# EXECUTIVE SUMMARY

## 2025-2026 ORANGE CROP FORECAST

*for the São Paulo and West-Southwest Minas Gerais citrus belt*

Fundecitrus
SCIENCE AND SUSTAINABILITY IN CITRICULTURE

PES
Crop Forecast Survey

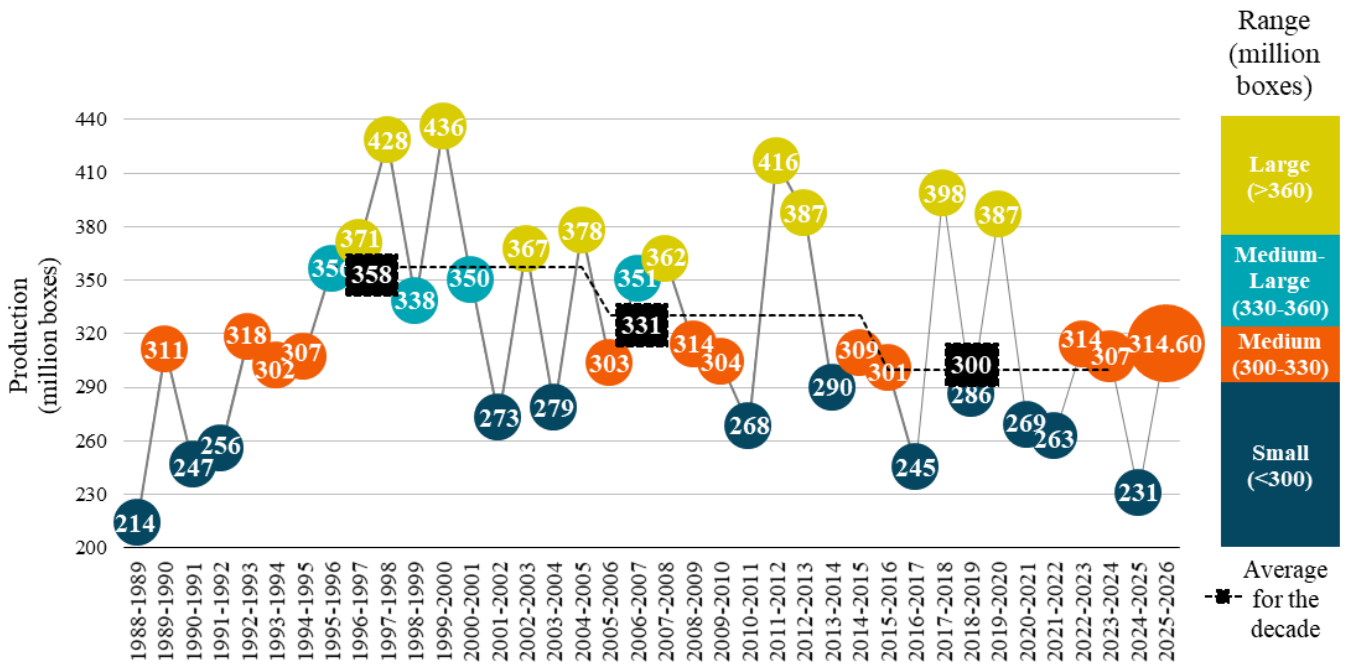
## 1 – 2025-2026 ORANGE CROP FORECAST

The 2025-2026 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, published on May 09, 2025, by Fundecitrus in cooperation with full professor at FCAV/Unesp[1], is 314.60 million boxes of 40.8 kg (90 lbs) each. This production is divided as follows (figures in parentheses indicate the variation in production as compared to the previous crop):

- 49.48 million boxes of the Hamlin, Westin, and Rubi varieties (+31.49%);
- 19.86 million boxes of the Valencia Americana, Seleta, Pineapple and Alvorada varieties (+27.31%);
- 90.51 million boxes of the Pera variety (+21.16%);
- 114.58 million boxes of the Valencia and Folha Murcha varieties (+50.78%);
- 40.17 million boxes of the Natal variety (+49.05%).

Approximately 26.93 million boxes are expected to be produced in the Triângulo Mineiro (+80.3%).

Overall, the projected volume represents a significant increase of 36.27% compared to the previous crop season, whose final number was 230.87 million boxes, bringing production back into the average range of the last ten years, as shown in Graph 1. Compared to the average volume produced in the last decade, the current crop shows a slight increase of 4.8%.




**Graph 1 – Orange production from 1988-1989 to 2024-2025 and 2025-2026 crop forecast**
Sources: CitrusBR (1988-1989 to 2014-2015) and Fundecitrus (2015-2016 to 2025-2026)

The outlook of a crop significantly superior to the previous one is mainly attributed to the higher number of fruits per tree, which resulted from the climate conditions that favored the second bloom, the advanced grove management, and the increased number of productive trees identified in the new survey, which is displayed in detail under item 2.1 "Productive Trees".

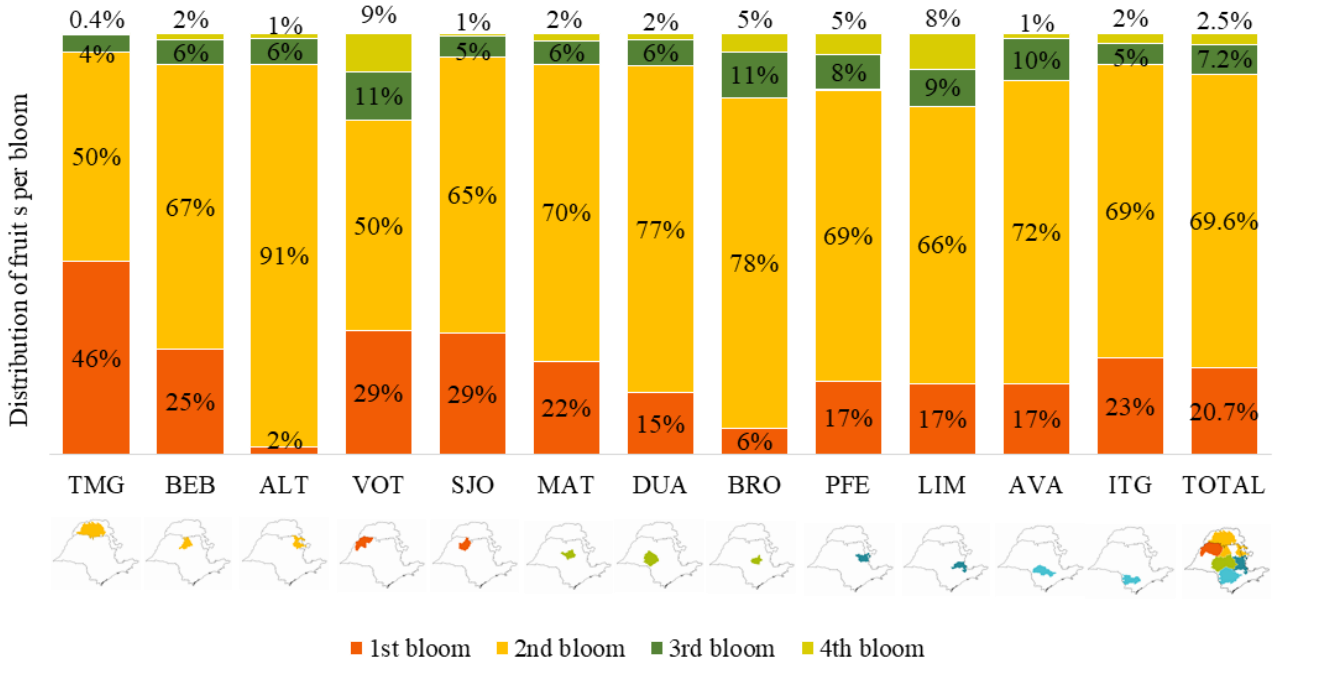
Based on the climate conditions of the São Paulo and Minas Gerais citrus belt, the factors that normally prompt the flowering of orange trees are the low temperatures during the winter season of the Southwest sector and the water deficit in other regions followed by the increase in soil moisture, either from rainfall or irrigation.

[1] José Carlos Barbosa, (voluntary) Full Professor at FCAV/Unesp.

In 2024, the citrus belt experienced drier conditions than the usual pattern, with rainfall below the historical average (1991-2020) in the first nine months of the year, according to data from Climatempo Meteorologia. It is worth highlighting the months from June to September - a critical period for the first bloom of orange trees, which recorded an accumulated average rainfall of 69 millimeters in the belt, representing a volume 55% below the historical average. As such, during these months, the increased soil moisture that is needed to induce flowering did not occur in non-irrigated groves, thereby affecting the first bloom of the crop. As a result, the fruits of this bloom in the current crop are concentrated in regions with significant irrigated areas, such as Triângulo Mineiro, Votuporanga, São José do Rio Preto, Matão, and Bebedouro, and in regions that received localized rain from June to September, such as Itapetininga, Limeira, and Porto Ferreira. Moreover, the rise in the average maximum temperature by 3.2ºC (37.76ºF) in August and September, mainly in the Northern and Northwestern areas, disrupted the setting of the first bloom fruits.

Significant rainfall volume and distribution was only seen in the citrus belt from October to December. In October, volumes were 25% above the historical average; in November, 34%; and in December, 7%. This widespread soil moisture, following a prolonged period of water deficit, reversed the drought conditions and triggered a second, abundant bloom under more favorable climatic conditions, which contributed to most of the estimated yield for this crop. The rainfall of 228 millimeters recorded in December, combined with 154 millimeters in January and 139 millimeters in February of 2025, was essential to promote the high setting level and the bloom fruit development.

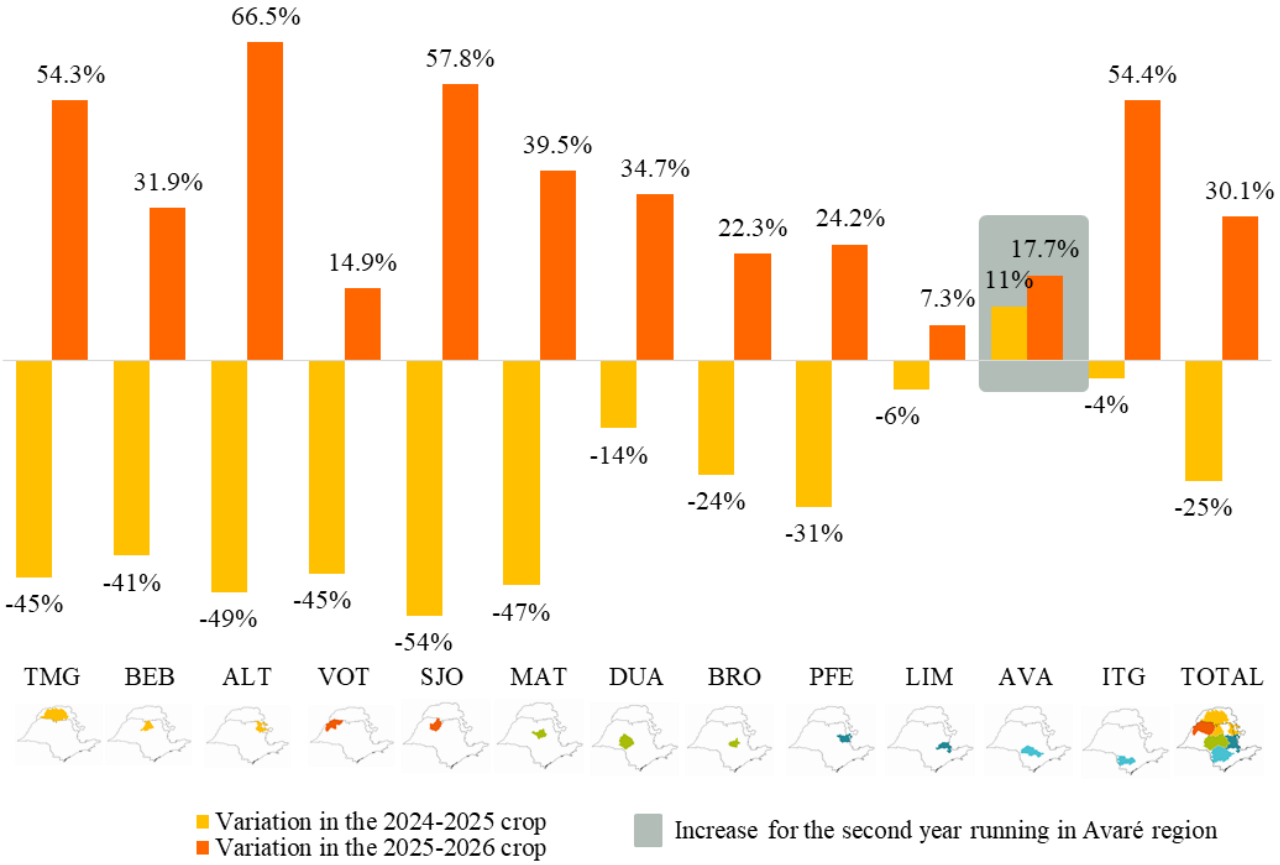
Overall, the first bloom share in the crop yield was 20.7%; the second bloom, 69.6%, the third bloom, 7.2%; and the fourth bloom, 2.5%, as shown in Graph 2. The fourth bloom yield in this crop season has returned to normal levels, unlike the previous crop season, whose fourth bloom was late and unusually abundant.




**Graph 2 – Distribution of fruits per bloom in each region**

In 2024, the higher profitability enabled growers to enhance management practices in their groves, with advances in nutrition, irrigation, and more efficient pest and disease control, which, in combination with favorable climatic conditions, provided an abundant fruit load in the plants, with 617 fruits per tree, 30,1% above the last crop. According to the forecast, this season marks the end of the negative cycle observed in the last crop and signals the return of a positive biennial cycle.

As presented in Graph 3, all regions of the citrus belt recorded an increase in relation to the 2024-2025 fruit load, with emphasis on Altinópolis (66.5%), São José do Rio Preto (57.8 %), Itapetininga (54.4%) and Triângulo Mineiro (54.3%). Furthermore, Avaré stand out for showing an increased fruit yield for the second consecutive year, which is due to more favorable climatic conditions compared to other regions. On the other hand, regions Limeira, Votuporanga, Brotas e Porto Ferreira demonstrated less significant rises compared to the average of the belt, with 7.3%, 14.9%, 22.3% and 24.2% respectively.




**Graph 3 – Variation in the number of fruits per tree in each region**

At the time of harvesting, the fruits weighed an average of 71 grams, a weight lower than the weight verified in the same period of the last crop, when the average weight was 96 grams. This happened because most of the fruits came from the second bloom, which took place in mid-October and November, whereas the previous crop had most of its fruits yielded by the first bloom, which occurred in August. Therefore, the fruits of the current crop were, on average, two months delayed compared to those of the previous crop.

Furthermore, although the rainfall was sufficient to stimulate the second bloom and prompt fruit setting, the rain volumes recorded in January and February 2025 were below the historical average. Hence, the fruits did not reach a higher weight during the harvesting season in March and April. The April rains exceeded the historical average and were concentrated in the second half of the month. For the critical fruit development period, between May and October 2025, the forecast indicates slightly below-average rainfall, except for July, which should experience above-average rainfall.

The weight of oranges at harvest is projected at 158 grams (258 fruits per box), which is similar to the weight recorded in the previous crop (159 grams or 256 fruits per box). This projection was based on the initial weight of fruits, the predominance of the second bloom, the forecast of accumulated rainfall

amounting to 75 millimeters from May to July 2025, and on the late harvest likelihood. The regression model used to project the average fruit size is explained in item "2.4 – Fruits per Box."

The projected drop rate for the crop is 20%, 2.2 percentage points higher than that of the previous crop. This projected is related to the increased severity of greening and the late harvest due to the predominance of the second bloom. The second bloom delays the harvesting period because it takes place two months after the first bloom.

The average yield of this crop was 869 boxes per hectare and 1.72 boxes per tree, an increase of 26% as compared to 687 boxes per hectare and 1.37 boxes per tree harvested in the 2024-2025 crop.

Upon analyzing the yield by variety, all groups attained a sharp increase in production compared to the previous crop season. It is worth highlighting the sharp increase in production of the late varieties Natal, with an increase of nearly 50%, and Valencia and Folha Murcha with 42%. The earlies varieties Hamlin, Westin and Rubi showed an increase of 28%, other earlies 16% and Pera 6.5%. Tables 1 and 2 present yields by variety and variations in relation to the previous crop season.

**Table 1 – Yield per hectare and variety for the 2020-2021 crop to the 2025-2026 crop[e]**

| Group of varieties | 2020-2021 | 2021-2022 | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026[e] |
|---|---|---|---|---|---|---|
| | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) |
| Hamlin, Westin and Rubi… | 797 | 819 | 1,021 | 1,047 | 666 | 851 |
| Other earlies..... | 827 | 804 | 925 | 987 | 749 | 867 |
| Subtotal for earlies..... | 804 | 815 | 998 | 1,032 | 688 | 855 |
| Pera…..... | 671 | 653 | 811 | 837 | 658 | 701 |
| Valencia and Folha Murcha….. | 739 | 838 | 940 | 969 | 703 | 1,002 |
| Natal..... | 803 | 734 | 978 | 738 | 723 | 1,065 |
| **Total.....** | **737** | **760** | **912** | **911** | **687** | **869** |

[e] Estimate

**Table 2 – Variation in yield per hectare for varieties as compared to previous season's**

| Group of varieties | 2021-2022 in comparison to 2020-2021 | | 2022-2023 in comparison to 2021-2022 | | 2023-2024 in comparison to 2022-2023 | | 2024-2025 in comparison to 2023-2024 | | 2025-2026[e] in comparison to 2024-2025 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % |
| Hamlin, Westin and Rubi… | 22 | 2.8% | 202 | 24.7% | 26 | 2.5% | -381 | -36,4% | 185 | 27.8% |
| Other earlies..... | -23 | -2.8% | 121 | 15.0% | 62 | 6.7% | -238 | -24,1% | 118 | 15.8% |
| Subtotal for earlies..... | 11 | 1.4% | 183 | 22.5% | 34 | 3.4% | -344 | -33,3% | 167 | 24.3% |
| Pera…..... | -18 | -2.7% | 158 | 24.2% | 26 | 3.2% | -179 | -21,4% | 43 | 6.5% |
| Valencia and Folha Murcha…. | 99 | 13.4% | 102 | 12.2% | 29 | 3.1% | -266 | -27,5% | 299 | 42.5% |
| Natal..... | -69 | -8.6% | 244 | 33.2% | -240 | -24.5% | -15 | -2,0% | 342 | 47.3% |
| **Total.....** | **23** | **3.1%** | **152** | **20.0%** | **-1** | **-0.1%** | **-224** | **-24.6%** | **182** | **26.5%** |

[e] Estimate

Regarding the regional sector productivity, the main highlight is Southwest, which includes the regions of Itapetininga and Avaré. This region is expected to achieve the highest productivity in the citrus belt, with 1,103 boxes per hectare, representing an increase of 23% compared to the previous crop. If this projection is confirmed, Southwest will maintain its leadership position. The sector facing the most challenging situation is Northwest, covering the regions of Votuporanga and São José do Rio Preto. In this location,

considerably low productivity is expected, totaling only 552 boxes per hectare, albeit 16% higher than the previous crop. The North sector showed the greatest variation compared to the previous crop season (41.8%). Tables 3 and 4 present yields by sector and variations in relation to the previous crop season.

**Table 3 – Yield per hectare of sectors for the 2020-2021 crop to the 2025-2026 crop[e]**

| Sector | 2020-2021 | 2021-2022 | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026[e] |
|---|---|---|---|---|---|---|
| | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) | (boxes/ hectare) |
| North..... | 648 | 804 | 868 | 1,117 | 627 | 889 |
| Northwest..... | 468 | 646 | 750 | 932 | 475 | 552 |
| Central..... | 667 | 729 | 928 | 879 | 621 | 826 |
| South..... | 725 | 699 | 926 | 831 | 698 | 788 |
| Southwest..... | 1,106 | 869 | 1,008 | 782 | 897 | 1,103 |
| **Total.....** | **737** | **760** | **912** | **911** | **687** | **869** |

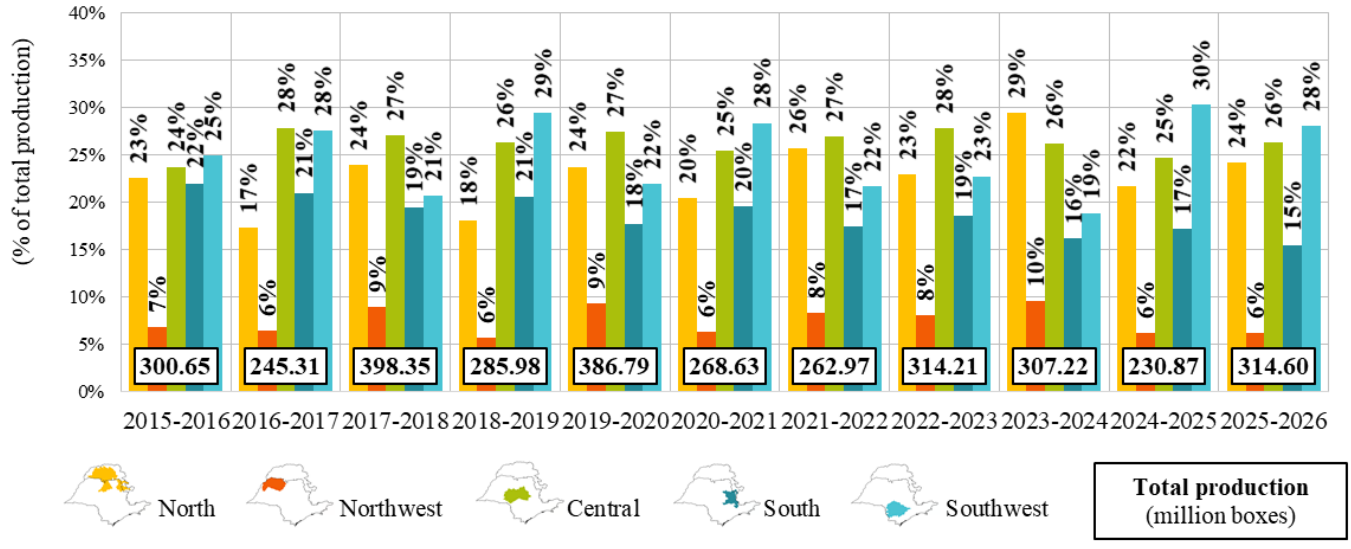
[e] Estimate

**Table 4 – Variation in yield per hectare of sectors in relation to the previous crop season's**

| Sector | 2021-2022 in comparison to 2020-2021 | | 2022-2023 in comparison to 2021-2022 | | 2023-2024 in comparison to 2022-2023 | | 2024-2025 in comparison to 2023-2024 | | 2025-2026[e] in comparison to 2024-2025 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % | (boxes/ hectare) | % |
| North..... | 156 | 24.1% | 64 | 8.0% | 249 | 28.7% | -490 | -43.9% | 262 | 41.8% |
| Northwest..... | 178 | 38.0% | 104 | 16.1% | 182 | 24.3% | -457 | -49.0% | 77 | 16.2% |
| Central..... | 62 | 9.3% | 199 | 27.3% | -49 | -5.3% | -258 | -29.4% | 205 | 33.0% |
| South..... | -26 | -3.6% | 227 | 32.5% | -95 | -10.3% | -133 | -16.0% | 90 | 12.8% |
| Southwest..... | -237 | -21.4% | 139 | 16.0% | -226 | -22.4% | 115 | 14.7% | 206 | 23.0% |
| **Total.....** | **23** | **3.1%** | **152** | **20.0%** | **-1** | **-0.1%** | **-224** | **-24.6%** | **182** | **26.4%** |

[e] Estimate

As shown in Graph 4, the distribution of yield levels among sectors remained similar to that of the previous crop season. The Southwest stands out as the most productive, accounting for 28% of the citrus belt's production, followed by the Central region with 26%, the North with 24%, the South with 15% and Northwest with 6%.




**Graph 4 – Share of sectors in total orange production in the 2015-2016 to 2025-2026 crops**

## 2 – OBJECTIVE SURVEY METHOD FOR THE ORANGE CROP FORECAST

In order to perform this estimate, the objective method used in previous crop seasons was maintained, which is based on quantitative data – field measurements, counting and weighing of fruit – applied to the equation represented below.

$$\text{Forecast production} = \frac{\text{Bearing trees} \times \text{Fruit per tree} \times (1 - \text{Drop rate \%}) \times (1 - \text{CF \%})}{\text{Fruit per box}}$$

where CF is the correction factor

Compiled results from the tree inventory and fruit stripping obtained throughout the survey were restricted, until the date of this publication, to the following professionals: Antonio Juliano Ayres (Fundecitrus executive director); Guilherme Maniezo Rodriguez (PES executive coordinator); Fernando Alvarinho Delgado (PES technical supervisor); Roseli Reina (PES specialist); Eduardo Cassettari Monteferrante (PES analyst); and José Carlos Barbosa (PES methodology analyst and Voluntary Full Professor at the department of Math and Science of FCAV/Unesp).

All of them were subject to confidentiality obligations with regard to PES information before its announcement was made public, according to agreements signed between each of them and Fundecitrus. As for antitrust practices, they were all complied with through the adoption of measures necessary to prevent any communication or sharing of individual information with competitive content among the orange juice companies that collaborate with Fundecitrus in this project or between these and citrus growers.

The crop forecast was finalized on May 09, 2025, at 9:30 a.m., in an in-person meeting at Fundecitrus, with no external communication channel beyond participants. Following that, at 10 a.m., Fundecitrus president began the public announcement of the crop forecast at the Fundecitrus auditorium in Araraquara - SP, broadcast live at the Fundecitrus channel on YouTube (www.youtube.com/fundecitrus). Next, Fundecitrus executive director, Antonio Juliano Ayres presented the detailed data. After the crop forecast announcement, this report was made available on the Fundecitrus website.

### 2.1 – BEARING TREES

Bearing trees total 182.71 million and occupy an area of 362,160 hectares in this crop season. These figures represent an increase of 12.7 million trees, equivalent to 7.5% above the previous mapping of 2022 and 17.8 thousand hectares (5.2%) in the bearing area.

Varieties included in this forecast are present in 97% of the area of orange groves in the citrus belt. Information on bearing trees was obtained from the “Tree inventory of the São Paulo and West-Southwest Minas Gerais citrus belt: Snapshot of groves in March 2025”, taken from the 2025 primary base – created by mapping groves from August 5, 2024 to January 31, 2025 – and from counting existing trees in approximately 5% of orange plots from February 3 to February 28, 2025.

The georeferenced mapping performed for the first time in 2015, renewed in 2018 and in 2022 was completely updated in this 2025 Inventory. New high-definition orthorectified images were obtained by the satellites SPOT 6&7 from European Airbus Defence and Space between May and August 2024. In August 2024, those images were made available to survey agents, together with drawings of plots identified in previous mappings, which were superimposed to the images for easier visualization of areas that should be visited for the collection of in loco data. Scanning or visual inspection of images was also employed by survey agents before they went to the field to pre-identify citrus groves planted after 2021, which should also be visited.

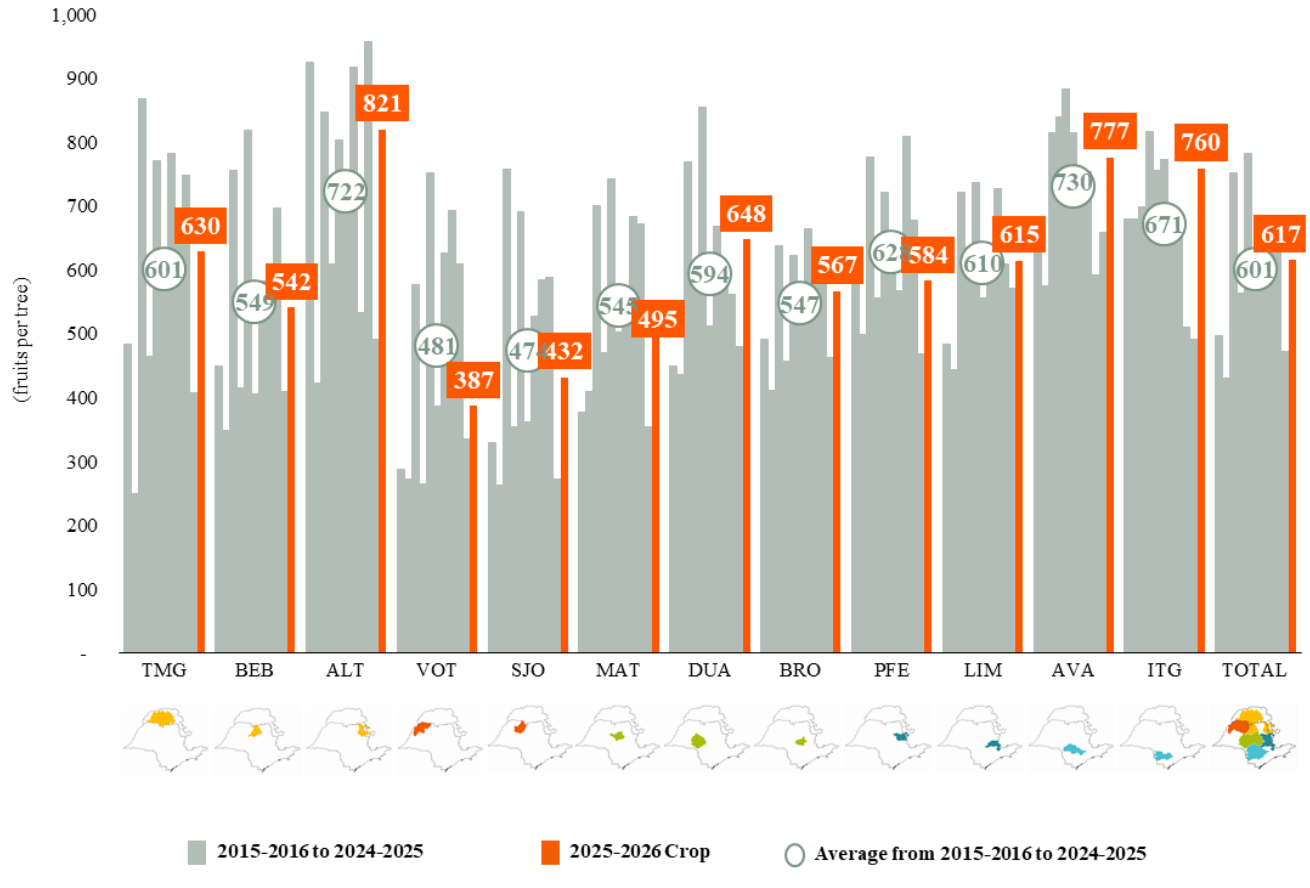
No information relative to plots other than their outlines was supplied to survey agents, which required all new data to be collected on variety, planting year, spacing, visual aspect of plants and irrigation system, when present. Recently collected data relative to the variety and planting year that differed from the previous register were audited for validation. Outlines of plots were redrawn to correspond to their present area, whenever their area was changed after plots having been registered in the previous mapping. Field visits identified plots that were abandoned or eradicated after the 2022 Inventory and those identified in that mapping as being in that situation, so that they were also revisited for data updating.

For the tree inventory to be taken, 5% of mapped orange plots were drawn to be visited again and have their planting holes classified and quantified. Each tree present in the plot was classified into one of four age categories: zero (up to two years old), one (from three to five years old), two (from six to ten years old) and three (over ten years old). Dead and missing trees were also accounted for. Plots were chosen through a random drawing that employed the proportionate stratified sampling technique. Stratification variables were: 12 regions, five orange varieties groups and four age groups, totaling 240 strata.

## 2.2 – FRUIT PER TREE

The average number of fruits per tree in April 2025, without considering the drop that occurs throughout the season, is 617, which represents an increase of 30% in relation to the previous crop. The average number of fruits per tree may have a variation of plus or minus 14 units, which is equivalent to ± 2.3% of the average number of fruits per tree at stripping. This figure is within the expected error of 2% to 3% used in sizing the sample.

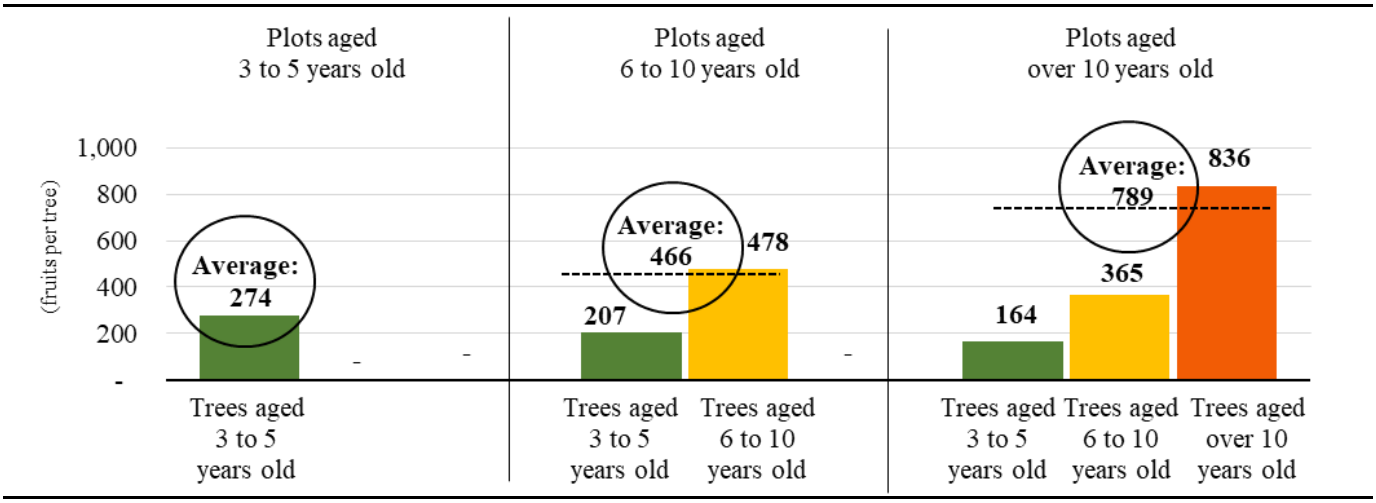
Graph 5 shows the number of fruits per tree at stripping from 2015 to 2025, separately for the 12 regions. Data precision for regions is smaller than that of the general average due to a lower number of samples per stratum.




**Graph 5** – **Number of fruits per fruit-stripped tree by region from 2015 to 2025**

For the forecast calculation, fruits from the first, second and third blooms were considered in full. A fruit set rate of 65% was applied to fruits from the fourth bloom. In the separation of fruits per bloom, off-season fruits were also identified and resulted from late and sporadic flowers from the previous crop season, not accounted for in the current crop forecast.

Three to five-year-old plots present yield of 274 fruits per tree this crop season. For six to 10-year-old plots, an average of 466 fruits per tree is estimated, with 478 fruits per tree for original plantings and 207 fruits per tree for three to five-year-old resets. Plots over 10 years old have an average of 789 fruits per tree and a yield of 836 fruits per tree for original plantings, 365 fruits per tree for six to 10-year-old resets and 164 fruits per tree for three to five-year-old resets. Yield rates are presented in Graph 6.




Ages and planting years: 3 – 5 years (2020 to 2022), 6 – 10 years (2015 to 2019) and over 10 years (2014 and previous years)
**Graph 6** – **Age-stratified number of fruits per tree in the plot**

An average of 753 fruits per tree for the late Natal variety; 695 were counted for the group of late season Valencia and Folha Murcha varieties; 692 fruits per tree for the earlies Hamlin, Westin and Rubi; 526 fruits per tree for other earlies and 498 fruits per tree for the mid-season Pera variety.

The method used consists in fruit stripping, that is, the advanced harvest of all fruits in the tree, regardless of the bloom they are from. In this crop season, fruits were stripped from trees from March 3 to April 25, 2025. Fruits harvested were taken to a fruit stripping center in Araraquara, where each sample was separated into the different blooms it was from. Fruits were quantified by automatic counting equipment and then weighed.

Sample size remained at 2,560 trees selected by a drawing, in the same way as last season. An initial drawing by the method of stratified random sampling included 2,200 trees distributed proportionally amongst all orange trees in the citrus belt and stratified according to their region, variety and age. An additional drawing included 360 resets of ages lower than the age groups of their groves. These resets correspond to replacements made mainly to offset tree losses caused by citrus greening, citrus blight, gomosis and other diseases. The tree population in this last drawing comprises plots that were counted in full to update the inventory and that meet the stratification criteria.

The stratification factor “region” is comprised of 12 groups encompassing the 320 cities where there are farms with mature orange groves. In addition to the subdivision into the 12 regions, the following charts present the five subdivisions of the factor “variety” and the six subdivisions of the factor “age”. Combinations of these factors result in 360 strata.

**Chart 1 – Regions of the citrus belt included in the drawing, by sector**

| Sector | Region | Abbreviation |
|---|---|---|
| North..... | Triângulo Mineiro | TMG |
| | Bebedouro | BEB |
| | Altinópolis | ALT |
| Northwest..... | Votuporanga | VOT |
| | São José do Rio Preto | SJO |
| Central..... | Matão | MAT |
| | Duartina | DUA |
| | Brotas | BRO |
| South..... | Porto Ferreira | PFE |
| | Limeira | LIM |
| Southwest..... | Avaré | AVA |
| | Itapetininga | ITG |

**Chart 2 – Variety groups included in the drawing, by maturity time**

| Maturity time | Variety group |
|---|---|
| Early..... | Hamlin, Westin and Rubi |
| Other early..... | Valencia Americana, Seleta, Pineapple and Alvorada |
| Mid-season..... | Pera |
| Late..... | Valencia and Folha Murcha |
| | Natal |

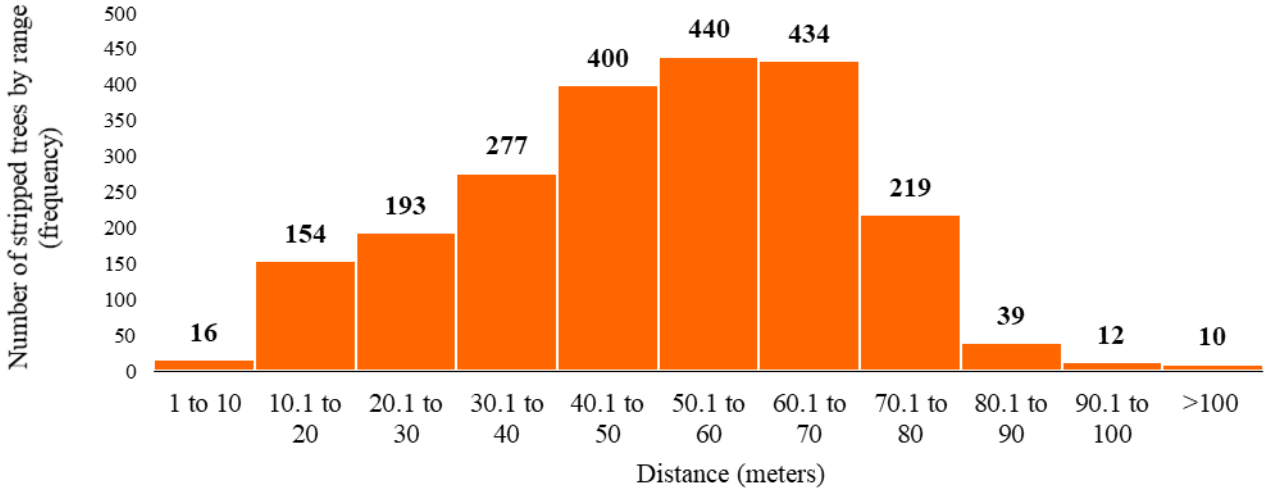
**Chart 3 – Age groups from the combined age of plots and age of trees**

| Age of plots[1] | Age of trees |
|---|---|
| 3 to 5 years..... | 3 to 5 years |
| 6 to 10 years..... | 3 to 5 years |
| 6 to 10 years..... | 6 to 10 years |
| Over 10 years..... | 3 to 5 years |
| Over 10 years..... | 6 to 10 years |
| Over 10 years..... | Over 10 years |

[1] Ages and planting years: 3 to 5 years (2020 to 2022), 6 to 10 years (2015 to 2019) and over 10 years (2014 and previous years)

For the 2,200 trees in the first drawing, the location in the plot of the tree to have fruit stripped from is predetermined and varies every crop season. This makes the selection of the tree unbiased, that is, free from interference of the survey agent. Otherwise, the choice could be skewed towards trees with more or less fruit. For the 2025-2026 crop, the tree in the drawn plot was the one located in the 24$^{th}$ planting hole in the 11$^{th}$ row. If there was a vacancy or dead tree in that position, or yet a tree of an age different from that of trees originally planted in the plot, the third plant down was selected. Should that situation repeat itself, three more plants down were counted, until a tree of the drawn age was found. If the plot did not have 11 or more planting rows, the counting restarted in the existing rows until number 11 was reached. For the second drawing of 360 resets, the tree was found in the plot after visual aspects were considered, such as trunk circumference and size of canopy.

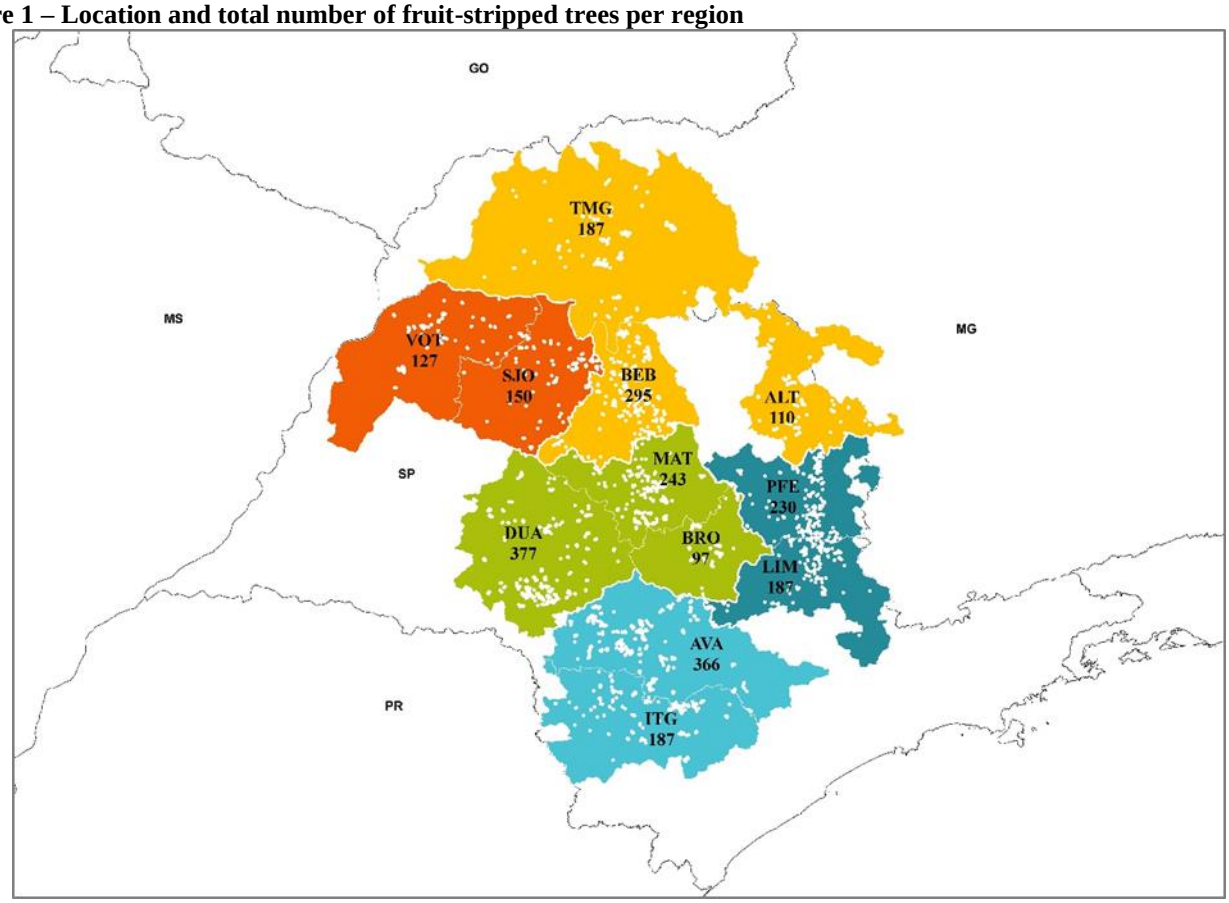
Graph 7 presents the distance (in meters) from the fruit-stripped tree originally planted in the plot to the nearest border of the plot, which shows the majority of classes with similar frequencies, with a central figure between 30.1 and 80 meters of distance from the fruit-stripped tree to the nearest border.



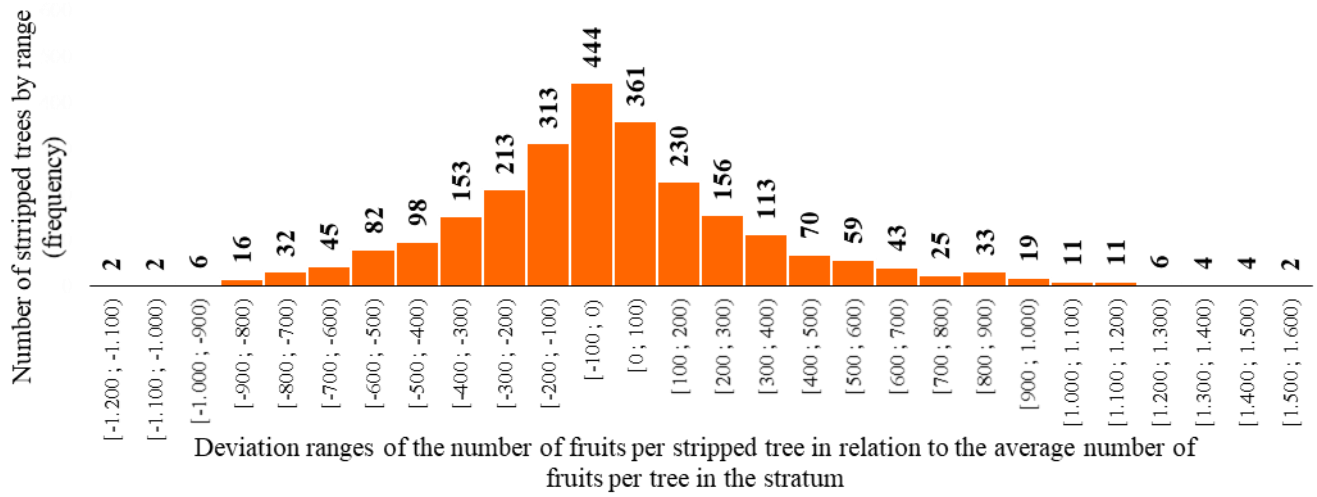

**Graph 7 – Histogram of distances from the fruit-stripped tree to the nearest border of the plot**

Figure 1 shows the location and number of fruit-stripped trees in each sector of the citrus belt.

**Figure 1 – Location and total number of fruit-stripped trees per region**




The yield deviation distribution analysis for each fruit-stripped tree in relation to the stratum average shows that sample data are randomly distributed according to a normal distribution, as presented in Graph 8. Out of the total samples, seven were discarded upon showing great discrepancy in relation to the others.




**Graph 8 – Histogram of deviations of fruits per tree at stripping**

Graph 9 shows the dispersion of deviations of each fruit-stripped tree in relation to the stratum average. It is observed that 95% of samples fall within the average (617 fruits) ± 2 standard deviations.


**Graph 9 – Deviation on the number of fruits at each stripping in relation to the stratum average**

The tree harvested upon permit from citrus growers is indemnified at R$ 80.00 through an online payment system where citrus growers can register and redeem the amount due.

## 2.3 – DROP RATE – fruit drop index from tree stripping to final plot harvest

The projected average drop rate is 20.0%, distributed as follows: 11.0% for the early Hamlin, Westin and Rubi varieties, 12.6% for other early varieties, 20.0% for the mid-season Pera variety, 23.9% for the late Valencia and Folha Murcha varieties, and 24.3% for the late Natal variety. This rate is applied to the number of fruits in the tree in April 2025, when fruits were stripped. The result of this calculation is the estimate of the number of fruits that will be available in the tree at harvest, since part of the oranges in the tree in the beginning of the crop season will fall due to physiological drop, damage caused by machines, pests and diseases, and adverse climatic conditions. As shown in Table 5, the South sector has the highest drop rate at an average 22.3%, whereas the North and Northwest sector has the lowest one at 17.4%.

**Table 5 – Projected fruit drop rates by sector and variety**

| Group of varieties | Sector | | | | | |
|---|---|---|---|---|---|---|
| | North | Northwest | Central | South | Southwest | Total |
| | (percentual) | (percentual) | (percentual) | (percentual) | (percentual) | (percentual) |
| Hamlin, Westin and Rubi…….. | 10.3 | 12.8 | 12.0 | 12.9 | 9.2 | **11.0** |
| Other earlies..... | 8.9 | 16.0 | 12.6 | 18.0 | 12.5 | **12.6** |
| Pera……..... | 16.7 | 14.5 | 24.2 | 21.9 | 18.2 | **20.0** |
| Valencia and Folha Murcha…... | 22.0 | 24.0 | 25.6 | 25.8 | 22.9 | **23.9** |
| Natal..... | 16.4 | 24.0 | 23.3 | 27.1 | 27.0 | **24.3** |
| **Total.....** | **17.4** | **17.4** | **21.5** | **22.3** | **19.6** | **20.0** |

Monthly and continuous monitoring carried out by Fundecitrus as of May 2025 in 1,200 orange plots visited up to their complete harvest serves as basis to correct the drop rate projected at the time of this publication and consequently to correct the production estimate as well.

## 2.4 – FRUIT PER BOX – fruit size, that is, number of oranges to reach the weight of 40.8 kg (box) at harvest

The final fruit size projection is 258 fruits per 40.8 kg box (158 grams/5.57 oz per fruit), namely 305 fruits per box for the group of early varieties comprising Hamlin, Westin and Rubi (134 grams/ 4.72 oz per fruit), 259 fruits per box for the group of other early varieties (158 grams/5.57 oz per fruit), 265 fruits per box for the mid-season Pera variety (154 grams/5.43 oz per fruit), 235 fruits per box for the late Valencia and Folha Murcha varieties (174 grams/6.13 oz per fruit), and 242 fruits per box for the late Natal variety (169 grams/5.96 oz per fruit). Table 6 presents projected fruit sizes by variety and sector.

**Table 6 – Projected fruit sizes by sector and variety**

| Group of varieties | Sector | | | | | |
|---|---|---|---|---|---|---|
| | North | Northwest | Central | South | Southwest | Total |
| | (Fruits estimated per box) | (Fruits estimated per box) | (Fruits estimated per box) | (Fruits estimated per box) | (Fruits estimated per box) | (Fruits estimated per box) |
| Hamlin, Westin and Rubi…….. | 303 | 296 | 304 | 310 | 306 | **305** |
| Other earlies..... | 250 | 251 | 255 | 277 | 277 | **259** |
| Pera……..... | 254 | 259 | 269 | 274 | 263 | **265** |
| Valencia and Folha Murcha…... | 221 | 234 | 243 | 248 | 233 | **235** |
| Natal..... | 229 | 252 | 245 | 251 | 240 | **242** |
| **Total.....** | **246** | **257** | **262** | **268** | **256** | **258** |

The final fruit size was estimated by a regression model that considered the final fruit size (fruits per box at harvest) as the dependent variable, and the number of fruits per tree counted at stripping, the initial fruit size (fruits per box at stripping), the sum of the production percentages of the first and second blooms in relation to the total production and the rainfall accumulated from May to July as independent variables. Data from ten crops, 2014-2015 to 2024-2025, were used in the regression and are presented in Table 6. Data from the 2021-2022 crop were not used because that was a period of totally atypical climate

conditions, with the worst drought in almost a century and high-intensity frosts. The result obtained shows an $R^2$ of 0.94. This means that the four independent variables together explain 94% of the variation in the final fruit size (fruits per box at harvest), which shows how important these variables are for the final fruit size. The comparison between the final fruit size estimated by this model and the final fruit size observed in these ten crops presents an average absolute error of 2.4%.

Data relative to final fruit size (fruits per box at harvest), number of fruits per tree counted at stripping, initial fruit size (fruits per box at stripping), the sum of the production percentages from the first and second blooms in relation to the total production for the series from 2012-2013 to 2014-2015 were provided by orange juice companies associated to Fundecitrus – Citrosuco, Cutrale and Louis Dreyfus –, which separately have estimated the production for the citrus region since 1988, with the use of objective methodology. Data were supplied individually and under a formal confidentiality agreement to an independent consulting firm for the determination of the average. Individual data supplied by each company were kept confidential. Data relative to the 2015-2016 to 2025-2026 crops come from results of estimates developed by Fundecitrus. Data on rainfall accumulated from May to July were supplied by Somar Meteorologia/Climatempo.

Data used in the model to estimate the final fruit size in this crop comprise figures from the 2025 stripping and the rainfall from May to July 2025 in a volume equivalent to 75 millimeters (Climatempo forecast). This size (264 fruits per box) obtained in the first regression was corrected by the second regression that used the observed size as the dependent variable and the estimated size as the independent variable, resulting in a projection of 258 fruits per box.

**Table 7 – Data for the 2014-2015 crop to the 2024-2025 crop used to estimate the final fruit size in the 2025-2026 crop**

| Crop | Fruits per tree at stripping | Initial fruit size at stripping | Sum of productions from first and second blooms | Accumulated rainfall from May to July | Final fruit size observed at harvest | Final fruit size estimated by the model | Error | Absolute error |
|---|---|---|---|---|---|---|---|---|
| | (number) | (fruits/box) | (%) | (millimeters) | (fruits/box) | (fruits/box) | (%) | (%) |
| 2014/15.... | 646 | 373 | 92% | 102 | 256 | 245 | -4% | 4% |
| 2015/16.... | 498 | 391 | 90% | 204 | 226 | 233 | 3% | 3% |
| 2016/17.... | 430 | 358 | 90% | 214 | 222 | 224 | 1% | 1% |
| 2017/18.... | 753 | 393 | 91% | 184 | 246 | 251 | 2% | 2% |
| 2018/19.... | 564 | 446 | 82% | 36 | 259 | 254 | -2% | 2% |
| 2019/20.... | 783 | 411 | 94% | 95 | 261 | 265 | 1% | 1% |
| 2020/21.... | 568 | 511 | 85% | 96 | 258 | 253 | -2% | 2% |
| 2022/23.... | 668 | 462 | 86% | 59 | 256 | 264 | 3% | 3% |
| 2023/24.... | 635 | 452 | 82% | 90 | 255 | 255 | -0,1% | 0.1% |
| 2024/25.... | 453 | 426 | 82% | 41 | 256 | 246 | -4% | 4% |
| 2025/26.... | 617 | 573 | 90% | 75 | (x) | 264 | (x) | (x) |

Sources: Fundecitrus (2015-2016 crop to 2025-2026 crop), CitrusBr (2014-2015 crop), Climatempo
(X) Not applicable

The result of the equation used in the crop estimate is corrected by the application of a correction factor. That is necessary because of variables not accounted for in the calculations, such as harvested fruits that wind up not being used, diverse planting densities that are not considered in the stratification of groves, and losses of trees throughout the crop season caused by eradications, abandonments or deaths. The correction factor of 0.10 applied in this crop is the same used since the 2017-2018 crop, which represents the average of the indexes for the 2015-2016 and 2016-2017 crops estimated by Fundecitrus.

## 3 – TABLES OF DATA

The following tables present the 2025-2026 orange crop forecast per sector, age, bloom and variety. The margin of error of the production estimate in the strata is higher than that of the production estimate in the citrus belt as a whole. Possible subsequent variations in fruit size and fruit drop rate may change the forecast and will be accounted for throughout the crop season by ongoing field monitoring for production estimate updates.

**Table 8 – 2025-2026 Orange crop forecast by sector**

| Sector | Mature groves area | Average density[1] of mature groves | Bearing trees | Fruit per tree at stripping[2] | 2025-2026 Orange crop forecast | | |
|---|---|---|---|---|---|---|---|
| | | | | | Per tree | Per hectare | Total |
| | (hectares) | (trees/ hectare) | (1,000 trees) | (number) | (boxes/ tree) | (boxes/ hectare) | (1,000,000 boxes) |
| North..... | 85,514 | 503 | 41,869.41 | 601 | 1.82 | 889 | 76.03 |
| Northwest..... | 35,268 | 475 | 16,345.28 | 413 | 1.19 | 552 | 19.46 |
| Central..... | 100,033 | 548 | 52,675.01 | 585 | 1.57 | 826 | 82.61 |
| South..... | 61,407 | 534 | 31,225.50 | 597 | 1.55 | 788 | 48.36 |
| Southwest..... | 79,938 | 523 | 40,595.53 | 771 | 2.17 | 1,103 | 88.14 |
| **Total.....** | **362,160** | **522** | **182,710.73** | **617** | **1.72** | **869** | **314.60** |

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2023 and 2024 resets)
[2] Weighted average per total stratum fruit

**Table 9 – 2025-2026 Orange crop forecast by tree age group (continues below)**

| Age of plots | Mature groves area | Average density[1] of mature groves | Bearing trees by age group | | | | Fruit per tree at stripping by age group of trees[2] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3 – 5 years | 6 – 10 years | Over 10 years | Total | 3 – 5 years | 6 – 10 years | Over 10 years | Total |
| | (hectares) | (trees/ hectare) | (1,000 trees) | (1,000 trees) | (1,000 trees) | (1,000 trees) | (fruit/ tree) | (fruit/ tree) | (fruit/ tree) | (fruit/ tree) |
| 3 – 5 years..... | 65,583 | 577 | 34,896.29 | - | - | 34,896.29 | 274 | - | - | 274 |
| 6 – 10 years..... | 70,702 | 616 | 1,941.58 | 40,002.57 | - | 41,944.15 | 207 | 478 | - | 466 |
| Over 10 years….. | 225,875 | 477 | 2,503.21 | 7,005.39 | 96,361.69 | 105,870.29 | 164 | 365 | 836 | 789 |
| **Total.....** | **362,160** | **522** | **39,341.08** | **47,007.96** | **96,361.69** | **182,710.73** | **264** | **462** | **836** | **617** |

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2023 and 2024 resets)
[2] Weighted average per total stratum fruit

**Table 9 – 2025-2026 Orange crop forecast by tree age group (continued)**

| Plots age | 2025-2026 Orange crop forecast by tree age group | | | | 2025-2026 Orange crop forecast by tree age group | | | |
|---|---|---|---|---|---|---|---|---|
| | 3 – 5 years | 6 – 10 years | Over 10 years | Total | 3 – 5 years | 6 – 10 years | Over 10 years | Total |
| | (boxes/ tree) | (boxes/ tree) | (boxes/ tree) | (boxes/ tree) | (1,000,000 boxes) | (1,000,000 boxes) | (1,000,000 boxes) | (1,000,000 boxes) |
| 3 – 5 years..... | 0.76 | - | - | 0.76 | 26.45 | - | - | 26.45 |
| 6 – 10 years..... | 0.55 | 1.32 | - | 1.29 | 1.07 | 52.98 | - | 54.05 |
| Over 10 years….. | 0.46 | 1.00 | 2.34 | 2.21 | 1.14 | 7.04 | 225.92 | 234.10 |
| **Total.....** | **0.73** | **1.28** | **2.34** | **1.72** | **28.66** | **60.02** | **225.92** | **314.60** |

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2023 and 2024 resets)

**Table 10 – 2025-2026 Orange crop forecast by bloom**

| Bloom | 2024-2025 Orange crop forecast | Percentage of the orange crop forecast by bloom |
|---|---|---|
| | (1,000,000 boxes) | (percentage) |
| 1st..... | 65.53 | 20.7% |
| 2nd ..... | 219.10 | 69.6% |
| 3rd..... | 22.25 | 7.2% |
| 4th ..... | 7.72 | 2.5% |
| **Total.....** | **314.60** | **100.00%** |

**Table 11 – 2025-2026 Orange crop forecast in percentage of bloom by region**

| Bloom | North[1] | | | | Northwest[2] | | | Central[3] | | | | South[4] | | | Sothwest[5] | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TMG | BEB | ALT | **AVE**[6] | VOT | SJO | **AVE**[6] | MAT | DUA | BRO | **AVE**[6] | PFE | LIM | **AVE**[6] | AVA | ITG | **AVE**[6] | |
| | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) |
| 1st..... | 45.9 | 25.2 | 1.9 | **29.2** | 29.4 | 28.8 | **29.0** | 22.2 | 14.8 | 6.3 | **16.2** | 17.4 | 17.0 | **17.2** | 16.8 | 23.1 | **18.7** | **20.7** |
| 2nd..... | 49.8 | 67.3 | 90.8 | **64.5** | 50.0 | 65.5 | **59.2** | 70.4 | 77.5 | 78.5 | **75.4** | 69.1 | 65.7 | **67.7** | 72.0 | 69.4 | **71.2** | **69.6** |
| 3rd..... | 3.9 | 5.9 | 6.2 | **5.3** | 11.4 | 5.1 | **7.7** | 5.6 | 6.2 | 10.7 | **6.4** | 8.5 | 8.9 | **8.7** | 10.0 | 5.0 | **8.4** | **7.2** |
| 4th..... | 0.4 | 1.5 | 1.1 | **1.1** | 9.1 | 0.7 | **4.1** | 1.8 | 1.6 | 4.5 | **1.9** | 5.0 | 8.4 | **6.4** | 1.2 | 2.5 | **1.6** | **2.5** |

[1] North: TMG – Triângulo Mineiro, BEB – Bebedouro, ALT – Altinópolis
[2] Northwest: VOT – Votuporanga, SJO – São José do Rio Preto
[3] Central: MAT – Matão, DUA – Duartina, BRO – Brotas
[4] South: PFE – Porto Ferreira, LIM – Limeira
[5] Southwest: AVA – Avaré, ITG – Itapetininga
[6] AVE – Weighted average per total stratum fruit

**Table 12 – 2025-2026 Orange crop forecast and its components by variety group**

| Variety group | Mature groves area | Average density[1] of mature groves | Components of May/2025 forecast | | | | 2025-2026 crop forecast | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Bearing trees | Fruit per tree at stripping[2] | Fruit estimated per box | Estimated drop rate | Per tree | Per hectare | Total |
| | (hectares) | (trees/ hectare) | (1,000 trees) | (number) | (number) | (%) | (boxes/ tree) | (boxes/ hectare) | (1,000,000 boxes) |
| **Early:** | | | | | | | | | |
| Hamlin, Westin and Rubi..... | 58,160 | 489 | 27,322.37 | 692 | 305 | 11.00 | 1.81 | 851 | 49.48 |
| **Other early:** | | | | | | | | | |
| Valencia Americana, Seleta, Pineapple and Alvorada…… | 22,895 | 573 | 12,477.78 | 526 | 259 | 12.60 | 1.59 | 867 | 19.86 |
| **Mid-season:** | | | | | | | | | |
| Pera..... | 129,076 | 539 | 67,129.82 | 498 | 265 | 20.00 | 1.35 | 701 | 90.51 |
| **Late:** | | | | | | | | | |
| Valencia and Folha Murcha... | 114,310 | 512 | 56,767.51 | 695 | 235 | 23.90 | 2.02 | 1.002 | 114.58 |
| Natal..... | 37,719 | 517 | 19,013.25 | 753 | 242 | 24.30 | 2.11 | 1.065 | 40.17 |
| **Total.....** | **362,160** | **522** | **182,710.73** | **617** | **258** | **20.00** | **1.72** | **869** | **314.60** |

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2023 and 2024 resets)
[2] Weighted average per total stratum fruit

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