2020-2021

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
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TREE INVENTORY AND 2020-2021 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

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SNAPSHOT OF GROVES IN MARCH 2020

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Faculdade de Economia, Administração e Contabilidade de Ribeirão Preto
Universidade de São Paulo

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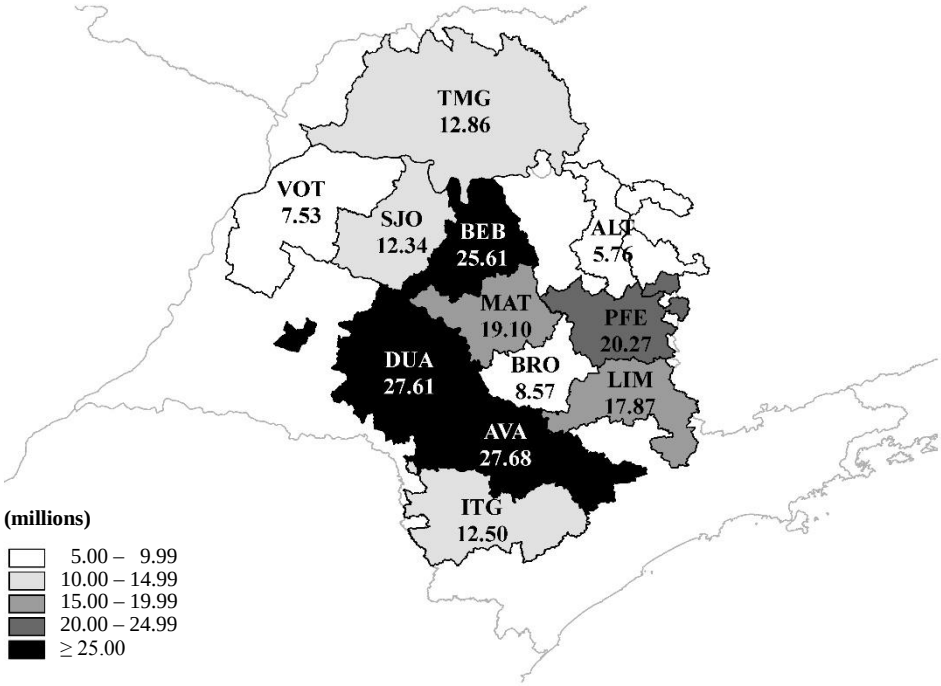
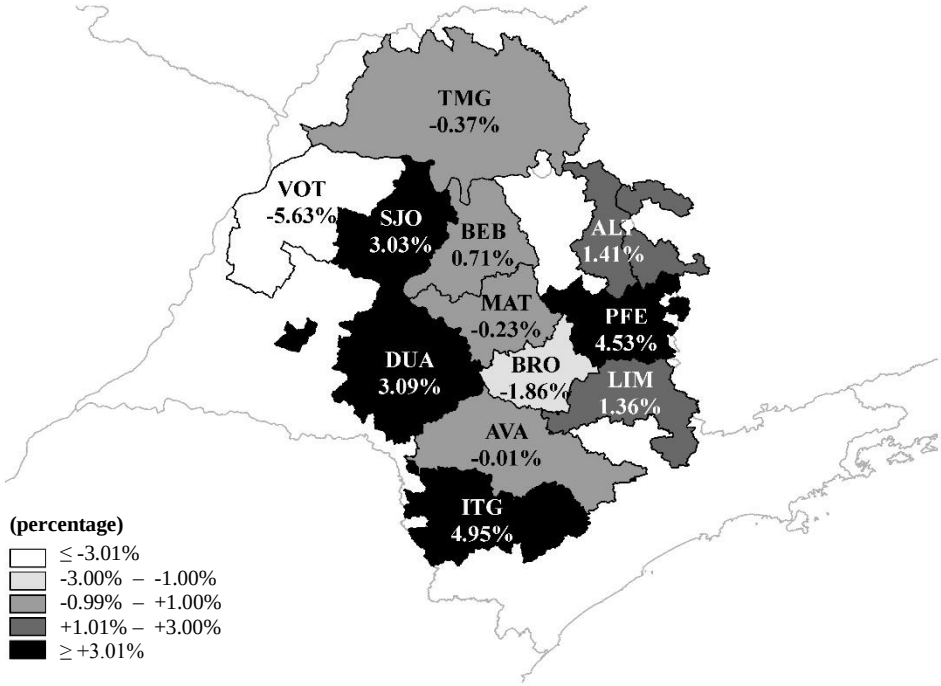
TOTAL ORANGE TREES[1] BY REGION
Total: 197.72 million trees



VARIATION IN TOTAL ORANGE TREES[1] BETWEEN THE 2019 AND 2020 INVENTORIES



Abbreviation	Region	Total orange trees[1]			Abbreviation	Region	Total orange trees[1]		
		2019 Inventory[2]	2020 Inventory[2]	Variation			2019 Inventory[2]	2020 Inventory[2]	Variation
		(millions)	(millions)	(%)			(millions)	(millions)	(%)
VOT	Votuporanga....	7.98	7.53	-5.63%	LIM	Limeira.....	17.63	17.87	1.36%
BRO	Brotas.....	8.73	8.57	-1.86%	ALT	Altinópolis.....	5.68	5.76	1.41%
TMG	Triâng. Mineiro	12.91	12.86	-0.37%	SJO	S. J. do Rio Preto	11.98	12.34	3.03%
MAT	Matão.....	19.15	19.1	-0.23%	DUA	Duartina.....	26.78	27.61	3.09%
AVA	Avaré.....	27.69	27.68	-0.01%	PFE	Porto Ferreira.....	19.39	20.27	4.53%
BEB	Bebedouro.....	25.43	25.61	0.71%	ITG	Itapetininga.....	11.91	12.5	4.95%

[1] Varieties: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.
Snapshot of groves in March. Calculations made used whole numbers and all decimal points.

TREE INVENTORY OF THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT– SNAPSHOT OF GROVES IN MARCH 2020

Published on May 26, 2020[1]

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March 2020 tree inventory: May 26, 2020
Crop forecast: May 26, 2020
1st Crop forecast update: September 10, 2020
2nd Crop forecast update: December 10, 2020
3rd Crop forecast update: February 10, 2021
Final crop forecast: April 12, 2021

This is a live document in that it serves to know and explore the citrus belt in rich detail and provide support to agents in this sector. In that sense and with the aim of meeting the demands both from the citrus segment and the press, we reserve the right to enlarge, review and deepen the information already published. It is therefore recommended that the most recent publication available at www.fundecitrus.com.br be used.

[1] Year 6 – Nº 1 – May 26, 2020 (Portuguese only). Due to the advanced holiday of July 9 (Constitutionalist Revolution of 1932), this report was not published on May 25 as stated in the Executive Summary.
Year 6 – Nº 2 – June 03, 2020 (Portuguese only). Cover photo changed.
Year 6 – Nº 3 – June 25, 2020 (Portuguese and English versions).

**Performed by FUNDECITRUS in cooperation with MARKESTRAT,
FEA-RP/USP and the department of Engineering, Math and Science of FCAV/Unesp**

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

SNAPSHOT OF GROVES IN MARCH 2020

Fundecitrus
Araraquara, São Paulo
2020

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FOREWORDS

Dr. Lourival Carmo Monaco
Fundecitrus President and citrus grower

The crop forecast survey (PES) challenges us to assess the portrait of our citriculture every year. This work provides a systemic and temporal view to guide policies toward a continued profitable private activity and point to necessary adjustments in the path to modernity in citriculture 4.0. Surveys carried out highlight the dependence on the climate particularly in the fruit development stage, the damage caused by diseases and pests and the physiological conditions that lead to significant production losses.

Production was observed to be 25.6% lower than last year's and 12.5% below the average for the last ten years. The largest concentration of 52% of fruit from the second bloom and its consequences on harvest stand out. Data points to studies to be developed to minimize risks and increase agribusiness profitability.

PES shows significant changes in agribusiness sustainability, with added improvements to its economic, social and environmental aspects. The studies carried out show that citrus farms have approximately 182 thousand hectares of legal reserve areas, corresponding to a rate of one hectare of environmental protection to every two and a half hectares of planted orange groves.

Results for the 2020-2021 crop have been attained with the same reliability, despite difficulties currently imposed by the Covid-19 pandemic, so that the sector can prepare for the coming harvest with all the necessary care. We trust we will find a modern and safe harvesting system, from the point of view of labor safety, so that protection requirements are met more easily. In addition, aiming at increased product quality and labor safety, handling of recommended chemicals in the market is now more stringent as well as their tracing in increasingly safer doses.

PES will continue to be instrumental in portraying changes incorporated or to be incorporated into the production chain in a sustainable manner. All links in the production chain can use unbiased data to continue their studies with detailed agribusiness information.

Antonio Juliano Ayres
Fundecitrus General Manager

This year, a worldwide challenge, the Covid-19 pandemic, required change and adaptation in our PES work in order to keep our employees and partners safe while carrying out the survey, which was possible due to the commitment of all involved. In the last step of data collection, sampling had to be reduced while still maintaining the high reliability of the survey. All field work and information analysis were carried out with extreme care and in full compliance with health protocols set forth by agencies in charge. In addition to information on the size of Brazilian citriculture and its economic and social importance, PES also presents, in partnership with Embrapa, data on the conserved green areas on citrus farms, which are considerable and show an increasingly sustainable citriculture that is concerned with protecting the environment and natural resources. Lastly, for the first time and as an adaptation to this scenario, the crop announcement was made exclusively online, with a record of 3,500 visualizations in Brazil and other 353 abroad. Being remodeled and meeting new demands, as well as respecting and caring for the health and safety of employees, the sector and society, PES work carries on, just as work in other Fundecitrus's areas.

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

I am greatly pleased to once again take part in the communication of the PES project. For the sixth time I can contribute my words and reiterate that this is an innovative effort to emphasize citriculture and Brazil, which is highly rewarding. Fundecitrus, Markestrat, FEARP/USP and UNESP share the same objective of producing a reliable figure for the orange crop forecast, providing credibility to Brazilian agribusiness. By using such a valuable source of information, production chain agents can develop strategic plans in a proper and intelligent manner. The technical members that comprise the high trust team in this project organized their knowledge and ideas after covering thousands of kilometers with the energy and dedication needed to deliver the best results possible to the economic development of the country. I am extremely glad to see the growth of the production chain with the years, with emerging problems being dealt with and transparency being valued through the hard work of our collaborators. The highest responsibility is delivered in the strong influence on final results for all involved in the whole chain process. I congratulate all for their dedication and for going steadily ahead with the mission of developing our Brazilian citriculture, which we are proud of.

Vinícius Gustavo Trombin
Executive Coordinator of PES linked to Markestrat

This year we performed the sixth Crop Forecast Survey with the same professional commitment, ethics and high fidelity to the data collected, aiming to once again provide quality information to the whole sector. The importance of having solid information in hand is even more evident this year, with the challenges posed by Covid-19 and a small crop with multiple blooms that require all production chain agents to assess a vast amount of data to plan their activities. Nevertheless, the importance of the information generated by PES is not only for planning operational activities in a given crop season. Using a metaphor, we can say that the power of that information is in its capacity to make us see the forest and not just the trees. Therefore, we expect that the reading of this report with attention to the rich details it presents can expand the horizons of all production chain agents, serving as a tour to each of the twelve regions of the citrus belt to explore its specificities while at the same time understanding the impacts of climatic conditions on its production. We also hope readers are surprised to literally see the forest. I am especially proud of citriculture when I say that because in an unprecedented manner we were able to quantify the areas dedicated to conserving native vegetation within each of the farms and the result surpassed our best expectations, objectively showing the commitment of citrus growers to sustainability.

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

The Crop Forecast Survey, now in its sixth year, faces new challenges due to problems resulting from the Covid-19 pandemic. Sample size had to be reduced to make information collection feasible without however significantly reducing sampling precision. Results from a new sample sizing show that even in face of all adversities Fundecitrus managed to coordinate the PES work with safety to the professionals involved and the necessary reliability of the results obtained. Once again Fundecitrus delivers the updated tree inventory and the crop forecast, carried out with the most rigor and accuracy possible, to citrus growers and the industry.

ACKNOWLEDGEMENTS

We are pleased to present the update for the Tree inventory and the 2020-2021 Orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt. For this survey to be published on time with its high quality and reliability, many people made great efforts, especially so this year, with the restrictions posed by the Covid-19 pandemic. We owe them our sincere appreciation.

We thank citrus growers and orange juice companies associated to Fundecitrus – Citrosuco, Cutrale and Louis Dreyfus –, for having opened their farms for data collection.

We thank the São Paulo State department of agriculture and supply, which through CDA-SP (São Paulo State animal and plant health protection agency) provided information on the number of nursery citrus plants marketed under the permit to transit plants in 2019.

We thank the Technical Committee for the exchange of field experiences and the support in preparing a contingency plan to strip trees this year.

We thank all Fundecitrus employees and outsourced personnel, particularly the survey agents, their assistants and all those working in the stripping laboratory, for having followed a strict safety protocol to avoid contamination and dissemination of the new coronavirus during data survey.

We thank Embrapa Territorial for the exchange of experience and methodological guidance to help quantifying areas dedicated to environmental conservation on citrus farms.

We thank the Fundecitrus management board for supporting this survey that contributes to strengthen harmonic and transparent relations in the citrus sector.

Lastly, we thank all the 3,853 people in 26 countries who watched the orange crop announcement live online.

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1 – INTRODUCTION

This publication presents the results of the fifth survey on the tree inventory of São Paulo and West-Southwest Minas Gerais citrus belt carried out by Fundecitrus in cooperation with Markestrat, FEARP/USP and the department of math and science at FCAV/Unesp from January 2020 to May 2020.

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 engineering, 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 EAESP/FGV, 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 aims at monitoring the performance of field activities and proposing 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 EAESP/FGV); and José Carlos Barbosa (methodology analyst, working as a volunteer linked to the department of engineering, math and science of FCAV/Unesp). All of them were subject to confidentiality obligations regarding 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 competitive content among the orange juice companies that collaborate with Fundecitrus in this project or between them and citrus growers.

1.1 – BUDGET

On May 29, 2019, the Fundecitrus Management Board formally approved this survey, with an allowed budget of R$ 5.613 million, of which 60% refer to expenses with technical and administrative staff and labor-related charges; 27% to travel expenses, accommodations, meals and maintenance; and the remaining 13% refer to expenses with software licenses, IT equipment, supplies, indemnity for tree stripping and others. This budget provides financial support to activities performed until May 31, 2020. After that date the budget referring to the period from June 2020 to May 2021 will come into force.

1.2 – GENERAL FIGURES

- **116 professionals directly involved in the survey;**
  40 agents, 56 assistants, 17 laboratory personnel, 1 supervisor, 1 specialist, 1 coordinator.
- **More than 323,000 kilometers (201,000 miles) covered from January to April 2020;**
  192.591 km (119,670 miles) accumulated distance in travelling to count 5% of orange plots and 130.578 km (81,137 miles) accumulated distance in travelling to strip orange trees
- **234 cities 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 2018 or 2019 that has not yet entered into production.

Bearing tree: tree planted in 2017 or 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 2018 or 2019. Plots planted in 2020 were not accounted for in this inventory since the field data survey included only the first quarter of said year.

Mature grove: plot planted in 2017 or 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.

Rural Environmental Registry: national electronic public register required for all rural properties, aimed at consolidating environmental information on rural real estates and land possessions in a database for control and monitoring purposes, environmental and economic planning, and fighting deforestation. Established by Act 12.651/2012.

Permanent Preservation Area: land either covered with native vegetation or not, intended to conserve water resources, the landscape, the geological stability and biodiversity, and to facilitate the gene flow of fauna and flora, protect the soil and ensure the well-being of human populations.

Legal Reserve Area: area located within a rural property or land possession, delimited according to legislation in force, intended to ensure the sustainable economic use of rural real estate natural resources, assist in conserving and rehabilitating ecological processes, foster biodiversity conservation, provide shelter to and protect the wild fauna and native flora.

Surplus native vegetation: area of native vegetation in excess of the minimum legal reserve requirements.

2 – METHODOLOGICAL PROCEDURES

2.1 – OBJECTIVE METHOD FOR MAPPING CITRUS GROVES

The second mapping of groves performed by Fundecitrus used georeferenced and high definition orthorectified images that enable precise measurements to be made. Images were obtained by satellites SPOT 6&7 from the European operator Airbus Defence and Space from May to August 2017. The georeferenced mapping was performed by survey agents *in situ*, that is, in person, on each citrus farm located in the 347 cities included in the 151,000 km^2 of images, from September 08, 2017 to January 29, 2018.

Data for each plot included variety, planting year, area occupied exclusively by trees, spacing, visual aspect of plants and irrigation system, if any. Only for a fraction of 1% of the mapped area, data was estimated by remote sensing and statistical inference. The data volume was encrypted and saved to the Fundecitrus Geographic Information System to form a new primary database (2018), to be stored until next mapping, expected to be performed in the second half of 2020 for the 2021 inventory to be taken.

2.2 – OBJECTIVE METHOD FOR TAKING THE ORANGE TREE INVENTORY

For the tree inventory, 5% of plots in the primary base (2018) are drawn to be visited and to have their planting holes classified and quantified. 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.

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.

If eradicated plots are found among the drawn plots, their areas are used to calculate the eradication rate of the sample. This proportion, called 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 it is the case in this 2020 inventory, an estimate is made of plantings that occurred in the years following the most recent 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 each 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 São Paulo State animal and plant health protection agency (CDA-SP), of the São Paulo State department of agriculture and supply, on the number of citrus nursery plants marketed under the permit to transit plants (PTV) 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. To estimate the area of newly planted groves, their stratified average density per variety and region is used. From the sum of the number of trees supplied by the CDA-SP and that found in the survey with growers, nursery plants used for resetting are subtracted so that the number of trees planted in groves is estimated for that year.

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 07 and March 06, 2020. Each survey agent counted an average of 16,500 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 region 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 1 presents sectors and regions of the citrus belt and following that, Chart 1 details the cities and abbreviations used to designate regions.

Figure 1 – Division of the citrus belt into 12 regions and respective sectors

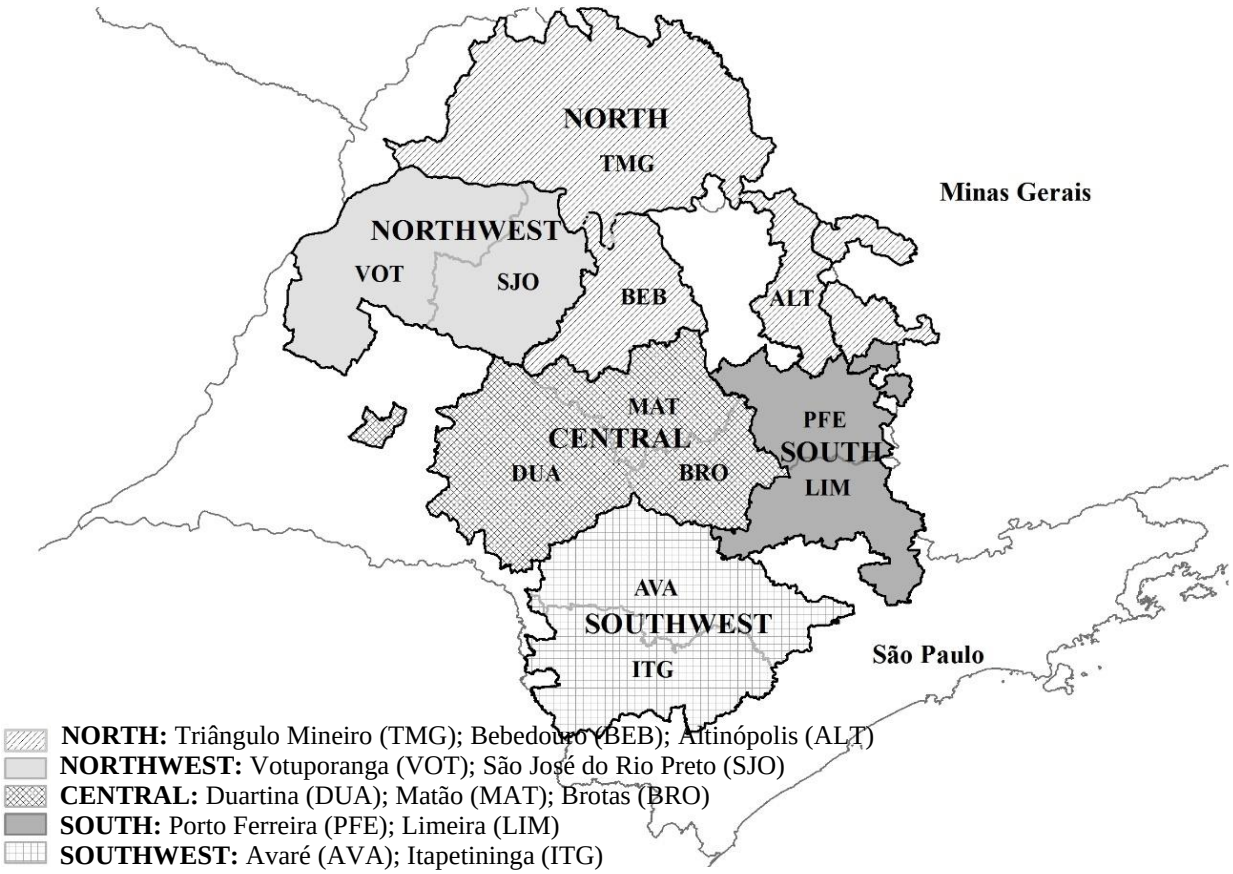


Chart 1 – Division of cities with citrus farms in sectors and regions

Sector	Region	Cities
North 72 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) 35 cities	Ariranha, Barretos, Bebedouro, Cajobi, Catanduva, Catiguá, Colina, Colômbia, Elisiário, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Palmares Paulista, Paraíso, Pindorama, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiúva, Taquaral, Terra Roxa, Uchoa, Urupês, Viradouro, Vista Alegre do Alto.
	Altinópolis (ALT) 21 cities	Altinópolis, Batatais, Brodowski, Cajuru, Cássia dos Coqueiros, Cristais Paulista, Fortaleza de Minas, Franca, Ibiraci, Igarapava, Itamogi, Jacuí, Jeriquara, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso, São Tomás de Aquino.
Northwest 91 cities	Votuporanga (VOT) 54 cities	Álvares 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 South, Nova Canaã Paulista, Ouroeste, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pereira Barreto, Pontalinda, Pontes Gestal, Populina, Riolândia, Rubinéia, Santa Albertina, Santa Clara d'Oeste, Santa Fé do South, 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, Urânia, Valentim Gentil, Vitória Brasil, Votuporanga.
	São José do Rio Preto (SJO) 37 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Icém, Ipiguá, Jaci, José Bonifácio, Macaubal, Magda, Mendonça, Mirassol, Mirassolândia, Monções, 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 South, Tanabi, Ubarana, União Paulista, Zacarias.
Central 79 cities	Matão (MAT) 21 cities	Américo Brasiliense, Araraquara, Bariri, Boa Esperança do South, Borborema, Cândido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itaju, Itápolis, Jaboticabal, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Rincão, Santa Lúcia, Tabatinga, Taquaritinga.
	Duartina (DUA) 43 cities	Agudos, Álvaro de Carvalho, Alvinlândia, Arealva, Avaí, Balbinos, Bastos, Bauru, Boracéia, 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, Parapuã, Paulistânia, Pederneiras, Pirajuí, Piratininga, Pongaí, Presidente Alves, Promissão, 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 54 cities	Porto Ferreira (PFE) 20 cities	Aguaí, Caconde, Casa Branca, Descalvado, Guaranésia, Guaxupé, Itobi, Luís 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) 34 cities	Águas de Lindóia, Americana, Amparo, Araras, Artur Nogueira, Atibaia, Bragança Paulista, Charqueada, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Ipeúna, Iracemápolis, Itapira, Itatiba, Jaguariúna, Jarinu, Leme, Limeira, Lindóia, Mogi Guaçu, Mogi Mirim, Monte Alegre do South, Paulínia, Pinhalzinho, Piracicaba, Rio Claro, Santo Antônio de Posse, Serra Negra, Socorro.
Southwest 51 cities	Avaré (AVA) 31 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, Arandu, Avaré, Bofete, Borebi, Botucatu, Cabreúva, Capela do Alto, Cerqueira César, Cesário Lange, Conchas, Guareí, Iaras, Iperó, Itatinga, Lençóis Paulista, Manduri, Óleo, Pardinho, Porangaba, Porto Feliz, Pratânia, Quadra, Salto de Pirapora, São Manuel, Sorocaba, Tatuí, Tietê.
	Itapetininga (ITG) 20 cities	Alambari, Buri, Campina do Monte Alegre, Capão Bonito, Coronel Macedo, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Itararé, Nova Campina, Paranapanema, Pilar do South, São Miguel Arcanjo, Sarapuí, Sarutaiá, Taquarituba, Taquarivaí, Tejupá.
5 sectors	12 regions	347 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[1], Seleta and Pineapple 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] Plots registered as Valencia Argentina in the 2015 mapping were updated to Valencia Americana.in this mapping

Age groups

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

Age group	Planting years
1 to 2 years.....	2019, 2018
3 to 5 years.....	2017, 2016, 2015
6 to 10 years.....	2014, 2013, 2012, 2011, 2010
Over 10 years.....	2009 and previous years

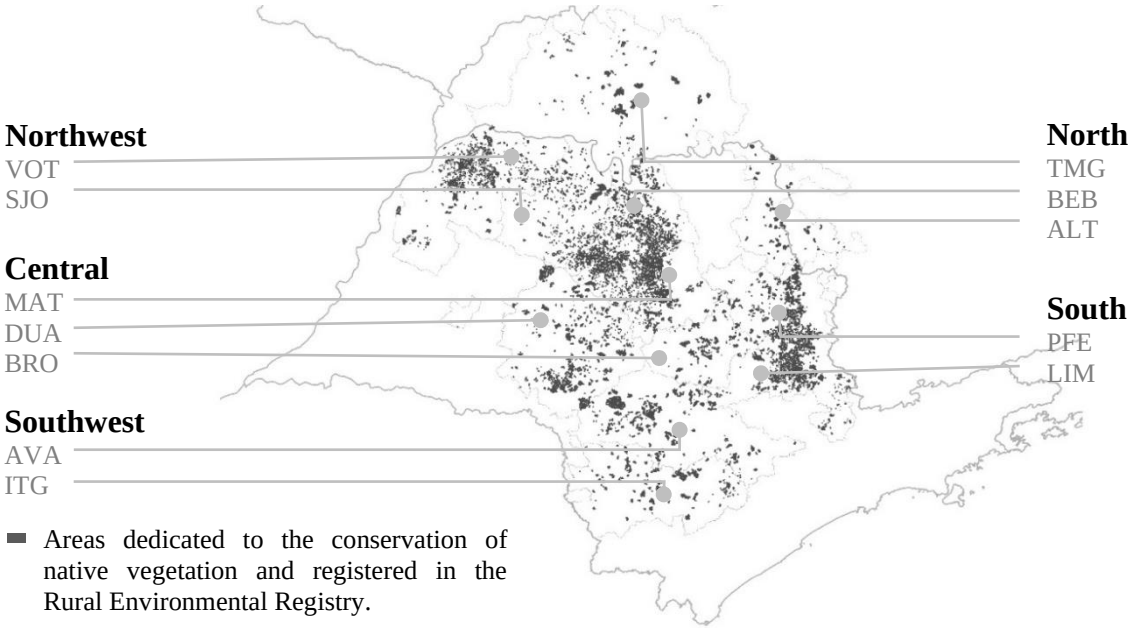
3 – RESULTS

3.1 – MAIN CONCLUSIONS ON THE TREE INVENTORY

This sixth Tree Inventory published by Fundecitrus presents results from an unprecedented survey in citriculture, aimed at quantifying areas dedicated to the conservation of native vegetation and biodiversity on each of the citrus farms mapped by Fundecitrus in 2017 and registered in the Rural Environmental Registry (CAR is the acronym in Portuguese). The survey showed that such areas total 181,750 hectares (Figure 2), whereas the areas designated for growing orange on those same farms amount to 459,058 hectares, which is to say that on average there is one hectare dedicated to environmental conservation for every 2.52 hectares designated for growing citrus. Therefore, for the first time it was possible to assess the environmental contribution of citriculture by quantifying conserved areas whose function established by law is to protect water resources, the landscape, the soil, the biodiversity of fauna and flora, and the well-being of people. This fixed asset objectively shows the commitment of citrus growers to environmental sustainability.

The current study was based on methodology developed by Embrapa Territorial. Its first step was to download Rural Environmental Registry geocodified data available in August 2019 from the database of the Serviço Florestal Brasileiro, linked to the department of agriculture, livestock and supply, comprising all rural properties located in the 347 cities in the citrus belt. The next step consisted of segregating the Rural Environmental Registry database subpopulation on citrus farms. Segregation was possible by crossing this database with information on location of citrus farms from Fundecitrus mapping. Next, overlapping polygons and duplicates were purged by the innovative method developed by Embrapa[1]. Lastly, this Rural Environmental Registry data subpopulation had areas of permanent protection, legal reserve areas and native vegetation included and areas of rivers and lakes deducted. Despite the best efforts made to present the net result for the conservation area, there are methodological restrictions that make it difficult to obtain the same precision of calculating the area designated for citrus growing. Among the reasons for that are the impossibility to locate land designated for offsetting legal reserve areas out of citrus farms and the use of polygons for vegetation areas, which are not as exact as polygons for citrus.

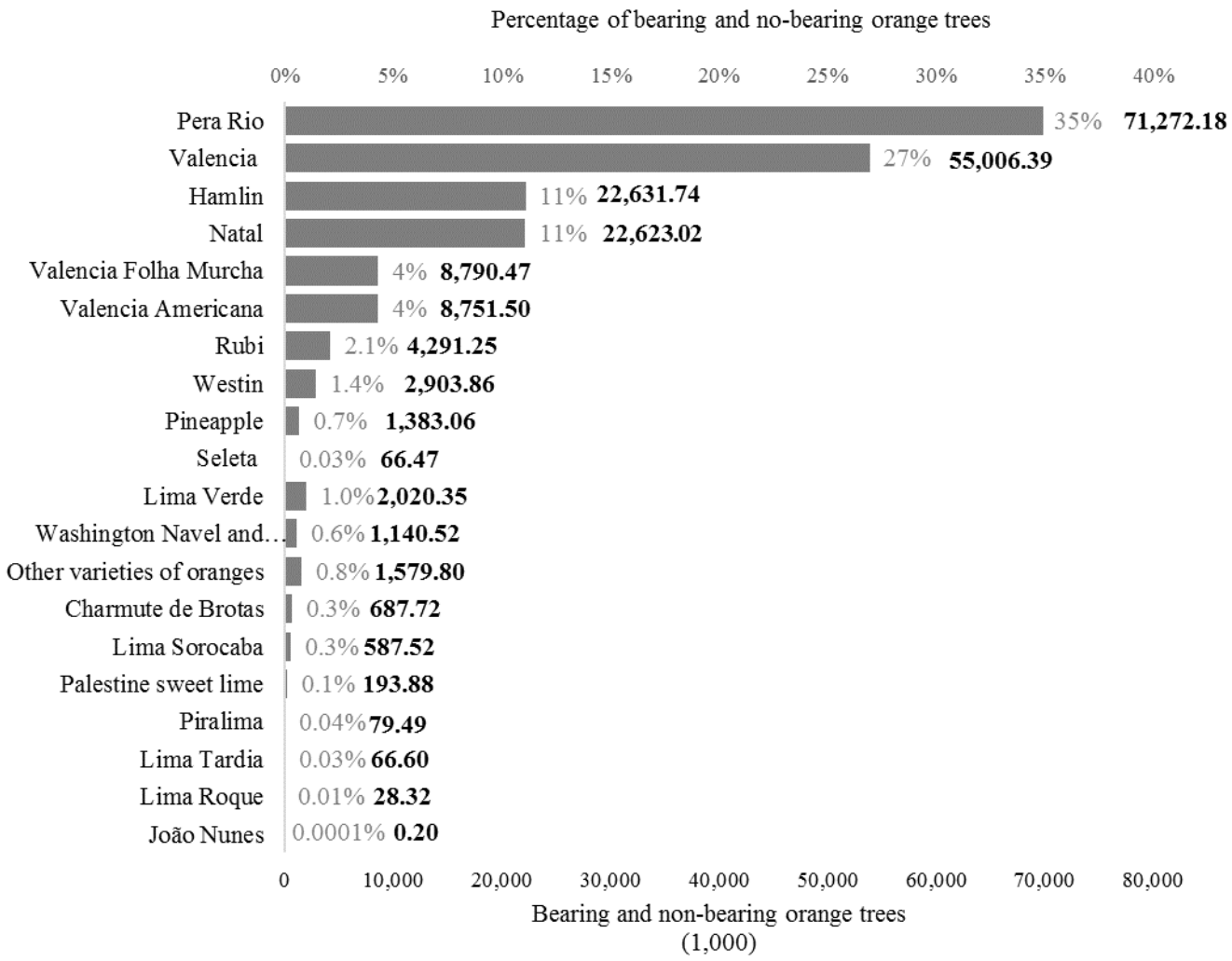
Figure 2 – Location of areas dedicated to environmental conservation on citrus farms



[1] EMBRAPA TERRITORIAL. Agriculture and environmental conservation: an analysis of the Rural Environment Registry. Campinas, 2018. Available on: < https://www.embrapa.br/car >. Access on: May 5, 2020.

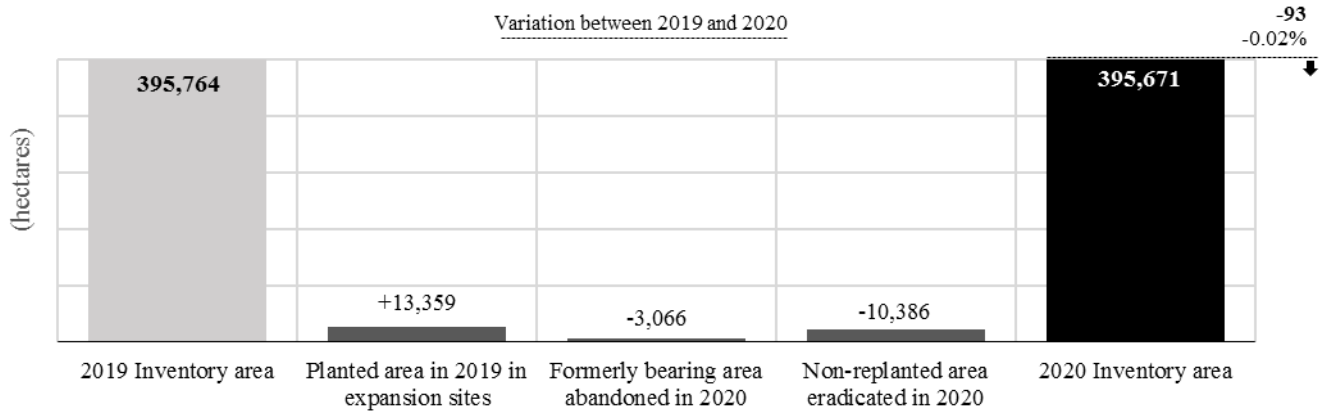
This inventory depicts the estimated situation of orange groves in the São Paulo and West-Southwest Minas Gerais citrus belt, updated in March 2020. Data relative to groves of acid limes, lemons and tangerines, as well as the number of farms and the percentage of irrigated area are still the same presented in the 2018 and 2019 inventories, since its updating depends on scanning the whole citrus planted area – meanwhile, data comes from the last mapping, of 2017. In the case of orange groves, the total of 5,882 farms also remains unchanged until next mapping, although data on groves has been updated in this 2020 inventory by a sampling survey that includes 5% of planted plots and enables a reassessment of the area and the percentage of trees by age, dead trees and gaps in those groves.

Sampling survey this year showed that the area of orange groves including all varieties is 407,776 hectares, that is, 0.26% smaller in comparison with that in the 2019 inventory. Of this total, 395,671 hectares, which is equivalent 97%, are planted with the Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal varieties. Those varieties comprise the group named "oranges" in the tables of this report. The remaining 3%, that is, 12,105 hectares, comprise the group named "other oranges" with the Bahia, Baianinha, Charmute de Brotas, acidless oranges, sweet lime and others. Graph 1 shows the complete distribution of the volume of trees by variety and their share in relation to total orange trees. From this point on in the text, statements are specific to the group called oranges, which is more representative of the citrus belt.



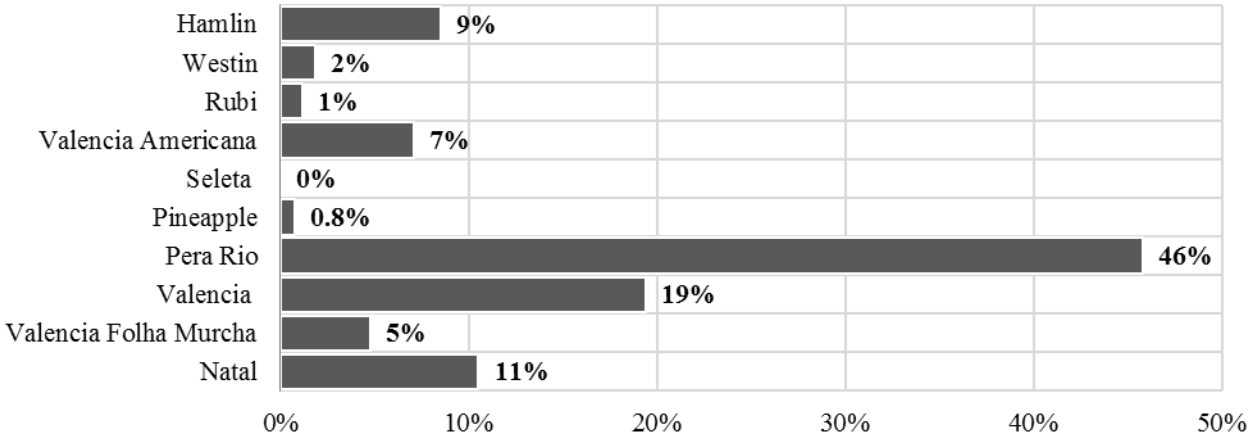
Graph 1 – Oranges and other oranges: Distribution of bearing and non-bearing orange trees by variety

The area with groves of the main varieties of oranges (395,671 hectares) presented in this inventory is 93 hectares smaller than that in 2019. This decrease corresponds to a net variation of -0,02%. As Graph 2 shows, this figure is determined from the area of groves in the 2019 inventory (395,764 hectares) to which the expansion area (13,359 hectares) relative to plantings in new areas in 2019 was added. From this total, the area accounted for as having bearing trees in the previous inventory but that is now abandoned, (3,066 hectares) is deducted, as well as the area that was eradicated and not replanted with orange (10,386 hectares) in 2019.



Graph 2 – Oranges: Update on cultivated area [2019 and 2020 inventories]

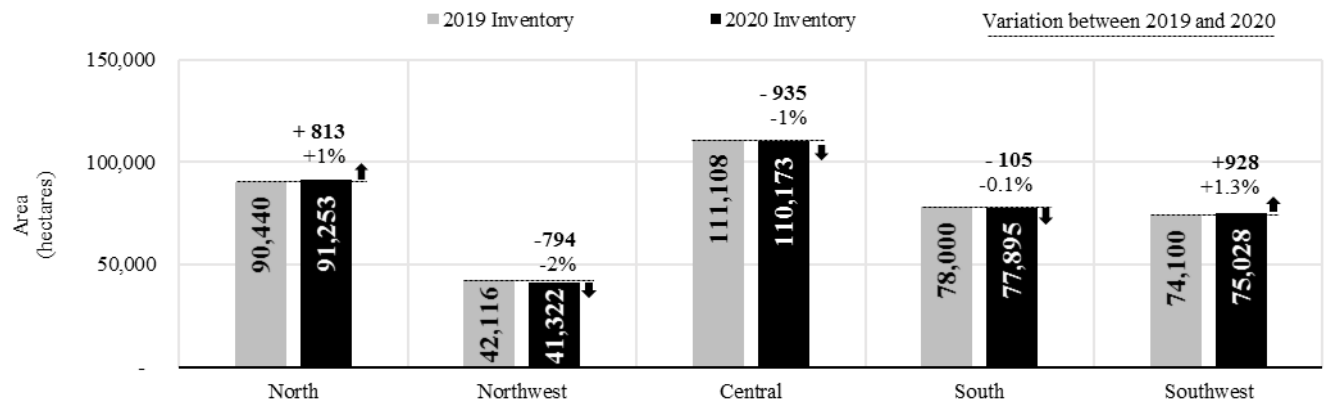
The area of groves planted in 2019 totals 17,635 hectares, which accounts for approximately 4.5% of the total area (395,671 hectares). Roughly 76% of new groves were planted in expansion areas and 24% in replanting areas. As for varietal distribution, Graph 3 shows that Pera Rio corresponds to 46% of those plantings; Valencia to 19%; Natal to 11%; Hamlin to 9%; Valencia Americana to 7%; Valencia Folha Murcha to 5%; Westin, Rubi, Pineapple and Seleta altogether to about 3%. The average share of Pera Rio in new plantings for the last ten years is about 45%. This significant share is due to the double aptitude of this variety, having characteristics that meet the demand for both fresh fruit and fruit for industrial processing, especially to produce not from concentrate orange juice.



Graph 3 – Oranges: Varietal share in plantings estimated for 2019 [2020 inventory]

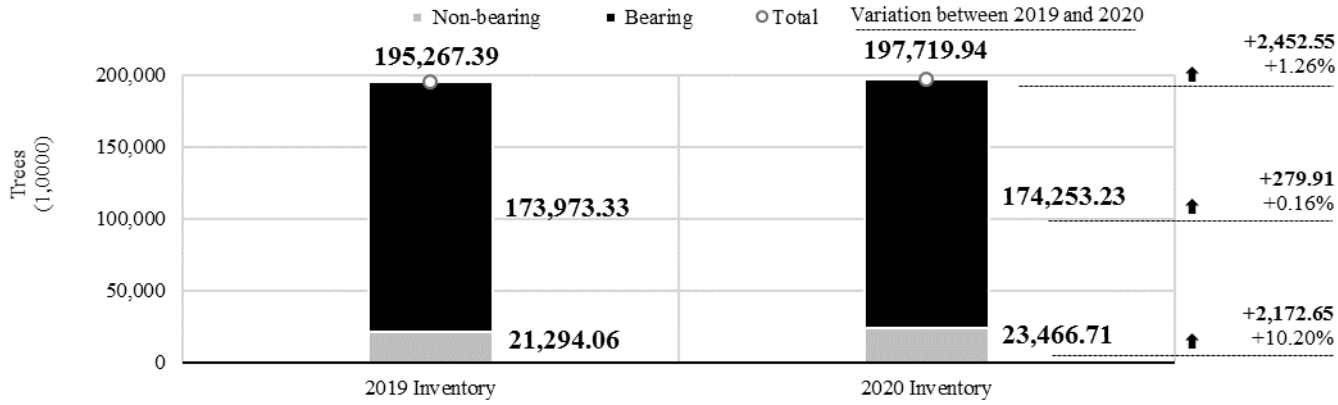
New groves are well distributed among all sectors of the citrus belt: 20% of their area in the North; 15% in the Northwest; 25% in the Central; 18% in the South and 22% in the Southwest. Data is estimated, actual figures will be known at the next scan of the citrus belt. Once data is confirmed, the upward trend of plantings will be proven true, with a rise of approximately 30% in comparison with the area planted in 2018.

For the second year in a row, only in the North and the Southwest sectors the variation of the orange area in relation to the previous inventory is positive, as presented in Graph 4. This balance shows that the loss of groves was less significant in those sectors, which can be related to lower rates of greening. According to the survey carried out by Fundecitrus in 2019, the North sector has 6.37% of its trees with symptoms whereas the Southwest has 7.86%. In the Central and South sectors, this percentage surpasses 30%. The negative balance in the Northwest is probably more influenced by the water deficit and higher temperatures that result in lower yield.



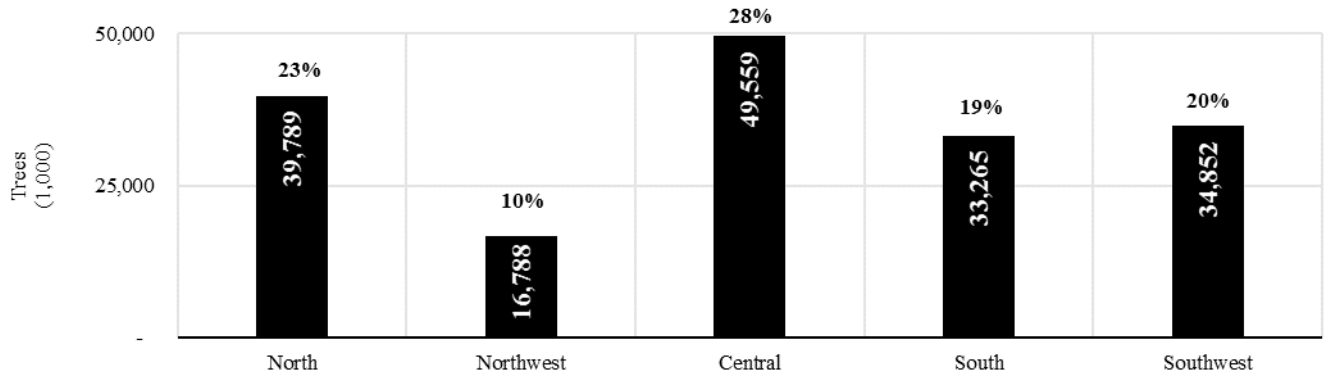
Graph 4 – Oranges: Area of groves by sector [2019 and 2020 inventories]

Bearing orange trees amount to 174.25 million and non-bearing trees to 23.47 million, totaling 197.72 million trees. As compared to the 2019 inventory, the total increase in trees was approximately 2.45 million plants, which corresponds to 1.26%, as presented in Graph 5. This data points to the continuity of the scenario seen in previous years of a reduced area, although with low impact on the total number of trees, resulting from the eradication of low-density groves and plantings of denser ones.



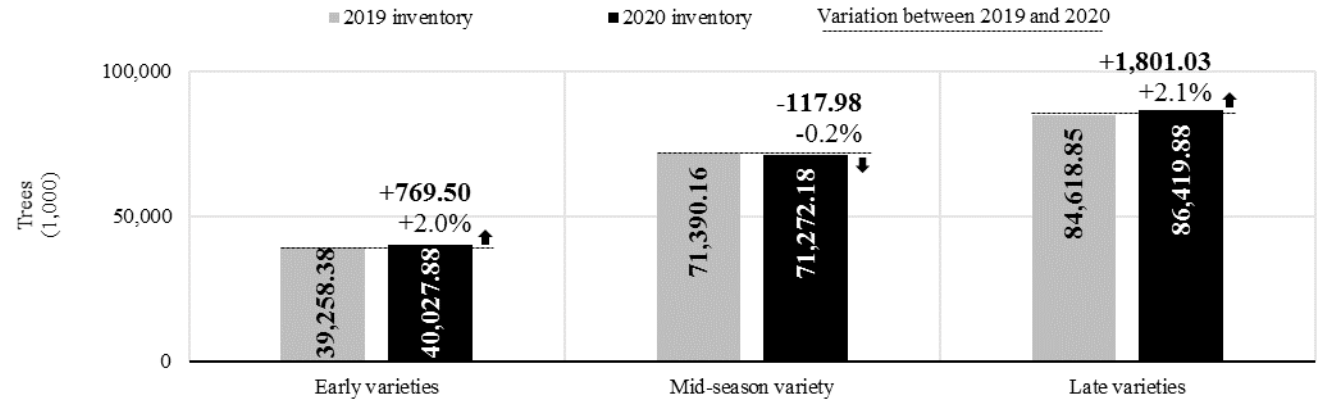
Graph 5 – Oranges: Total trees, bearing and non-bearing trees [2019 and 2020 inventories]

The Central sector has the highest concentration of bearing trees in the citrus belt, with 49.56 million bearing trees, corresponding to 28% of the total figure, followed by the North sector (39.79 million; 23%), the Southwest (34.85 million; 20%), the South (33.27 million; 19%) and the Northwest (16.79 million; 10%), as shown in Graph 6. The production of oranges in each sector is related to the number of bearing trees, although it is greatly influenced by climatic conditions that can affect or realize the full production potential of orange trees. When the climate is favorable in the citrus belt in general, as it was observed last crop season, that is, the 2019-2020 cycle, sectors with the highest concentration of trees also present the larger productions. However, in years with adverse climatic conditions, the Southwest sector gains share in total production, due to more regular rainfall and temperatures throughout the years in that sector.



Graph 6 – Oranges: Bearing trees by sector and relative share [2020 inventory]

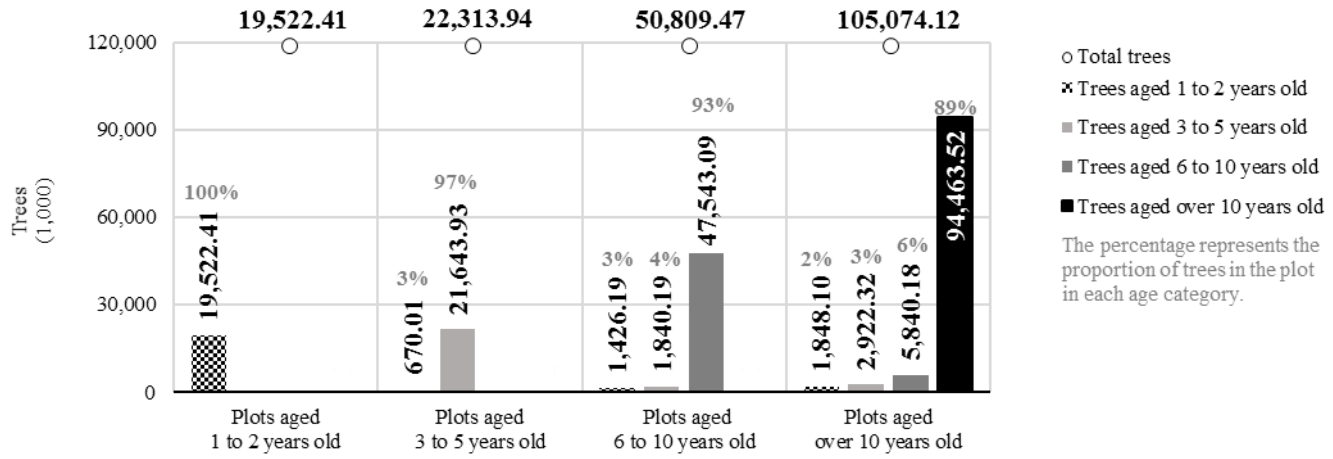
The distribution of citrus varieties by fruit harvesting time shows that the share of trees of early varieties in relation to the total (197.72 million trees) increased approximately 2%; whereas the share of the mid-season variety decreased 0.2%; and that of late varieties increased 2% in comparison to the previous inventory. Currently, 40.03 million trees are of early varieties, usually harvested between May and August; 71.27 million trees are of the mid-season variety, usually harvested between July and October; and 86.42 million trees are of late varieties, usually harvested between October and January, as shown in Graph 7. Climatic conditions and the bloom profile, among other factors, may advance or extend harvesting time, from one year to the next. A generalized delay in starting harvest is expected this year.



Graph 7 – Oranges: Total trees by maturation time of varieties [2019 and 2020 inventories]

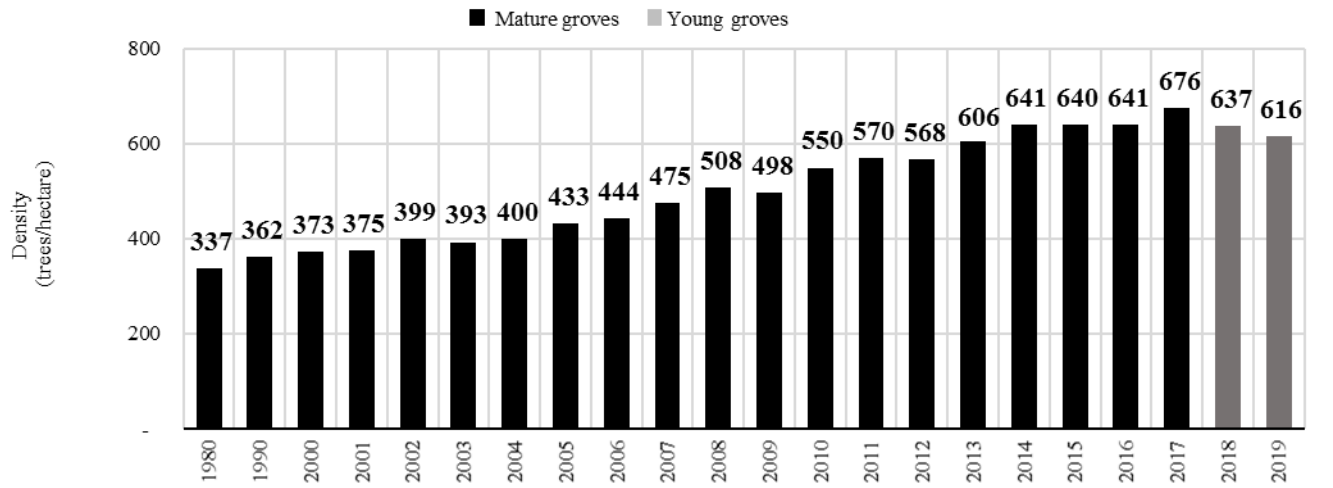
The average age of mature groves rose to 11.2 years. This systematic aging since the 2015 inventory results from more modest plantings observed in the last years. The share of groves of up to ten years old in the total area equaled 40% in the previous inventory and decreased to 39% in this one; groves from 11 to 15 years old decreased their share from 36% to 34%; those from 16 to 20 years old increased their share from 15% to 18%; and those over 20 years old remained with their share of 9%.

Groves of up to two years old, that is, planted in 2018 and 2019, comprise 19.52 million non-bearing trees. Groves from three to five years old, planted from 2015 to 2017, comprise 22.31 million trees – approximately 97% of those trees are in the same age group of plots and 3% are resets of the age group of one to two years old. Groves from six to ten years old were planted from 2010 to 2014 and comprise approximately 50.81 million trees – 93% of trees remain in the category of six to ten years old (same age group of plots); 4% are in the age group of three to five years old; and 3% are in the age group from one to two years old. In the group of groves over ten years old, that is, planted until 2009 and totaling 105.07 million trees, 89% of trees are over ten years old; 6% are between six and ten years old; 3% are between three and five years old; and 2% are between one and two years old. Graph 8 shows the distribution of trees by age category in all age groups of groves.



Graph 8 – Oranges: Trees by age groups and age groups of plots

The average density of groves planted in 2019, as estimated by the sample survey, is 616 trees per hectare, as compared to 637 trees in groves planted in 2018, and 676 trees in groves planted in 2017. This data indicates an upward trend in planting density, however with a lower curve slope as of 2018, as highlighted in Graph 9. The average density of young groves in this inventory is 625 trees per hectare whereas for mature groves that density is 489 trees per hectare.



Graph 9 – Oranges: Average grove density by planting year

The average eradication rate in the citrus belt is 3.70%, as estimated for the period from April 2019 to March 2020, which is slightly lower than the rate for the same period in the previous year (4.53%). The eradicated area is estimated to be 14,662 hectares. Of this total, 4,276 hectares have been renovated. Therefore, the net loss due to eradication is 10,386 hectares, in that 87% of this area is in the regions of Duartina (26%), Limeira (19%), Matão (16%), Avaré (15%) and Votuporanga (11%). Abandoned groves including all orange varieties totaled 3,148 hectares in the 2019 inventory and rose to 4,561 hectares in this one. Regions that concentrate approximately 80% of abandoned groves are: Votuporanga (42%) and Brotas (34%). The percentage of dead trees in the citrus belt increased from 1.28% to 2.09% and gaps decreased from 4.61% to 3.99% of existing planting holes.

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, Pera Rio, Valencia, Natal and Valencia Folha Murcha varieties.

Table 1 – All citrus: Area of groves by sector [2018, 2019, 2020 inventories and 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)	(%)
2018 inventory						
Total.....	**401,470**	**12,883**	**39,078**	**12,204**	**465,635**	**100.00**
Citrus percentage.....	**86.22**	**2.77**	**8.39**	**2.62**	**100.00**	**(X)**
2019 inventory						
Total.....	**395,764**	**13,061**	**39,078**	**12,204**	**460,107**	**100.00**
Citrus percentage.....	**86.02**	**2.84**	**8.49**	**2.65**	**100.00**	**(X)**
2020 inventory						
North.....	91,253	789	15,469	1,788	109,299	23.81
Northwest.....	41,322	575	4,768	1,534	48,199	10.50
Central.....	110,173	2,600	11,855	2,579	127,207	27.71
South.....	77,895	4,586	5,462	3,954	91,897	20.02
Southwest.....	75,028	3,555	1,524	2,349	82,456	17.96
Total.....	**395,671**	**12,105**	**39,078**	**12,204**	**459,058**	**100.00**
Citrus percentage.....	**86.19**	**2.64**	**8.51**	**2.66**	**100.00**	**(X)**
Variation 2020 x 2019						
Hectares.....	**-93**	**-956**	**-**	**-**	**-1,049**	**(X)**
Percentage.....	**-0.02**	**-7.32**	**-**	**-**	**-0.23**	**(X)**

(X) Not applicable.
1 Oranges: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, 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 Data will be updated in the next mapping.

Table 2 – All citrus: Farms[1] with citrus groves, stratified by sector [2018 inventory]

Sector	2018 inventory	
	(number)	(%)
North.....	2,526	25.66
Northwest.....	2,128	21.62
Central.....	1,873	19.02
South.....	2,919	29.65
Southwest.....	399	4.05
Total.....	**9,845**	**100.00**

1 Data will be updated in the next mapping.

Table 3 – Oranges: Farms[1] with orange groves, stratified by size of area with oranges [2019 and 2020 inventories]

Range of the farm size considering the total orange area	2019 inventory				2020 inventory			
	Farms with orange groves		Orange area		Farms with orange groves[1]		Orange area	
			Total	Irrigate area			Total	Irrigate area
(hectares)	(number)	(%)	(hectares)	(%)	(number)	(%)	(hectares)	(%)
0.1 – 10	2,594	44.10	12,470	10.92	2,723	46.29	13,338	10.39
10.1 – 50	2,103	35.75	46,599	13.57	2,003	34.05	47,933	12.38
50.1 – 100	493	8.38	34,282	16.78	505	8.59	37,428	17.14
100.1 – 500	543	9.23	112,337	22.16	507	8.62	108,407	21.38
500.1 – 1,000	82	1.39	56,876	34.57	84	1.43	62,418	29.14
Above 1,000	67	1.14	133,200	46.00	60	1.02	126,147	50.86
Total	**5,882**	**100.00**	**395,764**	**30.14**	**5,882**	**100.00**	**395,671**	**30.14**
Average per farm			**67.28**				**67.27**	

[1] Data will be updated in the next mapping.

Table 4 – Oranges: Farms[1] with orange groves, stratified by number of orange trees [2019 and 2020 inventories]

Range of the number of orange trees in the farm	2019 inventory				2020 inventory			
	Farms with orange groves[1]		Non-bearing and bearing trees		Farms with orange groves[1]		Non-bearing and bearing trees	
(trees)	(number)	(%)	(1,000 trees)	(%)	(number)	(%)	(1,000 trees)	(%)
Below 10 thousand	3,819	64.93	14,061.68	7.20	3,902	66.34	14,558.92	7.36
10.1 – 19 thousand	746	12.68	10,164.74	5.21	703	11.95	10,688.80	5.41
20 – 29 thousand	317	5.39	7,814.59	4.00	298	5.07	7,891.68	3.99
30 – 49 thousand	323	5.49	12,092.27	6.19	338	5.75	13,834.41	7.00
50 – 99 thousand	315	5.36	20,832.32	10.67	301	5.12	22,424.68	11.34
100 – 199 thousand	164	2.79	21,993.46	11.26	155	2.64	23,108.93	11.69
Above 200 thousand	198	3.37	108,308.35	55.47	185	3.15	105,212.52	53.21
Total	**5,882**	**100.00**	**195,267.39**	**100.00**	**5,882**	**100.00**	**197,719.94**	**100.00**
Average per farm			**33.20**				**33.61**	

[1] Data will be updated in the next mapping.

Table 5 – Oranges: Orange plots stratified by plot area size [2019 and 2020 inventories]

Plot area	2019 inventory				2020 inventory			
	Oranges		All oranges		Oranges		All oranges	
(hectares)	(número)	(%)	(número)	(%)	(número)	(%)	(número)	(%)
Below 1	2,425	5.32	2,902	5.96	3,205	7.12	3,524	7.50
1.1 – 4	12,282	26.94	13,551	27.82	13,070	29.05	13,960	29.71
4.1 – 10	17,054	37.41	17,983	36.92	16,138	35.87	16,714	35.57
10.1 – 20	9,609	21.08	9,958	20.44	8,684	19.30	8,860	18.85
Above 20	4,217	9.25	4,318	8.86	3,891	8.65	3,936	8.37
Total	**45,587**	**100.00**	**48,712**	**100.00**	**44,988**	**100.00**	**46,994**	**100.00**
	(hectares)		(hectares)		(hectares)		(hectares)	
Average per plot	**8.68**		**8.39**		**8.80**		**8.68**	

Table 6 – Oranges and others[1]: Area of groves by sector [2018, 2019, 2020 inventories and variation]

Inventory and sector	Total[1]	Changes			Variation	
		Estimate of groves planted in expansion areas in 2019	Estimate of bearing groves abandoned in 2020	Estimate of eradicated groves from April 2019 to March 2020, which were not renovated		
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2018 Inventory						
Total.....	**414,353**	-	-	-	-	-
2019 Inventory						
Total.....	**408,825**	-	-	-	-	-
2020 Inventory						
North.....	92,042	2,133	-76	-1,359	698	0.76
Northwest.....	41,897	2,387	-1,896	-1,145	-654	-1.54
Central.....	112,773	4,554	-1,157	-4,399	-1,002	-0.88
South.....	82,481	2,418	-148	-3,335	-1,065	-1.27
Southwest.....	78,583	2,826	-209	-1,643	974	1.26
Total.....	**407,776**	**14,318**	**-3,486**	**-11,881**	**-1,049**	**-0.26**

[1] Oranges: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, 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 [2020 inventory]

Variety	Area	Percentage
	(hectares)	(%)
Washington Navel and Baianinha.....	2,308	19.07
Charmute de Brotas.....	1,594	13.17
Acidless sweet oranges and sweet lime.....	5,944	49.10
Other varieties	2,259	18.66
Total.....	**12,105**	**100.00**

Table 8 – Acid limes and lemons: Area of groves by variety [2018 inventory][1]

Variety	Area	Percentage
	(hectares)	(%)
Tahiti acid lime (Persian lime)	35,076	89.76
Sicilian lemon.....	3,577	9.15
Other varieties including non-identified ones.....	425	1.09
Total.....	**39,078**	**100.00**

[1] Data will be updated in the next mapping.

Table 9 – Tangerines: Area of groves by variety [2018 inventory][1]

Variety	Area	Percentage
	(hectares)	(%)
Ponkan.....	5,286	43.31
Murcott.....	5,607	45.94
Other varieties	1,311	10.74
Total.....	**12,204**	**100.00**

[1] Data will be updated in the next mapping.

Table 10 – Oranges: Area of groves by sector [2018, 2019, 2020 inventories and variation]

Inventory and sector	Total[1]	Changes			Variation	
		Estimate of groves planted in expansion areas in 2019	Estimate of bearing groves abandoned in 2020	Estimate of eradicated groves from April 2019 to March 2020, which were not renovated		
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2018 Inventory						
Total.....	**401,470**	**-**	**-**	**-**	**-**	**-**
2019 Inventory						
Total.....	**395,764**	**-**	**-**	**-**	**-**	**-**
2020 Inventory						
North.....	91,253	2,066	-76	-1,177	813	0.90
Northwest.....	41,322	2,247	-1,896	-1,145	-794	-1.89
Central.....	110,173	4,281	-949	-4,267	-935	-0.84
South.....	77,895	2,201	-145	-2,161	-105	-0.13
Southwest.....	75,028	2,564	-	-1,636	928	1.25
Total.....	**395,671**	**13,359**	**-3,066**	**-10,386**	**-93**	**-0.02**

Table 11 – Oranges: Estimate of groves planted in 2019 in expansion and renovation areas [2020 inventory]

Sector	Estimate of groves planted in 2019				
	Total	In expansion areas		In renovation areas	
	(hectares)	(hectares)	(%)	(hectares)	(%)
North.....	3,502	2,066	58.99	1,436	41.01
Northwest.....	2,596	2,247	86.56	349	13.44
Central.....	4,494	4,281	95.26	213	4.74
South.....	3,105	2,201	70.89	904	29.11
Southwest.....	3,938	2,564	65.11	1,374	34.89
Total.....	**17,635**	**13,359**	**75.75**	**4,276**	**24.25**

Table 12 – Oranges: Trees by sector [2018, 2019, 2020 inventories and variation]

Inventory and sector	Total	Variation		Non-bearing trees			Bearing trees		
				Total	Variation		Total	Variation	
	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)
2018 inventory									
Total.....	**194,405.26**	**-**	**-**	**19,135.82**	**-**	**-**	**175,269.44**	**-**	**-**
2019 inventory									
Total.....	**195,267.39**	**862.13**	**0.44**	**21,294.06**	**2,158.24**	**11.28**	**173,973.33**	**-1,296.11**	**-0.74**
2020 inventory									
North.....	44,235.70	211.41	0.48	4,446.77	719.65	19.31	39,788.93	-508.24	-1.26
Northwest.....	19,872.60	-86.29	-0.43	3,084.64	755.83	32.46	16,787.96	-842.12	-4.78
Central.....	55,279.89	621.65	1.14	5,720.64	-1,175.56	-17.05	49,559.25	1,797.21	3.76
South.....	38,142.34	1,119.39	3.02	4,876.86	853.83	21.22	33,265.48	265.56	0.80
Southwest.....	40,189.41	586.39	1.48	5,337.80	1,018.90	23.59	34,851.61	-432.51	-1.23
Total.....	**197,719.94**	**2,452.55**	**1.26**	**23,466.71**	**2,172.65**	**10.20**	**174,253.23**	**279.90**	**0.16**

Table 13 – Oranges: Area of groves by variety group [2018, 2019, 2020 inventories and variation]

Inventory and variety group	Total	Changes			Variation	
		Estimate of groves planted in expansion areas in 2019	Estimate of bearing groves abandoned in 2020	Estimate of eradicated groves from April 2019 to March 2020, which were not renovated		
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(%)
2018 inventory						
Total.....	**401,470**	-	-	-	-	-
2019 inventory						
Total.....	**395,764**	-	-	-	-	-
2020 inventory						
Hamlin, Westin and Rubi……..	62,895	1,282	-55	-437	790	1.27
Other early[1].....	19,436	1,156	-21	-1,707	-572	-2.86
Pera Rio.....	134,755	5,923	-2,224	-5,011	-1,312	-0.96
Valencia and V.Folha Murcha[2].	132,331	3,598	-766	-2,078	754	0.57
Natal.....	46,254	1,400	-	-1,153	247	0.54
Total.....	**395,671**	**13,359**	**-3,066**	**-10,386**	**-93**	**-0.02**

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

Table 14 – Oranges: Trees by variety group [2018, 2019, 2020 inventories and variation]

Inventory and variety group	Total	Variation		Non-bearing trees			Bearing trees		
				Total	Variation		Total	Variation	
	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)	(1,000 trees)	(1,000 trees)	(%)
2018 inventory									
Total.....	**194,405.26**	-	-	**19,135.82**	-	-	**175,269.44**	-	-
2019 inventory									
Total.....	**195,267.39**	**862.13**	**0.44**	**21,294.06**	**2,158.24**	**11.28**	**173,973.33**	**-1,296.11**	**-0.74**
2020 inventory									
Hamlin, Westin and Rubi.....	29,826.85	808.46	2.79	2,937.40	-598.89	-16.94	26,889.45	1,407.35	5.52
Other early[1].....	10,201.03	-38.96	-0.38	2,308.81	84.70	3.81	7,892.22	-123.66	-1.54
Pera Rio.....	71,272.18	-117.98	-0.17	9,752.56	1,231.36	14.45	61,519.62	-1,349.34	-2.15
Valencia and V.Folha Murcha[2]	63,796.86	1,018.99	1.62	5,630.78	1,121.92	24.88	58,166.08	-102.93	-0.18
Natal.....	22,623.02	782.04	3.58	2,837.16	333.56	13.32	19,785.86	448.48	2.32
Total.....	**197,719.94**	**2,452.55**	**1.26**	**23,466.71**	**2,172.65**	**10.20**	**174,253.23**	**279.90**	**0.16**

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

Table 15 – Oranges: Stratification of total planting holes of groves [2020 inventory and 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.....	28.05	2,156.34	20.81	75.03	2,280.23
Other early[1].....	52.91	149.45	1.03	1.44	204.83
Pera Rio.....	575.80	4,029.21	51.83	96.21	4,753.05
Valencia and V.Folha Murcha[2].....	115.17	4,205.88	15.79	24.94	4,361.78
Natal.....	35.79	1,514.43	17.83	37.10	1,605.15
Subtotal.....	**807.72**	**12,055.31**	**107.29**	**234.72**	**13,205.04**
Bebedouro					
Hamlin, Westin and Rubi.....	300.85	4,472.65	141.70	238.48	5,153.68
Other early[1].....	335.81	1,672.48	17.36	81.05	2,106.70
Pera Rio.....	1,181.56	6,756.87	94.40	227.67	8,260.50
Valencia and V.Folha Murcha[2].....	835.82	7,524.46	70.25	233.46	8,663.99
Natal.....	489.06	2,039.14	32.93	91.51	2,652.64
Subtotal.....	**3,143.10**	**22,465.60**	**356.64**	**872.17**	**26,837.51**
Altinópolis					
Hamlin, Westin and Rubi.....	109.88	820.95	23.12	44.26	998.21
Other early[1].....	11.83	125.41	0.79	7.25	145.28
Pera Rio.....	277.94	1,762.92	51.16	133.26	2,225.28
Valencia and V.Folha Murcha[2].....	65.68	2,220.86	34.01	71.00	2,391.55
Natal.....	30.62	337.88	2.49	8.07	379.06
Subtotal.....	**495.95**	**5,268.02**	**111.57**	**263.84**	**6,139.38**
Votuporanga					
Hamlin, Westin and Rubi.....	61.73	422.81	10.95	19.68	515.17
Other early[1].....	18.82	175.20	15.07	13.11	222.20
Pera Rio.....	694.20	4,830.73	97.34	226.42	5,848.69
Valencia and V.Folha Murcha[2].....	65.73	903.63	35.07	73.64	1,078.07
Natal.....	42.84	315.79	10.40	31.78	400.81
Subtotal.....	**883.32**	**6,648.16**	**168.83**	**364.63**	**8,064.94**
São José do Rio Preto					
Hamlin, Westin and Rubi.....	256.74	1,981.83	66.49	142.07	2,447.13
Other early[1].....	843.74	1,163.42	79.78	59.89	2,146.83
Pera Rio.....	419.91	2,365.78	28.66	133.24	2,947.59
Valencia and V.Folha Murcha[2].....	260.48	3,078.82	42.81	145.56	3,527.67
Natal.....	420.45	1,549.95	22.76	52.33	2,045.49
Subtotal.....	**2,201.32**	**10,139.80**	**240.50**	**533.09**	**13,114.71**
Matão					
Hamlin, Westin and Rubi.....	156.20	2,911.22	104.25	150.79	3,322.46
Other early[1].....	108.68	1,549.87	65.81	85.11	1,809.47
Pera Rio.....	949.52	6,506.78	240.81	374.19	8,071.30
Valencia and V.Folha Murcha[2].....	353.38	4,945.58	159.74	299.44	5,758.14
Natal.....	187.66	1,435.80	41.04	113.30	1,777.80
Subtotal.....	**1,755.44**	**17,349.25**	**611.65**	**1,022.83**	**20,739.17**
Duartina					
Hamlin, Westin and Rubi.....	382.17	3,365.72	106.98	216.13	4,071.00
Other early[1].....	158.95	1,123.46	43.31	55.38	1,381.10
Pera Rio.....	1,357.19	9,917.23	304.03	510.30	12,088.75
Valencia and V.Folha Murcha[2].....	1,201.08	7,192.96	71.31	266.67	8,732.02
Natal.....	254.22	2,656.82	84.22	152.72	3,147.98
Subtotal.....	**3,353.61**	**24,256.19**	**609.85**	**1,201.20**	**29,420.85**
Brotas					
Hamlin, Westin and Rubi.....	77.23	844.18	23.78	41.79	986.98
Other early[1].....	8.17	248.53	3.12	19.02	278.84
Pera	185.44	2,215.73	67.25	112.52	2,580.94
Valencia and V.Folha Murcha[2].....	248.28	3,951.08	93.68	224.01	4,517.05
Natal.....	92.47	694.29	16.17	34.91	837.84
Subtotal.....	**611.59**	**7,953.81**	**204.00**	**432.25**	**9,201.65**

Table 15 – Oranges: Stratification of total planting holes of groves [2020 inventory and 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.....	570.30	2,208.33	21.29	73.93	2,873.85
Other early[1].....	68.79	215.76	9.17	42.64	336.36
Pera Rio.....	1,117.65	6,815.78	95.34	465.26	8,494.03
Valencia and V.Folha Murcha[2].....	726.13	6,269.91	131.27	449.51	7,576.82
Natal.....	353.44	1,925.07	25.35	104.88	2,408.74
Subtotal.....	**2,836.31**	**17,434.85**	**282.42**	**1,136.22**	**21,689.80**
Limeira					
Hamlin, Westin and Rubi.....	199.83	2,539.32	73.23	203.14	3,015.52
Other early[1].....	3.42	163.63	3.59	2.50	173.14
Pera Rio.....	1,093.57	6,160.49	289.03	398.40	7,941.49
Valencia and V.Folha Murcha[2].....	548.52	5,715.90	115.85	256.39	6,636.66
Natal.....	195.21	1,251.29	11.51	71.38	1,529.39
Subtotal.....	**2,040.55**	**15,830.63**	**493.21**	**931.81**	**19,296.20**
Avaré					
Hamlin, Westin and Rubi.....	492.43	3,968.79	301.80	235.87	4,998.89
Other early[1].....	144.10	721.30	30.11	36.82	932.33
Pera Rio.....	880.81	7,096.91	275.88	486.02	8,739.62
Valencia and V.Folha Murcha[2].....	756.42	9,147.82	141.63	206.56	10,252.43
Natal.....	434.85	4,041.52	164.13	185.42	4,825.92
Subtotal.....	**2,708.61**	**24,976.34**	**913.55**	**1,150.69**	**29,749.19**
Itapetininga					
Hamlin, Westin and Rubi.....	301.99	1,197.31	43.67	24.54	1,567.51
Other early[1].....	553.59	583.71	63.53	4.83	1,205.66
Pera Rio.....	1,018.97	3,061.19	94.38	85.76	4,260.30
Valencia and V.Folha Murcha[2].....	454.09	3,009.18	66.94	63.56	3,593.77
Natal.....	300.55	2,023.88	27.01	69.95	2,421.39
Subtotal.....	**2,629.19**	**9,875.27**	**295.53**	**248.64**	**13,048.63**
Total.....	**23,466.71**	**174,253.23**	**4,395.04**	**8,392.09**	**210,507.07**
Percentage.....	**11.15**	**82.78**	**2.09**	**3.99**	**100.00**
Variation					
Trees/holes….....	**2,172.65**	**279.90**	**1,743.70**	**-1,177.98**	**3,018.27**
Percentage.....	**10.20**	**0.16**	**65.77**	**-12.31**	**1.45**

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

Table 16 – Oranges: Trees by age group and age group of plot – Citrus belt [2020 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.....	19,522.41	-	-	-	19,522.41	9.87
3 – 5 years.....	670.01	21,643.93	-	-	22,313.94	11.29
6 – 10 years.....	1,426.19	1,840.19	47,543.09	-	50,809.47	25.70
Over 10 years.....	1,848.10	2,922.32	5,840.18	94,463.52	105,074.12	53.14
Total.....	**23,466.71**	**26,406.44**	**53,383.27**	**94,463.52**	**197,719.94**	**100.00**
Percentage.....	**11.87**	**13.36**	**27.00**	**47.78**	**100.00**	**(X)**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).
[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 [2020 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 ……	3,971.01	-	-	-	3,971.01	8.98
3 – 5 years ……	52.45	3,487.50	-	-	3,539.95	8.00
6 – 10 years ……..	118.27	295.31	12,320.72	-	12,734.30	28.79
Over 10 years….....	305.04	658.78	1,379.03	21,647.59	23,990.44	54.23
Subtotal……	**4,446.77**	**4,441.59**	**13,699.75**	**21,647.59**	**44,235.70**	**22.37**
Northwest						
1 – 2 years ……	2,941.61	-	-	-	2,941.61	14.80
3 – 5 years ……	44.02	2,590.30	-	-	2,634.32	13.26
6 – 10 years ……..	66.40	139.22	6,664.90	-	6,870.52	34.57
Over 10 years….....	32.61	68.62	137.97	7,186.95	7,426.15	37.37
Subtotal……	**3,084.64**	**2,798.14**	**6,802.87**	**7,186.95**	**19,872.60**	**10.05**
Central						
1 – 2 years ……	4,633.35	-	-	-	4,633.35	8.38
3 – 5 years ……	172.57	7,637.93	-	-	7,810.50	14.13
6 – 10 years ……..	575.28	761.86	14,201.44	-	15,538.58	28.11
Over 10 years…….	339.44	1,004.13	2,008.73	23,945.16	27,297.46	49.38
Subtotal……	**5,720.64**	**9,403.92**	**16,210.17**	**23,945.16**	**55,279.89**	**27.96**
South						
1 – 2 years ……	3,540.32	-	-	-	3,540.32	9.28
3 – 5 years ……	311.38	4,491.62	-	-	4,803.00	12.59
6 – 10 years ……..	494.71	481.55	8,523.86	-	9,500.12	24.91
Over 10 years….....	530.45	720.42	1,536.48	17,511.55	20,298.90	53.22
Subtotal……	**4,876.86**	**5,693.59**	**10,060.34**	**17,511.55**	**38,142.34**	**19.29**
Southwest						
1 – 2 years ……	4,436.12	-	-	-	4,436.12	11.04
3 – 5 years ……	89.59	3,436.58	-	-	3,526.17	8.77
6 – 10 years ……..	171.53	162.25	5,832.17	-	6,165.95	15.34
Over 10 years….....	640.56	470.37	777.97	24,172.27	26,061.17	64.85
Subtotal……	**5,337.80**	**4,069.20**	**6,610.14**	**24,172.27**	**40,189.41**	**20.33**
Total……..	**23,466.71**	**26,406.44**	**53,383.27**	**94,463.52**	**197,719.94**	**100.00**

Table 18 – Oranges: Trees by age group, age group of plot and variety [2020 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 ……	2,259.01	-	-	-	2,259.01	7.57
3 – 5 years ……	30.84	2,648.82	-	-	2,679.66	8.98
6 – 10 years ……..	136.10	265.99	5,375.77	-	5,777.86	19.37
Over 10 years….....	511.45	732.60	1,344.25	16,522.02	19,110.32	64.07
Subtotal……	**2,937.40**	**3,647.41**	**6,720.02**	**16,522.02**	**29,826.85**	**15.09**
Other early						
1 – 2 years ……	2,117.76	-	-	-	2,117.76	20.76
3 – 5 years ……	25.74	1,075.00	-	-	1,100.74	10.79
6 – 10 years ……..	54.69	122.59	2,461.55	-	2,638.83	25.87
Over 10 years….....	110.62	101.61	224.79	3,906.68	4,343.70	42.58
Subtotal……	**2,308.81**	**1,299.20**	**2,686.34**	**3,906.68**	**10,201.03**	**5.16**
Pera Rio						
1 – 2 years ……	8,112.43	-	-	-	8,112.43	11.38
3 – 5 years ……	409.32	10,321.54	-	-	10,730.86	15.06
6 – 10 years ……..	676.43	741.87	21,499.07	-	22,917.37	32.15
Over 10 years..…...	554.38	729.15	1,285.69	26,942.30	29,511.52	41.41
Subtotal……	**9,752.56**	**11,792.56**	**22,784.76**	**26,942.30**	**71,272.18**	**36.05**
Valencia, V.F. Murcha						
1 – 2 years ……	4,660.54	-	-	-	4,660.54	7.31
3 – 5 years ……	127.70	4,585.22	-	-	4,712.92	7.39
6 – 10 years ……..	365.34	459.80	14,418.95	-	15,244.09	23.89
Over 10 years….....	477.20	1,034.48	2,368.30	35,299.33	39,179.31	61.41
Subtotal……	**5,630.78**	**6,079.50**	**16,787.25**	**35,299.33**	**63,796.86**	**32.27**
Natal						
1 – 2 years ……	2,372.67	-	-	-	2,372.67	10.49
3 – 5 years ……	76.41	3,013.35	-	-	3,089.76	13.66
6 – 10 years ……..	193.63	249.94	3,787.75	-	4,231.32	18.70
Over 10 years….....	194.45	324.48	617.15	11,793.19	12,929.27	57.15
Subtotal……	**2,837.16**	**3,587.77**	**4,404.90**	**11,793.19**	**22,623.02**	**11.44**
Total……..	**23,466.71**	**26,406.44**	**53,383.27**	**94,463.52**	**197,719.94**	**100.00**

Table 19 – Hamlin, Westin and Rubi: Trees by age group and age group of plot – North Sector [2020 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.....	27.35	-	-	-	27.35
3 – 5 years.....	0.15	17.95	-	-	18.10
6 – 10 years.....	0.55	7.46	421.28	-	429.29
Over 10 years.....	-	24.46	41.34	1,643.85	1,709.65
Subtotal.....	**28.05**	**49.87**	**462.62**	**1,643.85**	**2,184.39**
Bebedouro					
1 – 2 years.....	277.96	-	-	-	277.96
3 – 5 years.....	1.29	222.81	-	-	224.10
6 – 10 years.....	7.98	58.60	828.56	-	895.14
Over 10 years.....	13.62	109.48	306.33	2,946.87	3,376.30
Subtotal.....	**300.85**	**390.89**	**1,134.89**	**2,946.87**	**4,773.50**
Altinópolis					
1 – 2 years.....	66.21	-	-	-	66.21
3 – 5 years.....	0.32	21.90	-	-	22.22
6 – 10 years.....	1.84	18.59	38.82	-	59.25
Over 10 years.....	41.51	50.83	84.97	605.84	783.15
Subtotal.....	**109.88**	**91.32**	**123.79**	**605.84**	**930.83**
North					
1 – 2 years.....	371.52	-	-	-	371.52
3 – 5 years.....	1.76	262.66	-	-	264.42
6 – 10 years.....	10.37	84.65	1,288.66	-	1,383.68
Over 10 years.....	55.13	184.77	432.64	5,196.56	5,869.10
Total.....	**438.78**	**532.08**	**1,721.30**	**5,196.56**	**7,888.72**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	61.62	-	-	-	61.62
3 – 5 years.....	0.01	3.87	-	-	3.88
6 – 10 years.....	0.10	1.68	138.89	-	140.67
Over 10 years.....	-	-	7.49	270.88	278.37
Subtotal.....	**61.73**	**5.55**	**146.38**	**270.88**	**484.54**
São José do Rio Preto					
1 – 2 years.....	244.65	-	-	-	244.65
3 – 5 years.....	0.06	167.74	-	-	167.80
6 – 10 years.....	11.45	16.73	773.51	-	801.69
Over 10 years.....	0.58	7.30	15.98	1,000.57	1,024.43
Subtotal.....	**256.74**	**191.77**	**789.49**	**1,000.57**	**2,238.57**
Northwest					
1 – 2 years.....	306.27	-	-	-	306.27
3 – 5 years.....	0.07	171.61	-	-	171.68
6 – 10 years.....	11.55	18.41	912.40	-	942.36
Over 10 years.....	0.58	7.30	23.47	1,271.45	1,302.80
Total.....	**318.47**	**197.32**	**935.87**	**1,271.45**	**2,723.11**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	91.74	-	-	-	91.74
3 – 5 years.....	9.60	570.82	-	-	580.42
6 – 10 years.....	23.78	27.51	784.23	-	835.52
Over 10 years.....	31.08	60.23	92.04	1,376.39	1,559.74
Subtotal.....	**156.20**	**658.56**	**876.27**	**1,376.39**	**3,067.42**
Duartina					
1 – 2 years.....	301.34	-	-	-	301.34
3 – 5 years.....	3.37	563.98	-	-	567.35
6 – 10 years.....	15.22	39.75	613.30	-	668.27
Over 10 years.....	62.24	133.15	182.69	1,832.85	2,210.93
Subtotal.....	**382.17**	**736.88**	**795.99**	**1,832.85**	**3,747.89**
Brotas					
1 – 2 years.....	71.93	-	-	-	71.93
3 – 5 years.....	0.13	15.15	-	-	15.28
6 – 10 years.....	2.19	17.28	141.95	-	161.42
Over 10 years.....	2.98	14.43	88.44	566.93	672.78
Subtotal.....	**77.23**	**46.86**	**230.39**	**566.93**	**921.41**
Central					
1 – 2 years.....	465.01	-	-	-	465.01
3 – 5 years.....	13.10	1,149.95	-	-	1,163.05
6 – 10 years.....	41.19	84.54	1,539.48	-	1,665.21
Over 10 years.....	96.30	207.81	363.17	3,776.17	4,443.45
Total.....	**615.60**	**1,442.30**	**1,902.65**	**3,776.17**	**7,736.72**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	342.98	-	-	-	342.98
3 – 5 years.....	2.29	329.57	-	-	331.86
6 – 10 years.....	44.06	19.43	607.78	-	671.27
Over 10 years.....	180.97	84.95	200.34	966.26	1,432.52
Subtotal.....	**570.30**	**433.95**	**808.12**	**966.26**	**2,778.63**
Limeira					
1 – 2 years.....	166.77	-	-	-	166.77
3 – 5 years.....	6.17	194.66	-	-	200.83
6 – 10 years.....	23.45	49.38	502.64	-	575.47
Over 10 years.....	3.44	88.62	136.36	1,567.66	1,796.08
Subtotal.....	**199.83**	**332.66**	**639.00**	**1,567.66**	**2,739.15**
South					
1 – 2 years.....	509.75	-	-	-	509.75
3 – 5 years.....	8.46	524.23	-	-	532.69
6 – 10 years.....	67.51	68.81	1,110.42	-	1,246.74
Over 10 years.....	184.41	173.57	336.70	2,533.92	3,228.60
Total.....	**770.13**	**766.61**	**1,447.12**	**2,533.92**	**5,517.78**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	347.12	-	-	-	347.12
3 – 5 years.....	4.88	139.60	-	-	144.48
6 – 10 years.....	1.35	7.25	300.97	-	309.57
Over 10 years.....	139.08	155.70	182.73	3,182.54	3,660.05
Subtotal.....	**492.43**	**302.55**	**483.70**	**3,182.54**	**4,461.22**
Itapetininga					
1 – 2 years.....	259.34	-	-	-	259.34
3 – 5 years.....	2.57	400.77	-	-	403.34
6 – 10 years.....	4.13	2.33	223.84	-	230.30
Over 10 years.....	35.95	3.45	5.54	561.38	606.32
Subtotal.....	**301.99**	**406.55**	**229.38**	**561.38**	**1,499.30**
Southwest					
1 – 2 years.....	606.46	-	-	-	606.46
3 – 5 years.....	7.45	540.37	-	-	547.82
6 – 10 years.....	5.48	9.58	524.81	-	539.87
Over 10 years.....	175.03	159.15	188.27	3,743.92	4,266.37
Total.....	**794.42**	**709.10**	**713.08**	**3,743.92**	**5,960.52**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	52.53	-	-	-	52.53
3 – 5 years.....	0.20	7.44	-	-	7.64
6 – 10 years.....	0.18	0.30	32.92	-	33.40
Over 10 years.....	-	0.12	0.27	108.40	108.79
Subtotal.....	**52.91**	**7.86**	**33.19**	**108.40**	**202.36**
Bebedouro					
1 – 2 years.....	257.02	-	-	-	257.02
3 – 5 years.....	1.77	66.76	-	-	68.53
6 – 10 years.....	21.91	6.01	464.35	-	492.27
Over 10 years.....	55.11	45.51	71.35	1,018.50	1,190.47
Subtotal.....	**335.81**	**118.28**	**535.70**	**1,018.50**	**2,008.29**
Altinópolis					
1 – 2 years.....	11.13	-	-	-	11.13
3 – 5 years.....	-	-	-	-	-
6 – 10 years.....	0.27	4.56	37.12	-	41.95
Over 10 years.....	0.43	1.31	7.66	74.76	84.16
Subtotal.....	**11.83**	**5.87**	**44.78**	**74.76**	**137.24**
North					
1 – 2 years.....	320.68	-	-	-	320.68
3 – 5 years.....	1.97	74.20	-	-	76.17
6 – 10 years.....	22.36	10.87	534.39	-	567.62
Over 10 years.....	55.54	46.94	79.28	1,201.66	1,383.42
Total.....	**400.55**	**132.01**	**613.67**	**1,201.66**	**2,347.89**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

1 Valencia Americana, Seleta and Pineapple.

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 [2020 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.....	17.00	-	-	-	17.00
3 – 5 years.....	0.03	1.59	-	-	1.62
6 – 10 years.....	1.79	18.27	42.25	-	62.31
Over 10 years.....	-	-	2.03	111.06	113.09
Subtotal.....	**18.82**	**19.86**	**44.28**	**111.06**	**194.02**
São José do Rio Preto					
1 – 2 years.....	834.30	-	-	-	834.30
3 – 5 years.....	1.25	62.01	-	-	63.26
6 – 10 years.....	6.83	13.67	537.78	-	558.28
Over 10 years.....	1.36	3.89	9.48	536.59	551.32
Subtotal.....	**843.74**	**79.57**	**547.26**	**536.59**	**2,007.16**
Northwest					
1 – 2 years.....	851.30	-	-	-	851.30
3 – 5 years.....	1.28	63.60	-	-	64.88
6 – 10 years.....	8.62	31.94	580.03	-	620.59
Over 10 years.....	1.36	3.89	11.51	647.65	664.41
Total.....	**862.56**	**99.43**	**591.54**	**647.65**	**2,201.18**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

1 Valencia Americana, Seleta and Pineapple.

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 [2020 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.....	82.18	-	-	-	82.18
3 – 5 years.....	3.45	329.23	-	-	332.68
6 – 10 years.....	6.70	24.13	415.48	-	446.31
Over 10 years.....	16.35	15.17	32.51	733.35	797.38
Subtotal.....	**108.68**	**368.53**	**447.99**	**733.35**	**1,658.55**
Duartina					
1 – 2 years.....	130.19	-	-	-	130.19
3 – 5 years.....	9.60	260.35	-	-	269.95
6 – 10 years.....	13.45	30.91	319.79	-	364.15
Over 10 years.....	5.71	11.56	42.25	458.60	518.12
Subtotal.....	**158.95**	**302.82**	**362.04**	**458.60**	**1,282.41**
Brotas					
1 – 2 years.....	5.90	-	-	-	5.90
3 – 5 years.....	0.78	15.60	-	-	16.38
6 – 10 years.....	1.45	15.82	127.58	-	144.85
Over 10 years.....	0.04	0.58	10.55	78.40	89.57
Subtotal.....	**8.17**	**32.00**	**138.13**	**78.40**	**256.70**
Central					
1 – 2 years.....	218.27	-	-	-	218.27
3 – 5 years.....	13.83	605.18	-	-	619.01
6 – 10 years.....	21.60	70.86	862.85	-	955.31
Over 10 years.....	22.10	27.31	85.31	1,270.35	1,405.07
Total.....	**275.80**	**703.35**	**948.16**	**1,270.35**	**3,197.66**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

1 Valencia Americana, Seleta and Pineapple.

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 [2020 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.....	47.20	-	-	-	47.20
3 – 5 years.....	0.04	1.05	-	-	1.09
6 – 10 years.....	-	0.46	46.71	-	47.17
Over 10 years.....	21.55	11.03	29.26	127.25	189.09
Subtotal.....	**68.79**	**12.54**	**75.97**	**127.25**	**284.55**
Limeira					
1 – 2 years.....	1.21	-	-	-	1.21
3 – 5 years.....	0.13	3.29	-	-	3.42
6 – 10 years.....	1.39	5.93	29.15	-	36.47
Over 10 years.....	0.69	2.24	4.03	118.99	125.95
Subtotal.....	**3.42**	**11.46**	**33.18**	**118.99**	**167.05**
South					
1 – 2 years.....	48.41	-	-	-	48.41
3 – 5 years.....	0.17	4.34	-	-	4.51
6 – 10 years.....	1.39	6.39	75.86	-	83.64
Over 10 years.....	22.24	13.27	33.29	246.24	315.04
Total.....	**72.21**	**24.00**	**109.15**	**246.24**	**451.60**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).
1 Valencia Americana, Seleta and Pineapple.
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 [2020 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.....	137.98	-	-	-	137.98
3 – 5 years.....	3.89	76.97	-	-	80.86
6 – 10 years.....	0.09	0.16	101.05	-	101.30
Over 10 years.....	2.14	9.70	15.15	518.27	545.26
Subtotal.....	**144.10**	**86.83**	**116.20**	**518.27**	**865.40**
Itapetininga					
1 – 2 years.....	541.12	-	-	-	541.12
3 – 5 years.....	4.60	250.71	-	-	255.31
6 – 10 years.....	0.63	2.37	307.37	-	310.37
Over 10 years.....	7.24	0.50	0.25	22.51	30.50
Subtotal.....	**553.59**	**253.58**	**307.62**	**22.51**	**1,137.30**
Southwest					
1 – 2 years.....	679.10	-	-	-	679.10
3 – 5 years.....	8.49	327.68	-	-	336.17
6 – 10 years.....	0.72	2.53	408.42	-	411.67
Over 10 years.....	9.38	10.20	15.40	540.78	575.76
Total.....	**697.69**	**340.41**	**423.82**	**540.78**	**2,002.70**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).
1 Valencia Americana, Seleta and Pineapple.
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 [2020 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.....	567.48	-	-	-	567.48
3 – 5 years.....	3.81	599.91	-	-	603.72
6 – 10 years.....	3.88	26.24	2,522.19	-	2,552.31
Over 10 years….....	0.63	2.07	29.64	849.16	881.50
Subtotal.....	**575.80**	**628.22**	**2,551.83**	**849.16**	**4,605.01**
Bebedouro					
1 – 2 years.....	1,054.50	-	-	-	1,054.50
3 – 5 years.....	27.21	1,136.47	-	-	1,163.68
6 – 10 years.....	50.82	80.31	3,073.26	-	3,204.39
Over 10 years.....	49.03	69.81	130.59	2,266.43	2,515.86
Subtotal.....	**1,181.56**	**1,286.59**	**3,203.85**	**2,266.43**	**7,938.43**
Altinópolis					
1 – 2 years.....	258.52	-	-	-	258.52
3 – 5 years.....	5.32	232.97	-	-	238.29
6 – 10 years.....	2.26	1.17	102.19	-	105.62
Over 10 years.....	11.84	57.64	96.17	1,272.78	1,438.43
Subtotal.....	**277.94**	**291.78**	**198.36**	**1,272.78**	**2,040.86**
North					
1 – 2 years.....	1,880.50	-	-	-	1,880.50
3 – 5 years.....	36.34	1,969.35	-	-	2,005.69
6 – 10 years.....	56.96	107.72	5,697.64	-	5,862.32
Over 10 years.....	61.50	129.52	256.40	4,388.37	4,835.79
Total.....	**2,035.30**	**2,206.59**	**5,954.04**	**4,388.37**	**14,584.30**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

[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 [2020 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.....	653.71	-	-	-	653.71
3 – 5 years.....	6.25	596.44	-	-	602.69
6 – 10 years.....	16.21	44.20	2,542.71	-	2,603.12
Over 10 years.....	18.03	13.17	13.33	1,620.88	1,665.41
Subtotal.....	**694.20**	**653.81**	**2,556.04**	**1,620.88**	**5,524.93**
São José do Rio Preto					
1 – 2 years.....	391.47	-	-	-	391.47
3 – 5 years.....	11.03	515.81	-	-	526.84
6 – 10 years.....	10.11	20.17	848.17	-	878.45
Over 10 years.....	7.30	25.06	29.69	926.88	988.93
Subtotal.....	**419.91**	**561.04**	**877.86**	**926.88**	**2,785.69**
Northwest					
1 – 2 years.....	1,045.18	-	-	-	1,045.18
3 – 5 years.....	17.28	1,112.25	-	-	1,129.53
6 – 10 years.....	26.32	64.37	3,390.88	-	3,481.57
Over 10 years.....	25.33	38.23	43.02	2,547.76	2,654.34
Total.....	**1,114.11**	**1,214.85**	**3,433.90**	**2,547.76**	**8,310.62**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	743.83	-	-	-	743.83
3 – 5 years.....	37.31	1,639.32	-	-	1,676.63
6 – 10 years.....	94.34	119.04	2,585.07	-	2,798.45
Over 10 years.....	74.04	51.17	80.36	2,031.82	2,237.39
Subtotal.....	**949.52**	**1,809.53**	**2,665.43**	**2,031.82**	**7,456.30**
Duartina					
1 – 2 years.....	1,090.66	-	-	-	1,090.66
3 – 5 years.....	54.01	1,636.70	-	-	1,690.71
6 – 10 years.....	172.34	176.69	2,509.14	-	2,858.17
Over 10 years.....	40.18	155.27	223.63	5,215.80	5,634.88
Subtotal.....	**1,357.19**	**1,968.66**	**2,732.77**	**5,215.80**	**11,274.42**
Brotas					
1 – 2 years.....	165.80	-	-	-	165.80
3 – 5 years.....	8.93	296.64	-	-	305.57
6 – 10 years.....	7.09	36.22	827.80	-	871.11
Over 10 years.....	3.62	40.51	106.65	907.91	1,058.69
Subtotal.....	**185.44**	**373.37**	**934.45**	**907.91**	**2,401.17**
Central					
1 – 2 years.....	2,000.29	-	-	-	2,000.29
3 – 5 years.....	100.25	3,572.66	-	-	3,672.91
6 – 10 years.....	273.77	331.95	5,922.01	-	6,527.73
Over 10 years.....	117.84	246.95	410.64	8,155.53	8,930.96
Total.....	**2,492.15**	**4,151.56**	**6,332.65**	**8,155.53**	**21,131.89**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	826.63	-	-	-	826.63
3 – 5 years.....	95.06	1,319.44	-	-	1,414.50
6 – 10 years.....	101.61	92.29	2,020.36	-	2,214.26
Over 10 years.....	94.35	128.82	249.26	3,005.61	3,478.04
Subtotal.....	**1,117.65**	**1,540.55**	**2,269.62**	**3,005.61**	**7,933.43**
Limeira					
1 – 2 years.....	737.07	-	-	-	737.07
3 – 5 years.....	136.98	944.94	-	-	1,081.92
6 – 10 years.....	162.60	100.16	2,130.42	-	2,393.18
Over 10 years.....	56.92	116.02	111.40	2,757.55	3,041.89
Subtotal.....	**1,093.57**	**1,161.12**	**2,241.82**	**2,757.55**	**7,254.06**
South					
1 – 2 years.....	1,563.70	-	-	-	1,563.70
3 – 5 years.....	232.04	2,264.38	-	-	2,496.42
6 – 10 years.....	264.21	192.45	4,150.78	-	4,607.44
Over 10 years.....	151.27	244.84	360.66	5,763.16	6,519.93
Total.....	**2,211.22**	**2,701.67**	**4,511.44**	**5,763.16**	**15,187.49**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	686.56	-	-	-	686.56
3 – 5 years.....	4.92	383.38	-	-	388.30
6 – 10 years.....	43.50	32.28	1,361.31	-	1,437.09
Over 10 years.....	145.83	66.60	201.57	5,051.77	5,465.77
Subtotal.....	**880.81**	**482.26**	**1,562.88**	**5,051.77**	**7,977.72**
Itapetininga					
1 – 2 years.....	936.20	-	-	-	936.20
3 – 5 years.....	18.49	1,019.52	-	-	1,038.01
6 – 10 years.....	11.67	13.10	976.45	-	1,001.22
Over 10 years.....	52.61	3.01	13.40	1,035.71	1,104.73
Subtotal.....	**1,018.97**	**1,035.63**	**989.85**	**1,035.71**	**4,080.16**
Southwest					
1 – 2 years.....	1,622.76	-	-	-	1,622.76
3 – 5 years.....	23.41	1,402.90	-	-	1,426.31
6 – 10 years.....	55.17	45.38	2,337.76	-	2,438.31
Over 10 years.....	198.44	69.61	214.97	6,087.48	6,570.50
Total.....	**1,899.78**	**1,517.89**	**2,552.73**	**6,087.48**	**12,057.88**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	111.52	-	-	-	111.52
3 – 5 years.....	0.88	72.35	-	-	73.23
6 – 10 years.....	1.69	11.28	1,919.25	-	1,932.22
Over 10 years.....	1.08	18.03	22.73	2,162.24	2,204.08
Subtotal.....	**115.17**	**101.66**	**1,941.98**	**2,162.24**	**4,321.05**
Bebedouro					
1 – 2 years.....	746.72	-	-	-	746.72
3 – 5 years.....	3.47	650.28	-	-	653.75
6 – 10 years.....	19.03	59.13	2,003.11	-	2,081.27
Over 10 years.....	66.60	129.79	316.55	4,365.60	4,878.54
Subtotal.....	**835.82**	**839.20**	**2,319.66**	**4,365.60**	**8,360.28**
Altinópolis					
1 – 2 years.....	40.51	-	-	-	40.51
3 – 5 years.....	2.07	49.37	-	-	51.44
6 – 10 years.....	2.04	5.56	88.67	-	96.27
Over 10 years.....	21.06	79.26	133.40	1,864.60	2,098.32
Subtotal.....	**65.68**	**134.19**	**222.07**	**1,864.60**	**2,286.54**
North					
1 – 2 years.....	898.75	-	-	-	898.75
3 – 5 years.....	6.42	772.00	-	-	778.42
6 – 10 years.....	22.76	75.97	4,011.03	-	4,109.76
Over 10 years.....	88.74	227.08	472.68	8,392.44	9,180.94
Total.....	**1,016.67**	**1,075.05**	**4,483.71**	**8,392.44**	**14,967.87**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	65.40	-	-	-	65.40
3 – 5 years.....	-	1.35	-	-	1.35
6 – 10 years.....	0.33	3.20	141.58	-	145.11
Over 10 years.....	-	2.58	5.31	749.61	757.50
Subtotal.....	**65.73**	**7.13**	**146.89**	**749.61**	**969.36**
São José do Rio Preto					
1 – 2 years.....	235.02	-	-	-	235.02
3 – 5 years.....	2.78	539.68	-	-	542.46
6 – 10 years.....	17.78	12.29	1,319.71	-	1,349.78
Over 10 years.....	4.90	11.17	24.34	1,171.63	1,212.04
Subtotal.....	**260.48**	**563.14**	**1,344.05**	**1,171.63**	**3,339.30**
Northwest					
1 – 2 years.....	300.42	-	-	-	300.42
3 – 5 years.....	2.78	541.03	-	-	543.81
6 – 10 years.....	18.11	15.49	1,461.29	-	1,494.89
Over 10 years.....	4.90	13.75	29.65	1,921.24	1,969.54
Total.....	**326.21**	**570.27**	**1,490.94**	**1,921.24**	**4,308.66**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	277.77	-	-	-	277.77
3 – 5 years.....	2.81	393.02	-	-	395.83
6 – 10 years.....	59.64	86.35	2,509.88	-	2,655.87
Over 10 years.....	13.16	96.13	180.45	1,679.75	1,969.49
Subtotal.....	**353.38**	**575.50**	**2,690.33**	**1,679.75**	**5,298.96**
Duartina					
1 – 2 years.....	1,068.45	-	-	-	1,068.45
3 – 5 years.....	11.36	936.93	-	-	948.29
6 – 10 years.....	90.99	82.50	1,702.85	-	1,876.34
Over 10 years.....	30.28	154.98	320.06	3,995.64	4,500.96
Subtotal.....	**1,201.08**	**1,174.41**	**2,022.91**	**3,995.64**	**8,394.04**
Brotas					
1 – 2 years.....	156.28	-	-	-	156.28
3 – 5 years.....	21.25	124.17	-	-	145.42
6 – 10 years.....	25.43	34.46	582.27	-	642.16
Over 10 years.....	45.32	107.60	430.02	2,672.56	3,255.50
Subtotal.....	**248.28**	**266.23**	**1,012.29**	**2,672.56**	**4,199.36**
Central					
1 – 2 years.....	1,502.50	-	-	-	1,502.50
3 – 5 years.....	35.42	1,454.12	-	-	1,489.54
6 – 10 years.....	176.06	203.31	4,795.00	-	5,174.37
Over 10 years.....	88.76	358.71	930.53	8,347.95	9,725.95
Total.....	**1,802.74**	**2,016.14**	**5,725.53**	**8,347.95**	**17,892.36**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	593.51	-	-	-	593.51
3 – 5 years.....	14.16	574.31	-	-	588.47
6 – 10 years.....	71.81	89.55	1,489.18	-	1,650.54
Over 10 years.....	46.65	113.50	340.61	3,662.76	4,163.52
Subtotal.....	**726.13**	**777.36**	**1,829.79**	**3,662.76**	**6,996.04**
Limeira					
1 – 2 years.....	402.38	-	-	-	402.38
3 – 5 years.....	33.66	484.59	-	-	518.25
6 – 10 years.....	35.22	54.38	774.69	-	864.29
Over 10 years.....	77.26	141.36	326.91	3,933.97	4,479.50
Subtotal.....	**548.52**	**680.33**	**1,101.60**	**3,933.97**	**6,264.42**
South					
1 – 2 years.....	995.89	-	-	-	995.89
3 – 5 years.....	47.82	1,058.90	-	-	1,106.72
6 – 10 years.....	107.03	143.93	2,263.87	-	2,514.83
Over 10 years.....	123.91	254.86	667.52	7,596.73	8,643.02
Total.....	**1,274.65**	**1,457.69**	**2,931.39**	**7,596.73**	**13,260.46**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	557.80	-	-	-	557.80
3 – 5 years.....	16.84	364.52	-	-	381.36
6 – 10 years.....	35.67	17.37	1,157.78	-	1,210.82
Over 10 years.....	146.11	171.70	243.78	7,192.67	7,754.26
Subtotal.....	**756.42**	**553.59**	**1,401.56**	**7,192.67**	**9,904.24**
Itapetininga					
1 – 2 years.....	405.18	-	-	-	405.18
3 – 5 years.....	18.42	394.65	-	-	413.07
6 – 10 years.....	5.71	3.73	729.98	-	739.42
Over 10 years.....	24.78	8.38	24.14	1,848.30	1,905.60
Subtotal.....	**454.09**	**406.76**	**754.12**	**1,848.30**	**3,463.27**
Southwest					
1 – 2 years.....	962.98	-	-	-	962.98
3 – 5 years.....	35.26	759.17	-	-	794.43
6 – 10 years.....	41.38	21.10	1,887.76	-	1,950.24
Over 10 years.....	170.89	180.08	267.92	9,040.97	9,659.86
Total.....	**1,210.51**	**960.35**	**2,155.68**	**9,040.97**	**13,367.51**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	33.40	-	-	-	33.40
3 – 5 years.....	0.35	45.44	-	-	45.79
6 – 10 years.....	0.73	1.61	291.54	-	293.88
Over 10 years.....	1.31	10.51	22.72	1,142.61	1,177.15
Subtotal.....	**35.79**	**57.56**	**314.26**	**1,142.61**	**1,550.22**
Bebedouro					
1 – 2 years.....	439.79	-	-	-	439.79
3 – 5 years.....	3.17	278.54	-	-	281.71
6 – 10 years.....	3.78	5.56	453.62	-	462.96
Over 10 years.....	42.32	50.26	80.74	1,170.42	1,343.74
Subtotal.....	**489.06**	**334.36**	**534.36**	**1,170.42**	**2,528.20**
Altinópolis					
1 – 2 years.....	26.37	-	-	-	26.37
3 – 5 years.....	2.44	85.31	-	-	87.75
6 – 10 years.....	1.31	8.93	43.84	-	54.08
Over 10 years.....	0.50	9.70	34.57	155.53	200.30
Subtotal.....	**30.62**	**103.94**	**78.41**	**155.53**	**368.50**
North					
1 – 2 years.....	499.56	-	-	-	499.56
3 – 5 years.....	5.96	409.29	-	-	415.25
6 – 10 years.....	5.82	16.10	789.00	-	810.92
Over 10 years.....	44.13	70.47	138.03	2,468.56	2,721.19
Total.....	**555.47**	**495.86**	**927.03**	**2,468.56**	**4,446.92**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

[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 [2020 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.....	42.61	-	-	-	42.61
3 – 5 years.....	0.23	45.25	-	-	45.48
6 – 10 years.....	-	0.72	49.78	-	50.50
Over 10 years.....	-	0.83	7.66	211.55	220.04
Subtotal.....	**42.84**	**46.80**	**57.44**	**211.55**	**358.63**
São José do Rio Preto					
1 – 2 years.....	395.83	-	-	-	395.83
3 – 5 years.....	22.38	656.56	-	-	678.94
6 – 10 years.....	1.80	8.29	270.52	-	280.61
Over 10 years.....	0.44	4.62	22.66	587.30	615.02
Subtotal.....	**420.45**	**669.47**	**293.18**	**587.30**	**1,970.40**
Northwest					
1 – 2 years.....	438.44	-	-	-	438.44
3 – 5 years.....	22.61	701.81	-	-	724.42
6 – 10 years.....	1.80	9.01	320.30	-	331.11
Over 10 years.....	0.44	5.45	30.32	798.85	835.06
Total.....	**463.29**	**716.27**	**350.62**	**798.85**	**2,329.03**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	161.53	-	-	-	161.53
3 – 5 years.....	5.17	447.14	-	-	452.31
6 – 10 years.....	18.78	22.72	332.96	-	374.46
Over 10 years.....	2.18	60.62	69.73	502.63	635.16
Subtotal.....	**187.66**	**530.48**	**402.69**	**502.63**	**1,623.46**
Duartina					
1 – 2 years.....	215.48	-	-	-	215.48
3 – 5 years.....	1.63	290.69	-	-	292.32
6 – 10 years.....	31.81	29.32	673.82	-	734.95
Over 10 years…….....	5.30	51.38	89.07	1,522.54	1,668.29
Subtotal.....	**254.22**	**371.39**	**762.89**	**1,522.54**	**2,911.04**
Brotas					
1 – 2 years.....	70.27	-	-	-	70.27
3 – 5 years.....	3.17	118.19	-	-	121.36
6 – 10 years.....	12.07	19.16	75.32	-	106.55
Over 10 years.....	6.96	51.35	60.28	369.99	488.58
Subtotal.....	**92.47**	**188.70**	**135.60**	**369.99**	**786.76**
Central					
1 – 2 years.....	447.28	-	-	-	447.28
3 – 5 years.....	9.97	856.02	-	-	865.99
6 – 10 years.....	62.66	71.20	1,082.10	-	1,215.96
Over 10 years.....	14.44	163.35	219.08	2,395.16	2,792.03
Total.....	**534.35**	**1,090.57**	**1,301.18**	**2,395.16**	**5,321.26**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	292.11	-	-	-	292.11
3 – 5 years.....	20.32	474.06	-	-	494.38
6 – 10 years.....	26.85	26.33	529.81	-	582.99
Over 10 years.....	14.16	21.01	80.83	793.03	909.03
Subtotal.....	**353.44**	**521.40**	**610.64**	**793.03**	**2,278.51**
Limeira					
1 – 2 years.....	130.46	-	-	-	130.46
3 – 5 years.....	2.57	165.71	-	-	168.28
6 – 10 years.....	27.72	43.64	393.12	-	464.48
Over 10 years.....	34.46	12.87	57.48	578.47	683.28
Subtotal.....	**195.21**	**222.22**	**450.60**	**578.47**	**1,446.50**
South					
1 – 2 years.....	422.57	-	-	-	422.57
3 – 5 years.....	22.89	639.77	-	-	662.66
6 – 10 years.....	54.57	69.97	922.93	-	1,047.47
Over 10 years.....	48.62	33.88	138.31	1,371.50	1,592.31
Total.....	**548.65**	**743.62**	**1,061.24**	**1,371.50**	**3,725.01**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 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.....	303.73	-	-	-	303.73
3 – 5 years.....	8.72	92.43	-	-	101.15
6 – 10 years.....	50.05	73.99	463.56	-	587.60
Over 10 years.....	72.35	45.26	85.90	3,280.38	3,483.89
Subtotal.....	**434.85**	**211.68**	**549.46**	**3,280.38**	**4,476.37**
Itapetininga					
1 – 2 years.....	261.09	-	-	-	261.09
3 – 5 years.....	6.26	314.03	-	-	320.29
6 – 10 years.....	18.73	9.67	209.86	-	238.26
Over 10 years.....	14.47	6.07	5.51	1,478.74	1,504.79
Subtotal.....	**300.55**	**329.77**	**215.37**	**1,478.74**	**2,324.43**
Southwest					
1 – 2 years.....	564.82	-	-	-	564.82
3 – 5 years.....	14.98	406.46	-	-	421.44
6 – 10 years.....	68.78	83.66	673.42	-	825.86
Over 10 years.....	86.82	51.33	91.41	4,759.12	4,988.68
Total.....	**735.40**	**541.45**	**764.83**	**4,759.12**	**6,800.80**

Ages and planting years: 1 – 2 years (2018 and 2019), 3 – 5 years (2015 to 2017), 6 – 10 years (2010 to 2014) and over 10 years (2009 and earlier).

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 [2020 inventory and variation]

Sector and region	2020 inventory			Variation (△) since 2019 inventory		
	Area of young groves[1]	Area of mature groves[2]	Total			
	(A)	(B)	(C)	(△ A)	(△ B)	(△ C)
	(hectares)	(hectares)	(hectares)	(%)	(%)	(%)
North						
Triângulo Mineiro.....	1,590	25,612	27,202	69.87	-1.35	1.13
Bebedouro.....	4,625	48,184	52,809	39.52	-1.77	0.85
Altinópolis.....	482	10,760	11,242	-8.54	1.04	0.59
Subtotal	**6,697**	**84,556**	**91,253**	**40.16**	**-1.29**	**0.90**
Northwest						
Votuporanga.....	1,942	15,044	16,986	102.93	-14.24	-8.17
São José do Rio Preto.....	3,056	21,280	24,336	27.44	0.28	3.04
Subtotal.....	**4,998**	**36,324**	**41,322**	**48.97**	**-6.29**	**-1.89**
Central						
Matão.....	2,064	35,443	37,507	-38.84	0.92	-2.57
Duartina.....	4,774	49,397	54,171	8.90	0.24	0.95
Brotas.....	851	17,644	18,495	15.63	-3.12	-2.40
Subtotal.....	**7,689**	**102,484**	**110,173**	**-9.49**	**-0.13**	**-0.84**
South						
Porto Ferreira.....	3,349	37,574	40,923	35.42	0.91	3.05
Limeira.....	2,316	34,656	36,972	3.58	-3.88	-3.44
Subtotal.....	**5,665**	**72,230**	**77,895**	**20.30**	**-1.45**	**-0.13**
Southwest						
Avaré.....	3,026	51,511	54,537	108.40	-3.29	-0.33
Itapetininga.....	3,152	17,339	20,491	7.69	5.35	5.71
Subtotal	**6,178**	**68,850**	**75,028**	**41.08**	**-1.25**	**1.25**
Total.....	**31,227**	**364,444**	**395,671**	**21.43**	**-1.51**	**-0.02**
Percentage.....	**7.89**	**92.11**	**100.00**	**(X)**	**(X)**	**(X)**

(X) Not applicable.
[1] Groves planted in 2018 and 2019.
[2] Groves planted in 2017 and in previous years.

Table 45 – Oranges: Non-bearing and bearing trees by sector and region [2020 inventory and variation]

Sector and region	2020 inventory					Variation (△) since 2019 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.....	792.28	15.44	807.72	12,055.31	12,863.03	61.66	-54.24	54.20	-2.68	-0.37
Bebedouro.....	2,775.99	367.11	3,143.10	22,465.60	25,608.70	38.49	-37.91	21.09	-1.61	0.71
Altinópolis.....	402.74	93.21	495.95	5,268.02	5,763.97	-5.13	-49.09	-18.38	3.78	1.41
Subtotal	**3,971.01**	**475.76**	**4,446.77**	**39,788.93**	**44,235.70**	**36.04**	**-41.12**	**19.31**	**-1.26**	**0.48**
Northwest										
Votuporanga.....	840.34	42.98	883.32	6,648.16	7,531.48	97.27	-7.13	87.04	-11.46	-5.63
S. J. do Rio Preto.....	2,101.27	100.05	2,201.32	10,139.80	12,341.12	29.54	-57.31	18.57	0.18	3.03
Subtotal.....	**2,941.61**	**143.03**	**3,084.64**	**16,787.96**	**19,872.60**	**43.62**	**-49.04**	**32.46**	**-4.78**	**-0.43**
Central										
Matão.....	1,357.05	398.39	1,755.44	17,349.25	19,104.69	-48.58	23.03	-40.76	7.18	-0.23
Duartina.....	2,806.12	547.49	3,353.61	24,256.19	27,609.80	7.45	-21.31	1.40	3.33	3.09
Brotas.....	470.18	141.41	611.59	7,953.81	8,565.40	10.78	-29.75	-2.26	-1.83	-1.86
Subtotal.....	**4,633.35**	**1,087.29**	**5,720.64**	**49,559.25**	**55,279.89**	**-18.36**	**-10.94**	**-17.05**	**3.76**	**1.14**
South										
Porto Ferreira.....	2,102.43	733.88	2,836.31	17,434.85	20,271.16	30.44	36.43	31.94	1.12	4.53
Limeira.....	1,437.89	602.66	2,040.55	15,830.63	17,871.18	5.68	17.54	8.92	0.46	1.36
Subtotal.....	**3,540.32**	**1,336.54**	**4,876.86**	**33,265.48**	**38,142.34**	**19.11**	**27.21**	**21.22**	**0.80**	**3.02**
Southwest										
Avaré.....	2,033.19	675.42	2,708.61	24,976.34	27,684.95	126.71	-24.52	51.18	-3.55	-0.01
Itapetininga.....	2,402.93	226.26	2,629.19	9,875.27	12,504.46	1.21	47.91	4.04	5.20	4.95
Subtotal.....	**4,436.12**	**901.68**	**5,337.80**	**34,851.61**	**40,189.41**	**35.62**	**-13.95**	**23.59**	**-1.23**	**1.48**
Total.....	**19,522.41**	**3,944.30**	**23,466.71**	**174,253.23**	**197,719.94**	**15.61**	**-10.52**	**10.20**	**0.16**	**1.26**
Percentage.....	**83.19**	**16.81**	**11.87**	**88.13**	**100.00**	**(X)**	**(X)**	**(X)**	**(X)**	**(X)**

(X) Not applicable.
1 Trees planted in 2018 and 2019.
2 Groves planted in 2018 and 2019.
3 Groves planted in 2017 and in previous years.
4 Trees planted in 2017 and in previous years.

Table 46 – Oranges: Area of groves by age group of plots, sector and region [2020 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.....	1,590	1,361	9,363	14,888	27,202
Bebedouro.....	4,625	4,230	12,263	31,691	52,809
Altinópolis.....	482	589	596	9,575	11,242
Subtotal.....	**6,697**	**6,180**	**22,222**	**56,154**	**91,253**
Northwest					
Votuporanga.....	1,942	1,379	6,276	7,389	16,986
S. J. Rio Preto.....	3,056	3,053	7,695	10,532	24,336
Subtotal.....	**4,998**	**4,432**	**13,971**	**17,921**	**41,322**
Central					
Matão.....	2,064	4,270	12,166	19,007	37,507
Duartina.....	4,774	6,082	10,829	32,486	54,171
Brotas.....	851	997	3,186	13,461	18,495
Subtotal.....	**7,689**	**11,349**	**26,181**	**64,954**	**110,173**
South					
Porto Ferreira.....	3,349	4,228	8,261	25,085	40,923
Limeira.....	2,316	3,322	7,430	23,904	36,972
Subtotal.....	**5,665**	**7,550**	**15,691**	**48,989**	**77,895**
Southwest					
Avaré.....	3,026	1,627	5,609	44,275	54,537
Itapetininga.....	3,152	3,045	4,116	10,178	20,491
Subtotal.....	**6,178**	**4,672**	**9,725**	**54,453**	**75,028**
Total.....	**31,227**	**34,183**	**87,790**	**242,471**	**395,671**
Percentage.....	**7.89**	**8.64**	**22.19**	**61.28**	**100.00**

[1] Area of young orange groves.

Table 47 – Oranges: Trees by age group, age group of plot, sector and region [2020 inventory]

Sector and region	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)
North											
Triâng.Mineiro...	792.28	5.39	743.09	7.03	46.89	5,187.18	3.02	55.19	116.70	5,906.26	12,863.03
Bebedouro.....	2,775.99	36.91	2,354.86	103.52	209.61	6,822.90	226.68	404.85	905.56	11,767.82	25,608.70
Altinópolis.....	402.74	10.15	389.55	7.72	38.81	310.64	75.34	198.74	356.77	3,973.51	5,763.97
Subtotal.....	**3,971.01**	**52.45**	**3,487.50**	**118.27**	**295.31**	**12,320.72**	**305.04**	**658.78**	**1,379.03**	**21,647.59**	**44,235.70**
Northwest											
Votuporanga.....	840.34	6.52	648.50	18.43	68.07	2,915.21	18.03	16.58	35.82	2,963.98	7,531.48
S J Rio Preto.....	2,101.27	37.50	1,941.80	47.97	71.15	3,749.69	14.58	52.04	102.15	4,222.97	12,341.12
Subtotal.....	**2,941.61**	**44.02**	**2,590.30**	**66.40**	**139.22**	**6,664.90**	**32.61**	**68.62**	**137.97**	**7,186.95**	**19,872.60**
Central											
Matão.....	1,357.05	58.34	3,379.53	203.24	279.75	6,627.62	136.81	283.32	455.09	6,323.94	19,104.69
Duartina.....	2,806.12	79.97	3,688.65	323.81	359.17	5,818.90	143.71	506.34	857.70	13,025.43	27,609.80
Brotas.....	470.18	34.26	569.75	48.23	122.94	1,754.92	58.92	214.47	695.94	4,595.79	8,565.40
Subtotal.....	**4,633.35**	**172.57**	**7,637.93**	**575.28**	**761.86**	**14,201.44**	**339.44**	**1,004.13**	**2,008.73**	**23,945.16**	**55,279.89**
South											
Porto Ferreira.....	2,102.43	131.87	2,698.43	244.33	228.06	4,693.84	357.68	359.31	900.30	8,554.91	20,271.16
Limeira.....	1,437.89	179.51	1,793.19	250.38	253.49	3,830.02	172.77	361.11	636.18	8,956.64	17,871.18
Subtotal.....	**3,540.32**	**311.38**	**4,491.62**	**494.71**	**481.55**	**8,523.86**	**530.45**	**720.42**	**1,536.48**	**17,511.55**	**38,142.34**
Southwest											
Avaré.....	2,033.19	39.25	1,056.90	130.66	131.05	3,384.67	505.51	448.96	729.13	19,225.63	27,684.95
Itapetininga.....	2,402.93	50.34	2,379.68	40.87	31.20	2,447.50	135.05	21.41	48.84	4,946.64	12,504.46
Subtotal.....	**4,436.12**	**89.59**	**3,436.58**	**171.53**	**162.25**	**5,832.17**	**640.56**	**470.37**	**777.97**	**24,172.27**	**40,189.41**
Total.....	**19,522.41**	**670.01**	**21,643.93**	**1,426.19**	**1,840.19**	**47,543.09**	**1,848.10**	**2,922.32**	**5,840.18**	**94,463.52**	**197,719.94**
Percentage.....	**9.87**	**0.34**	**10.95**	**0.72**	**0.93**	**24.05**	**0.93**	**1.48**	**2.95**	**47.78**	**100.00**

Table 48 – Oranges: Area of groves of early varieties by sector and region [2020 inventory]

Sector and region	Early varieties						
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Total
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
North							
Triâng.Mineiro.....	4,661	208	265	362	-	6	5,502
Bebedouro.....	8,685	1,399	882	3,703	2	213	14,884
Altinópolis.....	1,534	41	244	216	-	17	2,052
Subtotal.....	**14,880**	**1,648**	**1,391**	**4,281**	**2**	**236**	**22,438**
Northwest							
Votuporanga.....	737	53	190	347	-	69	1,396
S. J. Rio Preto.....	3,910	136	833	3,396	-	241	8,516
Subtotal.....	**4,647**	**189**	**1,023**	**3,743**	**-**	**310**	**9,912**
Central							
Matão.....	5,248	107	616	3,020	-	544	9,535
Duartina.....	6,276	279	1,273	2,261	50	98	10,237
Brotas.....	1,858	147	85	358	-	157	2,605
Subtotal.....	**13,382**	**533**	**1,974**	**5,639**	**50**	**799**	**22,377**
South							
Porto Ferreira.....	3,277	1,156	967	661	23	11	6,095
Limeira.....	3,986	1,501	391	316	45	2	6,241
Subtotal.....	**7,263**	**2,657**	**1,358**	**977**	**68**	**13**	**12,336**
Southwest							
Avaré.....	6,871	934	1,625	1,724	23	88	11,265
Itapetininga.....	1,618	212	690	709	2	772	4,003
Subtotal.....	**8,489**	**1,146**	**2,315**	**2,433**	**25**	**860**	**15,268**
Total.....	**48,661**	**6,173**	**8,061**	**17,073**	**145**	**2,218**	**82,331**
Percentage.....	**59.10**	**7.50**	**9.79**	**20.74**	**0.18**	**2.69**	**100.00**

Table 49 – Oranges: Trees of early varieties by sector and region [2020 inventory]

Sector and region	Early varieties						
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	Total
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)	(1,000 trees)
North							
Triâng.Mineiro.....	1,938.06	98.33	148.00	199.94	-	2.42	2,386.75
Bebedouro.....	3,689.83	588.84	494.83	1,901.87	0.88	105.54	6,781.79
Altinópolis.....	767.99	19.53	143.31	125.01	-	12.23	1,068.07
Subtotal.....	**6,395.88**	**706.70**	**786.14**	**2,226.82**	**0.88**	**120.19**	**10,236.61**
Northwest							
Votuporanga.....	352.30	22.99	109.25	152.63	-	41.39	678.56
S. J. Rio Preto.....	1,828.26	48.57	361.74	1,859.08	-	148.08	4,245.73
Subtotal.....	**2,180.56**	**71.56**	**470.99**	**2,011.71**	**-**	**189.47**	**4,924.29**
Central							
Matão.....	2,696.85	42.70	327.87	1,343.19	-	315.36	4,725.97
Duartina.....	2,892.58	126.53	728.78	1,200.87	29.72	51.82	5,030.30
Brotas.....	822.85	60.63	37.93	159.88	-	96.82	1,178.11
Subtotal.....	**6,412.28**	**229.86**	**1,094.58**	**2,703.94**	**29.72**	**464.00**	**10,934.38**
South							
Porto Ferreira.....	1,587.64	630.27	560.72	270.37	9.98	4.20	3,063.18
Limeira.....	1,830.69	702.55	205.91	149.31	16.73	1.01	2,906.20
Subtotal.....	**3,418.33**	**1,332.82**	**766.63**	**419.68**	**26.71**	**5.21**	**5,969.38**
Southwest							
Avaré.....	3,240.18	452.11	768.93	819.25	8.10	38.05	5,326.62
Itapetininga.....	984.51	110.81	403.98	570.10	1.06	566.14	2,636.60
Subtotal.....	**4,224.69**	**562.92**	**1,172.91**	**1,389.35**	**9.16**	**604.19**	**7,963.22**
Total.....	**22,631.74**	**2,903.86**	**4,291.25**	**8,751.50**	**66.47**	**1,383.06**	**40,027.88**
Percentage.....	**56.54**	**7.25**	**10.72**	**21.86**	**0.17**	**3.46**	**100.00**

Table 50 – Oranges: Area of groves of mid-season and late varieties by sector and region [2020 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.....	8,642	9,050	329	3,679	21,700
Bebedouro.....	14,282	16,083	2,113	5,447	37,925
Altinópolis.....	3,732	4,325	395	738	9,190
Subtotal.....	**26,656**	**29,458**	**2,837**	**9,864**	**68,815**
Northwest					
Votuporanga.....	12,751	1,544	496	799	15,590
S. J. Rio Preto.....	5,373	5,254	1,501	3,692	15,820
Subtotal.....	**18,124**	**6,798**	**1,997**	**4,491**	**31,410**
Central					
Matão.....	13,470	9,808	1,315	3,379	27,972
Duartina.....	21,103	14,122	2,478	6,231	43,934
Brotas.....	4,961	8,408	785	1,736	15,890
Subtotal.....	**39,534**	**32,338**	**4,578**	**11,346**	**87,796**
South					
Porto Ferreira.....	14,963	12,816	2,267	4,782	34,828
Limeira.....	14,322	11,192	2,376	2,841	30,731
Subtotal.....	**29,285**	**24,008**	**4,643**	**7,623**	**65,559**
Southwest					
Avaré.....	14,929	18,197	1,457	8,689	43,272
Itapetininga.....	6,227	5,180	840	4,241	16,488
Subtotal.....	**21,156**	**23,377**	**2,297**	**12,930**	**59,760**
Total.....	**134,755**	**115,979**	**16,352**	**46,254**	**313,340**
Percentage.....	**43.01**	**37.01**	**5.22**	**14.76**	**100.00**

Table 51 – Oranges: Trees of mid-season and late varieties by sector and region [2020 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.....	4,605.01	4,134.32	186.73	1,550.22	10,476.28
Bebedouro.....	7,938.43	7,289.00	1,071.28	2,528.20	18,826.91
Altinópolis.....	2,040.86	2,082.74	203.80	368.50	4,695.90
Subtotal.....	**14,584.30**	**13,506.06**	**1,461.81**	**4,446.92**	**33,999.09**
Northwest					
Votuporanga.....	5,524.93	718.13	251.23	358.63	6,852.92
S. J. Rio Preto.....	2,785.69	2,573.37	765.93	1,970.40	8,095.39
Subtotal.....	**8,310.62**	**3,291.50**	**1,017.16**	**2,329.03**	**14,948.31**
Central					
Matão.....	7,456.30	4,562.45	736.51	1,623.46	14,378.72
Duartina.....	11,274.42	6,990.40	1,403.64	2,911.04	22,579.50
Brotas.....	2,401.17	3,781.36	418.00	786.76	7,387.29
Subtotal.....	**21,131.89**	**15,334.21**	**2,558.15**	**5,321.26**	**44,345.51**
South					
Porto Ferreira.....	7,933.43	5,791.07	1,204.97	2,278.51	17,207.98
Limeira.....	7,254.06	5,072.12	1,192.30	1,446.50	14,964.98
Subtotal.....	**15,187.49**	**10,863.19**	**2,397.27**	**3,725.01**	**32,172.96**
Southwest					
Avaré.....	7,977.72	9,044.91	859.33	4,476.37	22,358.33
Itapetininga.....	4,080.16	2,966.52	496.75	2,324.43	9,867.86
Subtotal.....	**12,057.88**	**12,011.43**	**1,356.08**	**6,800.80**	**32,226.19**
Total.....	**71,272.18**	**55,006.39**	**8,790.47**	**22,623.02**	**157,692.06**
Percentage.....	**45.20**	**34.88**	**5.57**	**14.35**	**100.00**

Table 52 – Oranges: Area of groves by age group of plots, region and variety – North Sector [2020 inventory]

Sector 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.....	45	14	448	4,154	4,661
Westin.....	-	-	42	166	208
Rubi.....	13	13	239	-	265
V.Americana[3].....	75	9	57	221	362
Seleta.....	-	-	-	-	-
Pineapple.....	2	-	4	-	6
Pera Rio	1,176	1,103	4,397	1,966	8,642
Valencia.....	192	113	3,489	5,256	9,050
V.Folha Murcha[4].	9	12	123	185	329
Natal.....	78	97	564	2,940	3,679
Subtotal.....	**1,590**	**1,361**	**9,363**	**14,888**	**27,202**
Percentage.....	**5.85**	**5.00**	**34.42**	**54.73**	**29.81**
BEB[5]					
Hamlin.....	410	177	833	7,265	8,685
Westin.....	141	271	75	912	1,399
Rubi.....	11	5	652	214	882
V.Americana[3].....	343	112	853	2,395	3,703
Seleta.....	-	2	-	-	2
Pineapple.....	5	10	71	127	213
Pera Rio	1,762	1,946	5,141	5,433	14,282
Valencia.....	1,326	1,085	3,163	10,509	16,083
V.Folha Murcha[4].	31	116	665	1,301	2,113
Natal.....	596	506	810	3,535	5,447
Subtotal.....	**4,625**	**4,230**	**12,263**	**31,691**	**52,809**
Percentage.....	**8.76**	**8.01**	**23.22**	**60.01**	**57.87**
ALT[7]					
Hamlin.....	43	8	34	1,449	1,534
Westin.....	-	-	1	40	41
Rubi.....	94	23	46	81	244
V.Americana[3].....	16	-	48	152	216
Seleta.....	-	-	-	-	-
Pineapple.....	-	-	17	-	17
Pera Rio	220	355	174	2,983	3,732
Valencia.....	59	48	114	4,104	4,325
V.Folha Murcha[4].	7	25	49	314	395
Natal.....	43	130	113	452	738
Subtotal.....	**482**	**589**	**596**	**9,575**	**11,242**
Percentage.....	**4.29**	**5.24**	**5.30**	**85.17**	**12.32**
Total.....	**6,697**	**6,180**	**22,222**	**56,154**	**91,253**

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 [2020 inventory]

Sector and region	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.....	21.25	0.11	10.08	0.50	5.84	266.23	-	22.38	38.73	1,572.94	1,938.06
Westin.....	-	-	-	-	0.19	22.54	-	2.08	2.61	70.91	98.33
Rubi.....	6.10	0.04	7.87	0.05	1.43	132.51	-	-	-	-	148.00
V.Americana[2].....	51.43	0.20	7.44	0.16	0.28	31.64	-	0.12	0.27	108.40	199.94
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	1.10	-	-	0.02	0.02	1.28	-	-	-	-	2.42
Pera Rio	567.48	3.81	599.91	3.88	26.24	2,522.19	0.63	2.07	29.64	849.16	4,605.01
Valencia.....	105.92	0.69	64.03	1.62	11.04	1,846.66	1.06	17.83	22.23	2,063.24	4,134.32
V.Folha Murcha[3]	5.60	0.19	8.32	0.07	0.24	72.59	0.02	0.20	0.50	99.00	186.73
Natal.....	33.40	0.35	45.44	0.73	1.61	291.54	1.31	10.51	22.72	1,142.61	1,550.22
Subtotal.....	**792.28**	**5.39**	**743.09**	**7.03**	**46.89**	**5,187.18**	**3.02**	**55.19**	**116.70**	**5,906.26**	**12,863.03**
Percentage.....	**6.16**	**0.04**	**5.78**	**0.05**	**0.36**	**40.33**	**0.02**	**0.43**	**0.91**	**45.92**	**29.08**
BEB[4]											
Hamlin.....	205.66	0.55	88.15	4.11	29.08	423.64	11.07	93.08	271.46	2,563.03	3,689.83
Westin.....	66.71	0.71	130.98	0.40	3.05	41.74	1.51	13.10	27.77	302.87	588.84
Rubi.....	5.59	0.03	3.68	3.47	26.47	363.18	1.04	3.30	7.10	80.97	494.83
V.Americana[3].....	253.76	1.61	60.59	20.35	5.59	427.35	53.32	43.92	67.19	968.19	1,901.87
Seleta.....	-	0.02	0.86	-	-	-	-	-	-	-	0.88
Pineapple.....	3.26	0.14	5.31	1.56	0.42	37.00	1.79	1.59	4.16	50.31	105.54
Pera Rio	1,054.50	27.21	1,136.47	50.82	80.31	3,073.26	49.03	69.81	130.59	2,266.43	7,938.43
Valencia.....	727.18	3.13	585.43	16.34	50.93	1,631.46	55.93	114.29	294.32	3,809.99	7,289.00
V.Folha Murcha[4]	19.54	0.34	64.85	2.69	8.20	371.65	10.67	15.50	22.23	555.61	1,071.28
Natal.....	439.79	3.17	278.54	3.78	5.56	453.62	42.32	50.26	80.74	1,170.42	2,528.20
Subtotal.....	**2,775.99**	**36.91**	**2,354.86**	**103.52**	**209.61**	**6,822.90**	**226.68**	**404.85**	**905.56**	**11,767.82**	**25,608.70**
Percentage.....	**10.84**	**0.14**	**9.20**	**0.40**	**0.82**	**26.64**	**0.89**	**1.58**	**3.54**	**45.95**	**57.89**
ALT[5]											
Hamlin.....	20.81	0.03	4.46	1.17	9.55	15.90	33.96	49.61	79.62	552.88	767.99
Westin.....	-	-	-	0.01	0.14	0.34	2.36	0.10	1.55	15.03	19.53
Rubi.....	45.40	0.29	17.44	0.66	8.90	22.58	5.19	1.12	3.80	37.93	143.31
V.Americana[3].....	11.13	-	-	0.12	3.40	26.20	0.43	1.31	7.66	74.76	125.01
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	-	-	-	0.15	1.16	10.92	-	-	-	-	12.23
Pera Rio	258.52	5.32	232.97	2.26	1.17	102.19	11.84	57.64	96.17	1,272.78	2,040.86
Valencia.....	36.51	1.39	32.97	1.43	3.90	61.50	21.05	78.50	124.46	1,721.03	2,082.74
V.Folha Murcha[4]	4.00	0.68	16.40	0.61	1.66	27.17	0.01	0.76	8.94	143.57	203.80
Natal.....	26.37	2.44	85.31	1.31	8.93	43.84	0.50	9.70	34.57	155.53	368.50
Subtotal.....	**402.74**	**10.15**	**389.55**	**7.72**	**38.81**	**310.64**	**75.34**	**198.74**	**356.77**	**3,973.51**	**5,763.97**
Percentage.....	**6.99**	**0.18**	**6.76**	**0.13**	**0.67**	**5.39**	**1.31**	**3.45**	**6.19**	**68.94**	**13.03**
Total.....	**3,971.01**	**52.45**	**3,487.50**	**118.27**	**295.31**	**12,320.72**	**305.04**	**658.78**	**1,379.03**	**21,647.59**	**44,235.70**

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 [2020 inventory]

Sector 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.....	33	-	198	506	737
Westin.....	-	-	9	44	53
Rubi.....	67	8	51	64	190
V.Americana[3].....	27	5	121	194	347
Seleta.....	-	-	-	-	-
Pineapple.....	-	-	3	66	69
Pera Rio	1,646	1,269	5,471	4,365	12,751
Valencia.....	105	3	248	1,188	1,544
V.Folha Murcha[4]	3	-	57	436	496
Natal.....	61	94	118	526	799
Subtotal.....	**1,942**	**1,379**	**6,276**	**7,389**	**16,986**
Percentage.....	**11.43**	**8.12**	**36.95**	**43.50**	**41.11**
SJO[5]					
Hamlin.....	324	208	1,392	1,986	3,910
Westin.....	-	3	18	115	136
Rubi.....	19	15	270	529	833
V.Americana[3].....	878	118	1,164	1,236	3,396
Seleta.....	-	-	-	-	-
Pineapple.....	96	2	20	123	241
Pera Rio	672	937	1,615	2,149	5,373
Valencia.....	355	558	2,518	1,823	5,254
V.Folha Murcha[5]	140	267	233	861	1,501
Natal.....	572	945	465	1,710	3,692
Subtotal.....	**3,056**	**3,053**	**7,695**	**10,532**	**24,336**
Percentage.....	**12.56**	**12.55**	**31.62**	**43.28**	**58.89**
Total.....	**4,998**	**4,432**	**13,971**	**17,921**	**41,322**

[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 [2020 inventory]

Sector 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.....	20.27	-	-	0.10	1.66	112.70	-	-	5.86	211.71	352.30
Westin.....	-	-	-	-	-	4.74	-	-	0.49	17.76	22.99
Rubi.....	41.35	0.01	3.87	-	0.02	21.45	-	-	1.14	41.41	109.25
V.Americana[2].....	17.00	0.03	1.59	1.79	17.57	41.56	-	-	1.31	71.78	152.63
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	-	-	-	-	0.70	0.69	-	-	0.72	39.28	41.39
Pera Rio	653.71	6.25	596.44	16.21	44.20	2,542.71	18.03	13.17	13.33	1,620.88	5,524.93
Valencia.....	63.80	-	1.35	0.33	2.98	120.47	-	1.79	3.70	523.71	718.13
V.Folha Murcha[3]	1.60	-	-	-	0.22	21.11	-	0.79	1.61	225.90	251.23
Natal.....	42.61	0.23	45.25	-	0.72	49.78	-	0.83	7.66	211.55	358.63
Subtotal.....	**840.34**	**6.52**	**648.50**	**18.43**	**68.07**	**2,915.21**	**18.03**	**16.58**	**35.82**	**2,963.98**	**7,531.48**
Percentage.....	**11.16**	**0.09**	**8.61**	**0.24**	**0.90**	**38.71**	**0.24**	**0.22**	**0.48**	**39.35**	**37.90**
SJO[4]											
Hamlin.....	233.41	0.03	159.71	7.79	12.10	615.03	0.46	5.89	10.49	783.35	1,828.26
Westin.....	-	0.01	1.46	0.19	0.23	8.13	0.03	0.32	0.55	37.65	48.57
Rubi.....	11.24	0.02	6.57	3.47	4.40	150.35	0.09	1.09	4.94	179.57	361.74
V.Americana[2].....	755.63	1.23	60.87	6.80	13.32	530.35	1.19	3.37	8.21	478.11	1,859.08
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	78.67	0.02	1.14	0.03	0.35	7.43	0.17	0.52	1.27	58.48	148.08
Pera Rio	391.47	11.03	515.81	10.11	20.17	848.17	7.30	25.06	29.69	926.88	2,785.69
Valencia.....	176.94	2.70	393.12	15.83	10.93	1,202.28	3.07	7.04	15.37	746.09	2,573.37
V.Folha Murcha[3]	58.08	0.08	146.56	1.95	1.36	117.43	1.83	4.13	8.97	425.54	765.93
Natal.....	395.83	22.38	656.56	1.80	8.29	270.52	0.44	4.62	22.66	587.30	1,970.40
Subtotal.....	**2,101.27**	**37.50**	**1,941.80**	**47.97**	**71.15**	**3,749.69**	**14.58**	**52.04**	**102.15**	**4,222.97**	**12,341.12**
Percentage.....	**17.03**	**0.30**	**15.73**	**0.39**	**0.58**	**30.38**	**0.12**	**0.42**	**0.83**	**34.22**	**62.10**
Total.....	**2,941.61**	**44.02**	**2,590.30**	**66.40**	**139.22**	**6,664.90**	**32.61**	**68.62**	**137.97**	**7,186.95**	**19,872.60**

[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 [2020 inventory]

Sector 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.....	123	687	1,207	3,231	5,248
Westin.....	5	-	42	60	107
Rubi.....	3	4	238	371	616
V.Americana[3].....	121	315	329	2,255	3,020
Seleta.....	-	-	-	-	-
Pineapple.....	-	31	513	-	544
Pera Rio	1,166	2,195	4,611	5,498	13,470
Valencia.....	437	527	3,735	5,109	9,808
V.Folha Murcha[4]..	27	20	821	447	1,315
Natal.....	182	491	670	2,036	3,379
Subtotal.....	**2,064**	**4,270**	**12,166**	**19,007**	**37,507**
Percentage.....	**5.50**	**11.38**	**32.44**	**50.68**	**34.04**
DUA[5]					
Hamlin.....	420	533	771	4,552	6,276
Westin.....	75	24	27	153	279
Rubi.....	152	273	439	409	1,273
V.Americana[3].....	188	431	623	1,019	2,261
Seleta.....	-	-	4	46	50
Pineapple.....	19	-	38	41	98
Pera Rio	1,855	2,800	4,537	11,911	21,103
Valencia.....	1,514	1,199	2,539	8,870	14,122
V.Folha Murcha[4]..	279	327	536	1,336	2,478
Natal.....	272	495	1,315	4,149	6,231
Subtotal.....	**4,774**	**6,082**	**10,829**	**32,486**	**54,171**
Percentage.....	**8.81**	**11.23**	**19.99**	**59.97**	**49.17**
BRO[6]					
Hamlin.....	87	12	270	1,489	1,858
Westin.....	4	15	20	108	147
Rubi.....	54	1	-	30	85
V.Americana[3].....	10	29	81	238	358
Seleta.....	-	-	-	-	-
Pineapple.....	-	-	152	5	157
Pera Rio	295	547	1,480	2,639	4,961
Valencia.....	140	131	818	7,319	8,408
V.Folha Murcha[4]..	145	69	155	416	785
Natal.....	116	193	210	1,217	1,736
Subtotal.....	**851**	**997**	**3,186**	**13,461**	**18,495**
Percentage.....	**4.60**	**5.39**	**17.23**	**72.78**	**16.79**
Total.....	**7,689**	**11,349**	**26,181**	**64,954**	**110,173**

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 [2020 inventory]

Sector 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.....	86.96	9.54	568.78	18.98	22.48	637.29	30.15	54.18	89.89	1,178.60	2,696.85
Westin.....	2.78	-	-	0.52	0.59	16.94	0.73	1.13	1.42	18.59	42.70
Rubi.....	2.00	0.06	2.04	4.28	4.44	130.00	0.20	4.92	0.73	179.20	327.87
V.Americana[2].....	82.18	3.45	296.88	6.49	19.60	137.21	16.35	15.17	32.51	733.35	1,343.19
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	-	-	32.35	0.21	4.53	278.27	-	-	-	-	315.36
Pera Rio	743.83	37.31	1,639.32	94.34	119.04	2,585.07	74.04	51.17	80.36	2,031.82	7,456.30
Valencia.....	261.72	2.64	379.30	55.13	76.04	2,014.25	11.85	85.93	163.52	1,512.07	4,562.45
V.Folha Murcha[3]...	16.05	0.17	13.72	4.51	10.31	495.63	1.31	10.20	16.93	167.68	736.51
Natal.....	161.53	5.17	447.14	18.78	22.72	332.96	2.18	60.62	69.73	502.63	1,623.46
Subtotal.....	**1,357.05**	**58.34**	**3,379.53**	**203.24**	**279.75**	**6,627.62**	**136.81**	**283.32**	**455.09**	**6,323.94**	**19,104.69**
Percentage.....	**7.10**	**0.31**	**17.69**	**1.06**	**1.46**	**34.69**	**0.72**	**1.48**	**2.38**	**33.10**	**34.56**
DUA[4]											
Hamlin.....	199.61	2.22	341.74	8.71	25.23	376.15	57.97	123.21	165.82	1,591.92	2,892.58
Westin.....	43.96	0.06	11.17	0.25	0.60	10.56	0.94	2.19	3.72	53.08	126.53
Rubi.....	57.77	1.09	211.07	6.26	13.92	226.59	3.33	7.75	13.15	187.85	728.78
V.Americana[2].....	118.29	9.60	260.35	12.61	28.63	295.57	5.70	11.28	38.90	419.94	1,200.87
Seleta.....	0.04	-	-	0.08	0.23	2.40	0.01	0.18	2.14	24.64	29.72
Pineapple.....	11.86	-	-	0.76	2.05	21.82	-	0.10	1.21	14.02	51.82
Pera Rio	1,090.66	54.01	1,636.70	172.34	176.69	2,509.14	40.18	155.27	223.63	5,215.80	11,274.42
Valencia.....	902.29	9.16	747.22	72.95	68.98	1,382.56	28.27	139.98	285.22	3,353.77	6,990.40
V.Folha Murcha[4]....	166.16	2.20	189.71	18.04	13.52	320.29	2.01	15.00	34.84	641.87	1,403.64
Natal.....	215.48	1.63	290.69	31.81	29.32	673.82	5.30	51.38	89.07	1,522.54	2,911.04
Subtotal.....	**2,806.12**	**79.97**	**3,688.65**	**323.81**	**359.17**	**5,818.90**	**143.71**	**506.34**	**857.70**	**13,025.43**	**27,609.80**
Percentage.....	**10.16**	**0.29**	**13.36**	**1.17**	**1.30**	**21.08**	**0.52**	**1.83**	**3.11**	**47.18**	**49.95**
BRO[5]											
Hamlin.....	43.40	0.06	6.70	2.08	17.13	131.75	2.98	14.17	83.32	521.26	822.85
Westin.....	2.65	0.06	7.82	0.11	0.15	10.20	-	0.21	3.98	35.45	60.63
Rubi.....	25.88	0.01	0.63	-	-	-	-	0.05	1.14	10.22	37.93
V.Americana[2].....	5.90	0.78	15.60	0.53	13.74	35.57	0.04	0.58	10.44	76.70	159.88
Seleta.....	-	-	-	-	-	-	-	-	-	-	-
Pineapple.....	-	-	-	0.92	2.08	92.01	-	-	0.11	1.70	96.82
Pera Rio	165.80	8.93	296.64	7.09	36.22	827.80	3.62	40.51	106.65	907.91	2,401.17
Valencia.....	75.55	13.42	78.42	19.51	29.13	490.81	42.65	102.06	406.24	2,523.57	3,781.36
V.Folha Murcha[4]....	80.73	7.83	45.75	5.92	5.33	91.46	2.67	5.54	23.78	148.99	418.00
Natal.....	70.27	3.17	118.19	12.07	19.16	75.32	6.96	51.35	60.28	369.99	786.76
Subtotal.....	**470.18**	**34.26**	**569.75**	**48.23**	**122.94**	**1,754.92**	**58.92**	**214.47**	**695.94**	**4,595.79**	**8,565.40**
Percentage.....	**5.49**	**0.40**	**6.65**	**0.56**	**1.44**	**20.49**	**0.69**	**2.50**	**8.13**	**53.66**	**15.49**
Total.....	**4,633.35**	**172.57**	**7,637.93**	**575.28**	**761.86**	**14,201.44**	**339.44**	**1,004.13**	**2,008.73**	**23,945.16**	**55,279.89**

[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 [2020 inventory]

Sector 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.....	366	113	501	2,297	3,277
Westin.....	132	70	294	660	1,156
Rubi.....	66	306	307	288	967
V.Americana[3].....	73	1	105	482	661
Seleta.....	-	-	11	12	23
Pineapple.....	3	-	8	-	11
Pera Rio	1,255	2,098	3,540	8,070	14,963
Valencia.....	716	616	2,061	9,423	12,816
V.Folha Murcha[4].....	249	289	512	1,217	2,267
Natal.....	489	735	922	2,636	4,782
Subtotal.....	**3,349**	**4,228**	**8,261**	**25,085**	**40,923**
Percentage.....	**8%18**	**10%33**	**20%19**	**61%30**	**52%54**
LIM[5]					
Hamlin.....	236	185	412	3,153	3,986
Westin.....	46	108	410	937	1,501
Rubi.....	24	138	136	93	391
V.Americana[3].....	2	6	57	251	316
Seleta.....	-	-	4	41	45
Pineapple.....	-	-	-	2	2
Pera Rio	1,137	1,683	4,192	7,310	14,322
Valencia.....	416	633	1,061	9,082	11,192
V.Folha Murcha[4].....	249	270	398	1,459	2,376
Natal.....	206	299	760	1,576	2,841
Subtotal.....	**2,316**	**3,322**	**7,430**	**23,904**	**36,972**
Percentage.....	**6%26**	**8%99**	**20%10**	**64%65**	**47%46**
Total.....	**5,665**	**7,550**	**15,691**	**48,989**	**77,895**

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 [2020 inventory]

Sector 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.....	208.72	0.61	80.36	20.23	8.92	262.59	124.58	59.56	134.17	687.90	1,587.64
Westin.....	90.24	0.40	51.78	12.91	5.70	167.55	45.10	17.33	29.00	210.26	630.27
Rubi.....	44.02	1.28	197.43	10.92	4.81	177.64	11.29	8.06	37.17	68.10	560.72
V.Americana[2].....	45.79	0.04	1.05	-	0.24	40.76	21.06	10.77	29.26	121.40	270.37
Seleta.....	-	-	-	-	0.02	3.36	0.49	0.26	-	5.85	9.98
Pineapple.....	1.41	-	-	-	0.20	2.59	-	-	-	-	4.20
Pera Rio	826.63	95.06	1,319.44	101.61	92.29	2,020.36	94.35	128.82	249.26	3,005.61	7,933.43
Valencia.....	439.21	9.32	390.65	53.84	70.44	1,171.56	40.19	98.45	300.95	3,216.46	5,791.07
V.Folha Murcha[3]...	154.30	4.84	183.66	17.97	19.11	317.62	6.46	15.05	39.66	446.30	1,204.97
Natal.....	292.11	20.32	474.06	26.85	26.33	529.81	14.16	21.01	80.83	793.03	2,278.51
Subtotal.....	**2,102.43**	**131.87**	**2,698.43**	**244.33**	**228.06**	**4,693.84**	**357.68**	**359.31**	**900.30**	**8,554.91**	**20,271.16**
Percentage.....	**10.37**	**0.65**	**13.31**	**1.21**	**1.13**	**23.16**	**1.76**	**1.77**	**4.44**	**42.20**	**53.15**
LIM[4]											
Hamlin.....	127.18	2.07	83.19	10.06	21.18	215.68	2.55	73.30	108.71	1,186.77	1,830.69
Westin.....	27.26	3.10	50.69	9.59	20.20	205.61	0.79	13.76	24.84	346.71	702.55
Rubi.....	12.33	1.00	60.78	3.80	8.00	81.35	0.10	1.56	2.81	34.18	205.91
V.Americana[2].....	1.00	0.13	3.29	1.29	5.52	27.12	0.61	2.23	2.45	105.67	149.31
Seleta.....	0.21	-	-	0.10	0.41	2.03	0.07	0.01	1.55	12.35	16.73
Pineapple.....	-	-	-	-	-	-	0.01	-	0.03	0.97	1.01
Pera Rio	737.07	136.98	944.94	162.60	100.16	2,130.42	56.92	116.02	111.40	2,757.55	7,254.06
Valencia.....	252.37	19.60	322.55	25.52	38.74	566.11	63.84	123.81	286.49	3,373.09	5,072.12
V.Folha Murcha[3]...	150.01	14.06	162.04	9.70	15.64	208.58	13.42	17.55	40.42	560.88	1,192.30
Natal.....	130.46	2.57	165.71	27.72	43.64	393.12	34.46	12.87	57.48	578.47	1,446.50
Subtotal.....	**1,437.89**	**179.51**	**1,793.19**	**250.38**	**253.49**	**3,830.02**	**172.77**	**361.11**	**636.18**	**8,956.64**	**17,871.18**
Percentage.....	**8.05**	**1.00**	**10.03**	**1.40**	**1.42**	**21.43**	**0.97**	**2.02**	**3.56**	**50.12**	**46.85**
Total.....	**3,540.32**	**311.38**	**4,491.62**	**494.71**	**481.55**	**8,523.86**	**530.45**	**720.42**	**1,536.48**	**17,511.55**	**38,142.34**

[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 [2020 inventory]

Sector 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.....	341	160	248	6,122	6,871
Westin.....	103	5	131	695	934
Rubi.....	102	84	187	1,252	1,625
V.Americana[3].....	200	145	172	1,207	1,724
Seleta.....	-	-	-	23	23
Pineapple.....	1	-	-	87	88
Pera Rio	952	576	2,051	11,350	14,929
Valencia.....	755	413	1,406	15,623	18,197
V.Folha Murcha[4]..	133	106	492	726	1,457
Natal.....	439	138	922	7,190	8,689
Subtotal.....	**3,026**	**1,627**	**5,609**	**44,275**	**54,537**
Percentage.....	**5.55**	**2.98**	**10.28**	**81.18**	**72.69**
ITG[5]					
Hamlin.....	219	219	214	966	1,618
Westin.....	13	27	51	121	212
Rubi.....	160	246	120	164	690
V.Americana[3].....	388	166	102	53	709
Seleta.....	-	-	-	2	2
Pineapple.....	245	131	396	-	772
Pera Rio	1,169	1,317	1,567	2,174	6,227
Valencia.....	524	476	940	3,240	5,180
V.Folha Murcha[4]..	61	58	285	436	840
Natal.....	373	405	441	3,022	4,241
Subtotal.....	**3,152**	**3,045**	**4,116**	**10,178**	**20,491**
Percentage.....	**15.38**	**14.86**	**20.09**	**49.67**	**27.31**
Total.....	**6,178**	**4,672**	**9,725**	**54,453**	**75,028**

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 [2020 inventory]

Sector 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.....	217.79	2.97	85.45	0.62	3.52	127.92	107.02	133.49	173.75	2,387.65	3,240.18
Westin.....	67.83	0.13	3.13	0.22	1.12	71.02	11.72	8.96	3.51	284.47	452.11
Rubi.....	61.50	1.78	51.02	0.51	2.61	102.03	20.34	13.25	5.47	510.42	768.93
V.Americana[2].....	137.32	3.89	76.97	0.09	0.16	101.05	1.79	7.74	11.27	478.97	819.25
Seleta.....	0.08	-	-	-	-	-	0.07	0.05	0.11	7.79	8.10
Pineapple.....	0.58	-	-	-	-	-	0.28	1.91	3.77	31.51	38.05
Pera Rio	686.56	4.92	383.38	43.50	32.28	1,361.31	145.83	66.60	201.57	5,051.77	7,977.72
Valencia.....	477.18	13.49	294.69	25.47	12.51	855.12	135.37	166.90	235.01	6,829.17	9,044.91
V.Folha Murcha[3]...	80.62	3.35	69.83	10.20	4.86	302.66	10.74	4.80	8.77	363.50	859.33
Natal.....	303.73	8.72	92.43	50.05	73.99	463.56	72.35	45.26	85.90	3,280.38	4,476.37
Subtotal.....	**2,033.19**	**39.25**	**1,056.90**	**130.66**	**131.05**	**3,384.67**	**505.51**	**448.96**	**729.13**	**19,225.63**	**27,684.95**
Percentage.....	**7.34**	**0.14**	**3.82**	**0.47**	**0.47**	**12.23**	**1.83**	**1.62**	**2.63**	**69.44**	**68.89**
ITG[4]											
Hamlin.....	170.51	1.14	219.22	2.55	1.16	126.46	23.40	2.25	3.61	434.21	984.51
Westin.....	6.00	0.28	17.23	0.69	0.31	25.71	5.93	0.56	0.91	53.19	110.81
Rubi.....	82.83	1.15	164.32	0.89	0.86	71.67	6.62	0.64	1.02	73.98	403.98
V.Americana[2].....	343.53	4.60	129.44	0.63	1.42	61.04	6.99	0.48	0.24	21.73	570.10
Seleta.....	-	-	-	-	-	-	0.25	0.02	0.01	0.78	1.06
Pineapple.....	197.59	-	121.27	-	0.95	246.33	-	-	-	-	566.14
Pera Rio	936.20	18.49	1,019.52	11.67	13.10	976.45	52.61	3.01	13.40	1,035.71	4,080.16
Valencia.....	353.78	15.51	359.19	3.35	2.67	562.51	19.84	7.15	22.83	1,619.69	2,966.52
V.Folha Murcha[3]...	51.40	2.91	35.46	2.36	1.06	167.47	4.94	1.23	1.31	228.61	496.75
Natal.....	261.09	6.26	314.03	18.73	9.67	209.86	14.47	6.07	5.51	1,478.74	2,324.43
Subtotal.....	**2,402.93**	**50.34**	**2,379.68**	**40.87**	**31.20**	**2,447.50**	**135.05**	**21.41**	**48.84**	**4,946.64**	**12,504.46**
Percentage.....	**19.22**	**0.40**	**19.03**	**0.33**	**0.25**	**19.57**	**1.08**	**0.17**	**0.39**	**39.56**	**31.11**
Total.....	**4,436.12**	**89.59**	**3,436.58**	**171.53**	**162.25**	**5,832.17**	**640.56**	**470.37**	**777.97**	**24,172.27**	**40,189.41**

[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 [2020 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.....	14,880	4,647	13,382	7,263	8,489	48,661	59.10	12.30
Westin.....	1,648	189	533	2,657	1,146	6,173	7.50	1.56
Rubi.....	1,391	1,023	1,974	1,358	2,315	8,061	9.79	2.04
Valencia Americana.....	4,281	3,743	5,639	977	2,433	17,073	20.74	4.31
Seleta.....	2	-	50	68	25	145	0.18	0.04
Pineapple.....	236	310	799	13	860	2,218	2.69	0.56
Subtotal.....	**22,438**	**9,912**	**22,377**	**12,336**	**15,268**	**82,331**	**100.00**	**20.81**
Mid-season								
Pera Rio	26,656	18,124	39,534	29,285	21,156	134,755	100.00	34.06
Subtotal.....	**26,656**	**18,124**	**39,534**	**29,285**	**21,156**	**134,755**	**100.00**	**34.06**
Late								
Valencia.....	29,458	6,798	32,338	24,008	23,377	115,979	64.94	29.31
V.Folha Murcha[1].....	2,837	1,997	4,578	4,643	2,297	16,352	9.16	4.13
Natal.....	9,864	4,491	11,346	7,623	12,930	46,254	25.90	11.69
Subtotal.....	**42,159**	**13,286**	**48,262**	**36,274**	**38,604**	**178,585**	**100.00**	**45.13**
Total.....	**91,253**	**41,322**	**110,173**	**77,895**	**75,028**	**395,671**	**100.00**	**100.00**
Percentage.....	**23.06**	**10.44**	**27.84**	**19.69**	**18.96**	**100.00**	**(X)**	**(X)**

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

Table 63 – Oranges: Trees by sector and variety [2020 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.....	6,395.88	2,180.56	6,412.28	3,418.33	4,224.69	22,631.74	56.54	11.45
Westin.....	706.70	71.56	229.86	1,332.82	562.92	2,903.86	7.25	1.47
Rubi.....	786.14	470.99	1,094.58	766.63	1,172.91	4,291.25	10.72	2.17
Valencia Americana.....	2,226.82	2,011.71	2,703.94	419.68	1,389.35	8,751.50	21.86	4.43
Seleta.....	0.88	-	29.72	26.71	9.16	66.47	0.17	0.03
Pineapple.....	120.19	189.47	464.00	5.21	604.19	1,383.06	3.46	0.70
Subtotal.....	**10,236.61**	**4,924.29**	**10,934.38**	**5,969.38**	**7,963.22**	**40,027.88**	**100.00**	**20.24**
Mid-season								
Pera Rio	14,584.30	8,310.62	21,131.89	15,187.49	12,057.88	71,272.18	100.00	36.05
Subtotal.....	**14,584.30**	**8,310.62**	**21,131.89**	**15,187.49**	**12,057.88**	**71,272.18**	**100.00**	**36.05**
Late								
Valencia.....	13,506.06	3,291.50	15,334.21	10,863.19	12,011.43	55,006.39	63.65	27.82
V.Folha Murcha[1].....	1,461.81	1,017.16	2,558.15	2,397.27	1,356.08	8,790.47	10.17	4.45
Natal.....	4,446.92	2,329.03	5,321.26	3,725.01	6,800.80	22,623.02	26.18	11.44
Subtotal.....	**19,414.79**	**6,637.69**	**23,213.62**	**16,985.47**	**20,168.31**	**86,419.88**	**100.00**	**43.71**
Total.....	**44,235.70**	**19,872.60**	**55,279.89**	**38,142.34**	**40,189.41**	**197,719.94**	**100.00**	**100.00**
Percentage.....	**22.37**	**10.05**	**27.96**	**19.29**	**20.33**	**100.00**	**(X)**	**(X)**

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

Table 64 – Oranges: Area of groves by planting year [2019 and 2020 inventories and variation]

Planting year[1]	2019 inventory[2]	2020 inventory[2]	Variation[3]	
	(hectares)	(hectares)	(hectares)	(percentage)
1979 and previous years.....	1,616	1,531	-85	-5.26
1980.....	132	133	1	0.76
1981.....	139	149	10	7.19
1982.....	151	146	-5	-3.31
1983.....	652	566	-86	-13.19
1984.....	165	169	4	2.42
1985.....	877	547	-330	-37.63
1986.....	1,383	1,041	-342	-24.73
1987.....	1,061	810	-251	-23.66
1988.....	828	747	-81	-9.78
1989.....	1,670	1,570	-100	-5.99
1990.....	2,554	2,468	-86	-3.37
1991.....	2,163	1,941	-222	-10.26
1992.....	1,976	1,728	-248	-12.55
1993.....	2,778	1,863	-915	-32.94
1994.....	2,130	1,778	-352	-16.53
1995.....	2,752	2,605	-147	-5.34
1996.....	2,871	2,515	-356	-12.40
1997.....	4,657	4,492	-165	-3.54
1998.....	4,581	4,348	-233	-5.09
1999.....	6,113	5,764	-349	-5.71
2000.....	9,677	8,876	-801	-8.28
2001.....	9,968	8,784	-1,184	-11.88
2002.....	14,528	13,692	-836	-5.75
2003.....	19,395	18,250	-1,145	-5.90
2004.....	21,522	20,567	-955	-4.44
2005.....	28,424	27,010	-1,414	-4.97
2006.....	25,716	24,342	-1,374	-5.34
2007.....	34,193	32,262	-1,931	-5.65
2008.....	32,489	30,485	-2,004	-6.17
2009.....	23,620	21,292	-2,328	-9.86
2010.....	19,752	20,103	351	1.78
2011.....	18,474	18,821	347	1.88
2012.....	23,359	23,661	302	1.29
2013.....	16,420	16,679	259	1.58
2014.....	8,611	8,526	-85	-0.99
2015.....	11,742	11,487	-255	-2.17
2016.....	10,909	10,773	-136	-1.25
2017[4].....	(X)	11,923	-261	-2.14
Mature groves.....	**370,048**	**364,444**	**-5,604**	**-1.51**
2017.....	12,184	(X)	(X)	(X)
2018.....	13,532	13,592	60	0.44
2019.....	NA	17,635	(X)	(X)
Young groves.....	**25,716**	**31,227**	**5,511**	**21.43**
Total.....	**395,764**	**395,671**	**-93**	**-0.02**

NA – Non-available data, as 2019 plantings took place after the mapping for the 2018 inventory.
(X) Not applicable.

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

[3] Estimate of eradicated and abandoned groves from April 2019 to March 2020.

[4] Groves planted in 2017 belonged to the group of young groves in the 2019 inventory and moved to the group of mature groves in this 2020 inventory.

Table 65 – Oranges: Trees by planting year [2019 and 2020 inventories and variation]

Planting year[1]	2019 inventory[2]	2020 inventory[2]	Variation[3]	
	(1,000 trees)	(1,000 trees)	(1,000 trees)	(percentage)
1979 and previous years	360.75	350.61	-10.14	-2.81
1980	36.88	37.19	0.31	0.84
1981	38.04	42.99	4.95	13.01
1982	53.32	52.07	-1.25	-2.34
1983	184.15	163.16	-20.99	-11.40
1984	38.95	40.62	1.67	4.29
1985	216.35	147.69	-68.66	-31.74
1986	377.83	286.73	-91.10	-24.11
1987	305.2	254.89	-50.31	-16.48
1988	238.74	215.68	-23.06	-9.66
1989	489.64	477.62	-12.02	-2.45
1990	789.67	782.15	-7.52	-0.95
1991	654.05	587.31	-66.74	-10.20
1992	616.61	541.85	-74.76	-12.12
1993	819.88	566.94	-252.94	-30.85
1994	650.08	546.96	-103.12	-15.86
1995	1,012.23	970.01	-42.22	-4.17
1996	988.62	882.98	-105.64	-10.69
1997	1,544.02	1,475.80	-68.22	-4.42
1998	1,557.28	1,510.82	-46.46	-2.98
1999	1,983.32	1,903.59	-79.73	-4.02
2000	3,126.96	2,931.55	-195.41	-6.25
2001	3,471.13	3,014.66	-456.47	-13.15
2002	5,112.69	4,901.88	-210.81	-4.12
2003	6,918.22	6,503.74	-414.48	-5.99
2004	7,910.45	7,399.14	-511.31	-6.46
2005	11,022.10	10,515.64	-506.46	-4.59
2006	10,197.87	9,733.94	-463.93	-4.55
2007	14,364.49	13,799.19	-565.30	-3.94
2008	15,092.91	14,132.59	-960.32	-6.36
2009	11,420.30	9,693.53	-1,726.77	-15.12
2010	10,108.95	10,296.26	187.31	1.85
2011	9,945.54	10,035.71	90.17	0.91
2012	12,593.92	12,621.82	27.90	0.22
2013	9,360.10	9,483.02	122.92	1.31
2014	5,431.24	5,106.28	-324.96	-5.98
2015	7,303.94	7,107.69	-196.25	-2.69
2016	6,901.88	6,691.68	-210.20	-3.05
2017[4]	(X)	7,844.56	-340.46	-4.16
6 to 10 years old resets[5]	5,464.69	5,840.18	375.49	6.87
3 to 5 years old resets[5]	5,270.34	4,762.51	-507.83	-9.64
Bearing trees	**173,973.33**	**174,253.23**	**279.90**	**0.16**
0 a 2 years old resets[5]	4,408.04	3,944.30	-463.74	-10.52
2017	8,185.02	(X)	(X)	(X)
2018	8,701.00	8,656.63	-44.37	-0.51
2019	NA	10,865.78	(X)	(X)
Non-bearing trees	**21,294.06**	**23,466.71**	**2,172.65**	**10.20**
Total	**195,267.39**	**197,719.94**	**2,452.55**	**1.26**

NA – Non-available data, as 2019 plantings took place after the mapping for the 2018 inventory.
(X) Not applicable.

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 Snapshot of groves in March of the year the inventory is published.
3 Estimate of eradicated and abandoned groves from April 2019 to March 2020.
4 Groves planted in 2017 belonged to the group of young groves in the 2019 inventory and moved to the group of mature groves in this 2020 inventory.
5 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 [2020 inventory]

Planting year[1]	Sector					Total
	North	Northwest	Central	South	Southwest	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
1979 and previous	285	4	95	1,117	30	1,531
1980	47	10	-	76	-	133
1981	61	-	-	43	45	149
1982	22	-	-	124	-	146
1983	197	-	247	122	-	566
1984	8	5	2	136	18	169
1985	40	50	189	251	17	547
1986	58	300	82	558	43	1,041
1987	82	30	-	460	238	810
1988	31	63	338	278	37	747
1989	65	205	402	570	328	1,570
1990	291	37	893	867	380	2,468
1991	116	27	415	979	404	1,941
1992	357	28	143	524	676	1,728
1993	218	60	156	431	998	1,863
1994	151	99	395	408	725	1,778
1995	401	82	627	898	597	2,605
1996	298	51	750	797	619	2,515
1997	672	22	1,469	987	1,342	4,492
1998	821	107	1,510	1,355	555	4,348
1999	2,130	68	1,294	1,388	884	5,764
2000	3,077	178	2,289	2,386	946	8,876
2001	2,357	969	1,811	2,652	995	8,784
2002	2,025	605	4,930	3,565	2,567	13,692
2003	4,565	582	5,255	3,279	4,569	18,250
2004	5,385	1,525	5,142	3,631	4,884	20,567
2005	6,033	1,160	8,304	4,708	6,805	27,010
2006	6,056	1,955	5,660	4,011	6,660	24,342
2007	7,983	2,381	9,637	5,083	7,178	32,262
2008	6,499	4,431	7,382	3,956	8,217	30,485
2009	5,823	2,887	5,537	3,349	3,696	21,292
2010	5,182	3,095	4,723	4,610	2,493	20,103
2011	4,307	4,044	4,785	3,439	2,246	18,821
2012	6,099	4,184	6,745	4,213	2,420	23,661
2013	4,880	1,711	6,435	2,123	1,530	16,679
2014	1,754	937	3,493	1,306	1,036	8,526
2015	2,373	1,772	3,124	2,962	1,256	11,487
2016	2,224	1,771	2,942	2,561	1,275	10,773
2017	1,583	889	5,283	2,027	2,141	11,923
Mature groves	**84,556**	**36,324**	**102,484**	**72,230**	**68,850**	**364,444**
2018	3,195	2,402	3,195	2,560	2,240	13,592
2019	3,502	2,596	4,494	3,105	3,938	17,635
Young groves	**6,697**	**4,998**	**7,689**	**5,665**	**6,178**	**31,227**
Total	**91,253**	**41,322**	**110,173**	**77,895**	**75,028**	**395,671**
Percentage	**23.51**	**17.67**	**23.51**	**18.83**	**16.48**	**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 67 – Oranges: Trees by sector and planting year [2020 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.....	80.96	1.11	17.07	242.63	8.84	350.61
1980.....	15.30	2.56	-	19.33	-	37.19
1981.....	15.39	-	-	5.76	21.84	42.99
1982.....	6.38	-	-	45.69	-	52.07
1983.....	43.87	-	82.73	36.56	-	163.16
1984.....	2.80	1.90	0.62	30.51	4.79	40.62
1985.....	9.05	19.34	61.13	52.63	5.54	147.69
1986.....	17.74	84.16	25.71	146.46	12.66	286.73
1987.....	17.94	12.62	-	122.68	101.65	254.89
1988.....	11.26	27.54	92.50	72.95	11.43	215.68
1989.....	14.89	63.58	120.40	176.55	102.20	477.62
1990.....	98.44	12.94	279.40	261.11	130.26	782.15
1991.....	36.67	11.41	128.55	279.98	130.70	587.31
1992.....	108.96	7.18	40.48	163.00	222.23	541.85
1993.....	65.01	19.35	37.40	145.33	299.85	566.94
1994.....	44.14	37.72	109.16	127.19	228.75	546.96
1995.....	147.18	25.87	224.82	306.75	265.39	970.01
1996.....	91.92	15.13	262.43	272.13	241.37	882.98
1997.....	240.02	8.22	389.24	325.58	512.74	1,475.80
1998.....	267.05	32.93	537.82	462.63	210.39	1,510.82
1999.....	676.12	24.92	411.68	443.86	347.01	1,903.59
2000.....	967.61	51.02	712.41	823.71	376.80	2,931.55
2001.....	813.09	281.94	520.48	937.64	461.51	3,014.66
2002.....	693.04	208.10	1,655.51	1,272.13	1,073.10	4,901.88
2003.....	1,717.07	198.68	1,638.14	1,164.15	1,785.70	6,503.74
2004.....	1,928.56	489.36	1,754.91	1,320.94	1,905.37	7,399.14
2005.....	2,183.36	450.96	3,098.50	1,733.79	3,049.03	10,515.64
2006.....	2,314.07	771.18	2,165.87	1,498.11	2,984.71	9,733.94
2007.....	3,423.04	960.31	3,918.89	1,925.50	3,571.45	13,799.19
2008.....	2,921.63	2,146.41	3,247.90	1,625.26	4,191.39	14,132.59
2009.....	2,675.03	1,220.51	2,411.41	1,471.01	1,915.57	9,693.53
2010.....	2,687.53	1,480.23	2,271.87	2,412.14	1,444.49	10,296.26
2011.....	2,380.23	1,891.41	2,624.18	1,800.82	1,339.07	10,035.71
2012.....	3,341.76	1,922.56	3,606.69	2,306.54	1,444.27	12,621.82
2013.....	2,870.49	875.68	3,591.58	1,227.05	918.22	9,483.02
2014.....	1,040.71	495.02	2,107.12	777.31	686.12	5,106.28
2015.....	1,372.16	1,093.06	2,014.36	1,807.20	820.91	7,107.69
2016.....	1,244.02	1,024.90	1,933.64	1,528.81	960.31	6,691.68
2017.....	871.32	472.34	3,689.93	1,155.61	1,655.36	7,844.56
6 to10 years old resets[2].....	1,379.03	137.97	2,008.73	1,536.48	777.97	5,840.18
3 to 5 years old resets[2].....	954.09	207.84	1,765.99	1,201.97	632.62	4,762.51
Bearing trees.....	**39,788.93**	**16,787.96**	**49,559.25**	**33,265.48**	**34,851.61**	**174,253.23**
0 to 2 years old resets[2].....	475.76	143.03	1,087.29	1,336.54	901.68	3,944.30
2018.....	1,996.74	1,523.96	1,895.15	1,674.00	1,566.78	8,656.63
2019.....	1,974.27	1,417.65	2,738.20	1,866.32	2,869.34	10,865.78
Non-bearing trees.....	**4,446.77**	**3,084.64**	**5,720.64**	**4,876.86**	**5,337.80**	**23,466.71**
Total.....	**44,235.70**	**19,872.60**	**55,279.89**	**38,142.34**	**40,189.41**	**197,719.94**
Percentage.....	**22.37**	**10.05**	**27.96**	**19.29**	**20.33**	**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 68 – Oranges: Area of groves of early varieties by planting year [2020 inventory]

Planting year[1]	Early varieties						Total
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	
	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)	(hectares)
1979 and previous years....	316	-	-	-	26	-	342
1980.....	-	-	-	-	-	-	-
1981.....	49	-	-	-	-	-	49
1982.....	2	-	-	-	-	-	2
1983.....	7	-	-	-	-	-	7
1984.....	68	-	-	-	-	-	68
1985.....	82	8	95	-	-	-	185
1986.....	70	-	67	75	-	-	212
1987.....	137	2	-	27	-	-	166
1988.....	136	7	-	-	2	-	145
1989.....	34	-	-	-	-	-	34
1990.....	91	67	-	20	-	-	178
1991.....	222	59	-	-	-	-	281
1992.....	573	-	-	21	-	11	605
1993.....	549	4	-	43	-	19	615
1994.....	687	7	21	17	-	-	732
1995.....	169	32	-	-	-	-	201
1996.....	255	2	-	28	-	-	285
1997.....	272	167	7	484	-	26	956
1998.....	493	129	36	118	-	17	793
1999.....	794	277	-	214	2	-	1,287
2000.....	1,168	79	32	152	-	-	1,431
2001.....	570	66	28	415	-	24	1,103
2002.....	1,909	236	177	654	2	18	2,996
2003.....	2,922	232	124	693	25	3	3,999
2004.....	2,743	389	386	659	2	23	4,202
2005.....	4,535	356	182	764	-	48	5,885
2006.....	4,543	394	656	825	-	64	6,482
2007.....	5,980	411	236	1,668	7	49	8,351
2008.....	5,391	629	701	1,371	-	97	8,189
2009.....	2,403	458	747	1,455	58	52	5,173
2010.....	1,759	410	681	619	11	102	3,582
2011.....	1,581	314	838	1,297	6	247	4,283
2012.....	2,280	235	767	1,140	-	476	4,898
2013.....	715	146	310	611	2	230	2,014
2014.....	193	15	89	45	-	167	509
2015.....	380	60	205	206	2	2	855
2016.....	449	90	371	279	-	13	1,202
2017.....	1,487	373	540	852	-	159	3,411
Mature groves.....	**46,014**	**5,654**	**7,296**	**14,752**	**145**	**1,847**	**75,708**
2018.....	1,146	185	552	1,070	-	235	3,188
2019.....	1,501	334	213	1,251	-	136	3,435
Young groves.....	**2,647**	**519**	**765**	**2,321**	**-**	**371**	**6,623**
Total.....	**48,661**	**6,173**	**8,061**	**17,073**	**145**	**2,218**	**82,331**
Percentage.....	**59.10**	**7.50**	**9.79**	**20.74**	**0.18**	**2.69**	**20.81**

[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 [2020 inventory]

Planting year[1]	Early varieties						Total
	Hamlin	Westin	Rubi	Valencia Americana	Seleta	Pineapple	
	(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.....	62.52	-	-	-	6.31	-	68.83
1980.....	-	-	-	-	-	-	-
1981.....	11.59	-	-	-	-	-	11.59
1982.....	0.91	-	-	-	-	-	0.91
1983.....	2.41	-	-	-	-	-	2.41
1984.....	12.09	-	-	-	-	-	12.09
1985.....	19.19	1.90	10.03	-	-	-	31.12
1986.....	16.99	-	4.42	20.23	-	-	41.64
1987.....	28.29	0.71	-	4.16	-	-	33.16
1988.....	34.45	2.77	-	-	0.76	-	37.98
1989.....	7.92	-	-	-	-	-	7.92
1990.....	22.33	19.46	-	4.17	-	-	45.96
1991.....	49.30	15.32	-	-	-	-	64.62
1992.....	166.07	-	-	5.63	-	3.79	175.49
1993.....	144.42	1.85	-	9.09	-	3.97	159.33
1994.....	172.70	3.13	7.58	3.98	-	-	187.39
1995.....	66.30	11.51	-	-	-	-	77.81
1996.....	85.19	0.74	-	7.13	-	-	93.06
1997.....	85.13	49.66	2.00	78.42	-	8.58	223.79
1998.....	150.73	36.80	10.93	30.22	-	4.85	233.53
1999.....	229.96	89.73	-	64.76	0.78	-	385.23
2000.....	352.81	28.34	12.64	39.01	-	-	432.80
2001.....	187.67	22.37	16.03	91.02	-	7.64	324.73
2002.....	654.51	94.88	67.18	228.03	0.71	7.30	1,052.61
2003.....	1,044.74	80.75	37.27	220.54	8.38	1.25	1,392.93
2004.....	954.33	115.90	110.76	218.69	0.68	9.50	1,409.86
2005.....	1,632.13	127.25	70.55	274.71	-	23.31	2,127.95
2006.....	1,709.92	140.27	271.48	355.50	-	27.57	2,504.74
2007.....	2,448.89	155.90	111.08	701.19	3.30	18.95	3,439.31
2008.....	2,284.51	250.14	318.96	628.54	-	56.76	3,538.91
2009.....	1,034.22	196.59	352.92	673.98	30.49	22.80	2,311.00
2010.....	841.49	217.86	358.26	302.62	3.36	59.32	1,782.91
2011.....	782.29	160.97	465.24	625.20	3.17	154.49	2,191.36
2012.....	1,170.63	111.40	414.78	525.43	0.12	257.31	2,479.67
2013.....	422.11	86.16	187.86	280.14	1.14	126.36	1,103.77
2014.....	94.82	8.69	53.21	22.03	-	100.86	279.61
2015.....	256.34	40.02	141.44	123.13	0.86	1.14	562.93
2016.....	288.70	52.93	236.08	166.59	-	10.56	754.86
2017.....	1,102.80	181.31	349.20	624.35	-	148.37	2,406.03
6 to10 years old resets[2].....	1,165.43	100.35	78.47	209.71	3.81	11.27	1,569.04
3 to 5 years old resets[2].....	788.97	92.02	117.60	206.44	1.18	16.58	1,222.79
Bearing trees.....	**20,585.80**	**2,497.68**	**3,805.97**	**6,744.64**	**65.05**	**1,082.53**	**34,781.67**
0 to 2 years old resets[2].....	490.37	98.75	89.27	183.90	1.09	6.06	869.44
2018.....	639.32	92.68	260.86	903.40	-	190.28	2,086.54
2019.....	916.25	214.75	135.15	919.56	0.33	104.19	2,290.23
Non-bearing trees.....	**2,045.94**	**406.18**	**485.28**	**2,006.86**	**1.42**	**300.53**	**5,246.21**
Total.....	**22,631.74**	**2,903.86**	**4,291.25**	**8,751.50**	**66.47**	**1,383.06**	**40,027.88**
Percentual.....	**56.54**	**7.25**	**10.72**	**21.86**	**0.17**	**3.46**	**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 [2020 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...	345	689	-	155	1,189
1980.....	32	58	-	43	133
1981.....	2	31	-	67	100
1982.....	48	76	-	20	144
1983.....	177	234	6	142	559
1984.....	44	25	-	32	101
1985.....	182	124	3	53	362
1986.....	399	233	17	180	829
1987.....	241	262	35	106	644
1988.....	304	150	23	125	602
1989.....	592	679	36	229	1,536
1990.....	602	1,005	183	500	2,290
1991.....	427	898	31	304	1,660
1992.....	298	467	48	310	1,123
1993.....	357	305	65	521	1,248
1994.....	415	333	138	160	1,046
1995.....	796	1,102	171	335	2,404
1996.....	693	858	284	395	2,230
1997.....	1,272	1,667	75	522	3,536
1998.....	1,285	1,710	327	233	3,555
1999.....	1,553	2,280	323	321	4,477
2000.....	1,768	4,122	569	986	7,445
2001.....	1,740	3,663	547	1,731	7,681
2002.....	2,429	5,935	335	1,997	10,696
2003.....	4,946	6,897	167	2,241	14,251
2004.....	5,343	6,928	472	3,622	16,365
2005.....	6,889	9,525	769	3,942	21,125
2006.....	5,970	7,705	684	3,501	17,860
2007.....	8,676	10,524	1,175	3,536	23,911
2008.....	9,304	8,031	1,614	3,347	22,296
2009.....	8,719	5,030	1,037	1,333	16,119
2010.....	8,814	5,172	1,004	1,531	16,521
2011.....	7,770	5,035	686	1,047	14,538
2012.....	9,915	6,406	772	1,670	18,763
2013.....	7,752	3,890	846	2,177	14,665
2014.....	4,525	1,589	1,018	885	8,017
2015.....	5,873	1,914	877	1,968	10,632
2016.....	5,720	2,260	394	1,197	9,571
2017.....	5,233	1,628	288	1,363	8,512
Mature groves.....	**121,450**	**109,440**	**15,019**	**42,827**	**288,736**
2018.....	5,230	3,112	493	1,569	10,404
2019.....	8,075	3,427	840	1,858	14,200
Young groves.....	**13,305**	**6,539**	**1,333**	**3,427**	**24,604**
Total.....	**134,755**	**115,979**	**16,352**	**46,254**	**313,340**
Percentage.....	**43.01**	**37.01**	**5.22**	**14.76**	**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 71 – Oranges: Trees of mid-season and late varieties by planting year [2020 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....	95.10	150.59	-	36.09	281.78
1980.....	11.31	13.51	-	12.37	37.19
1981.....	0.51	3.39	-	27.50	31.40
1982.....	16.41	29.66	-	5.09	51.16
1983.....	57.67	74.23	1.65	27.20	160.75
1984.....	11.25	8.28	-	9.00	28.53
1985.....	62.47	40.62	1.18	12.30	116.57
1986.....	122.48	64.52	6.06	52.03	245.09
1987.....	104.62	80.24	6.72	30.15	221.73
1988.....	97.33	40.28	8.48	31.61	177.70
1989.....	197.10	194.31	12.69	65.60	469.70
1990.....	205.84	314.67	54.95	160.73	736.19
1991.....	151.18	282.47	11.22	77.82	522.69
1992.....	110.19	150.49	13.86	91.82	366.36
1993.....	118.82	100.77	23.97	164.05	407.61
1994.....	154.33	107.90	55.55	41.79	359.57
1995.....	322.75	396.69	60.49	112.27	892.20
1996.....	259.29	271.70	131.77	127.16	789.92
1997.....	499.49	583.28	31.14	138.10	1,252.01
1998.....	452.45	602.19	150.92	71.73	1,277.29
1999.....	550.97	754.88	112.56	99.95	1,518.36
2000.....	642.70	1,345.66	208.57	301.82	2,498.75
2001.....	615.41	1,337.79	218.83	517.90	2,689.93
2002.....	848.58	2,159.13	121.20	720.36	3,849.27
2003.....	1,838.21	2,422.96	59.01	790.63	5,110.81
2004.....	2,048.92	2,485.30	190.29	1,264.77	5,989.28
2005.....	2,832.16	3,668.88	323.75	1,562.90	8,387.69
2006.....	2,478.34	3,096.68	297.55	1,356.63	7,229.20
2007.....	3,784.26	4,415.35	555.71	1,604.56	10,359.88
2008.....	4,308.45	3,790.73	846.04	1,648.46	10,593.68
2009.....	3,943.71	2,304.73	503.29	630.80	7,382.53
2010.....	4,633.23	2,642.66	517.55	719.91	8,513.35
2011.....	4,178.42	2,745.05	403.88	517.00	7,844.35
2012.....	5,451.96	3,374.17	458.49	857.53	10,142.15
2013.....	4,484.61	2,231.24	500.73	1,162.67	8,379.25
2014.....	2,750.85	912.17	633.01	530.64	4,826.67
2015.....	3,659.31	1,077.56	526.27	1,281.62	6,544.76
2016.....	3,437.55	1,525.97	249.83	723.47	5,936.82
2017.....	3,224.68	1,045.39	160.20	1,008.26	5,438.53
6 to10 years old resets[2].....	1,285.69	2,160.34	207.96	617.15	4,271.14
3 to 5 years old resets[2].....	1,471.02	1,322.02	172.26	574.42	3,539.72
Bearing trees.....	**61,519.62**	**50,328.45**	**7,837.63**	**19,785.86**	**139,471.56**
0 to 2 years old resets[2].....	1,640.13	805.49	164.75	464.49	3,074.86
2018.....	3,413.52	1,805.77	273.62	1,077.18	6,570.09
2019.....	4,698.91	2,066.68	514.47	1,295.49	8,575.55
Non-bearing trees.....	**9,752.56**	**4,677.94**	**952.84**	**2,837.16**	**18,220.50**
Total.....	**71,272.18**	**55,006.39**	**8,790.47**	**22,623.02**	**157,692.06**
Percentage.....	**45.20**	**34.88**	**5.57**	**14.35**	**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 [2019 and 2020 inventories]

Sector and region	2019 inventory		2020 inventory	
	Young groves[2]	Mature groves[3]	Young groves[2]	Mature groves[3]
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
North				
Triângulo Mineiro	524	479	499	471
Bebedouro	604	478	600	474
Altinópolis	807	494	835	498
Average	**611**	**480**	**593**	**476**
Northwest				
Votuporanga	445	431	433	445
São José do Rio Preto	676	488	688	481
Average	**610**	**462**	**589**	**466**
Central				
Matão	782	470	657	501
Duartina	596	490	588	502
Brotas	575	456	552	459
Average	**668**	**477**	**602**	**494**
South				
Porto Ferreira	652	478	628	484
Limeira	609	451	621	474
Average	**631**	**465**	**625**	**479**
Southwest				
Avaré	617	503	672	498
Itapetininga	811	580	762	583
Average	**747**	**521**	**718**	**519**
Average…	**657**	**482**	**625**	**489**

1 Weighted average density per stratum area.
2 Groves planted in 2018 and 2019.
3 Groves planted in 2017 and previous years. Calculation considers total trees in the plot, that is, bearing and non-bearing trees (resets in 2018 and 2019).

Table 73 – Oranges: Density[1] of young and mature groves by variety [2019 and 2020 inventories]

Variety	2019 inventory		2020 inventory	
	Young groves[2]	Mature groves[3]	Young groves[2]	Mature groves[3]
	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)	(trees/ hectare)
Early				
Hamlin.....	675	446	587	458
Westin.....	532	443	593	459
Rubi.....	579	522	519	534
Valencia Americana.....	825	455	786	469
Seleta.....	(NA)	486	640	460
Pineapple.....	896	595	794	589
Average.....	**704**	**458**	**661**	**471**
Mid-season				
Pera Rio.....	647	514	610	520
Average.....	**647**	**514**	**610**	**520**
Late				
Valencia.....	605	465	592	467
Valencia Folha Murcha.....	563	520	591	533
Natal.....	693	460	692	473
Average.....	**631**	**469**	**622**	**475**
Average….....	**657**	**482**	**625**	**489**

NA Non-available data.
1 Weighted average density per stratum area.
2 Groves planted in 2018 and 2019.
3 Groves planted in 2017 and previous years. Calculation considers total trees in the plot, that is, bearing and non-bearing trees (resets in 2018 and 2019).

Table 74 – Oranges: Density[1] of young groves by variety and region [2020 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……..	475	501	481	607	722	700	475	503	569	540	638	774	587
Westin……..	NA	475	NA	NA	NA	593	587	615	682	590	657	476	593
Rubi……..	475	532	483	618	607	593	381	478	671	514	603	521	519
Valencia Americana…..	688	740	688	640	861	683	628	631	625	640	687	885	786
Seleta……	NA	NA	NA	NA	NA	NA	640	NA	NA	640	640	NA	640
Pineapple……..	688	574	NA	NA	823	NA	619	NA	503	NA	640	806	794
Average……...	**596**	**588**	**504**	**620**	**820**	**688**	**505**	**505**	**609**	**546**	**649**	**781**	**661**
Mid-season													
Pera Rio……	482	598	1.175	397	582	638	588	561	659	648	722	801	610
Average……..	**482**	**598**	**1.175**	**397**	**582**	**638**	**588**	**561**	**659**	**648**	**722**	**801**	**610**
Late													
Valencia……	553	549	612	606	498	599	596	540	614	607	632	674	592
V.Folha Murcha[14]……..	622	614	575	473	414	597	597	554	621	603	606	843	591
Natal…….….	433	738	622	695	692	884	791	607	597	634	692	700	692
Average……..……...	**522**	**608**	**613**	**635**	**591**	**679**	**622**	**564**	**609**	**612**	**649**	**695**	**622**
Average…..……..……	**499**	**600**	**835**	**433**	**688**	**657**	**588**	**552**	**628**	**621**	**672**	**762**	**625**

NA Non-available data.
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 [2020 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……..…..	415	421	500	472	445	509	460	440	474	454	463	582	458
Westin……...…..	475	414	464	431	359	385	406	404	528	464	463	530	459
Rubi……..…..	564	561	654	554	430	532	599	388	573	534	465	607	534
Valencia Americana….....	516	491	570	427	438	435	522	439	382	472	447	704	469
Seleta……..……	NA	472	NA	NA	NA	NA	592	NA	444	376	344	525	460
Pineapple……..……..	331	486	733	596	479	580	505	618	334	529	432	700	589
**Average…….…..... **	**430**	**447**	**521**	**474**	**440**	**490**	**490**	**448**	**490**	**462**	**460**	**617**	**471**
Mid-season													
Pera Rio…….……	541	550	508	439	509	546	529	479	518	494	522	621	520
Average……...…..	**541**	**550**	**508**	**439**	**509**	**546**	**529**	**479**	**518**	**494**	**522**	**621**	**520**
Late													
Valencia……..……	455	445	480	455	489	459	483	448	442	447	491	561	467
V.Folha Murcha[14]….....	565	505	514	506	520	559	563	526	521	491	588	573	533
Natal……..…….	421	431	492	427	504	457	452	442	463	500	506	533	473
**Average……..…..... **	**448**	**447**	**484**	**457**	**499**	**468**	**483**	**452**	**456**	**462**	**500**	**551**	**475**
**Average…..……... **	**471**	**474**	**498**	**445**	**481**	**501**	**502**	**459**	**484**	**474**	**498**	**583**	**489**

NA Non-available data.

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 2018 and 2019).

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 [2020 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…….……..	600	529	607	582	534	666	553	546	593	551	586	796	589
Westin…….…..	541	500	366	503	471	442	530	525	662	561	601	554	568
Rubi…….…..	560	602	583	533	581	584	599	478	642	566	591	613	597
Valencia Americana…...	643	589	638	525	633	714	583	598	487	592	618	823	634
Seleta…….……	NA	472	NA	NA	NA	NA	674	NA	320	643	640	NA	471
Pineapple…….……..	433	545	733	403	747	580	633	625	377	NA	640	733	661
Average…….	**592**	**558**	**607**	**551**	**590**	**655**	**573**	**565**	**611**	**559**	**598**	**741**	**605**
Mid-season													
Pera Rio…….……	558	613	805	460	557	655	613	578	647	601	702	734	606
Average…….…....	**558**	**613**	**805**	**460**	**557**	**655**	**613**	**578**	**647**	**601**	**702**	**734**	**606**
Late													
Valencia…….……	535	541	621	529	525	593	606	649	630	581	652	669	586
V.Folha Murcha[14]….....	605	575	610	381	508	622	622	641	665	611	646	646	614
Natal…….……	506	620	588	507	683	736	597	574	638	603	662	673	635
Average…….…….....	**533**	**562**	**603**	**507**	**575**	**624**	**606**	**628**	**638**	**594**	**654**	**667**	**603**
Average…..…..…….	**551**	**583**	**694**	**469**	**576**	**643**	**603**	**596**	**638**	**593**	**661**	**713**	**605**

NA Non-available data.

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 2018 and 2019).

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 [2020 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……..	393	404	494	430	403	418	426	417	438	435	458	480	427
Westin……..	459	378	467	416	338	358	392	368	458	411	445	506	418
Rubi……..	NA	431	596	660	350	499	517	383	432	424	439	503	450
Valencia Americana…..	492	473	554	380	397	354	467	367	380	442	413	550	420
Seleta……	NA	NA	NA	NA	NA	NA	585	NA	554	350	344	525	459
Pineapple……..	NA	450	NA	606	491	NA	378	383	NA	529	432	NA	474
Average……...	**401**	**418**	**503**	**449**	**395**	**398**	**439**	**407**	**434**	**430**	**448**	**488**	**427**
Mid-season													
Pera Rio……	449	463	482	382	460	407	473	401	431	416	482	508	448
Average…….	**449**	**463**	**482**	**382**	**460**	**407**	**473**	**401**	**431**	**416**	**482**	**508**	**448**
Late													
Valencia……	400	407	474	446	424	347	429	420	388	424	472	515	427
VFolha Murcha[14]……..	537	464	490	523	512	439	520	434	417	434	534	543	478
Natal…….	400	380	443	417	359	312	402	401	345	434	485	498	417
Average……...	**403**	**406**	**472**	**454**	**416**	**343**	**430**	**418**	**382**	**426**	**477**	**509**	**428**
Average…..…….	**409**	**420**	**481**	**411**	**417**	**379**	**447**	**413**	**406**	**424**	**472**	**506**	**433**

NA Non-available data.

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 2018 and 2019).

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 [2020 inventory]

Planting year[2]	Density
	(trees/hectare)
1979 and previous years	338
1980	337
1981	350
1982	422
1983	357
1984	290
1985	346
1986	333
1987	374
1988	331
1989	343
1990	362
1991	351
1992	355
1993	361
1994	367
1995	417
1996	391
1997	363
1998	399
1999	378
2000	373
2001	375
2002	399
2003	393
2004	400
2005	433
2006	444
2007	475
2008	508
2009	498
2010	550
2011	570
2012	568
2013	606
2014	641
2015	640
2016	641
2017	676
Mature groves	**489**
2018	637
2019	616
Young groves	**625**
Average	**500**

[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 2018 and 2019).

[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 and non-irrigated groves and of groves with no information on irrigation, by sector and region[1] [2019 and 2020 inventories]

Sector and region	2019 inventory		2020 inventory	
	Irrigated area	Non-irrigated area or without irrigation information	Irrigated area	Non-irrigated area or without irrigation information
	(hectares)	(hectares)	(hectares)	(hectares)
North				
Triângulo Mineiro	21,539	5,359	21,781	5,421
Bebedouro	34,797	17,569	35,089	17,720
Altinópolis	957	10,219	962	10,280
Subtotal	**57,293**	**33,147**	**57,832**	**33,421**
Northwest				
Votuporanga	6,286	12,212	5,771	11,215
São José do Rio Preto	10,288	13,330	10,599	13,737
Subtotal	**16,574**	**25,542**	**16,370**	**24,952**
Central				
Matão	16,925	21,571	16,487	21,020
Duartina	9,086	44,577	9,166	45,005
Brotas	1,294	17,655	1,261	17,234
Subtotal	**27,305**	**83,803**	**26,914**	**83,259**
South				
Porto Ferreira	7,840	31,870	8,075	32,848
Limeira	5,085	33,205	4,906	32,066
Subtotal	**12,925**	**65,075**	**12,981**	**64,914**
Southwest				
Avaré	4,935	49,780	4,913	49,624
Itapetininga	236	19,149	246	20,245
Subtotal	**5,171**	**68,929**	**5,159**	**69,869**
Total	**119,268**	**276,496**	**119,255**	**276,416**
Percentage	**30.14**	**69.86**	**30.14**	**69.86**

Table 80 – Oranges: Area of irrigated and non-irrigated groves and of groves with no information on irrigation, by variety[1] [2019 and 2020 inventories]

Variety	2019 inventory		2020 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	15,075	33,243	15,188	33,473
Westin	1,523	4,276	1,622	4,551
Rubi	2,360	5,628	2,383	5,678
Valencia Americana	5,864	11,819	5,664	11,409
Seleta	33	138	28	117
Pineapple	940	1,214	968	1,250
Subtotal	**25,795**	**56,318**	**25,853**	**56,478**
Mid-season				
Pera Rio	41,493	94,574	41,110	93,645
Subtotal	**41,493**	**94,574**	**41,110**	**93,645**
Late				
Valencia	32,944	82,525	33,105	82,874
Valencia Folha Murcha	4,017	12,091	4,080	12,272
Natal	15,019	30,988	15,107	31,147
Subtotal	**51,980**	**125,604**	**52,292**	**126,293**
Total	**119,268**	**276,496**	**119,255**	**276,416**

[1] Data will be updated in the next mapping.

Table 81– Oranges: Area of irrigated and non-irrigated groves and of groves with no information on irrigation, by age groups[1] [2019 and 2020 inventories]

Grove age	2019 inventory		2020 inventory	
	Irrigated area	Non-irrigated area or without irrigation information	Irrigated area	Non-irrigated area or without irrigation information
	(hectares)	(hectares)	(hectares)	(hectares)
1 – 2 years	5,448	20,268	6,603	24,624
3 – 5 years	13,731	17,531	15,004	19,179
6 – 10 years	28,788	72,837	24,837	62,953
Over 10 years	71,301	165,860	72,811	169,660
Total	**119,268**	**276,496**	**119,255**	**276,416**

[1] Data will be updated in the next mapping.

Table 82 – Oranges: Area of irrigated groves by irrigation method[1] [2019 and 2020 inventories]

Irrigation method	2019 inventory		2020 inventory	
	Irrigated area	Percentage	Irrigated area	Percentage
	(hectares)	(%)	(hectares)	(%)
Sprinkling	12,882	10.80	12,880	10.80
Localized	106,386	89.20	106,375	89.20
Total	**119,268**	**100.00**	**119,255**	**100.00**

[1] Data will be updated in the next mapping.

Table 83 – Oranges: Average age[1] of mature groves by sector and region [2015 to 2019 inventories]

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

[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.
[6] Groves planted in 2017 and previous years.

Table 84 – Oranges: Area of eradicated groves, eradication and renovation rates by sector and region [2019 and 2020 inventory]

Sector and region	2019 inventory[1]				2020 inventory[2]				Total[3]			
	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss
	Area	Rate	Area	Rate	Area	Rate	Area	Area	Area	Rate	Area	Area
	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)
North												
Triângulo Mineiro.....	239	0.90	231	8	554	2.06	537	17	793	2.96	768	25
Bebedouro.....	1,017	1.98	938	79	1,941	3.71	869	1,072	2,958	5.69	1,807	1,151
Altinópolis.....	303	2.68	164	139	118	1.06	30	88	421	3.74	194	227
Subtotal.....	**1,559**	**1.75**	**1,333**	**226**	**2,613**	**2.89**	**1,436**	**1,177**	**4,172**	**4.64**	**2,769**	**1,403**
Northwest												
Votuporanga.....	1,637	8.26	171	1,466	1,490	8.05	349	1,141	3,127	16.31	520	2,607
S. J. do Rio Preto.....	1,448	6.26	730	718	4	0.02	-	4	1,452	6.28	730	722
Subtotal.....	**3,085**	**7.18**	**901**	**2,184**	**1,494**	**3.55**	**349**	**1,145**	**4,579**	**10.73**	**1,250**	**3,329**
Central												
Matão.....	3,409	8.32	280	3,129	1,823	4.74	213	1,610	5,232	13.06	493	4,739
Duartina.....	2,494	4.57	854	1,640	2,651	4.94	-	2,651	5,145	9.51	854	4,291
Brotas.....	233	1.24	102	131	6	0.03	-	6	239	1.27	102	137
Subtotal.....	**6,136**	**5.36**	**1,236**	**4,900**	**4,480**	**4.03**	**213**	**4,267**	**10,616**	**9.39**	**1,449**	**9,167**
South												
Porto Ferreira.....	2,316	5.71	235	2,081	650	1.64	512	138	2,966	7.35	747	2,219
Limeira.....	3,114	7.65	461	2,653	2,415	6.31	392	2,023	5,529	13.96	853	4,676
Subtotal.....	**5,430**	**6.68**	**696**	**4,734**	**3,065**	**3.93**	**904**	**2,161**	**8,495**	**10.61**	**1,600**	**6,895**
Southwest												
Avaré.....	587	1.08	424	163	2,299	4.20	716	1,583	2,886	5.28	1,140	1,746
Itapetininga.....	1,388	7.14	468	920	711	3.67	658	53	2,099	10.81	1,126	973
Subtotal.....	**1,975**	**2.68**	**892**	**1,083**	**3,010**	**4.06**	**1,374**	**1,636**	**4,985**	**6.74**	**2,266**	**2,719**
Total.....	**18,185**	**4.53**	**5,058**	**13,127**	**14,662**	**3.70**	**4,276**	**10,386**	**32,847**	**8.23**	**9,334**	**23,513**

1 April 2018 to March 2019.
2 April 2019 to March 2020.
3 April 2018 to March 2020.

Table 85 – Oranges: Area of eradicated groves, eradication and renovation rates by variety [2019 and 2020 inventory]

Variety	2019 inventory[1]				2020 inventory[2]				Total[3]			
	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss
	Area	Rate	Area	Rate	Area	Rate	Area	Area	Area	Rate	Area	Area
	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)
Early												
Hamlin, Westin, Rubi.....	3,950	6.16	1,462	2,488	1,203	1.94	766	437	5,153	8.09	2,228	2,925
Other earlies.....	680	3.50	646	34	1,938	9.69	231	1,707	2,618	13.19	877	1,741
Mid-season												
Pera Rio.....	4,459	3.27	1,499	2,960	7,163	5.26	2,152	5,011	11,622	8.54	3,651	7,971
Late												
Valencia and Valencia Folha Murcha.....	7,077	5.23	1,011	6,066	2,747	2.09	669	2,078	9,824	7.32	1,680	8,144
Natal.....	2,019	4.34	440	1,579	1,611	3.50	458	1,153	3,630	7.85	898	2,732
Total.....	**18,185**	**4.53**	**5,058**	**13,127**	**14,662**	**3.70**	**4,276**	**10,386**	**32,847**	**8.23**	**9,334**	**23,513**

1 April 2018 to March 2019.
2 April 2019 to March 2020.
3 April 2018 to March 2020.

Table 86 – Oranges: Area of eradicated groves, eradication and renovation rates by age group [2019 and 2020 inventory]

Plot age	2019 inventory[1]				2020 inventory[2]				Total[3]			
	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss
	Area	Rate	Area	Area	Area	Rate	Area	Area	Area	Rate	Area	Area
	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)
1 – 2 years.....	-	-	-	-	-	-	-	-	-	-	-	-
3 – 5 years.....	142	0.38	14	128	620	1.98	12	608	762	2.36	26	736
6 – 10 years.....	3,157	2.56	1,038	2,119	737	0.73	585	152	3,894	3.29	1,623	2,271
Over 10 years.....	14,886	6.84	4,006	10,880	13,305	5.61	3,679	9,626	28,191	12.45	7,685	20,506
Total.....	**18,185**	**4.53**	**5,058**	**13,127**	**14,662**	**3.70**	**4,276**	**10,38**	**32,847**	**8.23**	**9,334**	**23,513**

- Represents zero.
1 April 2018 to March 2019.
2 April 2019 to March 2020.
3 April 2018 to March 2020.

Table 87 – Oranges: Area of eradicated groves and eradication rate stratified by farm size, considering the number of orange trees on the farm [2019 and 2020 inventory]

Range of the number of orange trees in the farm	2019 inventory[1]				2020 inventory[2]				Total[3]			
	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss	Eradication		Renovation	Net loss
	Area	Rate	Area	Area	Area	Rate	Area	Area	Area	Rate	Area	Area
(thousand trees)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)	(ha)	(%)	(ha)	(ha)
Below 10.....	129	0.42	127	2	1,614	5.14	288	1,326	1,743	5,56	415	1,328
10 – 19.....	1,479	6.20	92	1,387	1,005	4.41	476	529	2,484	10,61	568	1,916
20 – 29.....	466	2.80	154	312	491	3.00	302	189	957	5,80	456	501
30 – 49.....	713	2.84	390	323	672	2.68	457	215	1,385	5,52	847	538
50 – 99.....	2,762	6.10	1,068	1,694	1,489	3.52	980	509	4,251	9,62	2,048	2,203
100 – 199.....	3,085	6.79	239	2,846	1,205	2.78	900	305	4,290	9,57	1,139	3,151
Above 200.....	9,551	4.45	2,988	6,563	8,186	3.82	873	7,313	17,737	8,27	3,861	13,876
Total.....	**18,185**	**4.53**	**5,058**	**13,127**	**14,662**	**3.70**	**4,276**	**10,386**	**32,847**	**8,23**	**9,334**	**23,513**

- Represents zero.
1 April 2018 to March 2019.
2 April 2019 to March 2020.
3 April 2018 to March 2020.

Table 88 – Oranges: Dead trees and mortality rate by sector and region [2018, 2019 and 2020 inventories]

Sector and region	2018 inventory		2019 inventory		2020 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
North						
Triângulo Mineiro	66.98	0.52	83.17	0.63	107.29	0.81
Bebedouro	249.00	0.99	210.41	0.79	356.64	1.33
Altinópolis	79.60	1.34	136.30	2.28	111.57	1.82
Subtotal	**395.58**	**0.90**	**429.88**	**0.94**	**575.50**	**1.25**
Northwest						
Votuporanga	150.03	1.61	271.07	3.15	168.83	2.09
S. J. do Rio Preto	155.17	1.31	133.46	1.06	240.50	1.83
Subtotal	**305.20**	**1.45**	**404.53**	**1.91**	**409.33**	**1.93**
Central						
Matão	166.99	0.78	305.46	1.47	611.65	2.95
Duartina	324.49	1.13	342.38	1.20	609.85	2.07
Brotas	204.18	2.14	200.96	2.11	204.00	2.22
Subtotal	**695.66**	**1.17**	**848.80**	**1.44**	**1,425.50**	**2.40**
South						
Porto Ferreira	312.34	1.49	186.46	0.90	282.42	1.30
Limeira	474.32	2.31	318.00	1.67	493.21	2.56
Subtotal	**786.66**	**1.90**	**504.46**	**1.27**	**775.63**	**1.89**
Southwest						
Avaré	574.08	1.95	307.15	1.03	913.55	3.07
Itapetininga	89.30	0.80	156.52	1.27	295.53	2.26
Subtotal	**663.38**	**1.63**	**463.67**	**1.10**	**1,209.08**	**2.83**
Total	**2,846.48**	**1.38**	**2,651.34**	**1.28**	**4,395.04**	**2.09**

Table 89 – Oranges: Dead trees and mortality rate by variety [2018, 2019 and 2020 inventories]

Variety	2018 inventory		2019 inventory		2020 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
Early						
Hamlin	345.94	1.43	414.30	1.74	738.07	3.02
Westin	52.12	1.70	39.69	1.41	67.67	2.17
Rubi	51.98	1.18	77.06	1.70	132.33	2.86
Valencia Americana	79.05	0.92	88.18	0.93	256.13	2.73
Seleta	0.70	0.77	0.29	0.33	1.42	1.93
Pineapple	2.14	0.18	15.80	1.10	75.12	5.08
Subtotal	**531.93**	**1.28**	**635.32**	**1.50**	**1,270.74**	**2.94**
Mid-season						
Pera Rio	1,158.28	1.56	1,121.15	1.48	1,690.11	2.22
Subtotal	**1,158.28**	**1.56**	**1,121.15**	**1.48**	**1,690.11**	**2.22**
Late						
Valencia	713.58	1.22	627.73	1.09	873.03	1.51
Valencia Folha Murcha	115.5	1.25	97.94	1.10	105.32	1.13
Natal	327.19	1.42	169.20	0.73	455.84	1.90
Subtotal	**1,156.27**	**1.28**	**894.87**	**1.00**	**1,434.19**	**1.57**
Total	**2,846.48**	**1.38**	**2,651.34**	**1.28**	**4,395.04**	**2.09**

Table 90 – Oranges: Dead trees and mortality rate by age group [2018, 2019 and 2020 inventories]

Age groves	2018 inventory		2019 inventory		2020 inventory	
	Trees	Rate	Trees	Rate	Trees	Rate
	(1,000 trees)	(%)	(1,000 trees)	(%)	(1,000 trees)	(%)
1 – 2 years	25.27	0.17	11.63	0.07	24.19	0.12
3 – 5 years	42.84	0.18	39.85	0.19	176.36	0.77
6 – 10 years	554.35	0.80	393.97	0.66	682.32	1.28
Over 10 years	2,224.02	2.29	2,205.89	2.00	3,512.17	3.06
Total	**2,846.48**	**1.38**	**2,651.34**	**1.28**	**4,395.04**	**2.09**

Table 91 – Oranges: Vacancies by sector and region [2018, 2019 and 2020 inventories]

Sector and region	2018 inventory		2019 inventory		2019 inventory	
	Vacancies	Percentage	Vacancies	Percentage	Vacancies	Percentage
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
North						
Triângulo Mineiro…..….	165.42	1.29	116.91	0.89	234.72	1.78
Bebedouro……..…..	783.02	3.12	852.32	3.22	872.17	3.25
Altinópolis…….……...	230.29	3.89	161.83	2.71	263.84	4.30
Subtotal.....	**1,178.73**	**2.69**	**1,131.06**	**2.48**	**1,370.73**	**2.97**
Northwest						
Votuporanga.....	314.99	3.39	356.90	4.15	364.63	4.52
S. J. do Rio Preto……..…	437.31	3.70	427.31	3.41	533.09	4.06
Subtotal.....	**752.30**	**3.56**	**784.21**	**3.71**	**897.72**	**4.24**
Central						
Matão.....	1,121.38	5.27	1,333.33	6.41	1,022.83	4.93
Duartina.....	1,412.58	4.93	1,508.27	5.27	1,201.20	4.08
Brotas.....	545.29	5.72	582.93	6.13	432.25	4.70
Subtotal.....	**3,079.25**	**5.18**	**3,424.53**	**5.81**	**2,656.28**	**4.47**
South						
Porto Ferreira.....	1,185.73	5.66	1,117.48	5.40	1,136.22	5.24
Limeira.....	1,045.33	5.10	1,113.70	5.84	931.81	4.83
Subtotal.....	**2,231.06**	**5.38**	**2,231.18**	**5.61**	**2,068.03**	**5.05**
Southwest						
Avaré.....	1,709.49	5.79	1,737.32	5.84	1,150.69	3.87
Itapetininga.....	331.40	2.96	261.77	2.12	248.64	1.91
Subtotal.....	**2,040.89**	**5.02**	**1,999.09**	**4.75**	**1,399.33**	**3.27**
Total.....	**9,282.23**	**4.49**	**9,570.07**	**4.61**	**8,392.09**	**3.99**

Table 92 – Oranges: Vacancies by variety [2018, 2019 and 2020 inventories]

Variety	2018 inventory		2019 inventory		2020 inventory	
	Vacancies	Percentage	Vacancies	Percentage	Vacancies	Percentage
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
Early						
Hamlin……...…..…..	1,176.62	4.85	1,288.55	5.40	1,109.18	4.53
Westin……..…….	176.84	5.76	154.40	5.49	148.63	4.76
Rubi…….….	199.44	4.54	218.92	4.84	207.90	4.49
Valencia Americana…..…	548.96	6.40	646.45	6.81	382.52	4.07
Seleta……	4.77	5.24	4.68	5.33	5.53	7.53
Pineapple…….……..	27.24	2.33	21.58	1.50	20.99	1.42
Subtotal……..	**2,133.87**	**5.14**	**2,334.58**	**5.53**	**1,874.75**	**4.34**
Mid-season						
Pera Rio……..…..	3,122.28	4.20	3,264.58	4.31	3,249.25	4.26
Subtotal……..…	**3,122.28**	**4.20**	**3,264.58**	**4.31**	**3,249.25**	**4.26**
Late						
Valencia……..…..	2,563.32	4.39	2,484.80	4.32	1,919.37	3.32
Valencia Folha Murcha....	396.72	4.31	412.50	4.62	395.37	4.26
Natal…….……	1,066.04	4.62	1,073.61	4.65	953.35	3.97
**Subtotal……..….. **	**4,026.08**	**4.44**	**3,970.91**	**4.44**	**3,268.09**	**3.59**
Total……..…	**9,282.23**	**4.49**	**9,570.07**	**4.61**	**8,392.09**	**3.99**

Table 93 – Oranges: Vacancies by age group [2018, 2019 and 2020 inventories]

Groves age	2018 inventory		2019 inventory		2020 inventory	
	Vacancies	Percentage	Vacancies	Percentage	Vacancies	Percentage
	(1,000 holes)	(%)	(1,000 holes)	(%)	(1,000 holes)	(%)
1 – 2 years……..…….	121.30	0.79	68.33	0.40	9.00	0.05
3 – 5 years……...…….	475.06	1.95	469.40	2.26	348.21	1.52
6 – 10 years……...…..	2,491.35	3.58	2,084.41	3.50	1,774.43	3.33
Over 10 year……..…....	6,194.52	6.37	6,947.93	6.30	6,260.45	5.45
Total……	**9,282.23**	**4.49**	**9,570.07**	**4.61**	**8,392.09**	**3.99**

Table 94 – Other oranges[1]: Area and number of trees by region, variety and age [2020 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
		2017	2018	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	28	4.00	-	-	-	4.01	4.18	12.19
Charmute de Brotas	3	-	-	-	-	0.01	1.37	1.38
Acidless sweet oranges and sweet lime[2]	12	-	-	-	0.24	2.81	2.72	5.77
Other	7	-	0.25	-	-	1.91	0.24	2.40
Subtotal	**50**	**4.00**	**0.25**	**-**	**0.24**	**8.74**	**8.51**	**21.74**
Bebedouro								
Washington Navel and Baianinha	30	4.77	0.50	-	0.76	1.06	7.73	14.82
Charmute de Brotas	2	-	-	-	-	-	1.21	1.21
Acidless sweet oranges and sweet lime[2]	353	9.59	10.79	0.53	68.23	36.96	26.07	152.17
Other	150	35.36	24.60	0.07	5.91	15.05	10.64	91.63
Subtotal	**535**	**49.72**	**35.89**	**0.60**	**74.90**	**53.07**	**45.65**	**259.83**
Altinópolis								
Washington Navel and Baianinha	30	10.79	-	0.01	0.40	0.63	4.64	16.47
Charmute de Brotas	48	0.09	-	0.13	0.81	4.92	17.80	23.75
Acidless sweet oranges and sweet lime[2]	115	0.18	2.50	1.33	10.98	22.04	23.28	60.31
Other	11	0.06	4.30	-	0.08	0.24	1.76	6.44
Subtotal	**204**	**11.12**	**6.80**	**1.47**	**12.27**	**27.83**	**47.48**	**106.97**
Votuporanga								
Washington Navel and Baianinha	17	0.10	1.40	-	4.89	0.01	3.98	10.38
Charmute de Brotas	-	-	0.10	-	-	-	-	0.10
Acidless sweet oranges and sweet lime[2]	203	21.05	5.60	-	34.56	42.67	17.25	121.13
Other	97	-	43.36	-	1.66	2.21	6.77	54.00
Subtotal	**317**	**21.15**	**50.46**	**-**	**41.11**	**44.89**	**28.00**	**185.61**
São José do Rio Preto								
Washington Navel and Baianinha	35	-	0.32	1.35	0.50	10.18	3.83	16.18
Charmute de Brotas	1	-	-	0.05	0.02	0.49	-	0.56
Acidless sweet oranges and sweet lime[2]	44	0.11	0.52	1.89	1.79	10.56	8.80	23.67
Other	178	96.37	48.44	-	0.59	6.62	0.15	152.17
Subtotal	**258**	**96.48**	**49.28**	**3.29**	**2.90**	**27.85**	**12.78**	**192.58**
Matão								
Washington Navel and Baianinha	7	2.70	-	0.02	0.03	0.54	0.61	3.90
Charmute de Brotas	11	3.50	-	0.13	2.79	0.67	-	7.09
Acidless sweet oranges and sweet lime[2]	450	13.84	4.42	6.39	34.57	127.44	13.64	200.30
Other	84	0.50	9.21	3.67	53.44	3.05	0.88	70.75
Subtotal	**552**	**20.54**	**13.63**	**10.21**	**90.83**	**131.70**	**15.13**	**282.04**

Table 94 – Other oranges[1]: Area and number of trees by region, variety and age [2020 inventory] (continued)

Region and variety	Area	Trees 0 – 2 years			Trees 3 – 5 years	Trees 6 – 10 years	Trees over 10 years	Total
		2017	2018	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.....	54	4.96	1.38	0.17	5.52	27.75	0.04	39.82
Charmute de Brotas.....	253	0.07	0.67	0.20	0.65	40.29	67.72	109.60
Acidless sweet oranges and sweet lime[2].....	534	13.45	8.62	0.86	26.38	147.92	105.29	302.52
Other.....	260	23.04	126.47	0.02	33.99	0.90	-	184.42
Subtotal.....	**1,101**	**41.52**	**137.14**	**1.25**	**66.54**	**216.86**	**173.05**	**636.36**
Brotas								
Washington Navel and Baianinha.....	18	1.43	-	0.08	0.11	0.37	3.06	5.05
Charmute de Brotas.....	358	3.88	-	1.16	9.06	6.45	65.47	86.02
Acidless sweet oranges and sweet lime[2].....	421	12.57	19.57	1.87	31.86	7.01	69.29	142.17
Other.....	150	0.50	7.12	0.50	0.75	2.84	26.97	38.68
Subtotal.....	**947**	**18.38**	**26.69**	**3.61**	**41.78**	**16.67**	**164.79**	**271.92**
Porto Ferreira								
Washington Navel and Baianinha.....	375	20.45	8.84	3.15	57.23	58.75	43.45	191.87
Charmute de Brotas.....	197	4.13	-	2.37	8.34	40.14	33.90	88.88
Acidless sweet oranges and sweet lime[2].....	1,327	60.03	21.31	12.16	143.11	210.78	197.03	644.42
Other.....	130	28.85	27.68	0.09	2.78	1.02	0.92	61.34
Subtotal.....	**2,029**	**113.46**	**57.83**	**17.77**	**211.46**	**310.69**	**275.30**	**986.51**
Limeira								
Washington Navel and Baianinha.....	553	28.97	3.73	18.52	78.95	62.62	84.31	277.10
Charmute de Brotas.....	267	12.95	1.53	10.04	32.63	37.66	43.77	138.58
Acidless sweet oranges and sweet lime[2].....	1,323	70.95	44.15	46.88	123.65	202.59	223.02	711.24
Other.....	414	25.08	38.09	12.48	43.20	116.69	26.06	261.60
Subtotal.....	**2,557**	**137.95**	**87.50**	**87.92**	**278.43**	**419.56**	**377.16**	**1,388.52**
Avaré								
Washington Navel and Baianinha.....	819	13.94	14.65	10.16	67.33	46.16	236.82	389.06
Charmute de Brotas.....	337	0.43	3.28	5.61	17.31	17.18	127.68	171.49
Acidless sweet oranges and sweet lime[2].....	986	14.39	59.00	16.37	98.98	66.10	275.22	530.06
Other.....	227	20.77	84.43	4.19	22.66	0.82	7.78	140.65
Subtotal.....	**2,369**	**49.53**	**161.36**	**36.33**	**206.28**	**130.26**	**647.50**	**1,231.26**
Itapetininga								
Washington Navel and Baianinha.....	342	11.45	0.67	1.47	18.66	52.89	78.54	163.68
Charmute de Brotas.....	117	1.80	0.28	1.07	14.06	18.90	22.95	59.06
Acidless sweet oranges and sweet lime[2].....	176	5.04	5.43	0.72	9.40	25.34	36.67	82.60
Other.....	551	174.91	27.45	1.38	288.86	15.99	7.13	515.72
Subtotal.....	**1,186**	**193.20**	**33.83**	**4.64**	**330.98**	**113.12**	**145.29**	**821.06**
Total.....	**12,105**	**757.05**	**660.66**	**167.09**	**1,357.72**	**1,501.24**	**1,940.64**	**6,384.40**

[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 [2018 inventory]

Region and variety	Area	Plots 0 – 2 years		Plots 3 – 5 years	Plots 6 – 10 years	Plots over 10 years	Plots of non-identified age	Total
		2016	2017					
	(hectares)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)
Triângulo Mineiro								
Tahiti acid lime	369	4.76	-	73.58	76.16	52.99	-	207.49
Sicilian lemon.....	-	-	-	-	-	-	-	-
Other including non-identified ones	-	-	-	-	-	-	-	-
Subtotal.....	**369**	**4.76**	**-**	**73.58**	**76.16**	**52.99**	**-**	**207.49**
Bebedouro								
Tahiti acid lime	14,881	527.99	612.93		2,414.03	937.61	42.14	5,944.09
Sicilian lemon.....	74	1.98	8.22	8.68	30.84	0.35	-	50.07
Other including non-identified ones	100	1.03	-	8.69	27.02	5.04	3.25	45.03
Subtotal.....	**15,055**	**531.00**	**621.15**		**2,471.89**	**943.00**	**45.39**	**6,039.19**
Altinópolis								
Tahiti acid lime	45	3.19	4.65	1.31	7.81	2.65	4.23	23.84
Sicilian lemon.....	-	-	-	-	-	-	-	-
Other including non-identified ones	-	-	-	0.59	-	-	-	0.59
Subtotal.....	**45**	**3.19**	**4.65**	**1.90**	**7.81**	**2.65**	**4.23**	**24.43**
Votuporanga								
Tahiti acid lime	3,762	101.49	195.81	325.18	415.35	245.70	73.54	1,357.07
Sicilian lemon.....	1	-	-	-	-	0.43	-	0.43
Other including non-identified ones	8	-	4.87	1.14	-	-	0.56	6.57
Subtotal.....	**3,771**	**101.49**	**200.68**	**326.32**	**415.35**	**246.13**	**74.10**	**1,364.07**
São José do Rio Preto								
Tahiti acid lime	996	42.09	20.57	60.77	67.15	143.67	16.58	350.83
Sicilian lemon.....	1	-	-	0.52	-	-	-	0.52
Other including non-identified ones	-	-	-	-	-	-	-	-
Subtotal.....	**997**	**42.09**	**20.57**	**61.29**	**67.15**	**143.67**	**16.58**	**351.35**
Matão								
Tahiti acid lime	10,179	479.49	763.09		1,101.25	1,122.12	16.32	4,642.18
Sicilian lemon.....	37	-	15.14	-	0.26	-	-	15.40
Other including non-identified ones	122	13.98	2.83	18.73	16.02	0.61	1.68	53.85
Subtotal.....	**10,338**	**493.47**	**781.06**		**1,117.53**	**1,122.73**	**18.00**	**4,711.43**
Duartina								
Tahiti acid lime	446	23.99	7.73	99.79	19.09	41.00	18.35	209.95
Sicilian lemon.....	489	12.82	35.89	14.91	175.03	0.95	12.61	252.21
Other including non-identified ones	14	0.13	0.71	6.30	-	-	1.38	8.52
Subtotal.....	**949**	**36.94**	**44.33**	**121.00**	**194.12**	**41.95**	**32.34**	**470.68**
Brotas								
Tahiti acid lime	62	10.07	2.01	2.28	6.80	5.85	8.67	35.68
Sicilian lemon.....	368	0.40	1.49	84.39	2.79	38.00	5.87	132.94
Other including non-identified ones	138	0.25	-	15.67	7.39	22.11	-	45.42
Subtotal.....	**568**	**10.72**	**3.50**	**102.34**	**16.98**	**65.96**	**14.54**	**214.04**
Porto Ferreira								
Tahiti acid lime	639	40.24	34.27	65.82	173.30	48.70	0.84	363.17
Sicilian lemon.....	495	53.33	58.36	71.79	57.04	6.85	-	247.37
Other including non-identified ones	20	7.15	-	1.88	1.92	-	-	10.95
Subtotal.....	**1,154**	**100.72**	**92.63**	**139.49**	**232.26**	**55.55**	**0.84**	**621.49**
Limeira								
Tahiti acid lime	3,629	119.32	214.31	380.42	507.02	334.80	34.08	1,589.95
Sicilian lemon.....	657	64.11	22.03	92.78	178.92	4.96	2.24	365.04
Other including non-identified ones	22	0.06	2.83	2.89	1.87	3.56	-	11.21
Subtotal.....	**4,308**	**183.49**	**239.17**	**476.09**	**687.81**	**343.32**	**36.32**	**1,966.20**
Avaré								
Tahiti acid lime	35	2.05	1.35	8.05	4.28	0.78	1.99	18.50
Sicilian lemon.....	1,343	43.18	26.40	98.93	445.28	12.71	-	626.50
Other including non-identified ones	-	-	-	-	-	-	-	-
Subtotal.....	**1,378**	**45.23**	**27.75**	**106.98**	**449.56**	**13.49**	**1.99**	**645.00**
Itapetininga								
Tahiti acid lime	33	-	-	12.14	4.36	-	4.97	21.47
Sicilian lemon.....	112	-	-	9.12	30.35	-	2.30	41.77
Other including non-identified ones	1	-	-	1.14	-	-	-	1.14
Subtotal.....	**146**	**-**	**-**	**22.40**	**34.71**	**-**	**7.27**	**64.38**
Total.....	**39,078**	**1,553.10**	**2,035.49**		**5,771.33**	**3,031.44**	**251.60**	**16,679.75**

[1] 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 [2018 inventory]

Region and variety	Area	Plots 0 – 2 years		Plots 3 – 5 years	Plots 6 – 10 years	Plots over 10 years	Plots of non-identified age	Total
		2016	2017					
	(hectares)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)	(1,000 holes)
Triângulo Mineiro								
Ponkan	176	2.14	11.11	15.63	10.71	34.39	2.47	76.45
Murcott	14	-	-	-	0.87	3.82	-	4.69
Other	44	0.47	-	0.64	11.63	9.03	0.97	22.74
Subtotal	**234**	**2.61**	**11.11**	**16.27**	**23.21**	**47.24**	**3.44**	**103.88**
Bebedouro								
Ponkan	914	65.70	43.55	115.08	199.41	53.35	20.22	497.31
Murcott	281	12.89	14.19	20.62	57.73	30.50	2.23	138.16
Other	159	6.60	19.80	17.45	19.88	12.00	1.10	76.83
Subtotal	**1,354**	**85.19**	**77.54**	**153.15**	**277.02**	**95.85**	**23.55**	**712.30**
Altinópolis								
Ponkan	104	1.16	30.18	17.84	11.66	5.01	0.43	66.28
Murcott	80	-	-	11.66	18.85	4.39	-	34.90
Other	16	-	-	3.10	-	1.96	3.19	8.25
Subtotal	**200**	**1.16**	**30.18**	**32.60**	**30.51**	**11.36**	**3.62**	**109.43**
Votuporanga								
Ponkan	945	28.60	65.65	176.44	122.64	45.52	68.20	507.05
Murcott	83	19.14	5.10	19.31	1.47	-	-	45.02
Other	58	4.08	9.48	14.61	4.21	1.40	1.63	35.41
Subtotal	**1,086**	**51.82**	**80.23**	**210.36**	**128.32**	**46.92**	**69.83**	**587.48**
São José do Rio Preto								
Ponkan	337	9.46	24.14	60.74	54.23	48.00	2.99	199.56
Murcott	81	0.30	-	-	2.19	25.17	-	27.66
Other	30	2.45	-	12.49	3.27	0.79	0.31	19.31
Subtotal	**448**	**12.21**	**24.14**	**73.23**	**59.69**	**73.96**	**3.30**	**246.53**
Matão								
Ponkan	321	30.94	2.55	63.77	28.23	27.59	19.14	172.22
Murcott	433	29.26	5.80	82.25	11.17	86.05	3.82	218.35
Other	35	0.95	-	12.05	3.95	2.61	1.21	20.77
Subtotal	**789**	**61.15**	**8.35**	**158.07**	**43.35**	**116.25**	**24.17**	**411.34**
Duartina								
Ponkan	351	37.20	0.45	102.14	23.08	39.29	4.97	207.13
Murcott	865	34.69	-	31.29	23.82	253.89	-	343.69
Other	202	0.52	0.76	9.04	183.09	3.27	0.49	197.17
Subtotal	**1,418**	**72.41**	**1.21**	**142.47**	**229.99**	**296.45**	**5.46**	**747.99**
Brotas								
Ponkan	34	3.09	5.77	9.72	0.60	0.04	2.10	21.32
Murcott	204	17.25	-	50.20	8.30	23.90	24.99	124.64
Other	134	3.01	-	6.67	1.94	50.17	1.61	63.40
Subtotal	**372**	**23.35**	**5.77**	**66.59**	**10.84**	**74.11**	**28.70**	**209.36**
Porto Ferreira								
Ponkan	246	12.68	7.86	35.69	28.64	35.46	25.57	145.90
Murcott	1,094	47.52	43.05	112.89	53.79	254.01	46.24	557.50
Other	82	-	5.08	10.27	2.14	11.98	21.43	50.90
Subtotal	**1,422**	**60.20**	**55.99**	**158.85**	**84.57**	**301.45**	**93.24**	**754.30**
Limeira								
Ponkan	1,074	24.82	23.97	181.92	214.49	197.10	6.12	648.42
Murcott	1,326	67.70	57.60	215.48	53.58	307.42	4.94	706.72
Other	132	9.45	17.59	35.84	7.55	25.96	-	96.39
Subtotal	**2,532**	**101.97**	**99.16**	**433.24**	**275.62**	**530.48**	**11.06**	**1,451.53**
Avaré								
Ponkan	214	3.13	4.28	7.07	44.11	38.62	1.76	98.97
Murcott	725	45.61	37.08	25.62	81.26	122.58	69.31	381.46
Other	145	15.43	2.36	19.22	10.63	14.84	-	62.48
Subtotal	**1,084**	**64.17**	**43.72**	**51.91**	**136.00**	**176.04**	**71.07**	**542.91**
Itapetininga								
Ponkan	570	4.99	5.45	48.11	80.33	55.12	99.15	293.15
Murcott	421	12.47	2.83	28.75	70.73	52.08	71.65	238.51
Other	274	5.34	27.56	24.65	35.78	38.05	11.63	143.01
Subtotal	**1,265**	**22.80**	**35.84**	**101.51**	**186.84**	**145.25**	**182.43**	**674.67**
Total	**12,204**	**559.04**	**473.24**	**1,598.25**	**1,485.96**	**1,915.36**	**519.87**	**6,551.72**

[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 [2018 inventory]

Sector	Region	Cities
North 69 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, Elisiário, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Palmares Paulista, Paraíso, Pirangi, Pitangueiras, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiúva, Taquaral, Terra Roxa, Uchoa, Urupês, Viradouro, Vista Alegre do Alto.
	Altinópolis (ALT) 20 cities	Altinópolis, Batatais, Brodowski, Cajuru, Cássia dos Coqueiros, Cristais Paulista, Fortaleza de Minas, Franca, Ibiraci, Igarapava, Jacuí, Jeriquara, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso, São Tomás de Aquino.
Northwest 86 cities	Votuporanga (VOT) 52 cities	Álvares 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, Murutinga do Sul, Nova Canaã Paulista, Ouroeste, Palmeira d'Oeste, Paranapuã, Parisi, Pedranópolis, Pontalinda, Pontes Gestal, Populina, Riolândia, Rubinéia, 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, Urânia, Valentim Gentil, Vitória Brasil, Votuporanga.
	São José do Rio Preto (SJO) 34 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Guapiaçu, Icém, Ipiguá, Jaci, José Bonifácio, Magda, Mendonça, Mirassol, Mirassolândia, Monções, 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, Tanabi, Ubarana, Zacarias.
Central 73 cities	Matão (MAT) 20 cities	Américo Brasiliense, Araraquara, Bariri, Boa Esperança do Sul, Borborema, Cândido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itaju, Itápolis, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Rincão, Santa Lúcia, Tabatinga, Taquaritinga.
	Duartina (DUA) 38 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, Pongaí, Presidente Alves, 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 43 cities	Porto Ferreira (PFE) 17 cities	Aguaí, Caconde, Casa Branca, Descalvado, Itobi, Luís 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	Águas de Lindóia, Amparo, Araras, Artur Nogueira, 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 49 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, Porangaba, Porto Feliz, Pratânia, Salto de Pirapora, São Manuel, Sorocaba, Tatuí, Tietê.
	Itapetininga (ITG) 20 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, Tejupá.
Total 5 sectors	Total 12 regions	Total 320 cities

Table 98 – Other oranges: Cities with groves by sector and region [2018 inventory]

Sector	Region	Cities
North 37 cities	Triângulo Mineiro (TMG) 4 cities	Monte Alegre de Minas, Prata, Uberaba, Conceição das Alagoas.
	Bebedouro (BEB) 21 cities	Ariranha, Barretos, Bebedouro, Cajobi, Colômbia, Embaúba, Itajobi, Marapoama, Monte Azul Paulista, Olímpia, Paraíso, Pirangi, Pitangueiras, Santa Adélia, Severínia, Taiaçu, Taiúva, Uchoa, Urupês, Vista Alegre do Alto, Terra Roxa.
	Altinópolis (ALT) 12 cities	Altinópolis, Batatais, Brodowski, Cássia dos Coqueiros, Ibiraci, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso.
Northwest 36 cities	Votuporanga (VOT) 25 cities	Álvares Florence, Aspásia, Estrela d'Oeste, Fernandópolis, Jales, Macedônia, Mesópolis, Murutinga do Sul, Palmeira d'Oeste, Paranapuã, Parisi, Pontalinda, Santa Albertina, Santa Clara d'Oeste, Santa Fé do Sul, Santa Salete, Santana da Ponte Pensa, São João das Duas Pontes, Sud Mennucci, Três Fronteiras, Turmalina, Urânia, Vitória Brasil, Votuporanga, Auriflama.
	São José do Rio Preto (SJO) 11 cities	Altair, Bálsamo, Cedral, Ipiguá, José Bonifácio, Mendonça, Mirassolândia, Monte Aprazível, Nhandeara, Nova Aliança, Potirendaba.
Central 48 cities	Matão (MAT) 12 cities	Américo Brasiliense, Bariri, Boa Esperança do Sul, Borborema, Fernando Prestes, Ibitinga, Itaju, Itápolis, Monte Alto, Novo Horizonte, Tabatinga, Taquaritinga.
	Duartina (DUA) 23 cities	Alvinlândia, Arealva, Avaí, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Fernão, Guaimbê, Iacanga, Lucianópolis, Marília, Paulistânia, Pederneiras, Piratininga, Presidente Alves, São Pedro do Turvo, Ubirajara, Agudos, Echaporã, Espírito Santo do Turvo, Guarantã, Santa Cruz do Rio Pardo.
	Brotas (BRO) 13 cities	Analândia, Bocaina, Brotas, Corumbataí, Dois Córregos, Itirapina, Mineiros do Tietê, Santa Maria da Serra, Torrinha, Trabiju, Ribeirão Bonito, São Carlos, São Pedro.
South 31 cities	Porto Ferreira (PFE) 12 cities	Aguaí, Casa Branca, Descalvado, Mococa, Pirassununga, Porto Ferreira, Santa Cruz das Palmeiras, Santa Rita do Passa Quatro, 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, Piracicaba, Santo Antônio de Posse, Águas de Lindóia.
Southwest 36 cities	Avaré (AVA) 19 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, Avaré, Botucatu, Capela do Alto, Guareí, Iperó, Itatinga, Manduri, Porto Feliz, Pratânia, Salto de Pirapora, Sorocaba, Tatuí, Arandu, Cerqueira César, Conchas.
	Itapetininga (ITG) 17 cities	Alambari, Buri, Capão Bonito, Itaberá, Itaí, Itapetininga, Itapeva, Itaporanga, Paranapanema, São Miguel Arcanjo, Sarapuí, Tejupá, Coronel Macedo, Itararé, Pilar do Sul, Sarutaiá, Taquarivaí.
Total 5 sectors	Total 12 regions	Total 188 cities

Table 99 – Acid limes and lemons: Cities with groves by sector and region [2018 inventory]

Sector	Region	Cities
North 47 cities	Triângulo Mineiro (TMG) 8 cities	Campina Verde, Campo Florido, Frutal, Monte Alegre de Minas, Prata, Uberaba, Conceição das Alagoas, Iturama.
	Bebedouro (BEB) 33 cities	Ariranha, Barretos, Bebedouro, Cajobi, Colina, Colômbia, Elisiário, Embaúba, Guaraci, Ibirá, Irapuã, Itajobi, Marapoama, Monte Azul Paulista, Novais, Olímpia, Paraíso, Pirangi, Sales, Santa Adélia, Severínia, Tabapuã, Taiaçu, Taiúva, Taquaral, Uchoa, Urupês, Viradouro, Vista Alegre do Alto, Catanduva, Catiguá, Palmares Paulista, Pindorama.
	Altinópolis (ALT) 6 cities	Altinópolis, Brodowski, Monte Santo de Minas, Patrocínio Paulista, Santo Antônio da Alegria, São Sebastião do Paraíso.
Northwest 70 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) 25 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Jaci, Ipiguá, José Bonifácio, Mendonça, Mirassolândia, Nhandeara, Nova Aliança, Palestina, Nova Granada, Planalto, Potirendaba, São José do Rio Preto, Tanabi, Macaubal, Guapiaçu, Neves Paulista, Onda Verde, Sebastianópolis do Sul, Zacarias.
Central 57 cities	Matão (MAT) 17 cities	Bariri, Boa Esperança do Sul, Borborema, Cândido Rodrigues, Fernando Prestes, Ibitinga, Itápolis, Itaju, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Taquaritinga, Tabatinga, Araraquara, Jaboticabal.
	Duartina (DUA) 31 cities	Arealva, Avaí, Bauru, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Fernão, Duartina, Getulina, Guaimbê, Iacanga, Lins, Lucianópolis, Pederneiras, Marília, Piratininga, Presidente Alves, São Pedro do Turvo, Ubirajara, Álvaro de Carvalho, Boracéia, Echaporã, Gália, Guaiçara, Guarantã, Ocauçu, Pirajuí, Pongaí, Promissão, Reginópolis, Uru.
	Brotas (BRO) 9 cities	Analândia, Bocaina, Corumbataí, Brotas, Dois Córregos, Itirapina, Mineiros do Tietê, Trabiju, Ribeirão Bonito.
South 40 cities	Porto Ferreira (PFE) 16 cities	Aguaí, Casa Branca, Pirassununga, Mococa, Porto Ferreira, Santa Rita do Passa Quatro, São João da Boa Vista, São Simão, Tambaú, Guaxupé, Guaranésia, Itobi, Luís Antônio, Santa Rosa de Viterbo, São José do Rio Pardo, Vargem Grande do Sul.
	Limeira (LIM) 24 cities	Araras, Artur Nogueira, Cordeirópolis, Conchal, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Iracemápolis, Jaguariúna, Leme, Limeira, Mogi Guaçu, Mogi Mirim, Piracicaba, Rio Claro, Santo Antônio de Posse, Serra Negra, Itatiba, Monte Alegre do Sul, Pinhalzinho, Charqueada, Itapira.
Southwest 20 cities	Avaré (AVA) 13 cities	Águas de Santa Bárbara, Angatuba, Avaré, Araçoiaba da Serra, Botucatu, Capela do Alto, Itatinga, Porto Feliz, Sorocaba, Tatuí, Arandu, Cabreúva, Cerqueira César.
	Itapetininga (ITG) 7 cities	Buri, Itaberá, Itapeva, Itaí, Itaporanga, Paranapanema, São Miguel Arcanjo.
Total 5 sectors	Total 12 regions	Total 234 cities

Table 100 – Tangerines: Cities with groves by sector and region [2018 inventory]

Sector	Region	Cities
North 49 cities	Triângulo Mineiro (TMG) 7 cities	Campina Verde, Campo Florido, Frutal, Itapagipe, Monte Alegre de Minas, Prata, Uberaba.
	Bebedouro (BEB) 30 cities	Ariranha, Barretos, Bebedouro, Cajobi, Colina, Colômbia, Elisiário, Embaúba, Ibirá, Irapuã, Marapoama, Guaraci, Itajobi, Monte Azul Paulista, Novais, Olímpia, Paraíso, Pirangi, Pitangueiras, Sales, Severínia, Santa Adélia, Tabapuã, Taiaçu, Taiúva, Taquaral, Uchoa, Urupês, Viradouro, Vista Alegre do Alto.
	Altinópolis (ALT) 12 cities	Altinópolis, Cajuru, Ibiraci, Itamogi, Jacuí, Monte Santo de Minas, Nova Resende, Patrocínio Paulista, Pedregulho, Santo Antônio da Alegria, São Pedro da União, São Sebastião do Paraíso.
Northwest 66 cities	Votuporanga (VOT) 44 cities	Álvares Florence, Américo de Campos, Andradina, Aparecida d'Oeste, Aspásia, Cardoso, 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 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, Urânia, Valentim Gentil, Vitória Brasil, Votuporanga, Mirandópolis.
	São José do Rio Preto (SJO) 22 cities	Adolfo, Altair, Bady Bassitt, Bálsamo, Cedral, Cosmorama, Floreal, Ipiguá, Jaci, José Bonifácio, Mendonça, Mirassolândia, Monte Aprazível, Nhandeara, Nova Aliança, Nova Granada, Palestina, Paulo de Faria, Planalto, Potirendaba, São José do Rio Preto, Tanabi.
Central 49 cities	Matão (MAT) 18 cities	Américo Brasiliense, Bariri, Boa Esperança do Sul, Borborema, Cândido Rodrigues, Fernando Prestes, Gavião Peixoto, Ibitinga, Itaju, Itápolis, Matão, Monte Alto, Motuca, Nova Europa, Novo Horizonte, Santa Lúcia, Tabatinga, Taquaritinga.
	Duartina (DUA) 21 cities	Alvinlândia, Arealva, Avaí, Bauru, Cabrália Paulista, Cafelândia, Campos Novos Paulista, Duartina, Fernão, Getulina, Guaimbê, Iacanga, Lins, Lucianópolis, Marília, Paulistânia, Pederneiras, Piratininga, Presidente Alves, São Pedro do Turvo, Ubirajara.
	Brotas (BRO) 10 cities	Analândia, Bocaina, Brotas, Corumbataí, Dois Córregos, Itirapina, Mineiros do Tietê, Santa Maria da Serra, Torrinha, Trabiju.
South 42 cities	Porto Ferreira (PFE) 13 cities	Aguaí, Casa Branca, Descalvado, 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, Guaxupé.
	Limeira (LIM) 29 cities	Amparo, Araras, Artur Nogueira, Bragança Paulista, Conchal, Cordeirópolis, Cosmópolis, Engenheiro Coelho, Espírito Santo do Pinhal, Estiva Gerbi, Holambra, Iracemápolis, Jaguariúna, Jarinu, Leme, Limeira, Mogi Guaçu, Mogi Mirim, Paulínia, Piracicaba, Rio Claro, Santo Antônio de Posse, Serra Negra, Socorro, Atibaia, Itatiba, Lindóia, Monte Alegre do Sul, Pinhalzinho.
Southwest 28 cities	Avaré (AVA) 16 cities	Águas de Santa Bárbara, Angatuba, Anhembi, Araçoiaba da Serra, 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, São Miguel Arcanjo, Sarapuí, Tejupá.
Total 5 sectors	Total 12 regions	Total 234 cities

3.3 – ABANDONED ORANGE GROVES

Abandoned groves are plots where no management signs are identified, therefore showing no pruning/mowing, insufficient plant health control, high infestation of pests and diseases, with frequent rotten fruit on the ground, and cattle present in the plot. In many cases, the grove degradation is so severe that it prevents agents entering to collect data such as tree spacing, planting year and variety.

Table 101 – Oranges: Area and percentage of abandoned groves in relation to the total area [2019 and 2020 inventories]

Sector and region	2019 inventory				2020 inventory			
	Updated abandoned area found in the mapping (scan)	Abandoned area found in the 2019 sample survey (previsiously bearing groves, abandoned in 2018)	Total	Percentage of abandoned area in relation to total	Updated abandoned area found in the mapping (scan)	Abandoned area found in the 2020 sample survey (previsiously bearing groves, abandoned in 2018 and 2019)	Total	Percentage of abandoned area in relation to total
	(hectares)	(hectares)	(hectares)	(%)	(hectares)	(hectares)	(hectares)	(%)
North								
Triângulo Mineiro...	11	-	11	0.04	1	76	77	0.28
Bebedouro.....	79	111	190	0.36	25	-	25	0.05
Altinópolis.....	6	115	121	1.07	6	-	6	0.05
Subtotal.....	**95**	**226**	**321**	**0.35**	**32**	**76**	**108**	**0.12**
Northwest								
Votuporanga.....	329	141	470	2.48	168	1,742	1,910	10.11
S. J. do Rio Preto....	-	93	93	0.39	-	388	388	1.57
Subtotal.....	**329**	**234**	**563**	**1.32**	**168**	**2,130**	**2,298**	**5.27**
Central								
Matão.....	60	281	341	0.88	41	-	41	0.11
Duartina.....	228	-	228	0.42	26	25	51	0.09
Brotas.....	245	230	475	2.45	184	1,154	1,338	6.75
Subtotal.....	**533**	**511**	**1,044**	**0.93**	**251**	**1,179**	**1,430**	**1.28**
South								
Porto Ferreira.....	165	-	165	0.41	8	-	8	0.02
Limeira.....	117	550	667	1.71	83	166	249	0.67
Subtotal.....	**282**	**550**	**832**	**1.06**	**91**	**166**	**257**	**0.33**
Southwest								
Avaré.....	5	-	5	0.01	-	-	-	-
Itapetininga.....	-	-	-	-	-	-	-	-
Subtotal.....	**5**	**-**	**5**	**0.01**	**-**	**-**	**-**	**-**
Total.....	**1,244**	**1,521**	**2,765**	**0.69**	**542**	**3,551**	**4,093**	**1.02**

Table 102 – Other oranges: Area and percentage of abandoned groves in relation to the total area [2019 and 2020 inventories]

Sector and region	2019 inventory				2020 inventory			
	Updated abandoned area found in the mapping (scan)	Abandoned area found in the 2019 sample survey (previsiously bearing groves, abandoned in 2018)	Total	Percentage of abandoned area in relation to total	Updated abandoned area found in the mapping (scan)	Abandoned area found in the 2020 sample survey (previsiously bearing groves, abandoned in 2018 and 2019)	Total	Percentage of abandoned area in relation to total
	(hectares)	(hectares)	(hectares)	(%)	(hectares)	(hectares)	(hectares)	(%)
North								
Triângulo Mineiro...	15	-	15	19.69	-	-	-	-
Bebedouro.....	41	-	41	5.96	1	-	1	0.19
Altinópolis.....	-	-	-	-	-	-	-	-
Subtotal.....	**55**	**-**	**55**	**5.78**	**1**	**-**	**1**	**0.13**
Northwest								
Votuporanga.....	-	-	-	-	-	-	-	-
S. J. do Rio Preto....	-	-	-	-	-	-	-	-
Subtotal.....	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Central								
Matão.....	4	-	4	1.10	-	-	-	-
Duartina.....	18	-	18	1.91	-	-	-	-
Brotas.....	99	-	99	6.89	21	208	229	19.47
Subtotal.....	**122**	**-**	**122**	**4.37**	**21**	**208**	**229**	**8.09**
South								
Porto Ferreira.....	-	-	-	-	-	-	-	-
Limeira.....	52	148	200	6.86	27	3	30	1.16
Subtotal.....	**52**	**148**	**200**	**3.48**	**27**	**3**	**30**	**0.65**
Southwest								
Avaré.....	6	-	6	0.27	-	-	-	-
Itapetininga.....	-	-	-	-	-	209	209	14.98
Subtotal.....	**6**	**-**	**6**	**0.17**	**-**	**209**	**209**	**5.55**
Total.....	**235**	**148**	**383**	**2.85**	**48**	**420**	**468**	**3.72**

2020-2021 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

MAY 2020 FORECAST

Fundecitrus
SCIENCE AND SUSTAINABILITY IN CITRICULTURE

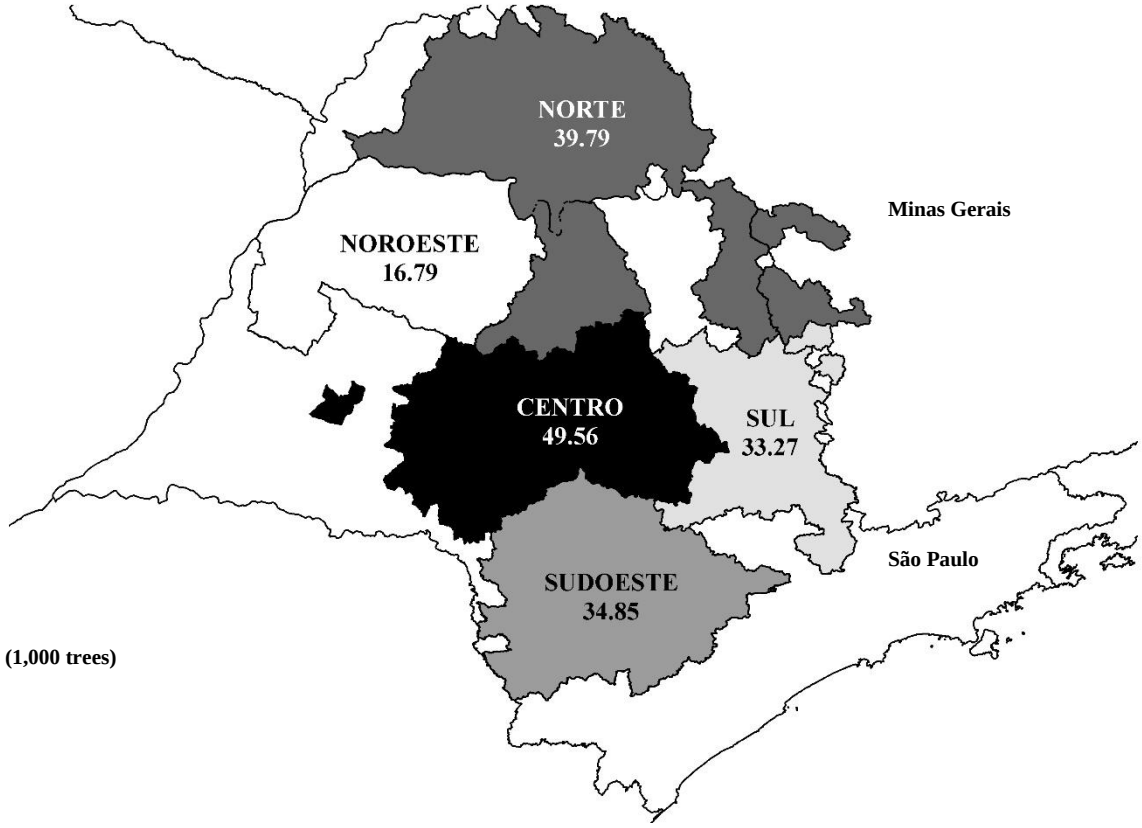
PES
Crop Forecast Survey

markestrat
Group

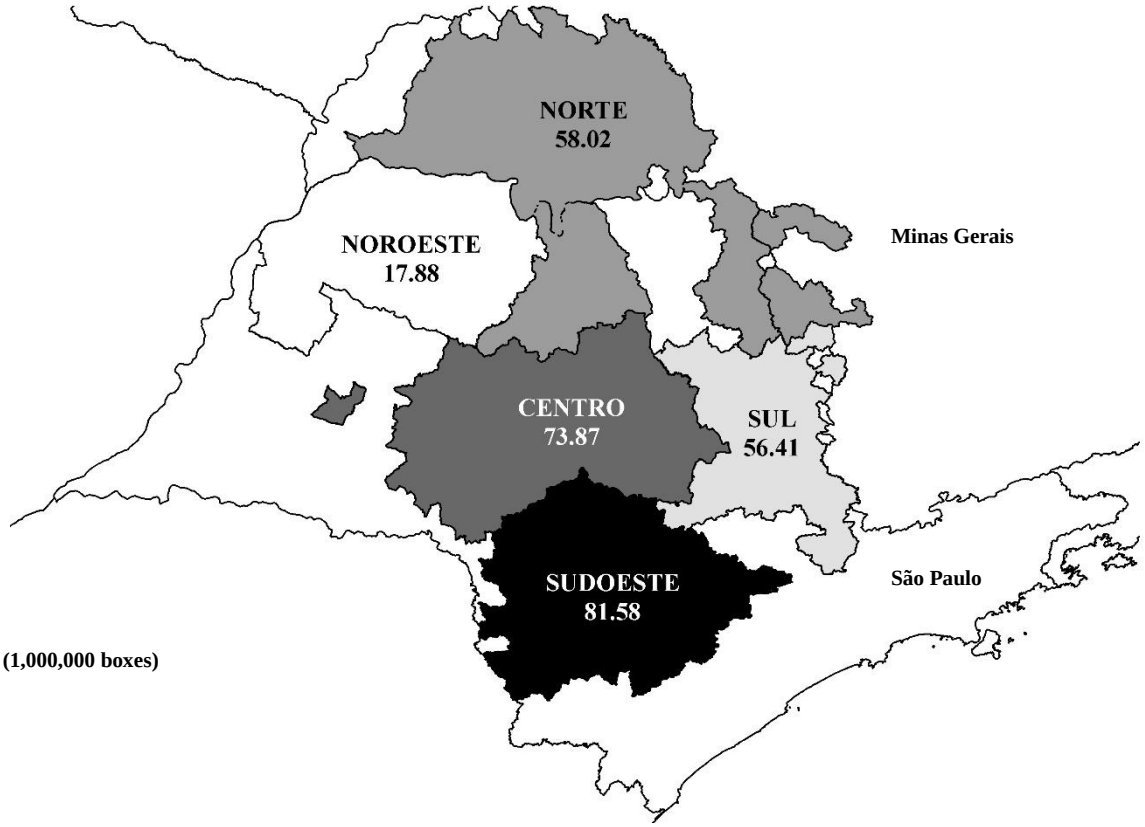
fea-RP
Faculdade de Economia, Administração e Contabilidade de Ribeirão Preto
Universidade de São Paulo

unesp
Jaboticabal

ORANGE BEARING TREES[1] BY SECTOR
Total: 174.25 million trees



2020-2021 ORANGE CROP FORECAST[1] BY SECTOR[2]
Total: 287.76 million boxes of 40.8 kg



[1] Snapshot in March 2020. Varieties: Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.
[2] Status in May 2020.

2020-2021 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT – MAY FORECAST

Published on May 26, 2020[1]

Publication Schedule

2020-2021 Crop Year
Executive summary of the 2020-2021 orange crop forecast: May 11, 2020
March 2020 tree inventory: May 26, 2020
Crop forecast: May 26, 2020
1st Crop forecast update: September 10, 2020
2nd Crop forecast update: December 10, 2020
3rd Crop forecast update: February 10, 2021
Final crop forecast: April 12, 2021

This is a live document in that it serves to know and explore the citrus belt in rich detail and provide support to agents in this sector. In that sense and with the aim of meeting the demands both from the citrus segment and the press, we reserve the right to enlarge, review and deepen the information already published. It is therefore recommended that the most recent publication available at www.fundecitrus.com.br be used.

[1] Year 6 – Nº 1 – May 26, 2020 (Portuguese only). Due to the advanced holiday of July 9 (Constitutionalist Revolution of 1932), this report was not published on May 25 as stated in the Executive Summary.
Year 6 – Nº 2 – June 03, 2020 (Portuguese only). Cover photo changed.
Year 6 – Nº 3 – June 25, 2020 (Portuguese and English versions).

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

2020-2021 ORANGE CROP FORECAST FOR THE SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT

MAY 2020 FORECAST

Fundecitrus
Araraquara, São Paulo
2020

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1 – 2020-2021 ORANGE CROP FORECAST

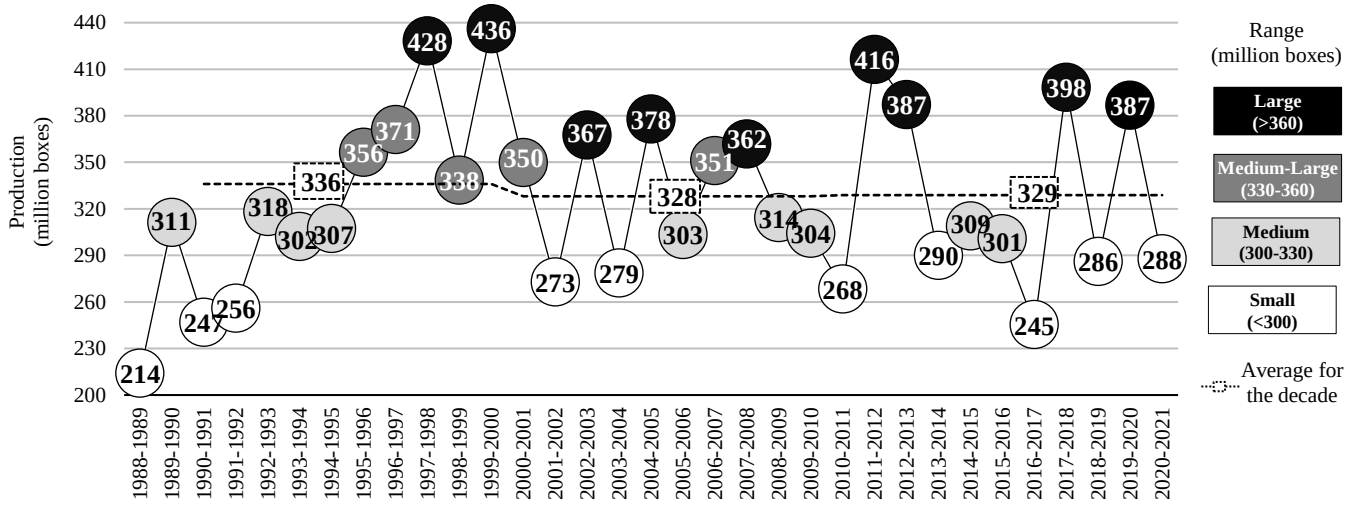
The 2020-2021 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, published on May 11, 2020 by Fundecitrus, in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp, is 287.76 million boxes (40.8 kg). Total orange production includes:

- 45.53 million boxes of the Hamlin, Westin and Rubi varieties;
- 13.05 million boxes of the Valencia Americana, Seleta and Pineapple varieties;
- 87.04 million boxes of the Pera Rio variety;
- 106.16 million boxes of the Valencia and Valencia Folha Murcha varieties;
- 35.98 million boxes of the Natal variety.

245.15 million boxes of the estimated production are of fruit from the first and second blooms (85.2% of the total), 34.64 million boxes are of fruit from the third bloom (12.0%) and 7.97 million boxes are of fruit from the fourth bloom (2.8%). Concerning the fourth bloom, 530 thousand boxes are of early varieties (6.6%), 4.80 million boxes of Pera Rio (60.2%), 1.52 million boxes of Valencia and Valencia Folha Murcha (19.1%) and 1.12 million boxes of Natal (14.1%).

Approximately 20.56 million boxes are expected to be produced in the Triângulo Mineiro.

The projected figure is 25.6% smaller than the previous crop of 386.79 million boxes, and 12.5% below the average crop size for the last 10 years. It is a small crop, considering the production potential of groves. Graph 1 shows the historical production series for the last 33 years.



Graph 1 – Orange production from 1988-1989 to 2019-2020 and 2020-2021 crop forecast
Sources: CitrusBR (1988-1989 to 2014-2015) and Fundecitrus (2015-2016 to 2020-2021)

Crop loss was caused by a significant reduction in the number of fruits per tree as compared to that in the previous crop. The large production in the last crop season increased the consumption of nutrient reserves in plants, which became scarce and triggered the phenomenon known as alternate bearing.

In addition to a lower energy availability for plants, the climate was also a negative influence. High temperatures in September and October 2019 affected the setting of newly formed fruit, from the so-called fruitlets (each the size of a pea) to those of approximately 3 cm of diameter.

Adverse climatic conditions were also seen in March and April 2020, affecting fruit at a more advanced stage of development. According to data from Somar Meteorologia, the accumulated rainfall volume in

that period was not even half the historical average (1981-2010), which restricted fruit growth as shown by the size of fruit stripped this season. Lower water availability reduced the immature fruit growth rate, which should also be observed in the next development stage, namely maturation.

Average yield per hectare this crop season is estimated at 790 boxes per hectare and 1,65 boxes per tree, as compared to 1,045 boxes per hectare and 2.22 boxes per tree harvested in the 2019-2020 crop. Early varieties, averaging 774 boxes per hectare, showed the highest yield drop in comparison to that of the previous crop, of 39.2%. The mid-season variety Pera Rio comes next: the 717 boxes expected per hectare this crop season represent a drop of 24.0% in relation to the previous crop. Next comes the Natal variety, with a drop of 22.3%% and an expected yield of 840 boxes per hectare. Lastly come the Valencia and Valencia Folha Murcha varieties with a drop of 14.6% and 853 boxes expected per hectare. Tables 1 and 2 present yields per variety and variations in relation to the previous crop season.

Table 1 – Yield per hectare and variety for the 2015-2016 crop to the 2020-2021 crop

Group of varieties	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021[f]
	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)
Hamlin, Westin and Rubi.....	865	744	1,235	833	1,319	772
Other earlies.....	784	744	1,008	810	1,121	779
Subtotal for earlies.....	847	744	1,184	828	1,273	774
Pera Rio.....	640	596	945	633	943	717
Valencia and V.Folha Murcha.	749	597	1,016	826	998	853
Natal.....	831	650	1,063	765	1,082	840
Total.....	**745**	**634**	**1,033**	**756**	**1,045**	**790**

[f] Forecast.

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

Group of varieties	2016-2017 in comparison to 2015-2016		2017-2018 in comparison to 2016-2017		2018-2019 in comparison to 2017-2018		2019-2020 in comparison to 2018-2019		2020-2021[f] in comparison to 2019-2020	
	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%
Hamlin, Westin and Rubi.....	-121	-14.0%	491	66.0%	-402	-32.5%	486	58.4%	-547	-41.5%
Other earlies.....	-40	-5.1%	264	35.5%	-198	-19.6%	311	38.4%	-341	-30.5%
Subtotal for earlies.....	-104	-12.2%	441	59.2%	-357	-30.1%	445	53.8%	-499	-39.2%
Pera Rio.....	-44	-6.9%	349	58.5%	-312	-33.0%	310	48.9%	-226	-24.0%
Valencia and V.Folha Murcha.	-153	-20.4%	420	70.3%	-190	-18.7%	172	20.9%	-145	-14.6%
Natal.....	-180	-21.7%	413	63.5%	-298	-28.0%	316	41.3%	-241	-22.3%
Total.....	**-111**	**-14.9%**	**399**	**62.9%**	**-278**	**-26.9%**	**290**	**38.3%**	**-256**	**-24.5%**

[f] Forecast.

Yield per sector this season as compared to that in the previous one shows significant variations among locations. The Northwest sector, encompassing the regions of Votuporanga and São José do Rio Preto, ranks first in yield drop in the current crop season as compared to the previous one, in a scale from high to low for all sectors. 492 boxes per hectare expected to be produced in the Northwest sector represent a drop of 46.7% in relation to the 2019-2020 crop. The North sector, comprising the regions of Triângulo Mineiro, Bebedouro and Altinópolis, ranks second with a yield drop of 35.9% and an expected yield of 686 boxes per hectare. The Central sector, encompassing the regions of Matão, Duartina and Brotas, ranks third with a yield drop of 30.1% and a yield of 721 boxes per hectare projected for this crop. The South sector, encompassing the regions of Porto Ferreira and Limeira, ranks fourth with a yield drop of 16.5% and 781 boxes expected per hectare. The Southwest sector, encompassing the regions of Avaré and

Itapetininga, ranks fifth with only 2.7% of yield drop and an expected harvest of 1,185 boxes per hectare. Tables 3 and 4 present yields per sector and variations in relation to the previous crop season.

Table 3 – Yield per hectare of sectors for the 2015-2016 crop to the 2020-2021 crop

Sector	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021[f]
	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)
North.....	792	495	1,108	606	1,070	686
Northwest.....	450	376	882	404	924	492
Central.....	613	616	984	707	1,032	721
South.....	779	664	989	770	936	781
Southeast.....	1,052	950	1,154	1,195	1,217	1,185
Total.....	**745**	**634**	**1,033**	**756**	**1,045**	**790**

[f] Forecast.

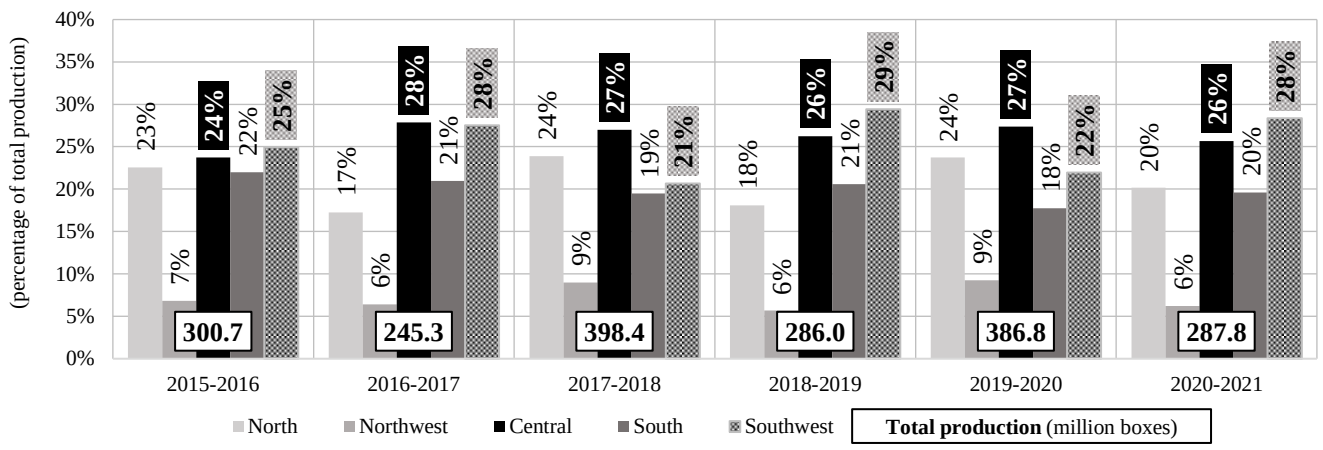
Table 4 – Variation in yield per hectare of sectors in relation to the previous crop season's

Sector	2016-2017 in comparison to 2015-2016		2017-2018 in comparison to 2016-2017		2018-2019 in comparison to 2017-2018		2019-2020 in comparison to 2018-2019		2020-2021[f] in comparison to 2019-2020	
	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%
North.....	-296	-37.4%	613	123.6%	-502	-45.3%	465	76.7%	-384	-35.9%
Northwest.....	-74	-16.4%	505	134.2%	-478	-54.2%	520	128.7%	-431	-46.7%
Central.....	3	0.4%	368	59.7%	-277	-28.1%	324	45.9%	-311	-30.1%
South.....	-116	-14.9%	325	49.0%	-218	-22.1%	165	21.5%	-155	-16.5%
Southwest.....	-102	-9.7%	204	21.5%	41	3.5%	22	1.8%	-32	-2.7%
Total.....	**-111**	**-14.9%**	**399**	**62.9%**	**-278**	**-26.9%**	**290**	**38.3%**	**-256**	**-24.5%**

[f] Forecast.

All positions held by varieties and sectors in the rankings, according to the criterion of yield variation expected for this crop in relation to the previous one, have been reversed this season, that is, the greater drop in yield expected for the current crop, the larger the increment observed in the previous crop. This is one evidence of the biennial production cycle of orange trees, showing that usually the fruit load one year is inversely proportional to the fruit load in the previous year, causing variations in yield per hectare that alternate with the crop seasons.

Although the Central has the largest concentration of bearing trees in the citrus belt, in years with adverse climatic conditions, such as this current crop year, the sector loses its orange production leadership to the Southwest sector, as shown in Graph 2, where the climate is more stable throughout the years.



Graph 2 – Share of sectors in total orange production for the 2015-2016 crop to the 2020-2021 crop

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

For increased critical mass and transparency, this survey has since its implementation developed activities with the follow-up from a technical committee organized in the 2015-2016 crop year with the purpose of offering operational improvement. This committee is made up by citrus growers, representatives of orange juice companies, academics, as well as Fundecitrus researchers and supervisors.

Results from the inventory and tree stripping were obtained throughout the survey, then compiled and 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 FEA-RP/USP and EAESP/FGV); and José Carlos Barbosa (methodology analyst linked to 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.

This team, together with Fundecitrus president Lourival Carmo Monaco in remote attendance, finalized the crop forecast on May 11, 2020, at 9:30 a.m., in a closed meeting at Fundecitrus, with no external communication channel beyond participants. Following that, at 10 a.m., Fundecitrus president began the public announcement of the crop forecast by videoconference, broadcast live on the website www.fundecitrus.com.br. Next, Fundecitrus general manager Antonio Juliano Ayres presented the detailed data at the Fundecitrus auditorium in Araraquara-SP, with no in-person attendance. After the crop forecast announcement, the Executive Summary of the 2020-2021 orange crop forecast was made available on the Fundecitrus website. The complete report, including the 2020 tree inventory and the 2020-2021 orange crop forecast, was made available in Portuguese on May 26, 2020 on www.fundecitrus.com.br.

Details on the estimate for the four components of the equation follow.

BEARING TREES

Bearing trees total 174.253 million, a 0.16% increase as compared to the previous inventory. Since the variation is positive, plants that started bearing fruit this crop season are more numerous than the total trees in groves that were accounted for as eradicated and abandoned in this new inventory.

Groves that reached bearing age this crop season were planted in 2017 and total 7.84 million bearing trees in 11,923 hectares, with an average density of 676 plants per hectare (calculation of density also considers non-bearing resets present in groves).

Conversely, groves accounted for as eradicated in this new inventory total 14,662 hectares and those accounted for as abandoned total 3,066 hectares, comprising a total loss of 17,728 hectares. Starting from

this area and the estimated average density of eradicated groves of 418 plants per hectare as an assumption to estimate the number of eradicated and abandoned trees, a total of 7.41 million plants is calculated as being lost.

Since the number of eradicated and abandoned trees is an estimate and there are other variables influencing the total bearing trees, such as number of resets in plots that start bearing fruit the following year and tree mortality, the purpose of these calculations is to indicate that there is high consistency across the inventory data, as well as to confirm that the density of new groves is higher than that of eradicated and abandoned groves. Consequently, despite the increased number of bearing trees, there is a decrease in the area of mature groves of 1.51%, totaling 364,444 hectares in this new inventory, as compared to the 370,048 hectares in the previous one.

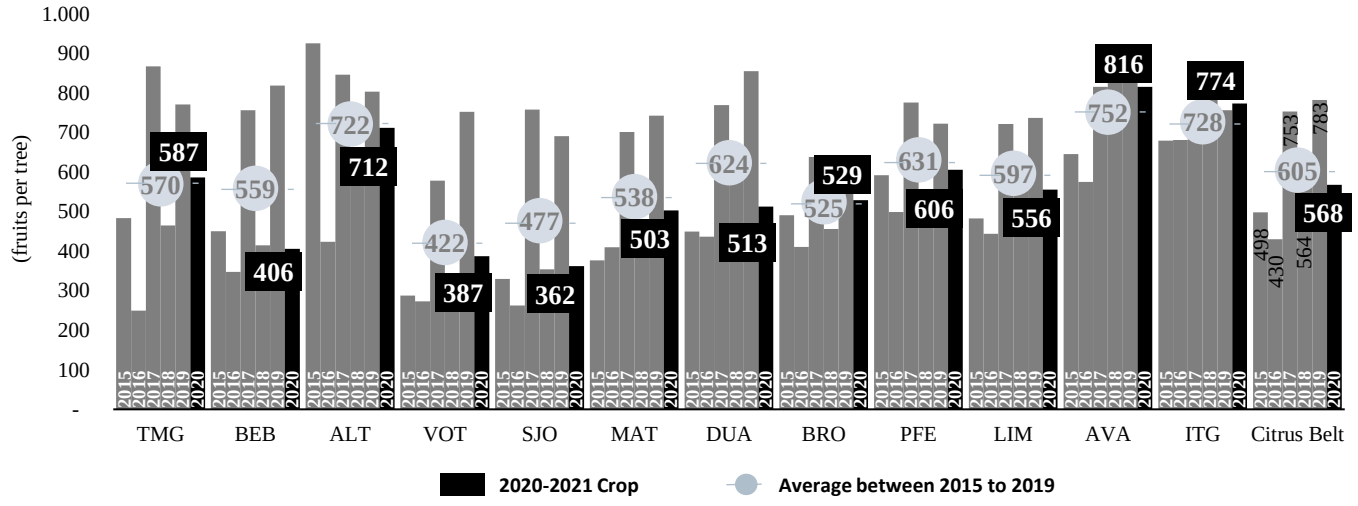
Varieties included in this forecast comprise 97% of trees and also 97% of the area of orange groves in the citrus belt.

Information on bearing trees was obtained from the Tree Inventory of the São Paulo and West-Southwest Minas Gerais Citrus Belt: Snapshot of Groves in March 2020, taken from the 2018 primary base – created by mapping groves from September 08, 2017 to January 29, 2018 – and from counting existing trees in 5% of orange plots, from January 07 to March 06, 2020. Plots for counting were drawn through stratified random sampling.

FRUIT PER TREE

The average number of fruits per tree in April 2020, disregarding fruit drop throughout the crop season, is calculated at 568. Flowering in groves was less intense than last years', which may be explained by the heavy fruit load in the last crop season, as well as by a shorter drought that therefore caused a lower water stress on plants.

Graph 3 shows the number of fruits per tree stripped in 2015 to 2020 in the citrus belt and separately for each of the twelve regions. Except for Itapetininga, all other regions present a decreased average number of fruits per tree as compared to the previous crop season. However, in terms of the average for the 2015 to the 2019 crop seasons, eight regions present a decrease.



Graph 3 – Number of fruits per tree stripped by region in 2015 to 2020

Distinct climatic conditions among regions of the citrus belt caused a lack of uniformity in the bloom profile. Drought, necessary to produce water stress and induce flowering in the São Paulo and West-

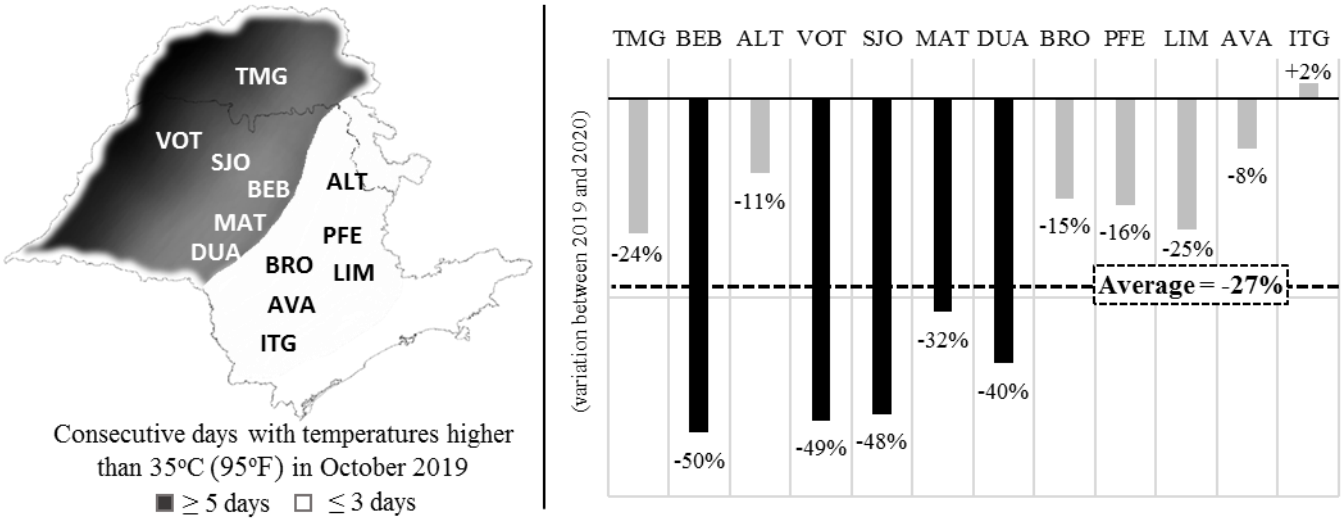
Southwest Minas Gerais citrus belt, did not start at the same time in all regions and varied in terms of duration and intensity. For most regions, it lasted approximately 30 days. The drought lasted more than 90 days only in the Triângulo Mineiro. In some regions drought took place in June while in others it occurred later, in the month of August.

Rainfall picked up unevenly among regions. Rain to break the drought fell in July in Porto Ferreira and Limeira, in August in the region of Votuporanga, and in the first week of September 2019 in the other regions. Although flowering was favored by conditions established by rainfall in non-irrigated groves, it was affected by an Indian Summer that lasted two weeks and hit most of the citrus belt in September. Associated to that phenomenon, temperatures were high, of up to 41ºC (105.8ºF) in several cities in the regions of the Triângulo Mineiro, Bebedouro and São José do Rio Preto.

Temperatures remained high during the month of October 2019, with highs of at least 35ºC (95ºF) in all other regions of the citrus belt, according to data from Somar Meteorologia. The region of Bebedouro presented the highest frequency of days with maximum temperatures above 35ºC (95ºF), for 23 days in October.

Heat was less intense in the regions of Altinópolis, Brotas, Porto Ferreira, Limeira, Avaré and Itapetininga, which favored the setting of newly formed fruit. In those locations, there were days with temperatures above 35ºC (95ºF) throughout October, although they were alternated with days of milder temperatures. Contrarily to the rest of the citrus belt, in those regions no more than three consecutive days recorded temperatures above 35ºC (95ºF), as shown in Figure 1.

Figure 1 – Consequence of temperatures observed in October to the number of fruits per tree for each region.



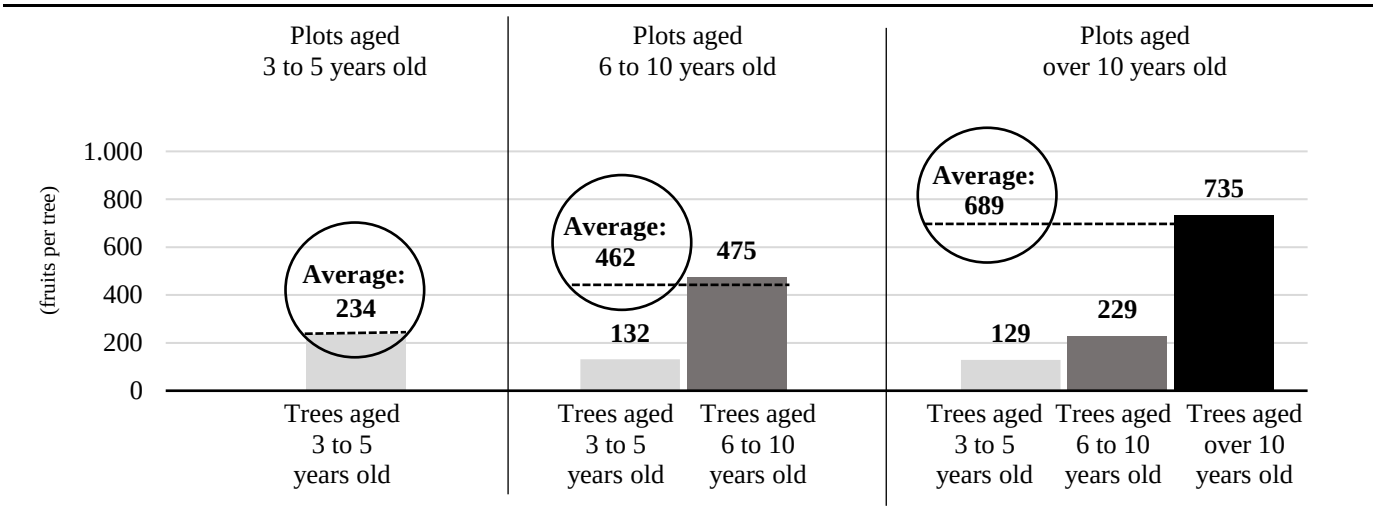
In order to advance flowering, irrigation was started notably in July 2019, which was seen in many groves in the Triângulo Mineiro, where 80% of the area is irrigated, which contributed to minimize the reduction in the number of fruits as compared to last year.

Adverse climatic conditions resulted in a high loss of fruits from the first bloom. However, due to a compensatory effect of this low setting there was a significant increase in the number of fruits from the second bloom.

The first bloom, from July to September 2019, accounts for 32.9% of the total fruits. The second bloom, in October and November 2019, is estimated at 52.3%. Together, these blooms correspond to 85.2% of the production and should be harvested at the same time. The third bloom, in December 2019 and January 2020, corresponds to 12.0% of the total, and the fourth bloom, as of February 2020, to 2.8%. For the forecast, all fruits from the first, second and third blooms were considered as a whole. A fruit set rate of 20% was applied to fruits from the fourth bloom, since it was a late bloom and because the physiological

drop of small and weak fruits had not taken place before stripping ended this year. In the separation of fruits per bloom, off-season fruits were also identified as a result 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 234 fruits per tree this crop season. For six to 10-year-old plots, an average of 462 fruits per tree is estimated, with 475 fruits per tree for original plantings and 132 fruits per tree for three to five-year-old resets. Plots over 10 years old have an expected average of 689 fruits per tree and a yield of 735 fruits per tree for original plantings, 229 fruits per tree for six to 10-year-old resets and 129 fruits per tree for three to five-year-old resets. Yields are presented in Graph 4.



Ages and planting years: 1 – 2 years (2017 and 2018), 3 – 5 years (2014 to 2016), 6 – 10 years (2009 to 2013) and over 10 years (2008 and previous years)
Graph 4 – Age-stratified number of fruits per tree in the plot

The subsequent blooms to compensate the low setting of the first blooms is a more marked characteristic in late and mid-season varieties than in the earlies, which was observed this year. The Natal variety presented the highest number of fruits per tree, surpassing the early varieties Hamlin, Westin and Rubi, that usually stand out as the most productive ones.

When trees were stripped in April 2020, an average of 634 fruits per tree were counted for the late variety Natal; 620 fruits per tree for the group of early varieties Hamlin, Westin and Rubi; 588 fruits per tree for the late varieties Valencia and Valencia Folha Murcha; 565 fruits per tree for other earlies and 506 fruits per tree for the mid-season Pera Rio variety.

The method used consists of tree stripping, that is, the advanced harvest of all fruits in the tree, regardless of the bloom they are from. This crop season, trees were stripped from March 12 to April 13, 2020. Fruits harvested were taken to a tree 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.

When tree stripping started in this crop season, the same number of samples of previous years was expected to be taken. However, with the onset of the Covid-19 pandemic in the first week of the survey, strategic decisions were made together with the PES technical committee, aiming at a reduced possibility of contagion and transmission of the new coronavirus, while still continuing to carry out the survey even in face of countless challenges that arose, such as closing of borders and interrupted service at restaurants and hotels in several cities.

Measures taken included the use of masks and alcohol-based hand sanitizer, quarantine for employees in the high risk group or those presenting symptoms of cold or flu, disinfection of surfaces and floors at the

tree stripping laboratory and distribution of posters with information on the disease. Sample size was reduced from 2,560 to 1,590 trees selected by a drawing. An initial drawing by the method of stratified random sampling included 1,000 trees distributed proportionally to the total orange trees in the citrus belt and stratified according to their region, variety and age. For increased estimate precision, 230 more trees that were original to plots were stripped. An additional drawing included 360 resets of ages lower than those in the age groups of the groves they were part of. These resets correspond to replacements made mainly to offset tree losses caused by greening, citrus canker 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 and Pineapple
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

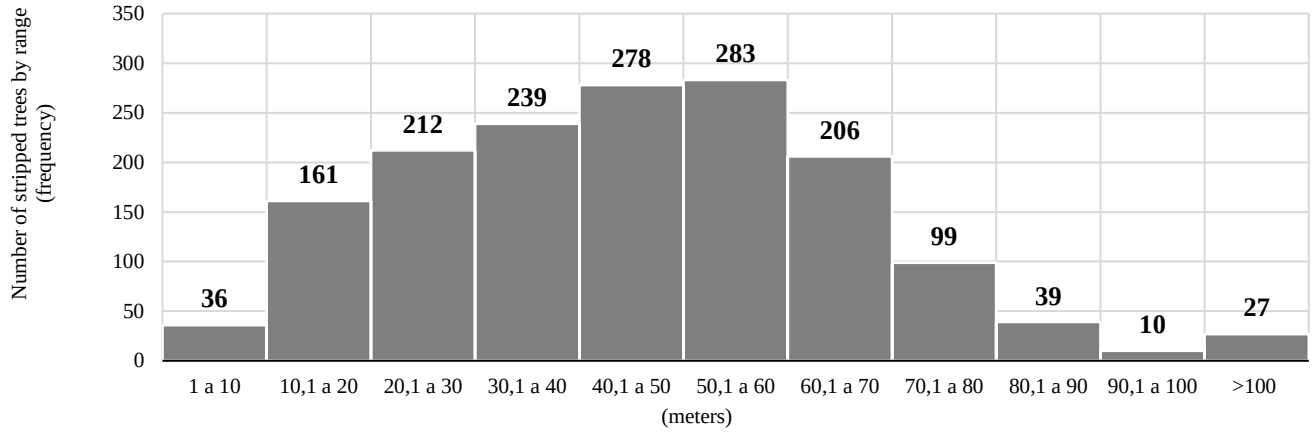
Age of plots[1]	Age of trees[2]
3 to 5	3 to 5 years
6 to 10 years	3 to 5 years
6 to 10 years	6 to 10 years
Over 10 years	3 to 5 years
Over 10 years	6 to 10 years
Over 10 years	Over 10 years

[1] Ages and planting years: 3 to 5 years (2015 to 2017), 6 to 10 years (2010 to 2014) and over 10 years (2009 and previous years).
[2] Estimated from information provided by growers on years resets were planted in the plot and from visual aspects of plants such as trunk circumference, height and shape of canopy, among other factors.

For the 1,230 trees in the first drawing, the location in the plot of the tree to be stripped is predetermined and varies every crop season. This makes the selection of the tree to be 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 2020-2021 crop, the tree in the drawn plot is the one located in the 21st planting hole in the 13th row. In case there is 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 is selected. Should that situation repeat itself, three more plants down are counted, until a tree of the drawn age is found. If the plot does not have 13 or more planting rows, the counting restarts in the existing rows until number 13 is reached. For the second drawing, of 360 resets, the stripped tree is found in the plot after visual aspects are considered, such as trunk circumference and size of canopy.

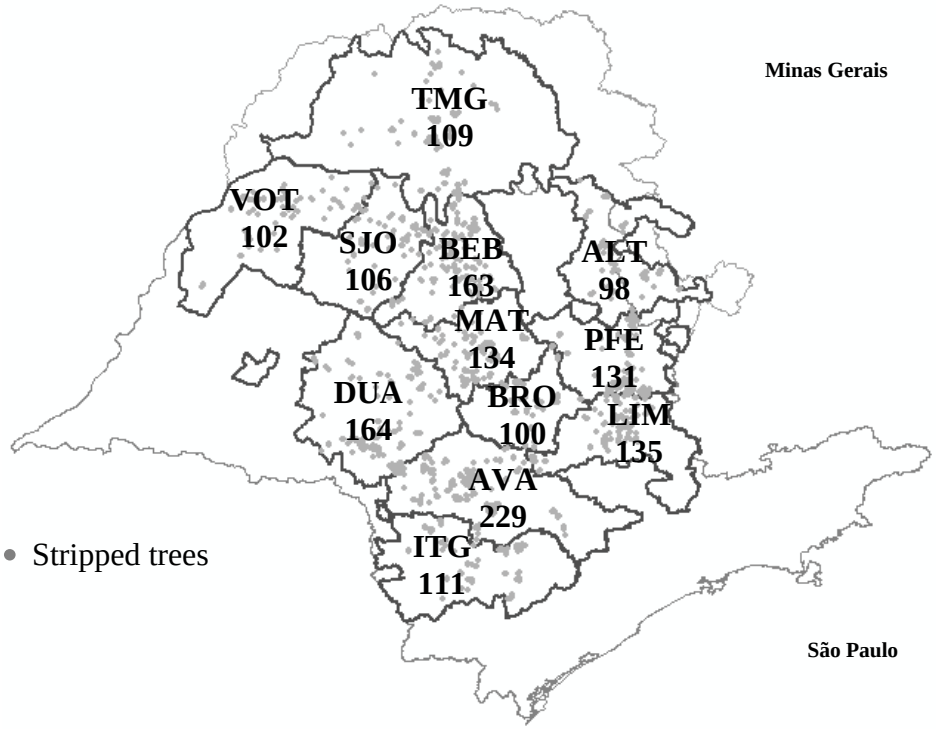
Graph 5 presents the distance (in meters) from the stripped tree to the nearest border of the plot, which shows the majority of classes with similar frequencies, with a central figure between 50 and 60 meters of distance from the stripped tree to the nearest border. Most of the 36 plots with the shortest distances, from one to ten meters, are small – approximately 80% of them have up to four hectares.



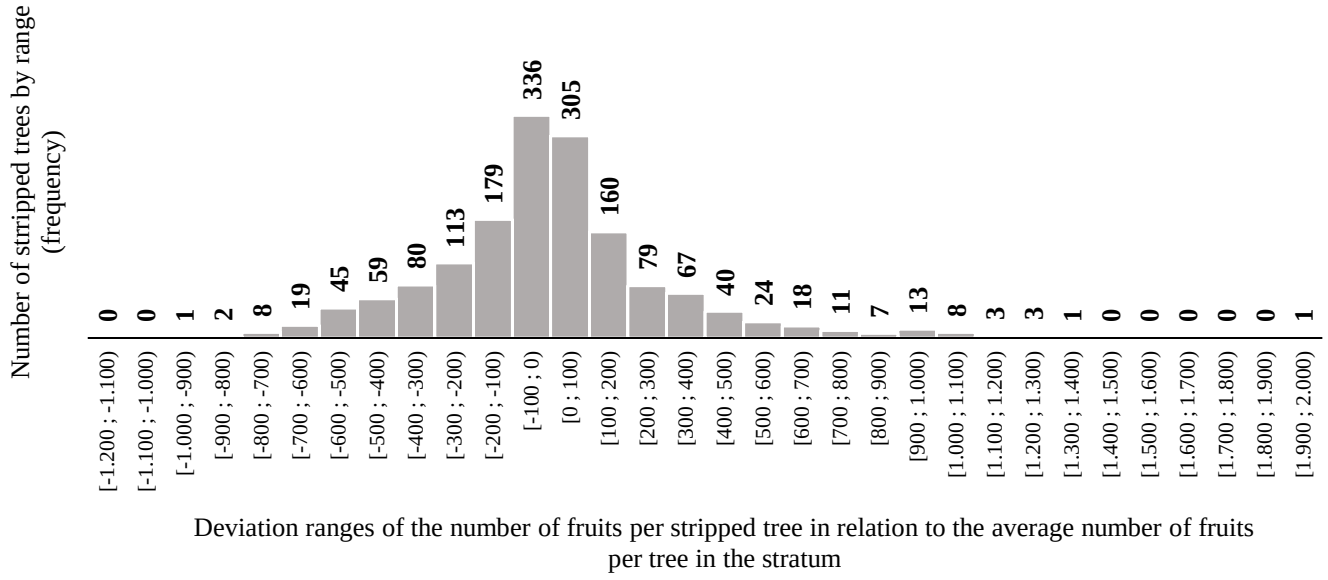
Graph 5 – Histogram of distances from the stripped tree to the nearest border of the plot

Figure 2 shows the location and number of stripped trees in each sector of the citrus belt.

Figure 2 – Location and total number of trees stripped per region

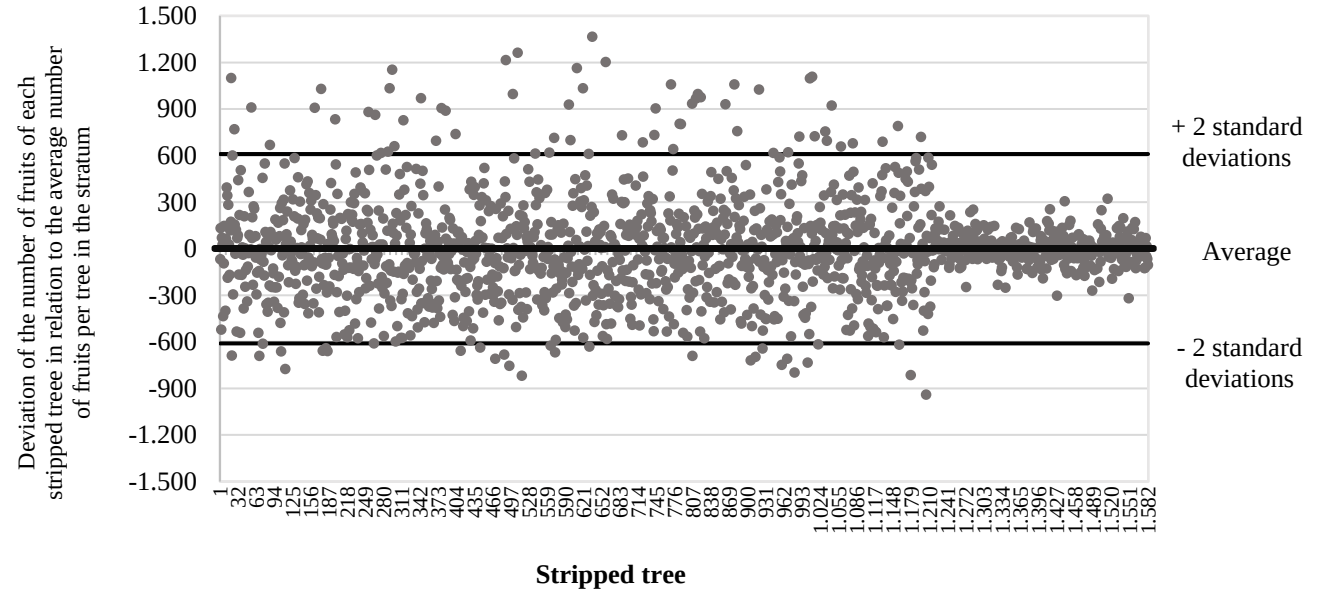


The average number of fruits per tree may vary plus or minus 15 fruits, which corresponds to ± 2.65 of the average number of fruits per tree obtained at stripping. This figure is within the expected error of 2% to 3% always used in sizing the sample. The yield deviation distribution analysis for each stripped tree in relation to the stratum average shows that sample data is randomly distributed according to a normal distribution, as presented in Graph 6. Out of the total samples, eight were discarded upon showing great discrepancy in relation to the others.



Graph 6 – Histogram of deviations of fruits per tree at stripping

Graph 7 shows the dispersion of deviations of each stripped tree in relation to the stratum average. It is observed that 95% of samples fall within the average (568 fruits) ± 2 standard deviations.



Graph 7 – 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$ 42.00 through an online payment system where citrus growers can register and redeem the amount due.

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

The projected average drop rate is 17.00%, distributed as follows: 10.50% for the early Hamlin, Westin and Rubi varieties; 11.50% for other early varieties; 16.50% for the mid-season Pera Rio variety; 20.00% for the late Valencia and Valencia Folha Murcha varieties; and 21.00% for the late Natal variety. This rate is applied to the number of fruits in the tree in April 2020, when trees are 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.

Should this fruit drop rate hold, it will be slightly above the rate of 16.70% observed in the 2018-2019 crop season, when the volume of boxes produced (285.98 million) and the distribution of blooms were similar to the estimate for this crop season. The top reason for this projection above historical baseline is the increased intensity of greening, the main disease that caused fruit drop observed in the previous crop season, as shown in Table 5.

Table 5 – Fruit drop rates by causes from the 2015-2016 crop to the 2019-2020 crop

Causes	Drop rate				
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	(percentage)	(percentage)	(percentage)	(percentage)	(percentage)
Physiological and mechanical…….....	N/A	5.99	7.45	5.16	5.15
Greening.....	N/A	1.37	4.06	2.70	4.39
Fruit borer and fruit fly.....	N/A	2.34	2.70	5.70	4.29
Black spot.....	N/A	3.75	2.16	2.02	2.12
Leprosis.....	N/A	0.25	0.62	0.82	1.30
Canker.....	N/A	0.03	0.31	0.30	0.38
Total.....	**17.49**	**13.73**	**17.31**	**16.70**	**17.63**

N/A – Non-available data, as survey of causes for fruit drop started in the 2016-2017 crop.

Monthly and continuous monitoring by Fundecitrus as of May 2020 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.

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 257 fruits per 40.8 kg box (90 lb), namely 294 fruits per box for the group of early varieties comprising Hamlin, Westin and Rubi; 271 fruits per box for the group of other early varieties; 268 fruits per box for the mid-season variety Pera Rio; 231 fruits per box for the late varieties Valencia and Valencia Folha Murcha; and 247 fruits per box for the late variety Natal.

The average size of 257 fruits per box is equivalent to oranges weighing approximately 159 grams (5.61 oz) at harvest. 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 from the first and second blooms in relation to the total production and the rainfall accumulated from May to July as independent variables. Data from the last 11 crops, 2009-2010 to 2019-2020, was used in the regression and is presented in Table 6. The result obtained shows an adjusted R^2 of 0.91 that means the four independent variables together explain 91% 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 the last 11 crops presents an average absolute error of 2.95%.

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 2009-2010 to 2014-2015 was 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 was 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 was kept confidential. Data relative to the 2015-2016 to 2019-2020 crops comes from results of estimates performed by Fundecitrus. Data on rainfall accumulated from May to July was supplied by Somar Meteorologia.

Data used in the model to estimate the final fruit size in this crop comprises figures from the 2020 stripping and the rainfall predicted for May to July 2020 in volumes equivalent to the climatological average (1981 – 2010) calculated with information from the Climatempo website. Final fruit size estimated by the regression is 261 for the 2020-2021 crop. This size was corrected by the regression that used the observed size as the dependent variable and the estimated size as the independent variable. The size projected by this other regression is 257 fruits per box for the 2020-2021 crop.

Table 6 – Data for the 2009-2010 crop to the 2019-2020 crop and data used to estimate the final fruit size in the 2020-2021 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)	(%)	(%)
2009-2010…	624	431	77%	143	250	239	-4%	4%
2010-2011…	532	457	97%	64	271	254	-6%	6%
2011-2012....	859	401	96%	116	269	266	-1%	1%
2012-2013....	764	439	95%	268	250	243	-3%	3%
2013-2014....	515	338	87%	247	224	216	-3%	3%
2014-2015....	646	373	92%	102	256	250	-2%	2%
2015-2016....	498	391	90%	204	226	235	4%	4%
2016-2017....	430	358	90%	214	222	224	1%	1%
2017-2018....	753	393	91%	184	246	250	2%	2%
2018-2019....	564	446	82%	36	259	265	2%	2%
2019-2020....	783	411	94%	95	261	268	3%	3%
2020-2021....	568	511	85%	133[ha]	(X)	261	(X)	(X)

Sources: Fundecitrus (2015-2016 crop to 2019-2020 crop), CitrusBr (2008-2009 crop to 2014-2015 crop), Somar Meteorologia and Climatempo.
(X) Not applicable.
ha Historical average.

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 considered in the calculations, such as harvested fruits that wind up not being used, diverse planting densities that are not included 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 and represents the average of the indexes of the 2015-2016 and 2016-2017 crops estimated by Fundecitrus.

3 – TABLES OF DATA

The following tables present the 2020-2021 orange crop forecast per sector, age, bloom and variety. In tables 18 to 22, the number of fruits per tree at stripping is presented separately for the 12 regions. If the estimate were made per region, the number of stripped trees would be statistically insufficient. Hence, the maximum detail on the estimate is per sector. Still, the margin of error of the production estimate per sector is higher than the production estimate for 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. Calculations made used whole numbers and all decimal points. Occasional divergences between figures on tables result from rounding numbers.

Table 7 – 2020-2021 Orange crop forecast by sector

Sector	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
North.....	84,556	476	39,789	502	1.46	686	58.02
Northwest.....	36,324	466	16,788	372	1.07	492	17.88
Central.....	102,484	494	49,559	512	1.49	721	73.87
South.....	72,230	479	33,265	582	1.70	781	56.41
Southwest.....	68,850	519	34,852	804	2.34	1,185	81.58
Total.....	**364,444**	**489**	**174,253**	**568**	**1.65**	**790**	**287.76**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).
[2] Weighted average per total stratum fruit.

Table 8 – 2020-2021 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.....	34,183	653	21,644	-	-	21,644	**234**			234
6 – 10 years.....	87,790	579	1,841	47,543	-	49,384	132	**475**		462
Over 10 years….....	242,471	433	2,921	5,840	94,464	103,225	129	229	**735**	689
Total.....	**364,444**	**489**	**26,406**	**53,383**	**94,464**	**174,253**	**215**	**448**	**735**	**568**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).
[2] Weighted average per total stratum fruit.

Table 8 – 2020-2021 Orange crop forecast by tree age group (continued)

Plots age	2020-2021 Orange crop forecast by tree age group				2020-2021 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.....	0.67	-	-	0.67	**14.50**	-	-	14.50
6 – 10 years.....	0.39	1.37	-	1.34	0.71	**65.34**	-	66.05
Over 10 years…...	0.38	0.66	2.14	2.01	1.10	3.84	**202.27**	207.21
Total.....	**0.62**	**1.30**	**2.14**	**1.65**	**16.31**	**69.18**	**202.27**	**287.76**

[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).

Table 9 – 2020-2021 Orange crop forecast by bloom

Bloom	2020-2021 Orange crop forecast	Percentage of the orange crop forecast by bloom
	(1,000,000 boxes)	(percentage)
1st.....	94.67	32.9%
2nd	150.48	52.3%
3rd.....	34.64	12.0%
4th	7.97	2.8%
Total.....	**287.76**	**100.00%**

Table 10 – 2020-2021 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.....	50.6	51.4	32.7	**47.6**	46.0	43.3	**44.4**	36.4	19.2	21.1	**25.4**	39.0	25.4	**32.8**	30.6	20.9	**28.0**	**32.9**
2nd.....	42.7	36.9	56.8	**42.7**	34.0	47.2	**41.8**	44.1	61.4	58.3	**54.9**	46.9	61.9	**53.7**	55.9	57.8	**56.4**	**52.3**
3rd.....	5.6	10.9	8.9	**8.6**	17.8	7.8	**11.9**	18.1	12.7	19.7	**15.7**	11.1	10.7	**10.9**	10.3	17.2	**12.2**	**12.0**
4th.....	1.1	0.8	1.6	**1.1**	2.2	1.7	**1.9**	1.5	6.7	0.9	**3.9**	3.0	2.0	**2.5**	3.2	4.2	**3.5**	**2.8**

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 11 – 2020-2021 Orange crop forecast and its components by variety group

Variety group	Mature groves area	Average density[1] of mature groves	Components of May/2020 forecast				2020-2021 Orange crop forecast		
			Bearing trees	Fruit per tree at stripping[2]	Fruit estimated per box	Estimated drop rate	Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(number)	(%)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:									
Hamlin, Westin and Rubi.....	58,964	468	26,889	620	294	10.50	1.69	772	45.53
Other early:									
Valencia Americana, Seleta, Pineapple.....	16,744	483	7,892	565	271	11.50	1.65	779	13.05
Mid-season:									
Pera Rio.....	121,450	520	61,520	506	268	16.50	1.41	717	87.04
Late:									
Valencia and VFolha Murcha[3]	124,459	475	58,166	588	231	20.00	1.83	853	106.16
Natal.....	42,827	473	19,786	634	247	21.00	1.82	840	35.98
Total.....	**364,444**	**489**	**174,253**	**568**	**257**	**17.00**	**1.65**	**790**	**287.76**

(X) Not applicable.
1 Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).
2 Weighted average per total stratum fruit.
3 V.Folha Murcha – Valencia Folha Murcha.

Table 12 – 2020-2021 Orange crop forecast by variety group and sector

Variety group	2020-2021 Orange 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.....	11.32	3.76	10.03	7.63	12.79	45.53
Other early:						
Valencia Americana, Seleta, Pineapple.....	3.55	1.24	4.85	0.85	2.56	13.05
Mid-season:						
Pera Rio.....	14.53	7.39	24.74	19.89	20.49	87.04
Late:						
Valencia and V.Folha Murcha[3]	21.63	4.47	27.25	22.63	30.18	106.16
Natal.....	6.99	1.02	7.00	5.41	15.56	35.98
Average.....	**58.02**	**17.88**	**73.87**	**56.41**	**81.58**	**287.76**

Table 13 – 2020-2021 Orange crop forecast by variety group – North Sector

Variety group	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:							
Hamlin, Westin and Rubi.....	17,162	438	7,450	557	1.52	660	11.32
Other early:							
Valencia Americana, Seleta, Pineapple.....	4,078	497	1,947	622	1.82	871	3.55
Mid-season:							
Pera Rio.....	23,498	541	12,549	414	1.16	618	14.53
Late:							
Valencia and V.Folha Murcha[3]	30,671	459	13,951	499	1.55	705	21.63
Natal.....	9,147	432	3,891	626	1.80	764	6.99
Average.....	**(X)**	**476**	**(X)**	**502**	**1.46**	**686**	**(X)**
Total.....	**84,556**	**(X)**	**39,789**	**(X)**	**(X)**	**(X)**	**58.02**

Table 14 – 2020-2021 Orange crop forecast by variety group – Northwest Sector

Variety group	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:							
Hamlin, Westin and Rubi.....	5,416	446	2,405	572	1.56	694	3.76
Other early:							
Valencia Americana, Seleta, Pineapple.....	3,052	443	1,339	320	0.93	406	1.24
Mid-season:							
Pera Rio.....	15,806	460	7,197	367	1.03	468	7.39
Late:							
Valencia and V.Folha Murcha[3]	8,192	489	3,982	361	1.12	546	4.47
Natal.....	3,858	489	1,866	190	0.55	264	1.02
Average.....	**(X)**	**466**	**(X)**	**372**	**1.07**	**492**	**(X)**
Total.....	**36,324**	**(X)**	**16,788**	**(X)**	**(X)**	**(X)**	**17.88**

(X) Not applicable.
1 Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).
2 Weighted average per total stratum fruit.
3 V.Folha Murcha – Valencia Folha Murcha.

Table 15 – 2020-2021 Orange crop forecast by variety group – Central Sector

Variety group	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Per hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:							
Hamlin, Westin and Rubi.....	14,966	486	7,121	516	1.41	670	10.03
Other early:							
Valencia Americana, Seleta, Pineapple.....	6,150	484	2,922	566	1.66	789	4.85
Mid-season:							
Pera Rio.....	36,218	528	18,640	475	1.33	683	24.74
Late:							
Valencia and V.Folha Murcha[3]	34,374	477	16,090	545	1.69	793	27.25
Natal.....	10,776	452	4,787	509	1.46	650	7.00
Average.....	**(X)**	**494**	**(X)**	**512**	**1.49**	**721**	**(X)**
Total.....	**102,484**	**(X)**	**49,559**	**(X)**	**(X)**	**(X)**	**73.87**

Table 16 – 2020-2021 Orange crop forecast by variety group – South Sector

Variety group	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Por hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:							
Hamlin, Westin and Rubi.....	10,408	481	4,748	589	1.61	733	7.63
Other early:							
Valencia Americana, Seleta, Pineapple.....	980	412	379	766	2.24	867	0.85
Mid-season:							
Pera Rio.....	26,893	507	12,976	548	1.53	740	19.89
Late:							
Valencia and V.Folha Murcha[3]	27,021	454	11,986	608	1.89	837	22.63
Natal.....	6,928	477	3,176	594	1.70	781	5.41
Average.....	**(X)**	**519**	**(X)**	**582**	**1.70**	**781**	**(X)**
Total.....	**72,230**	**(X)**	**33,265**	**(X)**	**(X)**	**(X)**	**56.41**

Table 17 – 2020-2021 Orange crop forecast by variety group – Southwest Sector

Variety group	Mature groves area	Average density[1] of mature groves	Bearing trees	Fruit per tree at stripping[2]	2020-2021 Orange crop forecast		
					Per tree	Por hectare	Total
	(hectares)	(trees/ hectare)	(1,000 trees)	(number)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
Early:							
Hamlin, Westin and Rubi.....	11,012	486	5,166	907	2.48	1,161	12.79
Other early:							
Valencia Americana, Seleta, Pineapple.....	2,484	532	1,305	669	1.96	1,031	2.56
Mid-season:							
Pera Rio.....	19,035	548	10,158	722	2.02	1,076	20.49
Late:							
Valencia and V.Folha Murcha[3]	24,201	513	12,157	799	2.48	1,247	30.18
Natal.....	12,118	515	6,065	895	2.57	1,284	15.56
Average.....	**(X)**	**519**	**(X)**	**804**	**2.34**	**1,185**	**(X)**
Total.....	**68,850**	**(X)**	**34,852**	**(X)**	**(X)**	**(X)**	**81.58**

(X) Not applicable.
[1] Calculation considers the total number of trees in the plot, that is, bearing and non-bearing trees (2018 and 2019 resets).
[2] Weighted average per total stratum fruit.
[3] V.Folha Murcha – Valencia Folha Murcha.

Table 18 – Fruit per tree at stripping[1] by age group, region and variety – North Sector [April 2020 stripping]

Region and variety groups	Plots 3 – 5 years Trees 3 – 5 years	Plots 6 – 10 years Trees 3 – 5 years	Plots 6 – 10 years Trees 6 – 10 years	Plots 6 – 10 years Average	Plots over 10 years Trees 3 – 5 years	Plots over 10 years Trees 6 – 10 years	Plots over 10 years Trees over 10 years	Plots over 10 years Average	Average
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
TMG[2]									
Early:									
Hamlin, Westin and Rubi.....	73	118	354	350	53	196	816	790	696
Other early varieties[3].....	185	42	536	531	14	167	556	554	531
Mid-season:									
Pera Rio.....	156	69	503	498	81	196	333	328	410
Late:									
Valencia and V.Folha Murcha[4]....	151	25	455	453	17	363	706	697	576
Natal.....	50	186	555	553	36	308	1,098	1,073	941
Average[1].....	**147**	**70**	**476**	**473**	**39**	**250**	**756**	**740**	**587**
BEB[5]									
Early:									
Hamlin, Westin and Rubi.....	66	34	593	556	90	54	468	418	428
Other early varieties[3].....	185	81	464	459	195	220	814	752	647
Mid-season:									
Pera Rio.....	186	92	319	314	70	74	534	496	359
Late:									
Valencia and V.Folha Murcha[4]....	91	108	281	276	36	47	510	467	382
Natal.....	402	31	141	139	94	321	535	505	409
Average[1].....	**174**	**78**	**339**	**332**	**81**	**91**	**533**	**488**	**406**
ALT[6]									
Early:									
Hamlin, Westin and Rubi.....	141	202	1,189	870	163	322	1,065	918	894
Other early varieties[3].....	NA	130	701	638	170	171	290	277	397
Mid-season:									
Pera Rio.....	320	190	795	788	198	139	740	678	637
Late:									
Valencia and V.Folha Murcha[4]....	97	121	374	359	313	203	846	784	751
Natal.....	259	192	1,045	900	96	262	624	536	523
Average[1].....	**268**	**179**	**748**	**685**	**230**	**219**	**826**	**752**	**712**
Average sector.....	**179**	**90**	**407**	**400**	**123**	**137**	**648**	**603**	**502**

NA Not Available
1 Weighted average per total stratum fruit.
2 TMG – Triângulo Mineiro.
3 Valencia Americana, Seleta and Pineapple.
4 V.Folha Murcha – Valencia Folha Murcha.
5 BEB – Bebedouro.
6 ALT – Altinópolis.

Table 19 – Fruit per tree at stripping[1] by age group, region and variety – Northwest Sector [April 2020 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.....	200	11	638	625	78	177	637	626	589
Other early varieties[3].....	194	46	234	230	37	187	396	390	304
Mid-season:									
Pera Rio.....	239	113	401	394	33	273	428	413	368
Late:									
Valencia and V.Folha Murcha[4]....	302	126	395	392	46	73	360	352	361
Natal.....	103	133	185	183	93	164	74	77	107
Average[1].....	**206**	**80**	**408**	**402**	**47**	**178**	**406**	**396**	**362**
SJO[5]									
Early:									
Hamlin, Westin and Rubi.....	122	177	743	736	ND	397	371	372	491
Other early varieties[3].....	194	133	526	408	ND	26	446	439	426
Mid-season:									
Pera Rio.....	144	90	385	380	72	308	431	427	367
Late:									
Valencia and V.Folha Murcha[4]....	200	193	450	445	46	43	351	348	363
Natal.....	407	155	538	532	312	235	664	648	595
Average[1].....	**162**	**109**	**410**	**403**	**80**	**256**	**423**	**419**	**387**
Average sector.....	**195**	**94**	**409**	**402**	**55**	**198**	**413**	**405**	**372**

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

Table 20 – Fruit per tree at stripping[1] by age group, region and variety – Central Sector [April 2020 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.....	147	71	192	188	210	292	776	725	462
Other early varieties[3].....	170	159	751	719	169	536	730	711	598
Mid-season:									
Pera Rio.....	272	175	424	413	210	299	881	843	520
Late:									
Valencia and V.Folha Murcha[4]....	198	234	393	388	88	72	624	547	436
Natal.....	504	52	456	430	343	338	990	856	641
Average[1].....	**263**	**171**	**407**	**397**	**195**	**230**	**781**	**722**	**503**
DUA[6]									
Early:									
Hamlin, Westin and Rubi.....	219	55	417	395	63	268	721	642	523
Other early varieties[3].....	271	45	406	374	168	158	765	702	500
Mid-season:									
Pera Rio.....	218	53	384	362	42	119	618	582	462
Late:									
Valencia and V.Folha Murcha[4]....	126	113	490	473	93	85	846	765	609
Natal.....	165	210	360	353	12	174	558	520	437
Average[1].....	**194**	**79**	**417**	**397**	**63**	**145**	**701**	**645**	**513**
BRO[7]									
Early:									
Hamlin, Westin and Rubi.....	256	176	439	411	59	180	849	743	672
Other early varieties[3].....	221	153	527	486	58	443	1,124	1,037	668
Mid-season:									
Pera Rio.....	199	87	415	401	130	482	466	455	399
Late:									
Valencia and V.Folha Murcha[4]....	150	78	444	424	135	105	709	609	566
Natal.....	249	291	473	436	118	299	709	594	514
Average[1].....	**201**	**137**	**437**	**417**	**125**	**194**	**685**	**601**	**529**
Average sector.....	**225**	**122**	**415**	**400**	**113**	**181**	**719**	**656**	**512**

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

Table 21 – Fruit per tree at stripping[1] by age group, region and variety – South Sector [April 2020 stripping]

Region and variety groups	Plots 3 – 5 years Trees 3 – 5 years	Plots 6 – 10 years Trees 3 – 5 years	Plots 6 – 10 years Trees 6 – 10 years	Plots 6 – 10 years Average	Plots over 10 years Trees 3 – 5 years	Plots over 10 years Trees 6 – 10 years	Plots over 10 years Trees over 10 years	Plots over 10 years Average	Average
	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
PFE[2]									
Early:									
Hamlin, Westin and Rubi.....	263	117	418	408	135	542	934	817	618
Other early varieties[3].....	171	127	708	702	111	177	1,058	842	808
Mid-season:									
Pera Rio.....	398	150	471	457	137	197	762	697	565
Late:									
Valencia and V.Folha Murcha[4]....	264	185	674	647	86	159	781	710	653
Natal.....	230	78	245	237	123	254	1,041	948	566
Average[1].....	**323**	**153**	**506**	**489**	**119**	**264**	**820**	**743**	**606**
LIM[5]									
Early:									
Hamlin, Westin and Rubi.....	419	237	675	636	262	410	586	557	563
Other early varieties[3].....	171	114	441	385	69	236	850	816	710
Mid-season:									
Pera Rio.....	250	271	507	496	250	528	666	645	530
Late:									
Valencia and V.Folha Murcha[4]....	353	177	544	520	183	390	619	588	558
Natal.....	196	245	669	626	178	117	832	756	637
Average[1].....	**291**	**236**	**553**	**533**	**223**	**393**	**644**	**613**	**556**
Average sector.....	**310**	**197**	**527**	**509**	**171**	**317**	**730**	**678**	**582**

NA Not Available
1 Weighted average per total stratum fruit.
2 PFE – Porto Ferreira.
3 V.Americana – Valencia Americana, Seleta and Pineapple
4 V.Folha Murcha – Valencia Folha Murcha.
5 LIM – Limeira.

Table 22 – Fruit per tree at stripping[1] by age group, region and variety – Southwest Sector [April 2020 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.....	272	79	613	601	57	435	1,041	966	913
Other early varieties[3].....	159	417	555	555	94	570	1,078	1,047	883
Mid-season:									
Pera Rio.....	272	179	624	614	90	294	829	799	734
Late:									
Valencia and V.Folha Murcha[4]....	291	150	589	582	124	215	917	877	816
Natal.....	291	29	694	602	399	617	925	910	855
Average[1].....	**272**	**85**	**619**	**599**	**123**	**347**	**920**	**882**	**816**
ITG[5]									
Early:									
Hamlin, Westin and Rubi.....	188	242	1,163	1,153	76	369	1,285	1,269	885
Other early varieties[3].....	144	176	572	569	69	269	1,040	1,011	404
Mid-season:									
Pera Rio.....	196	136	1,234	1,220	46	283	686	679	693
Late:									
Valencia and V.Folha Murcha[4]....	313	135	709	706	60	273	869	858	749
Natal.....	298	195	1,020	983	100	316	1,123	1,116	975
Average[1].....	**222**	**165**	**969**	**959**	**72**	**291**	**955**	**944**	**774**
Average sector.....	**237**	**100**	**766**	**748**	**120**	**343**	**927**	**894**	**804**

NA Not Available
1 Weighted average per total stratum fruit.
2 AVA – Avaré.
3 V.Americana – Valencia Americana, Seleta and Pineapple
4 V.Folha Murcha – Valencia Folha Murcha.
5 ITG – Itapetininga.

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