2024-2025

TREE INVENTORY AND ORANGE CROP FORECAST

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

Fundecitrus
SCIENCE AND SUSTAINABILITY IN CITRICULTURE

PES
Crop Forecast Survey

markestrat
Group

TREE INVENTORY AND 2024-2025 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

SECTION I

TREE INVENTORY

SECTION II

CROP FORECAST

"Because I am the size of what I see... and not the size of my height."
Fernando Pessoa

Exactly ten years ago,
All of us decided to look at citriculture from a different perspective:
What if our activity were even more democratic,
More transparent, more professional,
More sustainable?
Questions set dreams in motion.
Dreams fly high. Feet are kept on the ground.

TREE INVENTORY

of the São Paulo and West-Southwest Minas Gerais citrus belt

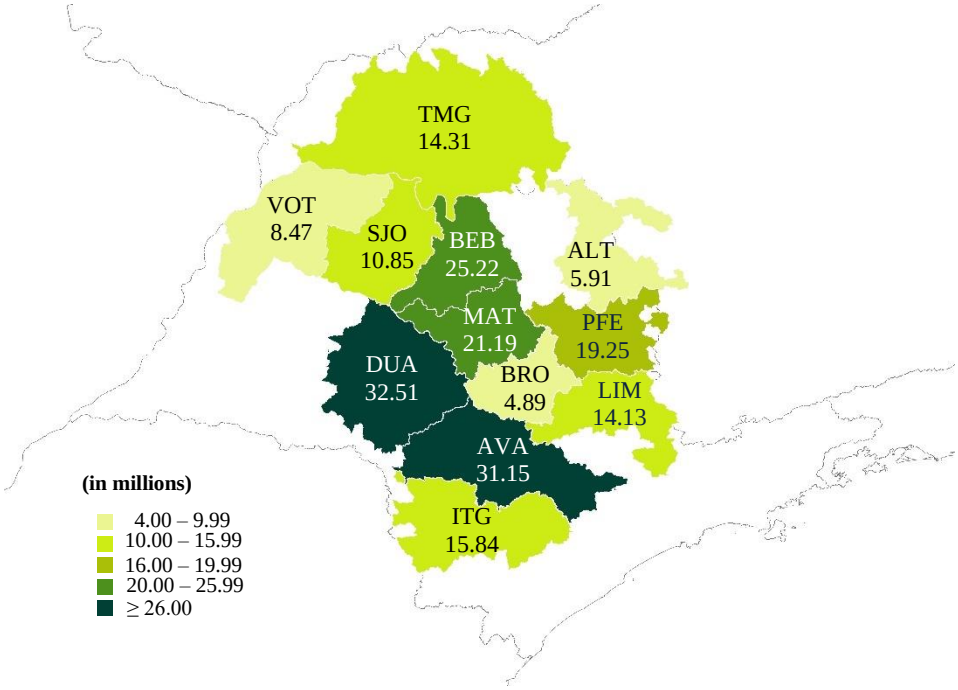
SNAPSHOT OF GROVES IN MARCH 2024

10 years

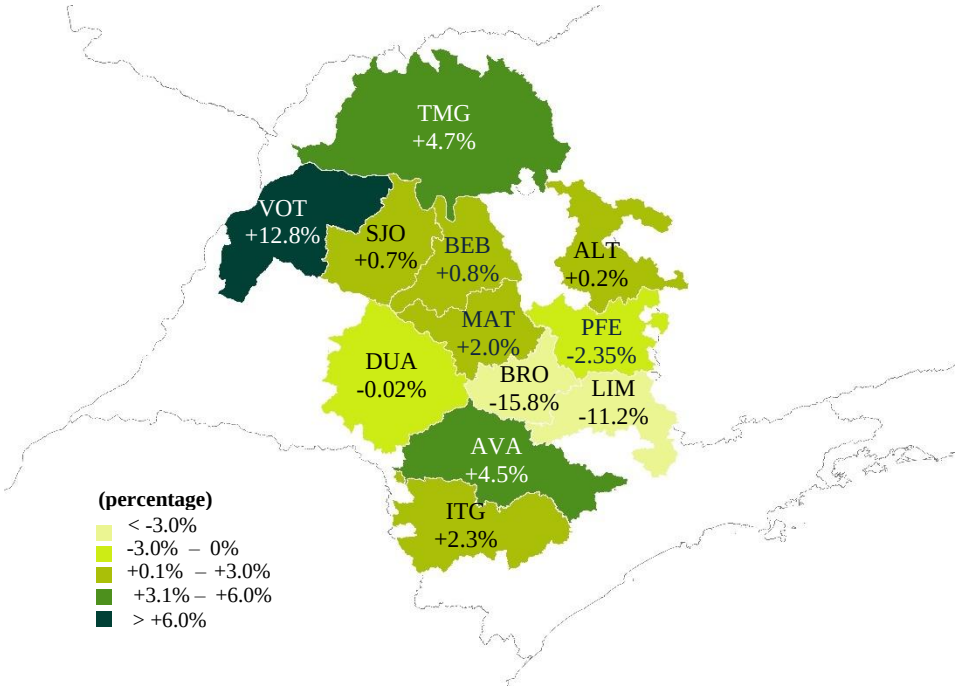
PES

Crop Forecast Survey

TOTAL ORANGE TREES[1] BY REGION
Total: 203.74 million trees



VARIATION IN TOTAL ORANGE TREES BETWEEN THE 2023 AND 2024 INVENTORIES



Abbreviation	Region	Total orange trees[1]			Abbreviation	Region	Total orange trees[1]		
		2023 Inventory[2]	2024 Inventory[2]	Variation			2023 Inventory[2]	2024 Inventory[2]	Variation
		(millions)	(millions)	(%)			(millions)	(millions)	(%)
VOT	Votuporanga.....	7.51	8.47	12.78%	SJO	S. J. do Rio Preto	10.78	10.85	0.67%
TMG	Triâng. Mineiro..	13.67	14.31	4.73%	ALT	Altinópolis.....	5.89	5.91	0.25%
AVA	Avaré.....	29.80	31.15	4.54%	DUA	Duartina.....	32.52	32.51	-0.02%
ITG	Itapetininga.....	15.48	15.84	2.31%	PFE	P.Ferreira.....	19.71	19.25	-2.35%
MAT	Matão.....	20.77	21.19	2.00%	LIM	Limeira.....	15.91	14.13	-11.17%
BEB	Bebedouro.....	25.02	25.22	0.79%	BRO	Brotas.....	5.81	4.89	-15.78%

[1] Varieties: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, João Nunes, Valencia, Valencia Folha Murcha and Natal

[2] Snapshot of groves in March

TREE INVENTORY OF THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT– SNAPSHOT OF GROVES IN MARCH 2024

Published on Jun10, 2024[1]

Publication Schedule

2024-2025 Crop Year
March 2024 tree inventory: June 10, 2024
Crop forecast: May 10, 2024
1st Crop forecast update: September 10, 2024
2nd Crop forecast update: December 10, 2024
3rd Crop forecast update: February 10, 2025
Final crop forecast: April 10, 2025

Production forecasts are subject to uncertainty, especially due to climatic conditions, which may not materialize as predicted. For that reason, the forecast is updated throughout the crop year based on data on early fruit drop and fruit size obtained through surveys carried out by Fundecitrus. Hence, using the most recent publication available on the website www.fundecitrus.com.br is recommended. Moreover, in order to meet the demands of the citrus sector and the press, we reserve the right to expand and deepen the information previously published.

[1] Year 10 – Nº 1 – June 10, 2024 (Portuguese only)

Performed by FUNDECITRUS in cooperation with MARKESTRAT and full professors from FEA-RP/USP and the department of Math and Science of FCAV/Unesp

TREE INVENTORY OF THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

SNAPSHOT OF GROVES IN MARCH 2024

Fundecitrus
Araraquara, São Paulo
2024

Av. Adhemar Pereira de Barros, 201 | Vila Melhado | ZIP Code: 14807-040 | Araraquara | São Paulo | Brazil
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Lourival Carmo Monaco
Fundecitrus President

Antonio Juliano Ayres
Fundecitrus General Manager

Marcos Fava Neves
PES Political-Institutional and Methodological Coordinator, part-time Full Professor at FEA-RP/USP and EAESP/FGV

Vinícius Gustavo Trombin
PES Executive Coordinator linked to Markestrat

José Carlos Barbosa
Methodology Analyst and (Voluntary) Full Professor at the department of engineering, math and science of FCAV/Unesp

Fernando Alvarinho Delgado
PES Supervisor/Fundecitrus

Roseli Reina
PES Specialist/Fundecitrus

Eduardo Cassettari Monteferrante
PhD student ESALQ/USP - Fundecitrus Scholarship Holder

Technical Committee
Bruno Gustavo Zacarin, project manager and fruit BI at Citrosuco
Edson Luis Rigotto, raw material director at Citrosuco
Ezequiel Castilho, agroindustrial production director at Agroterenas
Franklin Behlau, researcher at Fundecitrus
Ivan Brandimarte, agricultural director at Cambuhy
Jackeline Carvalho, global research manager at Louis Dreyfus Company
Luiz Fernando Baenninger Catapani, citrus grower
Marcell da Costa Ferreira Gameiro, raw material and product purchasing manager at Citrosuco
Vinícius Fregonesi, researcher at Louis Dreyfus Company

PES Survey Agents

Fundecitrus	**WCA**	**WCA**	**WCA**
Alexandre Antônio Lino	Alex Silva	Fernando Ribeiro	Luciano Neto
Cléber Angelo Albino	Alexandre Morellato	Flavio Junior	Luis Brito
Guilherme Barbosa	Alexssandro Silva	João Ferri	Quezia Cruz
Joferson Vermelho	Ana Paula Nunes	João Rochel	Robinsom Gomes
Marcos Barbosa	Bruno Arantes	Jose Gonçalves	Thiago Mercurio
Wladimir Pereira	Bruno Guimarães	Kleber Barreto	Walaes Santiago
	Claiton Oliveira	Leonidas Benassi	Willian Santiago
	Decio Junior	Lucas Lima	

FOREWORDS

Dr. Lourival Carmo Monaco

Fundecitrus President and citrus grower

A decade ago, the mission given to Fundecitrus by citrus growers was to obtain reliable production data and understand the profile of groves in each region, incorporating details of edaphoclimatic variations, to optimize the citrus business. Based on international experience and the methodology developed by Markestrat, the Deliberative Council approved the Crop Forecast Survey (PES) project. This project aimed to provide reliable and transparent data for all links in the production chain, which would allow monitoring production and support Fundecitrus' strategic planning. These ten years have been positive, with the release of the PES becoming an essential event in citrus farming. Over the decade, the cultivated area of the main orange varieties fell by approximately 10%, while the number of trees increased by about 3%. The average planting density increased from 459 to 524 trees per hectare. The sector demonstrated continuous modernization, with emphasis on the growth of irrigated groves from 25% to 36%. Currently, the professionalism of the team and the technical committee has increased confidence in the PES. The tool provides a comprehensive view of groves in different regions, encouraging stakeholders to use the data to advance citrus farming. The incorporation of information on diseases, pests, and cultivars highlights the need to expand genetic variability to minimize risks and keep the market supplied. Production and productivity reflect a perennial crop subject to weather conditions and continuous renewal requirements. Weather events negatively impacted the 2016-2017, 2020-2021, 2021-2022, 2023-2024 harvests and the one forecast for 2024-2025. High temperatures, drought, frost, fruit drop, and hormonal imbalance are challenges that need to be overcome to maintain sustainability and meet market demand. Precipitation in 2023-2024 was 963 mm on average between the regions of the citrus belt, 30% below the historical average (1,306 mm), indicating the importance of crossing climate forecasts with agricultural management. The evolution of the PES should include the expansion of the database, adding variables that allow for better detailing of crops and climate risks, as well as the quality of raw materials. Knowing the profile of groves, location, climate, soil, age, spacing, pests, and diseases is essential for strategic planning. Tools such as Artificial Intelligence can help use these variables to improve the productivity and sustainability of citrus farming in new and traditional growing areas.

Antonio Juliano Ayres

Fundecitrus General Manager

From time to time, the citrus industry undergoes significant revolutions. The Crop Forecast Survey (PES) and the Tree Inventory by Fundecitrus have been at the heart of the most substantial transformation in the citrus industry over the past decade. This is particularly true in strategic planning, which has become even more crucial due to the threat of greening, the most feared disease in the global citrus industry. Besides standardization and transparency, these tools enhance the sector's governance, acting as highly efficient mechanisms aligned with the global public interest. PES and the Tree Inventory have become indispensable for the citrus grower's performance in the short, medium, and long term. They also support essential work based on information generated by these surveys, such as the Fundecitrus Disease Survey and studies developed by the institution in partnership with Embrapa, funded by Innocent Drinks. These studies have allowed us to understand the carbon stored in our groves and quantify the fauna in citrus areas, enabling continuous improvements to make Brazilian citrus farming increasingly sustainable.

Marcos Fava Neves

PES Political-Institutional and Methodological Coordinator, part-time Full Professor at FEA-RP/USP, advisor to Markestrat and other organizations

It is with great joy and pride that we present the tenth edition of the Crop Forecast Survey (PES). This important milestone reflects a decade of dedication and commitment by Fundecitrus in partnership with Markestrat, FEA-RP/USP, and FCAV/UNESP. Over these ten years, I am sure that our report has represented a valuable tool for farmers, investors, and everyone involved in the orange production chain.

The PES analyses aim to deliver accurate data that allows the best decision-making for citrus sector agents in the face of great challenges. The main current challenge is the incidence of greening, which is compromising the supply of oranges in several countries and causing economic losses, which highlights the importance of management strategies and effective planning to combat it at the biological and market levels. With each edition, PES seeks to reinvent itself and improve research methods to deliver updated information and enable valuable insights for its readers. This year, the information that further enriches our report is the citrus belt fauna survey. The inclusion of this tool offers a holistic view of the production area, delivering ecological aspects along with economic and productive ones, which can be explored by the industry in food marketing to demonstrate the sector's sustainability to the world! We thank all the collaborators, researchers, and partners who contributed to the realization of this special 10-year report. We remain committed to excellence and the union of all for the success of Brazilian citrus farming. Here's to the next 10 years! Enjoy reading and have a good harvest, everyone!

Vinícius Gustavo Trombin
Executive Coordinator of PES and partner at Markestrat

It is gratifying to reflect on the last 10 years and realize how much the Crop Forecast Survey has evolved. The basis of everything was the incessant search for continuous improvement, scientific rigor, and the dedication of several professionals, always with total respect for competition rules and compliance. In a decade, the crop forecasting method has become even more accurate, grower engagement has increased, and we have gained a deeper understanding of production. We decided to go beyond immediate horizons, seeking synergies that would lead us to an even more detailed understanding of the sector. It was this quest for knowledge that revealed the 160,000 hectares dedicated to environmental conservation on citrus properties. Another milestone of these 10 years was the study carried out in partnership with Embrapa, concluded last year, which showed that citrus farming has already contributed to removing from the atmosphere a volume of carbon dioxide equivalent to eight years of emissions from the city of Sao Paulo, the fourth largest in the world. This year, again with Embrapa, we proved that citrus properties are rich in biodiversity, sheltering 314 species of wild animals, including 268 birds, 28 mammals, and 18 reptiles and amphibians, and guaranteeing sustainability to several populations, serving as shelter, breeding site, and feeding. The richness of wildlife in citrus farming, which was previously only empirical knowledge of producers, is now supported by scientific data. Orange juice consumers around the world can rest assured that orange production and the environment coexist in harmony in the citrus belt. By choosing Brazilian orange juice, in addition to opting for a healthy food, they are also contributing to the preservation of nature!

José Carlos Barbosa
Methodological Analyst at PES and (Voluntary) Full Professor at FCAV/Unesp

The Crop Forecast Survey is being carried out for the tenth year by Fundecitrus. This year, we increased the sample size for estimating the number of fruits per tree due to the increased variability between plants, mainly due to the increased incidence of HLB in the groves, returning to the number of samples that were used before the Covid-19 pandemic, aiming to increase the accuracy and reliability of the estimates. The methodologies incorporated in 2022, projecting fruit weight in harvested plots using the weight growth rate, and projecting drop by variety in each sector, due to the large variation in the incidence of HLB between sectors, improved the estimates of weight and fruit drop. This year, new challenges were facedbecause of the weather on flowering and fruit set, resulting in the lowest crop estimate of these 10 years that we have carried out the Crop Forecast Survey. Once again, Fundecitrus delivers to citrus growers, juice factories and other agents of the productive sector a tree inventory and a crop estimate carried out with the greatest possible rigor and reliability.

ACKNOWLEDGEMENTS

We would like to express our gratitude to all those involved who collaborated directly and indirectly to carry out this research. Their valuable support was essential for us to obtain impartial and relevant results, benefiting the entire production chain.

We especially want to highlight the citrus growers who generously provided data on their citrus production areas, trusting Fundecitrus to maintain complete confidentiality of individual information and respect the privacy of personal data.

We also thank the São Paulo State Department of Agriculture and Supply for sharing the information on the amount of nursery citrus plants marketed under the permit to transit plants in 2023.

We cannot fail to mention the orange juice companies Citrosuco, Cutrale and Louis Dreyfus for allowing their groves to be included in our field research and for sharing information on the average size of the fruits received for industrial processing over the past crop season.

Special thanks also to the Technical Committee, whose informed recommendations enriched our results and improved our surveys.

We want to express our gratitude to Fundecitrus employees who work in various areas supporting the work of the Crop Forecast Survey, and to the outsourced teams that have tirelessly dedicated themselves to this challenging project. With exceptional commitment and skill, they carried out the surveys with the highest quality and strictly adhered to the established deadlines.

We thank Embrapa, with whom we quantified carbon stocks in production and conservation areas and conducted the survey of wildlife on citrus farms. We also want to thank Innocent Drinks, who generously provided the necessary financial resources for the execution of this project, through the Farmer Innovation Fund, which supports initiatives aimed at reducing carbon in agriculture and inspires other farmers to adopt similar practices. We also want to thank the "Citrus Grower Friendly Companies". Created in 2015 by Fundecitrus, the seal brings together companies linked to the citrus chain that encourage sustainability actions for pest and disease control, such as joint management between citrus growers and phytosanitary education.

Last but not least, we would like to thank the farms that kindly allowed us to use their properties as the setting for the production of this year's PES institutional video.

Finally, we want to express our deep gratitude to the Fundecitrus Board of Directors, whose support for this research based on measurable indicators reinforces the importance of the value of data, transparency and democratization.

SUMMARY

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1 – INTRODUCTION

This publication presents the results of the ninth survey on the tree inventory of São Paulo and west-southwest Minas Gerais citrus belt carried out by Fundecitrus in cooperation with Markestrat, full professors from FEA-RP/USP and the department of Math and Science of FCAV/Unesp from Janurary 2021 to May 2024.

Fundecitrus has carried out, starting from 2014 – year it took over the responsibility of performing a public and reliable forecast of the crop and the profile of groves – all activities involving field data collection, laboratory work and information processing. Since then, (Voluntary) Professor José Carlos Barbosa, from the department of Math and Science at FCAV/Unesp has been in charge of analyzing methodologies. Markestrat, represented by Vinícius Gustavo Trombin, is responsible for the survey governance, with professor Marcos Fava Neves of FEA-RP/USP and also linked to Markestrat serving as the institutional and methodological coordinator.

One of the governance measures adopted at the time of survey implementation that is still in force is the follow-up on activities being performed, which is done by a technical committee comprising citrus growers, representatives of orange juice companies, academics, as well as Fundecitrus researchers and supervisors. The committee's objective is to monitor the performance of field activities and propose solutions toward operational improvements.

Results from this study were obtained all along the survey, then compiled and restricted until the crop announcement date to the following professionals: Antonio Juliano Ayres (Fundecitrus general manager); Fernando Alvarinho Delgado (PES supervisor) and Roseli Reina (PES Specialist); Vinícius Gustavo Trombin (executive coordinator linked to Markestrat); Marcos Fava Neves (institutional and methodological coordinator linked to FEA-RP/USP and Markestrat); and José Carlos Barbosa (methodology analyst, working as a volunteer linked to the department of Math and Science of FCAV/Unesp). All of them are subject to confidentiality obligations with regard to PES information before its announcement is made public, according to agreements signed between each of them and Fundecitrus.

As for antitrust practices, all of them are complied with through the adoption of measures necessary to prevent any communication or sharing of individual information with a competitive content among the orange juice companies that collaborate with Fundecitrus in this project or between these and citrus growers.

1.1 – BUDGET

The Fundecitrus Management Board decided on the execution of this research having approved the budget of R$ 7.03 million for the 2023/24 cycle, of which 60% refer to expenses with the entire technical and administrative staff and labor charges; 35%, to expenses with travel, lodging, meals and maintenance; and the other 5% to do with investments that include satellite images, softwares lincenses, computer equipment, materials, dispute compensation and others. This budget provides financial support for the implementation of the planned activities until May 31, 2024. After that date, the budget for the financial year from June 2024 to May 2025 shall apply.

1.2 – GENERAL FIGURES

- **103 professionals directly involved in the survey**

  Field personnel: 23 agents, 8 drivers and 58 assistants;
  Laboratory personnel: 14 assistants;
  Office personnel: 1 coordinator, 1 supervisor, 1 specialist, and 1 PhD student.

- **More than 426 thousand kilometers covered**
  Accumulated distance in travelling to count 5% of orange plots: 190,402 km;
  Accumulated distance in travelling to fruit stripping: 235,939 km.
- **Approximately 4,700 plots visited.**

1.3 – DEFINITION OF TECHNICAL TERMS

Citrus belt: region in Brazil with the largest concentration of commercial orange producing farms, encompassing cities in the state of São Paulo as well as some located in the west-southwest state of Minas Gerais.

Farm: rural estate with continuous area of land (physical interruptions may be present such as roads and water streams) under the control of one owner, with more than 200 citrus trees, with the possibility of there being areas in the same estate that are allocated for different purposes such as growing other crops or raising livestock.

Plot: farm fraction or portion separated by lanes, roads, tracks or any other passageway that is usually wider than the spacing between planting rows.

Non-bearing tree: tree planted in 2022 and 2023 that has not yet entered into production.

Bearing tree: tree planted in 2021 and in previous years.

Dead tree: defoliated tree where at least 75% of branches are dry, with no evidence of recovery.

Vacancy: empty space on the ground within the planting row that should be occupied by a citrus tree, according to the tree spacing defined when the plot was planted.

Planting hole: central spot in the space occupied by each tree (plant-area) where the earth is dug out and a nursery plant is set; spot in the planting row where there is a potential tree.

Young grove: plot planted in 2022 and 2023.

Mature grove: plot planted in 2021 and in previous years.

Eradicated grove: area where citrus trees were removed, which can refer to the whole plot or to part of it.

Box: one orange box is equivalent to 40.8 kg or 90 lb.

Hectare: one hectare is equivalent to 2.4710439 US acres.

Kilometer: one kilometer is equivalent to 0.621371192 miles.

2 – METHODOLOGICAL PROCEDURES

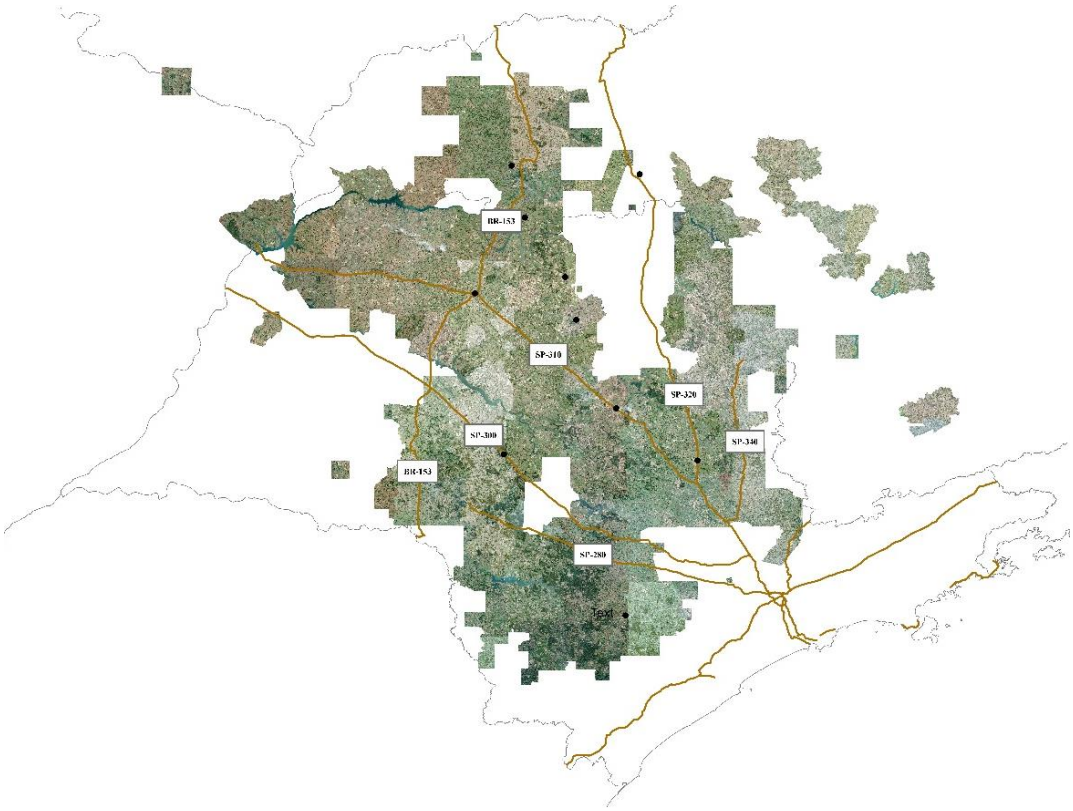
2.1 – OBJECTIVE METHOD FOR MAPPING CITRUS GROVES

The georeferenced mapping, performed for the first time when the 2015 inventory was taken and renewed in 2018, has been updated in the 2022 inventory. In all of them, the method employed is objective and aims at producing and conveying quality technical information with scientific rigor and the least possibility of subjective interference.
The mapping method can be divided into four steps, as follows: (1) collection of satellite images, (2) data collection on farms, (3) checking data in the office and in the field, (4) organizing data.

COLLECTION OF SATELLITE IMAGES

New high-definition images were obtained by satellites SPOT 6&7 from the European operator Airbus Defence and Space between May 1 and August 13, 2021. Such months were chosen due to favorable meteorological conditions, with lower incidence of clouds and lower rainfall, which allowed for a better contrast between vegetated and bare soil areas such as roads and tracks. Scenes covered 160,000 km^2 in 419 cities in the state of São Paulo, Minas Gerais, Goiás and Mato Grosso do Sul. This coverage area is represented in Figure 1.

Figure 1 – Area covered by new satellite images including regions of São Paulo, Minas Gerais, Goiás e Mato Grosso do Sul



Spatial resolution for scenes is 1.50 meters per pixel, which provides a fairly sharp view of plots. Canopy hues and diameter seen in the images made it possible to differentiate between mature groves from those still in early development and facilitated discerning citrus plantings from those of other fruit also significantly present in the citrus belt, such as mango, avocado and guava. Furthermore, images are orthorectified, which allowed precise measurements to be made, both linear ones in the case of spacing between rows or plants and those used in the calculation of the area of plots.

Images were georeferenced into geographic coordinates with Datum WGS 84, enabling their synchronicity to GPS for assisted navigation to farms and outlines of groves that had not been caught in images at the time they were taken. Mapping of totally or partially eradicated plots was also facilitated by this technology.

DATA COLLECTION ON FARMS

Satellite images were made available to survey agents in August 2021, and so were the outlines of plots identified in the previous mapping, which was overlaid on the images to ease visualization of spots to be visited for *in loco* data collection. No information relative to a plot other than its outline was supplied to survey agents, which required a new collection of all data: variety, planting year, spacing, visual aspect of plants and irrigation system, if any.

Before going to the field, survey agents visually inspected satellite images to identify younger groves planted from 2018 to 2021 that should be included in the visiting route and registered with the use of geoprocessing and data collection software. Data was entered on electronic forms that were specifically designed for that. With the use of GPS signaling the route on top of digital images of a region, survey agents travelled to cities to be scanned for location of groves.

The standard procedure to begin activities on any farm included disinfecting vehicles, personnel and equipment as well as obtaining a permit to enter and move through citrus plots before data could be collected in each of them – a total of 90% of the mapped area, including all oranges, had new data collected in this manner.

On farms corresponding to 7% of the mapped area, entry was not permitted but complete data on groves was supplied and inserted in the system to be used as such for calculations in the inventory.

When the owner or responsible was not found after several attempts or when the authorization was not granted, the survey was done remotely, if the citrus plots identified from the image could be viewed externally from the farm, or by statistical inference, based on the average data of their region, which occurred in 1% of the mapped area. But, when possible, their data was sought in the previous mapping, which occurred in 2% of the mapped area.

Criteria for outlining new plantings were the same used in 2018, that is, areas relative to any farm structures within plots, such as farmhouses, dams or sheds for the distribution of agricultural inputs, were not accounted for, so the net areas for each plot were obtained, i.e., only areas occupied by plants, automatically calculated by the geoprocessing software[1]. In case plots underwent changes after the 2018 mapping, their outlines were redrawn to correspond to their current area.

Planting configuration data (spatial tree arrangement) was also collected again. Hence, spacing was measured between rows and between plants located in the center of plots. To determine the spacing between rows, the distance between three trees in parallel rows was measured, whereas to determine the spacing between plants, 11 consecutive planting holes in the same row were measured.

Information on the variety and planting year for each plot was requested from the grower or the person in charge of the farm. In many cases the identification was made in the field by the agent themselves, upon considering a series of factors such as characteristics of leaves, shape of the canopy, presence and shape of fruit, tree size, use of dwarfing rootstock or not, and trunk width, among others.

The field visit identified plots that were abandoned or eradicated after the 2018 inventory. Plots already identified as such in the mapping that year were revisited for data update.

[1] Procedures described as of this point apply only to orange. For other citrus including acid limes, lemons and tangerines, a simplified mapping methodology was used.

Finally, the outline drawing of all citrus farms and the collection of registration information made it possible to accurately update the number of farms.

Information storage and security

In order to preserve the confidentiality of individualized information, all data collected and entered by agents was encrypted and securely sent through a private network from the agents' work computers to the Fundecitrus server, on a daily base.

Information was transferred to the Fundecitrus Geographic Information System whose database is stored in a secure environment that undergoes continuous improvement to be kept stable along time. This system is accessed by survey agents and supervisors who are part of the survey team through workstations that are not connected to the internet and have blocked entry/exit data ports to render communication with peripheral devices impossible. Access to individualized information is also managed by a login system with permit levels and validated by username and password verification.

According to compliance rules, survey agents should deliver filled out form sheets and any printed information they receive from citrus growers to Fundecitrus. These documents are confidential and are stored in a secured place at Fundecitrus for a period of four years after which they are destroyed. Data collection took place from August 16, 2021 to January 28, 2022. Each survey agent mapped an average of 243 hectares per day.

CHECKING DATA AT THE OFFICE AND IN THE FIELD

After data for all plots in a certain city was collected by agents, it was serially checked to prevent errors that could influence results. Technicians responsible for data processing at the office scanned images again to adjust the drawings of plots and verify if the citrus areas identified as such were mapped in totality by survey agents. Divergences were informed to agents that in turn went back to the cities for checks in the field and registration of farms in case the collected information was confirmed. Newly collected data relative to variety and planting year that differed from the previous registration was audited for validation.

In total, approximately 1,600 orange plots had their data audited *in loco* during mapping. Quality of registration information for plots was also assessed during the plot counting step. Out of roughly 2,500 plots visited in this step, registration errors were found in only 0.5% of them in reference to variety, and in 0.3% in reference to planting year.

DATA ORGANIZATION

After the data collected was submitted to verification, it was grouped and organized in regions, variety group and age group, as presented in item 2.3.

Therefore, data for each plot or farm is not individually published so as to preserve the privacy of each citrus grower.

This volume of data, encrypted and saved in the Fundecitrus Geographic Information System forms the new primary base (2022) that replaces that of 2018 and will now be preserved for use in future updates until a new mapping is performed, which is planned to start in the second half of 2024 for taking the 2025 inventory.

2.2 – OBJECTIVE METHOD FOR TAKING THE ORANGE TREE INVENTORY

For the tree inventory, 5% of plots in the primary base (2022) are drawn to be visited and to have their planting holes classified and quantified. In the 2015 and 2016 inventories, the counting of planting holes was stratified into four categories: bearing, non-bearing, dead trees and vacancies. Starting from the 2017 inventory, the categorizing method has been refined. Each tree present in a plot was classified into up to 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 10 years old). Dead trees and vacancies were also accounted for.

This reformulation provides a detailed overview of the number of trees within a same plot in each age category, since each tree is classified and counted at its own age and no longer considered as old as the original planted grove. For the categorized counting, survey agents are informed by the citrus grower whether a grove has been reset and when. Next, they visit the block and define the visual pattern of the tree for each age category present in the plot, by combining the information provided by the citrus grower with visual evidence such as trunk circumference, height and shape of canopy.

The visual pattern of age is specific to each plot since plant development varies according to management, variety, rootstock and scion genetics, irrigation and edaphoclimatic aspects, among other factors. Therefore, count results represent an approximate tree age and not effectively its chronological age, calculated from its exact planting year. Age base for the plot remains being the year it was planted.

If eradicated plots are found among the drawn plots, their areas are used to calculate the eradication rate of the sample. This eradication rate is applied to the primary base. The same calculation is done in case abandoned plots are found. After those two rates are applied to the primary base, the estimated area occupied by groves in the current crop is determined. This new area multiplied by the tree density of the primary base results in its updated number of planting holes. That number in turn is corrected by the index generated from the comparison between the number of planting holes found in the sample and its respective number in the primary base. Indexes resulting from counts are applied to that number of planting holes, i.e., percentages of trees in each age category, as well as percentages of dead trees and vacancies, aiming at the determination of the new tree inventory.

In years when farm mapping is not performed, as was the case in the development of this 2024 inventory, an estimation is made of plantings that occurred in the years following the mapping.

Hence, all farms in the sample are checked for the presence of groves planted after the survey agent’s visit at the time the previous mapping was performed to form the primary base. An index for new plantings is generated from the rate between the additional area and the respective total area for a variety on the farm. Indexes per variety are extrapolated to the whole region to estimate plantings in the year.

Data used to estimate the number of trees planted is supplied by the animal and plant health protection agency for the state of São Paulo (CDA-SP), of the São Paulo state agriculture and supply department, on the number of citrus nursery plants marketed under the permit to transit plants in the state of São Paulo.

In strata where stratified plantings per region and variety in the field survey show a higher number of trees than that supplied by the CDA-SP, the field survey data prevails. This difference results from the production of nursery plants by growers in nurseries within their farms and allocated to their own use, without the need of a permit to transit plants. Therefore, the final number of nursery plants planted in a given year includes nursery plants produced with and without permits to transit plants. The survey of the amount of these nursery plants is carried out by Fundecitrus from research with the main producers that have nurseries on their farms.

To estimate the area of these groves, the average density stratified by variety and region of these newly implemented plots and mapped during counting is used. From the sum of the number of trees from the CDA-SP with those from the research carried out with such growers, the nursery plants used for resetting are subtracted, thus obtaining the estimate of the number of trees planted in the groves that year.

To calculate the number of nursery plants allocated for resetting, the number of existing non-bearing trees in mature groves (resets) is divided by two, based on the assumption that such resetting occurred at the same rate in the two previous years. The density found in sampling 5% of plots is used to calculate the area occupied by new groves.

In years when mapping is performed, information once estimated for these new plantings is updated to its actual figures.

Lastly, auditing is performed with a plot recount to assess the quality of the data collected.

Plots are randomly drawn for counting through the proportional stratified sampling technique. Stratification variables are: 12 regions, five orange variety groups and four age groups, totaling 240 strata. Counting of groves was concentrated between January 9 and March 01, 2024. Each survey agent counted an average of 17,160 planting holes per day.

2.3 – CITRUS BELT STRATIFICATION

Sectors and regions

The citrus belt is divided into five sectors that in turn are subdivided into 12 regions. Each of them comprises several cities and has been named after one of them for reference. The division considered the soil and climate characteristics and historical aspects related to citriculture development that, in general, resulted in a technological pattern for similar farms in the region. Figure 2 presents sectors and regions of the citrus belt and following that, Chart 1 details the cities and abbreviations used to designate regions.

Figure 2 – Division of the citrus belt into 5 sectors

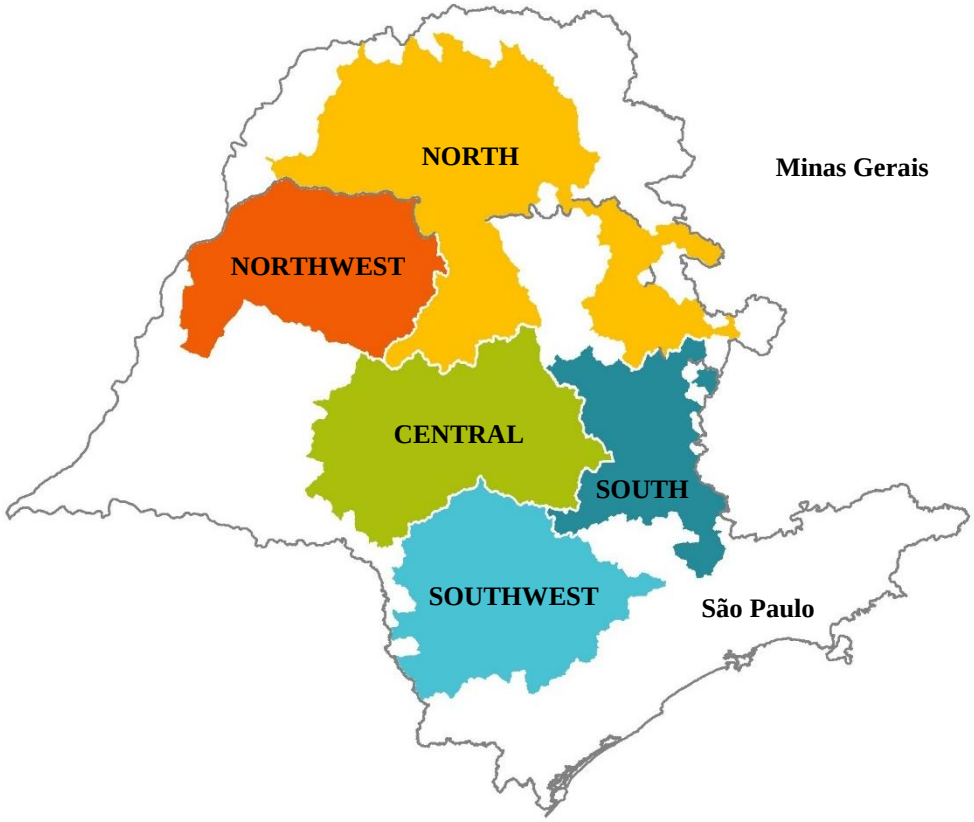
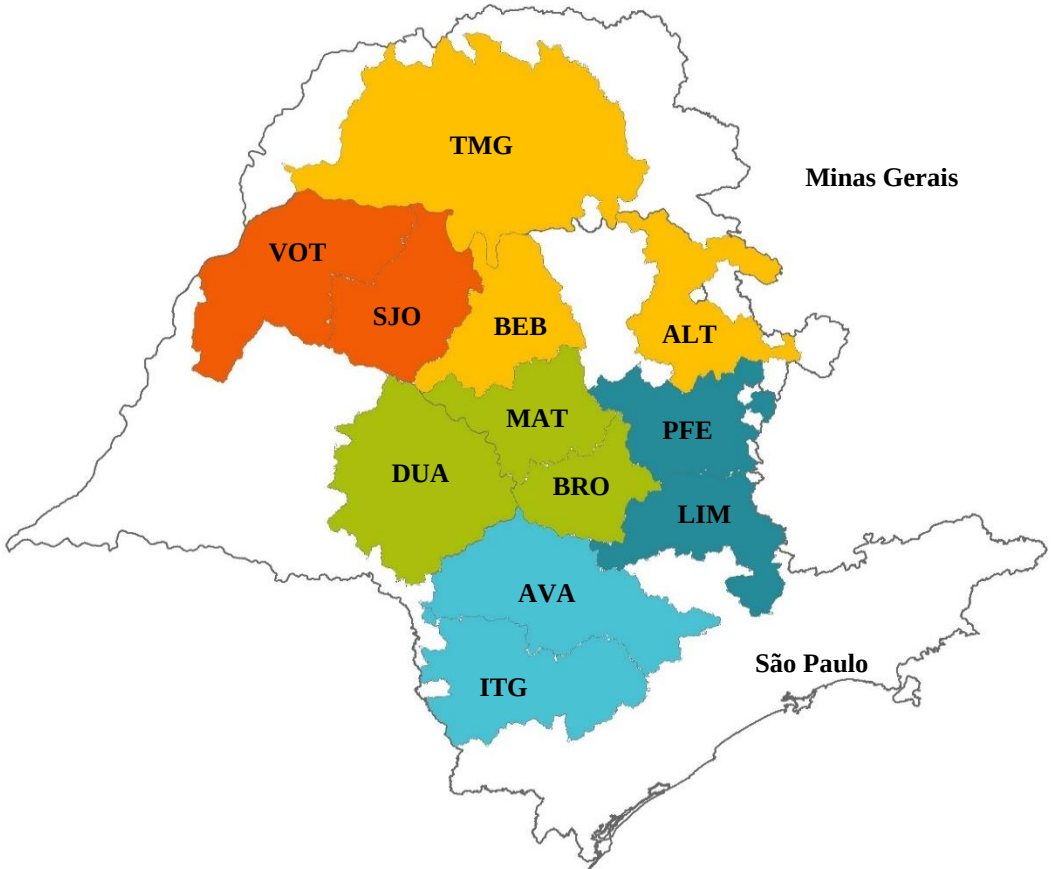


Figure 3 – Division of the citrus belt into 12 regions and respective sectors



NORTH: Triângulo Mineiro (TMG); Bebedouro (BEB); Altinópolis (ALT)
NORTHWEST: Votuporanga (VOT); São José do Rio Preto (SJO)
CENTRAL: Duartina (DUA); Matão (MAT); Brotas (BRO)
SOUTH: Porto Ferreira (PFE); Limeira (LIM)
SOUTHWEST: Avaré (AVA); Itapetininga (ITG)

Chart 1 – Division of cities with citrus farms in sectors and regions

Sector	Region	Cities
North 75 cities	Triângulo Mineiro (TMG) 16 cities	Campina Verde, Campo Florido, Canápolis, Comendador Gomes, Conceição das Alagoas, Frutal, Gurinhatã, Itapagipe, Ituiutaba, Iturama, Monte Alegre de Minas, Planura, Prata, São Francisco de Sales, Uberaba, Uberlândia
	Bebedouro (BEB) 36 cities	Ariranha, Barretos, Bebedouro, Cajobi, Catanduva, Catiguá, Colina, Colômbia, Elisiário, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Jaborandi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Palmares Paulista, Paraíso, Pindorama, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiuva, Taquaral, Terra Roxa, Uchoa, Urupês, Viradouro, Vista Alegre do Alto
	Altinópolis (ALT) 23 cities	Alterosa, Altinópolis, Batatais, Brodowski, Cajuru, Cassia dos Coqueiros, Cristais Paulista, Delfinópolis, Fortaleza de Minas, Franca, Ibiraci, Igarapava, Jacuí, Jeriquara, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Sacramento, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso, São Tomás de Aquino
Northwest 89 cities	Votuporanga (VOT) 54 cities	Alvares Florence, Américo de Campos, Andradina, Aparecida d'Oeste, Aspásia, Auriflama, Cardoso, Dirce Reis, Dolcinópolis, Estrela d'Oeste, Fernandópolis, General Salgado, Guaraçaí, Guarani d'Oeste, Guzolândia, Indiaporã, Jales, Macedônia, Marinópolis, Meridiano, Mesópolis, Mira Estrela, Mirandópolis, Murutinga do Sul, Nova Canaã Paulista, Ouroeste, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pereira Barreto, Pontalinda, Pontes Gestal, Populina, Riolândia, Rubineia, Santa Albertina, Santa Clara d'Oeste, Santa Fé do Sul, Santa Rita d'Oeste, Santa Salete, Santana da Ponte Pensa, Santo Antônio do Aracanguá, São Francisco, São João das Duas Pontes, São João de Iracema, Sud Mennucci, Suzanápolis
	São José do Rio Preto (SJO) 35 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Icem, Ipiguá, Jaci, José Bonifácio, Macaubal, Magda, Mendonça, Mirassol, Mirassolândia, Monte Aprazível, Neves Paulista, Nhandeara, Nipoã, Nova Aliança, Nova Granada, Onda Verde, Orindiúva, Palestina, Paulo de Faria, Planalto, Poloni, Potirendaba, São José do Rio Preto, Sebastianópolis do Sul, Tanabi,6 Ubarana, Zacarias
Central 76 cities	Matão (MAT) 21 cities	Américo Brasiliense, Araraquara, Bariri, Boa Esperança do Sul, Borborema, Candido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itaju, Itápolis, Jaboticabal, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Rincão, Santa Lucia, Tabatinga, Taquaritinga
	Duartina (DUA) 40 cities	Agudos, Alvinlândia, Arealva, Avaí, Balbinos, Bauru, Boraceia, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Echaporã, Espírito Santo do Turvo, Fernão, Gália, Garça, Getulina, Guaiçara, Guaimbê, Guarantã, Iacanga, Júlio Mesquita, Lins, Lucianópolis, Lupércio, Marília, Ocauçu, Paulistânia, Pederneiras, Pirajuí, Piratininga, Pongai, Presidente Alves, Quatá, Reginópolis, Sabino, Santa Cruz do Rio Pardo, São Pedro do Turvo, Ubirajara, Uru
	Brotas (BRO) 15 cities	Analândia, Bocaina, Brotas, Corumbataí, Dois Córregos, Dourado, Ibaté, Itirapina, Mineiros do Tietê, Ribeirão Bonito, Santa Maria da Serra, São Carlos, São Pedro, Torrinha, Trabiju
South 48 cities	Porto Ferreira (PFE) 18 cities	Aguaí, Casa Branca, Descalvado, Guaranésia, Itobi, Luiz Antônio, Mococa, Pirassununga, Porto Ferreira, Santa Cruz da Conceição, Santa Cruz das Palmeiras, Santa Rita do Passa Quatro, Santa Rosa de Viterbo, São João da Boa Vista, São José do Rio Pardo, São Simão, Tambaú, Vargem Grande do Sul
	Limeira (LIM) 30 cities	Amparo, Araras, Artur Nogueira, Atibaia, Bragança Paulista, Charqueada, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Iracemápolis, Itapira, Jaguariúna, Jarinu, Leme, Limeira, Lindóia, Mogi Guaçu, Mogi Mirim, Monte Alegre do Sul, Paulínia, Pinhalzinho, Piracicaba, Rio Claro, Santo Antônio de Posse, Serra Negra, Socorro
Southwest 48 cities	Avaré (AVA) 29 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, Arandu, Avaré, Bofete, Borebi, Botucatu, Capela do Alto, Cerqueira César, Cesário Lange, Conchas, Guareí, Iaras, Iperó, Itatinga, Lençóis Paulista, Manduri, Óleo, Pardinho, Piraju, Porangaba, Porto Feliz, Pratânia, Salto de Pirapora, São Manuel, Sorocaba, Tatuí
	Itapetininga (ITG) 19 cities	Alambari, Buri, Campina do Monte Alegre, Capão Bonito, Coronel Macedo, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Itararé, Nova Campina, Paranapanema, Pilar do Sul, São Miguel Arcanjo, Sarapuí, Sarutaiá, Taquarituba, Taquarivaí
5 sectors	12 regions	336 cities with citrus farms

Variety groups

Chart 2 – Division of citrus species per variety group

Group of citrus species	Varieties
Oranges.....	Early: Hamlin, Westin and Rubi Other early: Valencia Americana, Seleta, Pineapple and Alvorada[1] Mid-season: Pera Rio Late: Valencia and Valencia Folha Murcha Late: Natal
Other oranges.....	Washington Navel and Baianinha Charmute de Brotas Acidless sweet oranges and sweet lime: Lima Verde, Lima Late, Piralima, Lima Sorocaba, Lima Roque, João Nunes and Palestine sweet lime Other varieties
Acid limes and lemons.....	Tahiti acid lime (Persian lime) and Galego acid lime (Mexican lime) Sicilian lemon Other varieties including non-identified ones
Tangerines.....	Ponkan Murcott Other tangerines

[1] The full nomenclature is "Mapa - EECB IAC Alvorada", however the shortened name "Alvorada" was used in this report to represent this variety due to space constraints in the tables. This variety was included in this 2022 inventory in the group of main oranges, while in previous inventories it belonged to the group called "other oranges"

Age groups

Chart 3 – Classification by tree planting years and grove age groups

Age group	Planting years
1 to 2 years.....	2023, 2022
3 to 5 years.....	2021, 2020, 2019
6 to 10 years.....	2018, 2017, 2016, 2015, 2014
Over 10 years.....	2013 and previous years

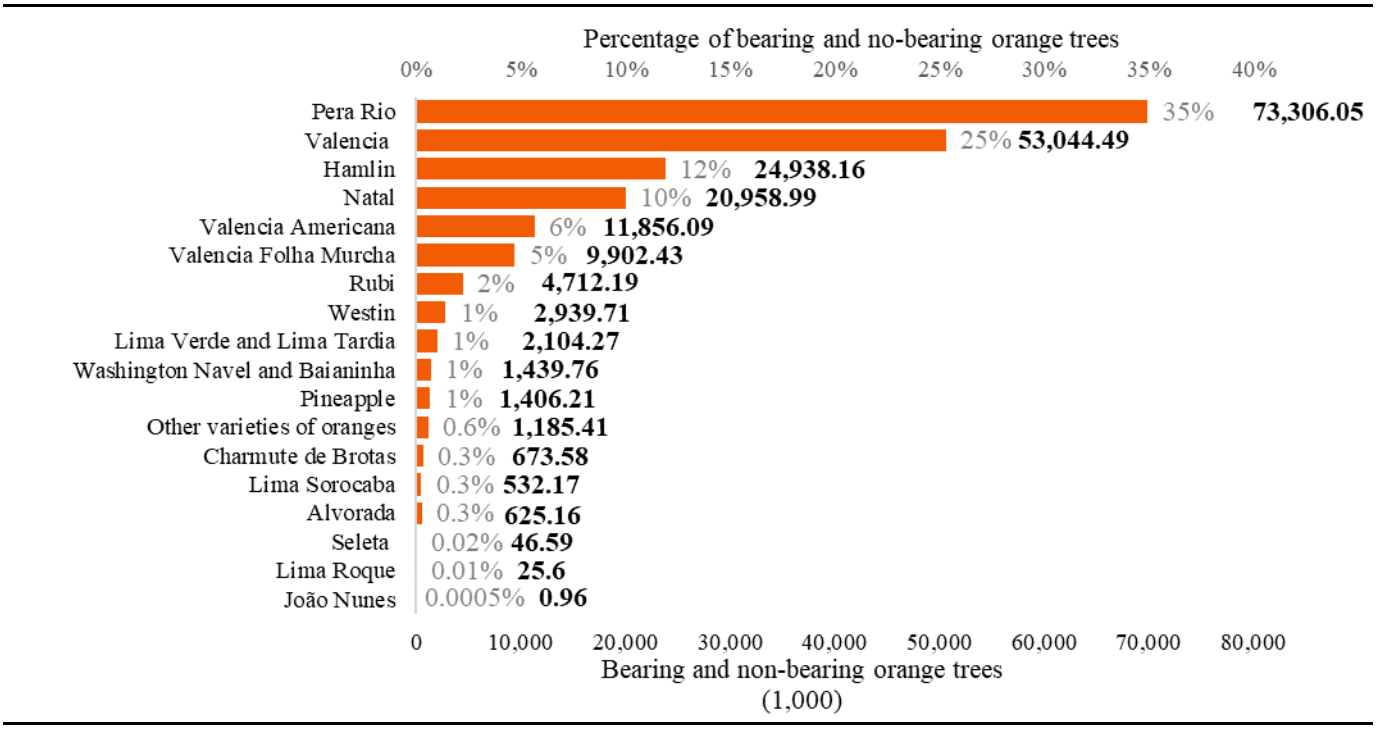
3 – RESULTS

3.1 – MAIN CONCLUSIONS ON THE TREE INVENTORY

This publication presents the tenth tree inventory carried out by Fundecitrus, which depicts the estimated situation of orange groves in the Citrus Belt of São Paulo and West-Southwest Minas Gerais, updated in March 2024. The data regarding acid limes, lemons, and tangerines, as well as the number of properties and the percentage of irrigated area, remain the same as in the 2022 inventory. This information will be updated in the next sweep of the citrus belt region, scheduled to begin in the second half of 2024 for the preparation of the 2025 inventory.

In the case of orange groves, the total of 5,134 properties and the number of plots in these properties also remain unchanged until the new mapping is carried out. However, the data of these groves are updated in this 2024 inventory through a sample survey that encompassed 5% of the plots of the citrus belt. This sampling allowed a reassessment of the area and the proportion of trees by age, as well as the identification of dead trees and gaps. It is important to point out that the groves implemented in 2023 were estimated based on three data sources and that the actual data of these groves will be obtained only in the next sweep of the citrus belt. The sources used are: (1) the São Paulo State Department of Agriculture and Supply for the amount of nursery citrus plants marketed under the permit to transit plants; (2) nurseries for the amount of nursery citrus plants produced for own consumption; and (3) properties selected in the count of 5% of the plots of the citrus belt where recent plantings were also identified, and density information was collected to infer the newly planted areas.

Orange groves encompassing all varieties, now occupy 399,279 hectares, which represents a decrease of 0.03% compared to the previous year. Of this total area, 388,490 hectares are planted with the main orange varieties and 10,789 hectares are planted with other varieties of oranges mainly intended for fresh consumption. In Graph 1, it is possible to visualize the complete distribution of the volume of trees per variety, as well as the share of each variety in relation to the total number of orange trees. The Pera Rio variety, for example, has approximately 73 million trees, which corresponds to 35% of the total trees in the citrus belt.

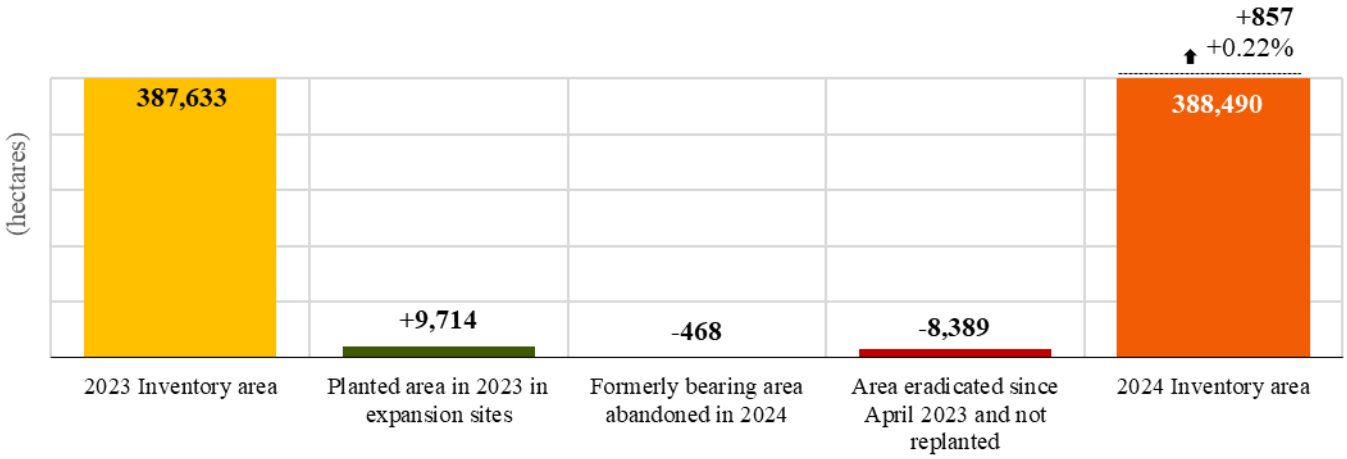


Graph 1 – All oranges: Distribution of orange trees by variety [2024 inventory]

3.1.1 – MAIN ORANGE VARIETIES

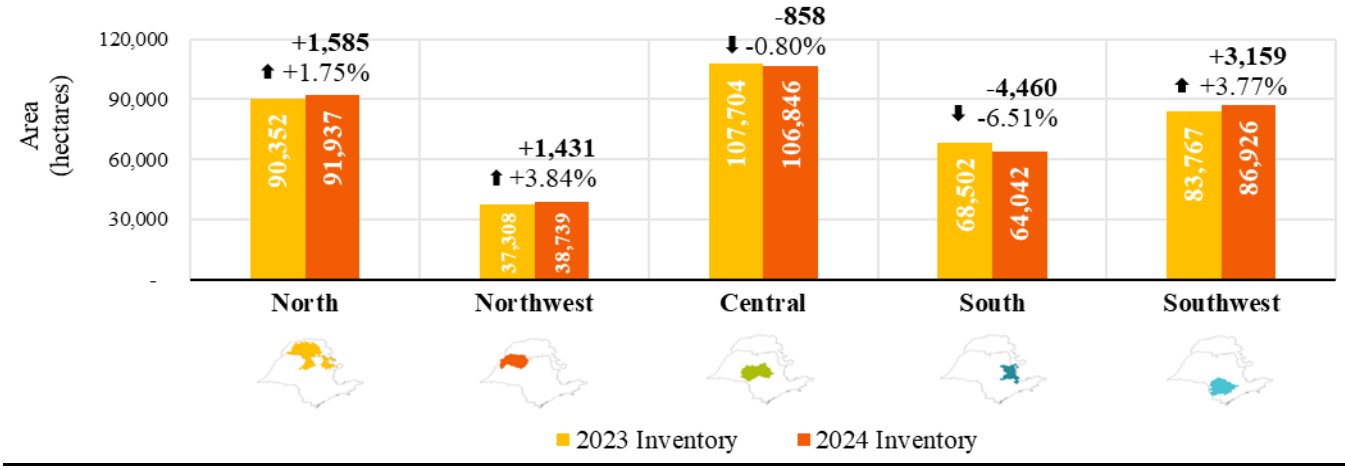
Of the total area of oranges, 97% are planted with the main varieties, which include: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, Valencia, Valencia Folha Murcha, and Natal. These varieties are grouped as "oranges" in the tables that make up this report.

The area occupied by the groves of these varieties is 388,490 hectares, as mentioned, which represents an increase of 857 hectares in relation to the existing area in 2023, as presented in Graph 2. This increase means a net change of +0.22%. The calculation of this value is obtained from the grove area of the 2023 inventory (387,633 hectares) plus the expansion area (+9,714 hectares), which refers to plantings in new areas that occurred in 2023 (areas were not dedicated to orange cultivation when the last mapping was carried out). From this total, the loss of groves (hectares) that occurred in 2023 is discounted, referring to the eradicated areas (-8,389 hectares), which were not replanted with orange and to the areas that were abandoned (-468 hectares).



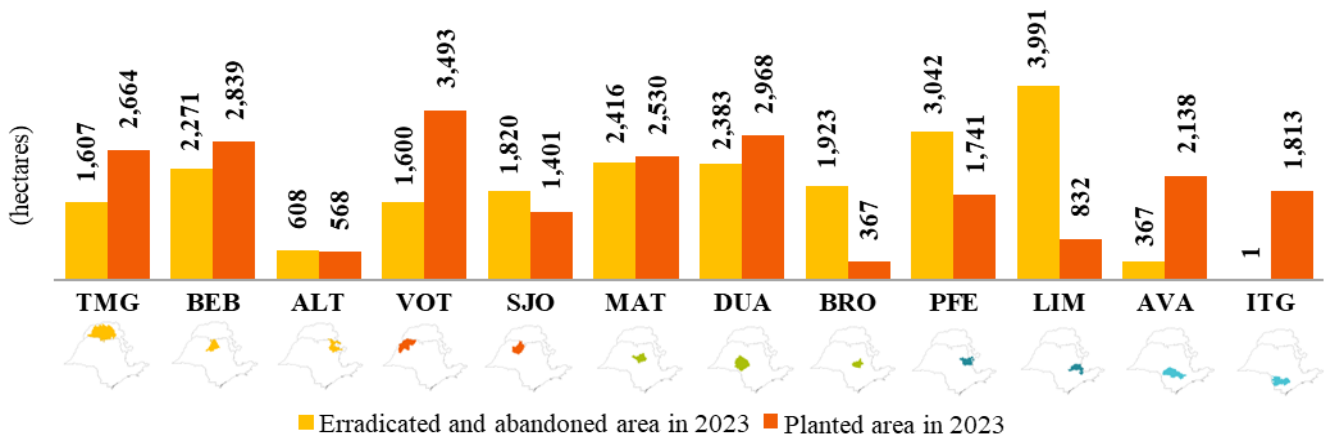
Graph 2 – Oranges: Update of the cultivated area [2023 and 2024 inventories]

The variation of 857 hectares is distributed among the five sectors, with three showing a positive variation and two with a negative variation. The Southwest sector had the highest growth, with an increase of 3,159 hectares, followed by the North, which grew by 1,585 hectares, and the Northwest with 1,431 hectares. In contrast, the South and Central sectors showed decreases in their areas. The most significant retraction occurred in the South sector, where most groves with a high incidence of greening are located, with a reduction of 4,460 hectares. The Central sector also registered a decrease of 858 hectares. The data is presented in Graph 3.



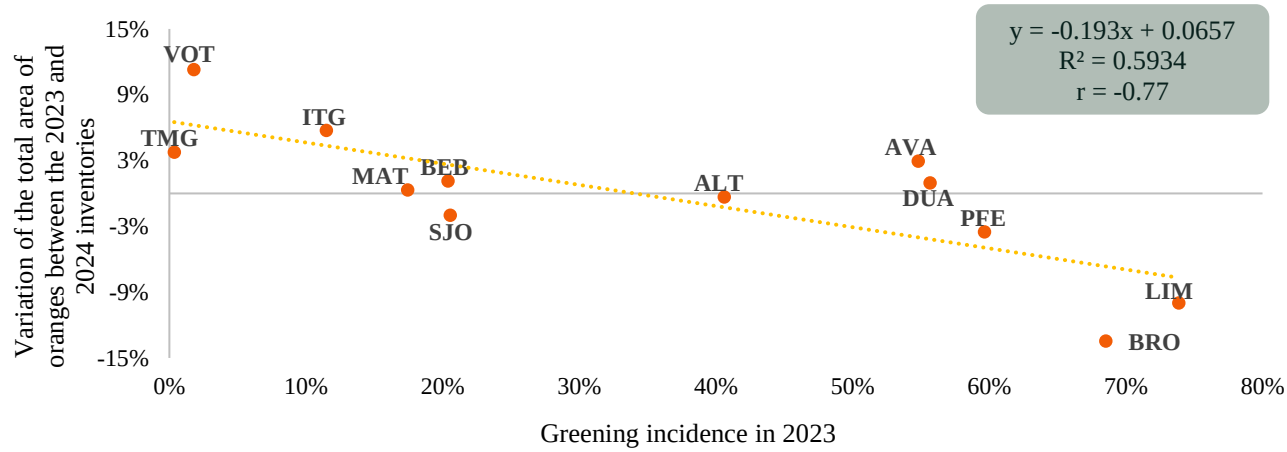
Graph 3 – Oranges: Grove area by sector [2023 and 2024 inventories]

The area variations presented in Graph 3 in each region reflect the difference between the area planted in 2023 and the area eradicated and abandoned in the same year. As shown in Graph 4, the South sector, which comprises the regions of Porto Ferreira and Limeira, has the largest eradicated area in this inventory, totaling approximately 7,000 hectares, which corresponds to an eradication rate of 10.27%. The Southwest sector has the smallest eradicated area with about 370 hectares and a rate equivalent to 0.44%. Regarding new plantings, the Votuporanga region, which has one of the lowest incidences of greening, stood out with the largest planted area in 2023.



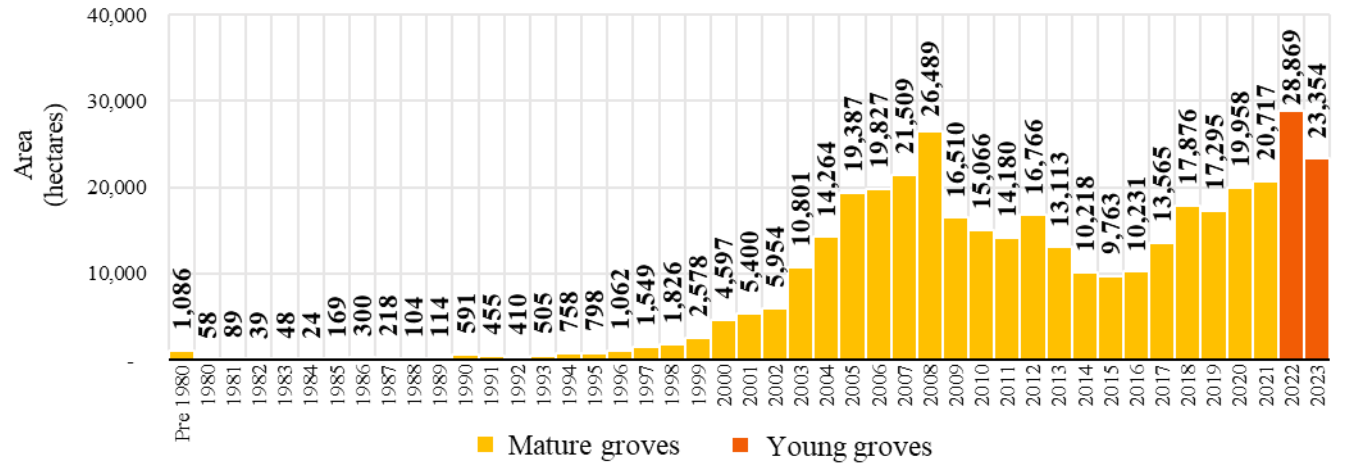
Graph 4 – Oranges: Eradicated and abandoned area plus planted area by region in 2023 [2024 inventory]

During the period from April 2023 to March 2024, the average eradication rate in the citrus belt was 5.68%, a higher rate than that observed in the inventories carried out by Fundecitrus until 2020, in which this rate did not exceed 5%. However, compared to the previous year, there was a reduction in the eradication rate. In the 2023 inventory, the eradicated area was 25,847 hectares, corresponding to a rate of 6.68%, while in the current inventory, the eradicated area fell to 22,029 hectares, equivalent to a rate of 5.68%. These figures show that the eradicated area in this new inventory is 15% smaller than in the previous year. Of the total eradicated area (22,029 hectares), it is estimated that 13,640 hectares have already been renewed. This indicates that 62% of the eradicated area was renewed in this inventory, compared to 78% in the previous inventory. These data suggest that producers are looking for new areas to carry out the plantings instead of continuing to form groves in the same places, resulting in an increase in plantings in isolated areas to reduce the risk of contamination by greening. The renewed area (13,640 hectares), together with the plantings in expansion areas (9,714 hectares), totals 23,354 hectares planted in 2023. In Graph 5, the negative correlation between the incidence of greening in the region and the growth of area in the same region between the 2023 and 2024 inventories is evident.



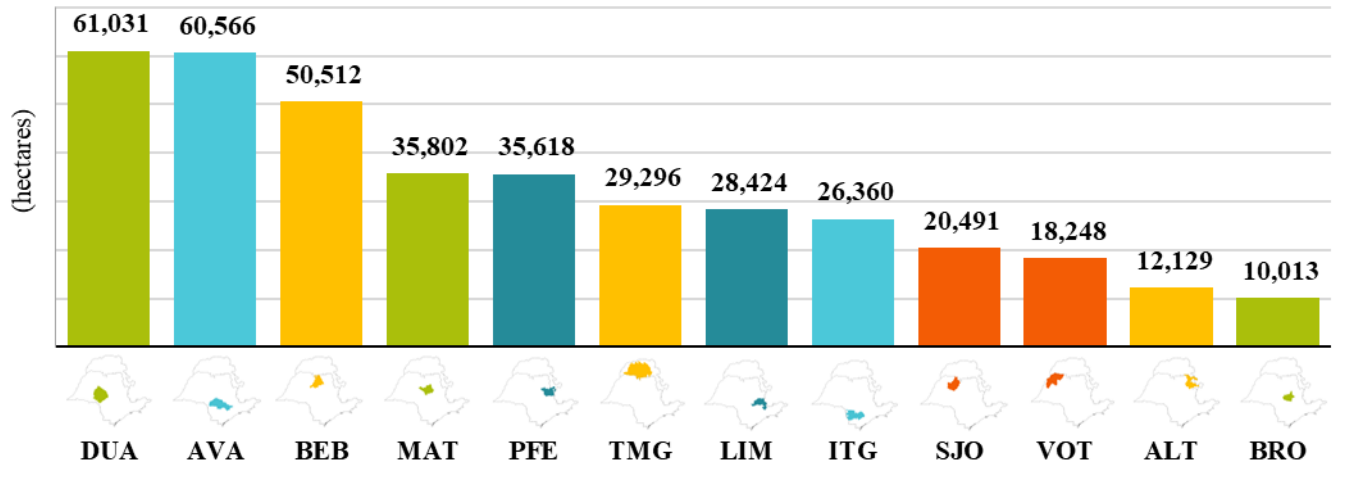
Graph 5 – Oranges: Negative correlation between the incidence of greening and the variation in the area of oranges in each region between the 2023 and 2024 inventories [2024 inventory]

The total area of groves planted in 2023 is estimated at 23,354 hectares, representing a decrease of 19% compared to the planting in the previous year, which can be seen in Graph 6. In relation to the varietal distribution, Pera Rio continues to occupy the largest share, corresponding to 41% of these plantings, followed by Valencia with 23%. The Hamlin variety represents 15%, while Valencia Americana, Natal and Valencia Folha Murcha contribute about 8%, 5% and 3% respectively. The varieties Rubi, Westin, Alvorada, and Pineapple together add up to approximately 4%.



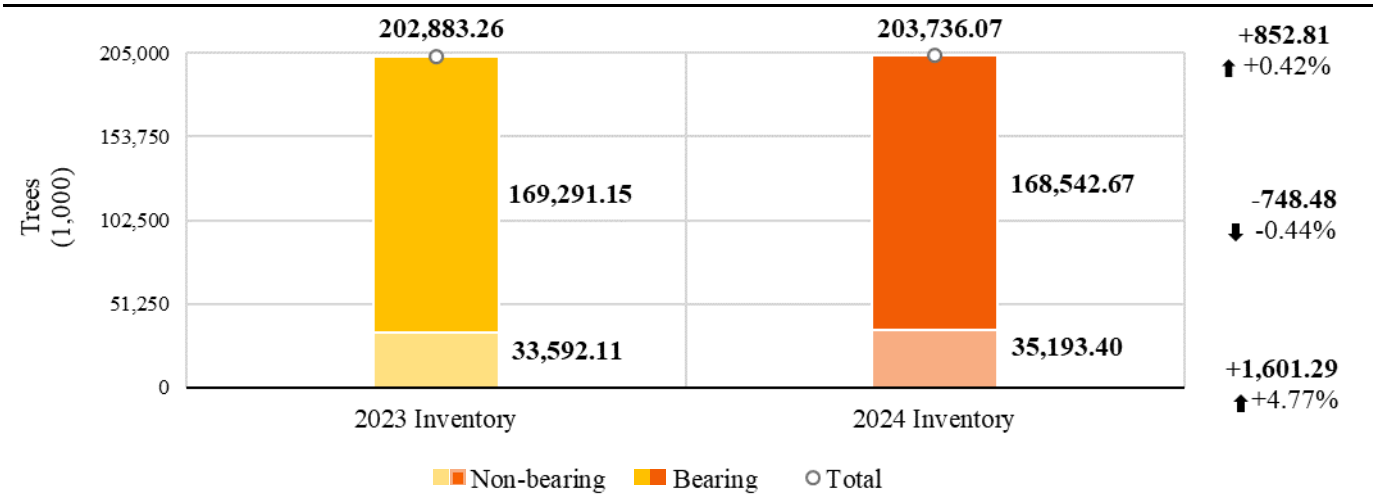
Graph 6 – Oranges: Area by plot planting year [2024 inventory]

The total area (388,490 hectares) is distributed quite unevenly among the regions of the citrus belt. As presented in Graph 7, just over half of this area is concentrated in only four regions: Duartina with 61,031 hectares; Avaré with 60,566 hectares; Bebedouro with 50,512 hectares; and Matão with 35,802 hectares. The other half is distributed in eight different regions: Porto Ferreira with 35,618 hectares; Triângulo Mineiro with 29,296 hectares; Limeira with 28,424 hectares; Itapetininga with 26,360 hectares; São José do Rio Preto with 20,491 hectares; Votuporanga with 18,248 hectares; Altinópolis with 12,129 hectares; and Brotas with 10,013 hectares.



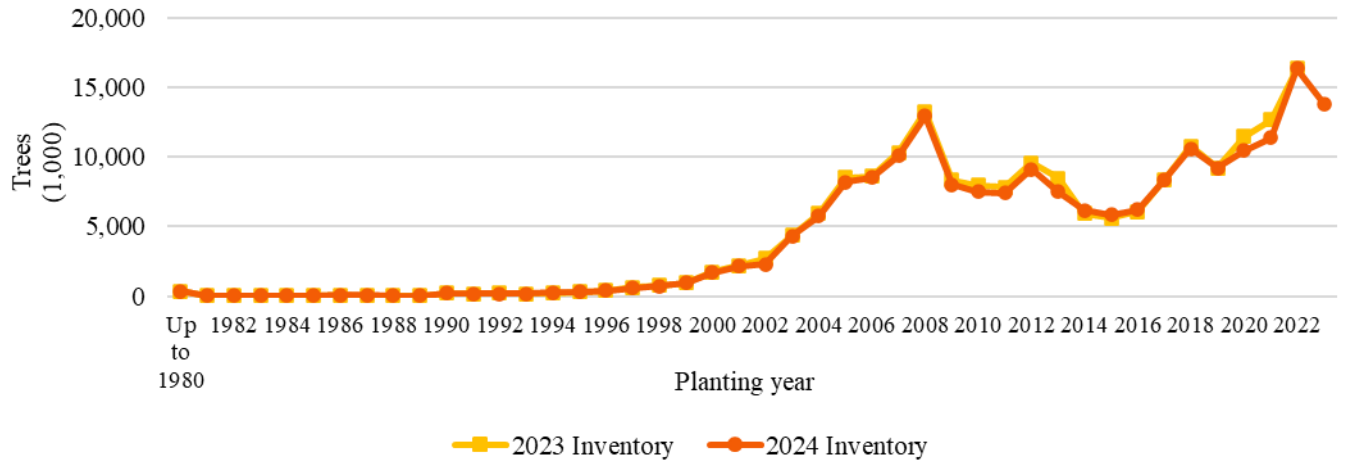
Graph 7 – Oranges: Grove area of the varieties of the group called "oranges" [2024 inventory]

In this planted area with the main varieties, there are a total of approximately 203.73 million trees in the citrus belt, with 168.54 million bearing trees and 35.19 million non-bearing trees (also considering resets), as shown in Graph 8.



Graph 8 – Oranges: Total trees, bearing and non-bearing trees [2023 and 2024 inventories]

Compared to the 2023 inventory, there was an increase of approximately 852 thousand trees, representing an increase of 0.42%. This growth results from the difference between the total number of nursery citrus plants planted in 2023 and the number of trees eradicated and abandoned in the same year. In the 2023 inventory, the number of non-bearing trees was 33.6 million, corresponding to the plantings carried out in 2021, 2022, and the resets. In 2024, this number rose to 35.2 million, covering the 2022, 2023 plantings, and the resets. The comparison between the 2023 and 2024 inventories shows an increase of 1.6 million trees, indicating that the 2023 planting was larger than the 2021 planting, as well as the number of non-bearing resets in the last two inventories. Thus, despite the decrease observed in planting between 2022 and 2023, there was also a reduction in eradication, resulting in a positive balance and registering an increase of almost one million trees as illustrated in Graph 9.



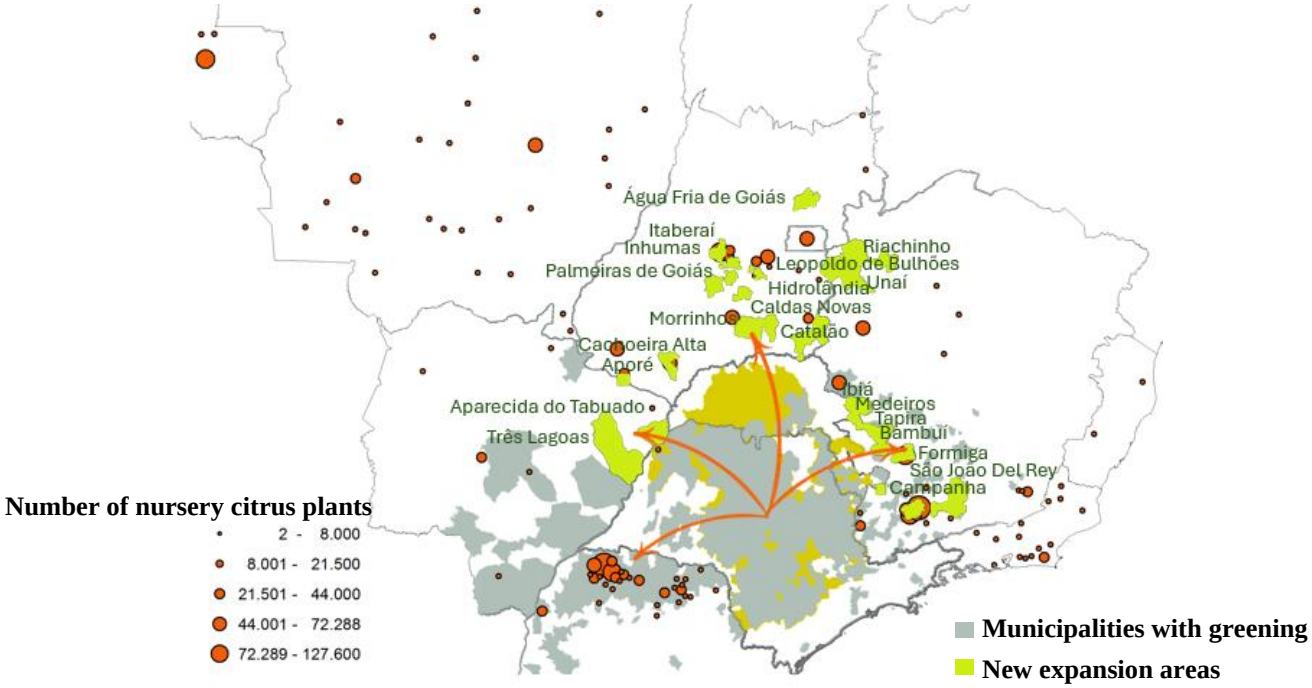
Graph 9 – Oranges: Trees per plot planting year reset not included [2023 and 2024 inventories]

Although planting within the citrus belt decreased in 2023, there was a continuation in the formation of new groves in bordering areas outside the citrus belt. It is observed that the search for new planting areas has intensified as a strategy to mitigate the risk of contamination of newly implemented groves, a situation that is more difficult to avoid in regions with high greening pressure.

Analyzing the data regarding the quantity of nursery citrus plants marketed with a permit to transit plants provided by the São Paulo State Department of Agriculture and Supply, it is observed that for the second consecutive year, 9% of the nursery citrus plants produced in São Paulo were destined for other states, which are indicated on the map presented in Figure 4. Among these, 3% went to Minas Gerais, 2.5% to Paraná, 2% to Goiás, 0.5% to Mato Grosso, 0.5% to Mato Grosso do Sul, and 0.5% to the other states

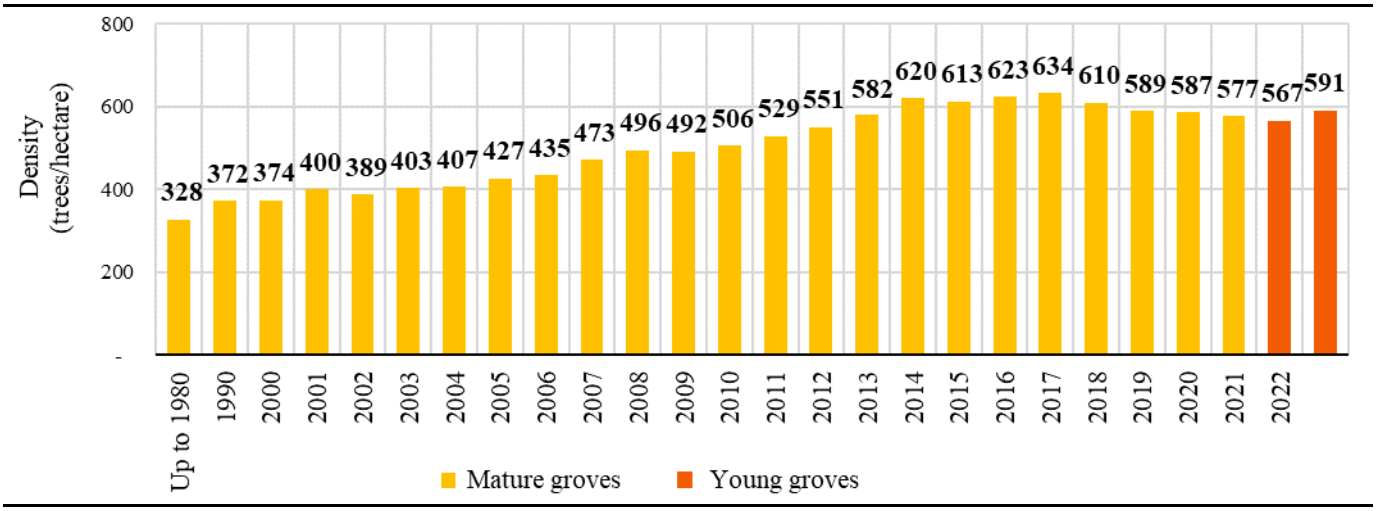
combined. These figures indicate the continuation of the movement of citrus expansion beyond the citrus belt, which had been verified in the last sweep of the citrus belt carried out in the second half of 2021.

Figure 4 – Destination of nursery citrus plants marketed with permit to transit plants outside the belt



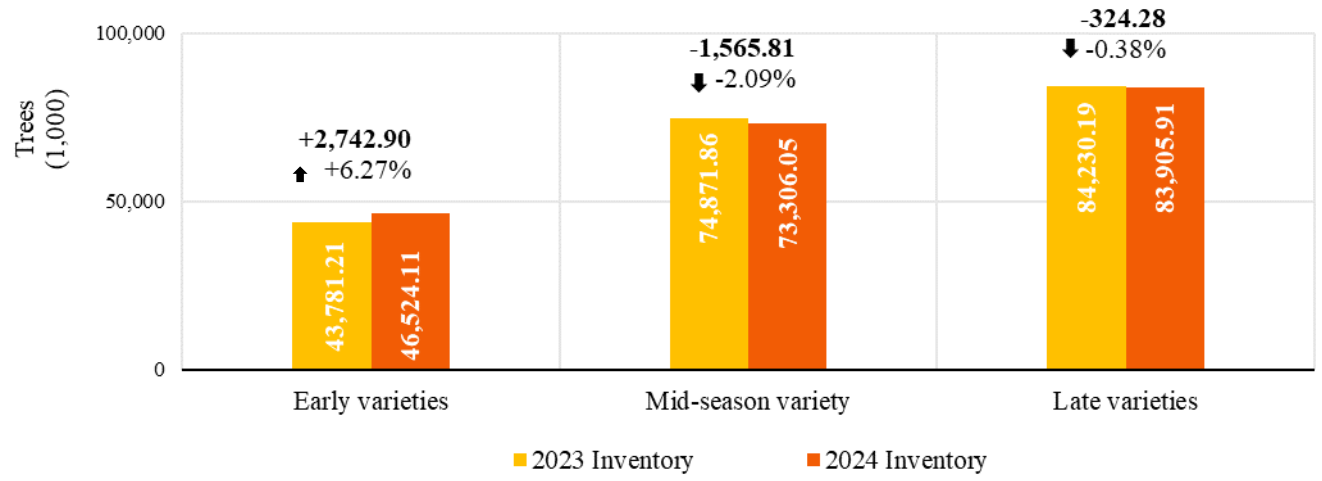
Source: Fundecitrus, based on data from the São Paulo State Department of Agriculture and Supply, Minas Gerais Institute of Agriculture and Livestock, Rural Development Institute of Paraná, and State Agency for Animal and Plant Health of Mato Grosso do Sul.

Regarding the planting density of the groves in the citrus belt, Graph 10 reveals a trajectory that has varied over time. From the 1980s until 2017, there was an increase in planting density followed by a decrease until 2022, and a new increase now in 2023. That increase in planting density occurred due to the need to optimize land use, made possible by new technologies, and the emergence of greening. However, the density reached such high levels that they brought significant challenges in terms of management, which led to its reduction from 2017 to 2022. However, with the most recent advance of greening in the citrus belt, the trend of reducing planting density was interrupted and rose again in 2023. In this inventory, the average density of groves in formation is 578 trees per hectare, while the average density of adult groves is 516 trees per hectare. The overall average density is 524 trees per hectare.



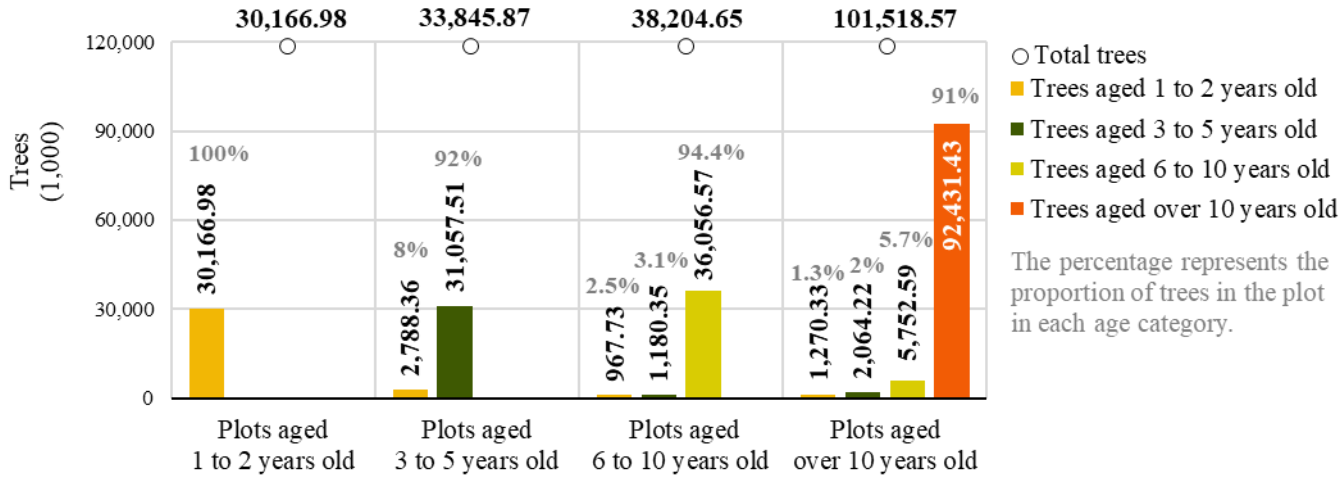
Graph 10 – Oranges: Average density of groves per planting year

When analyzing the distribution of varieties according to the maturation season, there are currently 46.52 million early variety trees, usually harvested between May and August, which corresponds to 23% of the total trees in the citrus belt. The mid-season variety trees total 73.31 million, with harvesting usually taking place between July and October, corresponding to 36% of the total. Late variety trees total 83.91 million, with harvesting normally occurring between October and January, representing 41% of the total. This data is presented in Graph 11. It is important to note that climatic variations and other factors, such as the size of the crop, can influence the harvest period, being able to anticipate it or extend it from one year to another.



Graph 11 – Oranges: Trees by maturation season of the varieties [2023 to 2024 inventories]

The average age of adult groves is 10.7 years. The segregation of plots into different age categories reveals that most trees are in the older age range, that is, in plots older than 10 years. In these plots, there are 101.52 million trees; of which 91% belong to the same age group as the plots and the remaining trees are from resets that occurred after implementation: 5.7% are between 6 and 10 years old; 2% are 3 to 6 years old; and 1.3% are less than 3 years old. The 6 to 10-year-old plots, formed between 2014 and 2018, have 38.2 million trees. The plots with 3 to 5 years were planted between 2019 and 2021 and have 33.84 million trees. The plots less than 3 years old, that is, implemented in 2022 and 2023, have not reached the adult phase, and contain 30.16 million plants. On average, the percentage of dead trees in the citrus belt is 1.39%, and of vacancies, 4.76%. Graph 12 shows the distribution of trees by age category in all age groups of groves.



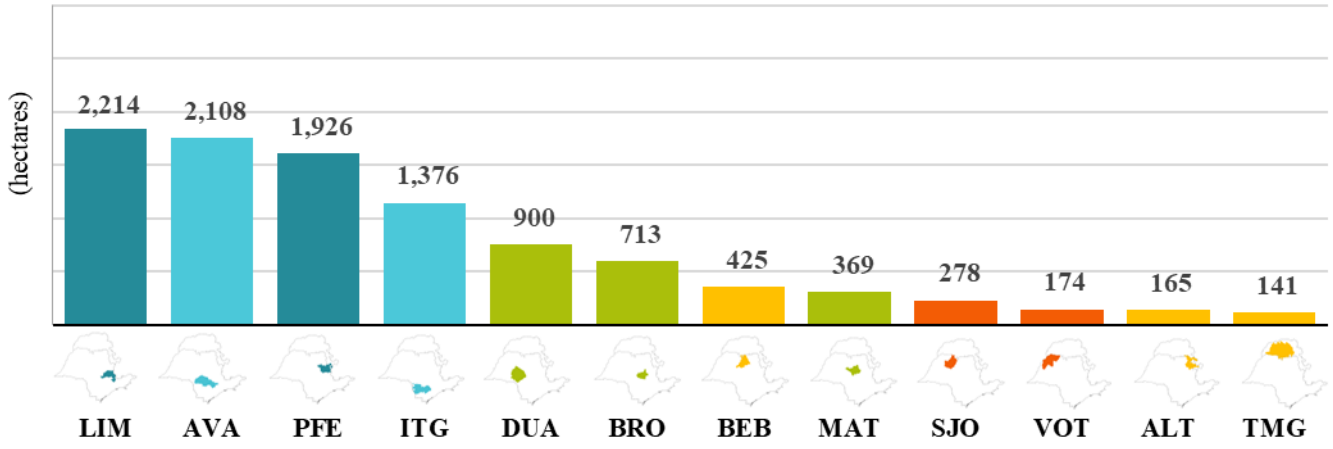
Graph 12 – Oranges: Trees by age groups and plot age groups

Finally, regarding the area of abandoned groves of the main orange varieties, there was a significant reduction compared to the previous inventory, decreasing from 2,724 hectares to 629 hectares.

3.1.2 – OTHER ORANGE VARIETIES

In addition to the "oranges" group, the citrus belt has groves that are dedicated to the production of oranges intended mainly for fresh consumption. This portion is grouped under the category of "other oranges" and includes varieties such as Bahia, Baianinha, Charmute de Brotas, acidless sweet oranges, sweet lime and others. In the 2024 inventory, this group represented about 3% of the planted area in the citrus belt, equivalent to 10,789 hectares. The area occupied by the groves of this group of varieties decreased by 993 hectares compared to the previous inventory, which represents a reduction of approximately 8%. The reduction observed in this group of varieties (993 hectares) represents a similar proportion to the growth in area that was estimated in groves of the main orange varieties (857 hectares), which explains the slight reduction of 136 hectares considering all varieties of orange.

Graph 13 shows that the groves of this group are mainly concentrated in the South and Southwest sectors, totaling 71% of the area of these varieties: the Limeira region has 2,214 hectares; Avaré, 2,108 hectares; Porto Ferreira, 1,926 hectares; and Itapetininga, 1,376 hectares. Among these regions, the values correspond to a reduction of 31%, 13% and 14% in Limeira, Avaré and Porto Ferreira, respectively, and an increase of 12% in Itapetininga compared to the previous inventory. The other eight regions together have 3,165 hectares. The main highlight among these less expressive regions is that the area of 'other oranges' has increased significantly in two regions of the North sector: Triângulo Mineiro and Bebedouro.



Graph 13 – Other Oranges: Grove area of the varieties of the group called "other oranges" [2024 inventory]

3.1.3 – BIODIVERSITY OF FAUNA ON CITRUS PROPERTIES

The detailed data and the exact location of all citrus properties in the belt open possibilities for research that goes beyond crop forecasting. The first research to use this information was the disease survey, especially to monitor the incidence and advancement of greening, the main disease affecting citrus farming. The second was the quantification of the environmental preservation area existing on citrus properties. The third and fourth surveys were carried out by Embrapa and Fundecitrus, with resources from the British company Innocent Drinks, selected in a public notice from the company's innovation fund (Farmer Innovation Fund), focused on mitigating climate change. These surveys deal with carbon stock and wildlife in the citrus belt.

In 2023, the results of the research on carbon (C) storage were released. This unprecedented study involved both adult orange groves of the main varieties and areas of preservation of native vegetation on citrus properties. The results showed that the citrus belt stored 36.33 million tons of C, with groves accounting for 60% of this stock and preservation areas for 40%. This volume corresponds to 133 million tons of carbon dioxide equivalent removed from the atmosphere, which corresponds to the emissions over eight years of a city like São Paulo, the fourth largest in the world.

In 2024, the results of the research that identified the number of wildlife species, with an emphasis on birds, mammals, reptiles, and amphibians, were released. One farm in each of the five sectors of the belt was selected for the research, with field surveys carried out using cameras with day and night presence sensors, in addition to observing traces such as burrows, feathers, feces, claw marks and footprints. 268 species of birds, 28 of mammals, and 18 of reptiles and amphibians were identified, totaling 314 species of these groups. The number of birds identified on these five citrus farms represents one third of the species cataloged in the state of São Paulo. The presence of young was also observed, indicating that these species have established themselves at the site and are not just passing through. Figure 5, for example, shows a photograph of a family of coatis recorded on one of the farms where the research was carried out. The complete reports of these studies can be found on the Fundecitrus website.

Figure 5 – Family of coatis photographed on a citrus property during field surveys

Source: Embrapa

3.1.4 – "PESQUISAR" DATA PLATFORM

The information on the tree inventory and production provided by the Crop Forecast Survey reveals the true dimension of citrus farming in São Paulo and West-Southwest Minas Gerais, the main orange producing region in the world. The results obtained are essential for all links in the production chain to be able to make decisions based on reliable data. In this tenth edition of the Crop Forecast Survey, the most recent innovation was the introduction of the "PESquisar" tool. The tool is a dynamic, interactive and online platform that presents data through dashboards with a modern look and easy to understand. In addition, the tool allows the user to create their own tables with the fields they want. On the platform, there is data on production, tree inventory, and the incidence of greening in the citrus belt. The platform can be accessed via the link www.fundecitrus.com.br/pes/pesquisar.

NEW INTERACTIVE DATA PLATFORM

DISCOVER THE WEALTH OF INFORMATION ABOUT ORANGE GROVES IN THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

EXPLORE THE DATA PUBLISHED SINCE 2015 IN A DYNAMIC AND INTERACTIVE WAY ONLINE

www.fundecitrus.com.br/pes/pesquisar-en

PESQUISAR

Fundecitrus | PES

3.2 – TABLES OF DATA

Calculations used whole numbers and all decimal points, the same way they are stored in the data bank. Occasional divergences between figures on tables result from rounding numbers. The word "oranges" in the title of tables indicates that their figures comprise the Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, Valencia, Natal and Valencia Folha Murcha varieties.

Table 1 – All citrus: Area of groves by sector [2023 and 2024 inventories and accumulated variation]

Inventory, sector and variation	Oranges[1]	Other oranges[2]	Acid limes and lemons[3, 5]	Tangerines[4, 5]	Total	Percentage of sectors
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2023 inventory						
North	90,352	439	20,016	1,977	112,784	24.32
Northwest	37,308	325	6,867	1,937	46,437	10.01
Central	107,704	1,950	16,558	2,712	128,924	27.80
South	68,502	5,431	6,010	3,428	83,371	17.98
Southwest	83,767	3,637	2,358	2,529	92,291	19.90
Total	**387,633**	**11,782**	**51,809**	**12,583**	**463,807**	**100.00**
Citrus percentage	**83.58**	**2.54**	**11.17**	**2.71**	**100.00**	**(X)**
2024 inventory						
North	91,937	731	20,016	1,977	114,661	24.73
Northwest	38,739	452	6,867	1,937	47,995	10.35
Central	106,846	1,982	16,558	2,712	128,098	27.63
South	64,042	4,140	6,010	3,428	77,620	16.74
Southwest	86,926	3,484	2,358	2,529	95,297	20.55
Total	**388,490**	**10,789**	**51,809**	**12,583**	**463,671**	**100.00**
Citrus percentage	**83.79**	**2.33**	**11.17**	**2.71**	**100.00**	
Accumulated variation						
Hectares	**857**	**-993**	**-**	**-**	**-136**	**(X)**
Percentage	**0.22**	**-8.43**	**-**	**-**	**-0.03**	**(X)**

(X) Not applicable
[1] Oranges: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, Valencia, Valencia Folha Murcha and Natal
[2] Other oranges: Washington Navel, Baianinha, Charmute de Brotas, Lima Verde, Lima Tardia, Piralima, Lima Sorocaba, Lima Roque, João Nunes, Palestine sweet lime and other varieties
[3] Acid limes and lemons: Tahiti acid lime (Persian lime), Galego acid lime (Mexican lime), Sicilian lemon and other varieties including non-identified ones.
[4] Tangerines: Ponkan, Murcott and other varieties
[5] Inventory data 2022. They will be updated in the next mapping that is expected to begin in the second half of 2024 in preparation of the 2025 inventory

Table 2 – All citrus[1]: Farms with citrus groves, stratified by sector [2015, 2018 and 2022 inventories]

Sector	2015 inventory		2018 inventory		2022 inventory	
	(number)	(%)	(number)	(%)	(number)	(%)
North	3,149	27.24	2,526	25.66	3,148	32.79
Northwest	2,756	23.84	2,128	21.62	1,677	17.47
Central	2,511	21.72	1,873	19.02	2,083	21.70
South	2,735	23.66	2,919	29.65	2,228	23.21
Southwest	410	3.54	399	4.05	464	4.83
Total	**11,561**	**100.00**	**9,845**	**100.00**	**9,600**	**100.00**

Inventory data 2022. They will be updated in the next mapping that is expected to begin in the second half of 2024 in preparation of the 2025 inventory

Table 3 – Oranges: Farms with orange groves, stratified by size of area with oranges [2023 and 2024 inventories]

Range of the farm size considering the total orange area	2023 inventory				2024 inventory			
	Farms with orange groves		Orange area		Farms with orange groves		Orange area	
			Total	Irrigate area			Total	Irrigate area
(hectares)	(number)	(%)	(hectares)	(%)	(number)	(%)	(hectares)	(%)
0.1 – 10.....	2,025	39.44	11,046	30.58	2,025	39.44	12,088	30.75
10.1 – 50.....	1,881	36.64	41,833	28.35	1,881	36.64	42,493	30.04
50.1 – 100.....	495	9.64	34,626	27.17	495	9.64	33,302	27.74
100.1 – 500.....	578	11.26	116,892	28.73	578	11.26	118,609	29.59
500.1 – 1,000.....	95	1.85	55,789	36.99	95	1.85	59,653	34.29
Above 1,000.....	60	1.17	127,446	48.58	60	1.17	122,345	48.90
Total.....	**5,134**	**100.00**	**387,633**	**36.32**	**5,134**	**100.00**	**388,490**	**36.32**
Average per farm...			**75.50**				**75.67**	

Table 4 – Oranges: Farms with orange groves, stratified by number of orange trees [2023 and 2024 inventories]

Range of the number of orange trees in the farm	2023 inventory		2024 inventory			
	Farms with orange groves	Non-bearing and bearing trees	Farms with orange groves		Non-bearing and bearing trees	
(árvores)	(number)	(1,000 trees)	(número)	(%)	(1,000 trees)	(%)
Below 10 thousand...	3,056	12,260.06	3,056	59.52	13,026.85	6.39
10.1 – 19 thousand....	681	9,329.99	681	13.26	10,506.15	5.16
20 – 29 thousand.....	317	8,385.82	317	6.17	8,024.72	3.94
30 – 49 thousand.....	333	12,383.22	333	6.49	13,873.73	6.81
50 – 99 thousand.....	348	25,306.05	348	6.78	25,771.91	12.65
100 – 199 thousand...	198	25,911.21	198	3.86	25,872.88	12.70
Above 200 thousand.	201	109,306.91	201	3.92	106,659.82	52.35
Total.....	**5,134**	**202,883.26**	**5,134**	**100.00**	**203,736.07**	**100.00**
Average per farm....		**39,52**			**39.68**	

Table 5 – Oranges: Orange plots stratified by plot area size[1] [2022 inventories]

Plot area	2022 inventory	
(hectares)	(number)	(%)
Below 1.....	2,331	5.15
1.1 – 4.....	11,588	25.60
4.1 – 10.....	17,103	37.79
10.1 – 20.....	10,120	22.36
Above 20.....	4,118	9.10
Total.....	**45,260**	**100.00**
	(hectares)	
Average per plot.....	**8.55**	

Inventory data 2022. They will be updated in the next mapping that is expected to begin in the second half of 2024 in preparation of the 2025 inventory

Table 6 – Oranges and others[1]: Area of groves by sector [2023, 2024 inventories and accumulated variation]

Inventory and sector	Total	Changes				Variation
		Estimate of groves planted in expansion areas in 2023	Estimate of bearing groves abandoned in 2023	Estimate of eradicated groves from April 2023 to March 2024, which were not renovated	Accumulated loss of groves due to eradication and abandonment	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2023 inventory						
North	90,791	-	-	-	-	-
Northwest	37,633	-	-	-	-	-
Central	109,654	-	-	-	-	-
South	73,933	-	-	-	-	-
Southwest	87,404	-	-	-	-	-
Total	**399,415**	-	-	-	-	-
2024 inventory						
North	92,668	2,245	-	-368	1,877	2.07
Northwest	39,191	2,351	-43	-750	1,558	4.14
Central	108,828	1,289	-1	-2,114	-826	-0.75
South	68,182	354	-	-6,105	-5,751	-7.78
Southwest	90,410	3,818	-580	-232	3,006	3.44
Total	**399,279**	**10,057**	**-624**	**-9,569**	**-136**	**-0.03**

- Not available.
1 Oranges: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, Valencia, Valencia Folha Murcha and Natal
Other oranges: Washington Navel, Baianinha, Charmute de Brotas, Lima Verde, Lima Tardia, Piralima, Lima Sorocaba, Lima Roque, João Nunes, Palestine sweet lime and other varieties

Table 7 – Other oranges: Area of groves by variety [2023, 2024 inventories]

Variety	2023 inventory	2024 inventory	
	Area	Area	Percentage
	(hectares)	(hectares)	(%)
Washington Navel and Baianinha	2,634	2,733	25.33
Charmute de Brotas	1,590	1,345	12.47
Acidless sweet oranges and sweet lime	5,843	4,862	45.06
Other varieties	1,715	1,849	17.14
Total	**11,782**	**10,789**	**100.00**

Table 8 – Acid limes and lemons: Area of groves by variety [2015, 2018 and 2022 inventories]

Variety	2015 inventory	2018 inventory	2022 inventory	
	Area	Area	Area	Area
	(hectares)	(hectares)	(hectares)	(hectares)
Tahiti acid lime (Persian lime)	-	35,076	45,872	88.54
Sicilian lemon	-	3,577	5,474	10.57
Other varieties including non-identified ones	-	425	463	0.89
Total	**27,936**	**39,078**	**51,809**	**100.00**

Table 9 – Tangerines: Area of groves by variety [2015, 2018 and 2022 inventories]

Variety	2015 inventory	2018 inventory	2022 inventory	
	Area	Area	Area	Percentage
	(hectares)	(hectares)	(hectares)	(%)
Ponkan	-	5,286	5,065	40.25
Murcott	-	5,607	5,810	46.17
Other varieties	-	1,311	1,708	13.57
Total	**10,070**	**12,204**	**12,583**	**100.00**

Table 10 – Oranges: Area of groves by sector [2023 and 2024 inventories and accumulated variation]

Inventory and sector	Total	Changes				Variation
		Estimate of groves planted in expansion areas in 2023	Estimate of bearing groves abandoned in 2023	Estimate of eradicated groves from April 2023 to March 2024, which were not renovated	Accumulated loss of groves due to eradication and abandonment	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2023 inventory						
North	90,352	-	-	-	-	-
Northwest	37,308	-	-	-	-	-
Central	107,704	-	-	-	-	-
South	68,502	-	-	-	-	-
Southwest	83,767	-	-	-	-	-
Total	**387,633**	-	-	-	-	-
2024 inventory						
North	91,937	2,148	-	-563	1,585	1.75
Northwest	38,739	2,348	-43	-874	1,431	3.84
Central	106,846	1,285	-1	-2,142	-858	-0.80
South	64,042	349	-	-4,809	-4,460	-6.51
Southwest	86,926	3,584	-424	-1	3,159	3.77
Total	**388,490**	**9,714**	**-468**	**-8,389**	**857**	**0.22**

- Not available

Table 11 – Oranges: Groves planted in 2023 in expansion and renovation areas [2024 inventory]

Sector	Groves planted in 2023 (after the 2022 inventory)				
	Total	In expansion areas		In renovation areas	
	(hectares)	(hectares)	(%)	(hectares)	(hectares)
North	6,071	2,148	35.38	3,923	64.62
Northwest	4,894	2,348	47.98	2,546	52.02
Central	5,865	1,285	21.91	4,580	78.09
South	2,573	349	13.56	2,224	86.44
Southwest	3,951	3,584	90.71	367	9.29
Total	**23,354**	**9,714**	**41.59**	**13,640**	**58.41**

Table 12 – Oranges: Trees by sector [2023 and 2024 inventories and accumulated variation]

Inventory and sector	Total	Accumulated variation		Non-bearing trees			Bearing trees		
				Total	Accumulated variation		Total	Accumulated variation	
	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)
2023 inventory									
North	44,582.43	-	-	5,650.00	-	-	38,932.43	-	-
Northwest	18,290.06	-	-	3,291.47	-	-	14,998.59	-	-
Central	59,103.07	-	-	11,426.37	-	-	47,676.70	-	-
South	35,621.03	-	-	6,168.95	-	-	29,452.08	-	-
Southwest	45,286.67	-	-	7,055.32	-	-	38,231.35	-	-
Total	**202,883.26**	-	-	**33,592.11**	-	-	**169,291.15**	-	-
2024 inventory									
North	45,441.51	859.08	1.93	7,612.51	1,962.51	34.73	37,829.00	-1,103.43	-2.83
Northwest	19,322.58	1,032.52	5.65	4,639.96	1,348.49	40.97	14,682.62	-315.97	-2.11
Central	58,596.15	-506.92	-0.86	10,592.34	-834.03	-7.30	48,003.81	327.11	0.69
South	33,380.26	-2,240.77	-6.29	5,334.06	-834.89	-13.53	28,046.20	-1,405.88	-4.77
Southwest	46,995.57	1,708.90	3.77	7,014.53	-40.79	-0.58	39,981.04	1,749.69	4.58
Total	**203,736.07**	**852.81**	**0.42**	**35,193.40**	**1,601.29**	**4.77**	**168,542.67**	**-748.48**	**-0.44**

- Not available

Table 13 – Oranges: Area of groves by variety group [2023 and 2024 inventories and accumulated variation]

Inventory and variety group	Total	Changes				Variation
		Estimate of groves planted in expansion areas in 2023	Estimate of bearing groves abandoned in 2023	Estimate of eradicated groves from April 2023 to March 2024, which were not renovated	Accumulated loss of groves due to eradication and abandonment	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2023 inventory						
Hamlin, Westin and Rubi.....	62,740	-	-	-	-	-
Other early[1].....	23,623	-	-	-	-	-
Pera Rio.....	137,304	-	-	-	-	-
Valencia and V.Folha Murcha[2]	123,300	-	-	-	-	-
Natal.....	40,666	-	-	-	-	-
Total.....	**387,633**	-	-	-	-	-
2024 inventory						
Hamlin, Westin and Rubi.....	65,361	2,958	-316	-21	2,621	4.18
Other early[1].....	25,131	1,792	-1	-283	1,508	6.38
Pera Rio.....	134,326	2,441	-108	-5,311	-2,978	-2.17
Valencia and V.Folha Murcha[2]	123,778	1,972	-43	-1,451	478	0.39
Natal.....	39,894	551	-	-1,323	-772	-1.90
Total.....	**388,490**	**9,714**	**-468**	**-8,389**	**857**	**0.22**

- Not available
1 Valencia Americana, Seleta, Pineapple and Alvorada
2 Valencia Folha Murcha

Table 14 – Oranges: Trees by variety group [2023 and 2024 inventories and accumulated variation]

Inventory and sector	Total	Accumulated variation		Non-bearing trees			Bearing trees		
				Total	Accumulated variation		Total	Accumulated variation	
	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)
2023 inventory									
Hamlin, Westin and Rubi.....	30,587.26	-	-	4,871.22	-	-	25,716.04	-	-
Other early[1].....	13,193.95	-	-	3,327.62	-	-	9,866.33	-	-
Pera Rio.....	74,871.86	-	-	13,363.19	-	-	61,508.67	-	-
Valencia and V.Folha Murcha[2]	63,044.32	-	-	9,395.40	-	-	53,648.92	-	-
Natal.....	21,185.87	-	-	2,634.68	-	-	18,551.19	-	-
Total.....	**202,883.26**	-	-	**33,592.11**	-	-	**169,291.15**	-	-
2024 inventory									
Hamlin, Westin and Rubi.....	32,590.06	2,002.80	6.55	6,153.00	1,281.78	26.31	26,437.06	721.02	2.80
Other early[1].....	13,934.05	740.10	5.61	3,099.09	-228.53	-6.87	10,834.96	968.63	9.82
Pera Rio.....	73,306.05	-1,565.81	-2.09	13,704.93	341.74	2.56	59,601.12	-1,907.55	-3.10
Valencia and V.Folha Murcha[2]	62,946.92	-97.40	-0.15	9,846.78	451.38	4.80	53,100.14	-548.78	-1.02
Natal.....	20,958.99	-226.88	-1.07	2,389.60	-245.08	-9.30	18,569.39	18.20	0.10
Total.....	**203,736.07**	**852.81**	**0.42**	**35,193.40**	**1,601.29**	**4.77**	**168,542.67**	**-748.48**	**-0.44**

- Not available
1 Valencia Americana, Seleta, Pineapple and Alvorada
2 Valencia Folha Murcha

Table 15 – Oranges: Stratification of total planting holes of groves [2024 inventory and accumulated variation] (continues next page)

Region and variety group	Non-bearing trees	Bearing trees	Dead trees	Vacancies	Total
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 holes)	(1,000 trees and holes)
Triângulo Mineiro					
Hamlin, Westin and Rubi.....	268.60	2,040.01	26.30	161.95	2,496.86
Other early[1].....	412.99	295.33	2.45	9.45	720.22
Pera Rio.....	886.70	4,053.77	41.32	75.83	5,057.62
Valencia and V.Folha Murcha[2].....	805.33	3,918.20	10.75	69.08	4,803.36
Natal.....	176.73	1,456.90	11.83	21.45	1,666.91
Subtotal.....	**2,550.35**	**11,764.21**	**92.65**	**337.76**	**14,744.97**
Bebedouro					
Hamlin, Westin and Rubi.....	935.36	3,987.78	33.64	148.96	5,105.74
Other early[1].....	541.93	1,747.82	10.78	139.81	2,440.34
Pera Rio.....	1,374.99	6,573.94	82.35	236.18	8,267.46
Valencia and V.Folha Murcha[2].....	936.88	6,949.70	68.58	327.56	8,282.72
Natal.....	119.00	2,052.78	4.10	104.04	2,279.92
Subtotal.....	**3,908.16**	**21,312.02**	**199.45**	**956.55**	**26,376.18**
Altinópolis					
Hamlin, Westin and Rubi.....	36.60	845.10	36.33	88.91	1,006.94
Other early[1].....	62.60	103.66	2.03	19.31	187.60
Pera Rio.....	531.93	1,536.39	102.67	114.31	2,285.30
Valencia and V.Folha Murcha[2].....	517.85	1,866.41	89.72	181.10	2,655.08
Natal.....	5.02	401.21	9.19	20.51	435.93
Subtotal.....	**1,154.00**	**4,752.77**	**239.94**	**424.14**	**6,570.85**
Votuporanga					
Hamlin, Westin and Rubi.....	101.35	283.54	2.35	16.09	403.33
Other early[1].....	192.32	156.82	1.27	7.30	357.71
Pera Rio.....	1,543.07	4,651.90	44.24	231.59	6,470.80
Valencia and V.Folha Murcha[2].....	793.49	472.67	10.81	22.13	1,299.10
Natal.....	59.90	215.30	0.07	2.42	277.69
Subtotal.....	**2,690.13**	**5,780.23**	**58.74**	**279.53**	**8,808.63**
São José do Rio Preto					
Hamlin, Westin and Rubi.....	269.04	1,760.19	20.09	114.83	2,164.15
Other early[1].....	550.78	1,749.79	10.41	68.35	2,379.33
Pera Rio.....	643.31	2,341.84	18.71	120.23	3,124.09
Valencia and V.Folha Murcha[2].....	454.43	2,140.87	19.12	106.81	2,721.23
Natal.....	32.27	909.70	3.21	43.38	988.56
Subtotal.....	**1,949.83**	**8,902.39**	**71.54**	**453.60**	**11,377.36**
Matão					
Hamlin, Westin and Rubi.....	1,482.55	2,280.25	47.85	261.23	4,071.88
Other early[1].....	184.32	2,178.83	4.24	201.20	2,568.59
Pera Rio.....	1,513.63	5,915.86	26.80	419.85	7,876.14
Valencia and V.Folha Murcha[2].....	1,255.30	3,967.26	29.75	334.44	5,586.75
Natal.....	592.16	1,818.06	6.88	231.60	2,648.70
Subtotal.....	**5,027.96**	**16,160.26**	**115.52**	**1,448.32**	**22,752.06**
Duartina					
Hamlin, Westin and Rubi.....	473.14	3,890.22	73.61	256.84	4,693.81
Other early[1].....	478.82	1,810.17	13.48	162.68	2,465.15
Pera Rio.....	1,918.01	10,543.66	234.69	851.04	13,547.40
Valencia and V.Folha Murcha[2].....	1,786.07	8,870.06	104.30	588.90	11,349.33
Natal.....	225.26	2,519.53	66.01	335.94	3,146.74
Subtotal.....	**4,881.30**	**27,633.64**	**492.09**	**2,195.40**	**35,202.43**
Brotas					
Hamlin, Westin and Rubi.....	93.41	605.03	30.93	81.29	810.66
Other early[1].....	8.42	219.31	1.80	21.78	251.31
Pera Rio.....	309.38	1,547.73	62.66	118.46	2,038.23
Valencia and V.Folha Murcha[2].....	234.47	1,513.58	39.87	116.89	1,904.81
Natal.....	37.40	324.26	3.02	71.05	435.73
Subtotal.....	**683.08**	**4,209.91**	**138.28**	**409.47**	**5,440.74**

Table 15 – Oranges: Stratification of total planting holes of groves [2024 inventory and accumulated variation] (continued)

Region and variety group	Non-bearing trees	Bearing trees	Dead trees	Vacancies	Total
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 holes)	(1,000 trees and holes)
Porto Ferreira					
Hamlin, Westin and Rubi.....	831.13	2,393.18	51.52	209.26	3,485.09
Other early[1].....	43.49	363.09	1.23	32.41	440.22
Pera Rio.....	1,486.51	6,176.73	81.95	273.83	8,019.02
Valencia and V.Folha Murcha[2].....	733.31	5,290.24	74.22	471.73	6,569.50
Natal.....	268.59	1,659.00	27.60	52.26	2,007.45
Subtotal.....	**3,363.03**	**15,882.24**	**236.52**	**1,039.49**	**20,521.28**
Limeira					
Hamlin, Westin and Rubi.....	336.87	2,193.54	36.08	199.82	2,766.31
Other early[1].....	56.28	274.37	0.97	14.59	346.21
Pera Rio.....	883.53	4,472.53	138.61	504.05	5,998.72
Valencia and V.Folha Murcha[2].....	542.49	4,358.81	64.85	350.09	5,316.24
Natal.....	151.86	864.71	16.85	44.68	1,078.10
Subtotal.....	**1,971.03**	**12,163.96**	**257.36**	**1,113.23**	**15,505.58**
Avaré					
Hamlin, Westin and Rubi.....	892.86	4,691.44	135.44	569.40	6,289.14
Other early[1].....	297.75	736.62	12.94	88.19	1,135.50
Pera Rio.....	1,590.55	7,710.53	107.86	579.77	9,988.71
Valencia and V.Folha Murcha[2].....	949.57	9,903.34	94.12	615.49	11,562.52
Natal.....	313.94	4,067.94	35.16	255.81	4,672.85
Subtotal.....	**4,044.67**	**27,109.87**	**385.52**	**2,108.66**	**33,648.72**
Itapetininga					
Hamlin, Westin and Rubi.....	432.09	1,466.78	36.76	186.27	2,121.90
Other early[1].....	269.39	1,199.15	1.39	82.22	1,552.15
Pera Rio.....	1,023.32	4,076.24	13.30	230.35	5,343.21
Valencia and V.Folha Murcha[2].....	837.59	3,849.00	3.21	104.39	4,794.19
Natal.....	407.47	2,280.00	18.40	140.10	2,845.97
Subtotal.....	**2,969.86**	**12,871.17**	**73.06**	**743.33**	**16,657.42**
Total.....	**35,193.40**	**168,542.67**	**2,360.67**	**11,509.48**	**217,606.22**
Percentage.....	**16.17**	**77.45**	**1.08**	**5.29**	**100.00**
Accumulated variation					
Trees/holes….....	**1,601.29**	**-748.48**	**-646.89**	**1,221.37**	**1,427.29**
Percentage.....	**4.77**	**-0.44**	**-21.51**	**11.87**	**0.66**

[1] Valencia Americana, Seleta, Pineapple and Alvorada
[2] V.Folha Murcha – Valencia Folha Murcha

Table 16 – Oranges: Trees by age group and age group of plot – Citrus belt [2024 inventory]

Plot age[1]	Tree age[2]				Total	Percentage
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years		
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(%)
1 – 2 years.....	30,166.98	-	-	-	30,166.98	14.81
3 – 5 years.....	2,788.36	31,057.51	-	-	33,845.87	16.61
6 – 10 years.....	967.73	1,180.35	36,056.57	-	38,204.65	18.75
Over 10 years.....	1,270.33	2,064.22	5,752.59	92,431.43	101,518.57	49.83
Total.....	**35,193.40**	**34,302.08**	**41,809.16**	**92,431.43**	**203,736.07**	**100.00**
Percentage.....	**17.27**	**16.84**	**20.52**	**45.37**	**100.00**	

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 17 – Oranges: Trees by age group, age group of plot and sector [2024 inventory]

Plot age and sector	Tree age				Total	Percentage
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years		
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(%)
North						
1 – 2 years ……	6,878.73	-	-	-	6,878.73	15.14
3 – 5 years ……	270.83	4,511.30	-	-	4,782.13	10.52
6 – 10 years ……..	104.74	119.44	6,504.25	-	6,728.43	14.81
Over 10 years….....	358.21	175.93	1,504.15	25,013.93	27,052.22	59.53
Subtotal……	**7,612.51**	**4,806.67**	**8,008.40**	**25,013.93**	**45,441.51**	**22.30**
Northwest						
1 – 2 years ……	4,217.87	-	-	-	4,217.87	21.83
3 – 5 years ……	240.71	2,931.72	-	-	3,172.43	16.42
6 – 10 years ……..	49.61	83.67	4,498.28	-	4,631.56	23.97
Over 10 years….....	131.77	142.43	281.99	6,744.53	7,300.72	37.78
Subtotal……	**4,639.96**	**3,157.82**	**4,780.27**	**6,744.53**	**19,322.58**	**9.48**
Central						
1 – 2 years ……	9,200.45	-	-	-	9,200.45	15.70
3 – 5 years ……	648.50	10,376.74	-	-	11,025.24	18.82
6 – 10 years ……..	430.34	613.59	13,472.91	-	14,516.84	24.77
Over 10 years…….	313.05	375.08	1,681.30	21,484.19	23,853.62	40.71
Subtotal……	**10,592.34**	**11,365.41**	**15,154.21**	**21,484.19**	**58,596.15**	**28.76**
South						
1 – 2 years ……	4,315.78	-	-	-	4,315.78	12.93
3 – 5 years ……	538.77	5,781.91	-	-	6,320.68	18.94
6 – 10 years ……..	200.73	276.23	5,907.11	-	6,384.07	19.13
Over 10 years….....	278.78	686.52	1,151.50	14,242.93	16,359.73	49.01
Subtotal……	**5,334.06**	**6,744.66**	**7,058.61**	**14,242.93**	**33,380.26**	**16.38**
Southwest						
1 – 2 years ……	5,554.15	-	-	-	5,554.15	11.82
3 – 5 years ……	1,089.55	7,455.84	-	-	8,545.39	18.18
6 – 10 years ……..	182.31	87.42	5,674.02	-	5,943.75	12.65
Over 10 years….....	188.52	684.26	1,133.65	24,945.85	26,952.28	57.35
Subtotal……	**7,014.53**	**8,227.52**	**6,807.67**	**24,945.85**	**46,995.57**	**23.07**
Total……..	**35,193.40**	**34,302.08**	**41,809.16**	**92,431.43**	**203,736.07**	**100.00**

Table 18 – Oranges: Trees by age group, age group of plot and variety [2024 inventory]

Plot age and variety	Tree age				Total	Percentage
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years		
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(%)
Hamlin, Westin, Rubi						
1 – 2 years ……	5,332.98	-	-	-	5,332.98	16.36
3 – 5 years ……	417.14	4,470.17	-	-	4,887.31	15.00
6 – 10 years ……..	141.28	133.31	3,656.27	-	3,930.86	12.06
Over 10 years….....	261.60	382.59	1,175.92	16,618.80	18,438.91	56.58
Subtotal……	**6,153.00**	**4,986.07**	**4,832.19**	**16,618.80**	**32,590.06**	**16.00**
Other early						
1 – 2 years ……	2,494.94	-	-	-	2,494.94	17.91
3 – 5 years ……	423.29	3,226.80	-	-	3,650.09	26.20
6 – 10 years ……..	40.67	45.08	2,769.72	-	2,855.47	20.49
Over 10 years….....	140.19	51.45	292.93	4,448.98	4,933.55	35.41
Subtotal……	**3,099.09**	**3,323.33**	**3,062.65**	**4,448.98**	**13,934.05**	**6.84**
Pera Rio						
1 – 2 years ……	11,812.90	-	-	-	11,812.90	16.11
3 – 5 years ……	986.49	13,105.65	-	-	14,092.14	19.22
6 – 10 years ……..	498.69	647.95	16,294.10	-	17,440.74	23.79
Over 10 years..…...	406.85	676.77	1,666.80	27,209.85	29,960.27	40.87
Subtotal……	**13,704.93**	**14,430.37**	**17,960.90**	**27,209.85**	**73,306.05**	**35.98**
Valencia, V.F. Murcha						
1 – 2 years ……	8,740.63	-	-	-	8,740.63	13.89
3 – 5 years ……	514.68	7,489.45	-	-	8,004.13	12.72
6 – 10 years ……..	228.22	270.11	9,008.52	-	9,506.85	15.10
Over 10 years….....	363.25	702.11	2,115.83	33,514.12	36,695.31	58.30
Subtotal……	**9,846.78**	**8,461.67**	**11,124.35**	**33,514.12**	**62,946.92**	**30.90**
Natal						
1 – 2 years ……	1,785.53	-	-	-	1,785.53	8.52
3 – 5 years ……	446.76	2,765.44	-	-	3,212.20	15.33
6 – 10 years ……..	58.87	83.90	4,327.96	-	4,470.73	21.33
Over 10 years….....	98.44	251.30	501.11	10,639.68	11,490.53	54.82
Subtotal……	**2,389.60**	**3,100.64**	**4,829.07**	**10,639.68**	**20,958.99**	**10.29**
Total……..	**35,193.40**	**34,302.08**	**41,809.16**	**92,431.43**	**203,736.07**	**100.00**

Table 19 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – North Sector [2024 inventory]

Plot age[1] and regions of North Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro					
1 – 2 years.....	251.04	-	-	-	251.04
3 – 5 years.....	1.41	80.16	-	-	81.57
6 – 10 years.....	6.89	4.13	65.08	-	76.10
Over 10 years.....	9.26	3.19	203.97	1,683.48	1,899.90
Subtotal.....	**268.60**	**87.48**	**269.05**	**1,683.48**	**2,308.61**
Bebedouro					
1 – 2 years.....	841.32	-	-	-	841.32
3 – 5 years.....	8.11	413.13	-	-	421.24
6 – 10 years.....	7.27	13.74	393.87	-	414.88
Over 10 years.....	78.66	30.89	151.98	2,984.17	3,245.70
Subtotal.....	**935.36**	**457.76**	**545.85**	**2,984.17**	**4,923.14**
Altinópolis					
1 – 2 years.....	34.36	-	-	-	34.36
3 – 5 years.....	1.14	57.64	-	-	58.78
6 – 10 years.....	0.44	0.31	31.38	-	32.13
Over 10 years.....	0.66	3.89	14.58	737.30	756.43
Subtotal.....	**36.60**	**61.84**	**45.96**	**737.30**	**881.70**
North					
1 – 2 years.....	1,126.72	-	-	-	1,126.72
3 – 5 years.....	10.66	550.93	-	-	561.59
6 – 10 years.....	14.60	18.18	490.33	-	523.11
Over 10 years.....	88.58	37.97	370.53	5,404.95	5,902.03
Total.....	**1,240.56**	**607.08**	**860.86**	**5,404.95**	**8,113.45**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 20 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – Northwest Sector [2024 inventory]

Plot age[1] and regions of Northwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Votuporanga					
1 – 2 years	101.34	-	-	-	101.34
3 – 5 years	0.01	44.79	-	-	44.80
6 – 10 years	-	0.39	99.94	-	100.33
Over 10 years	-	-	6.12	132.30	138.42
Subtotal	**101.35**	**45.18**	**106.06**	**132.30**	**384.89**
São José do Rio Preto					
1 – 2 years	203.64	-	-	-	203.64
3 – 5 years	37.43	125.73	-	-	163.16
6 – 10 years	0.68	0.75	267.87	-	269.30
Over 10 years	27.29	48.63	56.91	1,260.30	1,393.13
Subtotal	**269.04**	**175.11**	**324.78**	**1,260.30**	**2,029.23**
Northwest					
1 – 2 years	304.98	-	-	-	304.98
3 – 5 years	37.44	170.52	-	-	207.96
6 – 10 years	0.68	1.14	367.81	-	369.63
Over 10 years	27.29	48.63	63.03	1,392.60	1,531.55
Total	**370.39**	**220.29**	**430.84**	**1,392.60**	**2,414.12**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 21 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – Central Sector [2024 inventory]

Plot age[1] and regions of Central Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Matão					
1 – 2 years	1,417.41	-	-	-	1,417.41
3 – 5 years	20.95	491.09	-	-	512.04
6 – 10 years	12.21	1.91	726.66	-	740.78
Over 10 years	31.98	42.27	64.29	954.03	1,092.57
Subtotal	**1,482.55**	**535.27**	**790.95**	**954.03**	**3,762.80**
Duartina					
1 – 2 years	384.32	-	-	-	384.32
3 – 5 years	27.51	865.87	-	-	893.38
6 – 10 years	39.41	40.23	676.07	-	755.71
Over 10 years	21.90	37.37	197.60	2,073.08	2,329.95
Subtotal	**473.14**	**943.47**	**873.67**	**2,073.08**	**4,363.36**
Brotas					
1 – 2 years	77.25	-	-	-	77.25
3 – 5 years	14.60	95.61	-	-	110.21
6 – 10 years	-	-	8.66	-	8.66
Over 10 years	1.56	0.10	7.44	493.22	502.32
Subtotal	**93.41**	**95.71**	**16.10**	**493.22**	**698.44**
Central					
1 – 2 years	1,878.98	-	-	-	1,878.98
3 – 5 years	63.06	1,452.57	-	-	1,515.63
6 – 10 years	51.62	42.14	1,411.39	-	1,505.15
Over 10 years	55.44	79.74	269.33	3,520.33	3,924.84
Total	**2,049.10**	**1,574.45**	**1,680.72**	**3,520.33**	**8,824.60**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 22 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – South Sector [2024 inventory]

Plot age[1] and regions of South Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Porto Ferreira					
1 – 2 years	683.08	-	-	-	683.08
3 – 5 years	56.98	613.33	-	-	670.31
6 – 10 years	36.69	44.52	513.33	-	594.54
Over 10 years	54.38	57.05	120.13	1,044.82	1,276.38
Subtotal	**831.13**	**714.90**	**633.46**	**1,044.82**	**3,224.31**
Limeira					
1 – 2 years	258.97	-	-	-	258.97
3 – 5 years	55.25	293.69	-	-	348.94
6 – 10 years	5.36	20.22	262.64	-	288.22
Over 10 years	17.29	61.80	119.29	1,435.90	1,634.28
Subtotal	**336.87**	**375.71**	**381.93**	**1,435.90**	**2,530.41**
South					
1 – 2 years	942.05	-	-	-	942.05
3 – 5 years	112.23	907.02	-	-	1,019.25
6 – 10 years	42.05	64.74	775.97	-	882.76
Over 10 years	71.67	118.85	239.42	2,480.72	2,910.66
Total	**1,168.00**	**1,090.61**	**1,015.39**	**2,480.72**	**5,754.72**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 23 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – Southwest Sector [2024 inventory]

Plot age[1] and regions of Southwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Avaré					
1 – 2 years	757.74	-	-	-	757.74
3 – 5 years	95.28	877.40	-	-	972.68
6 – 10 years	21.32	7.11	166.30	-	194.73
Over 10 years	18.52	97.40	233.61	3,309.62	3,659.15
Subtotal	**892.86**	**981.91**	**399.91**	**3,309.62**	**5,584.30**
Itapetininga					
1 – 2 years	322.51	-	-	-	322.51
3 – 5 years	98.47	511.73	-	-	610.20
6 – 10 years	11.01	-	444.47	-	455.48
Over 10 years	0.10	-	-	510.58	510.68
Subtotal	**432.09**	**511.73**	**444.47**	**510.58**	**1,898.87**
Southwest					
1 – 2 years	1,080.25	-	-	-	1,080.25
3 – 5 years	193.75	1,389.13	-	-	1,582.88
6 – 10 years	32.33	7.11	610.77	-	650.21
Over 10 years	18.62	97.40	233.61	3,820.20	4,169.83
Total	**1,324.95**	**1,493.64**	**844.38**	**3,820.20**	**7,483.17**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 24 – Other early[1]: Trees by age group and age group of plot – North Sector [2024 inventory]

Plot age[2] and regions of North Sector	Age trees[3]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro					
1 – 2 years	378.08	-	-	-	378.08
3 – 5 years	33.47	175.25	-	-	208.72
6 – 10 years	0.10	0.44	35.90	-	36.44
Over 10 years	1.34	0.47	0.22	83.05	85.08
Subtotal	**412.99**	**176.16**	**36.12**	**83.05**	**708.32**
Bebedouro					
1 – 2 years	415.41	-	-	-	415.41
3 – 5 years	46.72	567.93	-	-	614.65
6 – 10 years	5.87	1.75	334.77	-	342.39
Over 10 years	73.93	8.79	35.67	798.91	917.30
Subtotal	**541.93**	**578.47**	**370.44**	**798.91**	**2,289.75**
Altinópolis					
1 – 2 years	58.19	-	-	-	58.19
3 – 5 years	0.25	1.52	-	-	1.77
6 – 10 years	0.07	0.12	1.86	-	2.05
Over 10 years	4.09	1.03	10.26	88.87	104.25
Subtotal	**62.60**	**2.67**	**12.12**	**88.87**	**166.26**
North					
1 – 2 years	851.68	-	-	-	851.68
3 – 5 years	80.44	744.70	-	-	825.14
6 – 10 years	6.04	2.31	372.53	-	380.88
Over 10 years	79.36	10.29	46.15	970.83	1,106.63
Total	**1,017.52**	**757.30**	**418.68**	**970.83**	**3,164.33**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

\- Represents zero

[1] Valencia Americana, Seleta, Pineapple and Alvorada

[2] Calculation based on the year the original plot was planted

[3] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 25 – Other early[1]: Trees by age group and age group of plot – Northwest Sector [2024 inventory]

Plot age[2] and regions of Northwest Sector	Age trees[3]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Votuporanga					
1 – 2 years	191.96	-	-	-	191.96
3 – 5 years	0.35	92.46	-	-	92.81
6 – 10 years	0.01	0.13	7.03	-	7.17
Over 10 years	-	0.64	-	56.56	57.20
Subtotal	**192.32**	**93.23**	**7.03**	**56.56**	**349.14**
São José do Rio Preto					
1 – 2 years	450.83	-	-	-	450.83
3 – 5 years	87.92	437.67	-	-	525.59
6 – 10 years	3.25	7.43	626.71	-	637.39
Over 10 years	8.78	3.75	30.34	643.89	686.76
Subtotal	**550.78**	**448.85**	**657.05**	**643.89**	**2,300.57**
Northwest					
1 – 2 years	642.79	-	-	-	642.79
3 – 5 years	88.27	530.13	-	-	618.40
6 – 10 years	3.26	7.56	633.74	-	644.56
Over 10 years	8.78	4.39	30.34	700.45	743.96
Total	**743.10**	**542.08**	**664.08**	**700.45**	**2,649.71**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Valencia Americana, Seleta, Pineapple and Alvorada
2 Calculation based on the year the original plot was planted
3 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 26 – Other early[1]: Trees by age group and age group of plot – Central Sector [2024 inventory]

Plot age[2] and regions of Central Sector	Age trees[3]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Matão					
1 – 2 years	137.78	-	-	-	137.78
3 – 5 years	35.19	805.80	-	-	840.99
6 – 10 years	4.81	13.57	483.11	-	501.49
Over 10 years	6.54	15.99	120.37	739.99	882.89
Subtotal	**184.32**	**835.36**	**603.48**	**739.99**	**2,363.15**
Duartina					
1 – 2 years	437.04	-	-	-	437.04
3 – 5 years	16.97	606.48	-	-	623.45
6 – 10 years	6.67	13.69	372.49	-	392.85
Over 10 years	18.14	14.35	54.40	748.76	835.65
Subtotal	**478.82**	**634.52**	**426.89**	**748.76**	**2,288.99**
Brotas					
1 – 2 years	2.15	-	-	-	2.15
3 – 5 years	0.06	1.70	-	-	1.76
6 – 10 years	6.21	4.93	110.97	-	122.11
Over 10 years	-	-	1.74	99.97	101.71
Subtotal	**8.42**	**6.63**	**112.71**	**99.97**	**227.73**
Central					
1 – 2 years	576.97	-	-	-	576.97
3 – 5 years	52.22	1,413.98	-	-	1,466.20
6 – 10 years	17.69	32.19	966.57	-	1,016.45
Over 10 years	24.68	30.34	176.51	1,588.72	1,820.25
Total	**671.56**	**1,476.51**	**1,143.08**	**1,588.72**	**4,879.87**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Valencia Americana, Seleta, Pineapple and Alvorada
2 Calculation based on the year the original plot was planted
3 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 27 – Other early[1]: Trees by age group and age group of plot – South Sector [2024 inventory]

Plot age[2] and regions of South Sector	Age trees[3]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Porto Ferreira					
1 – 2 years.....	39.26	-	-	-	39.26
3 – 5 years.....	0.22	139.23	-	-	139.45
6 – 10 years.....	0.02	0.74	49.24	-	50.00
Over 10 years.....	3.99	4.42	5.43	164.03	177.87
Subtotal.....	**43.49**	**144.39**	**54.67**	**164.03**	**406.58**
Limeira					
1 – 2 years.....	45.28	-	-	-	45.28
3 – 5 years.....	11.00	83.48	-	-	94.48
6 – 10 years.....	-	0.01	9.53	-	9.54
Over 10 years.....	-	-	1.92	179.43	181.35
Subtotal.....	**56.28**	**83.49**	**11.45**	**179.43**	**330.65**
South					
1 – 2 years.....	84.54	-	-	-	84.54
3 – 5 years.....	11.22	222.71	-	-	233.93
6 – 10 years.....	0.02	0.75	58.77	-	59.54
Over 10 years.....	3.99	4.42	7.35	343.46	359.22
Total.....	**99.77**	**227.88**	**66.12**	**343.46**	**737.23**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Valencia Americana, Seleta, Pineapple and Alvorada
[2] Calculation based on the year the original plot was planted
[3] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 28 – Other early[1]: Trees by age group and age group of plot – Southwest Sector [2024 inventory]

Plot age[2] and regions of Southwest Sector	Age trees[3]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Avaré					
1 – 2 years.....	246.62	-	-	-	246.62
3 – 5 years.....	26.32	77.42	-	-	103.74
6 – 10 years.....	1.69	1.85	117.38	-	120.92
Over 10 years.....	23.12	1.92	32.20	505.85	563.09
Subtotal.....	**297.75**	**81.19**	**149.58**	**505.85**	**1,034.37**
Itapetininga					
1 – 2 years.....	92.34	-	-	-	92.34
3 – 5 years.....	164.82	237.86	-	-	402.68
6 – 10 years.....	11.97	0.42	620.73	-	633.12
Over 10 years.....	0.26	0.09	0.38	339.67	340.40
Subtotal.....	**269.39**	**238.37**	**621.11**	**339.67**	**1,468.54**
Southwest					
1 – 2 years.....	338.96	-	-	-	338.96
3 – 5 years.....	191.14	315.28	-	-	506.42
6 – 10 years.....	13.66	2.27	738.11	-	754.04
Over 10 years.....	23.38	2.01	32.58	845.52	903.49
Total.....	**567.14**	**319.56**	**770.69**	**845.52**	**2,502.91**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Valencia Americana, Seleta, Pineapple and Alvorada
[2] Calculation based on the year the original plot was planted
[3] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 29 – Pera Rio: Trees by age group and age group of plot – North Sector [2024 inventory]

Plot age[1] and regions of North Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro					
1 – 2 years.....	862.73	-	-	-	862.73
3 – 5 years.....	10.19	934.31	-	-	944.50
6 – 10 years.....	10.80	17.26	1,063.63	-	1,091.69
Over 10 years….....	2.98	3.13	371.77	1,663.67	2,041.55
Subtotal.....	**886.70**	**954.70**	**1,435.40**	**1,663.67**	**4,940.47**
Bebedouro					
1 – 2 years.....	1,211.84	-	-	-	1,211.84
3 – 5 years.....	64.86	1,063.54	-	-	1,128.40
6 – 10 years.....	37.47	38.60	1,856.99	-	1,933.06
Over 10 years.....	60.82	32.47	92.74	3,489.60	3,675.63
Subtotal.....	**1,374.99**	**1,134.61**	**1,949.73**	**3,489.60**	**7,948.93**
Altinópolis					
1 – 2 years.....	525.95	-	-	-	525.95
3 – 5 years.....	3.00	182.84	-	-	185.84
6 – 10 years.....	2.89	6.11	282.91	-	291.91
Over 10 years.....	0.09	0.93	9.69	1,053.91	1,064.62
Subtotal.....	**531.93**	**189.88**	**292.60**	**1,053.91**	**2,068.32**
North					
1 – 2 years.....	2,600.52	-	-	-	2,600.52
3 – 5 years.....	78.05	2,180.69	-	-	2,258.74
6 – 10 years.....	51.16	61.97	3,203.53	-	3,316.66
Over 10 years.....	63.89	36.53	474.20	6,207.18	6,781.80
Total.....	**2,793.62**	**2,279.19**	**3,677.73**	**6,207.18**	**14,957.72**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 30 – Pera Rio: Trees by age group and age group of plot – Northwest Sector [2024 inventory]

Plot age[1] and regions of Northwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Votuporanga					
1 – 2 years	1,451.43	-	-	-	1,451.43
3 – 5 years	16.92	1,141.37	-	-	1,158.29
6 – 10 years	18.37	56.93	1,221.59	-	1,296.89
Over 10 years	56.35	49.92	51.71	2,130.38	2,288.36
Subtotal	**1,543.07**	**1,248.22**	**1,273.30**	**2,130.38**	**6,194.97**
São José do Rio Preto					
1 – 2 years	529.77	-	-	-	529.77
3 – 5 years	72.08	734.78	-	-	806.86
6 – 10 years	21.52	14.80	846.58	-	882.90
Over 10 years	19.94	27.17	60.94	657.57	765.62
Subtotal	**643.31**	**776.75**	**907.52**	**657.57**	**2,985.15**
Northwest					
1 – 2 years	1,981.20	-	-	-	1,981.20
3 – 5 years	89.00	1,876.15	-	-	1,965.15
6 – 10 years	39.89	71.73	2,068.17	-	2,179.79
Over 10 years	76.29	77.09	112.65	2,787.95	3,053.98
Total	**2,186.38**	**2,024.97**	**2,180.82**	**2,787.95**	**9,180.12**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 31 – Pera Rio: Trees by age group and age group of plot – Central Sector [2024 inventory]

Plot age[1] and regions of Central Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Matão					
1 – 2 years	1,345.30	-	-	-	1,345.30
3 – 5 years	41.80	981.96	-	-	1,023.76
6 – 10 years	104.65	90.47	2,368.89	-	2,564.01
Over 10 years	21.88	44.63	126.84	2,303.07	2,496.42
Subtotal	**1,513.63**	**1,117.06**	**2,495.73**	**2,303.07**	**7,429.49**
Duartina					
1 – 2 years	1,633.92	-	-	-	1,633.92
3 – 5 years	105.19	2,124.45	-	-	2,229.64
6 – 10 years	121.48	220.72	3,109.94	-	3,452.14
Over 10 years	57.42	83.98	282.85	4,721.72	5,145.97
Subtotal	**1,918.01**	**2,429.15**	**3,392.79**	**4,721.72**	**12,461.67**
Brotas					
1 – 2 years	261.13	-	-	-	261.13
3 – 5 years	33.23	125.10	-	-	158.33
6 – 10 years	13.66	24.16	652.31	-	690.13
Over 10 years	1.36	2.77	111.82	631.57	747.52
Subtotal	**309.38**	**152.03**	**764.13**	**631.57**	**1,857.11**
Central					
1 – 2 years	3,240.35	-	-	-	3,240.35
3 – 5 years	180.22	3,231.51	-	-	3,411.73
6 – 10 years	239.79	335.35	6,131.14	-	6,706.28
Over 10 years	80.66	131.38	521.51	7,656.36	8,389.91
Total	**3,741.02**	**3,698.24**	**6,652.65**	**7,656.36**	**21,748.27**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 32 – Pera Rio: Trees by age group and age group of plot – South Sector [2024 inventory]

Plot age[1] and regions of South Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Porto Ferreira					
1 – 2 years.....	1,250.80	-	-	-	1,250.80
3 – 5 years.....	101.52	1,842.42	-	-	1,943.94
6 – 10 years.....	61.28	55.16	1,684.27	-	1,800.71
Over 10 years.....	72.91	201.10	231.04	2,162.74	2,667.79
Subtotal.....	**1,486.51**	**2,098.68**	**1,915.31**	**2,162.74**	**7,663.24**
Limeira					
1 – 2 years.....	693.30	-	-	-	693.30
3 – 5 years.....	89.73	1,018.51	-	-	1,108.24
6 – 10 years.....	33.60	66.68	915.75	-	1,016.03
Over 10 years.....	66.90	81.38	127.23	2,262.98	2,538.49
Subtotal.....	**883.53**	**1,166.57**	**1,042.98**	**2,262.98**	**5,356.06**
South					
1 – 2 years.....	1,944.10	-	-	-	1,944.10
3 – 5 years.....	191.25	2,860.93	-	-	3,052.18
6 – 10 years.....	94.88	121.84	2,600.02	-	2,816.74
Over 10 years.....	139.81	282.48	358.27	4,425.72	5,206.28
Total.....	**2,370.04**	**3,265.25**	**2,958.29**	**4,425.72**	**13,019.30**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 33 – Pera Rio: Trees by age group and age group of plot – Southwest Sector [2024 inventory]

Plot age[1] and regions of Southwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Avaré					
1 – 2 years.....	1,415.25	-	-	-	1,415.25
3 – 5 years.....	98.77	1,978.66	-	-	2,077.43
6 – 10 years.....	41.88	43.05	916.78	-	1,001.71
Over 10 years.....	34.65	106.26	162.80	4,502.98	4,806.69
Subtotal.....	**1,590.55**	**2,127.97**	**1,079.58**	**4,502.98**	**9,301.08**
Itapetininga					
1 – 2 years.....	631.48	-	-	-	631.48
3 – 5 years.....	349.20	977.71	-	-	1,326.91
6 – 10 years.....	31.09	14.01	1,374.46	-	1,419.56
Over 10 years.....	11.55	43.03	37.37	1,629.66	1,721.61
Subtotal.....	**1,023.32**	**1,034.75**	**1,411.83**	**1,629.66**	**5,099.56**
Southwest					
1 – 2 years.....	2,046.73	-	-	-	2,046.73
3 – 5 years.....	447.97	2,956.37	-	-	3,404.34
6 – 10 years.....	72.97	57.06	2,291.24	-	2,421.27
Over 10 years.....	46.20	149.29	200.17	6,132.64	6,528.30
Total.....	**2,613.87**	**3,162.72**	**2,491.41**	**6,132.64**	**14,400.64**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 34 – Valencia and Valencia Folha Murcha: Trees by age group and age group of plot – North Sector [2024 inventory]

Plot age[1] and regions of Norte Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro					
1 – 2 years.....	798.68	-	-	-	798.68
3 – 5 years.....	1.87	74.99	-	-	76.86
6 – 10 years.....	0.36	5.51	139.55	-	145.42
Over 10 years.....	4.42	2.78	314.55	3,380.82	3,702.57
Subtotal.....	**805.33**	**83.28**	**454.10**	**3,380.82**	**4,723.53**
Bebedouro					
1 – 2 years.....	724.92	-	-	-	724.92
3 – 5 years.....	94.31	665.85	-	-	760.16
6 – 10 years.....	27.62	12.30	1,382.01	-	1,421.93
Over 10 years.....	90.03	76.86	203.30	4,609.38	4,979.57
Subtotal.....	**936.88**	**755.01**	**1,585.31**	**4,609.38**	**7,886.58**
Altinópolis					
1 – 2 years.....	509.30	-	-	-	509.30
3 – 5 years.....	0.58	67.13	-	-	67.71
6 – 10 years.....	0.12	1.42	160.27	-	161.81
Over 10 years.....	7.85	2.25	26.63	1,608.71	1,645.44
Subtotal.....	**517.85**	**70.80**	**186.90**	**1,608.71**	**2,384.26**
North					
1 – 2 years.....	2,032.90	-	-	-	2,032.90
3 – 5 years.....	96.76	807.97	-	-	904.73
6 – 10 years.....	28.10	19.23	1,681.83	-	1,729.16
Over 10 years.....	102.30	81.89	544.48	9,598.91	10,327.58
Total.....	**2,260.06**	**909.09**	**2,226.31**	**9,598.91**	**14,994.37**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 35 – Valencia and Valencia Folha Murcha: Trees by age group and age group of plot – Northwest Sector [2024 inventory]

Plot age[1] and regions of Northwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Votuporanga					
1 – 2 years.....	792.79	-	-	-	792.79
3 – 5 years.....	0.55	54.67	-	-	55.22
6 – 10 years.....	0.15	0.20	11.54	-	11.89
Over 10 years.....	-	0.05	1.08	405.13	406.26
Subtotal.....	**793.49**	**54.92**	**12.62**	**405.13**	**1,266.16**
São José do Rio Preto					
1 – 2 years.....	435.87	-	-	-	435.87
3 – 5 years.....	1.59	93.95	-	-	95.54
6 – 10 years.....	0.84	0.74	659.06	-	660.64
Over 10 years.....	16.13	9.51	49.39	1,328.22	1,403.25
Subtotal.....	**454.43**	**104.20**	**708.45**	**1,328.22**	**2,595.30**
Northwest					
1 – 2 years.....	1,228.66	-	-	-	1,228.66
3 – 5 years.....	2.14	148.62	-	-	150.76
6 – 10 years.....	0.99	0.94	670.60	-	672.53
Over 10 years.....	16.13	9.56	50.47	1,733.35	1,809.51
Total.....	**1,247.92**	**159.12**	**721.07**	**1,733.35**	**3,861.46**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 36 – Valencia and Valencia Folha Murcha: Trees by age group and age group of plot – Central Sector [2024 inventory]

Plot age[1] and regions of Central Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Matão					
1 – 2 years.....	1,131.16	-	-	-	1,131.16
3 – 5 years.....	18.68	386.90	-	-	405.58
6 – 10 years.....	26.39	52.83	1,076.17	-	1,155.39
Over 10 years.....	79.07	44.97	206.16	2,200.23	2,530.43
Subtotal.....	**1,255.30**	**484.70**	**1,282.33**	**2,200.23**	**5,222.56**
Duartina					
1 – 2 years.....	1,482.17	-	-	-	1,482.17
3 – 5 years.....	224.98	2,577.72	-	-	2,802.70
6 – 10 years.....	41.09	102.44	2,587.79	-	2,731.32
Over 10 years.....	37.83	71.83	324.19	3,206.09	3,639.94
Subtotal.....	**1,786.07**	**2,751.99**	**2,911.98**	**3,206.09**	**10,656.13**
Brotas					
1 – 2 years.....	180.04	-	-	-	180.04
3 – 5 years.....	15.81	276.49	-	-	292.30
6 – 10 years.....	23.64	16.36	236.00	-	276.00
Over 10 years.....	14.98	4.12	80.67	899.94	999.71
Subtotal.....	**234.47**	**296.97**	**316.67**	**899.94**	**1,748.05**
Central					
1 – 2 years.....	2,793.37	-	-	-	2,793.37
3 – 5 years.....	259.47	3,241.11	-	-	3,500.58
6 – 10 years.....	91.12	171.63	3,899.96	-	4,162.71
Over 10 years.....	131.88	120.92	611.02	6,306.26	7,170.08
Total.....	**3,275.84**	**3,533.66**	**4,510.98**	**6,306.26**	**17,626.74**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 37 – Valencia and Valencia Folha Murcha: Trees by age group and age group of plot – South Sector [2024 inventory]

Plot age[1] and regions of South Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Porto Ferreira					
1 – 2 years.....	632.45	-	-	-	632.45
3 – 5 years.....	54.81	791.69	-	-	846.50
6 – 10 years.....	25.25	24.58	977.84	-	1,027.67
Over 10 years.....	20.80	115.73	348.03	3,032.37	3,516.93
Subtotal.....	**733.31**	**932.00**	**1,325.87**	**3,032.37**	**6,023.55**
Limeira					
1 – 2 years.....	437.68	-	-	-	437.68
3 – 5 years.....	61.19	494.60	-	-	555.79
6 – 10 years.....	28.80	45.54	688.84	-	763.18
Over 10 years.....	14.82	72.71	135.39	2,921.73	3,144.65
Subtotal.....	**542.49**	**612.85**	**824.23**	**2,921.73**	**4,901.30**
South					
1 – 2 years.....	1,070.13	-	-	-	1,070.13
3 – 5 years.....	116.00	1,286.29	-	-	1,402.29
6 – 10 years.....	54.05	70.12	1,666.68	-	1,790.85
Over 10 years.....	35.62	188.44	483.42	5,954.10	6,661.58
Total.....	**1,275.80**	**1,544.85**	**2,150.10**	**5,954.10**	**10,924.85**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 38 – Valencia and Valencia Folha Murcha: Trees by age group and age group of plot – Southwest Sector [2024 inventory]

Plot age[1] and regions of Southwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Avaré					
1 – 2 years.....	846.63	-	-	-	846.63
3 – 5 years.....	31.01	1,208.98	-	-	1,239.99
6 – 10 years.....	42.35	7.27	382.10	-	431.72
Over 10 years.....	29.58	246.60	365.67	7,692.72	8,334.57
Subtotal.....	**949.57**	**1,462.85**	**747.77**	**7,692.72**	**10,852.91**
Itapetininga					
1 – 2 years.....	768.94	-	-	-	768.94
3 – 5 years.....	9.30	796.48	-	-	805.78
6 – 10 years.....	11.61	0.92	707.35	-	719.88
Over 10 years.....	47.74	54.70	60.77	2,228.78	2,391.99
Subtotal.....	**837.59**	**852.10**	**768.12**	**2,228.78**	**4,686.59**
Southwest					
1 – 2 years.....	1,615.57	-	-	-	1,615.57
3 – 5 years.....	40.31	2,005.46	-	-	2,045.77
6 – 10 years.....	53.96	8.19	1,089.45	-	1,151.60
Over 10 years.....	77.32	301.30	426.44	9,921.50	10,726.56
Total.....	**1,787.16**	**2,314.95**	**1,515.89**	**9,921.50**	**15,539.50**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 39 – Natal: Trees by age group and age group of plot – North Sector [2024 inventory]

Plot age[1] and regions of Norte Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro					
1 – 2 years.....	162.63	-	-	-	162.63
3 – 5 years.....	1.32	54.92	-	-	56.24
6 – 10 years.....	0.04	7.40	50.16	-	57.60
Over 10 years.....	12.74	1.41	16.94	1,326.07	1,357.16
Subtotal.....	**176.73**	**63.73**	**67.10**	**1,326.07**	**1,633.63**
Bebedouro					
1 – 2 years.....	102.38	-	-	-	102.38
3 – 5 years.....	3.27	142.96	-	-	146.23
6 – 10 years.....	4.53	5.71	592.23	-	602.47
Over 10 years.....	8.82	4.84	41.73	1,265.31	1,320.70
Subtotal.....	**119.00**	**153.51**	**633.96**	**1,265.31**	**2,171.78**
Altinópolis					
1 – 2 years.....	1.90	-	-	-	1.90
3 – 5 years.....	0.33	29.13	-	-	29.46
6 – 10 years.....	0.27	4.64	113.64	-	118.55
Over 10 years.....	2.52	3.00	10.12	240.68	256.32
Subtotal.....	**5.02**	**36.77**	**123.76**	**240.68**	**406.23**
North					
1 – 2 years.....	266.91	-	-	-	266.91
3 – 5 years.....	4.92	227.01	-	-	231.93
6 – 10 years.....	4.84	17.75	756.03	-	778.62
Over 10 years.....	24.08	9.25	68.79	2,832.06	2,934.18
Total.....	**300.75**	**254.01**	**824.82**	**2,832.06**	**4,211.64**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)

- Represents zero

[1] Calculation based on the year the original plot was planted

[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 40 – Natal: Trees by age group and age group of plot – Northwest Sector [2024 inventory]

Plot age[1] and regions of Northwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Votuporanga					
1 – 2 years	57.41	-	-	-	57.41
3 – 5 years	1.04	127.60	-	-	128.64
6 – 10 years	0.76	1.71	61.27	-	63.74
Over 10 years	0.69	1.66	-	23.06	25.41
Subtotal	**59.90**	**130.97**	**61.27**	**23.06**	**275.20**
São José do Rio Preto					
1 – 2 years	2.83	-	-	-	2.83
3 – 5 years	22.82	78.70	-	-	101.52
6 – 10 years	4.03	0.59	696.69	-	701.31
Over 10 years	2.59	1.10	25.50	107.12	136.31
Subtotal	**32.27**	**80.39**	**722.19**	**107.12**	**941.97**
Northwest					
1 – 2 years	60.24	-	-	-	60.24
3 – 5 years	23.86	206.30	-	-	230.16
6 – 10 years	4.79	2.30	757.96	-	765.05
Over 10 years	3.28	2.76	25.50	130.18	161.72
Total	**92.17**	**211.36**	**783.46**	**130.18**	**1,217.17**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 41 – Natal: Trees by age group and age group of plot – Central Sector [2024 inventory]

Plot age[1] and regions of Central Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Matão					
1 – 2 years	512.82	-	-	-	512.82
3 – 5 years	50.71	671.52	-	-	722.23
6 – 10 years	24.77	8.53	540.47	-	573.77
Over 10 years	3.86	3.79	39.25	554.50	601.40
Subtotal	**592.16**	**683.84**	**579.72**	**554.50**	**2,410.22**
Duartina					
1 – 2 years	167.66	-	-	-	167.66
3 – 5 years	38.37	281.41	-	-	319.78
6 – 10 years	2.70	17.45	395.76	-	415.91
Over 10 years	16.53	8.91	61.74	1,754.26	1,841.44
Subtotal	**225.26**	**307.77**	**457.50**	**1,754.26**	**2,744.79**
Brotas					
1 – 2 years	30.30	-	-	-	30.30
3 – 5 years	4.45	84.64	-	-	89.09
6 – 10 years	2.65	6.30	127.62	-	136.57
Over 10 years	-	-	1.94	103.76	105.70
Subtotal	**37.40**	**90.94**	**129.56**	**103.76**	**361.66**
Central					
1 – 2 years	710.78	-	-	-	710.78
3 – 5 years	93.53	1,037.57	-	-	1,131.10
6 – 10 years	30.12	32.28	1,063.85	-	1,126.25
Over 10 years	20.39	12.70	102.93	2,412.52	2,548.54
Total	**854.82**	**1,082.55**	**1,166.78**	**2,412.52**	**5,516.67**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
[1] Calculation based on the year the original plot was planted
[2] Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 42 – Natal: Trees by age group and age group of plot – South Sector [2024 inventory]

Plot age[1] and regions of South	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Porto Ferreira					
1 – 2 years	161.97	-	-	-	161.97
3 – 5 years	82.54	440.19	-	-	522.73
6 – 10 years	6.65	17.37	577.72	-	601.74
Over 10 years	17.43	58.50	52.08	513.14	641.15
Subtotal	**268.59**	**516.06**	**629.80**	**513.14**	**1,927.59**
Limeira					
1 – 2 years	112.99	-	-	-	112.99
3 – 5 years	25.53	64.77	-	-	90.30
6 – 10 years	3.08	1.41	227.95	-	232.44
Over 10 years	10.26	33.83	10.96	525.79	580.84
Subtotal	**151.86**	**100.01**	**238.91**	**525.79**	**1,016.57**
South					
1 – 2 years	274.96	-	-	-	274.96
3 – 5 years	108.07	504.96	-	-	613.03
6 – 10 years	9.73	18.78	805.67	-	834.18
Over 10 years	27.69	92.33	63.04	1,038.93	1,221.99
Total	**420.45**	**616.07**	**868.71**	**1,038.93**	**2,944.16**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 43 – Natal: Trees by age group and age group of plot – Southwest Sector [2024 inventory]

Plot age[1] and regions of Southwest Sector	Age trees[2]				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Avaré					
1 – 2 years	254.37	-	-	-	254.37
3 – 5 years	35.04	340.33	-	-	375.37
6 – 10 years	8.09	8.48	513.48	-	530.05
Over 10 years	16.44	92.29	198.12	2,915.24	3,222.09
Subtotal	**313.94**	**441.10**	**711.60**	**2,915.24**	**4,381.88**
Itapetininga					
1 – 2 years	218.27	-	-	-	218.27
3 – 5 years	181.34	449.27	-	-	630.61
6 – 10 years	1.30	4.31	430.97	-	436.58
Over 10 years	6.56	41.97	42.73	1,310.75	1,402.01
Subtotal	**407.47**	**495.55**	**473.70**	**1,310.75**	**2,687.47**
Southwest					
1 – 2 years	472.64	-	-	-	472.64
3 – 5 years	216.38	789.60	-	-	1,005.98
6 – 10 years	9.39	12.79	944.45	-	966.63
Over 10 years	23.00	134.26	240.85	4,225.99	4,624.10
Total	**721.41**	**936.65**	**1,185.30**	**4,225.99**	**7,069.35**

Ages and planting years: 1 – 2 years (2022 and 2023), 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and earlier)
- Represents zero
1 Calculation based on the year the original plot was planted
2 Estimated both from information supplied by growers on years resettings occurred in the plot and from visual aspects of the plant, such as trunk circumference, height and shape of canopy, among other factors

Table 44 – Oranges: Area of young and mature groves by sector and region [2024 inventory and accumulated variation]

Sector and region	2024 inventory			Accumulated variation (△) since 2022 inventory		
	Area of young groves[1]	Area of mature groves[2]	Total			
	(A)	(B)	(C)	(△ A)	(△ B)	(△ C)
	(hectares)	(hectares)	(hectares)	(%)	(%)	(%)
North						
Triângulo Mineiro.....	4,467	24,829	29,296	52.51	-1.90	3.74
Bebedouro.....	5,628	44,884	50,512	16.09	-0.47	1.14
Altinópolis.....	2,136	9,993	12,129	26.84	-4.69	-0.33
Subtotal	**12,231**	**79,706**	**91,937**	**29.28**	**-1.46**	**1.75**
Northwest						
Votuporanga.....	5,350	12,898	18,248	59.51	-1.12	11.28
São José do Rio Preto.....	3,208	17,283	20,491	23.20	-5.59	-2.00
Subtotal.....	**8,558**	**30,181**	**38,739**	**43.64**	**-3.73**	**3.84**
Central						
Matão.....	7,196	28,606	35,802	-1.15	0.70	0.32
Duartina.....	7,091	53,940	61,031	-9.73	2.57	0.97
Brotas.....	987	9,026	10,013	-28.84	-11.36	-13.46
Subtotal.....	**15,274**	**91,572**	**106,846**	**-7.55**	**0.43**	**-0.80**
South						
Porto Ferreira.....	4,699	30,919	35,618	-10.24	-2.41	-3.52
Limeira.....	2,445	25,979	28,424	-27.10	-7.97	-10.00
Subtotal.....	**7,144**	**56,898**	**64,042**	**-16.82**	**-5.03**	**-6.51**
Southwest						
Avaré.....	5,881	54,685	60,566	-16.79	5.63	2.94
Itapetininga.....	3,135	23,225	26,360	6.49	5.65	5.74
Subtotal	**9,016**	**77,910**	**86,926**	**-9.95**	**5.63**	**3.77**
Total.....	**52,223**	**336,267**	**388,490**	**3.33**	**-0.24**	**0.22**
Percentage.....	**13.44**	**86.56**	**100.00**	**(X)**	**(X)**	**(X)**

(X) Not applicable
- Represents zero
[1] Groves planted in 2022 and 2023
[2] Groves planted in 2021 and in previous years

Table 45 – Oranges: Non-bearing and bearing trees by sector and region [2024 inventory and accumulated variation]

Sector and region	2024 inventory					Accumulated variation (△) since 2022 inventory				
	Non-bearing trees[1]			Bearing trees[4]	Total					
	In young groves[2]	In mature groves[3] (resets)	Total							
	(A)	(B)	(C)	(D)	(E)	(△A)	(△B)	(△C)	(△D)	(△E)
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(%)	(%)	(%)	(%)	(%)
North										
Triângulo Mineiro.....	2,453.16	97.19	2,550.35	11,764.21	14,314.56	53.07	52.79	53.06	-1.98	4.73
Bebedouro.....	3,295.87	612.29	3,908.16	21,312.02	25,220.18	23.94	46.24	26.98	-2.88	0.79
Altinópolis.....	1,129.70	24.30	1,154.00	4,752.77	5,906.77	29.88	-32.67	27.39	-4.68	0.25
Subtotal	**6,878.73**	**733.78**	**7,612.51**	**37,829.00**	**45,441.51**	**34.05**	**41.55**	**34.73**	**-2.83**	**1.93**
Northwest										
Votuporanga.....	2,594.93	95.20	2,690.13	5,780.23	8,470.36	67.56	-28.89	59.89	-0.82	12.78
S. J. do Rio Preto.....	1,622.94	326.89	1,949.83	8,902.39	10,852.22	22.37	15.62	21.18	-2.92	0.67
Subtotal.....	**4,217.87**	**422.09**	**4,639.96**	**14,682.62**	**19,322.58**	**46.72**	**1.32**	**40.97**	**-2.11**	**5.65**
Central										
Matão.....	4,544.47	483.49	5,027.96	16,160.26	21,188.22	-3.40	51.34	0.08	2.61	2.00
Duartina.....	4,105.11	776.19	4,881.30	27,633.64	32,514.94	-11.87	-1.30	-10.34	2.06	-0.02
Brotas.....	550.87	132.21	683.08	4,209.91	4,892.99	-35.03	19.98	-28.71	-13.22	-15.78
Subtotal.....	**9,200.45**	**1,391.89**	**10,592.34**	**48,003.81**	**58,596.15**	**-9.89**	**14.46**	**-7.30**	**0.69**	**-0.86**
South										
Porto Ferreira.....	2,767.56	595.47	3,363.03	15,882.24	19,245.27	-10.44	9.63	-7.44	-1.20	-2.35
Limeira.....	1,548.22	422.81	1,971.03	12,163.96	14,134.99	-21.42	-25.24	-22.27	-9.07	-11.17
Subtotal.....	**4,315.78**	**1,018.28**	**5,334.06**	**28,046.20**	**33,380.26**	**-14.71**	**-8.16**	**-13.53**	**-4.77**	**-6.29**
Southwest										
Avaré.....	3,520.61	524.06	4,044.67	27,109.87	31,154.54	-8.94	-15.38	-9.83	7.08	4.54
Itapetininga.....	2,033.54	936.32	2,969.86	12,871.17	15,841.03	8.20	35.61	15.57	-0.33	2.31
Subtotal.....	**5,554.15**	**1,460.38**	**7,014.53**	**39,981.04**	**46,995.57**	**-3.33**	**11.50**	**-0.58**	**4.58**	**3.77**
Total.....	**30,166.98**	**5,026.42**	**35,193.40**	**168,542.67**	**203,736.07**	**3.94**	**10.00**	**4.77**	**-0.44**	**0.42**
Percentage.....	**85.72**	**14.28**	**17.27**	**82.73**	**100.00**	**(X)**	**(X)**	**(X)**	**(X)**	**(X)**

(X) Not applicable
- Represents zero
[1] Trees planted in 2022 and 2023
[2] Groves planted in 2022 and 2023
[3] Groves planted in 2021 and in previous years
[4] Trees planted in 2021 and in previous years

Table 46 – Oranges: Area of groves by age group of plots, sector and region [2024 inventory]

Sector and region	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
North					
Triâng.Mineiro....	4,467	2,529	2,508	19,792	29,296
Bebedouro.....	5,628	5,701	8,373	30,810	50,512
Altinópolis.....	2,136	641	922	8,430	12,129
Subtotal.....	**12,231**	**8,871**	**11,803**	**59,032**	**91,937**
Northwest					
Votuporanga.....	5,350	3,834	3,195	5,869	18,248
S. J. Rio Preto.....	3,208	2,884	4,871	9,528	20,491
Subtotal.....	**8,558**	**6,718**	**8,066**	**15,397**	**38,739**
Central					
Matão.....	7,196	5,399	7,906	15,301	35,802
Duartina.....	7,091	11,155	12,703	30,082	61,031
Brotas.....	987	1,024	2,049	5,953	10,013
Subtotal.....	**15,274**	**17,578**	**22,658**	**51,336**	**106,846**
South					
Porto Ferreira....	4,699	6,533	6,530	17,856	35,618
Limeira.....	2,445	3,613	3,941	18,425	28,424
Subtotal.....	**7,144**	**10,146**	**10,471**	**36,281**	**64,042**
Southwest					
Avaré.....	5,881	8,849	3,509	42,327	60,566
Itapetininga.....	3,135	5,808	5,146	12,271	26,360
Subtotal.....	**9,016**	**14,657**	**8,655**	**54,598**	**86,926**
Total.....	**52,223**	**57,970**	**61,653**	**216,644**	**388,490**
Percentage.....	**13.44**	**14.92**	**15.87**	**55.77**	**100.00**

- Represents zero
[1] Area of young orange groves

Table 47 – Oranges: Trees by age group, age group of plot, sector and region [2024 inventory]

Sector and region	Idades dos talhões e árvores										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
North											
Triâng.Mineiro	2,453.16	48.26	1,319.63	18.19	34.74	1,354.32	30.74	10.98	907.45	8,137.09	14,314.56
Bebedouro.....	3,295.87	217.27	2,853.41	82.76	72.10	4,559.87	312.26	153.85	525.42	13,147.37	25,220.18
Altinópolis.....	1,129.70	5.30	338.26	3.79	12.60	590.06	15.21	11.10	71.28	3,729.47	5,906.77
Subtotal.....	**6,878.73**	**270.83**	**4,511.30**	**104.74**	**119.44**	**6,504.25**	**358.21**	**175.93**	**1,504.15**	**25,013.93**	**45,441.51**
Northwest											
Votuporanga...	2,594.93	18.87	1,460.89	19.29	59.36	1,401.37	57.04	52.27	58.91	2,747.43	8,470.36
S J Rio Preto...	1,622.94	221.84	1,470.83	30.32	24.31	3,096.91	74.73	90.16	223.08	3,997.10	10,852.22
Subtotal.....	**4,217.87**	**240.71**	**2,931.72**	**49.61**	**83.67**	**4,498.28**	**131.77**	**142.43**	**281.99**	**6,744.53**	**19,322.58**
Central											
Matão.....	4,544.47	167.33	3,337.27	172.83	167.31	5,195.30	143.33	151.65	556.91	6,751.82	21,188.22
Duartina.....	4,105.11	413.02	6,455.93	211.35	394.53	7,142.05	151.82	216.44	920.78	12,503.91	32,514.94
Brotas.....	550.87	68.15	583.54	46.16	51.75	1,135.56	17.90	6.99	203.61	2,228.46	4,892.99
Subtotal.....	**9,200.45**	**648.50**	**10,376.74**	**430.34**	**613.59**	**13,472.91**	**313.05**	**375.08**	**1,681.30**	**21,484.19**	**58,596.15**
South											
Porto Ferreira..	2,767.56	296.07	3,826.86	129.89	142.37	3,802.40	169.51	436.80	756.71	6,917.10	19,245.27
Limeira.....	1,548.22	242.70	1,955.05	70.84	133.86	2,104.71	109.27	249.72	394.79	7,325.83	14,134.99
Subtotal.....	**4,315.78**	**538.77**	**5,781.91**	**200.73**	**276.23**	**5,907.11**	**278.78**	**686.52**	**1,151.50**	**14,242.93**	**33,380.26**
Southwest											
Avaré.....	3,520.61	286.42	4,482.79	115.33	67.76	2,096.04	122.31	544.47	992.40	18,926.41	31,154.54
Itapetininga.....	2,033.54	803.13	2,973.05	66.98	19.66	3,577.98	66.21	139.79	141.25	6,019.44	15,841.03
Subtotal.....	**5,554.15**	**1,089.55**	**7,455.84**	**182.31**	**87.42**	**5,674.02**	**188.52**	**684.26**	**1,133.65**	**24,945.85**	**46,995.57**
Total.....	**30,166.98**	**2,788.36**	**31,057.51**	**967.73**	**1,180.35**	**36,056.57**	**1,270.33**	**2,064.22**	**5,752.59**	**92,431.43**	**203,736.07**
Percentage.....	**14.81**	**1.37**	**15.24**	**0.47**	**0.58**	**17.70**	**0.62**	**1.01**	**2.82**	**45.37**	**100.00**

Table 48 – Oranges: Area of groves of early varieties by sector and region [2024 inventory]

Sector and region		Early varieties						
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Alvorada	Total
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
North								
Triâng.Mineiro.....	4,802	158	343	1,278	-	19	-	6,600
Bebedouro.....	8,301	1,016	873	4,117	2	208	-	14,517
Altinópolis.....	1,541	56	218	301	-	-	-	2,116
Subtotal.....	**14,644**	**1,230**	**1,434**	**5,696**	**2**	**227**	**-**	**23,233**
Northwest								
Votuporanga.....	427	34	335	744	-	43	13	1,596
S. J. Rio Preto.....	3,631	41	449	3,528	-	185	282	8,116
Subtotal.....	**4,058**	**75**	**784**	**4,272**	**-**	**228**	**295**	**9,712**
Central								
Matão.....	6,193	36	141	3,464	-	544	69	10,447
Duartina.....	6,887	200	1,516	3,789	31	123	196	12,742
Brotas.....	1,367	157	132	355	-	155	-	2,166
Subtotal.....	**14,447**	**393**	**1,789**	**7,608**	**31**	**822**	**265**	**25,355**
South								
Porto Ferreira.....	3,615	1,308	1,165	745	33	13	5	6,884
Limeira.....	3,526	1,188	346	541	20	3	31	5,655
Subtotal.....	**7,141**	**2,496**	**1,511**	**1,286**	**53**	**16**	**36**	**12,539**
Southwest								
Avaré.....	8,452	1,270	2,028	1,959	-	63	83	13,855
Itapetininga.....	2,113	349	1,147	907	1	998	283	5,798
Subtotal.....	**10,565**	**1,619**	**3,175**	**2,866**	**1**	**1,061**	**366**	**19,653**
Total.....	**50,855**	**5,813**	**8,693**	**21,728**	**87**	**2,354**	**962**	**90,492**
Percentage.....	**56.20**	**6.42**	**9.61**	**24.01**	**0.10**	**2.60**	**1.06**	**23.29**

- Represents zero

Table 49 – Oranges: Trees of early varieties by sector and region [2024 inventory]

Sector and region		Early varieties						
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Alvorada	Total
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
North								
Triâng.Mineiro.....	2,025.10	87.84	195.67	698.96	-	9.36	-	3,016.93
Bebedouro.....	3,934.69	480.11	508.34	2,181.00	1.61	107.14	-	7,212.89
Altinópolis.....	715.59	31.94	134.17	166.26	-	-	-	1,047.96
Subtotal.....	**6,675.38**	**599.89**	**838.18**	**3,046.22**	**1.61**	**116.50**	**-**	**11,277.78**
Northwest								
Votuporanga.....	192.95	14.96	176.98	322.75	-	18.28	8.11	734.03
S. J. Rio Preto.....	1,777.97	19.31	231.95	1,995.15	-	119.60	185.82	4,329.80
Subtotal.....	**1,970.92**	**34.27**	**408.93**	**2,317.90**	**-**	**137.88**	**193.93**	**5,063.83**
Central								
Matão.....	3,663.49	17.44	81.87	2,026.09	-	290.44	46.62	6,125.95
Duartina.....	3,359.64	111.52	892.20	2,070.34	17.11	75.93	125.61	6,652.35
Brotas.....	557.80	63.95	76.69	133.48	-	94.25	-	926.17
Subtotal.....	**7,580.93**	**192.91**	**1,050.76**	**4,229.91**	**17.11**	**460.62**	**172.23**	**13,704.47**
South								
Porto Ferreira.....	1,844.19	716.99	663.13	379.58	16.97	7.32	2.71	3,630.89
Limeira.....	1,750.18	603.20	177.03	299.70	10.19	1.43	19.33	2,861.06
Subtotal.....	**3,594.37**	**1,320.19**	**840.16**	**679.28**	**27.16**	**8.75**	**22.04**	**6,491.95**
Southwest								
Avaré.....	3,997.10	629.43	957.77	951.43	0.16	30.79	51.99	6,618.67
Itapetininga.....	1,119.46	163.02	616.39	631.35	0.55	651.67	184.97	3,367.41
Subtotal.....	**5,116.56**	**792.45**	**1,574.16**	**1,582.78**	**0.71**	**682.46**	**236.96**	**9,986.08**
Total.....	**24,938.16**	**2,939.71**	**4,712.19**	**11,856.09**	**46.59**	**1,406.21**	**625.16**	**46,524.11**
Percentage.....	**53.60**	**6.32**	**10.13**	**25.48**	**0.10**	**3.02**	**1.34**	**22.84**

- Represents zero

Table 50 – Oranges: Area of groves of mid-season and late varieties by sector and region [2024 inventory]

Sector and region	Mid-season and late varieties				
	Pera Rio	Valencia	Valencia Folha Murcha	Natal	Total
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
North					
Triâng.Mineiro.....	8,781	9,844	387	3,684	22,696
Bebedouro.....	14,205	15,397	1,951	4,442	35,995
Altinópolis.....	4,073	4,711	428	801	10,013
Subtotal.....	**27,059**	**29,952**	**2,766**	**8,927**	**68,704**
Northwest					
Votuporanga.....	13,615	2,155	260	622	16,652
S. J. Rio Preto.....	5,388	4,479	827	1,681	12,375
Subtotal.....	**19,003**	**6,634**	**1,087**	**2,303**	**29,027**
Central					
Matão.....	12,248	8,133	1,063	3,911	25,355
Duartina.....	23,024	15,683	3,732	5,850	48,289
Brotas.....	3,518	2,928	617	784	7,847
Subtotal.....	**38,790**	**26,744**	**5,412**	**10,545**	**81,491**
South					
Porto Ferreira.....	13,319	9,824	2,228	3,363	28,734
Limeira.....	10,507	7,931	2,399	1,932	22,769
Subtotal.....	**23,826**	**17,755**	**4,627**	**5,295**	**51,503**
Southwest					
Avaré.....	17,530	19,121	1,936	8,124	46,711
Itapetininga.....	8,118	6,052	1,692	4,700	20,562
Subtotal.....	**25,648**	**25,173**	**3,628**	**12,824**	**67,273**
Total.....	**134,326**	**106,258**	**17,520**	**39,894**	**297,998**
Percentage.....	**45.08**	**35.66**	**5.88**	**13.39**	**76.71**

Table 51 – Oranges: Trees of mid-season and late varieties by sector and region [2024 inventory]

Sector and region	Mid-season and late varieties				
	Pera Rio	Valencia	Valencia Folha Murcha	Natal	Total
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
North					
Triâng.Mineiro.....	4,940.47	4,520.86	202.67	1,633.63	11,297.63
Bebedouro.....	7,948.93	6,912.21	974.37	2,171.78	18,007.29
Altinópolis.....	2,068.32	2,136.62	247.64	406.23	4,858.81
Subtotal.....	**14,957.72**	**13,569.69**	**1,424.68**	**4,211.64**	**34,163.73**
Northwest					
Votuporanga.....	6,194.97	1132.97	133.19	275.2	7,736.33
S. J. Rio Preto.....	2,985.15	2,180.63	414.67	941.97	6,522.42
Subtotal.....	**9,180.12**	**3,313.60**	**547.86**	**1,217.17**	**14,258.75**
Central					
Matão.....	7,429.49	4,552.99	669.57	2,410.22	15,062.27
Duartina.....	12,461.67	8,488.22	2,167.91	2,744.79	25,862.59
Brotas.....	1,857.11	1,408.41	339.64	361.66	3,966.82
Subtotal.....	**21,748.27**	**14,449.62**	**3,177.12**	**5,516.67**	**44,891.68**
South					
Porto Ferreira.....	7,663.24	4,812.52	1,211.03	1,927.59	15,614.38
Limeira.....	5,356.06	3,623.15	1,278.15	1,016.57	11,273.93
Subtotal.....	**13,019.30**	**8,435.67**	**2,489.18**	**2,944.16**	**26,888.31**
Southwest					
Avaré.....	9,301.08	9,685.27	1167.64	4,381.88	24,535.87
Itapetininga.....	5,099.56	3,590.64	1095.95	2,687.47	12,473.62
Subtotal.....	**14,400.64**	**13,275.91**	**2,263.59**	**7,069.35**	**37,009.49**
Total.....	**73,306.05**	**53,044.49**	**9,902.43**	**20,958.99**	**157,211.96**
Percentage.....	**46.63**	**33.74**	**6.30**	**13.33**	**77.16**

Table 52 – Oranges: Area of groves by age group of plots, region and variety – North Sector [2024 inventory]

Region and variety	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
TMG[2]					
Hamlin.....	305	120	100	4,277	4,802
Westin.....	19	-	2	137	158
Rubi.....	125	28	35	155	343
V.Americana[3].....	672	347	69	190	1,278
Seleta.....	-	-	-	-	-
Pineapple.....	10	5	4	-	19
Alvorada.....	-	-	-	-	-
Pera Rio	1,374	1,772	1,915	3,720	8,781
Valencia.....	1,670	118	238	7,818	9,844
V.Folha Murcha[4]	51	31	28	277	387
Natal.....	241	108	117	3,218	3,684
Subtotal.....	**4,467**	**2,529**	**2,508**	**19,792**	**29,296**
Percentage.....	**15.25**	**8.63**	**8.56**	**67.56**	**31.87**
BEB[5]					
Hamlin.....	1,154	655	421	6,071	8,301
Westin.....	183	70	384	379	1,016
Rubi.....	41	61	44	727	873
V.Americana[3].....	628	1,086	534	1,869	4,117
Seleta.....	-	-	2	-	2
Pineapple.....	32	19	25	132	208
Alvorada.....	-	-	-	-	-
Pera Rio	1,907	2,069	3,386	6,843	14,205
Valencia.....	1,332	1,393	2,092	10,580	15,397
V.Folha Murcha[4]	176	131	526	1,118	1,951
Natal.....	175	217	959	3,091	4,442
Subtotal.....	**5,628**	**5,701**	**8,373**	**30,810**	**50,512**
Percentage.....	**11.14**	**11.29**	**16.58**	**61.00**	**54.94**
ALT[7]					
Hamlin.....	29	68	17	1,427	1,541
Westin.....	13	10	-	33	56
Rubi.....	12	16	32	158	218
V.Americana[3].....	86	3	6	206	301
Seleta.....	-	-	-	-	-
Pineapple.....	-	-	-	-	-
Alvorada.....	-	-	-	-	-
Pera Rio	874	390	445	2,364	4,073
Valencia.....	1,114	60	117	3,420	4,711
V.Folha Murcha[4]	5	51	117	255	428
Natal.....	3	43	188	567	801
Subtotal.....	**2,136**	**641**	**922**	**8,430**	**12,129**
Percentage.....	**17.61**	**5.28**	**7.60**	**69.50**	**13.19**
Total.....	**12,231**	**8,871**	**11,803**	**59,032**	**91,937**

- Represents zero
1 Area of young orange groves
2 TMG – Triângulo Mineiro
3 V.Americana – Valencia Americana
4 V.Folha Murcha – Valencia Folha Murcha
5 BEB – Bebedouro
6 ALT – Altinópolis

Table 53 – Oranges: Trees by age group, age group of plot, region and variety – North Sector [2024 inventory]

Region and variety	Plot and tree ages										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
TMG[1]											
Hamlin.....	164.97	1.18	66.92	5.19	3.11	44.08	9.23	3.15	179.42	1,547.85	2,025.10
Westin.....	10.70	-	-	0.12	0.07	1.04	0.02	-	19.32	56.57	87.84
Rubi.....	75.37	0.23	13.24	1.58	0.95	19.96	0.01	0.04	5.23	79.06	195.67
V.Americana[2].....	372.58	33.12	173.43	0.10	0.42	34.23	1.34	0.47	0.22	83.05	698.96
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	5.50	0.35	1.82	-	0.02	1.67	-	-	-	-	9.36
Alvorada.....	-	-	-	-	-	-	-	-	-	-	-
Pera Rio	862.73	10.19	934.31	10.80	17.26	1,063.63	2.98	3.13	371.77	1,663.67	4,940.47
Valencia.....	774.88	1.47	59.04	0.29	5.42	121.53	4.24	2.78	314.01	3,237.20	4,520.86
V.Folha Murcha[3]	23.80	0.40	15.95	0.07	0.09	18.02	0.18	-	0.54	143.62	202.67
Natal.....	162.63	1.32	54.92	0.04	7.40	50.16	12.74	1.41	16.94	1,326.07	1,633.63
Subtotal.....	**2,453.16**	**48.26**	**1,319.63**	**18.19**	**34.74**	**1,354.32**	**30.74**	**10.98**	**907.45**	**8,137.09**	**14,314.56**
Percentage.....	**17.14**	**0.34**	**9.22**	**0.13**	**0.24**	**9.46**	**0.21**	**0.08**	**6.34**	**56.84**	**31.50**
BEB[4]											
Hamlin.....	722.13	6.75	343.59	0.40	9.87	195.44	62.82	23.65	126.35	2,443.69	3,934.69
Westin.....	93.02	1.00	33.50	6.87	1.30	164.98	3.06	1.40	7.52	167.46	480.11
Rubi.....	26.17	0.36	36.04	-	2.57	33.45	12.78	5.84	18.11	373.02	508.34
V.Americana[2].....	395.28	45.96	558.71	5.66	1.67	319.92	69.80	8.30	33.76	741.94	2,181.00
Seleta.....	-	-	-	0.02	0.01	1.09	0.04	0.01	0.01	0.43	1.61
Pineapple.....	20.13	0.76	9.22	0.19	0.07	13.76	4.09	0.48	1.90	56.54	107.14
Alvorada.....	-	-	-	-	-	-	-	-	-	-	-
Pera Rio	1,211.84	64.86	1,063.54	37.47	38.60	1,856.99	60.82	32.47	92.74	3,489.60	7,948.93
Valencia.....	641.69	88.22	603.19	5.76	8.91	1,110.82	77.60	66.16	184.34	4,125.52	6,912.21
V.Folha Murcha[3]	83.23	6.09	62.66	21.86	3.39	271.19	12.43	10.70	18.96	483.86	974.37
Natal.....	102.38	3.27	142.96	4.53	5.71	592.23	8.82	4.84	41.73	1,265.31	2,171.78
Subtotal.....	**3,295.87**	**217.27**	**2,853.41**	**82.76**	**72.10**	**4,559.87**	**312.26**	**153.85**	**525.42**	**13,147.37**	**25,220.18**
Percentage.....	**13.07**	**0.86**	**11.31**	**0.33**	**0.29**	**18.08**	**1.24**	**0.61**	**2.08**	**52.13**	**55.50**
ALT[5]											
Hamlin.....	18.40	0.78	39.76	0.08	0.05	9.04	0.43	2.48	9.26	635.31	715.59
Westin.....	8.00	0.16	7.92	-	-	-	0.03	0.21	0.83	14.79	31.94
Rubi.....	7.96	0.20	9.96	0.36	0.26	22.34	0.20	1.20	4.49	87.20	134.17
V.Americana[2].....	58.19	0.25	1.52	0.07	0.12	1.86	4.09	1.03	10.26	88.87	166.26
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	-	-	-	-	-	-	-	-	-	-	-
Alvorada.....	-	-	-	-	-	-	-	-	-	-	-
Pera Rio	525.95	3.00	182.84	2.89	6.11	282.91	0.09	0.93	9.69	1,053.91	2,068.32
Valencia.....	507.10	0.31	35.91	0.06	0.73	81.36	6.16	1.77	20.84	1,482.38	2,136.62
V.Folha Murcha[3]	2.20	0.27	31.22	0.06	0.69	78.91	1.69	0.48	5.79	126.33	247.64
Natal.....	1.90	0.33	29.13	0.27	4.64	113.64	2.52	3.00	10.12	240.68	406.23
Subtotal.....	**1,129.70**	**5.30**	**338.26**	**3.79**	**12.60**	**590.06**	**15.21**	**11.10**	**71.28**	**3,729.47**	**5,906.77**
Percentage.....	**19.13**	**0.09**	**5.73**	**0.06**	**0.21**	**9.99**	**0.26**	**0.19**	**1.21**	**63.14**	**13.00**
Total.....	**6,878.73**	**270.83**	**4,511.30**	**104.74**	**119.44**	**6,504.25**	**358.21**	**175.93**	**1,504.15**	**25,013.93**	**45,441.51**

- Represents zero
1 TMG – Triângulo Mineiro
2 Valencia Americana
3 Valencia Folha Murcha
4 BEB – Bebedouro
5 ALT – Altinópolis

Table 54 – Oranges: Area of groves by age group of plots, region and variety –Northwest Sector [2024 inventory]

Region and variety	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
VOT[2]					
Hamlin.....	20	96	95	216	427
Westin.....	-	10	3	21	34
Rubi.....	165	5	125	40	335
V.Americana[3].....	380	218	15	131	744
Seleta.....	-	-	-	-	-
Pineapple.....	30	11	-	2	43
Alvorada.....	13	-	-	-	13
Pera Rio	3,148	3,029	2,778	4,660	13,615
Valencia.....	1,454	139	6	556	2,155
V.Folha Murcha[4]	21	26	17	196	260
Natal.....	119	300	156	47	622
Subtotal.....	**5,350**	**3,834**	**3,195**	**5,869**	**18,248**
Percentage.....	**29.32**	**21.01**	**17.51**	**32.16**	**47.10**
SJO[5]					
Hamlin.....	356	258	359	2,658	3,631
Westin.....	-	5	4	32	41
Rubi.....	32	12	33	372	449
V.Americana[3].....	698	793	670	1,367	3,528
Seleta.....	-	-	-	-	-
Pineapple.....	5	38	54	88	185
Alvorada.....	178	14	90	-	282
Pera Rio	1,088	1,442	1,486	1,372	5,388
Valencia.....	846	180	838	2,615	4,479
V.Folha Murcha[4]	-	-	194	633	827
Natal.....	5	142	1,143	391	1,681
Subtotal.....	**3,208**	**2,884**	**4,871**	**9,528**	**20,491**
Percentage.....	**15.66**	**14.07**	**23.77**	**46.50**	**52.90**
Total.....	**8,558**	**6,718**	**8,066**	**15,397**	**38,739**

- Represents zero
[1] Area of young orange groves
[2] VOT – Votuporanga
[3] V.Americana – Valencia Americana
[4] V.Folha Murcha – Valencia Folha Murcha
[5] SJO – São José do Rio Preto

Table 55 – Oranges: Trees by age group, region and variety – Northwest Sector [2024 inventory]

Region and variety	Plot and tree ages										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
VOT[1]											
Hamlin.....	9.34	0.01	38.54	-	0.14	36.70	-	-	4.42	103.80	192.95
Westin.....	-	-	3.68	-	0.01	1.92	-	-	0.53	8.82	14.96
Rubi.....	92.00	-	2.57	-	0.24	61.32	-	-	1.17	19.68	176.98
V.Americana[2].....	171.54	0.33	87.22	0.01	0.13	7.03	-	0.62	-	55.87	322.75
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	12.31	0.02	5.24	-	-	-	-	0.02	-	0.69	18.28
Alvorada.....	8.11	-	-	-	-	-	-	-	-	-	8.11
Pera Rio	1,451.43	16.92	1,141.37	18.37	56.93	1,221.59	56.35	49.92	51.71	2,130.38	6,194.97
Valencia.....	782.23	0.45	44.91	0.05	0.06	3.73	-	0.03	0.74	300.77	1,132.97
V.Folha Murcha[3]	10.56	0.10	9.76	0.10	0.14	7.81	-	0.02	0.34	104.36	133.19
Natal.....	57.41	1.04	127.60	0.76	1.71	61.27	0.69	1.66	-	23.06	275.20
Subtotal.....	**2,594.93**	**18.87**	**1,460.89**	**19.29**	**59.36**	**1,401.37**	**57.04**	**52.27**	**58.91**	**2,747.43**	**8,470.36**
Percentage.....	**30.64**	**0.22**	**17.25**	**0.23**	**0.70**	**16.54**	**0.67**	**0.62**	**0.70**	**32.44**	**43.84**
SJO[4]											
Hamlin.....	187.02	37.40	116.82	0.49	0.53	251.00	20.37	36.26	42.41	1,085.67	1,777.97
Westin.....	-	0.01	2.63	0.03	0.03	2.59	0.47	0.82	0.98	11.75	19.31
Rubi.....	16.62	0.02	6.28	0.16	0.19	14.28	6.45	11.55	13.52	162.88	231.95
V.Americana[2].....	354.39	82.09	398.95	2.41	7.43	508.37	7.91	3.36	27.19	603.05	1,995.15
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	2.50	5.65	25.73	0.16	-	40.31	0.87	0.39	3.15	40.84	119.60
Alvorada.....	93.94	0.18	12.99	0.68	-	78.03	-	-	-	-	185.82
Pera Rio	529.77	72.08	734.78	21.52	14.80	846.58	19.94	27.17	60.94	657.57	2,985.15
Valencia.....	435.83	1.59	93.95	0.75	0.53	546.27	11.21	6.48	33.65	1,050.37	2,180.63
V.Folha Murcha[3]	0.04	-	-	0.09	0.21	112.79	4.92	3.03	15.74	277.85	414.67
Natal.....	2.83	22.82	78.70	4.03	0.59	696.69	2.59	1.10	25.50	107.12	941.97
Subtotal.....	**1,622.94**	**221.84**	**1,470.83**	**30.32**	**24.31**	**3,096.91**	**74.73**	**90.16**	**223.08**	**3,997.10**	**10,852.22**
Percentage.....	**14.95**	**2.04**	**13.55**	**0.28**	**0.22**	**28.54**	**0.69**	**0.83**	**2.06**	**36.83**	**56.16**
Total.....	**4,217.87**	**240.71**	**2,931.72**	**49.61**	**83.67**	**4,498.28**	**131.77**	**142.43**	**281.99**	**6,744.53**	**19,322.58**

- Represents zero
1 VOT – Votuporanga
2 V.Americana – Valencia Americana
3 V.Folha Murcha – Valencia Folha Murcha
4 SJO – São José do Rio Preto

Table 56 – Oranges: Area of groves by age group of plots, region and variety – Central Sector [2024 inventory]

Region and variety	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
MAT[2]					
Hamlin.....	2,074	819	1,045	2,255	6,193
Westin.....	6	-	9	21	36
Rubi.....	25	2	6	108	141
V.Americana[3].....	132	1,252	635	1,445	3,464
Seleta.....	-	-	-	-	-
Pineapple.....	10	-	32	502	544
Alvorada.....	69	-	-	-	69
Pera Rio	2,337	1,667	3,643	4,601	12,248
Valencia.....	1,790	437	1,358	4,548	8,133
V.Folha Murcha[4]	9	134	407	513	1,063
Natal.....	744	1,088	771	1,308	3,911
Subtotal.....	**7,196**	**5,399**	**7,906**	**15,301**	**35,802**
Percentage.....	**20.10**	**15.08**	**22.08**	**42.74**	**33.51**
DUA[5]					
Hamlin.....	535	1,076	853	4,423	6,887
Westin.....	-	94	31	75	200
Rubi.....	45	328	407	736	1,516
V.Americana[3].....	468	1,019	660	1,642	3,789
Seleta.....	-	-	-	31	31
Pineapple.....	70	13	16	24	123
Alvorada.....	169	-	27	-	196
Pera Rio	2,925	3,714	5,580	10,805	23,024
Valencia.....	2,061	3,293	3,361	6,968	15,683
V.Folha Murcha[4]	584	1,079	981	1,088	3,732
Natal.....	234	539	787	4,290	5,850
Subtotal.....	**7,091**	**11,155**	**12,703**	**30,082**	**61,031**
Percentage.....	**11.62**	**18.28**	**20.81**	**49.29**	**57.12**
BRO[6]					
Hamlin.....	80	66	9	1,212	1,367
Westin.....	30	13	3	111	157
Rubi.....	15	111	6	-	132
V.Americana[3].....	-	3	53	299	355
Seleta.....	-	-	-	-	-
Pineapple.....	3	-	152	-	155
Alvorada.....	-	-	-	-	-
Pera Rio	497	249	1,208	1,564	3,518
Valencia.....	202	310	246	2,170	2,928
V.Folha Murcha[4]	122	110	161	224	617
Natal.....	38	162	211	373	784
Subtotal.....	**987**	**1,024**	**2,049**	**5,953**	**10,013**
Percentage.....	**9.86**	**10.23**	**20.46**	**59.45**	**9.37**
Total.....	**15,274**	**17,578**	**22,658**	**51,336**	**106,846**

- Represents zero
1 Area of young orange groves
2 MAT – Matão
3 V.Americana – Valencia Americana
4 V.Folha Murcha – Valencia Folha Murcha
5 DUA – Duartina
6 BRO – Brotas

Table 57 – Oranges: Trees by age group, age group of plot, region and variety – Central Sector [2024 inventory]

Region and variety	Plot and tree ages										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots Over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
MAT[1]											
Hamlin.....	1,398.47	20.87	490.06	12.21	1.82	716.99	30.86	39.86	61.24	891.11	3,663.49
Westin.....	4.00	-	-	-	0.05	5.41	0.23	0.52	0.66	6.57	17.44
Rubi.....	14.94	0.08	1.03	-	0.04	4.26	0.89	1.89	2.39	56.35	81.87
V.Americana[2].....	84.91	35.19	805.80	4.44	13.57	452.37	0.04	12.24	113.87	503.66	2,026.09
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	6.25	-	-	0.37	-	30.74	6.50	3.75	6.50	236.33	290.44
Alvorada.....	46.62	-	-	-	-	-	-	-	-	-	46.62
Pera Rio	1,345.30	41.80	981.96	104.65	90.47	2,368.89	21.88	44.63	126.84	2,303.07	7,429.49
Valencia.....	1,125.83	11.72	287.70	25.51	50.41	823.72	69.37	40.09	185.55	1,933.09	4,552.99
V.Folha Murcha[3]	5.33	6.96	99.20	0.88	2.42	252.45	9.70	4.88	20.61	267.14	669.57
Natal.....	512.82	50.71	671.52	24.77	8.53	540.47	3.86	3.79	39.25	554.50	2,410.22
Subtotal.....	**4,544.47**	**167.33**	**3,337.27**	**172.83**	**167.31**	**5,195.30**	**143.33**	**151.65**	**556.91**	**6,751.82**	**21,188.22**
Percentage.....	**21.45**	**0.79**	**15.75**	**0.82**	**0.79**	**24.52**	**0.68**	**0.72**	**2.63**	**31.87**	**36.16**
DUA[4]											
Hamlin.....	355.21	19.20	604.52	23.69	23.64	434.63	16.44	28.04	153.78	1,700.49	3,359.64
Westin.....	0.18	1.85	58.19	1.03	1.09	15.42	0.42	0.74	3.43	29.17	111.52
Rubi.....	28.93	6.46	203.16	14.69	15.50	226.02	5.04	8.59	40.39	343.42	892.20
V.Americana[2].....	286.61	16.76	598.87	6.47	13.27	345.14	18.14	13.59	51.49	720.00	2,070.34
Seleta.....	0.05	-	-	-	-	-	-	0.40	1.53	15.13	17.11
Pineapple.....	43.01	0.21	7.61	0.20	0.42	9.11	-	0.36	1.38	13.63	75.93
Alvorada.....	107.37	-	-	-	-	18.24	-	-	-	-	125.61
Pera Rio	1,633.92	105.19	2,124.45	121.48	220.72	3,109.94	57.42	83.98	282.85	4,721.72	12,461.67
Valencia.....	1,167.03	170.13	1,949.22	31.81	79.30	2,013.41	29.65	56.14	271.72	2,719.81	8,488.22
V.Folha Murcha[3]	315.14	54.85	628.50	9.28	23.14	574.38	8.18	15.69	52.47	486.28	2,167.91
Natal.....	167.66	38.37	281.41	2.70	17.45	395.76	16.53	8.91	61.74	1,754.26	2,744.79
Subtotal.....	**4,105.11**	**413.02**	**6,455.93**	**211.35**	**394.53**	**7,142.05**	**151.82**	**216.44**	**920.78**	**12,503.91**	**32,514.94**
Percentage.....	**12.63**	**1.27**	**19.86**	**0.65**	**1.21**	**21.97**	**0.47**	**0.67**	**2.83**	**38.46**	**55.49**
BRO[5]											
Hamlin.....	50.23	4.89	32.02	-	-	4.50	1.56	0.08	6.19	458.33	557.80
Westin.....	17.75	1.16	7.59	-	-	1.29	-	0.02	1.25	34.89	63.95
Rubi.....	9.27	8.55	56.00	-	-	2.87	-	-	-	-	76.69
V.Americana[2].....	-	0.06	1.70	1.78	3.35	24.88	-	-	1.74	99.97	133.48
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	2.15	-	-	4.43	1.58	86.09	-	-	-	-	94.25
Alvorada.....	-	-	-	-	-	-	-	-	-	-	-
Pera Rio	261.13	33.23	125.10	13.66	24.16	652.31	1.36	2.77	111.82	631.57	1,857.11
Valencia.....	115.02	11.94	208.84	14.34	9.92	143.14	12.76	3.48	71.47	817.50	1,408.41
V.Folha Murcha[3]	65.02	3.87	67.65	9.30	6.44	92.86	2.22	0.64	9.20	82.44	339.64
Natal.....	30.30	4.45	84.64	2.65	6.30	127.62	-	-	1.94	103.76	361.66
Subtotal.....	**550.87**	**68.15**	**583.54**	**46.16**	**51.75**	**1,135.56**	**17.90**	**6.99**	**203.61**	**2,228.46**	**4,892.99**
Percentage.....	**11.26**	**1.39**	**11.93**	**0.94**	**1.06**	**23.21**	**0.37**	**0.14**	**4.16**	**45.54**	**8.35**
Total.....	**9,200.45**	**648.50**	**10,376.74**	**430.34**	**613.59**	**13,472.91**	**313.05**	**375.08**	**1,681.30**	**21,484.19**	**58,596.15**

- Represents zero
1 MAT – Matão
2 Valencia Americana
3 Valencia Folha Murcha
4 DUA – Duartina
5 BRO – Brotas

Table 58 – Oranges: Area of groves by age group, region and variety – South Sector [2024 inventory]

Region and variety	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
PFE[2]					
Hamlin.....	837	594	422	1,762	3,615
Westin.....	153	274	188	693	1,308
Rubi.....	152	216	337	460	1,165
V.Americana[3].....	51	203	65	426	745
Seleta.....	-	8	3	22	33
Pineapple.....	-	-	5	8	13
Alvorada.....	-	5	-	-	5
Pera Rio	2,124	3,091	3,033	5,071	13,319
Valencia.....	981	1,038	947	6,858	9,824
V.Folha Murcha[4]....	158	335	599	1,136	2,228
Natal.....	243	769	931	1,420	3,363
Subtotal.....	**4,699**	**6,533**	**6,530**	**17,856**	**35,618**
Percentage.....	**13.19**	**18.34**	**18.33**	**50.13**	**55.62**
LIM[5]					
Hamlin.....	307	342	318	2,559	3,526
Westin.....	32	155	87	914	1,188
Rubi.....	1	72	145	128	346
V.Americana[3].....	65	121	14	341	541
Seleta.....	-	-	4	16	20
Pineapple.....	-	-	-	3	3
Alvorada.....	-	29	2	-	31
Pera Rio	1,165	1,871	1,647	5,824	10,507
Valencia.....	470	492	881	6,088	7,931
V.Folha Murcha[4].....	226	390	544	1,239	2,399
Natal.....	179	141	299	1,313	1,932
Subtotal.....	**2,445**	**3,613**	**3,941**	**18,425**	**28,424**
Percentage.....	**8.60**	**12.71**	**13.87**	**64.82**	**44.38**
Total.....	**7,144**	**10,146**	**10,471**	**36,281**	**64,042**

- Represents zero
1 Area of young orange groves
2 PFE – Porto Ferreira
3 V.Americana – Valencia Americana
4 V.Folha Murcha – Valencia Folha Murcha
5 LIM – Limeira

Table 59 – Oranges: Trees of groves by age group of plots, region and variety – South Sector [2024 inventory]

Region and variety	Plot and tree ages										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
PFE[1]											
Hamlin.....	487.36	33.98	318.93	14.10	19.95	225.02	32.67	33.68	82.51	595.99	1,844.19
Westin.....	99.58	12.56	160.76	6.65	9.41	106.08	16.21	16.79	23.95	265.00	716.99
Rubi.....	96.14	10.44	133.64	15.94	15.16	182.23	5.50	6.58	13.67	183.83	663.13
V.Americana[2].....	38.91	0.21	132.05	0.02	0.67	44.41	3.90	4.18	5.24	149.99	379.58
Seleta.....	0.30	0.01	4.47	-	0.03	2.03	0.04	0.08	-	10.01	16.97
Pineapple.....	0.05	-	-	-	0.04	2.80	0.05	0.16	0.19	4.03	7.32
Alvorada.....	-	-	2.71	-	-	-	-	-	-	-	2.71
Pera Rio	1,250.80	101.52	1,842.42	61.28	55.16	1,684.27	72.91	201.10	231.04	2,162.74	7,663.24
Valencia.....	550.08	41.90	605.28	17.62	14.94	590.89	18.01	96.01	291.19	2,586.60	4,812.52
V.Folha Murcha[3]	82.37	12.91	186.41	7.63	9.64	386.95	2.79	19.72	56.84	445.77	1,211.03
Natal.....	161.97	82.54	440.19	6.65	17.37	577.72	17.43	58.50	52.08	513.14	1,927.59
Subtotal.....	**2,767.56**	**296.07**	**3,826.86**	**129.89**	**142.37**	**3,802.40**	**169.51**	**436.80**	**756.71**	**6,917.10**	**19,245.27**
Percentage.....	**14.38**	**1.54**	**19.88**	**0.67**	**0.74**	**19.76**	**0.88**	**2.27**	**3.93**	**35.94**	**57.65**
LIM[4]											
Hamlin.....	235.93	32.46	166.46	2.88	9.50	156.16	11.09	40.51	90.72	1,004.47	1,750.18
Westin.....	22.14	15.67	87.50	0.10	3.29	49.76	5.40	18.55	24.89	375.90	603.20
Rubi.....	0.90	7.12	39.73	2.38	7.43	56.72	0.80	2.74	3.68	55.53	177.03
V.Americana[2].....	45.13	7.39	69.09	-	0.01	6.56	-	-	1.92	169.60	299.70
Seleta.....	0.15	-	-	-	-	1.64	-	-	-	8.40	10.19
Pineapple.....	-	-	-	-	-	-	-	-	-	1.43	1.43
Alvorada.....	-	3.61	14.39	-	-	1.33	-	-	-	-	19.33
Pera Rio	693.30	89.73	1,018.51	33.60	66.68	915.75	66.90	81.38	127.23	2,262.98	5,356.06
Valencia.....	287.40	38.00	253.91	22.80	32.00	387.93	11.77	56.63	114.44	2,418.27	3,623.15
V.Folha Murcha[3]	150.28	23.19	240.69	6.00	13.54	300.91	3.05	16.08	20.95	503.46	1,278.15
Natal.....	112.99	25.53	64.77	3.08	1.41	227.95	10.26	33.83	10.96	525.79	1,016.57
Subtotal.....	**1,548.22**	**242.70**	**1,955.05**	**70.84**	**133.86**	**2,104.71**	**109.27**	**249.72**	**394.79**	**7,325.83**	**14,134.99**
Percentage.....	**10.95**	**1.72**	**13.83**	**0.50**	**0.95**	**14.89**	**0.77**	**1.77**	**2.79**	**51.83**	**42.35**
Total.....	**4,315.78**	**538.77**	**5,781.91**	**200.73**	**276.23**	**5,907.11**	**278.78**	**686.52**	**1,151.50**	**14,242.93**	**33,380.26**

- Represents zero
1 PFE – Porto Ferreira
2 V.Americana – Valencia Americana
3 V.Folha Murcha – Valencia Folha Murcha
4 LIM – Limeira

Table 60 – Oranges: Area of groves by age group of plots, region and variety – Southwest Sector [2024 inventory]

Region and variety	Plot age				Total
	1 – 2 years[1]	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
AVA[2]					
Hamlin.....	1,003	1,479	176	5,794	8,452
Westin.....	199	245	53	773	1,270
Rubi.....	237	261	110	1,420	2,028
V.Americana[3].....	406	84	180	1,289	1,959
Seleta.....	-	-	-	-	-
Pineapple.....	-	13	-	50	63
Alvorada.....	-	83	-	-	83
Pera Rio	2,412	3,826	1,522	9,770	17,530
Valencia.....	998	2,040	445	15,638	19,121
V.Folha Murcha[4]	291	217	243	1,185	1,936
Natal.....	335	601	780	6,408	8,124
Subtotal.....	**5,881**	**8,849**	**3,509**	**42,327**	**60,566**
Percentage.....	**9.71**	**14.61**	**5.79**	**69.89**	**69.68**
ITG[5]					
Hamlin.....	338	554	321	900	2,113
Westin.....	87	80	55	127	349
Rubi.....	221	388	310	228	1,147
V.Americana[3].....	82	277	397	151	907
Seleta.....	-	-	-	1	1
Pineapple.....	39	208	335	416	998
Alvorada.....	13	126	144	-	283
Pera Rio	977	2,048	1,936	3,157	8,118
Valencia.....	685	698	803	3,866	6,052
V.Folha Murcha[4]	377	524	146	645	1,692
Natal.....	316	905	699	2,780	4,700
Subtotal.....	**3,135**	**5,808**	**5,146**	**12,271**	**26,360**
Percentage.....	**11.89**	**22.03**	**19.52**	**46.55**	**30.32**
Total.....	**9,016**	**14,657**	**8,655**	**54,598**	**86,926**

- Represents zero
1 Area of young orange groves
2 AVA – Avaré
3 V.Americana – Valencia Americana
4 V.Folha Murcha – Valencia Folha Murcha
5 ITG – Itapetininga

Table 61 – Oranges: Trees by age group, age group of plot, region and variety – Southwest Sector [2024 inventory]

Region and variety	Plot and tree ages										Total
	Plots 1 – 2 years	Plots 3 – 5 years		Plots 6 – 10 years			Plots over 10 years				
	Trees 1 – 2 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees 1 – 2 years	Trees 3 – 5 years	Trees 6 – 10 years	Trees Over 10 years	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
AVA[1]											
Hamlin.....	536.91	68.01	631.32	14.32	3.67	74.09	15.61	71.53	178.53	2,403.11	3,997.10
Westin.....	101.75	12.45	124.51	2.71	1.35	30.06	0.64	9.54	21.60	324.82	629.43
Rubi.....	119.08	14.82	121.57	4.29	2.09	62.15	2.27	16.33	33.48	581.69	957.77
V.Americana[2].....	246.46	2.28	43.19	1.69	1.85	117.38	22.94	1.90	29.90	483.84	951.43
Seleta.....	0.16	-	-	-	-	-	-	-	-	-	0.16
Pineapple.....	-	0.32	5.96	-	-	-	0.18	0.02	2.30	22.01	30.79
Alvorada.....	-	23.72	28.27	-	-	-	-	-	-	-	51.99
Pera Rio	1,415.25	98.77	1,978.66	41.88	43.05	916.78	34.65	106.26	162.80	4,502.98	9,301.08
Valencia.....	641.48	29.38	1,062.63	26.82	4.66	236.23	26.15	207.97	314.70	7,135.25	9,685.27
V.Folha Murcha[3]	205.15	1.63	146.35	15.53	2.61	145.87	3.43	38.63	50.97	557.47	1,167.64
Natal.....	254.37	35.04	340.33	8.09	8.48	513.48	16.44	92.29	198.12	2,915.24	4,381.88
Subtotal.....	**3,520.61**	**286.42**	**4,482.79**	**115.33**	**67.76**	**2,096.04**	**122.31**	**544.47**	**992.40**	**18,926.41**	**31,154.54**
Percentage.....	**11.30**	**0.92**	**14.39**	**0.37**	**0.22**	**6.73**	**0.39**	**1.75**	**3.19**	**60.75**	**66.29**
ITG[4]											
Hamlin.....	170.34	72.74	259.17	3.62	-	250.72	0.08	-	-	362.79	1,119.46
Westin.....	41.76	2.46	44.91	1.81	-	26.55	-	-	-	45.53	163.02
Rubi.....	110.41	23.27	207.65	5.58	-	167.20	0.02	-	-	102.26	616.39
V.Americana[2].....	54.72	80.82	103.58	7.31	0.25	291.62	-	0.09	0.38	92.58	631.35
Seleta.....	-	-	-	-	-	-	-	-	-	0.55	0.55
Pineapple.....	26.21	68.25	74.23	3.14	-	233.04	0.26	-	-	246.54	651.67
Alvorada.....	11.41	15.75	60.05	1.52	0.17	96.07	-	-	-	-	184.97
Pera Rio	631.48	349.20	977.71	31.09	14.01	1,374.46	11.55	43.03	37.37	1,629.66	5,099.56
Valencia.....	497.88	7.67	449.84	9.37	0.67	602.70	37.35	41.08	47.14	1,896.94	3,590.64
V.Folha Murcha[3]	271.06	1.63	346.64	2.24	0.25	104.65	10.39	13.62	13.63	331.84	1,095.95
Natal.....	218.27	181.34	449.27	1.30	4.31	430.97	6.56	41.97	42.73	1,310.75	2,687.47
Subtotal.....	**2,033.54**	**803.13**	**2,973.05**	**66.98**	**19.66**	**3,577.98**	**66.21**	**139.79**	**141.25**	**6,019.44**	**15,841.03**
Percentage.....	**12.84**	**5.07**	**18.77**	**0.42**	**0.12**	**22.59**	**0.42**	**0.88**	**0.89**	**38.00**	**33.71**
Total.....	**5,554.15**	**1,089.55**	**7,455.84**	**182.31**	**87.42**	**5,674.02**	**188.52**	**684.26**	**1,133.65**	**24,945.85**	**46,995.57**

- Represents zero
[1] AVA – Avaré
[2] V.Americana – Valencia Americana
[3] V.Folha Murcha – Valencia Folha Murcha
[4] ITG – Itapetininga

Table 62 – Oranges: Area of groves by sector and variety [2024 inventory]

Variety	Sector					Total	Percentage of the variety group	Percentage of total
	North	Northwest	Central	South	Southwest			
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)	(%)
Early								
Hamlin.....	14,644	4,058	14,447	7,141	10,565	50,855	56.20	13.09
Westin.....	1,230	75	393	2,496	1,619	5,813	6.42	1.50
Rubi.....	1,434	784	1,789	1,511	3,175	8,693	9.61	2.24
Valencia Americana.....	5,696	4,272	7,608	1,286	2,866	21,728	24.01	5.59
Seleta.....	2	-	31	53	1	87	0.10	0.02
Pineapple.....	227	228	822	16	1,061	2,354	2.60	0.61
Alvorada.....	-	295	265	36	366	962	1.06	0.25
Subtotal.....	**23,233**	**9,712**	**25,355**	**12,539**	**19,653**	**90,492**	**100.00**	**23.29**
Mid-season								
Pera Rio	27,059	19,003	38,790	23,826	25,648	134,326	100.00	34.58
Subtotal.....	**27,059**	**19,003**	**38,790**	**23,826**	**25,648**	**134,326**	**100.00**	**34.58**
Late								
Valencia.....	29,952	6,634	26,744	17,755	25,173	106,258	64.92	27.35
V.Folha Murcha[1].....	2,766	1,087	5,412	4,627	3,628	17,520	10.70	4.51
Natal.....	8,927	2,303	10,545	5,295	12,824	39,894	24.37	10.27
Subtotal.....	**41,645**	**10,024**	**42,701**	**27,677**	**41,625**	**163,672**	**100.00**	**42.13**
Total.....	**91,937**	**38,739**	**106,846**	**64,042**	**86,926**	**388,490**	**(X)**	**100.00**
Percentage.....	**23.67**	**9.97**	**27.50**	**16.48**	**22.38**	**100.00**	**(X)**	**(X)**

- Represents zero
(X) Not applicable
[1] V.Folha Murcha – Valencia Folha Murcha

Table 63 – Oranges: Trees by sector and variety [2024 inventory]

Variety	Sector					Total	Percentage of the variety group	Percentage of total
	North	Northwest	Central	South	Southwest			
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(%)	(%)
Early								
Hamlin.....	6,675.38	1,970.92	7,580.93	3,594.37	5,116.56	24,938.16	53.60	12.24
Westin.....	599.89	34.27	192.91	1,320.19	792.45	2,939.71	6.32	1.44
Rubi.....	838.18	408.93	1,050.76	840.16	1,574.16	4,712.19	10.13	2.31
Valencia Americana.....	3,046.22	2,317.90	4,229.91	679.28	1,582.78	11,856.09	25.48	5.82
Seleta.....	1.61	-	17.11	27.16	0.71	46.59	0.10	0.02
Pineapple.....	116.50	137.88	460.62	8.75	682.46	1,406.21	3.02	0.69
Alvorada.....	-	193.93	172.23	22.04	236.96	625.16	1.34	0.31
Subtotal.....	**11,277.78**	**5,063.83**	**13,704.47**	**6,491.95**	**9,986.08**	**46,524.11**	**100.00**	**22.84**
Mid-season								
Pera Rio	14,957.72	9,180.12	21,748.27	13,019.30	14,400.64	73,306.05	100.00	35.98
Subtotal.....	**14,957.72**	**9,180.12**	**21,748.27**	**13,019.30**	**14,400.64**	**73,306.05**	**100.00**	**35.98**
Late								
Valencia.....	13,569.69	3,313.60	14,449.62	8,435.67	13,275.91	53,044.49	63.22	26.04
V.Folha Murcha[1].....	1,424.68	547.86	3,177.12	2,489.18	2,263.59	9,902.43	11.80	4.86
Natal.....	4,211.64	1,217.17	5,516.67	2,944.16	7,069.35	20,958.99	24.98	10.29
Subtotal.....	**19,206.01**	**5,078.63**	**23,143.41**	**13,869.01**	**22,608.85**	**83,905.91**	**100.00**	**41.18**
Total.....	**45,441.51**	**19,322.58**	**58,596.15**	**33,380.26**	**46,995.57**	**203,736.07**	**(X)**	**100.00**
Percentage.....	**22.30**	**9.48**	**28.76**	**16.38**	**23.07**	**100.00**	**(X)**	**(X)**

- Represents zero
(X) Not applicable
[1] V.Folha Murcha – Valencia Folha Murcha

Table 64 – Oranges: Area of groves by planting year [2023 and 2024 inventories and accumulated variation]

Planting year[1]	2023 inventory[2]	2024 inventory[2]	Accumulated variation[3]	
	(hectares)	(hectares)	(hectares)	(percentage)
1979 and previous years	1,201	1,086	-115	-9.58
1980	66	58	-8	-12.12
1981	88	89	1	1.14
1982	39	39	0	0.00
1983	51	48	-3	-5.88
1984	23	24	1	4.35
1985	178	169	-9	-5.06
1986	309	300	-9	-2.91
1987	218	218	0	0.00
1988	113	104	-9	-7.96
1989	140	114	-26	-18.57
1990	677	591	-86	-12.70
1991	506	455	-51	-10.08
1992	608	410	-198	-32.57
1993	532	505	-27	-5.08
1994	783	758	-25	-3.19
1995	826	798	-28	-3.39
1996	1,146	1,062	-84	-7.33
1997	1,751	1,549	-202	-11.54
1998	2,018	1,826	-192	-9.51
1999	2,897	2,578	-319	-11.01
2000	4,924	4,597	-327	-6.64
2001	5,729	5,400	-329	-5.74
2002	7,099	5,954	-1,145	-16.13
2003	11,657	10,801	-856	-7.34
2004	15,435	14,264	-1,171	-7.59
2005	20,949	19,387	-1,562	-7.46
2006	21,288	19,827	-1,461	-6.86
2007	23,235	21,509	-1,726	-7.43
2008	28,453	26,489	-1,964	-6.90
2009	18,387	16,510	-1,877	-10.21
2010	16,840	15,066	-1,774	-10.53
2011	15,733	14,180	-1,553	-9.87
2012	18,370	16,766	-1,604	-8.73
2013	14,905	13,113	-1,792	-12.02
2014	9,994	10,218	224	2.24
2015	9,571	9,763	192	2.01
2016	10,255	10,231	-24	-0.23
2017	13,672	13,565	-107	-0.78
2018	18,425	17,876	-549	-2.98
2019	17,609	17,295	-314	-1.78
2020	20391	19,958	-433	-2.12
2021[3]	(X)	20,717	-956	-4.41
Mature groves	**337,091**	**336,267**	**-824**	**-0.24**
2021[3]	21,673	(X)	-956	-4.41
2022	28,869	28,869	-	0.00
2023	(X)	23,354	(X)	(X)
Young groves	**50,542**	**52,223**	**1,681**	**3.33**
Total	**387,633**	**388,490**	**857**	**0.22**

(X) Not applicable

[1] Snapshot of groves in March of the year the inventory is published

[2] Estimate of eradicated and abandoned groves from March 2022 to March 2023

[3] Groves planted in 2020 belonged to the group of young groves in the 2022 inventory and moved to the group of mature groves in this 2023 inventory

Table 65 – Oranges: Trees by planting year [2023 and 2024 inventories and accumulated variation]

Planting year[1]	2023 inventory[2]	2024 inventory[2]	Accumulated variation[3]	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(percentage)
1979 and previous years.....	330.18	293.69	-36.49	-11.05
1980.....	16.62	13.80	-2.82	-16.97
1981.....	35.69	36.00	0.31	0.87
1982.....	13.42	14.30	0.88	6.56
1983.....	17.06	16.97	-0.09	-0.53
1984.....	11.29	10.44	-0.85	-7.53
1985.....	33.72	39.00	5.28	15.66
1986.....	85.42	83.32	-2.10	-2.46
1987.....	53.37	55.28	1.91	3.58
1988.....	38.19	35.19	-3.00	-7.86
1989.....	39.92	31.92	-8.00	-20.04
1990.....	230.30	189.80	-40.50	-17.59
1991.....	154.12	135.20	-18.92	-12.28
1992.....	207.57	138.02	-69.55	-33.51
1993.....	162.20	150.82	-11.38	-7.02
1994.....	219.32	202.27	-17.05	-7.77
1995.....	301.19	288.74	-12.45	-4.13
1996.....	389.90	359.99	-29.91	-7.67
1997.....	644.30	559.40	-84.90	-13.18
1998.....	759.06	656.53	-102.53	-13.51
1999.....	975.04	852.49	-122.55	-12.57
2000.....	1,735.68	1,555.52	-180.16	-10.38
2001.....	2,208.41	1,979.05	-229.36	-10.39
2002.....	2,707.07	2,124.71	-582.36	-21.51
2003.....	4,383.76	4,022.85	-360.91	-8.23
2004.....	5,958.85	5,375.17	-583.68	-9.80
2005.....	8,543.51	7,725.70	-817.81	-9.57
2006.....	8,639.70	7,942.95	-696.75	-8.06
2007.....	10,331.43	9,471.03	-860.40	-8.33
2008.....	13,259.90	12,140.90	-1,119.00	-8.44
2009.....	8,323.93	7,482.48	-841.45	-10.11
2010.....	7,962.13	6,941.84	-1,020.29	-12.81
2011.....	7,823.45	6,876.66	-946.79	-12.10
2012.....	9,585.15	8,623.57	-961.58	-10.03
2013.....	8,479.01	6,005.83	-2,473.18	-29.17
2014.....	5,918.66	5,972.75	54.09	0.91
2015.....	5,635.21	5,695.25	60.04	1.07
2016.....	6,094.43	6,035.44	-58.99	-0.97
2017.....	8,405.67	8,114.35	-291.32	-3.47
2018.....	10,798.86	10,238.78	-560.08	-5.19
2019.....	9,207.74	9,204.74	-3.00	-0.03
2020.....	11,495.90	10,479.33	-1,016.57	-8.84
2021[2].....	(X)	11,373.44	(X)	(X)
6 to 10 years old resets[3].....	4,361.84	5,752.59	1,390.75	31.88
3 to 5 years old resets[3].....	2,712.98	3,244.57	531.59	19.59
Bearing trees.....	**169,291.15**	**168,542.67**	**-748.48**	**-0.44**
0 to 2 years old resets[3].....	4,569.60	5,026.42	456.82	10.00
2021[2].....	12,665.19	(X)	-1,291.75	-10.20
2022.....	16,357.32	16,357.31	-0.01	0.00
2023.....	(X)	13,809.67	(X)	(X)
Non-bearing trees.....	**33,592.11**	**35,193.40**	**1,601.29**	**4.77**
Total.....	**202,883.26**	**203,736.07**	**852.81**	**0.42**

(X) Not applicable

[1] Snapshot of groves in March of the year the inventory is published

[2] Groves planted in 2020 belonged to the group of young groves in the 2022 inventory and moved to the group of mature groves in this 2023 inventory

[3] Trees from resettings after the original plot was planted were estimated at their respective ages

Table 66 – Oranges: Area of groves by sector and planting year [2024 inventory]

Planting year[1]	Sector					Total
	North	Northwest	Central	South	Southwest	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
1979 and previous years	130	-	82	844	30	1,086
1980	-	11	-	47	-	58
1981	11	-	4	28	46	89
1982	3	-	-	36	-	39
1983	17	-	-	31	-	48
1984	-	-	-	-	24	24
1985	3	-	22	144	-	169
1986	5	-	-	257	38	300
1987	-	-	-	218	-	218
1988	23	-	21	35	25	104
1989	12	26	3	57	16	114
1990	76	22	188	170	135	591
1991	83	-	9	221	142	455
1992	69	-	-	147	194	410
1993	105	25	43	172	160	505
1994	60	9	98	60	531	758
1995	296	21	82	190	209	798
1996	187	-	336	381	158	1,062
1997	362	-	73	278	836	1,549
1998	517	5	287	406	611	1,826
1999	1,418	3	131	532	494	2,578
2000	2,108	40	717	1,090	642	4,597
2001	2,098	141	466	2,125	570	5,400
2002	1,225	147	698	1,593	2,291	5,954
2003	3,125	289	1,789	2,165	3,433	10,801
2004	4,228	300	3,646	1,979	4,111	14,264
2005	4,484	402	5,766	2,613	6,122	19,387
2006	5,199	820	4,972	2,486	6,350	19,827
2007	6,002	853	5,121	2,936	6,597	21,509
2008	5,090	2,830	7,271	2,943	8,355	26,489
2009	4,617	1,699	3,583	2,344	4,267	16,510
2010	4,279	1,890	3,258	3,322	2,317	15,066
2011	3,480	2,558	3,087	2,795	2,260	14,180
2012	5,616	2,157	4,583	2,343	2,067	16,766
2013	4,104	1,149	5,000	1,293	1,567	13,113
2014	2,214	1,170	4,215	1,554	1,065	10,218
2015	2,279	1,692	2,717	1,883	1,192	9,763
2016	2,207	1,549	2,854	2,298	1,323	10,231
2017	1,947	1,097	6,012	2,139	2,370	13,565
2018	3,156	2,558	6,860	2,597	2,705	17,876
2019	3,279	2,380	4,498	3,265	3,873	17,295
2020	2,499	2,231	6,074	3,248	5,906	19,958
2021	3,093	2,107	7,006	3,633	4,878	20,717
Mature groves	**79,706**	**30,181**	**91,572**	**56,898**	**77,910**	**336,267**
2022	6,160	3,664	9,409	4,571	5,065	28,869
2023	6,071	4,894	5,865	2,573	3,951	23,354
Young groves	**12,231**	**8,558**	**15,274**	**7,144**	**9,016**	**52,223**
Total	**91,937**	**38,739**	**106,846**	**64,042**	**86,926**	**388,490**
Percentage	**23.67**	**9.97**	**27.50**	**16.48**	**22.38**	**100.00**

- Represents zero

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

Table 67 – Oranges: Trees by sector and planting year [2024 inventory]

Planting year[1]	Sector					Total
	North	Northwest	Central	South	Southwest	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
1979 and previous years.....	53.65	-	27.36	203.90	8.78	293.69
1980.....	-	2.47	-	11.33	-	13.80
1981.....	4.69	-	1.79	8.21	21.31	36.00
1982.....	1.57	-	-	12.73	-	14.30
1983.....	7.63	-	-	9.34	-	16.97
1984.....	-	-	-	-	10.44	10.44
1985.....	1.09	-	7.11	30.80	-	39.00
1986.....	0.88	-	-	65.63	16.81	83.32
1987.....	-	-	-	55.28	-	55.28
1988.....	9.55	-	5.75	9.59	10.30	35.19
1989.....	4.80	4.00	1.18	15.99	5.95	31.92
1990.....	31.16	4.63	61.60	49.88	42.53	189.80
1991.....	27.21	-	2.50	69.53	35.96	135.20
1992.....	22.64	-	-	55.31	60.07	138.02
1993.....	27.56	9.76	8.91	59.09	45.50	150.82
1994.....	18.65	2.18	25.66	21.46	134.32	202.27
1995.....	104.51	6.99	26.39	69.09	81.76	288.74
1996.....	63.38	-	106.44	132.70	57.47	359.99
1997.....	128.40	-	27.00	91.75	312.25	559.40
1998.....	172.22	1.74	114.44	150.11	218.02	656.53
1999.....	448.96	0.56	47.99	157.58	197.40	852.49
2000.....	674.67	14.45	233.11	377.40	255.89	1,555.52
2001.....	736.48	59.86	161.02	760.41	261.28	1,979.05
2002.....	431.17	55.12	218.15	565.68	854.59	2,124.71
2003.....	1,143.28	105.64	587.68	795.27	1,390.98	4,022.85
2004.....	1,566.48	117.18	1,301.32	713.75	1,676.44	5,375.17
2005.....	1,672.58	161.15	2,102.61	992.78	2,796.58	7,725.70
2006.....	2,077.92	319.90	1,869.96	923.86	2,751.31	7,942.95
2007.....	2,709.39	346.62	2,113.69	1,138.25	3,163.08	9,471.03
2008.....	2,394.30	1,372.32	3,121.97	1,158.79	4,093.52	12,140.90
2009.....	2,123.07	704.10	1,553.69	1,005.73	2,095.89	7,482.48
2010.....	2,068.13	844.50	1,399.52	1,452.03	1,177.66	6,941.84
2011.....	1,772.89	1,152.20	1,567.92	1,248.55	1,135.10	6,876.66
2012.....	2,978.78	941.10	2,347.02	1,202.76	1,153.91	8,623.57
2013.....	1,536.24	518.06	2,442.41	628.37	880.75	6,005.83
2014.....	1,293.93	592.89	2,526.69	909.12	650.12	5,972.75
2015.....	1,293.43	1,005.43	1,600.73	1,086.46	709.20	5,695.25
2016.....	1,249.37	900.49	1,732.35	1,238.26	914.97	6,035.44
2017.....	1,008.94	565.29	3,720.99	1,168.39	1,650.74	8,114.35
2018.....	1,658.58	1,434.18	3,892.15	1,504.88	1,748.99	10,238.78
2019.....	1,633.68	1,070.74	2,507.55	1,884.97	2,107.80	9,204.74
2020.....	1,261.41	994.93	3,570.30	1,812.02	2,840.67	10,479.33
2021.....	1,616.21	866.05	4,298.89	2,084.92	2,507.37	11,373.44
6 to10 years old resets[2].....	1,504.15	281.99	1,681.30	1,151.50	1133.65	5,752.59
3 to 5 years old resets[2].....	295.37	226.1	988.67	962.75	771.68	3,244.57
Bearing trees.....	**37,829.00**	**14,682.62**	**48,003.81**	**28,046.20**	**39,981.04**	**168,542.67**
0 to 2 years old resets[2].....	733.78	422.09	1,391.89	1,018.28	1,460.38	5,026.42
2022.....	3,297.41	1,871.99	5,589.14	2,537.79	3,060.98	16,357.31
2023.....	3,581.32	2,345.88	3,611.31	1,777.99	2,493.17	13,809.67
Non-bearing trees.....	**7,612.51**	**4,639.96**	**10,592.34**	**5,334.06**	**7,014.53**	**35,193.40**
Total.....	**45,441.51**	**19,322.58**	**58,596.15**	**33,380.26**	**46,995.57**	**203,736.07**
Percentage.....	**22.30**	**9.48**	**28.76**	**16.38**	**23.07**	**100.00**

- Represents zero

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

[2] Trees from resettings after the original plot was planted were estimated at their respective ages

Table 68 – Oranges: Area of groves of early varieties by planting year [2024 inventory]

Planting year[1]	Early varieties							Total
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Alvorada	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
1979 and previous	260	-	-	-	-	-	-	260
1980.....	-	-	-	-	-	-	-	-
1981.....	1	-	-	-	-	-	-	1
1982.....	-	-	-	-	-	-	-	-
1983.....	-	-	-	-	-	-	-	-
1984.....	-	-	-	-	-	-	-	-
1985.....	3	-	95	-	-	-	-	98
1986.....	5	-	67	75	-	-	-	147
1987.....	96	-	-	27	-	-	-	123
1988.....	15	-	-	4	-	-	-	19
1989.....	5	-	-	-	-	-	-	5
1990.....	9	10	-	2	-	-	-	21
1991.....	123	14	-	-	-	-	-	137
1992.....	147	-	-	-	-	11	-	158
1993.....	227	-	-	9	-	-	-	236
1994.....	404	-	-	-	-	-	-	404
1995.....	70	9	-	-	-	-	-	79
1996.....	192	-	-	5	-	2	-	199
1997.....	125	40	-	4	-	-	-	169
1998.....	283	20	21	119	-	-	-	443
1999.....	551	6	6	169	-	-	-	732
2000.....	849	46	4	12	1	-	-	912
2001.....	534	35	61	33	7	1	-	671
2002.....	1,034	212	158	585	-	-	-	1,989
2003.....	2,526	119	117	362	-	-	-	3,124
2004.....	2,270	137	66	355	-	20	-	2,848
2005.....	3,751	249	174	441	-	9	-	4,624
2006.....	3,924	279	573	667	7	86	-	5,536
2007.....	4,123	288	219	1,212	4	26	-	5,872
2008.....	4,945	506	656	1,359	8	22	-	7,496
2009.....	2,082	472	318	1,051	12	40	-	3,975
2010.....	1,354	303	540	457	31	69	-	2,754
2011.....	1,064	251	644	1,061	-	277	-	3,297
2012.....	1,829	197	615	758	-	444	-	3,843
2013.....	753	123	198	589	-	218	-	1,881
2014.....	203	38	149	127	2	176	-	695
2015.....	442	54	253	253	-	5	70	1,077
2016.....	376	108	371	206	-	18	40	1,119
2017.....	1,517	366	518	968	7	171	37	3,584
2018.....	1,598	253	299	1,744	-	253	116	4,263
2019.....	1,789	374	560	1,431	-	113	51	4,318
2020.....	2,291	289	456	1,548	-	152	113	4,849
2021.....	2,047	293	484	2,427	8	42	93	5,394
Mature groves....	**43,817**	**5,091**	**7,622**	**18,060**	**87**	**2,155**	**520**	**77,352**
2022.....	3,433	410	668	1,840	-	54	273	6,678
2023.....	3,605	312	403	1,828	-	145	169	6,462
Young groves.....	**7,038**	**722**	**1,071**	**3,668**	**-**	**199**	**442**	**13,140**
Total.....	**50,855**	**5,813**	**8,693**	**21,728**	**87**	**2,354**	**962**	**90,492**
Percentage.....	**56.20**	**6.42**	**9.61**	**24.01**	**0.10**	**2.60**	**1.06**	**100.00**

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

Table 69 – Oranges: Trees of early varieties by planting year [2024 inventory]

Planting year[1]	Early varieties							Total
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Alvorada	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
1979 and previous years.....	62.28	-	-	-	-	-	-	62.28
1980.....	-	-	-	-	-	-	-	-
1981.....	0.53	-	-	-	-	-	-	0.53
1982.....	-	-	-	-	-	-	-	-
1983.....	-	-	-	-	-	-	-	-
1984.....	-	-	-	-	-	-	-	-
1985.....	1.46	-	19.43	-	-	-	-	20.89
1986.....	0.88	-	14.56	20.17	-	-	-	35.61
1987.....	23.32	-	-	6.32	-	-	-	29.64
1988.....	5.62	-	-	1.50	-	-	-	7.12
1989.....	1.60	-	-	-	-	-	-	1.60
1990.....	2.17	2.69	-	0.67	-	-	-	5.53
1991.....	28.40	3.66	-	-	-	-	-	32.06
1992.....	41.17	-	-	-	-	4.83	-	46.00
1993.....	54.75	-	-	3.88	-	-	-	58.63
1994.....	73.32	-	-	-	-	-	-	73.32
1995.....	26.47	3.82	-	-	-	-	-	30.29
1996.....	54.33	-	-	2.22	-	0.69	-	57.24
1997.....	34.52	12.30	-	1.61	-	-	-	48.43
1998.....	80.25	7.91	5.49	36.44	-	-	-	130.09
1999.....	145.65	1.72	2.56	56.07	-	-	-	206.00
2000.....	248.47	13.74	1.58	3.10	0.55	-	-	267.44
2001.....	176.84	13.50	27.05	12.90	2.97	0.68	-	233.94
2002.....	360.31	76.96	52.43	176.09	-	-	-	665.79
2003.....	950.14	52.10	34.57	121.97	-	-	-	1,158.78
2004.....	850.87	48.30	26.40	109.90	-	7.91	-	1,043.38
2005.....	1,429.32	87.95	67.31	168.54	-	5.30	-	1,758.42
2006.....	1,491.33	105.37	229.81	256.74	2.28	37.30	-	2,122.83
2007.....	1,803.65	117.49	98.94	469.44	2.60	9.85	-	2,501.97
2008.....	2,178.55	208.59	306.07	568.09	4.42	12.57	-	3,278.29
2009.....	893.69	198.25	142.56	447.39	6.14	15.07	-	1,703.10
2010.....	587.52	141.38	274.74	199.41		43.75	-	1,261.93
2011.....	479.28	112.30	315.32	480.09	-	162.94	-	1,549.93
2012.....	908.55	92.30	317.41	372.47	-	217.61	-	1,908.34
2013.....	237.37	40.94	108.69	277.41	0.43	103.54	-	768.38
2014.....	103.75	22.53	86.24	69.70	1.09	95.96	-	379.27
2015.....	247.19	31.24	153.90	148.88	-	2.80	44.19	628.20
2016.....	219.33	56.10	203.53	122.43	-	11.26	29.23	641.88
2017.....	1,004.16	171.82	264.23	645.12	3.67	134.87	23.32	2,247.19
2018.....	823.94	123.41	144.90	1,167.64	-	172.63	96.93	2,529.45
2019.....	962.65	216.69	328.71	741.59	-	63.72	27.46	2,340.82
2020.....	1,026.04	161.46	254.84	816.04	-	44.40	40.82	2,343.60
2021.....	1,119.42	153.04	247.32	1,416.48	4.47	21.69	50.13	3,012.55
6 to10 years old resets[2].....	934.83	104.96	136.13	275.97	1.54	15.42	-	1,468.85
3 to 5 years old resets[2].....	351.52	65.19	99.19	88.52	0.53	7.31	0.17	612.43
Bearing trees.....	**20,025.4**	**2,447.7**	**3,963.9**	**9,284.79**			**312.25**	**37,272.0**
0 to 2 years old resets[2].....	576.41	93.12	150.49	462.58	0.11	96.00	45.46	1,424.17
2022.....	2,128.86	226.26	382.54	1,030.18	0.47	31.32	152.80	3,952.43
2023.....	2,207.45	172.62	215.25	1,078.54	0.19	86.79	114.65	3,875.49
Non-bearing trees.....	**4,912.72**	**492.00**	**748.28**	**2,571.30**	**0.77**	**214.11**	**312.91**	**9,252.09**
Total.....	**24,938.1**	**2,939.7**	**4,712.1**				**625.16**	**46,524.1**
Percentage.....	**53.60**	**6.32**	**10.13**	**25.48**	**0.10**	**3.02**	**1.34**	**100.00**

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

[2] Trees from resettings after the original plot was planted were estimated at their respective ages

Table 70 – Oranges: Area of groves of mid-season and late varieties by planting year [2024 inventory]

Planting year[1]	Mid-season and late varieties				Total
	Pera Rio	Valencia	Valencia Folha Murcha	Natal	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
1979 and previous years...	169	535	8	114	826
1980.....	-	58	-	-	58
1981.....	6	8	20	54	88
1982.....	-	39	-	-	39
1983.....	4	42	-	2	48
1984.....	19	-	-	5	24
1985.....	13	27	-	31	71
1986.....	70	48	-	35	153
1987.....	-	76	-	19	95
1988.....	36	15	-	34	85
1989.....	22	42	10	35	109
1990.....	217	201	32	120	570
1991.....	62	249	5	2	318
1992.....	73	114	23	42	252
1993.....	116	77	23	53	269
1994.....	97	101	135	21	354
1995.....	171	460	30	58	719
1996.....	167	443	116	137	863
1997.....	289	978	70	43	1,380
1998.....	200	939	190	54	1,383
1999.....	368	1,205	156	117	1,846
2000.....	776	2,167	202	540	3,685
2001.....	549	2,845	562	773	4,729
2002.....	599	2,185	117	1,064	3,965
2003.....	1,791	4,296	138	1,452	7,677
2004.....	3,077	5,519	427	2,393	11,416
2005.....	4,155	6,923	426	3,259	14,763
2006.....	3,945	6,576	620	3,150	14,291
2007.....	5,492	6,838	740	2,567	15,637
2008.....	7,563	6,930	1,267	3,233	18,993
2009.....	6,571	4,073	690	1,201	12,535
2010.....	6,453	4,218	676	965	12,312
2011.....	5,047	4,449	481	906	10,883
2012.....	5,858	5,274	576	1,215	12,923
2013.....	5,776	3,175	769	1,512	11,232
2014.....	5,255	1,967	1,170	1,131	9,523
2015.....	4,441	1,930	741	1,574	8,686
2016.....	5,570	1,936	422	1,184	9,112
2017.....	5,449	2,252	560	1,720	9,981
2018.....	7,864	3,247	1,070	1,432	13,613
2019.....	7,485	2,771	881	1,840	12,977
2020.....	9,004	3,454	1,027	1,624	15,109
2021.....	8,679	3,973	1,120	1,551	15,323
Mature groves.....	**113,498**	**92,655**	**15,500**	**37,262**	**258,915**
2022.....	11,139	8,236	1,381	1,435	22,191
2023.....	9,689	5,367	639	1,197	16,892
Young groves.....	**20,828**	**13,603**	**2,020**	**2,632**	**39,083**
Total.....	**134,326**	**106,258**	**17,520**	**39,894**	**297,998**
Percentage.....	**45.08**	**35.66**	**5.88**	**13.39**	**100.00**

- Represents zero

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

Table 71– Oranges: Trees of mid-season and late varieties by planting year [2024 inventory]

Planting year[1]	Mid-season and late varieties				Total
	Pera Rio	Valencia	Valencia Folha Murcha	Natal	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
1979 and previous years...	61.38	126.02	4.44	39.57	231.41
1980.....	-	13.80	-	-	13.8
1981.....	2.45	1.73	6.48	24.81	35.47
1982.....	-	14.30	-	-	14.3
1983.....	1.81	14.08	-	1.08	16.97
1984.....	8.45	-	-	1.99	10.44
1985.....	4.74	7.46	-	5.91	18.11
1986.....	22.00	13.78	-	11.93	47.71
1987.....	-	20.84	-	4.80	25.64
1988.....	12.69	3.21	-	12.17	28.07
1989.....	8.60	11.05	2.82	7.85	30.32
1990.....	72.84	55.60	13.47	42.36	184.27
1991.....	21.91	78.84	1.49	0.90	103.14
1992.....	27.03	43.81	8.60	12.58	92.02
1993.....	37.09	25.20	9.67	20.23	92.19
1994.....	34.13	36.04	53.35	5.43	128.95
1995.....	60.08	166.30	13.08	18.99	258.45
1996.....	60.09	143.90	45.24	53.52	302.75
1997.....	118.49	354.41	21.86	16.21	510.97
1998.....	74.80	349.40	85.85	16.39	526.44
1999.....	137.59	406.02	57.31	45.57	646.49
2000.....	301.66	729.69	75.15	181.58	1,288.08
2001.....	203.64	1,064.80	210.90	265.77	1,745.11
2002.....	210.53	808.46	38.81	401.12	1,458.92
2003.....	670.25	1,597.07	48.79	547.96	2,864.07
2004.....	1,213.79	2,055.96	156.34	905.70	4,331.79
2005.....	1,741.02	2,761.19	159.78	1,305.29	5,967.28
2006.....	1,646.33	2,693.74	269.38	1,210.67	5,820.12
2007.....	2,414.09	3,068.58	338.47	1,147.92	6,969.06
2008.....	3,501.50	3,224.70	617.06	1,519.35	8,862.61
2009.....	3,013.38	1,885.63	327.04	553.33	5,779.38
2010.....	3,108.51	1,857.21	300.34	413.85	5,679.91
2011.....	2,465.70	2,157.51	236.23	467.29	5,326.73
2012.....	3,195.61	2,636.67	293.56	589.39	6,715.23
2013.....	2,757.67	1,276.70	414.91	788.17	5,237.45
2014.....	3,070.60	1,145.03	692.60	685.25	5,593.48
2015.....	2,634.31	1,040.32	434.34	958.08	5,067.05
2016.....	3,234.66	1,226.47	252.39	680.04	5,393.56
2017.....	3,089.46	1,361.21	320.88	1,095.61	5,867.16
2018.....	4,265.07	1,888.70	646.58	908.98	7,709.33
2019.....	3,846.49	1,454.07	521.92	1,041.44	6,863.92
2020.....	4,734.95	1,979.22	622.03	799.53	8,135.73
2021.....	4,524.21	2,221.13	691.08	924.47	8,360.89
6 to10 years old resets[2].....	1,666.80	1,849.79	266.04	501.11	4,283.74
3 to 5 years old resets[2].....	1,324.72	786.17	186.05	335.2	2,632.14
Bearing trees.....	**59,601.12**	**44,655.81**	**8,444.33**	**18,569.39**	**131,270.65**
0 to 2 years old resets[2].....	1,892.03	862.23	243.92	604.07	3,602.25
2022.....	6,092.89	4,465.65	768.57	1077.77	12,404.88
2023.....	5,720.01	3,060.80	445.61	707.76	9,934.18
Non-bearing trees.....	**13,704.93**	**8,388.68**	**1,458.10**	**2,389.60**	**25,941.31**
Total.....	**73,306.05**	**53,044.49**	**9,902.43**	**20,958.99**	**157,211.96**
Percentage.....	**46.63**	**33.74**	**6.30**	**13.33**	**100.00**

[1] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory. Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

[2] Trees from resettings after the original plot was planted were estimated at their respective ages

Table 72 – Oranges: Density[1] of young and mature groves by sector and region [2023 and 2024 inventories]

Sector and region	2023 inventory		2024 inventory	
	Young groves[2]	Mature groves[3]	Young groves[2]	Mature groves[3]
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
North				
Triângulo Mineiro	547	477	549	478
Bebedouro	548	496	586	488
Altinópolis	516	479	529	478
Average	**542**	**488**	**562**	**484**
Northwest				
Votuporanga	462	457	485	456
São José do Rio Preto	509	516	506	534
Average	**482**	**492**	**493**	**500**
Central				
Matão	646	565	632	582
Duartina	593	530	579	527
Brotas	611	487	558	481
Average	**618**	**536**	**602**	**539**
South				
Porto Ferreira	590	524	589	533
Limeira	587	494	633	484
Average	**589**	**510**	**604**	**511**
Southwest				
Avaré	547	501	599	505
Itapetininga	638	619	649	595
Average	**574**	**536**	**616**	**532**
Average…	**574**	**516**	**578**	**516**

[1] Weighted average density per stratum area
[2] Groves planted in 2022 and 2023
[3] Calculation considers total trees in the plot, that is, bearing and non-bearing trees (resets in 2022 and 2023)

Table 73 – Oranges: Density[1] of young and mature groves by variety [2023 and 2024 inventories]

Variety	2023 inventory		2024 inventory	
	Young groves[2]	Mature groves[3]	Young groves[2]	Mature groves[3]
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early				
Hamlin.....	607	461	616	470
Westin.....	564	489	552	499
Rubi.....	573	532	558	540
Valencia Americana.....	585	539	575	540
Seleta.....	605	527	623	528
Pineapple.....	574	617	594	598
Alvorada.....	553	712	605	688
Average.....	**591**	**493**	**596**	**500**
Mid-season				
Pera Rio.....	549	545	567	542
Average.....	**549**	**545**	**567**	**542**
Late				
Valencia.....	563	494	553	491
Valencia Folha Murcha.....	612	557	601	561
Natal.....	694	507	678	515
Average.....	**592**	**504**	**577**	**505**
Average….....	**574**	**516**	**578**	**516**

[1] Weighted average density per stratum area
[2] Groves planted in 2022 and 2023
[3] Calculation considers total trees in the plot, that is, bearing and non-bearing trees (resets in 2022 and 2023)

Table 74 – Oranges: Density[1] of young groves by variety and region [2024 inventory]

Variety	Region												Average
	TMG[2]	BEB[3]	ALT[4]	VOT[5]	SJO[6]	MAT[7]	DUA[8]	BRO[9]	PFE[10]	LIM[11]	AVA[12]	ITG[13]	
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early													
Hamlin……..……..	541	626	634	467	525	674	664	628	582	769	535	504	616
Westin……..……..	563	508	615	NA	NA	667	NA	592	651	692	511	480	552
Rubi……..……..	603	638	663	558	519	598	643	618	633	900	502	500	558
Valencia Americana….....	554	629	677	451	508	643	612	NA	763	694	607	667	575
Seleta……..……	NA	NA	NA	NA	NA	NA	612	NA	612	683	600	NA	623
Pineapple……..……..	550	629	NA	410	500	625	614	716	NA	NA	NA	672	594
Alvorada.....	NA	NA	NA	624	528	676	635	NA	NA	NA	NA	878	605
Average……...	**556**	**617**	**661**	**482**	**516**	**671**	**638**	**620**	**605**	**751**	**544**	**532**	**596**
Mid-season													
Pera Rio……..……	628	635	602	461	487	576	559	525	589	595	587	646	567
Average…….	**628**	**635**	**602**	**461**	**487**	**576**	**559**	**525**	**589**	**595**	**587**	**646**	**567**
Late													
Valencia……..……	464	482	455	538	515	629	566	569	561	611	643	727	553
VFolha Murcha[14]…..…..	467	473	440	503	NA	592	540	533	521	665	705	719	601
Natal……..……	675	585	633	482	566	689	716	797	667	631	759	691	678
Average……..……...	**490**	**492**	**456**	**533**	**516**	**646**	**573**	**581**	**575**	**629**	**678**	**716**	**577**
Average…..……..……	**549**	**586**	**529**	**485**	**506**	**632**	**579**	**558**	**589**	**633**	**599**	**649**	**578**

NA Not available
[1] Weighted average density per stratum area
[2] TMG – Triângulo Mineiro
[3] BEB – Bebedouro
[4] ALT – Altinópolis
[5] VOT – Votuporanga
[6] SJO – São José do Rio Preto
[7] MAT – Matão
[8] DUA – Duartina
[9] BRO – Brotas
[10] PFE – Porto Ferreira
[11] LIM – Limeira
[12] AVA – Avaré
[13] ITG – Itapetininga
[14] V.Folha Murcha – Valencia Folha Murcha

Table 75 – Oranges: Density[1] of mature groves by variety and region [2024 inventory]

Variety	Region												Average
	TMG[2]	BEB[3]	ALT[4]	VOT[5]	SJO[6]	MAT[7]	DUA[8]	BRO[9]	PFE[10]	LIM[11]	AVA[12]	ITG[13]	
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early													
Hamlin……..	414	450	461	451	486	550	473	394	488	470	465	535	470
Westin……..	555	465	556	440	471	448	557	364	535	503	493	463	499
Rubi……..	552	580	613	500	516	577	587	576	560	510	468	546	540
Valencia Americana…..	539	512	503	415	580	583	537	376	491	535	454	699	540
Seleta……	NA	810	NA	NA	NA	NA	550	NA	505	503	NA	555	528
Pineapple……..	430	495	NA	459	651	532	621	606	560	476	489	652	598
Alvorada.....	NA	NA	NA	NA	884	NA	675	NA	542	624	626	643	688
**Average……..... **	**437**	**477**	**484**	**446**	**537**	**562**	**509**	**416**	**511**	**487**	**467**	**588**	**500**
Mid-season													
Pera Rio……	551	548	482	453	571	614	539	528	573	499	522	626	542
**Average…….. **	**551**	**548**	**482**	**453**	**571**	**614**	**539**	**528**	**573**	**499**	**522**	**626**	**542**
Late													
Valencia……	458	446	453	500	480	540	537	474	482	447	499	576	491
VFolha Murcha[14]……..	532	502	580	513	501	630	589	555	545	519	585	627	561
Natal…….	427	485	507	433	560	599	459	444	566	515	530	563	515
**Average……... **	**451**	**459**	**473**	**479**	**505**	**567**	**525**	**479**	**510**	**471**	**513**	**577**	**505**
Average…..……	**478**	**488**	**478**	**456**	**534**	**582**	**527**	**481**	**533**	**484**	**505**	**595**	**516**

NA Not available

[1] Weighted average density per stratum area. Calculation for groves over 2 years of age considers the total trees of the plot, that is, bearing and non-bearing trees (resets of 2022 and 2023)

[2] TMG – Triângulo Mineiro

[3] BEB – Bebedouro

[4] ALT – Altinópolis

[5] VOT – Votuporanga

[6] SJO – São José do Rio Preto

[7] MAT – Matão

[8] DUA – Duartina

[9] BRO – Brotas

[10] PFE – Porto Ferreira

[11] LIM – Limeira

[12] AVA – Avaré

[13] ITG – Itapetininga

[14] V.Folha Murcha – Valencia Folha Murcha

Table 76 – Oranges: Density[1] of groves of up to 10 years old by variety and region [2024 inventory]

Variety	Region												Average
	TMG[2]	BEB[3]	ALT[4]	VOT[5]	SJO[6]	MAT[7]	DUA[8]	BRO[9]	PFE[10]	LIM[11]	AVA[12]	ITG[13]	
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early													
Hamlin……..	544	573	598	402	610	670	593	591	593	624	500	624	595
Westin……..	568	472	699	431	588	631	622	604	642	651	549	529	568
Rubi……..	592	675	685	529	488	617	634	581	643	524	533	559	587
Valencia Americana…..	564	590	653	434	626	692	590	567	678	641	616	712	615
Seleta……	NA	562	NA	NA	NA	NA	NA	NA	622	447	NA	NA	586
Pineapple……..	493	581	NA	428	766	890	612	608	578	NA	483	696	666
Alvorada……..	NA	NA	NA	624	659	676	641	NA	542	624	626	654	650
Average……	**561**	**571**	**641**	**454**	**625**	**679**	**600**	**592**	**620**	**617**	**529**	**633**	**602**
Mid-season													
Pera Rio……	573	580	587	436	553	645	599	568	606	602	579	681	581
Average……..	**573**	**580**	**587**	**436**	**553**	**645**	**599**	**568**	**606**	**602**	**579**	**681**	**581**
Late													
Valencia……	475	510	484	520	579	648	621	664	614	555	575	717	587
VFolha Murcha[14]……..	530	538	655	445	583	668	607	624	628	633	689	694	626
Natal…….	593	630	641	434	625	695	579	623	662	704	676	670	645
Average……..	**499**	**537**	**523**	**496**	**597**	**668**	**613**	**643**	**632**	**605**	**618**	**695**	**607**
Average…..……	**550**	**562**	**562**	**449**	**590**	**663**	**605**	**600**	**617**	**606**	**579**	**672**	**595**

NA Not available

[1] Weighted average density per stratum area. Calculation for groves over 2 years of age considers the total trees of the plot, that is, bearing and non-bearing trees (resets of 2022 and 2023)

[2] TMG – Triângulo Mineiro

[3] BEB – Bebedouro

[4] ALT – Altinópolis

[5] VOT – Votuporanga

[6] SJO – São José do Rio Preto

[7] MAT – Matão

[8] DUA – Duartina

[9] BRO – Brotas

[10] PFE – Porto Ferreira

[11] LIM – Limeira

[12] AVA – Avaré

[13] ITG – Itapetininga

[14] V.Folha Murcha – Valencia Folha Murcha

Table 77 – Oranges: Density[1] of groves over 10 years old by variety and region [2024 inventory]

Variety	Region												Average
	TMG[2]	BEB[3]	ALT[4]	VOT[5]	SJO[6]	MAT[7]	DUA[8]	BRO[9]	PFE[10]	LIM[11]	AVA[12]	ITG[13]	
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early													
Hamlin……..	407	438	454	501	446	454	429	385	423	448	461	403	437
Westin……..	554	474	480	445	438	380	450	326	465	465	461	359	459
Rubi……..	544	564	589	521	523	570	540	NA	456	490	446	449	501
Valencia Americana…..	448	457	506	431	469	436	489	340	383	503	418	616	453
Seleta……	NA	NA	NA	NA	NA	NA	550	NA	460	526	NA	555	523
Pineapple……..	NA	477	NA	352	514	504	640	NA	555	476	490	593	534
Alvorada.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average……...	**417**	**454**	**472**	**477**	**460**	**456**	**457**	**372**	**431**	**458**	**453**	**467**	**449**
Mid-season													
Pera Rio……	549	537	450	491	558	543	476	478	526	436	492	545	501
Average…….	**549**	**537**	**450**	**491**	**558**	**543**	**476**	**478**	**526**	**436**	**492**	**545**	**501**
Late													
Valencia……	455	421	442	542	421	490	442	417	436	427	491	523	456
VFolha Murcha[14]……..	521	470	527	534	476	589	517	422	462	439	549	573	501
Natal……	422	427	452	541	349	460	429	283	452	442	503	504	456
Average……...	**447**	**426**	**448**	**540**	**423**	**492**	**444**	**400**	**442**	**431**	**497**	**520**	**460**
Average…..……	**459**	**459**	**454**	**497**	**460**	**497**	**459**	**413**	**464**	**439**	**486**	**519**	**469**

NA Not available

1 Weighted average density per stratum area. Calculation for groves over 2 years of age considers the total trees of the plot, that is, bearing and non-bearing trees (resets of 2022 and 2023)

2 TMG – Triângulo Mineiro

3 BEB – Bebedouro

4 ALT – Altinópolis

5 VOT – Votuporanga

6 SJO – São José do Rio Preto

7 MAT – Matão

8 DUA – Duartina

9 BRO – Brotas

10 PFE – Porto Ferreira

11 LIM – Limeira

12 AVA – Avaré

13 ITG – Itapetininga

14 V.Folha Murcha – Valencia Folha Murcha

Table 78 – Oranges: Density[1] of groves by planting year [2024 inventory]

Planting year[2]	Density
	(trees/hectare)
1979 and previous years	328
1980	280
1981	460
1982	398
1983	375
1984	468
1985	286
1986	338
1987	326
1988	385
1989	319
1990	372
1991	349
1992	373
1993	364
1994	377
1995	409
1996	382
1997	396
1998	409
1999	374
2000	374
2001	400
2002	389
2003	403
2004	407
2005	427
2006	435
2007	473
2008	496
2009	492
2010	506
2011	529
2012	551
2013	582
2014	620
2015	613
2016	623
2017	634
2018	610
2019	589
2020	587
2021	577
Mature groves	**516**
2022	567
2023	591
Young groves	**578**
Average	**524**

[1] Weighted average density per stratum area. Calculation for groves over 2 years of age considers the total trees of the plot, that is, bearing and non-bearing trees (resets of 2022 and 2023)

[2] Information per planting year considers the year the original plot was planted and refers to remaining groves at the time data were collected to take inventory Therefore, information does not depict the totality of groves established in such years, since eradication and renovation occurred along time

Table 79 – Oranges: Area of irrigated, non-irrigated, and groves with no information on irrigation, by sector and region [2023 and 2024 inventories]

Sector and region	2023 inventory		2024 inventory	
	Irrigated area	Non-irrigated area or without irrigation information	Irrigated Area[1]	Non-irrigated area or without irrigation information
	(hectares)	(hectares)	(hectares)	(hectares)
North				
Triângulo Mineiro.....	24,242	3,997	24,782	4,514
Bebedouro.....	36,599	13,345	37,347	13,165
Altinópolis.....	831	11,338	879	11,250
Subtotal	**61,671**	**28,681**	**63,008**	**28,929**
Northwest				
Votuporanga.....	11,343	5,055	12,699	5,549
São José do Rio Preto.....	11,733	9,177	10,879	9,612
Subtotal.....	**23,076**	**14,232**	**23,578**	**15,161**
Central				
Matão.....	20,806	14,882	19,017	16,785
Duartina.....	10,418	50,028	9,997	51,034
Brotas.....	2,584	8,986	2,593	7,420
Subtotal.....	**33,809**	**73,895**	**31,607**	**75,239**
South				
Porto Ferreira.....	9,437	27,482	9,324	26,294
Limeira.....	7,322	24,261	6,961	21,463
Subtotal.....	**16,758**	**51,744**	**16,285**	**47,757**
Southwest				
Avaré.....	5,018	53,821	6,149	54,417
Itapetininga.....	453	24,475	471	25,889
Subtotal	**5,471**	**78,296**	**6,620**	**80,306**
Total.....	**140,786**	**246,847**	**141,098**	**247,392**
Percentage.....	**36.32**	**63.68**	**36.32**	**63.68**

[1] Based on the same proportions of irrigated area and area in the rainfed system identified in the 2022 mapping, the complete data will be updated in the next mapping, scheduled to begin in the second half of 2024, aiming at the preparation of the 2025 inventory

Table 80 – Oranges: Area of irrigated and non-irrigated groves and of groves with no information on irrigation, by variety [2023 and 2024 inventories]

Variety	2023 inventory		2024 inventory	
	Irrigated area	Non-irrigated area or without irrigation information	Irrigated area	Non-irrigated area or without irrigation information
	(hectares)	(hectares)	(hectares)	(hectares)
Early				
Hamlin	18,651	29,478	19,121	31,528
Westin	1,455	4,473	1,509	4,675
Rubi	2,841	5,828	2,705	5,823
Valencia Americana	6,613	13,208	7,209	14,501
Seleta	-	93	-	101
Pineapple	963	1,302	1,058	1,418
Alvorada	130	391	143	701
Subtotal	**30,653**	**54,773**	**31,745**	**58,747**
Mid-season				
Pera Rio	50,855	87,005	50,570	83,756
Subtotal	**50,855**	**87,005**	**50,570**	**83,756**
Late				
Valencia	38,135	66,007	39,201	66,920
Valencia Folha Murcha	4,731	12,654	5,011	12,646
Natal	16,209	26,051	14,571	25,323
Subtotal	**59,075**	**104,712**	**58,783**	**104,889**
Total	**140,583**	**246,490**	**141,098**	**247,392**

Table 81– Oranges: Area of irrigated and non-irrigated groves and of groves with no information on irrigation, by age groups [2023 and 2024 inventories]

Grove age	2023 inventory		2024 inventory	
	Irrigated area	Non-irrigated area or without irrigation information	Irrigated area[1]	Non-irrigated area or without irrigation information[1]
	(hectares)	(hectares)	(hectares)	(hectares)
1 – 2 years	9,382	41,160	14,242	37,981
3 – 5 years	17,967	38,458	14,631	43,339
6 – 10 years	28,774	29,623	27,880	33,773
Over 10 years	84,663	137,606	84,345	132,299
Total	**140,786**	**246,847**	**141,098**	**247,392**

Table 82 – Oranges: Area of irrigated groves by irrigation method [2023 and 2024 inventories]

Irrigation method	2023 inventory		2024 inventory	
	Irrigated area	Percentage	Irrigated area[1]	Percentage[1]
	(hectares)	(%)	(hectares)	(%)
Sprinkling	8,559	6.08	8,578	6.08
Localized	132,228	93.92	132,520	93.92
Total	**140,786**	**100.00**	**141,098**	**100.00**

[1] Based on the same proportions of irrigated area and area in the rainfed system identified in the 2022 mapping, the complete data will be updated in the next mapping, scheduled to begin in the second half of 2024, aiming at the preparation of the 2025 inventory

Table 83 – Oranges: Average age[1] of mature groves by sector and region [2015 to 2024 inventories]

Sector and region	Inventory									
	2015[2]	2016[3]	2017[4]	2018[5]	2019[6]	2020[7]	2021[8]	2022[9]	2023[10]	2024[11]
	(years)	(years)	(years)	(years)	(years)	(years)	(years)	(years)	(years)	(years)
North										
Triângulo Mineiro.....	11.1	7.8	8.6	9.3	10.0	10.5	11.1	11.5	11.6	11.2
Bebedouro.....	9.2	9.5	10.1	10.6	10.9	11.2	11.5	11.7	11.7	11.7
Altinópolis.....	9.5	10.3	11.0	11.6	12.0	12.8	12.9	14.3	13.0	13.1
Average.....	**9.6**	**9.1**	**9.8**	**10.3**	**10.8**	**11.2**	**11.5**	**12.0**	**11.8**	**11.7**
Northwest										
Votuporanga.....	7.9	8.3	8.9	9.5	10.1	9.5	9.1	9.0	8.8	7.5
São José do Rio Preto..	8.0	8.0	7.9	8.5	8.3	8.7	9.2	9.1	9.3	9.1
Average.....	**7.9**	**8.2**	**8.3**	**8.9**	**9.0**	**9.0**	**9.1**	**9.1**	**9.1**	**8.4**
Central										
Matão.....	9.3	8.9	9.4	9.0	9.2	9.8	10.0	8.9	8.5	8.5
Duartina.....	9.6	9.3	9.8	9.5	10.1	10.3	10.2	9.5	9.4	9.7
Brotas.....	7.6	10.9	11.5	12.7	13.3	13.8	13.1	11.0	11.5	11.4
Average.....	**9.0**	**9.4**	**9.9**	**9.8**	**10.3**	**10.6**	**10.5**	**9.5**	**9.3**	**9.4**
South										
Porto Ferreira.....	10.2	9.9	10.6	11.4	11.6	11.8	11.5	10.8	10.5	10.4
Limeira.....	10.6	11.7	12.5	12.1	12.7	12.9	13.1	11.7	12.3	12.9
Average.....	**10.3**	**10.8**	**11.6**	**11.8**	**12.1**	**12.3**	**12.3**	**11.2**	**11.3**	**11.5**
Southwest										
Avaré.....	11.7	10.7	11.6	12.2	12.9	13.1	12.7	12.7	12.6	13.2
Itapetininga.....	11.2	10.6	10.5	9.5	9.3	9.0	8.6	9.1	9.4	9.5
Average.....	**11.5**	**10.7**	**11.3**	**11.4**	**11.8**	**11.8**	**11.4**	**11.5**	**11.5**	**11.9**
Average.....	**9.8**	**9.8**	**10.3**	**10.5**	**10.9**	**11.2**	**11.1**	**10.8**	**10.7**	**10.7**

1 Average age weighted by sector trees
2 Groves planted in 2012 and previous years
3 Groves planted in 2013 and previous years
4 Groves planted in 2014 and previous years
5 Groves planted in 2015 and previous years
6 Groves planted in 2016 and previous years
7 Groves planted in 2017 and previous years
8 Groves planted in 2018 and previous years
9 Groves planted in 2019 and previous years
10 Groves planted in 2020 and previous years
11 Groves planted in 2021 and previous years

Table 84 – Oranges: Area of eradicated groves, eradication and renovation rates by sector and region [2023 and 2024 inventories]

Sector and region	2023 inventory from April 2022 to March 2023				2024 inventory from April 2022 to March 2023				Total			
	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss
	Area	Rate	Area	Area	Area	Rate	Area	Area	Area	Rate	Area	Area
	(ha[1])	(%)	(ha[1])	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])
North												
Triângulo Mineiro	-1,056	-3.84	974	-82	-1,607	-5.69	1,490	-117	-2,663	-9.53	2,464	-199
Bebedouro.....	-2,591	-5.21	2,447	-144	-2,271	-4.55	1,921	-350	-4,862	-9.76	4,368	-494
Altinópolis.....	-834	-7.29	775	-59	-608	-5.00	512	-96	-1,442	-12.29	1,287	-155
Subtotal.....	**-4,481**	**-5.05**	**4,197**	**-284**	**-4,486**	**-4.97**	**3,923**	**-563**	**-8,967**	**-10.02**	**8,120**	**-847**
Northwest												
Votuporanga.....	-2,532	-14.59	1,468	-1,064	-1,600	-9.76	1,431	-169	-4,132	-24.35	2,899	-1,233
S. J. do Rio Preto	-1,473	-6.97	1,427	-46	-1,820	-8.70	1,115	-705	-3,293	-15.67	2,542	-751
Subtotal.....	**-4,005**	**-10.41**	**2,895**	**-1,110**	**-3,420**	**-9.17**	**2,546**	**-874**	**-7,425**	**-19.57**	**5,441**	**-1,984**
Central												
Matão.....	-2,656	-7.89	2,524	-132	-2,416	-6.77	1,977	-439	-5,072	-14.66	4,501	-571
Duartina.....	-4,662	-7.56	3,595	-1,068	-2,383	-3.94	2,285	-98	-7,045	-11.51	5,880	-1,166
Brotas.....	-1,138	-9.41	505	-633	-1,923	-16.62	318	-1,605	-3,061	-26.03	823	-2,238
Subtotal.....	**-8,456**	**-7.87**	**6,624**	**-1,832**	**-6,722**	**-6.24**	**4,580**	**-2,142**	**-15,178**	**-14.11**	**11,204**	**-3,974**
South												
Porto Ferreira.....	-3,423	-9.16	2,394	-1,029	-3,042	-8.24	1,473	-1,569	-6,465	-17.40	3,867	-2,598
Limeira.....	-2,345	-7.05	1,287	-1,059	-3,991	-12.64	751	-3,240	-6,336	-19.68	2,038	-4,299
Subtotal.....	**-5,768**	**-8.16**	**3,681**	**-2,087**	**-7,033**	**-10.27**	**2,224**	**-4,809**	**-12,801**	**-18.43**	**5,905**	**-6,896**
Southwest												
Avaré.....	-2,726	-4.71	2,478	-248	-367	-0.62	367	-	-3,093	-5.34	2,845	-248
Itapetininga.....	-410	-1.71	293	-117	-1	0.00	-	-1	-411	-1.71	293	-118
Subtotal.....	**-3,136**	**-3.83**	**2,772**	**-364**	**-368**	**-0.44**	**367**	**-1**	**-3,504**	**-4.27**	**3,139**	**-365**
Total.....	**-25,847**	**-6.68**	**20,169**	**-5,678**	**-**	**-5.68**	**13,640**	**-8,389**	**-47,876**	**-12.36**	**33,809**	**-14,067**

[1] hectares

Table 85 – Oranges: Area of eradicated groves, eradication and renovation rates by variety [2023 and 2024 inventories]

Variety	2023 inventory from April 2022 to March 2023				2024 inventory from April 2022 to March 2023				Total			
	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss
	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area
	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])
Early												
Hamlin, Westin, Rubi.....	-4,278	-6.82	3,127	-1,150	-1,383	-2.20	1,362	-21	-5,661	-9.02	4,489	-1,171
Other earlies.....	-1,245	-5.48	1,232	-13	-633	-2.68	350	-283	-1,878	-8.16	1,582	-296
Mid-season												
Pera Rio.....	-10,089	-7.32	8,196	-1,893	-	-9.15	7,248	-5,311	-22,648	-16.47	15,444	-7,204
Late												
Valência e Valência Folha Murcha.....	-7,345	-6.04	6,674	-671	-5,485	-4.45	4,034	-1,451	-12,830	-10.49	10,708	-2,122
Natal.....	-2,890	-6.84	940	-1,949	-1,969	-4.84	646	-1,323	-4,859	-11.68	1,586	-3,272
Total.....	**-25,847**	**-6.68**	**20,169**	**-5,678**	**-**	**-5.68**	**13,640**	**-8,389**	**-47,876**	**-12.36**	**33,809**	**-14,067**

[1] hectares

Table 86 – Oranges: Area of eradicated groves, eradication and renovation rates by age group [2023 and 2024 inventories]

Age	2023 inventory from April 2022 to March 2023				2024 inventory from April 2022 to March 2023				Total			
	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss
	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area
	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])	(ha[1])	(%)	(ha[1])
1 – 2 years.....	-	-	-	-	-	-	-	-	-	-	-	-
3 – 5 years.....	-2,212	-4.29	119	-2,093	-1,702	-3.02	1,215	-487	-3,914	-7.31	1,334	-2,580
6 – 10 years.....	-2,747	-4.08	317	-2,430	-177	-0.30	174	-3	-2,924	-4.38	491	-2,433
Over 10 years.....	-20,888	-9.26	19,733	-1,155	-20,150	-9.07	12,251	-7,899	-41,038	-18.33	31,984	-9,054
Total.....	**-25,847**	**-6.68**	**20,169**	**-5,678**	**-22,029**	**-5.68**	**13,640**	**-8,389**	**-47,876**	**-12.36**	**33,810**	**-14,067**

[1] hectares

Table 87 – Oranges: Area of eradicated groves and eradication rate stratified by farm size, considering the number of orange trees on the farm [2023 and 2024 inventories]

Range of the number of Orange trees in the farm	2023 inventory from April 2022 to March 2023				2024 inventory from April 2022 to March 2023				Total			
	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss	Erradication		Renovation	Net loss
	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area	Area	Rate	Area
(1,000 trees)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)
Below 10.....	-2,708	-11.07	2,113	-595	-1,789	-6.82	925	-864	-4,497	-17.90	3,038	-1,459
10 – 19.....	-1,516	-7.97	1,183	-333	-1,047	-5.32	957	-91	-2,563	-13.28	2,139	-424
20 – 29.....	-1,272	-8.32	993	-279	-1,586	-9.69	487	-1,099	-2,858	-18.01	1,480	-1,378
30 – 49.....	-1,658	-6.82	1,294	-364	-1,333	-5.21	1,062	-271	-2,991	-12.04	2,356	-635
50 – 99.....	-3,568	-7.94	2,785	-784	-3,486	-7.19	2,508	-978	-7,054	-15.13	5,292	-1,762
100 – 199.....	-10,394	-20.76	8,111	-2,283	-1,946	-4.10	1,837	-108	-12,340	-24.86	9,948	-2,392
Above 200.....	-4,730	-2.26	3,691	-1,039	-10,842	-5.32	5,865	-4,978	-15,572	-7.58	9,556	-6,017
Total.....	**-25,847**	**-6.68**	**20,169**	**-5,678**	**-22,029**	**-5.68**	**13,640**	**-8,389**	**-47,876**	**-12.36**	**33,809**	**-14,067**

[1] hectares

Table 88 – Oranges: Dead trees and mortality rate by sector and region [2019 to 2024 inventories]

Sector and region	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
North												
Triângulo Mineiro.....	83.17	0.63	107.29	0.81	91.87	0.69	83.76	0.62	122.14	0.87	92.65	0.63
Bebedouro.....	210.41	0.79	356.64	1.33	156.23	0.60	335.79	1.30	321.61	1.23	199.45	0.76
Altinópolis.....	136.30	2.28	111.57	1.82	148.42	2.39	159.03	2.61	260.64	4.00	239.94	3.65
Subtotal.....	**429.88**	**0.94**	**575.50**	**1.25**	**396.52**	**0.87**	**578.58**	**1.27**	**704.39**	**1.50**	**532.04**	**1.12**
Northwest												
Votuporanga.....	271.07	3.15	168.83	2.09	158.17	2.28	254.00	3.04	91.77	1.16	58.74	0.67
S. J. do Rio Preto.....	133.46	1.06	240.50	1.83	257.88	1.94	231.32	2.11	195.46	1.73	71.54	0.63
Subtotal.....	**404.53**	**1.91**	**409.33**	**1.93**	**416.05**	**2.06**	**485.32**	**2.52**	**287.23**	**1.49**	**130.28**	**0.65**
Central												
Matão.....	305.46	1.47	611.65	2.95	284.74	1.39	268.75	1.37	180.15	0.81	115.52	0.51
Duartina.....	342.38	1.20	609.85	2.07	682.31	2.26	580.44	1.62	624.14	1.79	492.09	1.40
Brotas.....	200.96	2.11	204.00	2.22	162.82	1.97	129.18	2.01	164.71	2.60	138.28	2.54
Subtotal.....	**848.80**	**1.44**	**1,425.50**	**2.40**	**1,129.87**	**1.92**	**978.37**	**1.58**	**969.00**	**1.53**	**745.89**	**1.18**
South												
Porto Ferreira.....	186.46	0.90	282.42	1.30	301.27	1.47	233.59	1.13	176.62	0.84	236.52	1.15
Limeira.....	318.00	1.67	493.21	2.56	263.79	1.43	414.62	2.27	312.75	1.83	257.36	1.66
Subtotal.....	**504.46**	**1.27**	**775.63**	**1.89**	**565.06**	**1.45**	**648.21**	**1.66**	**489.37**	**1.29**	**493.88**	**1.37**
Southwest												
Avaré.....	307.15	1.03	913.55	3.07	527.93	1.77	291.66	0.93	424.37	1.31	385.52	1.15
Itapetininga.....	156.52	1.27	295.53	2.26	72.05	0.54	91.63	0.60	133.20	0.82	73.06	0.44
Subtotal.....	**463.67**	**1.10**	**1,209.08**	**2.83**	599.98	**1.39**	383.29	0.82	557.57	1.15	458.58	0.91
Total.....	**2,651.34**	**1.28**	**4,395.04**	**2.09**	**3,107.48**	**1.50**	**3,073.77**	**1.45**	**3,007.56**	**1.39**	**2,360.67**	**1.08**

Table 89 – Oranges: Dead trees and mortality rate by variety [2019 to 2024 inventories]

Variety	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
Early												
Hamlin.....	414.30	1.74	738.07	3.02	426.84	1.79	478.29	1.80	493.17	1.98	426.40	1.57
Westin.....	39.69	1.41	67.67	2.17	44.95	1.47	44.97	1.82	46.35	1.43	43.10	1.35
Rubi.....	77.06	1.70	132.33	2.86	74.51	1.55	54.74	1.46	74.04	1.47	61.40	1.20
Valência Americana..	88.18	0.93	256.13	2.73	152.41	1.44	132.12	1.19	114.93	0.95	59.63	0.47
Seleta.....	0.29	0.33	1.42	1.93	2.86	3.37	0.25	0.50	0.75	1.45	0.43	0.84
Pineapple.....	15.80	1.10	75.12	5.08	10.61	0.70	12.39	0.87	4.63	0.31	2.04	0.13
Alvorada.....	-	-	-	-	-	-	0.55	0.14	0.88	0.16	0.89	0.14
Subtotal.....	**635.32**	**1.50**	**1,270.74**	**2.94**	**712.18**	**1.62**	**723.31**	**1.58**	**734.75**	**1.55**	**593.89**	**1.18**
Mid-season												
Pera Rio.....	1,121.15	1.48	1,690.11	2.22	1,299.4	1.72	1,201.41	1.52	1,174.32	1.48	955.16	1.22
Subtotal.....	**1,121.15**	**1.48**	**1,690.11**	**2.22**	**1,299.4**	**1.72**	**1,201.41**	**1.52**	**1,174.32**	**1.48**	**955.16**	**1.22**
Late												
Valência.....	627.73	1.09	873.03	1.51	719.22	1.30	797.99	1.45	812.31	1.44	542.85	0.96
V. Folha Murcha.....	97.94	1.10	105.32	1.13	112.09	1.25	120.02	1.26	116.03	1.11	66.45	0.63
Natal.....	169.20	0.73	455.84	1.90	264.58	1.13	231.04	1.01	170.15	0.75	202.32	0.90
Subtotal.....	**894.87**	**1.00**	**1,434.19**	**1.57**	**1,095.8**	**1.25**	**1,149.05**	**1.32**	1,098.49	1.23	811.62	0.91
Total.....	**2,651.34**	**1.28**	**4,395.04**	**2.09**	**3,107.4**	**1.50**	**3,073.77**	**1.45**	**3,007.56**	**1.39**	**2,360.67**	**1.08**

Table 90 – Oranges: Dead trees and mortality rate by age group [2019 to 2024 inventory]

Age groves	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
1 – 2 years	11.63	0.07	24.19	0.12	30.86	0.13	114.99	0.45	67.55	0.23	96.15	0.31
3 – 5 years	39.85	0.19	176.36	0.77	29.55	0.12	56.95	0.18	41.25	0.12	48.05	0.14
6 – 10 years.....	393.97	0.66	682.32	1.28	309.48	0.66	296.05	0.71	123.94	0.33	113.9	0.28
Over 10 years.....	2,205.89	2.00	3,512.17	3.06	2,737.59	2.45	2,605.78	2.32	2,774.82	2.44	2,102.57	1.88
Total.....	**2,651.34**	**1.28**	**4,395.04**	**2.09**	**3,107.48**	**1.50**	**3,073.77**	**1.45**	**3,007.56**	**1.39**	**2,360.67**	**1.08**

Table 91 – Oranges: Vacancies by sector and region [2019 to 2024 inventories]

Sector and region	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
North												
Triângulo Mineiro.....	116.91	0.89	234.72	1.78	224.03	1.67	307.26	2.26	280.92	2.00	337.76	2.29
Bebedouro.....	852.32	3.22	872.17	3.25	741.00	2.82	956.36	3.72	901.12	3.43	956.55	3.63
Altinópolis.....	161.83	2.71	263.84	4.30	303.63	4.88	326.52	5.35	362.76	5.57	424.14	6.45
Subtotal.....	**1,131.06**	**2.48**	**1,370.73**	**2.97**	**1,268.66**	**2.77**	**1,590.14**	**3.50**	**1,544.80**	**3.30**	**1,718.45**	**3.60**
Northwest												
Votuporanga.....	356.90	4.15	364.63	4.52	241.71	3.48	274.2	3.29	316.42	4.00	279.53	3.17
S. J. do Rio Preto.....	427.31	3.41	533.09	4.06	522.77	3.93	485.15	4.43	350.39	3.09	453.6	3.99
Subtotal.....	**784.21**	**3.71**	**897.72**	**4.24**	**764.48**	**3.78**	**759.35**	**3.94**	**666.81**	**3.47**	**733.13**	**3.63**
Central												
Matão.....	1,333.33	6.41	1,022.83	4.93	1,428.07	6.96	1,077.32	5.50	1,270.59	5.72	1,448.32	6.37
Duartina.....	1,508.27	5.27	1,201.20	4.08	1,676.98	5.56	1,813.07	5.07	1,744.18	5.00	2,195.40	6.24
Brotas.....	582.93	6.13	432.25	4.70	497.99	6.03	397.54	6.20	352.23	5.57	409.47	7.53
Subtotal.....	**3,424.53**	**5.81**	**2,656.28**	**4.47**	**3,603.04**	**6.11**	**3,287.93**	**5.33**	**3,367.00**	**5.31**	**4,053.19**	**6.39**
South												
Porto Ferreira.....	1,117.48	5.40	1,136.22	5.24	1,045.93	5.12	828.73	4.00	1,047.45	5.00	1,039.49	5.07
Limeira.....	1,113.70	5.84	931.81	4.83	861.54	4.68	1,004.63	5.51	864.46	5.06	1,113.23	7.18
Subtotal.....	**2,231.18**	**5.61**	**2,068.03**	**5.05**	**1,907.47**	**4.91**	**1,833.36**	**4.71**	**1,911.91**	**5.03**	**2,152.72**	**5.98**
Southwest												
Avaré.....	1,737.32	5.84	1,150.69	3.87	1,745.05	5.85	1,857.96	5.93	2,083.22	6.45	2,108.66	6.27
Itapetininga.....	261.77	2.12	248.64	1.91	341.57	2.58	448.3	2.91	714.37	4.37	743.33	4.46
Subtotal.....	**1,999.09**	**4.75**	**1,399.33**	**3.27**	**2,086.62**	**4.84**	**2,306.26**	**4.93**	2,797.59	5.75	2,851.99	5.67
Total.....	**9,570.07**	**4.61**	**8,392.09**	**3.99**	**9,630.27**	**4.65**	**9,777.04**	**4.61**	**10,288.11**	**4.76**	**11,509.4**	**5.29**

Table 92 – Oranges: Vacancies by variety [2019 to 2024 inventories]

Variety	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
Early												
Hamlin.....	1,288.55	5.40	1,109.18	4.53	1,499.49	6.30	1,559.97	5.88	1,443.06	5.80	1,753.43	6.47
Westin.....	154.40	5.49	148.63	4.76	184.16	6.01	129.72	5.26	178.02	5.50	198.77	6.25
Rubi.....	218.92	4.84	207.90	4.49	315.50	6.55	164.57	4.39	319.82	6.35	342.65	6.70
Val. Americana.....	646.45	6.81	382.52	4.07	623.92	5.88	562.72	5.08	689.08	5.71	701.67	5.56
Seleta.....	4.68	5.33	5.53	7.53	6.51	7.67	2.21	4.45	2.96	5.72	3.93	7.71
Pineapple.....	21.58	1.50	20.99	1.42	65.51	4.34	86.91	6.07	86.04	5.85	112.29	7.38
Alvorada.....	-	-	-	-	-	-	8.43	2.16	28.34	5.28	29.4	4.49
Subtotal.....	**2,334.58**	**5.53**	**1,874.75**	**4.34**	**2,695.09**	**6.14**	**2,514.53**	**5.50**	**2,747.32**	**5.81**	**3,142.14**	**6.25**
Mid-season												
Pera Rio.....	3,264.58	4.31	3,249.25	4.26	3,127.90	4.15	3,488.39	4.40	3,537.61	4.45	3,755.49	4.81
Subtotal.....	**3,264.58**	**4.31**	**3,249.25**	**4.26**	**3,127.90**	**4.15**	**3,488.39**	**4.40**	**3,537.61**	**4.45**	**3,755.49**	**4.81**
Late												
Valência.....	2,484.80	4.32	1,919.37	3.32	2,246.68	4.05	2,275.19	4.14	2,325.02	4.13	2,786.96	4.94
V.Folha Murcha.....	412.50	4.62	395.37	4.26	345.16	3.85	393.94	4.13	371.47	3.56	501.65	4.79
Natal.....	1,073.61	4.65	953.35	3.97	1,215.44	5.21	1,104.99	4.85	1,306.69	5.77	1,323.24	5.89
Subtotal.....	**3,970.91**	**4.44**	**3,268.09**	**3.59**	**3,807.28**	**4.34**	**3,774.12**	**4.33**	**4,003.18**	**4.48**	**4,611.85**	**5.16**
Total.....	**9,570.07**	**4.61**	**8,392.09**	**3.99**	**9,630.27**	**4.65**	**9,777.04**	**4.61**	**10,288.1**	**4.76**	**11,509.4**	**5.29**

Table 93 – Oranges: Vacancies by age group [2019 to 2024 inventories]

Groves age	2019 inventory		2020 inventory		2021 inventory		2022 inventory		2023 inventory		2024 inventory	
	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate	Vacancies	Rate
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
1 – 2 years	68.33	0.40	9.00	0.05	78.93	0.32	386.03	1.51	346.02	1.18	346.59	1.13
3 – 5 years	469.40	2.26	348.21	1.52	487.67	2.05	773.14	2.38	1,071.44	3.08	1,185.12	3.38
6 – 10 years.....	2,084.41	3.50	1,774.43	3.33	1,676.86	3.57	1,555.11	3.71	1,563.81	4.11	1,718.82	4.29
Over 10 years.....	6,947.93	6.30	6,260.45	5.45	7,386.81	6.61	7,062.76	6.29	7,306.84	6.42	8,258.95	7.38
Total.....	**9,570.07**	**4.61**	**8,392.09**	**3.99**	**9,630.27**	**4.65**	**9,777.04**	**4.61**	**10,288.1**	**4.76**	**11,509.4**	**5.29**

Table 94 – Other oranges: Area and number of trees by region, variety and age [2024 inventory] (continues next page)

Region and variety	Area	Trees 0 – 2 years			Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Total
		2021	2022	Resets				
	(hectares)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Triângulo Mineiro								
Washington Navel and Baianinha	121	-	62.01	0.44	0.10	2.75	0.92	66.22
Charmute de Brotas	-	-	-	-	-	-	-	-
Acidless sweet oranges and sweet lime[1]	5	-	0.11	0.53	0.59	-	0.97	2.20
Other	15	4.20	-	0.14	0.02	0.09	0.74	5.19
Subtotal	**141**	**4.20**	**62.12**	**1.11**	**0.71**	**2.84**	**2.63**	**73.61**
Bebedouro								
Washington Navel and Baianinha	148	-	100.03	0.23	1.49	4.39	1.21	107.35
Charmute de Brotas	6	1.00	-	0.03	0.02	-	1.77	2.82
Acidless sweet oranges and sweet lime[1]	74	3.46	-	1.17	6.30	14.33	14.39	39.65
Other	197	32.79	5.64	5.21	33.27	28.98	11.31	117.20
Subtotal	**425**	**37.25**	**105.67**	**6.64**	**41.08**	**47.70**	**28.68**	**267.02**
Altinópolis								
Washington Navel and Baianinha	15	0.07	-	-	0.10	0.20	5.31	5.68
Charmute de Brotas	57	-	-	0.04	0.47	11.29	18.31	30.11
Acidless sweet oranges and sweet lime[1]	88	0.10	0.02	1.25	8.88	2.82	31.39	44.46
Other	5	-	0.53	-	0.03	0.17	1.89	2.62
Subtotal	**165**	**0.17**	**0.55**	**1.29**	**9.48**	**14.48**	**56.90**	**82.87**
Votuporanga								
Washington Navel and Baianinha	19	0.20	-	-	0.01	0.54	9.45	10.20
Charmute de Brotas	-	-	-	-	-	-	-	-
Acidless sweet oranges and sweet lime[1]	147	-	1.30	0.91	1.47	53.13	27.97	84.78
Other	8	-	0.50	0.07	0.02	4.13	-	4.72
Subtotal	**174**	**0.20**	**1.80**	**0.98**	**1.50**	**57.80**	**37.42**	**99.70**
São José do Rio Preto								
Washington Navel and Baianinha	20	-	-	0.11	0.02	0.19	11.09	11.41
Charmute de Brotas	-	-	-	-	-	-	-	-
Acidless sweet oranges and sweet lime[1]	28	1.45	-	0.12	0.21	2.44	11.16	15.38
Other	230	39.18	31.69	35.18	7.67	-	6.79	120.51
Subtotal	**278**	**40.63**	**31.69**	**35.41**	**7.90**	**2.63**	**29.04**	**147.30**
Matão								
Washington Navel and Baianinha	9	0.75	1.12	0.09	0.17	1.38	0.88	4.39
Charmute de Brotas	2	-	-	0.05	0.09	0.69	0.21	1.04
Acidless sweet oranges and sweet lime[1]	241	23.31	3.11	5.45	28.11	79.59	14.85	154.42
Other	117	4.10	2.27	0.24	48.33	40.66	1.86	97.46
Subtotal	**369**	**28.16**	**6.50**	**5.83**	**76.70**	**122.32**	**17.80**	**257.31**

Table 94 – Other oranges: Area and number of trees by region, variety and age [2024 inventory] (continued)

Region and variety	Area	Trees 0 – 2 years			Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Total
		2021	2022	Resets				
	(hectares)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
Duartina								
Washington Navel and Baianinha.....	112	11.45	0.19	1.81	13.96	27.58	15.75	70.74
Charmute de Brotas.....	203	0.47	0.10	3.12	14.64	21.44	41.24	81.01
Acidless sweet oranges and sweet lime[2]....	538	6.48	1.22	9.31	32.22	93.44	149.66	292.33
Other.....	47	6.07	9.41	0.01	1.36	16.70	-	33.55
**Subtotal..... **	**900**	**24.47**	**10.92**	**14.25**	**62.18**	**159.16**	**206.65**	**477.63**
Brotas								
Washington Navel and Baianinha.....	84	13.38	9.40	0.12	12.13	4.37	3.82	43.22
Charmute de Brotas.....	128	-	0.07	0.89	6.54	9.56	34.79	51.85
Acidless sweet oranges and sweet lime[2].....	358	28.60	8.23	1.67	19.41	48.26	65.62	171.79
Other.....	143	3.34	21.99	0.26	16.59	10.14	9.85	62.17
**Subtotal..... **	**713**	**45.32**	**39.69**	**2.94**	**54.67**	**72.33**	**114.08**	**329.03**
Porto Ferreira								
Washington Navel and Baianinha.....	366	0.23	7.30	17.75	42.81	97.62	47.81	213.52
Charmute de Brotas.....	162	-	0.50	5.40	8.08	23.05	42.60	79.63
Acidless sweet oranges and sweet lime[2].....	1,353	62.93	29.36	45.23	71.72	219.44	310.76	739.44
Other.....	45	5.04	6.59	1.67	10.96	3.42	1.32	29.00
**Subtotal..... **	**1,926**	**68.20**	**43.75**	**70.05**	**133.57**	**343.53**	**402.49**	**1,061.59**
Limeira								
Washington Navel and Baianinha.....	467	21.73	17.27	11.26	67.44	48.09	87.97	253.76
Charmute de Brotas.....	197	6.28	1.69	6.14	17.58	29.16	49.62	110.47
Acidless sweet oranges and sweet lime[2].....	1,095	14.37	28.98	34.46	152.05	125.88	270.51	626.25
Other.....	455	52.30	5.05	5.44	69.62	19.44	117.43	269.28
**Subtotal..... **	**2,214**	**94.68**	**52.99**	**57.30**	**306.69**	**222.57**	**525.53**	**1,259.76**
Avaré								
Washington Navel and Baianinha.....	838	48.42	13.39	14.22	65.96	37.82	215.21	395.02
Charmute de Brotas.....	425	7.90	2.35	11.80	64.11	57.31	89.21	232.68
Acidless sweet oranges and sweet lime[2].....	792	7.32	18.99	23.60	100.25	55.19	212.86	418.21
Other.....	53	3.83	5.47	9.29	1.16	2.43	5.70	27.88
**Subtotal..... **	**2,108**	**67.47**	**40.20**	**58.91**	**231.48**	**152.75**	**522.98**	**1,073.79**
Itapetininga								
Washington Navel and Baianinha.....	534	20.41	51.36	20.36	35.39	26.57	104.16	258.25
Charmute de Brotas.....	165	3.05	7.21	12.65	13.07	13.77	34.22	83.97
Acidless sweet oranges and sweet lime[2].....	143	2.03	0.20	11.42	4.10	24.70	31.64	74.09
Other.....	534	-	9.69	15.02	42.36	316.06	32.70	415.83
**Subtotal..... **	**1,376**	**25.49**	**68.46**	**59.45**	**94.92**	**381.10**	**202.72**	**832.14**
**Total..... **	**10,789**	**436.24**	**464.34**	**314.16**	**1,020.88**	**1,579.21**	**2,146.92**	**5,961.75**

- Represents zero
[1] Resets were considered as old as the original planted grove
[2] Acidless sweet oranges: Lima Verde, Lima Tardia, Piralima, Lima Sorocaba, Lima Roque and João Nunes
Sweet lime: Palestine sweet lime

Table 95 – Acid limes and lemons: Area and planting holes estimated[1] by region, variety and age of plot [2022 inventory]

Region and variety	Area	Plots 0 – 2 years		Plots 3 – 5 years	Plots 6 – 10 years	Plots over 10 years	Total
		2020	2021				
	(hectares)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)
Triângulo Mineiro							
Tahiti acid lime	343	1.29	1.96	-	53.74	56.09	113.08
Sicilian lemon	-	-	-	-	-	-	-
Other including non-identified ones	1	-	-	0.21	-	0.96	1.17
Subtotal	**344**	**1.29**	**1.96**	**0.21**	**53.74**	**57.05**	**114.25**
Bebedouro							
Tahiti acid lime	19,368	652.38	588.49	2,878.81	1,914.60	721.59	6,755.87
Sicilian lemon	154	5.17	2.06	43.67	14.03	9.99	74.92
Other including non-identified ones	10	4.74	0.04	0.50	0.72	2.35	8.35
Subtotal	**19,532**	**662.29**	**590.59**	**2,922.98**	**1,929.35**	**733.93**	**6,839.14**
Altinópolis							
Tahiti acid lime	52	-	-	7.28	19.65	6.72	33.65
Sicilian lemon	74	-	-	47.73	-	-	47.73
Other including non-identified ones	14	-	-	-	6.21	-	6.21
Subtotal	**140**	**-**	**-**	**55.01**	**25.86**	**6.72**	**87.59**
Votuporanga							
Tahiti acid lime	5,269	337.97	189.02	802.08	811.77	196.18	2,337.02
Sicilian lemon	7	-	-	2.75	-	-	2.75
Other including non-identified ones	9	-	-	0.72	-	2.15	2.87
Subtotal	**5,285**	**337.97**	**189.02**	**805.55**	**811.77**	**198.33**	**2,342.64**
São José do Rio Preto							
Tahiti acid lime	1,579	84.51	43.61	252.98	142.91	91.55	615.56
Sicilian lemon	-	-	-	0.06	-	-	0.06
Other including non-identified ones	3	-	0.22	-	0.86	0.39	1.47
Subtotal	**1,582**	**84.51**	**43.83**	**253.04**	**143.77**	**91.94**	**617.09**
Matão							
Tahiti acid lime	13,871	357.21	648.42	1,622.34	1,775.07	988.47	5,391.51
Sicilian lemon	127	4.49	-	25.50	22.49	-	52.48
Other including non-identified ones	-	-	-	-	0.15	-	0.15
Subtotal	**13,998**	**361.70**	**648.42**	**1,647.84**	**1,797.71**	**988.47**	**5,444.14**
Duartina							
Tahiti acid lime	942	75.32	64.93	153.43	108.44	22.35	424.47
Sicilian lemon	579	1.01	5.85	86.03	8.99	135.56	237.44
Other including non-identified ones	3	-	1.19	-	0.10	-	1.29
Subtotal	**1,524**	**76.33**	**71.97**	**239.46**	**117.53**	**157.91**	**663.20**
Brotas							
Tahiti acid lime	149	0.48	7.64	62.03	15.21	1.42	86.78
Sicilian lemon	750	147.51	1.01	119.00	112.82	1.41	381.75
Other including non-identified ones	137	11.68	10.14	-	0.63	22.10	44.55
Subtotal	**1,036**	**159.67**	**18.79**	**181.03**	**128.66**	**24.93**	**513.08**
Porto Ferreira							
Tahiti acid lime	523	15.17	47.50	42.56	103.16	83.61	292.00
Sicilian lemon	734	46.12	3.39	65.56	102.13	167.75	384.95
Other including non-identified ones	29	0.25	1.47	-	2.77	11.07	15.56
Subtotal	**1,286**	**61.54**	**52.36**	**108.12**	**208.06**	**262.43**	**692.51**
Limeira							
Tahiti acid lime	3,581	116.55	143.81	537.66	637.48	369.28	1,804.78
Sicilian lemon	1,125	55.59	15.58	166.68	289.36	112.59	639.80
Other including non-identified ones	18	-	-	9.38	-	-	9.38
Subtotal	**4,724**	**172.14**	**159.39**	**713.72**	**926.84**	**481.87**	**2,453.96**
Avaré							
Tahiti acid lime	164	14.97	0.16	74.94	13.29	2.92	106.28
Sicilian lemon	1,470	-	51.26	161.72	368.09	133.68	714.75
Other including non-identified ones	206	53.32	-	40.74	-	-	94.06
Subtotal	**1,840**	**68.29**	**51.42**	**277.40**	**381.38**	**136.60**	**915.09**
Itapetininga							
Tahiti acid lime	31	-	-	2.58	13.59	0.35	16.52
Sicilian lemon	454	66.29	-	101.66	20.08	28.13	216.16
Other including non-identified ones	33	9.08	-	-	0.37	4.29	13.74
Subtotal	**518**	**75.37**	**-**	**104.24**	**34.04**	**32.77**	**246.42**
Total	**51,809**	**2,061.10**	**1,827.75**	**7,308.60**	**6,558.71**	**3,172.95**	**20,929.11**

- Represents zero

The method employed for mapping groves of acid limes and lemons was reduced to the outline of the plots, and data about variety and number of trees were supplied by the farmer or person in charge. Whenever such information was not provided, the number of holes was calculated by the area of the plot divided by the spacing, which was identified by visual evaluation. The counting of 5% of the plots was not performed for this group of citrus species

Table 96 – Tangerines: Area and planting holes[1] estimated by region, variety and age of plot [2022 inventory]

Region and variety	Area	Plots 0 – 2 years		Plots 3 – 5 years	Plots 6 – 10 years	Plots over 10 years	Total
		2020	2021				
	(hectares)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)
Triângulo Mineiro							
Ponkan	126	2.92	11.83	9.28	18.68	12.51	55.22
Murcott	37	-	20.92	-	-	-	20.92
Other	16	-	-	-	2.86	2.21	5.07
Subtotal	**179**	**2.92**	**32.75**	**9.28**	**21.54**	**14.72**	**81.21**
Bebedouro							
Ponkan	890	33.93	19.77	91.17	234.88	105.74	485.49
Murcott	386	32.15	15.60	94.01	69.93	4.88	216.57
Other	214	8.75	14.03	42.57	39.61	11.88	116.84
Subtotal	**1,490**	**74.83**	**49.40**	**227.75**	**344.42**	**122.50**	**818.90**
Altinópolis							
Ponkan	126	3.73	2.80	3.73	38.01	33.23	81.50
Murcott	129	40.12	7.05	5.83	2.94	21.11	77.05
Other	53	0.43	9.83	15.10	8.36	3.13	36.85
Subtotal	**308**	**44.28**	**19.68**	**24.66**	**49.31**	**57.47**	**195.40**
Votuporanga							
Ponkan	1,280	28.32	120.86	101.62	246.91	152.14	649.85
Murcott	135	3.25	11.42	36.51	19.08	0.44	70.70
Other	114	9.05	9.36	16.76	22.00	2.95	60.12
Subtotal	**1,529**	**40.62**	**141.64**	**154.89**	**287.99**	**155.53**	**780.67**
São José do Rio Preto							
Ponkan	327	12.27	11.09	21.79	92.67	29.62	167.44
Murcott	56	15.83	-	3.43	4.17	4.36	27.79
Other	25	-	0.07	3.42	12.25	0.19	15.93
Subtotal	**408**	**28.10**	**11.16**	**28.64**	**109.09**	**34.17**	**211.16**
Matão							
Ponkan	353	26.25	18.92	57.01	92.29	28.74	223.21
Murcott	593	28.28	17.56	91.94	113.37	71.63	322.78
Other	121	9.56	9.21	25.26	23.66	3.87	71.56
Subtotal	**1,067**	**64.09**	**45.69**	**174.21**	**229.32**	**104.24**	**617.55**
Duartina							
Ponkan	268	4.61	1.62	4.43	148.83	40.30	199.79
Murcott	809	52.00	9.00	17.71	51.88	463.20	593.79
Other	152	1.07	-	2.26	22.62	89.75	115.70
Subtotal	**1,229**	**57.68**	**10.62**	**24.40**	**223.33**	**593.25**	**909.28**
Brotas							
Ponkan	25	-	6.65	4.80	5.74	-	17.19
Murcott	295	4.11	77.01	23.05	110.56	7.74	222.47
Other	96	4.93	14.91	-	28.84	8.01	56.69
Subtotal	**416**	**9.04**	**98.57**	**27.85**	**145.14**	**15.75**	**296.35**
Porto Ferreira							
Ponkan	209	2.17	1.94	28.95	34.60	63.85	131.51
Murcott	1,061	21.76	14.02	141.89	186.09	242.48	606.24
Other	177	18.55	8.85	16.04	36.18	24.09	103.71
Subtotal	**1,447**	**42.48**	**24.81**	**186.88**	**256.87**	**330.42**	**841.46**
Limeira							
Ponkan	501	25.04	23.95	68.75	141.00	60.81	319.55
Murcott	1,219	57.14	47.70	211.18	228.16	191.94	736.12
Other	261	13.30	26.51	61.89	67.99	6.02	175.71
Subtotal	**1,981**	**95.48**	**98.16**	**341.82**	**437.15**	**258.77**	**1,231.38**
Avaré							
Ponkan	123	5.76	0.91	11.07	22.01	30.82	70.57
Murcott	748	41.53	14.68	58.23	191.52	134.83	440.79
Other	170	18.06	7.86	14.49	53.01	14.82	108.24
Subtotal	**1,041**	**65.35**	**23.45**	**83.79**	**266.54**	**180.47**	**619.60**
Itapetininga							
Ponkan	837	22.79	48.26	157.02	123.52	162.49	514.08
Murcott	342	2.63	14.31	36.79	48.17	96.90	198.80
Other	309	18.24	36.63	35.56	58.19	45.88	194.50
Subtotal	**1,488**	**43.66**	**99.20**	**229.37**	**229.88**	**305.27**	**907.38**
Total	**12,583**	**568.53**	**655.13**	**1,513.54**	**2,600.58**	**2,172.56**	**7,510.34**

- Represents zero

[1] The method employed for mapping tangerines groves was reduced to the outline of the plots, and data about variety and number of trees were supplied by the farmer or person in charge. Whenever such information was not provided, the number of holes was calculated by the area of the plot divided by the spacing, which was identified by visual evaluation. The counting of 5% of the plots was not performed for this group of citrus species

Table 97 – Oranges: Cities with groves by sector and region [2022 inventory]

Sector	Region	Cities
North 72 cities	Triângulo Mineiro (TMG) 15 cities	Campina Verde, Campo Florido, Canápolis, Comendador Gomes, Conceição das Alagoas, Frutal, Gurinhatã, Itapagipe, Ituiutaba, Monte Alegre de Minas, Planura, Prata, São Francisco de Sales, Uberaba, Uberlândia
	Bebedouro (BEB) 34 cities	Ariranha, Barretos, Bebedouro, Cajobi, Catanduva, Catiguá, Colina, Colômbia, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Jaborandi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Palmares Paulista, Paraíso, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiuva, Taquaral, Terra Roxa, Uchoa, Urupês, Viradouro, Vista Alegre do Alto
	Altinópolis (ALT) 23 cities	Alterosa, Altinópolis, Batatais, Brodowski, Cajuru, Cassia dos Coqueiros, Cristais Paulista, Delfinópolis, Fortaleza de Minas, Franca, Ibiraci, Igarapava, Jacuí, Jeriquara, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Sacramento, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso, São Tomás de Aquino
Northwest 80 cities	Votuporanga (VOT) 48 cities	Alvares Florence, Américo de Campos, Aparecida d'Oeste, Aspásia, Auriflama, Cardoso, Dirce Reis, Dolcinópolis, Estrela d'Oeste, Fernandópolis, Guaraçaí, Guarani d'Oeste, Guzolândia, Indiaporã, Jales, Macedônia, Marinópolis, Meridiano, Mesópolis, Mira Estrela, Nova Canaã Paulista, Ouroeste, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pontalinda, Pontes Gestal, Populina, Riolândia, Santa Albertina, Santa Clara d'Oeste, Santa Fé do Sul, Santa Rita d'Oeste, Santa Salete, Santana da Ponte Pensa, Santo Antônio do Aracanguá, São Francisco, São João das Duas Pontes, São João de Iracema, Sud Mennucci, Suzanápolis, Três Fronteiras, Turmalina, Urania, Valentim Gentil, Vitória Brasil, Votuporanga
	São José do Rio Preto (SJO) 32 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Icem, Ipiguá, Jaci, Jose Bonifácio, Magda, Mendonca, Mirassol, Mirassolândia, Monte Aprazível, Neves Paulista, Nhandeara, Nipoã, Nova Aliança, Nova Granada, Onda Verde, Orindiúva, Palestina, Paulo de Faria, Poloni, Potirendaba, São José do Rio Preto, Tanabi, Ubarana, Zacarias
Central 72 cities	Matão (MAT) 20 cities	Américo Brasiliense, Araraquara, Bariri, Boa Esperança do Sul, Borborema, Candido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itaju, Itápolis, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Rincão, Santa Lucia, Tabatinga, Taquaritinga
	Duartina (DUA) 39 cities	Agudos, Alvinlândia, Arealva, Avaí, Balbinos, Bauru, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Echaporã, Espírito Santo do Turvo, Fernão, Gália, Garça, Getulina, Guaiçara, Guaimbê, Guarantã, Iacanga, Júlio Mesquita, Lins, Lucianópolis, Lupércio, Marília, Ocauçu, Paulistânia, Pederneiras, Pirajuí, Piratininga, Pongai, Presidente Alves, Quatá, Reginópolis, Sabino, Santa Cruz do Rio Pardo, São Pedro do Turvo, Ubirajara, Uru
	Brotas (BRO) 13 cities	Analândia, Bocaina, Brotas, Corumbataí, Dourado, Ibaté, Itirapina, Ribeirão Bonito, Santa Maria da Serra, São Carlos, São Pedro, Torrinha, Trabiju
South 43 cities	Porto Ferreira (PFE) 17 cities	Aguaí, Casa Branca, Descalvado, Guaranésia, Itobi, Luiz Antônio, Mococa, Pirassununga, Porto Ferreira, Santa Cruz da Conceição, Santa Cruz das Palmeiras, Santa Rita do Passa Quatro, Santa Rosa de Viterbo, São João da Boa Vista, São Simão, Tambaú, Vargem Grande do Sul
	Limeira (LIM) 26 cities	Amparo, Araras, Artur Nogueira, Atibaia, Bragança Paulista, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Iracemápolis, Itapira, Jaguariúna, Jarinu, Leme, Limeira, Mogi Guaçu, Mogi Mirim, Paulínia, Piracicaba, Rio Claro, Santo Antônio de Posse, Serra Negra, Socorro
Southwest 47 cities	Avaré (AVA) 28 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, Arandu, Avaré, Bofete, Borebi, Botucatu, Capela do Alto, Cerqueira Cesar, Cesário Lange, Conchas, Iaras, Iperó, Itatinga, Lençóis Paulista, Manduri, Óleo, Pardinho, Piraju, Porangaba, Porto Feliz, Pratânia, Salto de Pirapora, São Manuel, Sorocaba, Tatuí
	Itapetininga (ITG) 19 cities	Alambari, Buri, Campina do Monte Alegre, Capão Bonito, Coronel Macedo, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Itararé, Nova Campina, Paranapanema, Pilar do Sul, São Miguel Arcanjo, Sarapuí, Sarutaiá, Taquarituba, Taquarivaí
Total 5 sectors	Total 12 regions	Total 314 cities

Table 98 – Other oranges: Cities with groves by sector and region [2022 inventory]

Sector	Region	Cities
North 36 cities	Triângulo Mineiro (TMG) 3 cities	Conceição das Alagoas, Monte Alegre de Minas, Uberaba
	Bebedouro (BEB) 19 cities	Ariranha, Bebedouro, Cajobi, Colômbia, Embaúba, Irapuã, Itajobi, Marapoama, Monte Azul Paulista, Olímpia, Paraíso, Pirangi, Santa Adélia, Severínia, Taiaçu, Taiuva, Uchoa, Urupês, Vista Alegre do Alto
	Altinópolis (ALT) 14 cities	Altinópolis, Batatais, Brodowski, Cajuru, Cassia dos Coqueiros, Ibiraci, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Sacramento, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso
Northwest 28 cities	Votuporanga (VOT) 17 cities	Alvares Florence, Aspásia, Estrela d'Oeste, Fernandópolis, Jales, Palmeira d'Oeste, Paranapuã, Pontalinda, Santa Clara d'Oeste, Santa Fé do Sul, Santa Salete, São João das Duas Pontes, Sud Mennucci, Turmalina, Urania, Vitória Brasil, Votuporanga
	São José do Rio Preto (SJO) 11 cities	Bálsamo, Cedral, Cosmorama, José Bonifácio, Mendonça, Mirassolândia, Monte Aprazível, Nhandeara, Nova Aliança, Potirendaba, São José do Rio Preto
Central 45 cities	Matão (MAT) 12 cities	Américo Brasiliense, Bariri, Boa Esperança do Sul, Borborema, Candido Rodrigues, Fernando Prestes, Ibitinga, Itápolis, Monte Alto, Novo Horizonte, Tabatinga, Taquaritinga
	Duartina (DUA) 21 cities	Agudos, Avaí, Bauru, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Echaporã, Espírito Santo do Turvo, Fernão, Iacanga, Lucianópolis, Marília, Paulistânia, Pederneiras, Pirajuí, Piratininga, Presidente Alves, Santa Cruz do Rio Pardo, São Pedro do Turvo, Ubirajara
	Brotas (BRO) 12 cities	Analândia, Bocaina, Brotas, Corumbataí, Dois Córregos, Dourado, Itirapina, Mineiros do Tietê, Ribeirão Bonito, São Carlos, Torrinha, Trabiju.
South 29 cities	Porto Ferreira (PFE) 10 cities	Aguaí, Casa Branca, Descalvado, Mococa, Pirassununga, Santa Cruz das Palmeiras, São João da Boa Vista, São Simão, Tambaú, Vargem Grande do Sul
	Limeira (LIM) 19 cities	Amparo, Araras, Artur Nogueira, Bragança Paulista, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Jaguariúna, Leme, Limeira, Mogi Guaçu, Mogi Mirim, Paulínia, Piracicaba, Santo Antônio de Posse
Southwest 32 cities	Avaré (AVA) 20 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, Arandu, Avaré, Botucatu, Capela do Alto, Cerqueira Cesar, Conchas, Guareí, Iperó, Itatinga, Manduri, Óleo, Porto Feliz, Pratânia, Salto de Pirapora, Sorocaba, Tatuí
	Itapetininga (ITG) 12 cities	Alambari, Buri, Capão Bonito, Coronel Macedo, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Itararé, Paranapanema, São Miguel Arcanjo
Total 5 sectors	Total 12 regions	Total 170 cities

Table 99 – Acid limes and lemons: Cities with groves by sector and region [2022 inventory]

Sector	Region	Cities
North 50 cities	Triângulo Mineiro (TMG) 8 cities	Campina Verde, Frutal, Ituiutaba, Iturama, Monte Alegre de Minas, Prata, Uberaba
	Bebedouro (BEB) 33 cities	Ariranha, Barretos, Bebedouro, Cajobi, Catanduva, Catiguá, Colina, Elisiário, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Palmares Paulista, Paraíso, Pindorama, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiuva, Taquaral, Uchoa, Urupês, Viradouro, Vista Alegre do Alto
	Altinópolis (ALT) 9 cities	Altinópolis, Brodowski, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Sacramento, Santo Antônio da Alegria, São Sebastião do Paraíso
Northwest 74 cities	Votuporanga (VOT) 45 cities	Álvares Florence, Aparecida d'Oeste, Aspásia, Dolcinópolis, Estrela d'Oeste, Fernandópolis, Guaraçaí, Guarani d'Oeste, Jales, Macedônia, Marinópolis, Meridiano, Mesópolis, Mira Estrela, Murutinga do Sul, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pontalinda, Populina, Rubinéia, Santa Albertina, Santa Fé do Sul, Santa Rita d'Oeste, Santa Salete, Santana da Ponte Pensa, Santo Antônio do Aracanguá, São Francisco, São João das Duas Pontes, São João de Iracema, Sud Mennucci, Três Fronteiras, Turmalina, Urânia, Valentim Gentil, Vitória Brasil, Votuporanga, Mirandópolis, Dirce Reis, Guzolândia, Nova Canaã Paulista, Ouroeste, Pereira Barreto, Pontes Gestal
	São José do Rio Preto (SJO) 29 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Ipiguá, Jaci, Jose Bonifácio, Macaubal, Mendonca, Mirassol, Mirassolândia, Neves Paulista, Nhandeara, Nova Aliança, Nova Granada, Onda Verde, Palestina, Paulo de Faria, Planalto, Potirendaba, São José do Rio Preto, Sebastianópolis Do Sul, Tanabi, Ubarana, Zacarias
Central 53 cities	Matão (MAT) 17 cities	Araraquara, Bariri, Boa Esperança do Sul, Borborema, Candido Rodrigues, Fernando Prestes, Ibitinga, Itaju, Itápolis, Jaboticabal, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Tabatinga, Taquaritinga
	Duartina (DUA) 25 cities	Arealva, Avaí, Bauru, Boraceia, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Echaporã, Espírito Santo do Turvo, Gália, Getulina, Guaiçara, Guaimbê, Guarantã, Iacanga, Lins, Lucianópolis, Marília, Pederneiras, Pirajuí, Piratininga, Presidente Alves, São Pedro do Turvo, Ubirajara
	Brotas (BRO) 11 cities	Analândia, Brotas, Corumbataí, Dois Córregos, Dourado, Ibaté, Itirapina, Ribeirão Bonito, São Carlos, Torrinha, Trabiju
South 37 cities	Porto Ferreira (PFE) 14 cities	Aguaí, Casa Branca, Itobi, Mococa, Pirassununga, Porto Ferreira, Santa Cruz da Conceição, Santa Rita do Passa Quatro, Santa Rosa de Viterbo, São João da Boa Vista, São José do Rio Pardo, São Simão, Tambaú, Vargem Grande do Sul
	Limeira (LIM) 23 cities	Araras, Artur Nogueira, Charqueada, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Iracemápolis, Itapira, Jaguariúna, Leme, Limeira, Lindóia, Mogi Guaçu, Mogi Mirim, Monte Alegre do Sul, Paulínia, Piracicaba, Rio Claro, Santo Antônio de Posse
Southwest 22 cities	Avaré (AVA) 11 cities	Águas de Santa Bárbara, Angatuba, Araçoiaba da Serra, Arandu, Avaré, Botucatu, Capela do Alto, Itatinga, Óleo, Porto Feliz, Sorocaba
	Itapetininga (ITG) 11 cities	Buri, Capão Bonito, Coronel Macedo, Itaberá, Itaí, Itapetininga, Itaporanga, Paranapanema, São Miguel Arcanjo, Sarapuí, Taquarivaí
Total 5 sectors	Total 12 regions	Total 236 cities

Table 100 – Tangerines: Cities with groves by sector and region [2022 inventory]

Sector	Region	Cities
North 50 cities	Triângulo Mineiro (TMG) 6 cities	Campina Verde, Frutal, Itapagipe, Monte Alegre de Minas, Prata, Uberaba
	Bebedouro (BEB) 31 cities	Ariranha, Barretos, Bebedouro, Cajobi, Catiguá, Colina, Colômbia, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Jaborandi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Paraíso, Pindorama, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiuva, Taquaral, Uchoa, Urupês, Vista Alegre do Alto
	Altinópolis (ALT) 13 cities	Altinópolis, Cajuru, Cassia dos Coqueiros, Franca, Ibiraci, Jacuí, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Sacramento, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso
Northwest 62 cities	Votuporanga (VOT) 44 cities	Alvares Florence, Américo de Campos, Andradina, Aparecida d'Oeste, Aspásia, Dolcinópolis, Estrela d'Oeste, Fernandópolis, Guaraçaí, Guarani d'Oeste, Indiaporã, Jales, Macedônia, Marinópolis, Meridiano, Mesópolis, Mira Estrela, Murutinga do Sul, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pereira Barreto, Pontalinda, Populina, Rubineia, Santa Albertina, Santa Clara d'Oeste, Santa Fé do Sul, Santa Rita d'Oeste, Santa Salete, Santana da Ponte Pensa, Santo Antônio do Aracanguá, São Francisco, São João das Duas Pontes, São João de Iracema, Sud Mennucci, Suzanápolis, Três Fronteiras, Turmalina, Urania, Valentim Gentil, Vitória Brasil, Votuporanga
	São José do Rio Preto (SJO) 18 cities	Altair, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Ipiguá, Jaci, José Bonifácio, Mirassolândia, Monte Aprazível, Nhandeara, Nova Aliança, Nova Granada, Palestina, Potirendaba, São José do Rio Preto, Tanabi
Central 42 cities	Matão (MAT) 16 cities	Américo Brasiliense, Bariri, Boa Esperança do Sul, Borborema, Candido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itápolis, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Tabatinga, Taquaritinga
	Duartina (DUA) 17 cities	Avaí, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Fernão, Gália, Garça, Iacanga, Lins, Marília, Paulistânia, Pederneiras, Piratininga, Presidente Alves, São Pedro do Turvo, Ubirajara
	Brotas (BRO) 9 cities	Analândia, Bocaina, Brotas, Corumbataí, Dois Córregos, Itirapina, São Carlos, Torrinha, Trabiju
South 34 cities	Porto Ferreira (PFE) 11 cities	Aguaí, Casa Branca, Mococa, Pirassununga, Porto Ferreira, Santa Cruz da Conceição, Santa Cruz das Palmeiras, Santa Rita do Passa Quatro, São João da Boa Vista, São Simão, Tambaú
	Limeira (LIM) 23 cities	Amparo, Araras, Artur Nogueira, Atibaia, Bragança Paulista, Conchal, Cordeirópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Jaguariúna, Jarinu, Leme, Limeira, Mogi Guaçu, Mogi Mirim, Monte Alegre do Sul, Paulínia, Pinhalzinho, Piracicaba, Santo Antônio de Posse, Socorro
Southwest 26 cities	Avaré (AVA) 14 cities	Águas de Santa Bárbara, Anhembi, Avaré, Botucatu, Capela do Alto, Guareí, Iperó, Itatinga, Manduri, Porto Feliz, Pratânia, Salto de Pirapora, Sorocaba, Tatuí
	Itapetininga (ITG) 12 cities	Alambari, Buri, Capão Bonito, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Paranapanema, Pilar Do Sul, São Miguel Arcanjo, Sarapuí
Total 5 sectors	Total 12 regions	Total 214 cities

3.3 – ABANDONED ORANGE GROVES

Abandoned groves are citrus plots in which no signs of management are identified, such as lack of pruning/weeding, unsatisfactory phytosanitary control, with a high degree of pest and disease infestation, often with rotted fruits on the ground and the presence of livestock in the plot. The areas of these groves are counted separately and do not make up the inventory of productive and non-productive trees.

Table 101 – Oranges: Area and percentage of abandoned groves in relation to the total area [2023 and 2024 inventories]

Sector and region	2023 inventory			2024 inventory			
	Abandoned area found in the mapping (scan)	Abandoned area found in the 2023 sample survey (area that was bearing in the mapping but has been abandoned)	Total	Update on the abandoned area found in the mapping (scan)	Abandoned area found in the 2024 sample survey (area that was bearing but has been abandoned)	Total	Percentage of abandoned area in relation to the total area of the citrus belt
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
North							
Triângulo Mineiro..	-	0	0	-	-	-	-
Bebedouro.....	14	-	14	2	-	2	0.00
Altinópolis.....	-	2	2	-	-	-	-
Subtotal.....	**14**	**2**	**16**	**2**	**-**	**2**	**0.00**
Northwest							
Votuporanga.....	92	279	372	62	43	105	0.57
S. J. do Rio Preto...	60	562	621	9	-	9	0.04
Subtotal.....	**152**	**841**	**993**	**71**	**43**	**114**	**0.29**
Central							
Matão.....	11	-	11	6	-	6	0.02
Duartina.....	9	656	665	7	-	7	0.01
Brotas.....	45	-	45	45	1	46	0.46
Subtotal.....	**65**	**656**	**720**	**58**	**1**	**59**	**0.06**
South							
Porto Ferreira.....	18	-	18	18	-	18	0.05
Limeira.....	2	964	965	1	-	1	0.00
Subtotal.....	**20**	**964**	**983**	**19**	**-**	**19**	**0.03**
Southwest							
Avaré.....	11	-	11	11	44	55	0.09
Itapetininga.....	-	-	-	-	380	380	1.42
Subtotal.....	**11**	**-**	**11**	**11**	**424**	**435**	**0.50**
Total.....	**262**	**2,462**	**2,724**	**161**	**468**	**629**	**0.16**

Table 102 – Other oranges: Area and percentage of abandoned groves in relation to the total area [2023 and 2024 inventories]

Sector and region	2023 inventory			2024 inventory			
	Abandoned area found in the mapping (scan)	Abandoned area found in the 2023 sample survey (area that was bearing in the mapping but has been abandoned)	Total	Update on the abandoned area found in the mapping (scan)	Abandoned area found in the 2024 sample survey (area that was bearing but has been abandoned)	Total	Percentage of abandoned area in relation to the total area of the citrus belt
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
North							
Triângulo Mineiro..	29	0	29	8	-	8	0.03
Bebedouro.....	-	-	-	-	-	-	-
Altinópolis.....	-	-	-	-	-	-	-
Subtotal.....	**29**	**0**	**29**	**8**	**-**	**8**	**0.01**
Northwest							
Votuporanga.....	1	-	1	-	-	-	-
S. J. do Rio Preto...	-	-	-	-	-	-	-
Subtotal.....	**1**	**-**	**1**	**-**	**-**	**-**	**-**
Central							
Matão.....	-	-	-	-	-	-	-
Duartina.....	-	-	-	-	-	-	-
Brotas.....	4	-	4	4	-	4	0.04
Subtotal.....	**4**	**-**	**4**	**4**	**-**	**4**	**0.00**
South							
Porto Ferreira.....	6	-	6	6	-	6	0.02
Limeira.....	1	-	1	1	-	1	0.00
Subtotal.....	**7**	**-**	**7**	**7**	**-**	**7**	**0.01**
Southwest							
Avaré.....	-	-	-	-	156	156	0.25
Itapetininga.....	-	-	-	-	-	-	-
Subtotal.....	**-**	**-**	**-**	**-**	**156**	**156**	**0.17**
Total.....	**41**	**0**	**41**	**19**	**156**	**175**	**0.04**

3.4 – NEW CITRUS AREAS IN MUNICIPALITIES NEAR THE CITRUS BELT IDENTIFIED IN THE MAPPING CARRIED OUT IN 2022

In the mapping that gave rise to the 2022 inventory, the scan also contemplated municipalities outside the citrus belt, which are close to the bordering areas, in order to monitor the evolution of citrus plantings in these borders. Commercial groves were mapped, but not those whose purpose is still to analyze the behavior of citrus varieties in the regions. The selection of municipalities was based on the volume of nursery plants received in recent years, according to data from the animal and plant health protection agency for the state of São Paulo (CDA-SP), informed by the Brazilian statistics institute (IBGE) and indication by the PES technical committee.

In these new areas, the plant counting step was not performed in 5% of the mapped plots, a technique used to estimate the number of trees in each age category, dead trees and vacancies. The method in these areas contemplated only the registration of the plots, so it is possible to accurately measure the area and estimate the number of planting holes, which results from the total area of the plot and the estimate of the area occupied by each plant, given by the spacing between plants and between rows.

The plantings are distributed in 11 municipalities and cover an area of 6,339 hectares, with an estimated 3.508 million planting holes. Most of the fruits produced in these regions are intended for consumption *in natura*: 47% of the area is occupied with tangerines, 43% with oranges and 10% with acid limes and lemons. The data is presented in the following figure and tables.

Figura 6 – Location of citrus plots in new planting areas in municipalities near the citrus belt

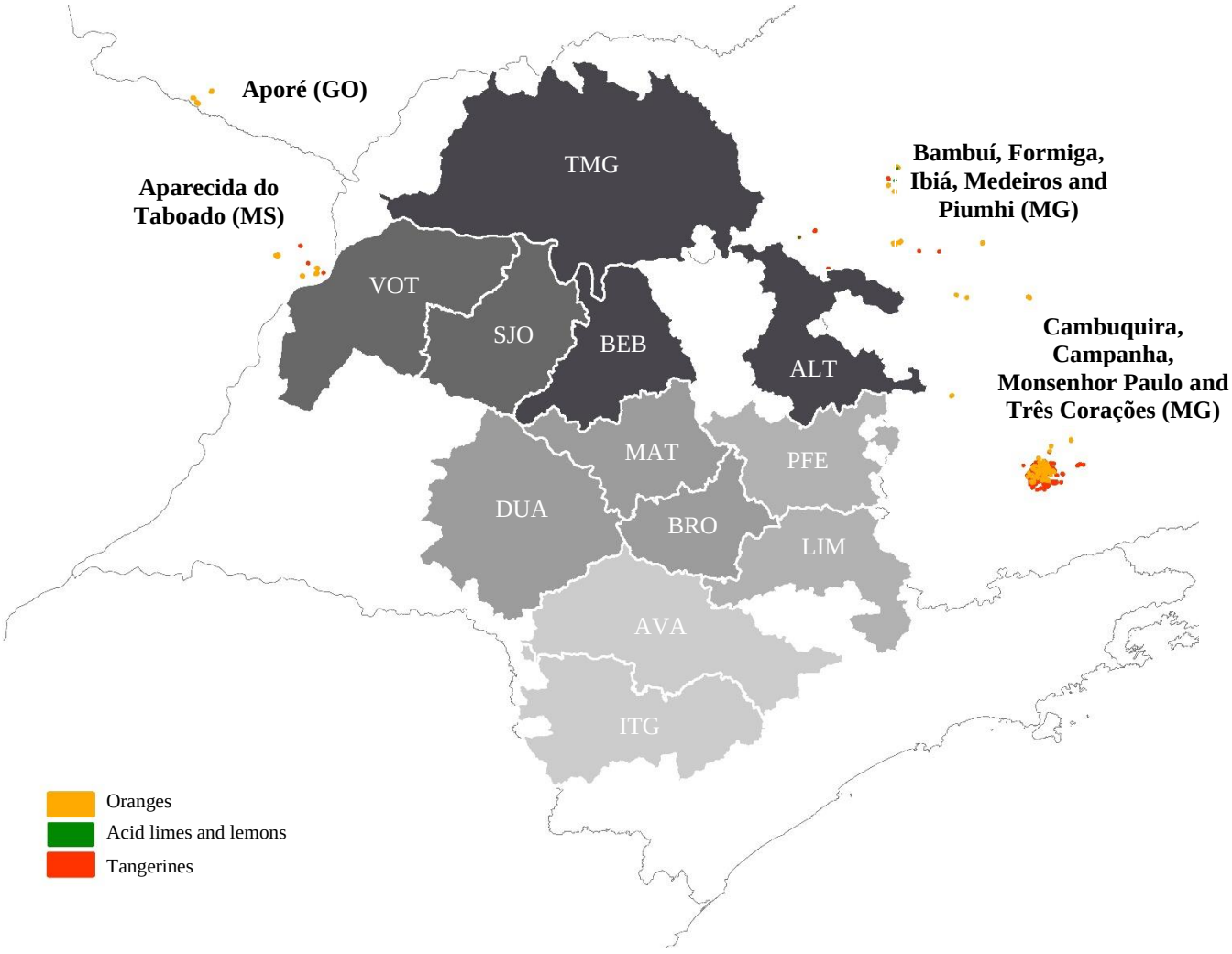


Table 103 – All citrus: Groves area by variety and age in the newly mapped areas [inventory 2022]

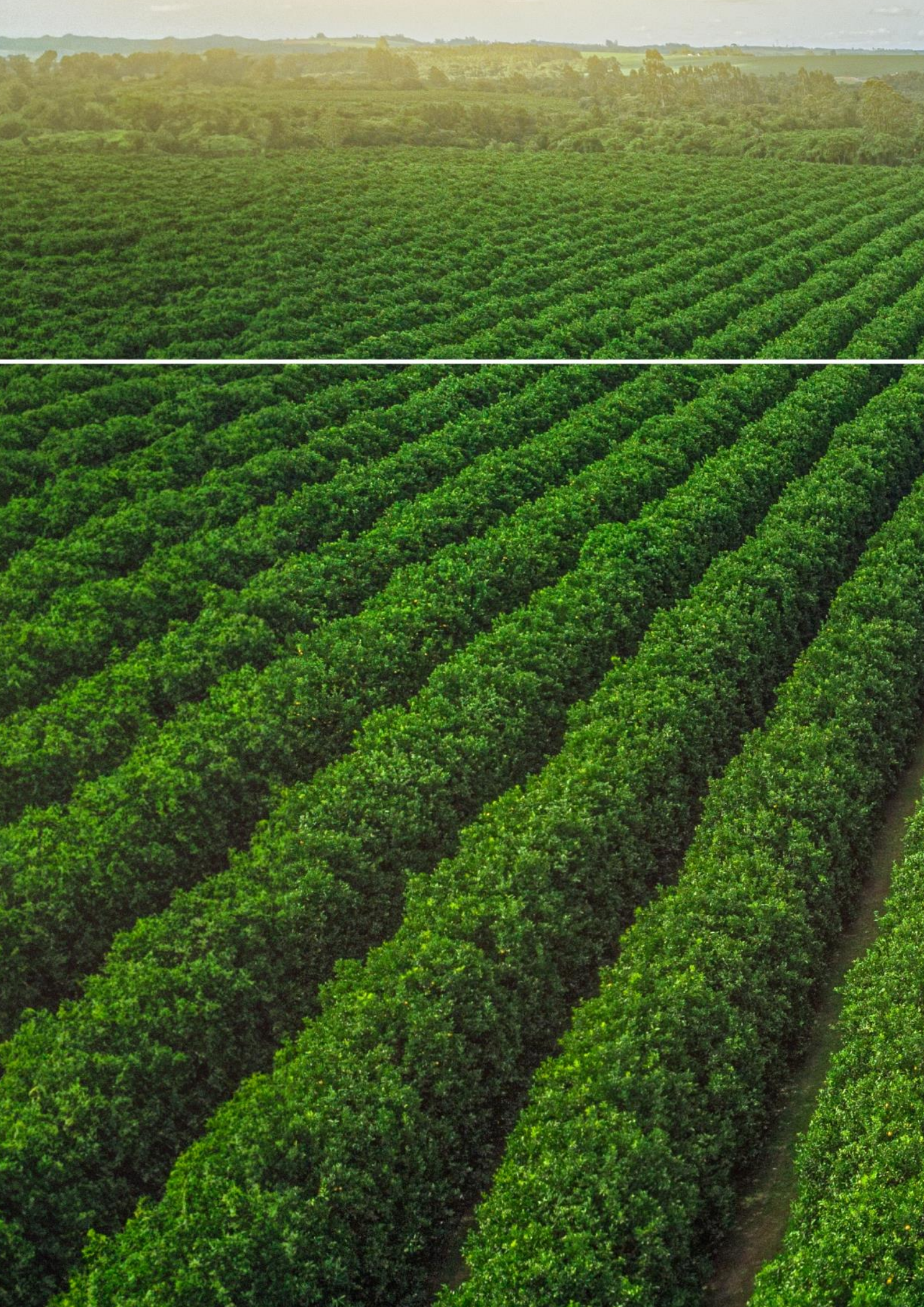
Cities and varieties	Plot age				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
Aparecida do Taboado (MS) and Aporé					
Hamlin	-	39	-	-	39
Rubi	-	82	-	-	82
Pera Rio	89	208	209	465	971
Natal	-	-	14	49	63
Tahiti acid lime	267	57	232	-	556
Ponkan	9	55	29	7	100
Subtotal	**365**	**441**	**484**	**521**	**1,811**
Cambuquira, Campanha, Monsenhor Paulo and Três Corações (MG)					
Rubi	2	-	-	-	2
Westin	-	-	11	1	12
Pera Rio	101	23	74	50	248
Valencia	9		1	9	19
Valencia Folha Murcha	26	46	51	42	165
Natal	71	114	30	30	245
Washington Navel and Baianinha	12	2	10	42	66
Charmute de Brotas	9	26	11	-	46
Acidless sweet oranges and sweet lime	20	9	25	18	72
Tahiti acid lime	2	12	18	-	32
Other lemons	3	-	-	-	3
Murcott	15	-	17	-	32
Ponkan	358	373	1,006	993	2,730
Other tangerines	14	17	22	17	70
Subtotal	**642**	**622**	**1,276**	**1,202**	**3,742**
Bambuí, Formiga, Ibiá, Medeiros and Piumhi (MG)					
Hamlin	101	-	-	-	101
Rubi	-	-	86	-	86
Pera Rio	21	82	203	53	359
Valencia	-	-	-	35	35
Valencia Folha Murcha	7	17	9	21	54
Natal	-	13	-	-	13
Charmute de Brotas	-	-	-	9	9
Acidless sweet oranges and sweet lime	-	-	12	9	21
Other oranges	-	-	28	3	31
Tahiti acid lime	-	7	-	25	32
Ponkan	-	13	16	16	45
Subtotal	**129**	**132**	**354**	**171**	**786**
Subtotal oranges	**468**	**661**	**774**	**836**	**2,739**
Subtotal acid limes and lemons	**272**	**76**	**250**	**25**	**623**
Subtotal tangerines	**396**	**458**	**1,090**	**1,033**	**2,977**
Total	**1,136**	**1,195**	**2,114**	**1,894**	**6,339**

- Represents zero

Table 104 – All citrus: Planting holes area by variety and age in the newly mapped areas [inventory 2022]

Cities and varieties	Plot age				Total
	1 – 2 years	3 – 5 years	6 – 10 years	Over 10 years	
	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)
Aparecida do Taboado (MS) and Aporé (GO)					
Hamlin	-	20.86	-	-	20.86
Rubi	-	42.67	-	-	42.67
Pera Rio	46.17	103.79	114.23	236.66	500.85
Natal	-	-	7.92	24.23	32.15
Tahiti acid lime	123.3	25.65	83.63	-	232.58
Ponkan	4.3	28.75	18	3.48	54.53
Subtotal	**173.77**	**221.72**	**223.78**	**264.37**	**883.64**
Cambuquira, Campanha, Monsenhor Paulo and Três Corações (MG)					
Rubi	0.92	-	-	-	0.92
Westin	-	-	6.65	0.39	7.04
Pera Rio	59.6	12.56	40.91	24.45	137.52
Valencia	5.82	-	0.38	4.48	10.68
Valencia Folha Murcha	14.21	27.2	26.38	20.11	87.9
Natal	36.11	59.6	20.28	13.44	129.43
Washington Navel and Baianinha	7.86	1.58	5.19	20.62	35.25
Charmute de Brotas	5.97	14.99	7.38	-	28.34
Acidless sweet oranges and sweet lime	13.6	5.37	15.19	8.49	42.65
Tahiti acid lime	0.98	9.56	9.11	-	19.65
Other lemons	1.5	-	-	-	1.5
Murcott	10.53	-	9.78	-	20.31
Ponkan	233.45	238.03	622.38	514.89	1608.75
Other tangerines	8.95	10.73	12.75	9.22	41.65
Subtotal	**399.50**	**379.62**	**776.38**	**616.09**	**2,171.59**
Bambuí, Formiga, Ibiá, Medeiros and Piumhi (MG)					
Hamlin	52.63	-	-	-	52.63
Rubi	-	-	57.85	-	57.85
Pera Rio	11.74	36.09	128.14	28.66	204.63
Valencia	-	-	-	17.66	17.66
Valencia Folha Murcha	4.05	10.82	4.68	10.18	29.73
Natal	-	8.70	-	-	8.70
Charmute de Brotas	-	-	-	4.56	4.56
Acidless sweet oranges and sweet lime	-	-	6.09	4.30	10.39
Other oranges	-	-	14.68	1.34	16.02
Tahiti acid lime	-	2.89	-	15.41	18.30
Ponkan	-	10.28	11.80	11.12	33.20
Subtotal	**68.42**	**68.78**	**223.24**	**93.23**	**453.67**
Subtotal oranges	**258.68**	**344.23**	**455.95**	**419.57**	**1,478.43**
Subtotal acid limes and lemons	**125.78**	**38.10**	**92.74**	**15.41**	**272.03**
Subtotal tangerines	**257.23**	**287.79**	**674.71**	**538.71**	**1,758.44**
Total	**641.69**	**670.12**	**1,223.40**	**973.69**	**3,508.90**

- Represents zero
[1] For the new mapped areas, the tree count of 5% of the plots was not performed

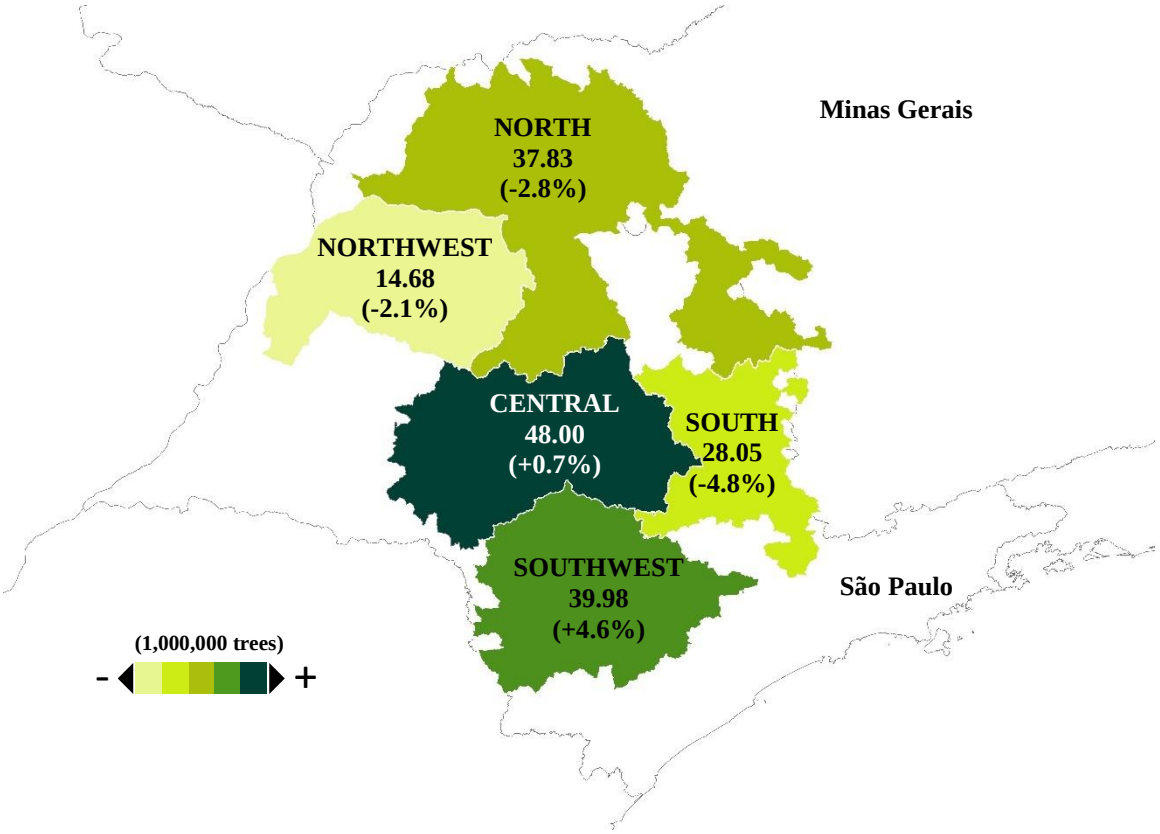


2024-2025 ORANGE CROP FORECAST

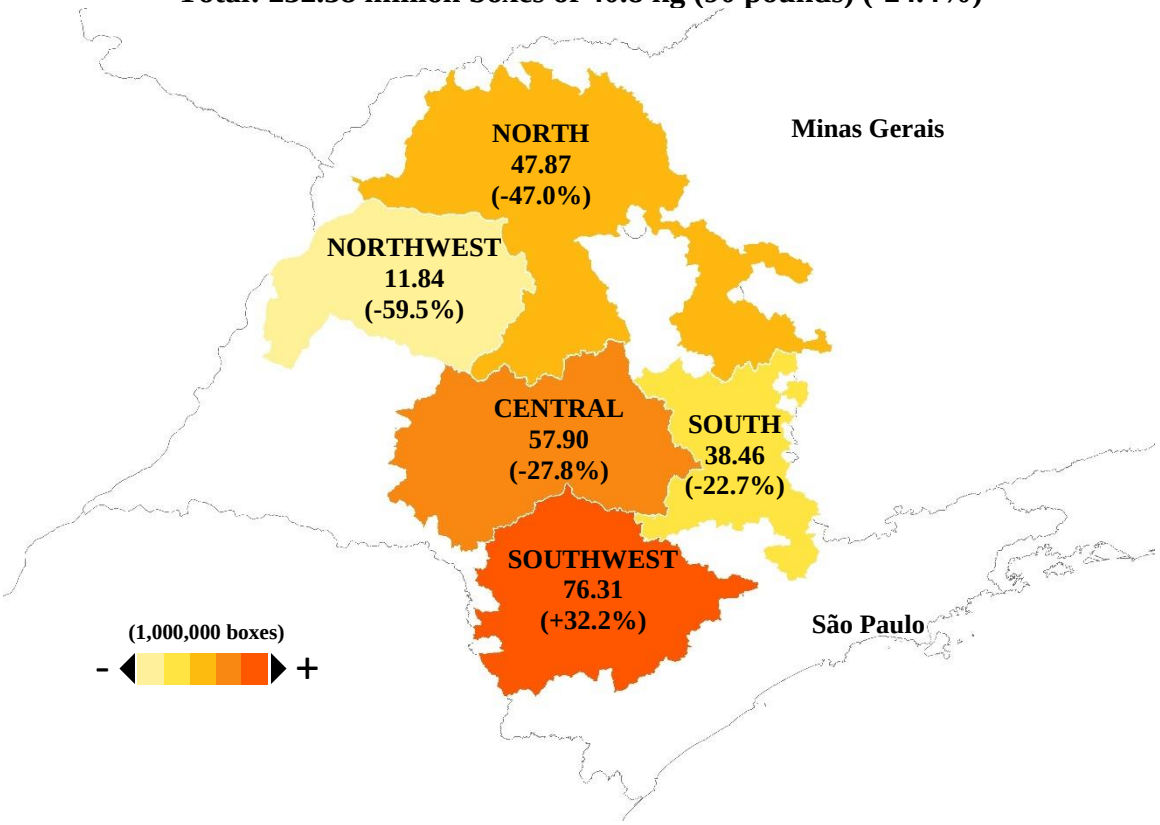
for the São Paulo and West-Southwest Minas Gerais citrus belt

SCENARIO IN MAY 2024

ORANGE BEARING TREES BY SECTOR[1]
AND COMPARASION TO THE PREVIOUS CROP SEASON (-0.4%)
Total: 168.54 million trees



2024-2025 ORANGE CROP FORECAST BY SECTOR[2]
AND COMPARASION TO THE PREVIOUS CROP SEASON
Total: 232.38 million boxes of 40.8 kg (90 pounds) (-24.4%)



[1] Snapshot in March 2024. Varieties: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Alvorada, Pera Rio, Valencia, Valencia Folha Murcha and Natal

[2] Status in May 2024

2024-2025 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT – MAY FORECAST

Publication Schedule

2024-2025 Crop Year
March 2024 tree inventory: June 10, 2024
Crop forecast: May 10, 2024
1st Crop forecast update: September 10, 2024
2nd Crop forecast update: December 10, 2024
3rd Crop forecast update: February 10, 2025
Final crop forecast: April 10, 2025

Production forecasts are subject to uncertainty, especially due to climatic conditions, which may not materialize as predicted. For that reason, the forecast is updated throughout the crop year based on data on early fruit drop and fruit size obtained through surveys carried out by Fundecitrus. Hence, using the most recent publication available on the website www.fundecitrus.com.br is recommended. Moreover, in order to meet the demands of the citrus sector and the press, we reserve the right to expand and deepen the information previously published.

Performed by FUNDECITRUS in cooperation with MARKESTRAT and full professors from FEA-RP/USP and the department of Math and Science of FCAV/Unesp

2024-2025 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

OUTLOOK IN MAY 2024

Fundecitrus
Araraquara, São Paulo
2024

Av. Adhemar Pereira de Barros, 201 | Vila Melhado | ZIP Code: 14807-040 | Araraquara | São Paulo | Brazil
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Lourival Carmo Monaco
Fundecitrus President

Antonio Juliano Ayres
Fundecitrus General Manager

Marcos Fava Neves
PES Political-Institutional and Methodological Coordinator, part-time Full Professor at FEA-RP/USP and EAESP/FGV

Vinícius Gustavo Trombin
PES Executive Coordinator linked to Markestrat

José Carlos Barbosa
Methodology Analyst and (Voluntary) Full Professor at the department of Math and Science of FCAV/Unesp

Fernando Alvarinho Delgado
PES Supervisor/Fundecitrus

Roseli Reina
PES Specialist/Fundecitrus

SUMMARY

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1 – 2024-2025 ORANGE CROP FORECAST

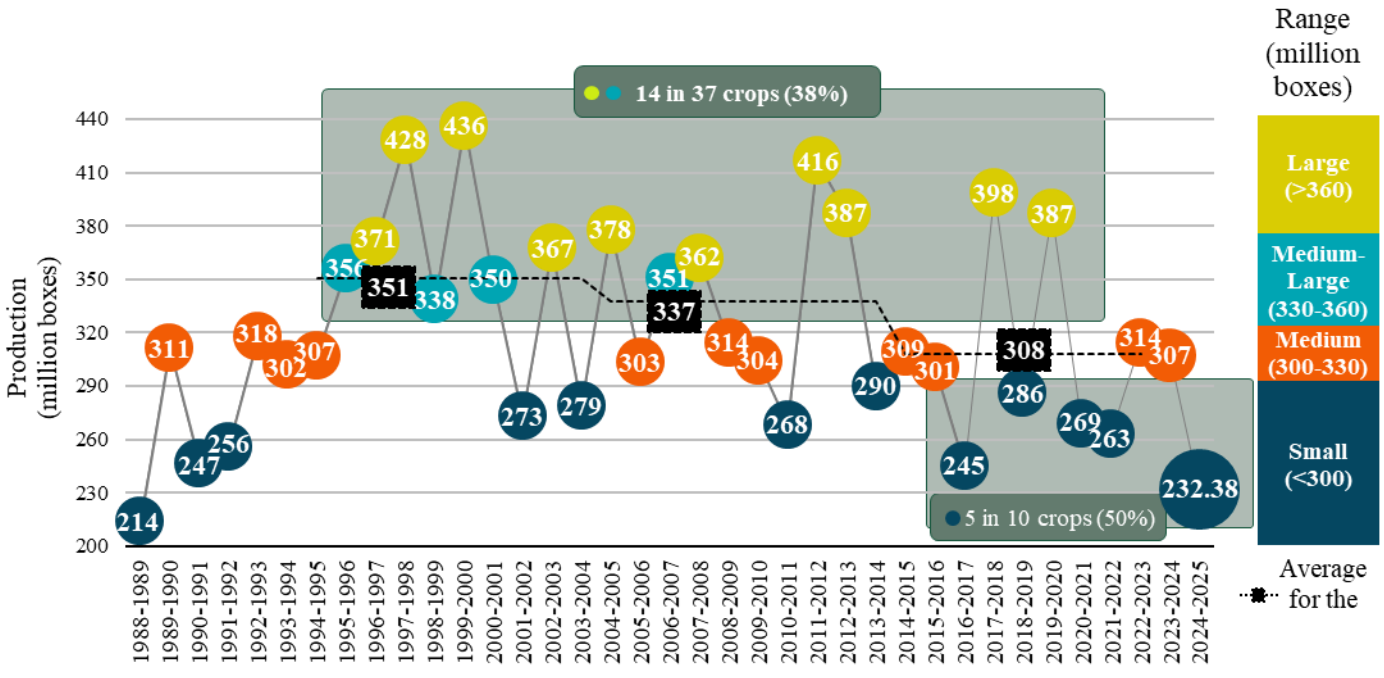
The 2024-2025 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, published on May 10, 2024, by Fundecitrus in cooperation with Markestrat and full professors at FEA-RP/USP[2] and FCAV/Unesp[3], is 232.38 million boxes of 40.8 kg (90 lbs) each. This production is divided as follows (figures in parentheses indicate the drop in production as compared to the previous crop):

- 37.12 million boxes of the Hamlin, Westin, and Rubi varieties (-36.10%);
- 15.72 million boxes of the Valencia Americana, Seleta, Pineapple and Alvorada varieties (-15.07%);
- 70.97 million boxes of the Pera Rio variety (-27.30%);
- 81.58 million boxes of the Valencia and Valencia Folha Murcha varieties (-22.45%);
- 26.99 million boxes of the Natal variety (-2.91%).

Approximately 14.61 million boxes are expected to be produced in the Triângulo Mineiro (-47.48%).

Overall, the projected volume represents a significant drop of 24.36% as compared to the previous crop that totaled 307.22 million boxes, a value close to the average for the last decade. Consequently, there is no substantial difference when comparing the current crop with the average volume harvested in the last 10 years. Should this production forecast hold true, this will be the second smallest crop since 1988-1989, when forecasts using the objective method began to be performed in the citrus belt.

The production data from the historical series, which comprises 37 crop seasons, points to a gradual downward trend over time, closely related to adverse climate. As Graph 1 shows, “medium to large size” and “large size” crops were more common, accounting for 14 of the 37 crop seasons, which is equivalent to 38%. However, when examining the most recent period, the last 10 years, a change in the scenario is observed: the “small size” crops have become predominant, representing 50% of the events in the period.



Graph 1 – Orange production from 1988-1989 to 2023-2024 and 2024-2025 crop forecast
Sources: CitrusBR (1988-1989 to 2014-2015) and Fundecitrus (2015-2016 to 2024-2025)

[2] Marcos Fava Neves, Part-time Full Professor at FEA-RP/USP.
[3] José Carlos Barbosa, (voluntary) Full Professor at FCAV/Unesp.

The gradual decrease in orange production becomes evident when observing the data: between 1994-1995 and 2003-2004, the average harvest was 351 million boxes, which dropped down to 337 million in the following decade (2004-2005 to 2013-2014) and reached 308 million in the most recent decade (2014-2015 to 2023-2024). This progressive decline is mainly attributed to increasingly challenging climatic conditions for orange production.

The several extreme weather events that began to affect the citrus belt with greater frequency and intensity could have caused even further damage to production, had it not been for the significant investment in groves, which intensified from the 2000s onwards and substantially improved the yield of the citrus planted area. Among the most relevant events are the migration of groves to the Southwest, a region with more favorable climatic conditions for growing oranges, technological developments such as the expansion of the irrigated area that currently accounts for 36% of the total area, and the renovation of groves with better quality and more efficient combinations of scion and rootstock, as well as the phytosanitary control, particularly relevant for the successful management of Citrus Variegated Chlorosis (CVC).

In this crop season, the conditions necessary for flower induction began with the drought during the month of May 2023, which resulted in plant stress due to water shortage and an accumulation of reserves. After this period of water stress, conditions became favorable for flowering, either due to the rains that fell on May 31 and between June 14 and 16, 2023, with an accumulated volume of approximately 80 millimeters on average in the citrus belt, or owing to the water supply through irrigation. This environmental stimulus induced the first bloom, which stood out as the most intense of this season, reaching its peak in the second half of August.

The favorable climate was abruptly interrupted by the arrival of a heatwave on September 17, initially affecting municipalities in the regions located in the North and Northwest and spreading until it reached all the extent of the citrus belt on September 24, except for the Itapetininga region. During that period, the average maximum temperature was 37°C, reaching a record for this season in Votuporanga, where thermometers registered 42°C. The highest maximum temperatures were recorded in the regions of Votuporanga, with an average of 40°C, São José do Rio Preto, with an average of 39°C, and Bebedouro, with an average of 38°C. Next came: Duartina and Matão, with average maximum temperatures of 37ºC, Triângulo Mineiro, Porto Ferreira, Limeira and Altinópolis, with an average of 36ºC, Brotas and Avaré, with 35ºC, and finally, Itapetininga, with an average of 33ºC. The high temperatures persisted in October, although less intense, in the regions of Brotas, Porto Ferreira, Limeira, Avaré and Itapetininga. This first heatwave affected the setting of the first bloom.

The hot weather increased the evapotranspiration rate, a condition that was aggravated by the low volumes of rain observed in July, August, and September, totaling approximately 50 millimeters. This combination resulted in another water stress on the plants due to water shortage. Conditions for a new flowering were established with the arrival of rains in October, with an average volume of 157 millimeters in the citrus belt. This second bloom, overall, was less vigorous than the first, reaching its peak at the end of October. The development of this bloom was compromised by a second heatwave that swept through the citrus belt. The damage caused by this event was even more severe than that caused by the first one, because the heat also affected the newly formed fruit from the first bloom. This heatwave began on November 7 and gradually expanded until it completely covered the citrus belt, dissipating on November 19. Average maximum temperatures reached 36°C, with thermometers registering the highest temperatures in the regions of São José do Rio Preto, Votuporanga, Bebedouro, Matão and Triângulo Mineiro. Southwestern regions, comprising Avaré and Itapetininga, were less affected due to the event's lower intensity and shorter duration there.

Picture 1 – Examples of plots with significant drop of newly formed fruit after the first and second heatwave, at a lower intensity in the region of Itapetininga

The successive heatwaves caused a significant drop in the newly formed fruits, known as fruitlets, as shown in the example above, in the regions of Brotas, Mogi Guaçu, and at lower intensity in Itapetininga. However, the accumulated rainfall, with an average of 134 millimeters in November, brought new vigor to the plants, stimulating a third bloom. Nevertheless, this bloom, peaking in early December, was not very significant. Subsequently, another heatwave swept through most of the citrus belt between December 12 and 21. This third event was less intense and of shorter duration than the previous ones, especially in the regions of Itapetininga, Avaré, and Altinópolis.

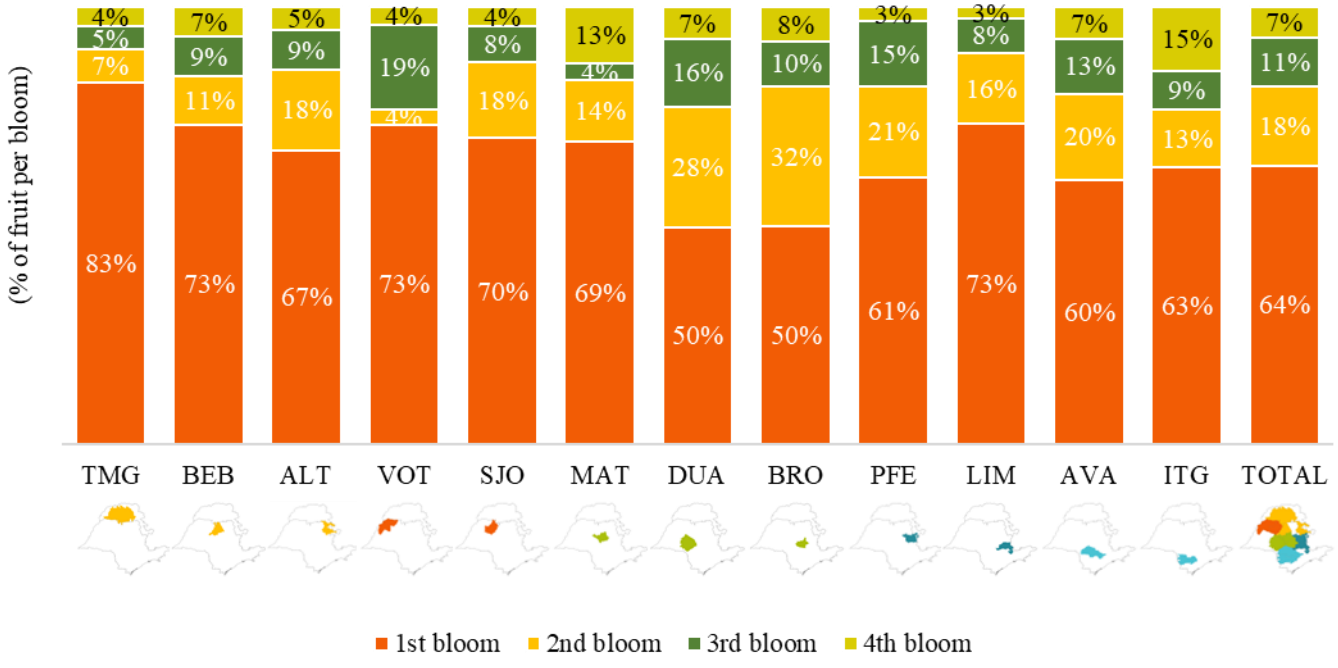
The rains that fell in December 2023, January and February 2024, totaling an average of 102 millimeters, 139 millimeters and 137 millimeters, respectively, were of importance. This rainfall not only helped to set the fruit that had resisted the high temperatures and drought, but also stimulated its growth. In addition, they led to an extraordinarily late fourth bloom.

Fruits from the fourth bloom, at the time of stripping, are normally in the fruitlet stage, with approximately 20 millimeters in diameter. However, atypically, the fourth bloom this season peaked between the end of February and the beginning of March 2024, at least a month behind the historical pattern. Since fruit stripping began in mid-March and lasted until the end of April, fruits from the fourth bloom were still at a very early stage of development, with smaller sizes than usual, ranging from 5 to 15 millimeters for the most part. In addition, some of the trees in the sample were still flowering when they were stripped.

Flowers were found on 227 trees that were stripped, corresponding to 9% of the sample. When analyzing the varieties, flowers were found on 12% of the Pera Rio samples, 10% of the Natal samples, 8% of the Valencia and Folha Murcha samples, 6% of the Hamlin, Westin and Rubi samples and 4% of the other early varieties samples. In terms of location, four regions stood out: there were flowers on 16% of the samples from Altinópolis, 15% of the samples from Brotas, 14% of those from Avaré and 13% of the samples from Duartina. Considering only the trees that had flowers, an average of 213 flowers were counted per plant. However, when weighting the entire sample, i.e. including trees without flowers, the average drops to 19 flowers per plant.

In order to take the flowers and fruits from the fourth bloom into account when calculating the production estimate, the assumption made this season was that 10% of the flowers would turn into fruitlets. This rate is more conservative than those suggested in the studies mentioned by Professor Sentelhas (2005)[4], which range from 15 to 20%. Additionally, the fruitlet setting rate was defined at 33%, a lower value as compared to the one adopted in the previous crop, due to forecasts of drier and hotter weather this year. Applying both rates, it is assumed that every 33 flowers in the fourth bloom result in just one fruit, which corresponds to a conversion rate of flowers into fruits of around 3%. This rate is in line with field research by Professor Guardiola (1997)[5], which mentions that it can reach 3%, but it is more conservative than that obtained in studies cited by Professor Sentelhas (2005), which reached 6%.

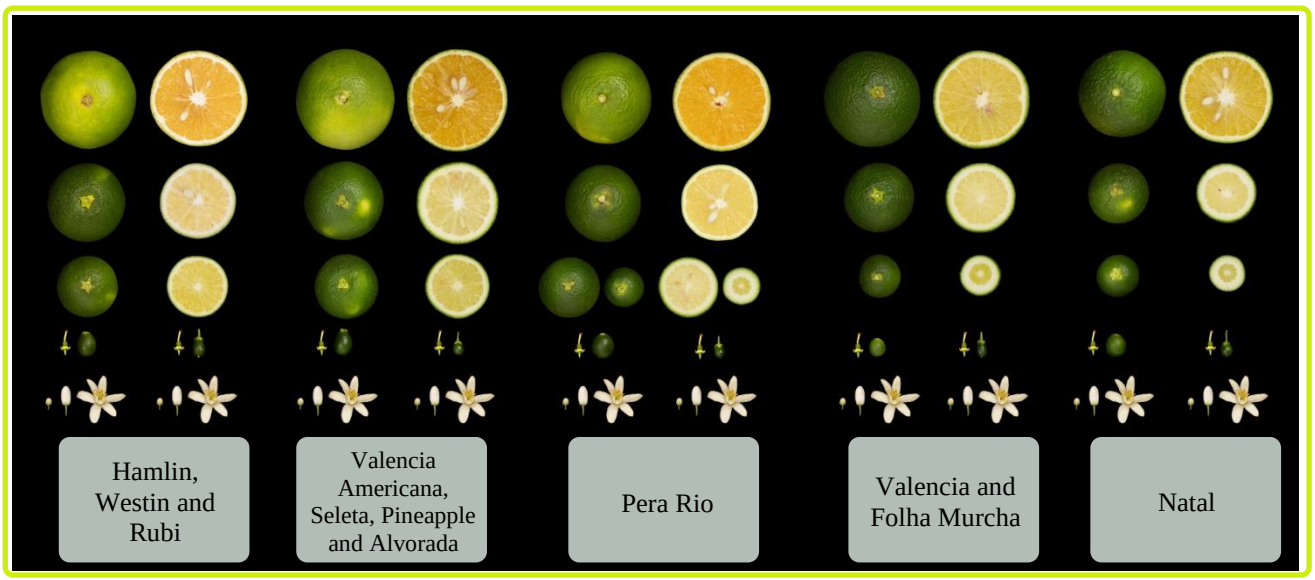
Despite the expectation of a lower setting of the fourth bloom as compared to that in the previous year, its contribution to production is notably higher in this crop, representing on average 7% of the total among regions. As Graph 2 shows, in some specific regions, such as Itapetininga, Matão and Brotas, the share of the fourth bloom exceeds the average for the citrus belt, reaching 15%, 13% and 8%, respectively. Most of the production results from the first bloom, representing a significant 64% of the total, which contrasts significantly with the last four years, in which the share of the first bloom was around 30%. The second bloom, in turn, contributes 18%. In Brotas and Duartina, the low setting of the first bloom was offset by the second bloom, resulting in an increase in the share of the latter, reaching 32% and 28%, respectively. Together, in the citrus belt, the first and second blooms account for a significant 82% of the crop. The third bloom represents 11%, and as previously mentioned, the fourth bloom accounts for 7% of the total.



Graph 2 – Distribution of fruits per bloom in each region

Picture 2 below shows the classification standard for fruits in this crop season for the different varieties also including late blooming flowers.

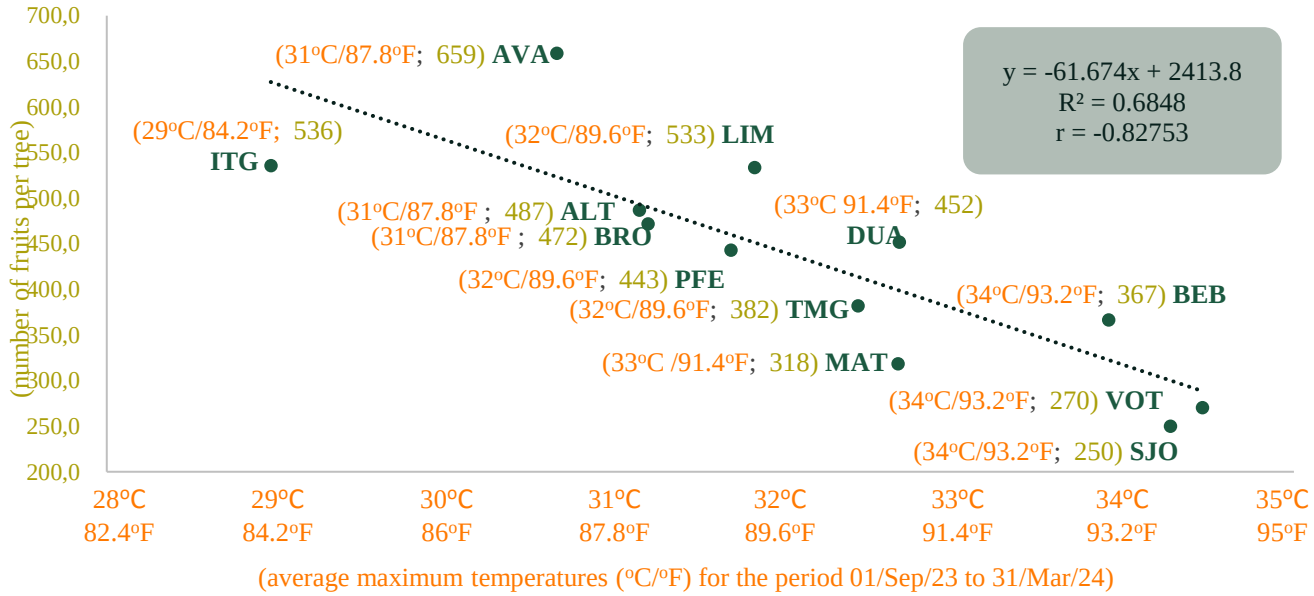
[4] SENTELHAS, P.C. Agrometeriologia dos citros. In: MATTOS JUNIOR, D.; DE NEGRI, J.D.; PIO, R.M.; POMPEU JUNIOR, J. (Org). Citros. Campinas: IAC/FUNDAG, 2005. P. 319-344.
[5] GUARDIOLA, J.L. 1997. Overview of flower bud induction, flowering and fruit set, p.5-21. In: Futch, S.H and Kender, W.J. (eds). Citrus flowering and fruit short course. Citrus Res. And Ed. Center, Lake Alfred, Fla.



Picture 2 – Classification standard by bloom for each variety

Therefore, the data shows that, once again, the climate emerges as the main cause of the significant drop in production. Since June 2023, the citrus belt has been affected by the El Niño phenomenon, classified by the World Meteorological Organization (WMO) as one of the five most intense ever recorded. The previous most recent event, even more severe than the current one, occurred in 2015, exerting a severe impact on the subsequent 2016-2017 crop. During this period, there was an 18% drop in production, resulting in 245.31 million boxes harvested. This season, the combination of high temperatures, high evapotranspiration rates and an intense water shortage in the citrus belt during the crucial period of flowering and fruit setting resulted in a low number of fruits per tree. The relation between the number of fruits per tree and the average maximum temperature in the different regions of the citrus belt becomes evident in Graph 3.

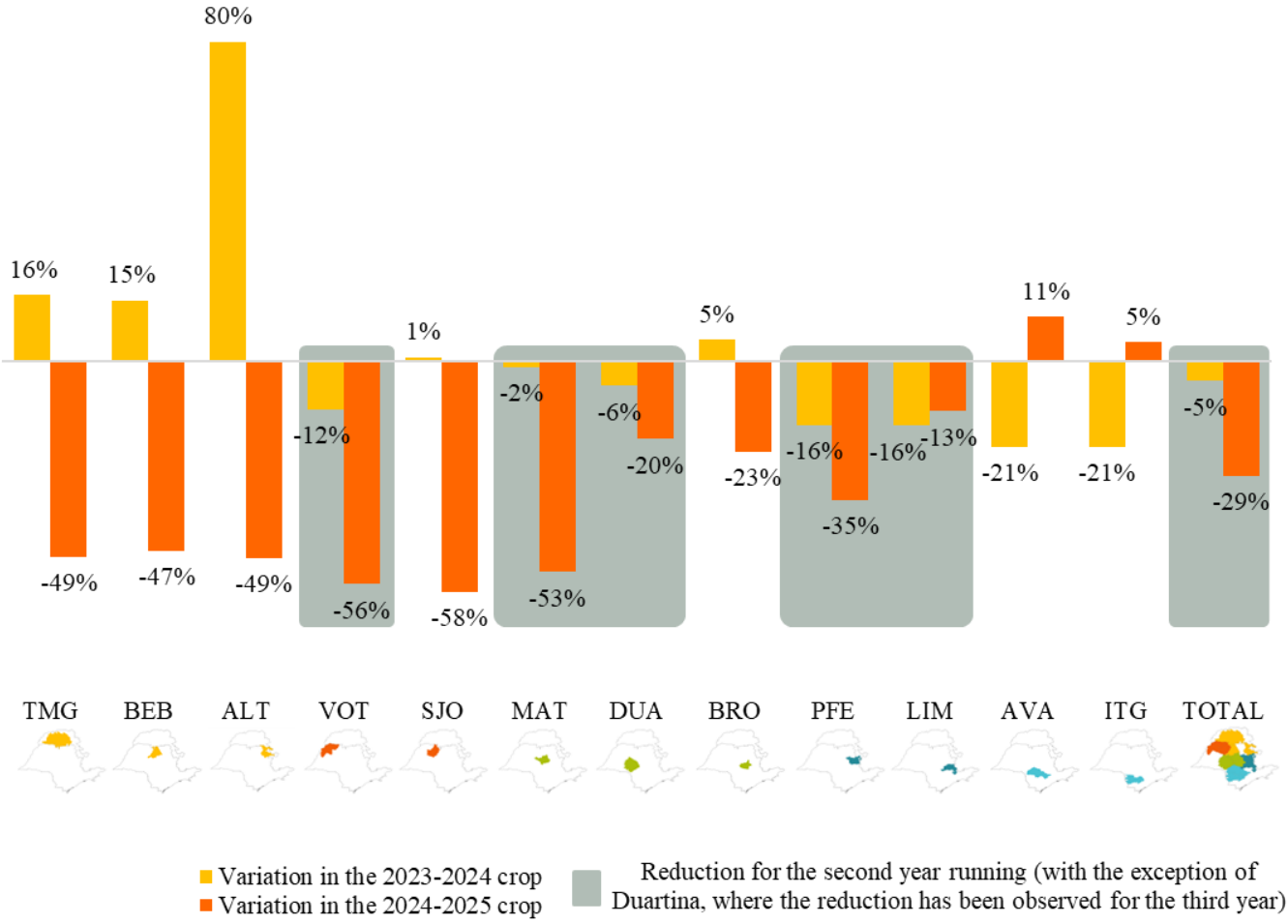
The correlation coefficient obtained in the regression analysis is -0.83, pointing to a strong and inverse correlation between the two variables, evidencing that as the temperature rises, the number of fruits per tree drops.



Graph 3 – Negative correlation between maximum temperatures and the number of fruits per tree in each region

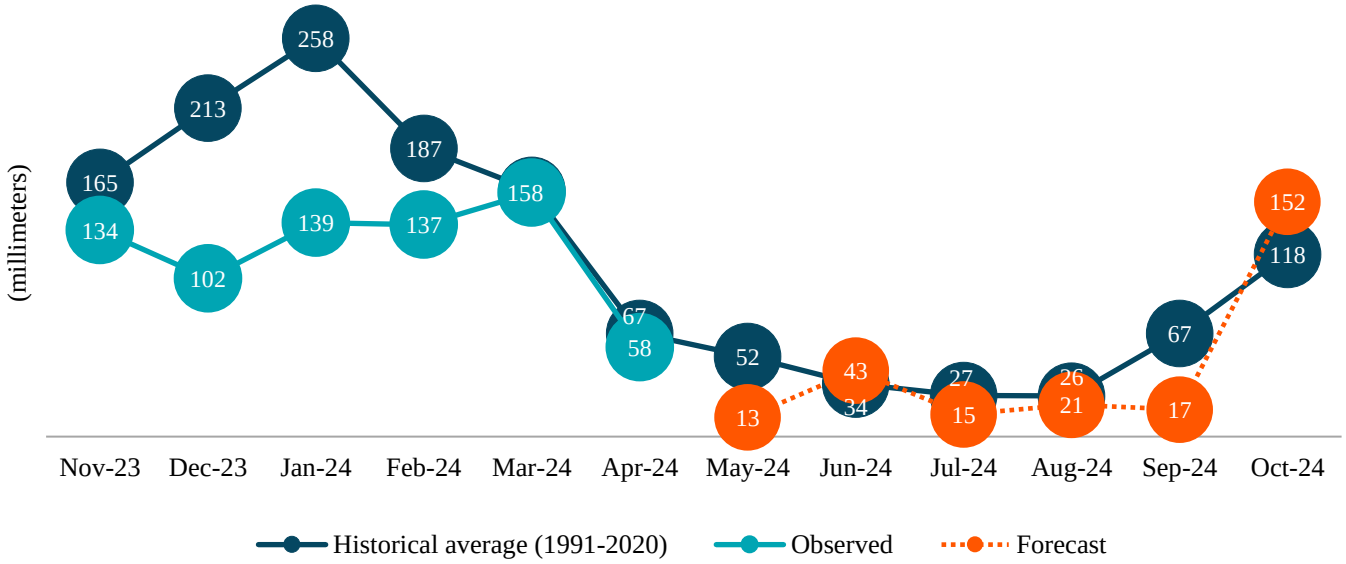
The unfavorable climatic conditions triggered a drop in the number of fruits per tree for the second consecutive year, marking yet another negative cycle. This year, the reduction was even more pronounced, reaching an average of 29%, as compared to the 5% recorded in the previous crop. This consecutive drop represents a break in the biennial cycle, characterized by alternating high and low fruit loads.

As shown in Graph 4, five regions in the citrus belt - Votuporanga, Matão, Duartina, Porto Ferreira and Limeira - experienced a decrease in fruit load for the second year, while seven regions - Triângulo Mineiro, Bebedouro, Altinópolis, São José do Rio Preto, Brotas, Avaré, and Itapetininga - showed an alternation. Only the Southwest regions - Avaré and Itapetininga - recorded an increase in the number of fruits in this crop. This growth is directly linked to more favorable climatic conditions as compared to other regions in the citrus belt, as well as to the accumulation of reserves due to the low production last season.



Graph 4 – Variation in the number of fruits per tree in each region

In addition to the already observed climatic adversities, which resulted in a reduction in the number of fruits per tree, the forecast of drier weather over the next six months is expected to continue impacting the crop, further hindering fruit growth and increasing the challenge of keeping groves supplied with water even where irrigation systems are installed. According to data from Climatempo, shown in Graph 5 the expected rainfall should be 20% below the historical average of the accumulated volume from May to October 2024. This condition was incorporated into the regression model used to project fruit size.



Graph 5 – Rainfall observed from November 2023 to April 2024 and forecast for May to October 2024

At the time of fruit stripping, fruits have an average weight of approximately 96 grams, slightly greater than in the same period of the last crop, when they weighed an average of 90 grams. This is because most of the fruits result from the first bloom, which occurred in August, while in the previous crop, most resulted from the second bloom, which occurred in October. Therefore, the fruits in this crop are, on average, two months ahead as compared to those in the previous crop. Additionally, the number of fruits per tree is lower, reducing competition among them. This results in greater availability of carbohydrates, nutrients, and water for fruit growth.

Thus, the projected weight of oranges at harvest is 169 grams/5.96 ounces (241 fruits per box), representing an increase of 6% as compared to the average weight of 160 grams/5.64 ounces recorded in the previous crop (255 fruits per box) and 4% above the average weight of the last 10 crops (162 grams/5.73 ounces, resulting in 251 fruits per box). The regression model used to project the average fruit size is explained in section "2.4 - Fruits per Box".

Although this crop has a smaller volume of fruit to be harvested, and a high proportion of fruit from the first bloom, the early fruit drop rate is expected to remain high and is projected at 18.5%, just 0.5 percentage point lower than in the previous crop. The main reason for that is the increased intensity of citrus greening, which in the previous crop was responsible for 8.35 percentage points of the total 19% early drop, resulting in an estimated loss of 32 million boxes solely due to the disease. Additionally, other factors are expected to continue impacting this season, such as fruit fly and fruit borer attack, fruit peel cracking, especially in regions with higher water shortage, as there is a higher share of fruits from the fourth bloom, and fruit drop caused by mechanical damage resulting from frequent machinery movement in plots with high density of plants.

At this point in the crop season, it is already possible to observe early fruit drop, especially in early varieties, in groves with a higher incidence of citrus greening and in trees contaminated by the disease, especially at the edges of plots, where there is a higher concentration of symptomatic plants. Other factors contributing to fruit loss include citrus black spot and infestations of fruit flies and fruit borers. Occasionally, in some locations in the North and Northwest sectors, atypical fruit drop has also been observed due to the infestation of Black parlatoria scale (BPS). This early drop is also associated with the advanced ripening of the fruit, which was accelerated by the heat and the earliness of the main bloom. Despite the internal

ripening, fruits still have a greener peel than normal for this time of year, due to the lack of cold nights, which are essential for the skin pigmentation process to take place.

The average yield this season is 691 boxes per hectare and 1.38 boxes per tree, a decrease of 24.14% as compared to the 911 boxes per hectare and 1.81 boxes per tree harvested in the 2023-2024 crop.

When analyzing yield by variety, a sharp drop of 37.3% in production of the Hamlin, Westin and Rubi varieties stands out. The other early varieties, along with Pera, Valencia and Folha Murcha, showed yield drops similar to the average for the citrus belt, of approximately 24%. On the other hand, the yield of the Natal variety remained stable, with a slight decrease of only 1.9%. It's worth remembering that the Natal variety recorded the greatest drop in yield last season, but now it stands out for presenting the smallest decrease. Tables 1 and 2 show the yields by variety and the variations in relation to the previous season.

Table 1 – Yield per hectare and variety for the 2019-2020 crop to the 2024-2025 crop[e]

Group of varieties	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025[e]
	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)
Hamlin, Westin and Rubi…	1,319	797	819	1,021	1,047	657
Other earlies.....	1,121	827	804	925	987	755
Subtotal for earlies.....	1,273	804	815	998	1,032	683
Pera Rio.....	943	671	653	811	837	625
Valencia and V.Folha Murcha.	998	739	838	940	969	754
Natal.....	1,082	803	734	978	738	724
Total.....	**1,045**	**737**	**760**	**912**	**911**	**691**

[e] Estimate

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

Group of varieties	2020-2021 in comparison to 2019-2020		2021-2022 in comparison to 2020-2021		2022-2023 in comparison to 2021-2022		2023-2024 in comparison to 2022-2023		2024-2025[e] in comparison to 2023-2024	
	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%
Hamlin, Westin and Rubi…	-522	-39.6%	22	2.8%	202	24.7%	26	2.5%	-390	-37.3%
Other earlies.....	-294	-26.2%	-23	-2.8%	121	15.0%	62	6.7%	-232	-23.5%
Subtotal for earlies.....	-469	-36.9%	11	1.4%	183	22.5%	34	3.4%	-349	-33.8%
Pera Rio.....	-272	-28.8%	-18	-2.7%	158	24.2%	26	3.2%	-212	-25.3%
Valencia and V.Folha Murcha.	-259	-26.0%	99	13.4%	102	12.2%	29	3.1%	-215	-22.2%
Natal.....	-279	-25.8%	-69	-8.6%	244	33.2%	-240	-24.5%	-14	-1.9%
Total.....	**-308**	**-29.5%**	**23**	**3.1%**	**152**	**20.0%**	**-1**	**-0.1%**	**-220**	**-24.1%**

[e] Estimate

Regarding yield by sector, the main highlight is the Southwest, which includes the regions of Avaré and Itapetininga. It is expected that this region will achieve the highest yield in the citrus belt, with 979 boxes per hectare, representing an increase of 25.3% as compared to the previous crop. Should this projection hold true, the Southwest will regain its leadership position, lost only in the last season, among the ten crop forecasts carried out by Fundecitrus. The sector facing the most challenging situation is the Northwest, comprising the regions of Votuporanga and São José do Rio Preto. In that locality, considerably low yield is expected, reaching only 392 boxes per hectare, representing a yield drop of 57.9% as compared to the previous crop, which is the most pronounced yield drop in the citrus belt. Tables 3 and 4 present yields by sector and variations in relation to the previous season.

Table 3 – Yield per hectare of sectors for the 2019-2020 crop to the 2024-2025 crop[e]

Sector	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025[e]
	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)
North.....	1,070	648	804	868	1,117	601
Northwest.....	924	468	646	750	932	392
Central.....	1,032	667	729	928	879	632
South.....	936	725	699	926	831	676
Southeast.....	1,217	1,106	869	1,008	782	979
Total.....	**1,045**	**737**	**760**	**912**	**911**	**691**

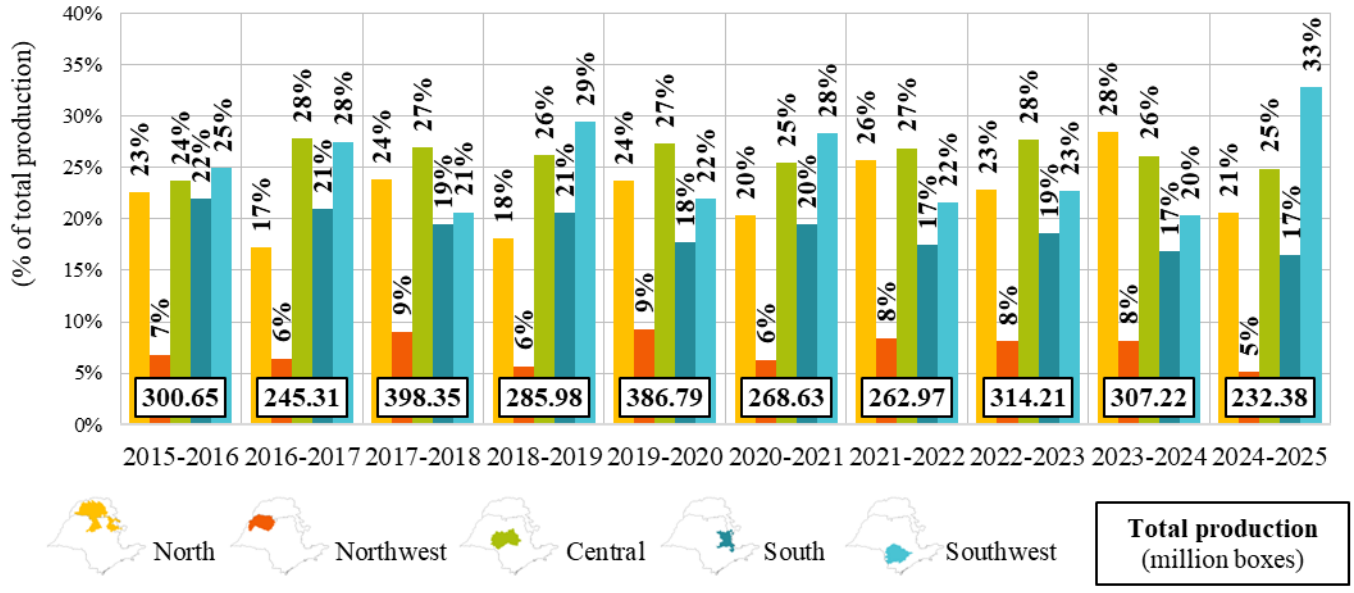
[e] Estimate

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

Sector	2020-2021 in comparison to 2019-2020		2021-2022 in comparison to 2020-2021		2022-2023 in comparison to 2021-2022		2023-2024 in comparison to 2022-2023		2024-2025[e] in comparison to 2023-2024	
	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%
North.....	-422	-39.4%	156	24.1%	64	8.0%	249	28.7%	-516	-46.2%
Northwest.....	-456	-49.4%	178	38.0%	104	16.1%	182	24.3%	-540	-57.9%
Central.....	-365	-35.4%	62	9.3%	199	27.3%	-49	-5.3%	-247	-28.1%
South.....	-211	-22.5%	-26	-3.6%	227	32.5%	-95	-10.3%	-155	-18.7%
Southwest.....	-111	-9.1%	-237	-21.4%	139	16.0%	-226	-22.4%	197	25.3%
Total.....	**-308**	**-29.5%**	**23**	**3.1%**	**152**	**20.0%**	**-1**	**-0.1%**	**-220**	**-24.1%**

[e] Estimate

As shown in Graph 6, the distribution of production among sectors shows significant changes. The Southwest stands out with a substantial increase, from 19% to 33%. The Central sector, on the other hand, remains stable, with a slight reduction from 26% to 25%. However, the North suffers a considerable drop, from 29% to 21%. Meanwhile, the South maintains a similar proportion, with a slight variation from 16% to 17%. Finally, the Northwest records the most significant change, decreasing from 10% to 5%. This data shows a significant redistribution of production among the different sectors.



Graph 6 – Share of sectors in total orange production in the 2015-2016 to 2024-2025 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 general manager); Fernando Alvarinho Delgado (technical supervisor); Roseli Reina (specialist); Vinícius Gustavo Trombin (executive coordinator linked to Markestrat); Marcos Fava Neves (political-institutional and methodological coordinator linked to Markestrat and Part-time Full Professor at FEA-RP/USP); and José Carlos Barbosa (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.

Together with Fundecitrus president Lourival Carmo Monaco, the crop forecast was finalized on May 10, 2024, at 9:30 a.m., in an in-person meeting at Fundecitrus, with no external communication channel beyond participants. This year Professor Marcos Fava Neves participated by videoconference in only the presentation and discussion of the data. 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 general manager, Antonio Juliano Ayres and the Crop Forecast Survey coordinator, Vinícius Trombin, presented the detailed data. After the crop forecast announcement, this report was made available on the Fundecitrus website.

2.1 – BEARING TREES

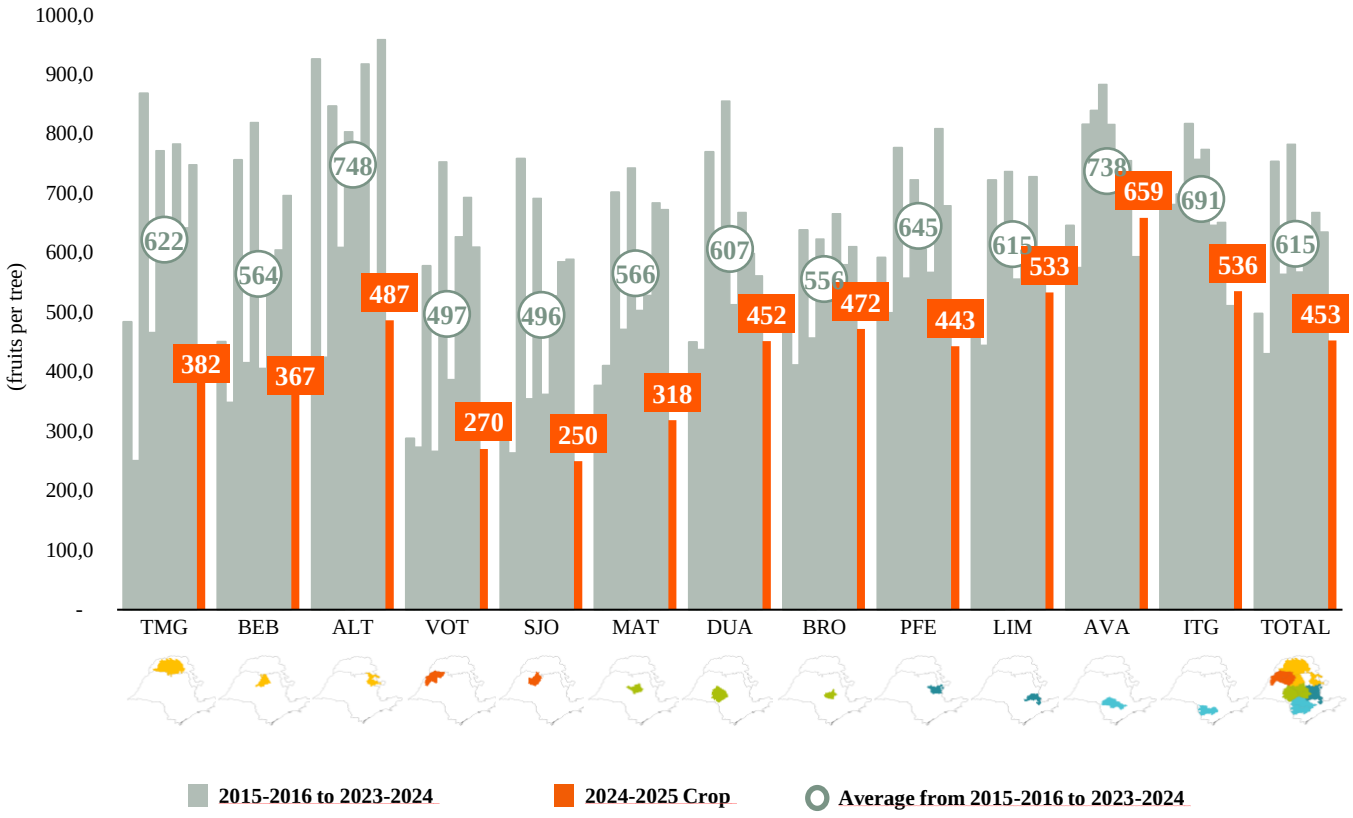
Bearing trees total 168.54 million and occupy an area of 336,267 hectares in this crop season. These figures represent a decrease of 748 thousand trees, equivalent to 0.44% above the 2023 inventory and a decrease in the bearing area of 0.24%.

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 in March 2024”, taken from the 2022 primary base – created by mapping groves from August 16, 2021 to January 28, 2022 – and from counting existing trees in approximately 5% of orange plots from January 08 to March 08, 2024.

2.2 – FRUIT PER TREE

The average number of fruits per tree in April 2024, without considering the drop that occurs throughout the season, is 453, which represents a decrease of 28.66% in relation to the previous crop. The average number of fruits per tree may have a variation of plus or minus 11 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 7 shows the number of fruits per tree at stripping from 2015 to 2024, 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. The error in the average number of fruits per tree is ± 9.2% in the Triângulo Mineiro, ± 8.3% in Bebedouro, ± 9.7% in Altinópolis, ± 13.8% in Votuporanga, ± 11.9%; in São José do Rio Preto, ± 8.5% in Matão, ± 6.0% in Duartina, ± 10.9% in Brotas, ± 7.3% in Porto Ferreira, ± 6.9% in Limeira, ± 5.8% in Avaré, and ± 8.6% in Itapetininga.

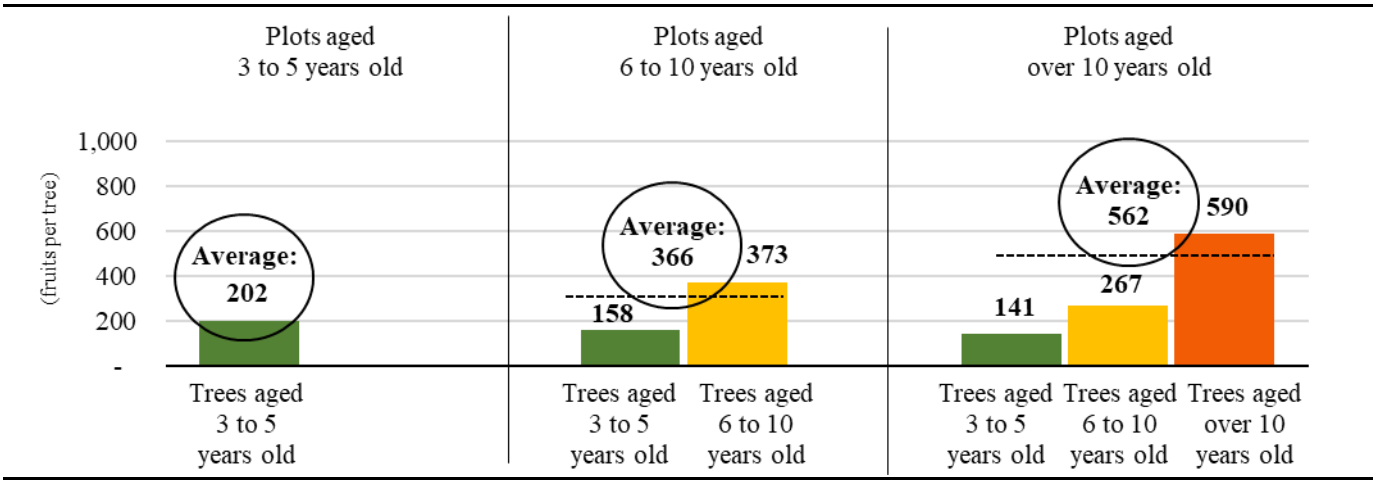


Graph 7 – **Number of fruits per fruit-stripped tree by region from 2015 to 2024**

For the forecast calculation, fruits from the first, second and third blooms were considered in full. A fruit set rate of 33% was applied to fruits from the fourth bloom. In this crop there was an uncommon phenomenon at the fourth bloom, which peaked a month after the usual time, between late February and early March 2024. As a result, fruits were at an initial developmental stage during stripping, presenting a smaller size than what it typically is, and varying from 5 to 15 millimeters. For that reason, their setting rate is presumed to be lower than that considered in the previous crop. Furthermore, a total of 227 trees still presented flowers at stripping. In order to take the flowers and fruits from the fourth bloom into account when estimating the number of fruits per tree, it was considered that 10% of the flowers would turn into fruitlets, to which a setting rate of 33% was applied, resulting in a conversion rate of flowers into fruits of approximately 3%.

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 202 fruits per tree this crop season. For six to 10-year-old plots, an average of 366 fruits per tree is estimated, with 373 fruits per tree for original plantings and 158 fruits per tree for three to five-year-old resets. Plots over 10 years old have an average of 562 fruits per tree and a yield of 590 fruits per tree for original plantings, 267 fruits per tree for six to 10-year-old resets and 141 fruits per tree for three to five-year-old resets. Yield rates are presented in Graph 8.



Ages and planting years: 3 – 5 years (2019 to 2021), 6 – 10 years (2014 to 2018) and over 10 years (2013 and previous years)
Graph 8 – **Age-stratified number of fruits per tree in the plot**

An average of 493 fruits per tree for the late Natal variety; 485 were counted for the group of earlies Hamlin, Westin and Rubi; 482 fruits per tree for the late season Valencia and Valencia Folha Murcha varieties; 450 fruits per tree for other earlies and 401 fruits per tree for the mid-season Pera Rio variety.

The stratification of the data considering the presence or absence of an irrigation system in the plot shows that the trees of irrigated groves present, in this crop, 24% more fruits compared to the trees in rainfed groves. The distinction between the impact of irrigation and the effect of climatic conditions has become more complex this season. The complexity is greater because the regions with the highest number of irrigated trees are in towards the North of the citrus belt, which have suffered the most from adverse climate and therefore have the lowest fruit loads. For this reason, it was decided to use the simple arithmetic mean to compare the average number of fruits from irrigated plots with those from non-irrigated plots. It is therefore necessary to limit the analysis to stratification by region.

However, it is important to emphasize that this analysis is merely exploratory and is not an experiment aimed at proving the contribution of irrigation to productivity. This analysis was limited only to tabulating data based on the presence or absence of an irrigation system, without considering specific information on irrigation use. The conclusion that irrigation is responsible for the increase in fruit production (25% more) cannot be drawn solely on the basis of this exploratory analysis. Therefore, this assessment points to a higher fruit load in irrigated plots as compared to non-irrigated plots in the same region, but more in-depth studies, considering additional variables and employing an appropriate experimental design, can provide more conclusive and reliable results regarding the impact of irrigation.

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 14 to April 26, 2024. Fruits harvested were taken to a fruit stripping laboratory 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 was 2,560 trees selected by a drawing. The sample size has returned to 2,560 trees randomly drawn, after four years of its being 1,560 trees. The decrease occurred during the Covid-19

pandemic and did not compromise the overall accuracy. However, due to the increased incidence of greening, it was decided to return to the original sample size of the crop forecast survey (PES) sampling method, aiming to ensure greater reliability in the strata. 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 Rio
Late	Valencia and Valencia Folha Murcha
	Natal

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

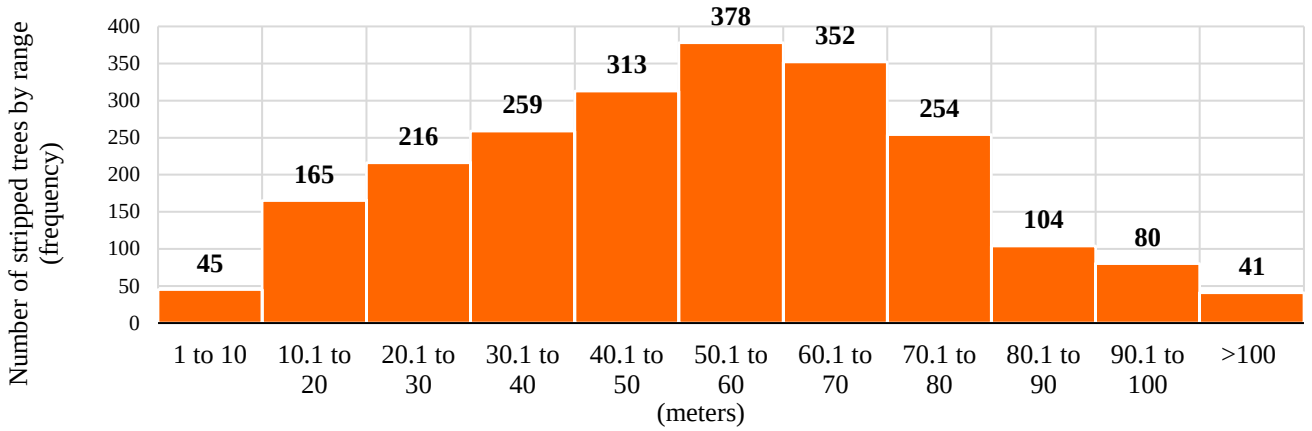
Age of plots[1]	Age of trees
3 to 5 years	3 to 5 years
6 to 10 years	3 to 5 years
6 to 10 years	6 to 10 years
Over 10 years	3 to 5 years
Over 10 years	6 to 10 years
Over 10 years	Over 10 years

[1] Ages and planting years: 3 to 5 years (2019 to 2021), 6 to 10 years (2014 to 2018) and over 10 years (2013 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 2024-2025 crop, the tree in the drawn plot was the one located in the 25th planting hole in the 15th 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 15

or more planting rows, the counting restarted in the existing rows until number 15 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.

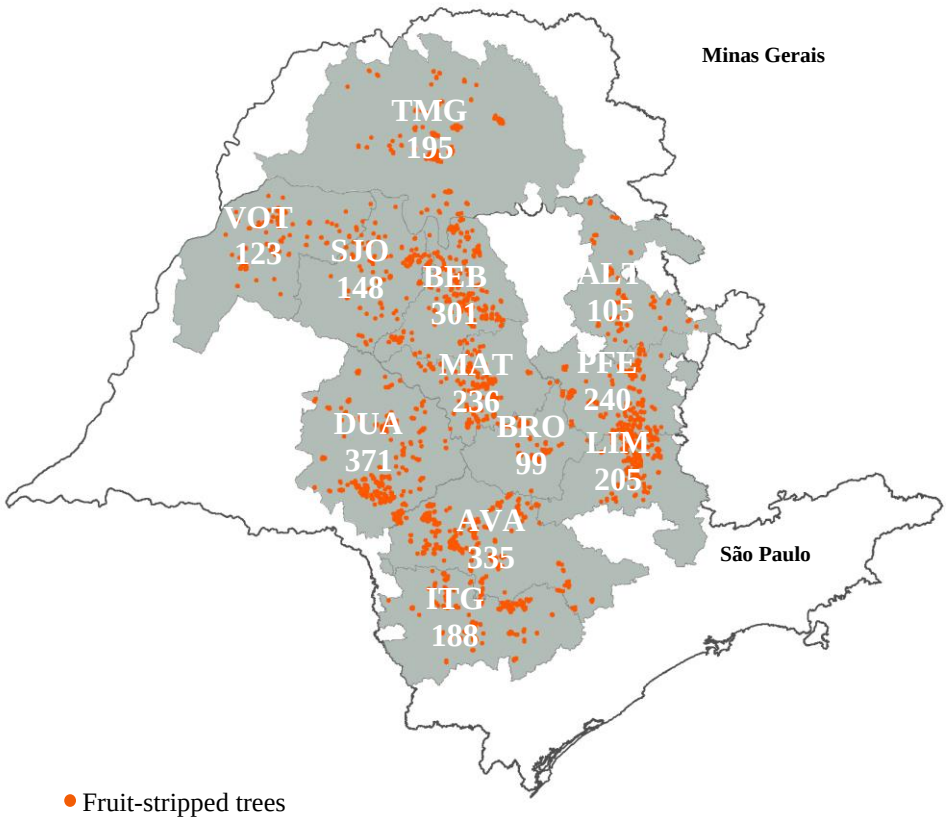
Graph 9 presents the distance (in meters) from the fruit-stripped tree originally planted in the plot to the nearest border of the plot, which shows the majority of classes with similar frequencies, with a central figure between 40 and 70 meters of distance from the fruit-stripped tree to the nearest border.



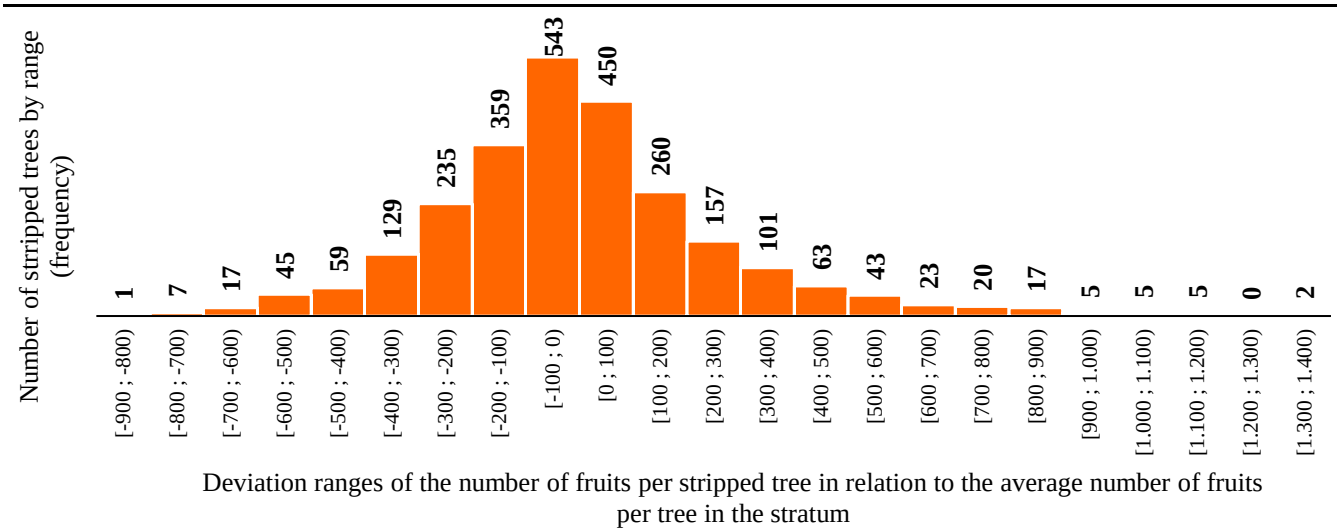
Graph 9 – Histogram of distances from the fruit-stripped tree to the nearest border of the plot

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

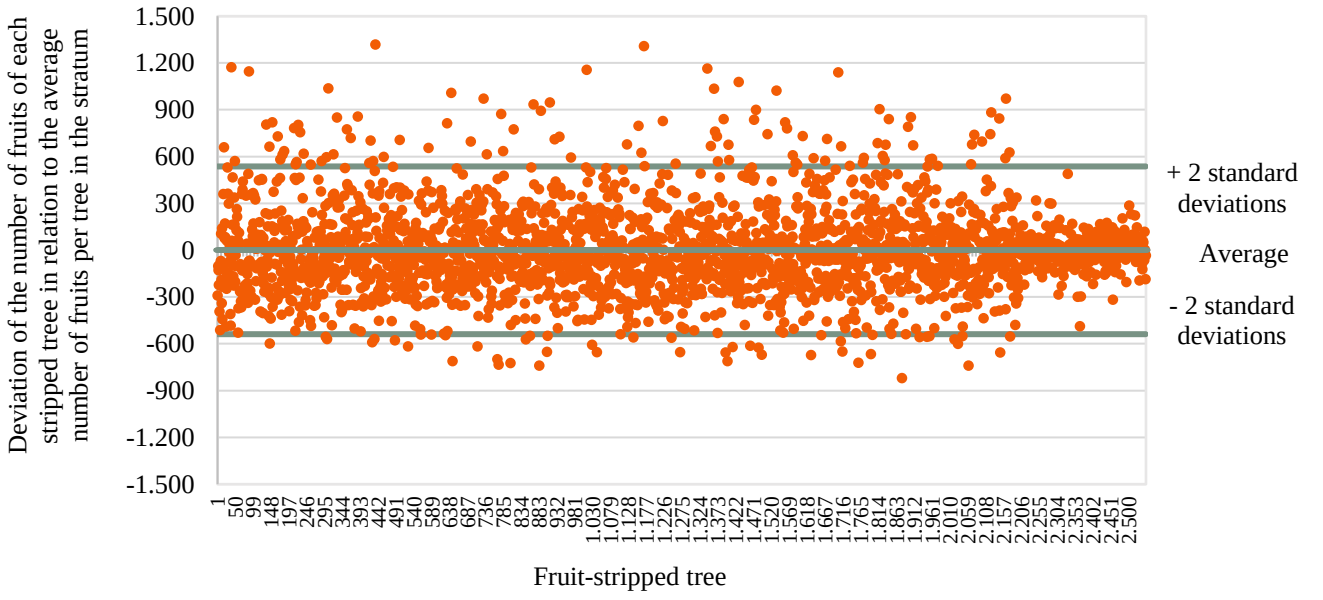


The yield deviation distribution analysis for each fruit-stripped tree in relation to the stratum average shows that sample data are randomly distributed according to a normal distribution, as presented in Graph 10. Out of the total samples, fourteen were discarded upon showing great discrepancy in relation to the others.



Graph 10 – Histogram of deviations of fruits per tree at stripping

Graph 11 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 (453 fruits) ± 2 standard deviations.



Graph 11 – 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$ 60.00 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 18.50%, distributed as follows: 9.50% for the early Hamlin, Westin and Rubi varieties, 10.70% for other early varieties, 18.40% for the mid-season Pera Rio variety, 22.70% for the late Valencia and Valencia Folha Murcha varieties, and 23.90% for the late Natal variety. This rate is applied to the number of fruits in the tree in April 2024, 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 21.20%, whereas the North sector has the lowest one at 15.10%.

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……..	8.30	12.10	10.40	12.10	8.10	**9.50**
Other earlies.....	8.00	14.90	10.90	17.10	8.90	**10.70**
Pera Rio.....	15.50	13.00	22.10	19.80	16.90	**18.40**
Valencia and V. Folha Murcha..	21.20	24.10	24.20	25.00	21.10	**22.70**
Natal.....	12.90	23.30	22.10	27.20	27.20	**23.90**
Total.....	**15.10**	**16.10**	**19.90**	**21.20**	**18.30**	**18.50**

Monthly and continuous monitoring carried out by Fundecitrus as of May 2024 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 241 fruits per 40.8 kg box (169 grams/5.96 ounces per fruit), namely 281 fruits per box for the group of early varieties comprising Hamlin, Westin and Rubi (145 grams/ 5.12 ounces per fruit), 249 fruits per box for the group of other early varieties (164 grams/5.78 ounces per fruit), 247 fruits per box for the mid-season Pera Rio variety (165 grams/5.83 ounces per fruit), 218 fruits per box for the late Valencia and Valencia Folha Murcha varieties (187 grams/6.60 ounces per fruit), and 232 fruits per box for the late Natal variety (176 grams/6.20 ounces 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……..	281	275	277	288	282	**281**
Other earlies.....	244	240	240	262	265	**249**
Pera Rio.....	239	245	251	255	244	**247**
Valencia and V. Folha Murcha..	202	217	224	229	216	**218**
Natal.....	222	241	235	241	230	**232**
Total.....	**235**	**242**	**244**	**249**	**239**	**241**

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 eleven crops, 2012-2013 to 2023-2024, 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 adjusted R^2 of 0.89. This means that the four independent variables together explain 89% 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 eleven 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 2024-2025 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 2024 stripping and the rainfall from May to July 2024 in a volume equivalent to 70 millimeters (Climatempo forecast). This size (243 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 241 fruits per box.

Table 7 – Data for the 2012-2013 crop to the 2023-2024 crop used to estimate the final fruit size in the 2024-2025 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)	(%)	(%)
2012/13....	764	439	95%	268	250	236	-5%	5%
2013/14....	515	338	87%	247	224	220	-2%	2%
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%	70	(X)	243	(X)	(X)

Sources: Fundecitrus (2015-2016 crop to 2024-2025 crop), CitrusBr (2012-2013 crop to 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 2024-2025 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 – 2024-2025 Orange crop forecast by sector

Sector	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2024-2025 Orange crop forecast		
					Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
North.....	79,706	484	37,829.00	386	1.27	601	47.87
Northwest.....	30,181	500	14,682.62	258	0.81	392	11.84
Central.....	91,572	539	48,003.81	409	1.21	632	57.90
South.....	56,898	511	28,046.20	482	1.37	676	38.46
Southwest.....	77,910	532	39,981.04	619	1.91	979	76.31
Total.....	**336,267**	**516**	**168,542.67**	**453**	**1.38**	**691**	**232.38**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)
[2] Weighted average per total stratum fruit

Table 9 – 2024-2025 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.....	57,970	584	31,057.51	-	-	31,057.51	**202**	-	-	202
6 – 10 years.....	61,653	620	1,180.35	36,056.57	-	37,236.92	158	**373**	-	366
Over 10 years…..	216,644	469	2,064.22	5,752.59	92,431.43	100,248.24	141	267	**590**	562
Total.....	**336,267**	**516**	**34,302.08**	**41,809.16**	**92,431.43**	**168,542.67**	**197**	**358**	**590**	**453**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)
[2] Weighted average per total stratum fruit

Table 9 – 2024-2025 Orange crop forecast by tree age group (continued)

Plots age	2024-2025 Orange crop forecast by tree age group				2024-2025 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.....	0.61	-	-	0.61	**19.01**	-	-	19.01
6 – 10 years.....	0.47	1.13	-	1.11	0.56	**40.78**	-	41.34
Over 10 years…..	0.43	0.82	1.80	1.72	0.89	4.70	**166.44**	172.03
Total.....	**0.60**	**1.09**	**1.80**	**1.38**	**20.46**	**45.48**	**166.44**	**232.38**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)

Table 10 – 2024-2025 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.....	148.66	64.0%
2nd	42.02	18.1%
3rd.....	25.29	10.9%
4th	16.41	7.1%
Total.....	**232.38**	**100.0%**

Table 11 – 2024-2025 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.....	82.8	73.2	67.2	**75.2**	73.0	70.0	**71.2**	69.2	49.5	49.8	**54.7**	61.0	73.2	**66.9**	60.4	63.3	**61.2**	**64.0**
2nd.....	7.5	11.1	18.5	**11.1**	3.7	17.5	**11.8**	14.2	27.6	32.1	**24.5**	20.9	16.4	**18.7**	19.8	13.2	**18.0**	**18.1**
3rd.....	5.3	9.0	9.0	**7.9**	19.2	8.2	**12.7**	3.6	15.7	10.3	**12.0**	14.9	7.9	**11.5**	12.6	8.8	**11.6**	**10.9**
4th.....	4.4	6.8	5.3	**5.8**	4.1	4.2	**4.2**	12.9	7.1	7.8	**8.7**	3.2	2.5	**2.9**	7.2	14.6	**9.3**	**7.1**

[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 – 2024-2025 Orange crop forecast and its components by variety group

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	56,530	482	26,437.06	485	281	9.50	1.40	657	37.12
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	20,822	549	10,834.96	450	249	10.70	1.45	755	15.72
Mid-season:									
Pera Rio.....	113,498	542	59,601.12	401	247	18.40	1.19	625	70.97
Late:									
Valencia and VFolha Murcha[3]	108,155	501	53,100.14	482	218	22.70	1.54	754	81.58
Natal.....	37,262	515	18,569.39	493	232	23.90	1.45	724	26.99
Total.....	**336,267**	**516**	**168,542.67**	**453**	**241**	**18.50**	**1.38**	**691**	**232.38**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)
[2] Weighted average per total stratum fruit
[3] V.Folha Murcha – Valencia Folha Murcha

Table 13 – 2024-2025 Orange crop forecast by variety group and sector

Variety group	2024-2025 crop forecast					
	Sector					
	North	Northwest	Central	South	Southwest	Total
	(1,000,000 boxes)	(1,000,000 boxes)	(1,000,000 boxes)	(1,000,000 boxes)	(1,000,000 boxes)	(1,000,000 boxes)
Early:						
Hamlin, Westin and Rubi.....	9.88	1.27	8.75	5.93	11.29	37.12
Other early:						
Valencia Americana, Seleta, Pineapple and Alvorada	3.24	1.70	5.99	0.91	3.88	15.72
Mid-season:						
Pera Rio.....	12.89	5.77	18.56	13.26	20.49	70.97
Late:						
Valencia and V.Folha Murcha[3]	17.40	2.47	18.23	14.58	28.90	81.58
Natal.....	4.46	0.63	6.37	3.78	11.75	26.99
Average.....	**47.87**	**11.84**	**57.90**	**38.46**	**76.31**	**232.38**

Table 14 – 2024-2025 Orange crop forecast by variety group – North Sector

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	15,427	453	6,872.89	490	281	8.3	1.44	640	9.88
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	4,497	514	2,146.81	447	244	8.0	1.51	720	3.24
Mid-season:									
Pera Rio.....	22,904	540	12,164.10	333	239	15.5	1.06	563	12.89
Late:									
Valencia and VFolha Murcha[3]	28,370	457	12,734.31	391	202	21.2	1.37	613	17.40
Natal.....	8,508	464	3,910.89	324	222	12.9	1.14	524	4.46
Total.....	**79,706**	**484**	**37,829.00**	**386**	**235**	**15.1**	**1.27**	**601**	**47.87**

Table 15 – 2024-2025 Orange crop forecast by variety group – Northwest Sector

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	4,344	486	2,043.73	216	275	12.1	0.62	292	1.27
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	3,491	575	1,906.61	281	240	14.9	0.89	487	1.70
Mid-season:									
Pera Rio.....	14,767	488	6,993.74	258	245	13.0	0.83	391	5.77
Late:									
Valencia and VFolha Murcha[3]	5,400	488	2,613.54	301	217	24.1	0.95	457	2.47
Natal.....	2,179	531	1,125.00	196	241	23.3	0.56	289	0.63
Total.....	**30,181**	**500**	**14,682.62**	**258**	**242**	**16.1**	**0.81**	**392**	**11.84**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)
[2] Weighted average per total stratum fruit
[3] V.Folha Murcha – Valencia Folha Murcha

Table 16 – 2024-2025 Orange crop forecast by variety group – Central Sector

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	13,819	503	6,775.50	444	277	10.4	1.29	633	8.75
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	7,805	551	4,208.31	428	240	10.9	1.42	767	5.99
Mid-season:									
Pera Rio.....	33,031	560	18,007.25	369	251	22.1	1.03	562	18.56
Late:									
Valencia and VFolha Murcha[3]	27,388	542	14,350.90	419	224	24.2	1.27	666	18.23
Natal.....	9,529	504	4,661.85	459	235	22.1	1.37	668	6.37
Total.....	**91,572**	**539**	**48,003.81**	**409**	**244**	**19.9**	**1.21**	**632**	**57.90**

Table 17 – 2024-2025 Orange crop forecast by variety group – South Sector

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	9,666	498	4,586.72	471	288	12.1	1.29	613	5.93
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	1,275	512	637.46	501	262	17.1	1.43	714	0.91
Mid-season:									
Pera Rio.....	20,537	539	10,649.26	440	255	19.8	1.25	646	13.26
Late:									
Valencia and VFolha Murcha[3]	20,547	480	9,649.05	515	229	25.0	1.51	710	14.58
Natal.....	4,873	548	2,523.71	552	241	27.2	1.50	776	3.78
Total.....	**56,898**	**511**	**28,046.20**	**482**	**249**	**21.2**	**1.37**	**676**	**38.46**

Table 18 – 2024-2025 Orange crop forecast by variety group – Southwest Sector

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2024 forecast				2024-2025 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.....	13,274	482	6,158.22	626	282	8.1	1.83	851	11.29
Other early:									
Valencia Americana, Seleta, Pineapple and Alvorada……	3,754	576	1,935.77	651	265	8.9	2.00	1.034	3.88
Mid-season:									
Pera Rio.....	22,259	555	11,786.77	567	244	16.9	1.74	921	20.49
Late:									
Valencia and VFolha Murcha[3]	26,450	526	13,752.34	642	216	21.1	2.10	1.093	28.90
Natal.....	12,173	542	6,347.94	651	230	27.2	1.85	965	11.75
Total.....	**77,910**	**532**	**39,981.04**	**619**	**239**	**18.3**	**1.91**	**979**	**76.31**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2022 and 2023 resets)
[2] Weighted average per total stratum fruit
[3] V.Folha Murcha – Valencia Folha Murcha

Table 19 – Fruit per tree at stripping[1] by age group, region and variety – North Sector [April 2024 stripping]

Region and variety groups	Plots 3 – 5 years	Plots 6 – 10 years			Plots over 10 years				Average
	Trees 3 – 5 years	Trees 3 – 5 years	Trees 6 – 10 years	Average	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Average	
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
TMG[2]									
Early:									
Hamlin, Westin and Rubi.....	168	84	632	599	113	127	756	687	664
Other early varieties[3].....	105	257	540	537	65	149	732	726	335
Mid-season:									
Pera Rio.....	171	77	445	439	7	47	287	243	279
Late:									
Valencia and V.Folha Murcha[4]....	143	125	269	264	35	167	371	353	346
Natal.....	206	66	363	325	87	6	396	390	381
Average[1].....	**162**	**85**	**435**	**427**	**58**	**106**	**441**	**407**	**382**
BEB[5]									
Early:									
Hamlin, Westin and Rubi.....	133	246	167	170	159	139	468	449	388
Other early varieties[3].....	204	74	337	335	96	312	681	659	449
Mid-season:									
Pera Rio.....	324	220	316	314	90	149	381	372	347
Late:									
Valencia and V.Folha Murcha[4]....	166	68	377	374	14	382	401	395	369
Natal.....	260	78	224	222	105	156	361	354	309
Average[1].....	**232**	**184**	**311**	**309**	**66**	**248**	**424**	**413**	**367**
ALT[6]									
Early:									
Hamlin, Westin and Rubi.....	97	40	151	150	56	245	610	600	549
Other early varieties[3].....	12	110	356	341	109	152	819	744	725
Mid-season:									
Pera Rio.....	131	98	322	318	89	111	497	493	417
Late:									
Valencia and V.Folha Murcha[4]....	177	9	110	109	98	366	633	628	566
Natal.....	108	110	286	279	277	398	148	159	191
Average[1].....	**132**	**91**	**249**	**245**	**132**	**280**	**563**	**556**	**487**
Average sector.....	**204**	**146**	**331**	**328**	**70**	**164**	**450**	**432**	**386**

1 Weighted average per total stratum fruit
2 TMG – Triângulo Mineiro
3 Valencia Americana, Seleta, Pineapple and Alvorada
4 V.Folha Murcha – Valencia Folha Murcha
5 BEB – Bebedouro
6 ALT – Altinópolis

Table 20 – Fruit per tree at stripping[1] by age group, region and variety – Northwest Sector [April 2024 stripping]

Region and variety groups	Plots 3 – 5 years	Plots 6 – 10 years			Plots over 10 years				Average
	Trees 3 – 5 years	Trees 3 – 5 years	Trees 6 – 10 years	Average	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Average	
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
VOT[2]									
Early:									
Hamlin, Westin and Rubi.....	98	10	93	93	ND	151	81	84	90
Other early varieties[3].....	286	24	156	154	69	ND	277	275	276
Mid-season:									
Pera Rio.....	215	57	271	261	130	189	356	347	291
Late:									
Valencia and V.Folha Murcha[4]....	147	10	197	193	161	244	265	265	250
Natal.....	31	39	178	174	23	ND	236	222	95
Average[1].....	**197**	**56**	**253**	**245**	**125**	**186**	**327**	**320**	**270**
SJO[5]									
Early:									
Hamlin, Westin and Rubi.....	362	43	141	140	55	72	259	244	237
Other early varieties[3].....	187	48	153	151	156	204	477	463	281
Mid-season:									
Pera Rio.....	70	66	265	261	61	127	246	229	191
Late:									
Valencia and V.Folha Murcha[4]....	211	119	333	333	90	121	318	309	312
Natal.....	109	86	240	239	31	67	217	187	220
Average[1].....	**141**	**62**	**240**	**239**	**64**	**115**	**310**	**295**	**250**
Average sector.....	**169**	**58**	**244**	**241**	**87**	**130**	**317**	**305**	**258**

[1] Weighted average per total stratum fruit
[2] VOT – Votuporanga
[3] Valencia Americana, Seleta, Pineapple and Alvorada
[4] V.Folha Murcha – Valencia Folha Murcha
[5] SJO - São José do Rio Preto

Table 21 – Fruit per tree at stripping[1] by age group, region and variety – Central Sector [April 2024 stripping]

Region and variety groups	Plots 3 – 5 years	Plots 6 – 10 years			Plots over 10 years				Average
	Trees 3 – 5 years	Trees 3 – 5 years	Trees 6 – 10 years	Average	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Average	
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
MAT[2]									
Early:									
Hamlin, Westin and Rubi.....	163	54	350	349	89	314	297	289	281
Other early varieties[3].....	100	43	477	466	98	572	286	322	273
Mid-season:									
Pera Rio.....	254	60	273	266	213	105	377	360	303
Late:									
Valencia and V.Folha Murcha[4]....	129	58	274	264	117	361	525	504	399
Natal.....	182	36	310	306	87	365	412	407	293
Average[1].....	**174**	**57**	**307**	**299**	**135**	**343**	**407**	**397**	**318**
DUA[5]									
Early:									
Hamlin, Westin and Rubi.....	211	56	587	557	31	161	702	645	532
Other early varieties[3].....	245	235	486	477	125	395	1.022	964	619
Mid-season:									
Pera Rio.....	213	353	407	404	45	175	466	443	384
Late:									
Valencia and V.Folha Murcha[4]....	200	169	355	348	158	237	697	645	425
Natal.....	263	282	465	458	203	246	675	659	581
Average[1].....	**213**	**268**	**413**	**405**	**92**	**212**	**627**	**590**	**452**
BRO[6]									
Early:									
Hamlin, Westin and Rubi.....	120	ND	105	105	167	442	567	565	488
Other early varieties[3].....	162	165	338	330	ND	415	465	464	391
Mid-season:									
Pera Rio.....	262	206	267	265	127	329	884	798	522
Late:									
Valencia and V.Folha Murcha[4]....	218	71	236	225	74	531	553	549	435
Natal.....	137	16	322	308	ND	590	822	817	429
Average[1].....	**199**	**136**	**273**	**267**	**96**	**416**	**659**	**637**	**472**
Average sector.....	**200**	**199**	**360**	**353**	**109**	**280**	**561**	**534**	**409**

1 Weighted average per total stratum fruit
2 MAT – Matão
3 Valencia Americana, Seleta, Pineapple and Alvorada
4 V.Folha Murcha – Valencia Folha Murcha
5 DUA – Duartina
6 BRO – Brotas

Table 22 – Fruit per tree at stripping[1] by age group, region and variety – South Sector [April 2024 stripping]

Region and variety groups	Plots 3 – 5 years	Plots 6 – 10 years			Plots over 10 years				Average
	Trees 3 – 5 years	Trees 3 – 5 years	Trees 6 – 10 years	Average	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Average	
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
PFE[2]									
Early:									
Hamlin, Westin and Rubi.....	137	105	295	280	74	514	551	525	369
Other early varieties[3].....	308	162	269	267	82	66	485	462	376
Mid-season:									
Pera Rio.....	228	182	395	388	242	641	679	642	447
Late:									
Valencia and V.Folha Murcha[4]....	219	150	338	334	83	112	661	587	484
Natal.....	330	33	402	391	32	258	588	508	419
Average[1].....	**226**	**134**	**366**	**358**	**148**	**347**	**641**	**587**	**443**
LIM[5]									
Early:									
Hamlin, Westin and Rubi.....	295	56	565	528	150	334	690	643	582
Other early varieties[3].....	151	191	389	389	ND	270	926	919	667
Mid-season:									
Pera Rio.....	180	62	346	327	88	454	598	574	430
Late:									
Valencia and V.Folha Murcha[4]....	247	117	438	418	183	316	659	633	553
Natal.....	128	33	620	617	189	392	1.023	961	807
Average[1].....	**211**	**79**	**433**	**412**	**145**	**368**	**679**	**647**	**533**
Average sector.....	**221**	**108**	**390**	**378**	**147**	**354**	**660**	**616**	**482**

1 Weighted average per total stratum fruit
2 PFE – Porto Ferreira
3 Valencia Americana, Seleta, Pineapple and Alvorada
4 V.Folha Murcha – Valencia Folha Murcha
5 LIM – Limeira

Table 23 – Fruit per tree at stripping[1] by age group, region and variety – Southwest Sector [April 2024 stripping]

Region and variety groups	Plots 3 – 5 years	Plots 6 – 10 years			Plots over 10 years				Average
	Trees 3 – 5 years	Trees 3 – 5 years	Trees 6 – 10 years	Average	Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Average	
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
AVA[2]									
Early:									
Hamlin, Westin and Rubi.....	212	209	830	804	125	301	776	728	634
Other early varieties[3].....	120	264	292	292	335	714	1.130	1.102	868
Mid-season:									
Pera Rio.....	250	129	657	633	181	378	742	717	587
Late:									
Valencia and V.Folha Murcha[4]....	210	226	351	349	242	429	835	800	710
Natal.....	250	93	467	460	221	180	792	737	661
Average[1].....	**230**	**147**	**548**	**535**	**206**	**350**	**804**	**766**	**659**
ITG[5]									
Early:									
Hamlin, Westin and Rubi.....	212	ND	607	607	ND	ND	983	983	600
Other early varieties[3].....	149	356	441	441	86	569	916	915	518
Mid-season:									
Pera Rio.....	195	101	571	566	126	259	712	688	528
Late:									
Valencia and V.Folha Murcha[4]....	108	69	510	510	74	155	600	576	467
Natal.....	132	45	481	476	54	130	890	842	632
Average[1].....	**162**	**93**	**530**	**528**	**84**	**176**	**744**	**716**	**536**
Average sector.....	**202**	**135**	**537**	**531**	**181**	**328**	**789**	**754**	**619**

[1] Weighted average per total stratum fruit
[2] AVA – Avaré
[3] Valencia Americana, Seleta, Pineapple and Alvorada
[4] V.Folha Murcha – Valencia Folha Murcha
[5] ITG – Itapetininga

Table 24 – Variation in fruit per tree at stripping (considers only the trees of the original plantings, excludes resets), from non-irrigated and irrigated groves, by sector and region [April 2024 stripping]

Sector and region	Variation between non-irrigated and irrigated groves (trees of the original plantings)	Percentage of bearing trees in irrigated groves in the citrus belt
	(%)	(%)
North		
Triângulo Mineiro.....	167.0%	89.0%
Bebedouro.....	27.6%	76.7%
Altinópolis.....	-14.5%	5.5%
Subtotal	**64.0%**	**71.1%**
Northwest		
Votuporanga.....	121.2%	73.5%
São José do Rio Preto.....	31.4%	56.2%
Subtotal.....	**67.0%**	**63.0%**
Central		
Matão.....	28.8%	58.5%
Duartina.....	13.7%	17.1%
Brotas.....	-41.9%	29.2%
Subtotal.....	**13.9%**	**32.1%**
South		
Porto Ferreira.....	3.7%	27.4%
Limeira.....	29.0%	25.2%
Subtotal.....	**14.8%**	**26.4%**
Southwest		
Avaré.....	-27.4%	10.9%
Itapetininga.....	25.3%	1.7%
Subtotal	**-10.0%**	**7.9%**
Total.....	**24.4%**	**36.9%**

The data in this table are stratified by the presence or absence of irrigation system in the stands of the stripped trees, but Fundecitrus did not have access to information on the use of irrigation, in addition, it is important to consider that other factors such as management practices, age of trees, cultivated varieties, among others, can affect the amount of fruit per tree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