

**Required Report:** Required - Public Distribution

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## **Report Name:** Citrus Semi-annual

**Country:** Brazil

**Post:** Brasilia

**Report Category:** Citrus

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### **Report Highlights:**

The Brazilian orange crop for Marketing Year (MY) 2023/24 is forecast at 378 million 90-pound boxes (MBx) - standard reference, equivalent to 15.42 million metric tons (MMT), a decrease of 7.3 percent compared to previous Post estimate (408 million boxes or 16.5 MMT), primarily due to poor weather conditions that culminated in a more severe drought, as well as impacts from greening. Meanwhile, Post revised the orange weight forecast to 165 grams/5.82 ounces in MY 2023/24, 4.2 percent heavier than Post previous estimate of 158 grams due to the lower production and consequent more room for the fruits to grow. Post revised the total forecast related to the Brazilian FCOJ 65 Brix equivalent production for MY 2023/24 at 1.06 MMT, a decrease of 8.62 percent vis-à-vis the Post estimate for MY 2022/23 (1.16 MMT), due to downward expected availability of fruit for processing provoked by drought, extremely high temperatures and increase of greening incidence.

## FRESH ORANGES

### PS&D Table

The following table provides revised data for Brazilian fresh orange production, supply, and distribution (PS&D) for Brazilian (BR) marketing years (MY, July-June) 2022/23, 2023/24, and 2024/25, and final forecast for MY 2023/24. The MY mentioned above are equivalent to U.S. MY 2021/22, 2022/23, and 2023/24 respectively.

**Table 1**

*Production, Supply and Distribution for Brazilian Fresh Oranges*

| Oranges, Fresh<br>Market Year Begins<br>Brazil                              | 2021/2022     |          | 2022/2023     |          | 2023/2024     |          |
|---|---------------|----------|---------------|----------|---------------|----------|
|   | Jul 2022      |          | Jul 2023      |          | Jul 2024      |          |
|   | USDA Official | New Post | USDA Official | New Post | USDA Official | New Post |
| Area Planted (HECTARES)   | 614100        | 614100   | 600000        | 600000   | 590000        | 590000   |
| Area Harvested (HECTARES)   | 546400        | 546400   | 510000        | 575000   | 500000        | 570000   |
| Bearing Trees (1000 TREES)  | 228000        | 228000   | 200476        | 198070   | 198000        | 197194   |
| Non-Bearing Trees (1000 TREES)  | 34300         | 34300    | 40000         | 39302    | 42000         | 41176    |
| Total No. Of Trees (1000 TREES)   | 262300        | 262300   | 240476        | 237372   | 240000        | 238370   |
| Production (1000 MT)  | 16932         | 16932    | 16673         | 15482    | 16500         | 15300    |
| Imports (1000 MT)   | 28            | 28       | 27            | 27       | 30            | 32       |
| Total Supply (1000 MT)  | 16960         | 16960    | 16700         | 15509    | 16530         | 15332    |
| Exports (1000 MT)   | 0             | 0        | 0             | 0        | 0             | 0        |
| Fresh Dom. Consumption (1000 MT)  | 4669          | 4669     | 4500          | 4500     | 4530          | 4400     |
| For Processing (1000 MT)  | 12291         | 12291    | 12200         | 11009    | 12000         | 10932    |
| Total Distribution (1000 MT)  | 16960         | 16960    | 16700         | 15509    | 16530         | 15332    |
|   |               |          |               |          |               |          |
| (HECTARES) ,(1000 TREES) ,(1000 MT)   |               |          |               |          |               |          |
| OFFICIAL DATA CAN BE ACCESSED AT: <a href="#">PSD Online Advanced Query</a> |               |          |               |          |               |          |

Note: There is a one-year lag between the BR MY and the U.S. MY. For example, BR MY 2024/25 is equivalent to U.S. MY 2023/24. To ensure data continuity, the current Brazilian MY 2024/25 will be referred to as U.S. MY 2023/24 throughout this report.

### General

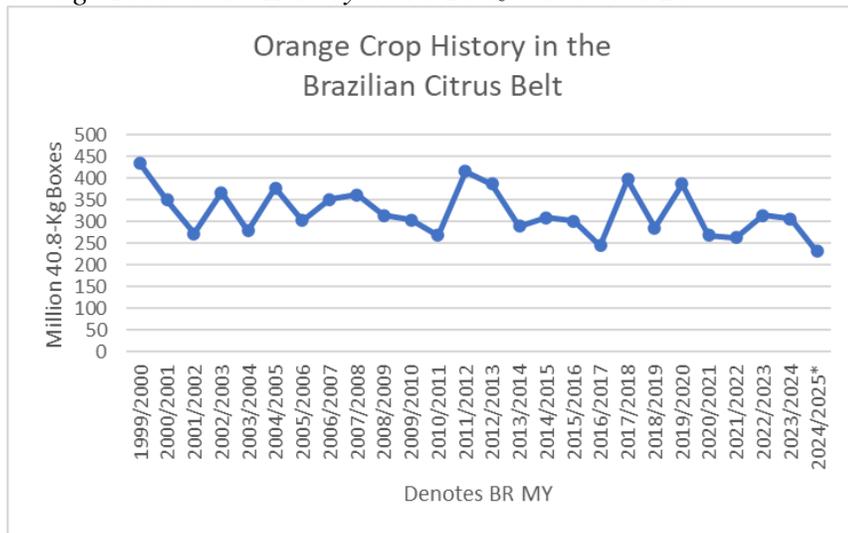
Post forecasts the total Brazilian orange crop for MY 2023/24 (July/June) at 378 million 40.8-kg boxes (MBx) - standard reference equivalent to 90 pounds - or 15.42 million metric tons (MMT), a decrease of 7.3 percent compared to previous Post estimate (408 million boxes or 16.5 MMT), primarily due to poor weather conditions that culminated in a more severe drought, as well as impacts from greening.

According to Post contacts, 16 percent of the agricultural workforce in Brazil belongs to the fruit sector. Moreover, Brazil's citrus GDP mobilizes USD 6.5 billion per year. In the Brazilian citrus belt, however, harvest projections dropped 24 percent, which brought the citrus sector to a stage of alert. The main reason for the sharp drop was the weather. Only 36 percent of the orchards in the Brazilian citrus belt are irrigated and the forecast is for less rain in 2024. The year of 2023 faced a very dry period during the flowering season and very high post-flowering temperatures. According to Post contacts, crop MY 2023/24 will be the second smallest in thirty-five years.

The commercial area of the state of São Paulo and the western part of Minas Gerais (known as “Triângulo Mineiro”) produced 307.22 million 40.8-Kg/90-pound boxes (12.52 MMT) in MY 2022/2023, according to the most recent data released by the Defense Fund for Citriculture (Fundecitrus) in April 2024. Considering the total citrus belt production, 279.4 million boxes (11.39 MMT) were harvested in São Paulo and 27.82 million boxes (1.13 MMT) in the Triângulo Mineiro region. Forecast for MY2023/24 by Fundecitrus reflects a significant drop of 74 million boxes, equivalent to 3.31 MMT less than the previous crop.

In Brazil, approximately 30 percent of orange production is destined to the market and 70 percent is used for juice processing. The main orange varieties that Brazil produces are Hamlim, Westin, Rubi, Valencia Americana, Seleta, Pineapple, BRS Alvorada, Pera Rio - pear orange, Valencia, “Folha Murcha” Valencia, and Natal. The citriculture chain in Brazil is highly industrialized.

**Figure 1**  
*Orange Production History in the Brazilian Citrus Belt*



Source: Fundecitrus Data, chart elaborated by OAA Brasilia  
2024/2025\* (BR MY): projection

The graph above (Figure 1) shows the updated orange crop production history in the Brazilian citrus belt, reflecting significant oscillations over the course of twenty-five years, ranging from 450 million 40.8-Kg/90-pound boxes (18.36 MMT) in BR MY 1999/2000 to 250 million (12.20 MMT) BR MY 2010/11. During its big harvests, the Brazilian citrus belt produced an average of 400 million boxes (16.32 MMT), particularly in BR MY 2011/12, 2012/13, 2017/18, 2019/20. However, in the past four market years, the average has fallen around 100 million (4.08 MMT) to an average of 300 million boxes (12.24 MMT). The new forecast number for MY 2023/24, the lowest in recent history, has marked a starting point of huge drops in production, considering if climate and greening performance projections hold as expected.

Orange yield in the Brazilian citrus belt varies greatly, ranging from less than a thousand boxes (40.8 tons) per hectare to two thousand boxes (81.6 tons) per hectare, depending on producers' strategies, such as orange varieties adaptation; orchards densification; and adoption of techniques.

Post revised the weight of oranges forecast at 165 grams/5.82 ounces in MY 2023/24, 4.2 percent heavier than Post previous estimate of 158 grams due to the lower production and consequently, more room for the fruits to grow. Current data from Fundecitrus forecasts the weight of oranges at 169 grams/5.96 ounces (241 fruits per box) for MY 2023/24 (BR MY 2024/25), representing an increase of 5.32 percent in relation to the average weight recorded in the previous crop (160 grams) and a decrease of 5.4 percent in the quantity of fruits per box, a total of 255 in MY 2022/23. According to Fundecitrus, the fruit will be heavier because this season's fruit is, on average, two months ahead of last year's crop, and because the number of fruits per tree is lower, which reduces competition between them.

## Production



Bags of collected oranges in a Brazilian crop field

According to data from the Brazilian Institute of Geography and Statistics (IBGE) released in April 2024, citrus was produced in Brazil on 585,448 hectares in MY 2022/23. The citrus belt accounts for approximately 83 percent of the cultivated area in Brazil.

Considering the 307.22 million boxes produced in the Brazilian citrus belt in MY 2022/23, 90.4 percent were produced in São Paulo and 9.5 percent in Minas Gerais regions, of which approximately 18 percent were in natura, and 82 percent were used for processing, according to Post contacts. In Brazil, citrus growers plant and sell according to market demand, many of them through juice industry contracts. The citrus belt, however, also has the highest incidence of plants with symptoms of the main citrus disease, greening (or Huanglongbing - HLB). According to data published by Fundecitrus, 38 percent of orange trees are affected by greening, though severity varies.

Throughout 2023, temperatures in the citrus belt reached astonishing numbers, with upper limits ranging from 95°F to 104°F. The process known as “evapotranspiration”, the evaporation of water from the soil and the transpiration of plants, is higher as heatwaves increase and has a negative impact on fruit production. Fundecitrus has found that the correlation between maximum temperatures and the number of fruits results in a reduction of 61 fruits per tree for each higher temperature in Celcius degree.

With the arrival of the dry season from May to August 2023, rain became scarce in the citrus belt region in São Paulo, falling 26 percent below the average, causing the trees to suffer from drought stress. Rains observed in December 2023, January and February 2024 spurred fruit growth and led to a late fourth bloom, with a seven percent higher production in this bloom, compared to the same fourth bloom in the previous year among the citrus belt regions, as reported by Fundecitrus in May 2024.

According to the Brazilian Economic Research Center (CEPEA), throughout 2023, many oranges were withered and sunburned, varieties that consumers do not usually buy. To avoid those fruit conditions and premature fruit fall, many producers anticipated the harvest of late varieties, mainly Valencia and Natal. Abundant rain in October 2023 relieved drought stress, but the availability of oranges on the fresh market remained restricted. For 2024, CEPEA anticipates unfavorable weather during the planting

period, since the forecast is that rainfall will remain below average until mid-October, as indicated by Climatempo, a Brazilian meteorology platform that has also highlighted that São Paulo had the hottest May in 81 years, reaching 32,8 °C, equivalent to 91 °F.

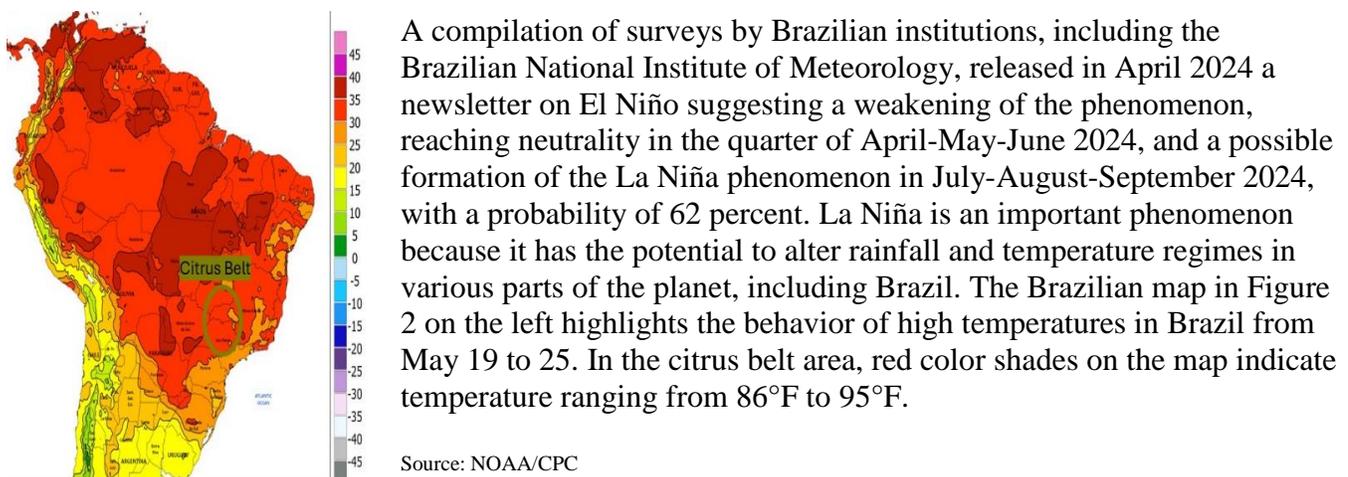
In irrigated areas damages tend to be mitigated, since orange flowers are more advanced. These areas are in the north of São Paulo state, where temperatures are usually higher. Irrigation can reduce the risk of high temperatures and, according to Fundecitrus, the practice of irrigation is considered a complementary strategy to fight the drought impact. However, as previously informed, only 36 percent of areas in the citrus belt are irrigated, leaving 63 percent of non-irrigated hectares, or hectares without information on irrigation. According to Post contacts, even the irrigated regions have become drier due to lack of underground water. Thus, the main cause of the orange production dip in Brazil so far has been climate issues, since drought has taken over the orchards earlier than expected, causing great concern, according to Post contacts. Information gathered in May 2024 reflects that it had not rained for almost 50 days in São Paulo citrus belt region. Regarding greening, ongoing studies being conducted in 2024 by Fundecitrus will soon provide a better sense of its impact and severity.

With El Niño in Brazil, heatwaves started in June 2023 and remained into June 2024, although weakened. High temperatures and rain shortage in the Brazilian citrus belt is expected in 2024 to be a cause of concern for the next harvest (MY 2023/24), according to Post contacts.

According to the Brazilian Drought Monitor, as a result of below-normal rainfall, there was an advance of moderate drought in the west of Minas Gerais. In São Paulo, due to negative rainfall anomalies, there was a worsening of the drought in the west, which went from weak to moderate, and advance of weak drought in the south and southwest of the state.

## Figure 2

*Extreme Maximum Temperature in Brazil (in °C), May 19-25, 2024*



A Technical Note released by the Brazilian National Center for Monitoring and Warning of Natural Disasters released in March 2024 states that in 2024, it's likely that a rapid transition from El Niño to La Niña on the period September 2024 – February 2025 will occur, which is the rainy season in most of Brazil. Regarding precipitation and temperature, the analysis indicates that the most likely scenario is above-average rainfall in three specific states, including Minas Gerais, where part of the citrus belt is

located. A La Niña can re-emerge in time intervals ranging from two to seven years. The most recent episode lasted from July 2020 to February 2023.

## Area

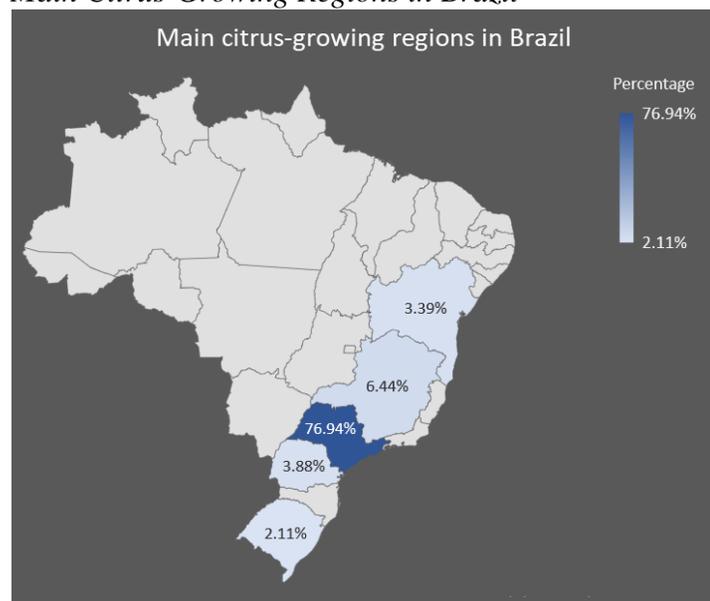
Post maintains the area planted forecast for oranges at 590,000 ha for MY 2023/24, considering the difference between the eradication rate and the replanting rate over the years, which is balanced. This is less than two percent (10,000 ha) downward compared to estimate for MY 2022/23 (600,000 ha), based on official number of Hectates released by IBGE.

São Paulo is the only state that compiles trees planted and tree inventory data. According to final crop data from Fundecitrus from April 2024, bearing trees in São Paulo totaled 168.54 million in MY 2022/23, a decrease of 748,000 bearing trees over the area of 399,279 hectares in the citrus belt.

While oranges are produced in all of Brazil, the map in Figure 3 below shows the main citrus-growing regions, according to data from IBGE (2022). It denotes the states of Bahia (3.39 percent); Paraná (3.88 percent) and Rio Grande do Sul (2.11 percent) as the main orange production states outside of the Brazilian citrus belt (76.94 percent in São Paulo and 6.44 percent in Minas Gerais).

### Figure 3

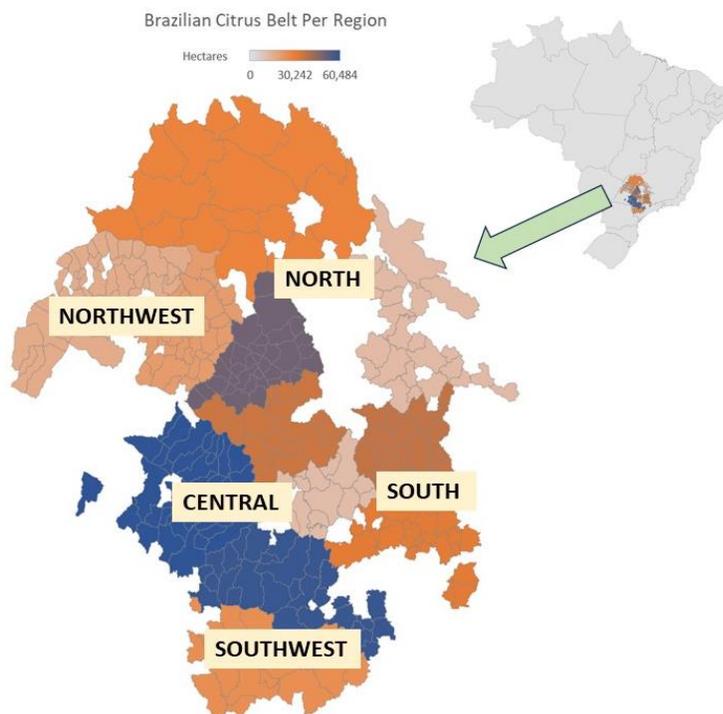
*Main Citrus-Growing Regions in Brazil*



Source: IBGE 2022, chart by OAA Brasilia

The area of land planted with orange trees in the Brazilian citrus belt is composed of five sectors: North, Northwest, Central, South and Southwest. In Brazil there are around 5,000 orange grove properties, most of them large producers with high productivity. In addition to pests, high production costs and an insufficient labor force have driven many small producers away from the industry. As reported by Post contacts in 2023, it costs around BRL 40 million (USD7.44 million) to invest in a citrus farm.

**Figure 4**  
*Brazilian Citrus Belt per Region*



Source: Fundecitrus, elaborated by OAA Brasília

The map in Figure 4 above covers the area of land planted with orange trees in each of the five sectors of the citrus belt: North, Northwest, Central, South and Southwest. Variation in area is indicated by colors. The darkest color, for example, in navy blue, denotes regions where there is the highest concentration of orange tree planting area, including, among other municipalities, Avaré, with 58,824 ha and Duarte, with 60,446 ha. Meanwhile, there are 12,169 ha in Altinópolis and 11,570 in Brotas, highlighted in the map by the lightest shade of orange. Density of orchards can be very uneven, even in the same producing region.

As already informed in the previous report, it has been noticed that some citrus farming, especially on small and medium farms, is being converted to other crops, such as sugar cane or livestock farming due to the lower risk in investments. While prices influence the decisions of some Brazilian citrus producers to shift to different commodities, other citrus producers are studying the avenues to grow oranges in areas that may be less affected by climate and greening.

In the long term, the trend of the orange industry expanding outside the São Paulo and Minas Gerais area is likely to continue. In the state of Bahia, for example, the greening disease does not yet exist, due to the climate and the distance from the main region of the citrus belt. Some Post contacts see the demand for citrus cultivation outside the belt as relocation, and not necessarily expansion. Orange growers have been carrying out prospecting analyses to define new planting regions. Nevertheless, such relocation can be risky, since most of the potential new regions to grow oranges in Brazil – such as Mato Grosso and Mato Grosso do Sul- are significantly further away from the current factories and ports.

Besides considering climate risk, agricultural planning for planting and producing citrus in new areas must include the use of healthy seedlings produced in a protected environment.

Orange orchards also play an important role in carbon sequestration and mitigation of climate change. Recent studies conducted by Fundecitrus and Embrapa and funded by Innocent Drinks, a British-based company that produces smoothies and juice, have found that the entire citrus belt holds a stock of approximately 36 million tons of carbon, equivalent to 133.4 million tons of carbon dioxide (CO<sub>2</sub>). This is the same amount emitted by the city of São Paulo in around eight years. The absorption of the gas can contribute to reducing the impacts of global warming, according to Embrapa, since the agricultural land functions simultaneously as a source and sink for carbon, while stabilizing and securing fauna in the citrus farming areas.

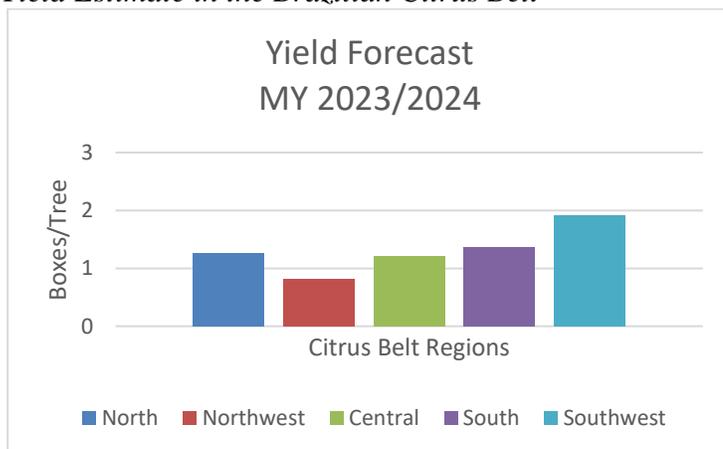
### Tree Inventory and Yields

Post revised the total Brazilian tree inventory for MY 2023/24 forecast to 238.37 million trees, of which 197.19 million are bearing trees and 41.17 million are non-bearing trees, a slight decrease of 0.41 percent compared to revised number of 237.37 million of total trees estimated for MY 2022/23. The decrease is mainly expected in the São Paulo commercial citrus belt.

For MY 2023/24, Post revised the yield forecast to 1.6 boxes of 90 pounds per tree, a decrease of 12 percent from the estimate for MY 2022/23 (1.82 boxes per tree) due to the likely potential decrease in the quantity of fruits as a consequence of the longer lasting drought already being observed in 2024, as well as potential impacts of new heatwaves and greening.

For the citrus belt, the graph from Figure 5 below shows the current yield forecast from Fundecitrus for MY 2023/24, with a total of 1.38 boxes of 90 pounds per tree. The Southwest stands out as the most productive region, with 1.91 box per tree and the Northwest as the least productive, with 0.81 box per tree.

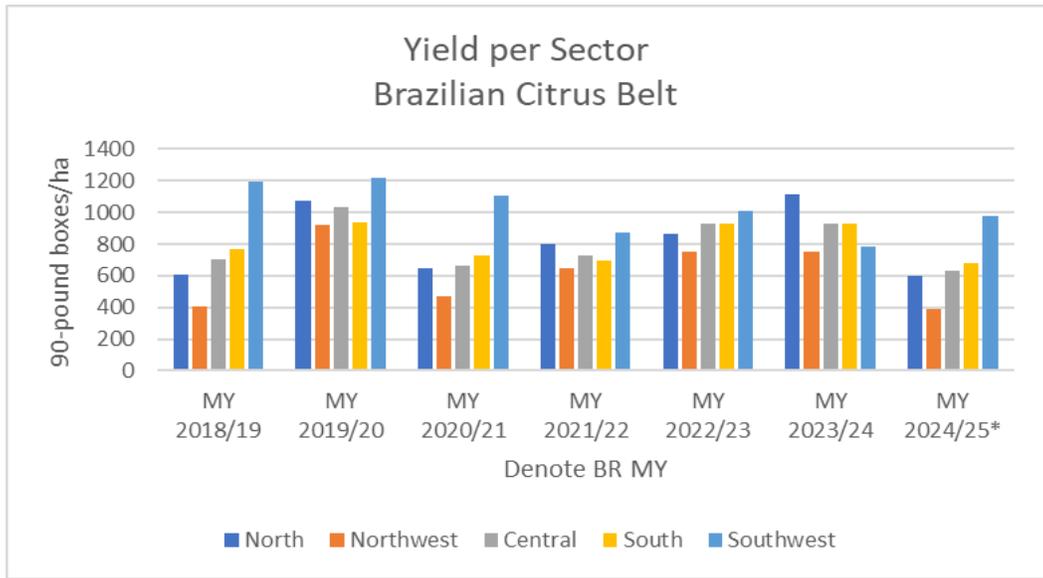
**Figure 5**  
*Yield Estimate in the Brazilian Citrus Belt*



Source: Fundecitrus, chart by OAA Brasilia

Considering all orange varieties, Fundecitrus reported 255 fruits to make up a 90-pound box in MY 2022/23 in the citrus belt and forecasted 241 fruits per box in MY 2023/24. This is about a decrease of one box per tree, according to Post contacts, a huge drop. For that amount, orange weight for MY 2023/24 is estimated at 169 grams by Fundecitrus, six percent heavier than the previous weight of 160 grams. The heavier fruit is a result of a calculation called “regression cultivation model” to project fruit size, which is the calculation between final fruit size at harvest, and the sum of the initial fruit size from the first two blooms and the rainfall accumulated from May to July.

**Figure 6**  
Yield per Region in the Brazilian Citrus Belt



The graph in Figure 6 on the left shows productivity of the Brazilian citrus belt (São Paulo and Triângulo Mineiro) per hectare, split by region within the last five crops, including estimate from Fundecitrus to the current MY 2023/24 (BR MY 2024/25).

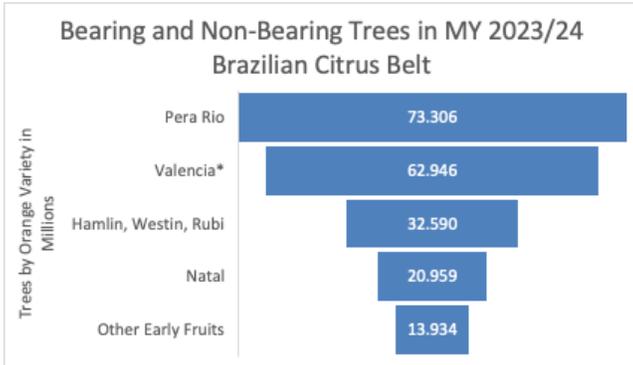
Source: Fundecitrus, chart by OAA Brasília  
\*Estimate

The graph also shows the North of citrus belt decreasing in productivity from 1,117 90-pound boxes per hectare in MY 2022/23 (BR MY 2023/24) to 601 boxes in MY 2023/24 (BR MY 2024/25) as per Fundecitrus estimate, 46 percent lower. The Southwest region, on the other hand, produced 782 boxes (31.9 tons) per hectare in MY 2022/23 and is projected to actually increase its production to 979 boxes (39.9 tons) per hectare in MY 2023/24. The total average for the citrus belt is estimated to decrease production from 911 boxes (37.16 tons) to 691 boxes (28.19 tons), a 24 percent decrease in yield.

Figures 7 and 8 below show what varieties of bearing trees produce the most.

**Figure 7**

*Brazilian Citrus Belt Bearing and non-bearing trees in MY 2023/24*

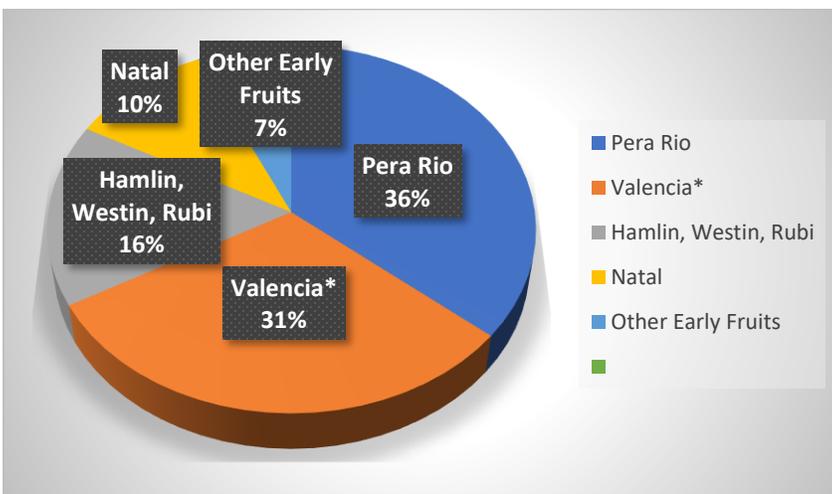


Source: Fundecitrus, chart by OAA Brasilia  
Valencia\*: Valencia and Valencia Folha Murcha  
Other early fruits: Valencia Americana, Seleta, Pineapple, and Alvorada

Pera Rio produces the most orange, totaling 36 percent of the citrus belt production, which reflects the same previous estimate from Fundecitrus; Valencia trees produce 31 percent, six percent higher than the previous estimate; Hamlin, Westin and Rubi, in turn, produce 16 percent. Compared to the previous inventory, the current numbers from Fundecitrus released on June 10, 2024, reflect an increase of approximately 852,000 trees, or 0.42 percent for MY2023/24. This growth is the result of the difference between the total number of saplings planted in 2023 and the number of trees eradicated and abandoned in the same year.

**Figures 8**

*Brazilian Citrus Belt Bearing and non-bearing trees in MY 2023/24 in Percentage*



Source: Fundecitrus, chart by OAA Brasilia  
Valencia\*: Valencia and Valencia Folha Murcha  
Other early fruits: Valencia Americana, Seleta, Pineapple, and Alvorada

Fundecitrus forecasts the citrus belt to have 168.54 million bearing trees in MY 2023/24, a slight decrease of 0.44 percent vis-à-vis the previous crop (MY 2022/2023), which had 169.29 million bearing trees. New planting strategies remain a target for citrus growers. In 2023, replanting was slightly lower than average because producers were still deciding where they would replant in Brazil. The plan is to replant seven percent of the orchard every year to maintain the supply. Within this context, it's important to mention that an orchard has a lifespan of fifteen years.

Need for credit tends to grow due to the rise in the incidence of greening. According to Post contacts, São Paulo’s agribusiness expansion fund, known in Portuguese as FEAP, has existed for around thirty years to support family farming. Such credit may bring a number of orange growers to migrate to other crops to avoid risks. There was, nevertheless, more planting of orange trees than eradication in 2023, considering that 22,029 ha were eradicated, and 23,354 ha planted, with a subtle drop in productive trees between the previous and the current harvest.

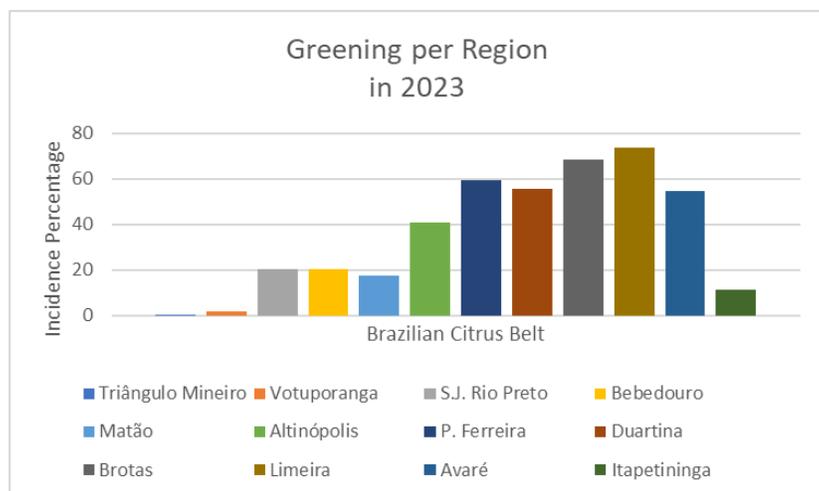
### Greening

In recent years, citrus cultivation has been heavily impacted by the occurrence of pests and diseases, especially Huanglongbing (HLB) or greening. The greening bacterium multiplies rapidly in susceptible plants, reaching high populations in just forty days. In Brazil, the damage is accentuated in the country's main producing region, the citrus belt. Greening has affected the Brazilian citrus belt for twenty years and has currently reached an all-time high. One of the main challenges is the fact that the insect is able to mutate into new forms, becoming immune to molecules created to fight it.

As previously mentioned, a large increase in the incidence of greening in Brazil has led citrus growers in the citrus belt to look for areas where the disease is still absent, such as in the state of Goiás, or where it occurs with a lower incidence, such as in the states of Minas Gerais, Paraná, and Mato Grosso do Sul. According to data by Fundecitrus from 2023, there are in the citrus belt 77.22 million contaminated trees, of which 34.79 million are in the initial stage, equivalent to 17 percent; 24.93 million or 12.3 percent are facing the intermediate stage; and 17.5 million are facing extremely greening severity, equivalent to 8.6 percent.

### Figure 9

*Incidence of Greening per Region in 2023*



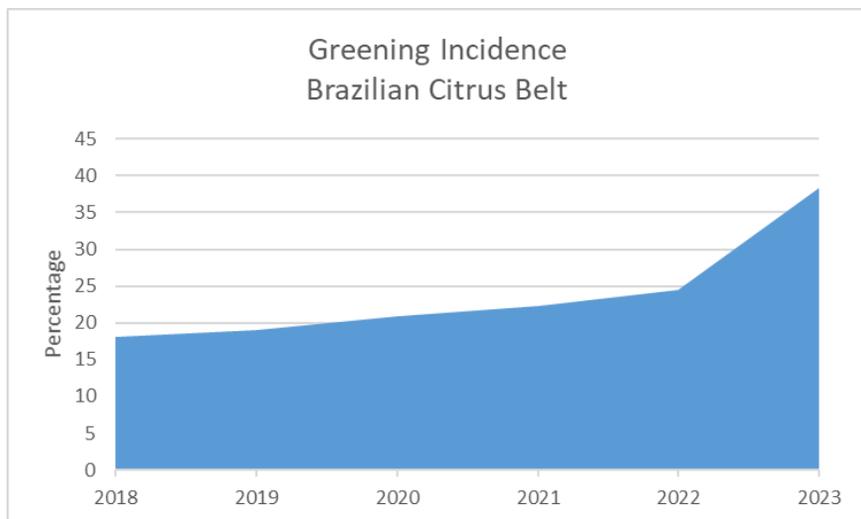
A disease survey data by Fundecitrus, reflected in the graph on the left (Figure 9), shows that the regions with the highest incidences of greening in the citrus belt are Limeira (where the incidence rose from 70.72 percent in 2022 to 73.87 percent in 2023), Brotas (from 49.41 percent to 68.53 percent), Porto Ferreira (from 47.05 percent to 59.65 percent), Duartina (from 25.37 percent to 55.66 percent) and Avaré (from 31.80 percent to 54.79 percent).

Source: Fundecitrus data, chart by OAA Brasilia

The graph below (Figure 10) shows the rapid greening incidence growth throughout the Brazilian citrus belt since 2018. Although greening has been verified for twenty years in Brazil, the last six stand out, especially the peak between 2022 and 2023, with incidence ranging from 24 percent to 38 percent, a growth of 14 percent. This is significantly greater than the historic average of 1.25 percent growth, bringing alert to the citrus sector.

### Figure 10

*Incidence of Greening in the Brazilian Citrus Belt*



Source: Fundecitrus data, chart by OAA Brasilia

The Brazilian National Program for the Prevention and Control of Huanglongbing (HLB), created by the Brazilian Ministry of Agriculture and Livestock (MAPA), has established that raising seedlings in certified nursery greenhouses is the ideal method to control the disease. It is a way of containing the spread of greening to new planting sites. The states with orange planting outside the citrus belt include Bahia, Paraná, Goiás, Espírito Santo, Mato Grosso do Sul, and Rio Grande do Sul and together they currently comprise a little more than ten percent of the orange production in Brazil, according to data from IBGE.

Another solution to prevent greening disease is called Tamarixia, a biological active, also referred to as a natural enemy of the disease vector. Current studies to bring new tools against greening infection and avoid the disease spread include an antibiotic from the company Invaio, being applied in Florida. The antibiotic promises to treat the fruit with no residue. According to Post contacts, the Brazilian government has approved tests of biotechnology events, but in the United States the project is at a more advanced stage. Fundecitrus, along with MAPA and CTNBio, have been conducting studies since 2023 to find ways to create a repellent plant to combat greening. The manipulation of genetically engineered plants, through an experimental area of over thirty hectares showed four types of repellent orange tree events. Valencia plants with two modified events had 50 percent less greening in blocks of 300 plants.

## Prices

The orange index price series is published by the University of São Paulo's Luiz de Queiroz College of Agriculture (ESALQ), along with CEPEA, for both the domestic fresh market and products delivered to orange juice processing plants in the state of São Paulo. Prices for the fresh market are for fruit on the tree. At the end of each calendar year, there is high demand from the industry, causing prices to rise due to low stock levels.

Some contracts may include a premium depending on the price of orange juice. According to Post contacts, there is concern among producers about the possibility of not fulfilling their contracts, thus generating a more aggressive search for oranges. They also inform that the minimum price guarantee policy is rarely used for fruit, even though there must be a minimum producer price.

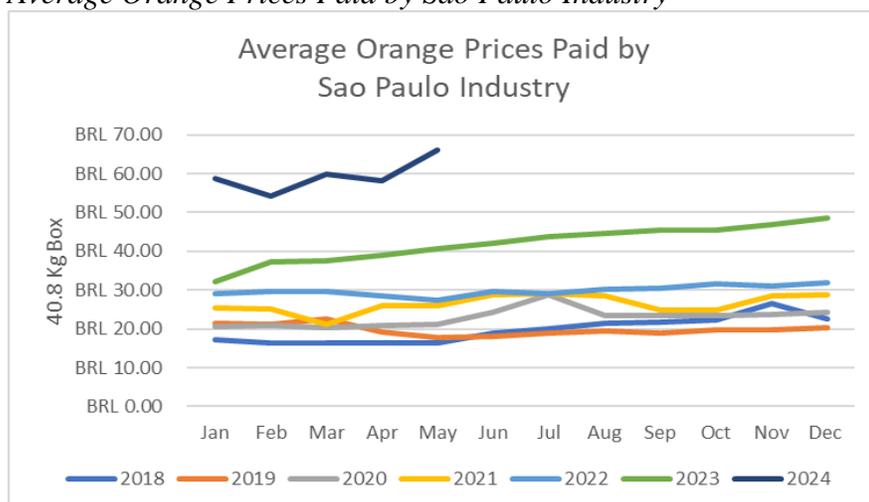
Prices for oranges destined for the industry have reached 30-year highs since the beginning of 2024. According to CEPEA, in early May 2024, dry and warm weather concerned citrus growers in São Paulo because of fruit fall. In the first week of June 2024, the fruit was traded in the state of São Paulo at BRL 85 (USD 15.86)/box - harvested and sent to the factory, a record for the entire CEPEA series, which began in 1994 (averages were deflated by the IGP-DI).

Also, according to CEPEA researchers, the boost to prices comes from both higher demand and reduced supply. On the demand side, the industry needs to acquire raw materials, given the very low stocks of orange juice. On the supply side, fruit production is expected to be low again in São Paulo and the Triângulo Mineiro.

The graph below (Figure 11) reflects the average of orange prices paid by São Paulo Industry/Spot Market (all orange varieties) The average prices are in Reais referring to 40.8-kg/90-pound box (fruits delivered to processing plant). In 2023, box prices ranged from BRL 42 (USD 7.84) to BRL 48 (USD 8.96), significantly lower than in the first half of 2024, when with lower supplies, the price of a 40.8 kg box increased BRL 20 (USD 3.73).

**Figure 11**

*Average Orange Prices Paid by São Paulo Industry*

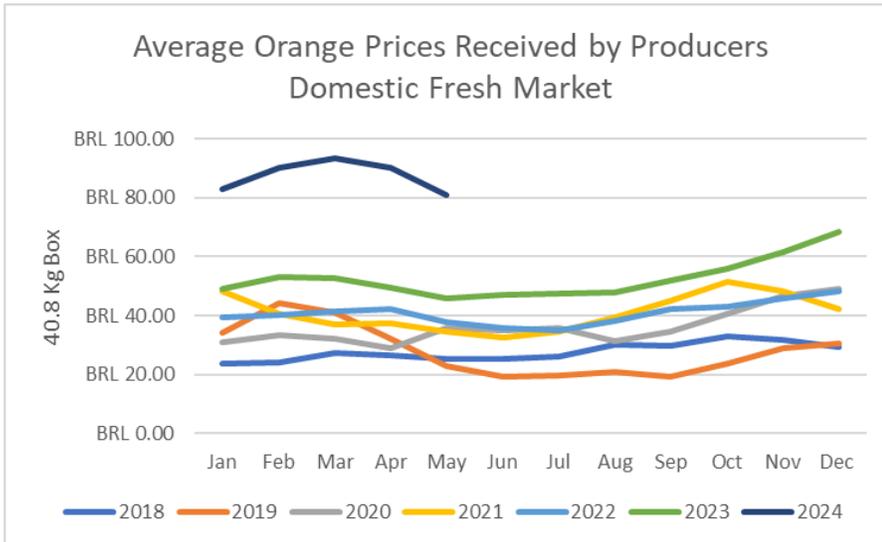


Source: CEPEA/ESALQ, elaborated by OAA Brasilia

## Figure 12

### Average Orange Prices Received by Producers in Domestic Fresh Market

Orange Prices Received by Producers in Domestic Fresh Market (all orange varieties: Pera, Natal, Valencia, Lima, Baia, with harvest fluctuations depending on the time of year) denote fruits on tree/in natura.



Source: CEPEA, chart by OAA Brasilia

The graph above (Figure 12) shows that orange prices received by producers increased in 2023, ranging from BRL 50 (USD 9.33) per 90-pound box in January 2023 to more than BRL 60 (USD 11.20) in the end of the year. Between the end of 2023 and beginning of 2024, prices ranged from over BRL 60 to almost BRL 100 (USD 18.66), the highest price in thirty years.

The combination of the greening disease and the weather facing atypical temperatures and long period of drought, have inflated the price of oranges in Brazil. This has caused farmers to harvest the fruit early, before the fruit is completely mature. In February, the price of pear oranges, which are the most widely consumed, rose above six percent, more than inflation. From March 2023 to March 2024, orange prices have risen by more than 36%.

In general, producers that provide oranges to the juice industry have a higher cost, as it involves more logistics for transportation. According to CEPEA, the attractive price offered by the industry has pushed up the value of the fruit on the fresh market. The competition for the fruit is boosting prices in all segments.

“Hortifruti Brasil”, a Brazilian magazine and market researcher, has published that the record prices for oranges sold to the São Paulo industry through the short and new long-term contracts for MY 2023/24 harvest should boost citrus growers' purchasing power in relation to agricultural inputs. In addition, recent decreases in costs of important items used in the crop, such as fertilizers, also favors them, since the number of orange boxes needed in the referred harvest to buy fertilizers is lower than in the previous one.

## Consumption



Post revised the total forecast of Brazilian orange consumption for MY 2023/24 to 4.4 MMT, a decrease of 2.2 percent compared to the Post estimate for (4.5 MMT), despite a higher demand for orange in natura to meet healthy diet habits. The orange supply shortage and consequently higher prices impact consumption directly. These figures include actual domestic consumption plus losses from the natural drop, harvesting, transportation, and packing.

Note that fruit delivered to processors for “not from concentrate” (NFC) orange juice production for the domestic market will not be included as fresh orange consumption but as “Delivered to Processors for NFC Production”. Fresh domestic consumption estimates are calculated as the difference between production estimates and the volume of oranges delivered to processors for FCOJ and NFC produced for domestic consumption and export.

Orange imported from Egypt has been growing in Brazil. These are a different orange variety that are high-value, and Post contacts inform that its in-natura consumption so far is from a relatively small percentage of select consumers.

## Trade

For many years Brazil has traded insignificant volumes of fresh oranges, a fact that has been changing for imports and remaining for exports.

## Exports

Total fresh orange exports for MY 2023/24 are projected at virtually zero, For MY 2022/23, Post maintains the estimate at virtually zero, just like the previous season, according to updated information on the trade flow from SECEX. Brazil has limited market access to other countries.

Paraguay and Argentina were the main importers, but there has been a large decrease since the second half of 2023. To Paraguay, a total of 972 tons of orange were exported in the first half of 2023, none in the second and only 155 tons so far in 2024. Exports are virtually zero to the European Union, as well as to Canada and the United States

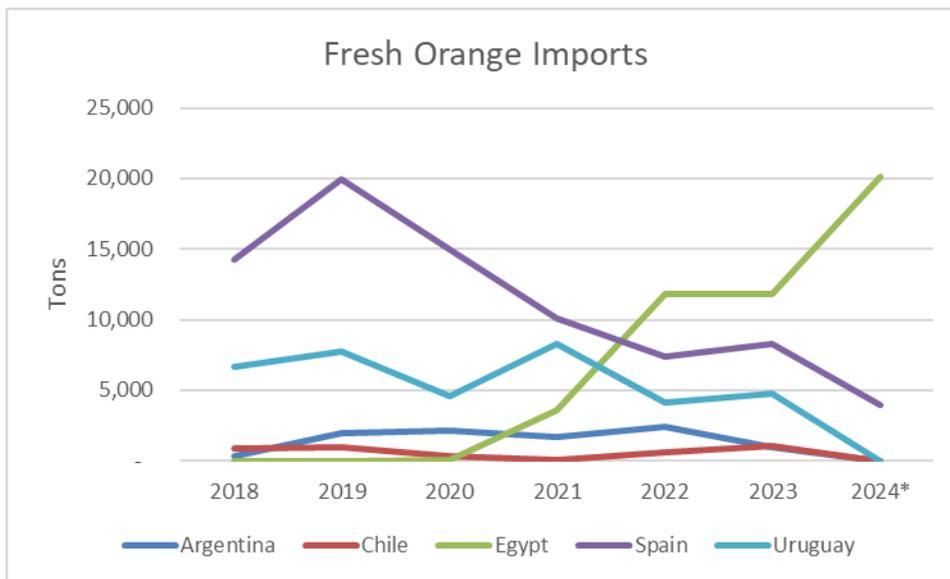
## Imports

Post revised the forecast for total fresh orange imports for MY 2023/24 to 32,000 MT, an increase of 6.25 percent compared to Post estimate of 30,000 MT, based on trade partnerships and an increased demand for fresh oranges. In MY 2022/23, Brazil imported a total of 27,000 MT. Egypt, Uruguay, Spain, and Argentina were the major countries of origin for imported oranges from July 2022 to June 2023.

Since the orange stock is already low, a significant amount of the fruits supposed to be sent to the supermarkets and greengrocers is instead becoming juice production, giving rise to an increase in fruit imports.

Brazil has a strong relationship with Spain in the context of horticulture, generating significant portion on trade flow. Imported oranges are generally distinctive in texture and flavor from Brazilian ones. The table below shows fresh orange imports (NCM 0805.10.00) by country of origin.

**Figure 13**  
*Brazil's Fresh Orange Imports*



Source: TDM, chart by OAA Brasilia  
2024\*: data collected from January to May 2024.

The graph above (Figure 13) highlights imports in calendar year and the increase of fresh orange imports from Egypt, reaching so far in 2024 the same orange imports peak amount from Spain in 2019. Egypt signed a Free Trade Agreement with Mercosul (the South American trade bloc, including Brazil) in 2017. The first test batches of Egyptian oranges arrived in Brazil in 2020, a total of 75 tons. A year later, Egyptian orange exports to Brazil reached 3,600 tons. In 2022 exports stood at 11,800 tons and have almost reached 14,000 tons in 2023. From January to April 2024, Brazil imported 20,081 tons of oranges from Egypt.

Worldwide, from July 2023 until May 2024 Brazil imported 37,861 tons of fresh oranges, equivalent to USD 30 million. Note that only partial harvest data information was available until the closing of this report. The referred import already reflects a quantity 20 percent larger than that from previous crop, from July 2022 to June 2023.

## ORANGE JUICE

### Production

### PS&D Table

The following table provides revised total Brazilian orange juice production, supply, and distribution (PS&D) for BR MY 2022/23, 2023/24, and BR 2024/25, and the final forecast for BR MY 2024/25. The MY mentioned above are equivalent to U.S. MY 2021/22, 2022/23, and 2023/24 respectively.

The table include NFC production for exports converted to Frozen Concentrated Orange Juice (FCOJ), 66 Brix equivalent. The following conversion factor: 1 metric ton of FCOJ 66 Brix equals 5.4 to 5.6 metric tons of NFC 11.6 Brix.

**Table 2**

*Production, Supply and Distribution of Brazilian Orange Juice*

| Orange Juice<br>Market Year Begins | 2021/2022     |          | 2022/2023     |          | 2023/2024     |          |
|------------------------------------|---------------|----------|---------------|----------|---------------|----------|
|                                    | Jul 2022      |          | Jul 2023      |          | Jul 2024      |          |
| Brazil                             | USDA Official | New Post | USDA Official | New Post | USDA Official | New Post |
| Deliv. To Processors (MT)          | 12291000      | 12291000 | 12200000      | 11009000 | 1200000       | 10932000 |
| Beginning Stocks (MT)              | 15000         | 15000    | 9000          | 9000     | 8170          | 8170     |
| Production (MT)                    | 1135000       | 1135000  | 1124170       | 1169274  | 1105700       | 1065830  |
| Imports (MT)                       | 0             | 0        | 0             | 0        | 0             | 0        |
| Total Supply (MT)                  | 1150000       | 1150000  | 1133170       | 1178274  | 1113870       | 1074000  |
| Exports (MT)                       | 1068000       | 1068000  | 1050000       | 1095104  | 1034870       | 1000000  |
| Domestic Consumption (MT)          | 73000         | 73000    | 75000         | 75000    | 75000         | 70000    |
| Ending Stocks (MT)                 | 9000          | 9000     | 8170          | 8170     | 4000          | 4000     |
| Total Distribution (MT)            | 1150000       | 1150000  | 1133170       | 1178274  | 1113870       | 1074000  |
| (MT)                               |               |          |               |          |               |          |

OFFICIAL DATA CAN BE ACCESSED AT: [PSD Online Advanced Query](#)

\*Note: There is a one-year lag between the BR MY and the U.S. MY. For example, BR MY 2022/23 is equivalent to U.S. MY 2021/22. To ensure data continuity, the current Brazilian MY 2023/24 will be referred to as U.S. MY 2022/23 throughout this report.

## Production



Post revised the total forecast related to the Brazilian FCOJ 66 Brix equivalent production for MY 2023/24 to 1.06 MMT, a decrease of 8.62 percent vis-à-vis the Post estimate for MY 2022/23 (1.16 MMT), due to downward expected availability of fruit for processing provoked by drought, extremely high temperatures and increase of greening incidence. Orange juice figures include NFC production for exports converted to FCOJ 66 Brix equivalent. There is no official estimate for NFC supply and demand in Brazil.

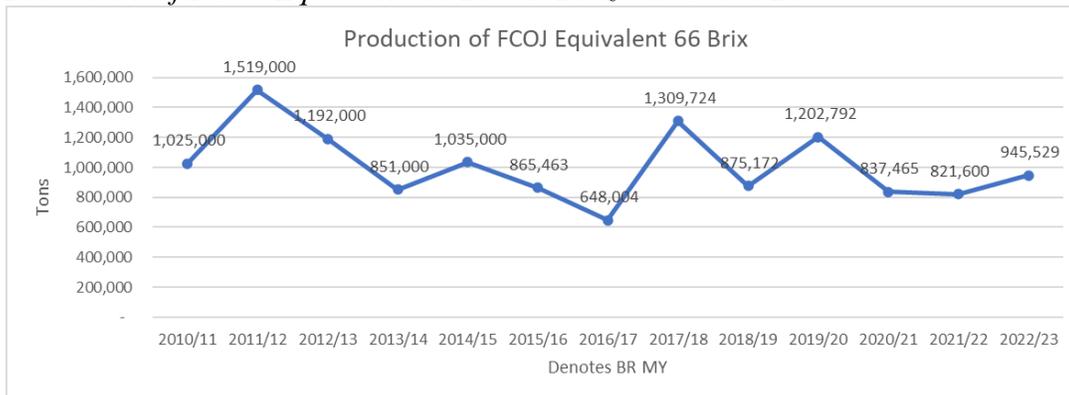
Juice production faces challenges related to Brix (the mix of oranges for the ideal sugar concentration), according to CitrusBR. To meet certain orange juice standards, it is necessary to mix different varieties of oranges from between harvests, depending on the period of the year. Juice from early oranges, for example, has low Brix and is not considered ideal, but when mixed with sweeter mid-season and late oranges, the Brix consumption preference standard is achieved. Because of this variation and the current orange supply shortage, there may be orange juice supply disruptions between the current and the next crop. According to Post contacts, when processing ends, three months of orange juice supply in stocks needed.

Orange juice production is concentrated in the state of São Paulo, which leads the ranking, followed by Minas Gerais and Paraná. The total number of oranges processed in the São Paulo and Minas Gerais citrus belt region in MY 2022/23 (BR MY 2023/24) harvest was 267 million boxes (10.89 MMT), calculated by the difference between the informal number of consumed in-natura oranges and the quantity of processed juice, most of which are produced by CitrusBR members: Citrusuco, Cutrale, and Louis Dreyfus.

Across the citrus belt, harvests have been impacted by greening, heatwaves and drought in different ways. Due to low supply, some companies are processing lower quality fruits. Contaminated oranges with greening do not harm human health, but they do change in taste and become sourer. For this reason, some producers choose to salvage those fruits in production of mixed or concentrated juices for both domestic and for export, but most oranges with greening fall before the harvest.

**Figure 14**

*Production of FCOJ Equivalent 66 Brix in Brazilian Citrus Belt*



Source: CitrusBR, chart by OAA Brasilia

Because there were no new updates until the closing of this report, the graph above (Figure 14) is replicated from the previous report to emphasize the flow of Brazilian FCOJ Equivalent 66 Brix in the Brazilian citrus belt, which reached its peak in the last ten years, an approximate amount of 1.6 MMT in MY 2010/11 (BR MY 2011/2012). It decreased five harvests later to 648,004 tons in MY 2015/16 (BR MY 2016/17), then reached a new peak in the MY 2017/2018 crop, with 1.3 MMT produced.

## Consumption



Post revised the outlook of domestic FCOJ equivalent consumption for MY 2023/24 to 70,000 MT, 66 Brix, 6.66 percent less than estimate for MY 2022/23 (75,000 MT), due to the upcoming risks addressed in the subchapters above, including orange shortage and rising prices.

The shortage of oranges has been pushing the juice industry to launch mixed flavors. The reduced availability of oranges has motivated companies to incorporate the combination of two or more fruits into their portfolio, a trend that started in Brazil in the last decade, but only now has a spotlight in the Brazilian market.

Orange is a fruit that has many health benefits, one of the reasons why the consumption demand would tend to increase, but the recent price increase is expected to alter the consumption of orange juice. Note that NFC consumption converted to FCOJ equivalent is included in the orange juice statistic.

## Trade

In Brazil, orange juice is processed into concentrated and not-from-concentrate juice and distributed all over the world. Brazil is the world's leading exporter of orange juice and accounts for 75 percent of the orange juice marketed in the world. For every ten cups of orange juice consumed, seven are produced in Brazil.

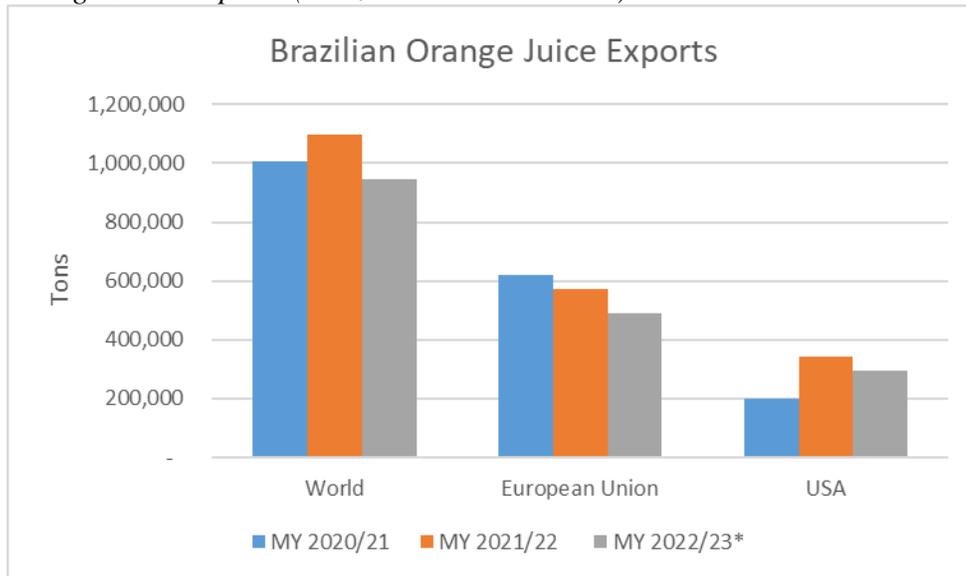
The largest export market is the European Union, followed by the United States. Even in the face of slightly reduced consumption of orange juice in Europe and the United States, supply is falling at an even faster rate, with very low stocks in Brazilian factories and a projection of greening increase in the next harvests. Meanwhile, Brazil has recently been sought to export other orange products such as orange pulp, especially to markets in Asia.

## Exports

Post revised export forecast of Brazilian FCOJ 66 Brix equivalent exports for MY 2023/24 to 1.0 MMT, a decrease of 4.76 percent compared to Post estimate (1.05 MMT), due to the same production challenges mentioned in the previous report, mainly impacted by weather conditions and also, greening incidence. In MY 2022/23, Brazil exported so far (July 2023-May 2024) 944,227 tons of FCOJ to the world, of which 492,235 tons were exported to the European Union and 293,033 tons to the United States.

**Figure 15**

*Orange Juice Exports (Brazilian Main Partners)*



Source: SECEX, chart elaborated by OAA Brasilia  
MY 2022/23\*: Jul 23 – May 24

The graphic above reflects the market behavior due to production issues faced in the United States, which have led to increased imports of Brazilian orange juice. Worldwide, Brazil exported 1.09 MMT tons of FCOJ in MY 2021/22, 340,736 tons to the United States and 571,786 tons to the European Union.

According to Post contacts, more than 50 percent of Brazilian NFC is exported to the United States and more than 98 percent of exports comes from the Brazilian citrus belt, based at Santos Port.

## Imports

Brazil does not import orange juice.

## Stocks

Post maintains the forecast of orange juice 66 Brix ending stocks for MY 2023/24 at 4,000 MT, which represents a significant decrease of fifty percent from Post previous estimate for MY 2022/23 (8,170 MT), based on information shared by Post contacts. Stock figures include only stocks in the storage tanks of orange juice facilities (processing plants, port terminals, etc.) in Brazil. They do not include stocks owned by Brazilian companies abroad, e.g., in transit and port terminals in the United States, Europe, and Japan.

CitrusBR global inventories include orange juice in storage tanks at processing plants and port terminals in Brazil and stocks abroad (vessels and port facilities worldwide). Brazilian stocks in MY 2022/23 were estimated to reach the lowest level in history, according to information confirmed by Post contacts. Only on June 30, 2024, however, official numbers will be released. Ten years ago, orange stocks were over one million tons. However, steady demand and challenges to global supplies, as mentioned above, have dramatically decreased reserves.

According to CEPEA, considering the inventory forecast and that high prices for oranges may persist, the global supply of orange juice could be compromised. At present, CEPEA informs that Brazil does not have competitors with enough relevant production to compensate for the deficit in Brazil’s national supply. Stock concerns seem to be on a downward trend, and don't just extend to the current crop.

**Figure 16**  
*Global Stocks of Brazilian Orange Juice*



Source: Citrus BR data, chart by OAA Brasilia

As shown in the graphic above, global stocks of orange juice by CitrusBR members audited on June 30, 2023, converted into FCOJ Equivalent, totaled 84,745 tons, a decrease of 40.7 percent compared to the 143,104 tons recorded in the same period of the previous year. The graphic also reflects the significant drop from June 2020 to June 2023, which came from 471,138 tons to 84,745 tons, respectively, a decrease of 87 percent. The next audit will happen on June 30, 2024.

**Attachments:**

No Attachments