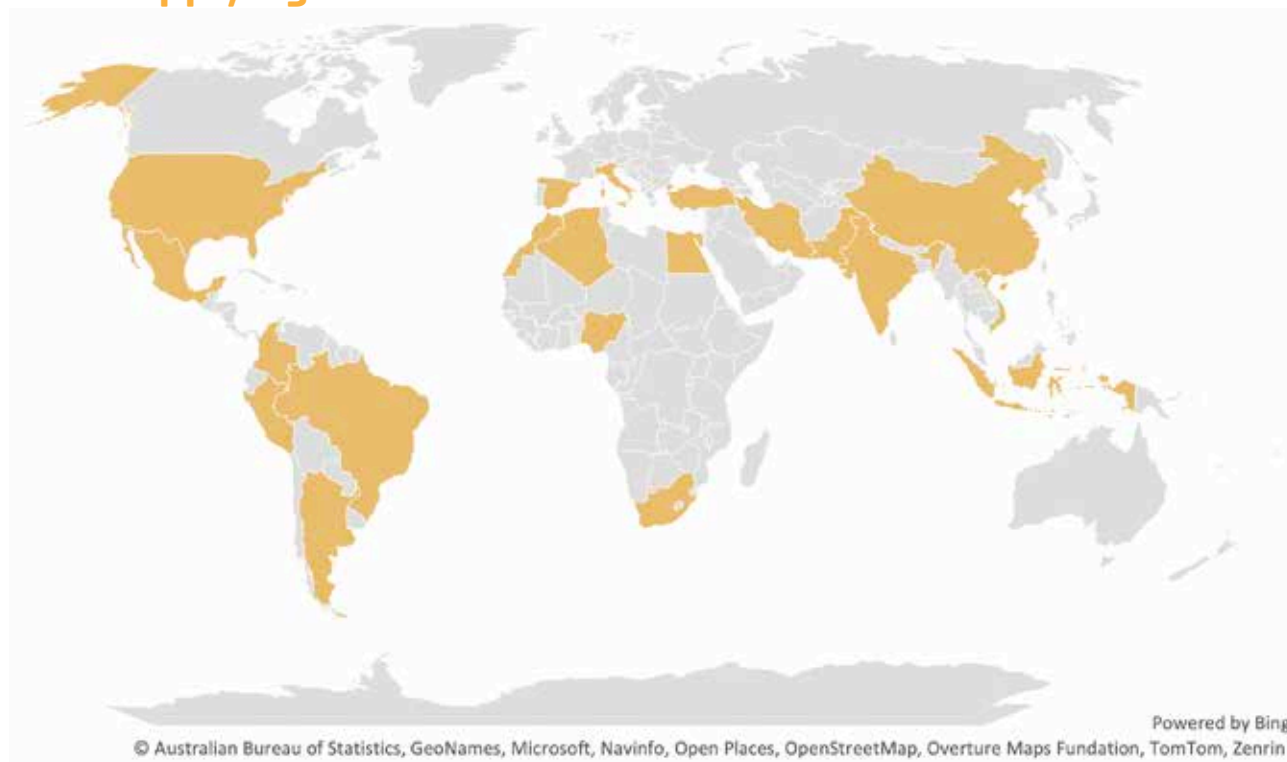


Figure 14: Top 20 citrus producing countries in 2023. Source: COLEAD based on FAOSTAT.

The largest fresh citrus producing countries are China (48 million tonnes), Brazil (20 million tonnes), India (15 million tonnes), Mexico (9 million tonnes) and Türkiye (8 million tonnes). However, as many countries tend to use their citrus for local consumption and processing, these are not the largest fresh citrus exporting countries.

In terms of fresh citrus exports, the main suppliers are Spain, South Africa, Türkiye, Egypt and China. However, in value, the picture is very slightly different, with the USA edging onto the list. Spain is renowned for high quality oranges and mandarins in particular. South Africa and Egypt export more oranges compared with other citrus fruit. Türkiye's main exports are easy peelers and lemons, while China's main exports are easy peelers. Grapefruit is mainly exported by South Africa, China and Türkiye. The biggest supplies of lemons is Mexico, followed by Spain.

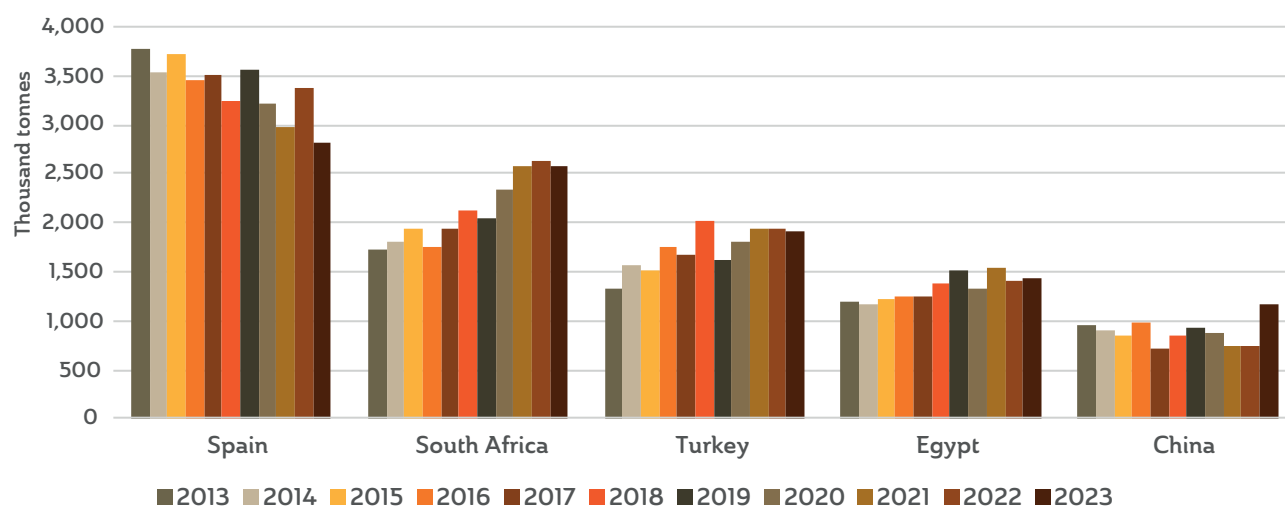


Figure 15: Top five exporters of fresh citrus in volume (thousand tonnes). Source: COLEAD based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.



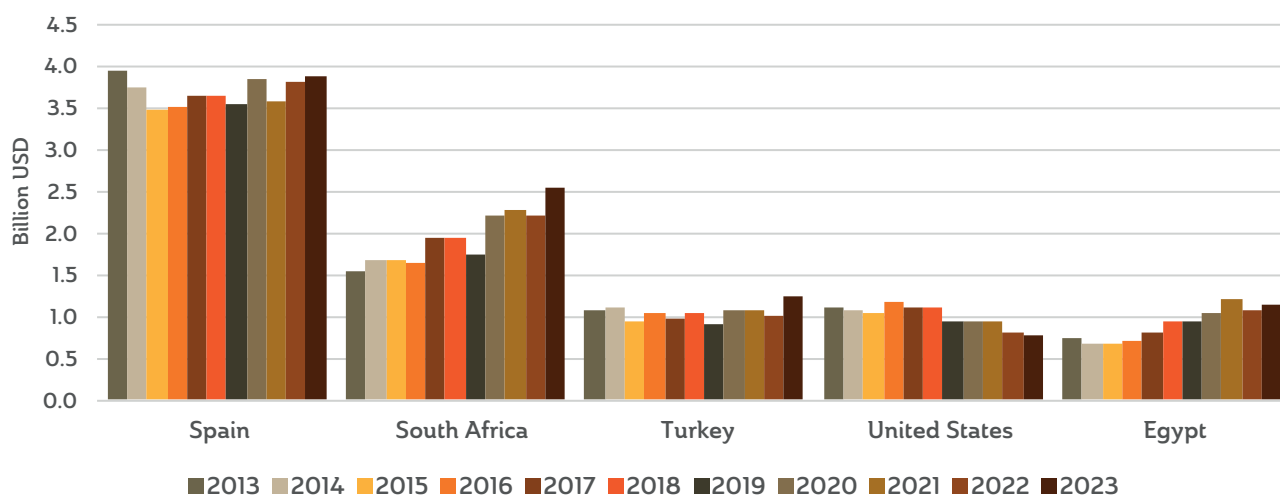


Figure 16: Top five exporters of fresh citrus by value (US\$ billion). Source: COLEAD based on CEPII BACI, IFPRI, Eurostat and UK Trade Info.

## European Union

The EU is one of the largest importers of citrus fruits globally, with some key supplying markets.

- Spain: the largest citrus producer in the EU and exports significant volumes within the EU and beyond, a key supplier particularly for oranges, mandarins and lemons.
- South Africa: a major supplier of oranges, easy peelers and grapefruits to the EU, particularly during the EU off-season between May and October.
- Morocco: known for its clementines and other easy peelers, a key citrus supplier to the EU especially during the winter months, benefitting from its proximity to the EU and favourable trade agreements.
- Türkiye: a significant exporter of lemons, oranges and mandarins to the EU and has expanded citrus production in recent years, particularly in its southern regions, to meet EU demand.
- Egypt: emerging as a leading supplier of quality oranges at competitive prices to the EU, capitalizing on a long growing season and favourable export conditions. Unrest in the Middle East affects where Egyptian exports are redirected, and should be watched carefully.

## USA

The USA imports citrus fruit from several markets to supplement domestic production and meet consumer demand.

- Mexico: a primary year-round supplier of limes and lemons to the USA, benefiting from proximity and trade agreements.
- South Africa: a major supplier of oranges, easy peelers and grapefruits particularly during the northern hemisphere off-season.
- Chile: exports a range of citrus to the USA, including lemons, oranges and easy peelers, particularly during the off-season.
- Spain: less prominent than in the EU, also exports particularly mandarins and oranges to the USA market.
- Peru: has become an increasingly important supplier of mandarins, oranges and lemons, supported by favourable trade agreements and investment in agriculture.

## Other producers

China's citrus exports have seen a remarkable increase, exporting 888,000 tonnes in 2022<sup>3</sup>, solidifying its status as a key player in the international citrus trade. This surge in exports is attributed to concerted efforts in enhancing quality and standards that have significantly improved the competitiveness of Chinese citrus products on the global stage.

## 3.4. Pricing

The price of oranges decreased during 2024 from a high of €111 per 100 kg in October 2023, to €79 per 100 kg in July 2024, though this is in the range of volatility as seen in previous years (Figure 17).

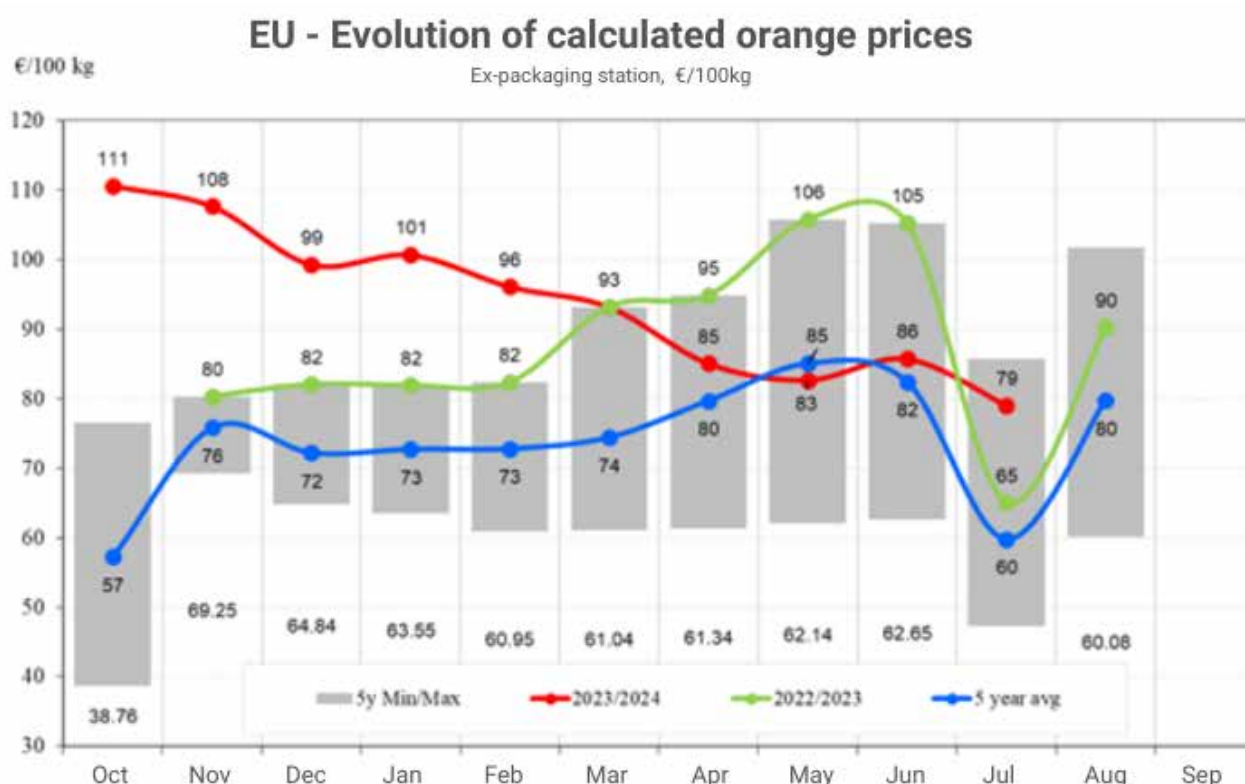


Figure 17: Price of oranges (€/100 kg). Source: European Commission Citrus Fruit Statistics, 2024

Table 4 shows the average prices of various citrus fruits per region, but no indication of the volume. For example, Europe (non EU27+UK) countries have much cheaper citrus, but is not a key producer, exporting less than 2 million tonnes in 2022, while exports from EU were more than 10 million tonnes. Other regions competing for affordable citrus exports are Asia and North Africa.

<sup>3</sup> Source: COLEAD based on CEPII BACI, Eurostat, UK Trade Info and IFPRI.

Table 4: Export prices (FOB), US\$/kg of citrus, average 2018–2022. Source: COLEAD based on CEPII BACI, Eurostat, UK Trade Info and IFPRI.

Price US\$/kg	Oranges	Easy peelers	Lemons	Grapefruit
Asia	0.90	0.99	1.24	0.87
EU27+UK (CIF)	0.81	1.22	1.31	1.02
Europe (non EU27+UK)	0.42	0.50	0.55	0.60
Latin America and Caribbean	0.56	1.14	1.09	0.89
Middle East	0.57	1.04	0.98	1.00
North Africa	0.77	0.89	1.07	0.79
North America	1.28	1.75	1.6	1.32
Oceania	1.2	1.75	1.6	1.24
Sub-Saharan Africa	0.7	1.13	0.9	0.76

### 3.5. Seasonality

Citrus fruit is ready for harvest mostly during the cooler months of the year, so the southern hemisphere produces between May and November, while countries in the northern hemisphere harvests between October and May. On a global scale, this means that citrus is available all year round.

Table 5: Harvest months of fresh citrus in key citrus growing countries. Source: Multiple sources; see Appendix for details.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Oranges</b>												
Spain												
Egypt												
USA												
Brazil												
South Africa												
<b>Easy peelers</b>												
USA												
China												
Spain												
Morocco												
Peru												
South Africa												
<b>Grapefruit</b>												
USA												
Türkiye												
Mexico												
South Africa												
<b>Lemons</b>												
Spain												
USA												
Argentina												
South Africa												

### 3.6. Processing

Every citrus packhouse is different, but most use a five-stage process. The cost of a typical fresh citrus fruit pack line machine is can be in the region of US\$600,000, though this can be much higher, depending on the level of automation.



Figure 18: Typical fresh citrus process stages.

#### Stage 1: Receiving, sorting and de-greening

Fruit from the orchard goes into picking trailers or large bins on trucks. On arrival at the packhouse, details must be carefully recorded, especially in those that handle fruit from different growers, including date, time, weight, type and variety, production unit specifics, orchard information, and grower details. If de-greening is needed, the fruit's initial colour is also noted. Depending on the target market, inspections may also be necessary to check for infestations of false codling moth, fruit fly, citrus black spot, or other pests or diseases.

De-greening is a process used for fruit that has reached minimum sugar and acid levels but is not a desirable colour. This allows growers to market fruit early, before natural colour development, with decisions to de-green usually taken at the beginning of harvesting season based on fruit colour and timing. During de-greening, fruit is exposed to ethylene gas in de-greening rooms, until they reach the desired colour. As the warm and humid rooms are ideal for fungal diseases, fruit is first treated with fungicide, and also treated to prevent decay is stored for longer periods.

#### Stage 2: Washing

Either straight from the orchard or after de-greening, fruit goes to the pack line for washing and to eliminate harmful microorganisms using either a wet or dry tip system. In the wet tip system, bins are emptied into a water bath with a sanitizing solution. In the dry tip system, bins are emptied onto a conveyor belt where fruit is washed with brushes and sprayed with a sanitizing solution.

#### Stage 3: Drying and waxing

Prior to drying an initial sorting stage is followed by fungicidal treatment to eliminate infections that could later cause decay. Fruit then goes through a drying phase to ensure it is thoroughly dry before the waxing process, whereby fruit is sprayed with wax as it moves along a conveyor belt. The wax prevents fruit from losing moisture, enhances its appearance, and reduces the chance of future fungal infections.

#### Stage 4: Sorting, sizing and packing

After another drying phase, fruit is categorized on size and quality to ensure uniformity in every pack. Fruit that does not meet export standards is redirected to local markets or processing

lines. Machines are typically used for sorting, but several manual sorting stations are also common in many packhouses. Once fruit is sorted, they are tagged if the destination market requires it, either by machines manually. Finally, fruit is ready to be categorized according to size and grade, and packed as per market requirement.



Figure 19: Citrus sorting machine (image: <https://www.quadramachinery.com/pages/citrus-sorting-machines>).

Packhouses use automated packers that are much faster than manual packing, especially for high-volume fruit categories. Automated place packers use plates with indentations for fruit packing, with vacuum suckers to lift and deposit fruit into cartons. Automated jumble packers gather fruit in a hopper by weight, and release it into cartons while ensuring even distribution, and can accommodate various containers like bags.



Figure 20: A Maf Roda V8 speed packer with Jumble Filler Combo in operation. Source: 2 fruit plaza, online magazine.

Packing cartons come in two main types: telescopic and open-top display, each with specific features and uses. Ventilation is crucial for fruit freshness, with cartons made from three or five-layer corrugated board. Special designs reflect branding and use environmentally-friendly ink. Fruit labels, wrappers, pallets, and securing sheets are essential for packaging and transport. Solid pallets are crucial for secure transportation, with specific designs recommended for citrus exports that require compliance with ISPM15 guidelines. Securing sheets, pallet caps, corner pieces, and strapping are used to ensure carton stability during transportation.



**Stage 5: Regulatory controls and transport**

As quality, sizing and screening for diseases are essential in a citrus packhouse AI technology is now available to facilitate rapid and accurate screening. This is an optional addition to the line. Most packhouses use manual inspection. Once on pallets, regulatory authorities will undertake inspections to ensure the fruit meets the export requirements of the intended market. Pallets are then transported to the harbour by road or rail methods, or occasionally, shipping containers are filled directly at the packhouse.

## 4. Challenges and opportunities

Table 6: Challenges and opportunities for the fresh citrus

Challenges Issues	Opportunities
<ul style="list-style-type: none"> <li>■ Pressure on disposable income in leading markets.</li> <li>■ High administrative and financial burden to comply with regulatory requirements in leading markets.</li> <li>■ Market access hinges on good compliance at all links in the supply chain in any single country.</li> <li>■ Achieving market access to leading markets is time consuming, costly and requires lobbying at the highest levels of government.</li> <li>■ Requires integration into existing developed markets infrastructure.</li> <li>■ Changing packaging requirements may be needed to meet exceptionally high standards of consumer-ready packaging</li> <li>■ Full seasonal calendar – overlaps between the seasons of major exporting countries create over supply and dumping at certain periods of the year.</li> <li>■ Difficult to differentiate – Fresh citrus products often look and taste similar across suppliers, making it hard for producers to stand out in a crowded market and compete on anything other than price.</li> <li>■ Precise sorting is required to meet buyer requirements, and to rule out the risk of interceptions for phytosanitary pests, diseases, fungal infections, etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ A very large, global market.</li> <li>■ Varied fruit types with opportunities for many uses and sub-markets.</li> <li>■ Retailers committed to driving growth of citrus commerce.</li> <li>■ Many positive consumer trends.</li> <li>■ Supply changes create opportunities for new suppliers.</li> <li>■ Organic certified fruit a growing category in some countries.</li> <li>■ Growing demand in Africa and Asia.</li> <li>■ Lower phytosanitary standards in Africa, with shoppers accustomed to imperfect, smaller fruit.</li> <li>■ Clearly articulated export standards for quality, phytosanitary requirements, packaging, etc., for leading markets.</li> <li>■ Organised supply chain with good infrastructure globally.</li> <li>■ Consumer ready packaging offers opportunities for advanced companies to differentiate, e.g. biodegradable packaging.</li> <li>■ All players actively looking for differentiation, especially in convenient easy peeler fruit.</li> <li>■ Modular expansion is possible.</li> </ul>

## 5. Ingredients for success

### 5.1. Market access

The required phytosanitary controls and registrations of origins are a barrier for new producers who are not accustomed to stringent regulatory systems. Overcoming these challenges obliges producers to coordinate efforts if they are to gain to achieve market access. Whether this is carried out at home or abroad, it adds to logistics and packing costs, increases the administrative burden on exporters, and requires a well-organised supply chain. In South Africa, for example, which has been successful at winning market access, this is supported by a levy paid on each carton exported, and is coordinated by industry bodies such as the Citrus Growers Association. The backing of government bodies, regulatory agencies and industry associations is indispensable in providing support that is needed to overcome trade barriers and secure lucrative export deals.

### 5.2. Phytosanitary control

Gaining and retaining market access necessitates passing all good phytosanitary controls at each step of the value chain. This requires a rigorous system of data collection and labelling, and that growers have an effective pest management system in place. Regulatory infrastructure must ensure that inspections take place so the conditions for market access are consistently being met. As bans can apply to a whole country, there is strong incentive for an organised industry that implements phytosanitary control at the national level as well as interventions at the farm and packhouse level. This should be supported by research into measures to improve the control of current (and emerging) phytosanitary pests and diseases would be helpful, training for farmers and packhouse staff on appropriate techniques. The high costs of achieving and retaining market access suggest that an industry body is needed, to shift the financial, logistical and administrative burden from individual companies, to a collective effort, with costs borne through levies or by other means.

### 5.3. Build partnerships

The continued integration of operations between different producers and suppliers requires good account management. Some larger growers already produce consumer-ready packaging for many retailers in developed markets, while other have smaller or more specialised market niches. Building partnerships will allow suppliers to have better insight in changes and trends in demand and supply in developed markets.

### 5.4. Alternate markets

As there is always a risk of over-supply to any market, of falling or even collapsing prices, even changing regulations in developed markets. As such, suppliers should always consider diversification, and which is especially useful if markets with fewer regulatory hurdles are considered, such as Africa.

## 5.5. Stepwise investment

Full automation of the production process requires significant investment. Companies could therefore explore modular financing, that could for example begin with conveyor belts with manual sorting and screening of fruit, before later progressing to parts of the process being automated. Companies should also design packhouses for growth at the outset, and look for suppliers who can provide equipment that can be scaled up by adding automated components, or by increasing the capacity in sections of the line.

## 5.6. Enter via lower risk markets

The risks of failing phytosanitary inspections while attempting to access developed markets may lead newcomers to consider smaller, less challenging markets to learn and develop the skills needed to reliably deliver to more sophisticated markets. This allows companies some space to progressively invest in the administrative systems and infrastructure needed to meet buyer requirements and the mandatory regulations.

## 5.7. Develop a risk register

All fresh produce exports come with risk. However, competition with advanced suppliers in South Africa, Spain and Egypt for example, increases the chances of over-supply. The impact of climate change and new pest and diseases outbreaks also present additional risks to exporters. Developing a risk register with clear strategies for managing risks is essential, and consider crop and export insurance, where this is available.

## 6. Further reading

For further reading on the import and export of fresh fruit, see below (per region).

### Europe:

CBI – Centre for the Promotion of Imports from Developing Countries (CBI: [www.cbi.eu](http://www.cbi.eu))

- Export guides for fresh fruit and vegetables, including citrus.
- Buyer requirements, certification, labelling, packaging and EU market trends.
- Country-specific and product-specific market access information.

EU Access2Markets (<https://trade.ec.europa.eu/access-to-markets/>)

- Portal for understanding tariffs, marketing standards, certificates and SPS rules.
- Offers tailored requirements based on the origin and target EU country.

Freshfel Europe ([www.freshfel.org](http://www.freshfel.org))

- The European fresh produce association.
- Good for updates on EU market developments, policies and retail trends.

### United States of America:

United States Department of Agriculture (USDA) Foreign Agricultural Service (FAS: [www.fas.usda.gov](http://www.fas.usda.gov))

- Global Alliance for Improved Nutrition (GAIN) Reports on citrus and fresh fruit imports.
- Insight into phytosanitary protocols, trends and buyer expectations in the United States market.

United States Food and Drug Administration (FDA: [www.fda.gov](http://www.fda.gov))

- Explains what citrus exporters must do to legally import into the United States.
- Covers facility registration, food safety plans, labelling and inspections.

### China and rest of Asia:

General Administration of Customs China (GACC: <http://english.customs.gov.cn>)

- Check for listings of approved citrus exporters and registered countries.
- Inspection and quarantine requirements.

Association of Southeast Asian Nations (ASEAN) Access ([www.aseanaccess.com](http://www.aseanaccess.com))

- Regional portal for exporters into Southeast Asia.
- Includes trade regulations, distributor contacts and logistical insights.



## Appendix:

### List of references for harvest months as shown in Table 5

<b>Oranges</b>	
<b>Brazil</b>	<a href="https://crec.ifas.ufl.edu/media/crecifasufledu/extension/extension-publications/2019/2019_december_brazil.pdf">https://crec.ifas.ufl.edu/media/crecifasufledu/extension/extension-publications/2019/2019_december_brazil.pdf</a>
<b>Spain</b>	<a href="https://www.ncesc.com/geographic-faq/what-month-are-oranges-harvested-in-spain/">https://www.ncesc.com/geographic-faq/what-month-are-oranges-harvested-in-spain/</a>
<b>United States of America</b>	<a href="https://www.countrysidecitrus.com/product/Buy-Oranges-in-Season-or-Out">https://www.countrysidecitrus.com/product/Buy-Oranges-in-Season-or-Out</a>
<b>Egypt</b>	<a href="https://hbanna.com/seasonal-calendar/">https://hbanna.com/seasonal-calendar/</a>
<b>South Africa</b>	<a href="https://www.crw.org.za/home/document-home/learning-aids-and-resources/ca-citrus-av-series-learning-material/citrus-planting-management/citrus-planting-management-learner-guide-english/5808-ca-av-series-cpm-lm-m02-citrus-types-and-cultivars-1/file">https://www.crw.org.za/home/document-home/learning-aids-and-resources/ca-citrus-av-series-learning-material/citrus-planting-management/citrus-planting-management-learner-guide-english/5808-ca-av-series-cpm-lm-m02-citrus-types-and-cultivars-1/file</a>
<b>Easy peelers</b>	<a href="https://www.crowdfarming.com/blog/en/the-vaste-world-of-citrus-varieties-and-their-nutrients/">https://www.crowdfarming.com/blog/en/the-vaste-world-of-citrus-varieties-and-their-nutrients/</a>
<b>United States of America</b>	<a href="https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Annual_Statistical_Bulletin/2023/CitrusAndAvocado.pdf">https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Annual_Statistical_Bulletin/2023/CitrusAndAvocado.pdf</a>
<b>China</b>	<a href="https://www.tridge.com/intelligences/mandarin/season">https://www.tridge.com/intelligences/mandarin/season</a>
<b>Spain</b>	<a href="https://www.tridge.com/intelligences/mandarin/season">https://www.tridge.com/intelligences/mandarin/season</a>
<b>Peru</b>	<a href="https://www.producebluebook.com/know-your-produce-commodity/mandarins-tangerines-clementines/">https://www.producebluebook.com/know-your-produce-commodity/mandarins-tangerines-clementines/</a>
<b>Morocco</b>	<a href="https://www.tridge.com/intelligences/mandarin/season">https://www.tridge.com/intelligences/mandarin/season</a>
<b>South Africa</b>	<a href="https://www.producebluebook.com/know-your-produce-commodity/mandarins-tangerines-clementines/">https://www.producebluebook.com/know-your-produce-commodity/mandarins-tangerines-clementines/</a>
<b>Grapefruit</b>	
<b>United States of America</b>	<a href="https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Annual_Statistical_Bulletin/2023/CitrusAndAvocado.pdf">https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Annual_Statistical_Bulletin/2023/CitrusAndAvocado.pdf</a>
<b>Türkiye</b>	<a href="https://www.freshanatolia.com/en/fruits-and-vegetable-and-citrus-products-produce-season-seasonality-availability-for-export">https://www.freshanatolia.com/en/fruits-and-vegetable-and-citrus-products-produce-season-seasonality-availability-for-export</a>
<b>Mexico</b>	<a href="https://www.freshplaza.com/north-america/article/9467683/mexican-citrus-season-gets-underway/">https://www.freshplaza.com/north-america/article/9467683/mexican-citrus-season-gets-underway/</a>
<b>South Africa</b>	<a href="https://capefive.com/wp-content/uploads/2022/09/Citrus-Calendar-Cape-Five_2022.pdf">https://capefive.com/wp-content/uploads/2022/09/Citrus-Calendar-Cape-Five_2022.pdf</a>
<b>Lemons</b>	
<b>Spain</b>	<a href="https://www.agrios-elcarril.es/en-gb/lemon-and-citrus">https://www.agrios-elcarril.es/en-gb/lemon-and-citrus</a>
<b>United States of America</b>	<a href="https://www.tridge.com/intelligences/lemon/season">https://www.tridge.com/intelligences/lemon/season</a>
<b>Argentina</b>	<a href="https://stories.agronometrics.com/argentina-is-our-main-lemon-source-this-time-of-year/">https://stories.agronometrics.com/argentina-is-our-main-lemon-source-this-time-of-year/</a>
<b>South Africa</b>	<a href="https://capefive.com/wp-content/uploads/2022/09/Citrus-Calendar-Cape-Five_2022.pdf">https://capefive.com/wp-content/uploads/2022/09/Citrus-Calendar-Cape-Five_2022.pdf</a>



# SECTOR STUDY: FRESH CITRUS

1. Fresh citrus
2. Citrus juice
3. Citrus oil and peel



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