Current forecast update (variation regarding the December forecast):   **February, 10 2021**

Total orange crop production forecast: 269.01 million boxes (decreased of 0.13%)

Hamlin, Westin and Rubi: 47.00 million boxes (unchanged)

Other early season: 13.85 million boxes (unchanged)

Pera Rio: 81.83 million boxes (increased of 3.74%)

Valencia and Valencia Folha Murcha: 91.72 million boxes (decreased of 2.80%)

Natal: 34.61 million boxes (decreased of 1.87%)

Publication Schedule 2020-2021

Final crop forecast: April 12, 2021

Orange crop forecast update by sector and variety group – citrus belt

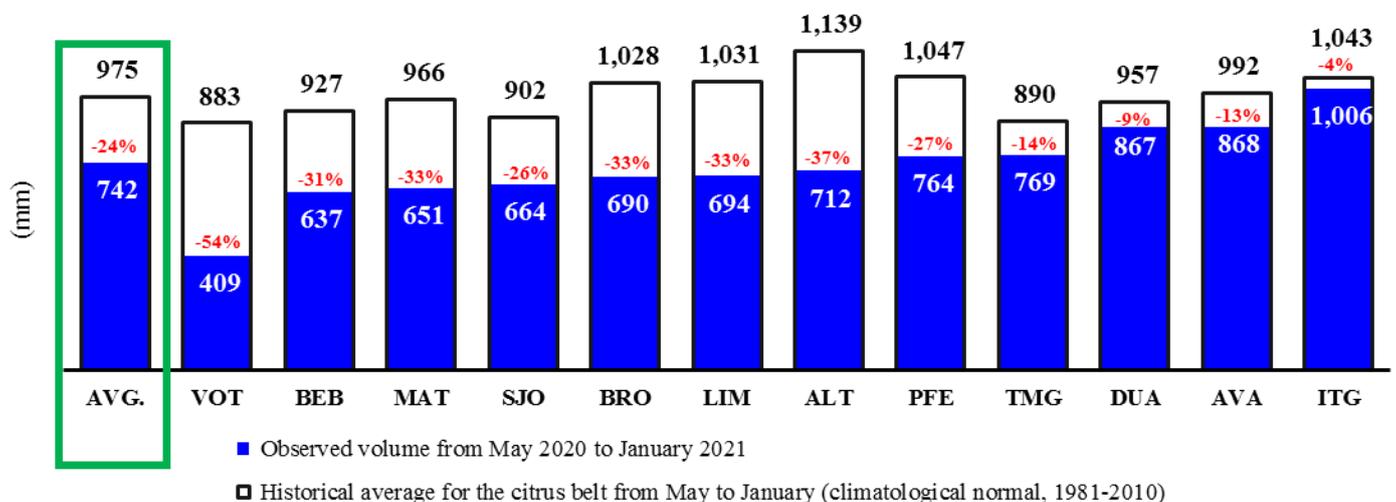| Month | Forecast components | | | | Crop forecast update 2020-2021 | | | Crop forecast update 2020-2021 | | |
| | December/2020 and February/2021 (strike-through values were presented in December, to their left are their respective values updated in February) | | | | December/2020 | | | February/2021 | | |
Sector and variety group	Bearing trees	Fruit per tree at stripping	Fruit estimated per box	Estimated drop rate	Per tree	Per hectare	Total	Per tree	Per hectare	Total
	(1,000 trees)	(number)	(number)	(percentage)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)	(boxes/ tree)	(boxes/ hectare)	(1,000,000 boxes)
CITRUS BELT										
Hamlin, Westin and Rubi.......	26,889	620	278	12.80	1.75	797	47.00	1.75	797	47.00
Other early............................	7,892	565	255	11.50	1.75	827	13.85	1.75	827	13.85
Pera Rio.................................	61,520	506	266 ~~276~~	22.20	1.28	649	78.88	1.33	674	81.83
Valencia and Folha Murcha...	58,166	588	252 ~~245~~	24.70	1.62	758	94.36	1.58	737	91.72
Natal......................................	19,786	634	249 ~~247~~	23.50 ~~22.70~~	1.78	824	35.27	1.75	808	34.61
Total.................................	**174,253**	**568**	**261**	**21.20 ~~21.10~~**	**1.55**	**739**	**269.36**	**1.54**	**738**	**269.01**
NORTH SECTOR										
Hamlin, Westin and Rubi.......	7,450	557	278	12.80	1.57	681	11.69	1.57	681	11.69
Other early............................	1,947	622	255	11.50	1.94	924	3.77	1.94	924	3.77
Pera Rio.................................	12,549	414	266 ~~276~~	22.20	1.05	560	13.17	1.09	581	13.66
Valencia and Folha Murcha...	13,951	499	252 ~~245~~	24.70	1.38	627	19.23	1.34	609	18.69
Natal......................................	3,891	626	249 ~~247~~	23.50 ~~22.70~~	1.76	749	6.85	1.73	735	6.72
Subtotal.............................	**39,789**	**502**	**261**	**21.20 ~~21.10~~**	**1.38**	**647**	**54.71**	**1.37**	**645**	**54.53**
NORTHWEST SECTOR										
Hamlin, Westin and Rubi.......	2,405	572	278	12.80	1.61	716	3.88	1.61	716	3.88
Other early............................	1,339	320	255	11.50	0.99	436	1.33	0.99	436	1.33
Pera Rio.................................	7,197	367	266 ~~276~~	22.20	0.93	423	6.69	0.96	439	6.94
Valencia and Folha Murcha...	3,982	361	252 ~~245~~	24.70	0.99	483	3.96	0.97	471	3.86
Natal......................................	1,866	190	249 ~~247~~	23.50 ~~22.70~~	0.54	259	1.00	0.53	254	0.98
Subtotal.............................	**16,788**	**372**	**261**	**21.20 ~~21.10~~**	**1.00**	**464**	**16.86**	**1.01**	**468**	**16.99**
CENTRAL SECTOR										
Hamlin, Westin and Rubi.......	7,121	516	278	12.80	1.45	692	10.35	1.45	692	10.35
Other early............................	2,922	566	255	11.50	1.76	836	5.14	1.76	836	5.14
Pera Rio.................................	18,640	475	266 ~~276~~	22.20	1.20	619	22.43	1.25	642	23.27
Valencia and Folha Murcha...	16,090	545	252 ~~245~~	24.70	1.51	705	24.23	1.46	685	23.55
Natal......................................	4,787	509	249 ~~247~~	23.50 ~~22.70~~	1.43	637	6.86	1.41	625	6.73
Subtotal.............................	**49,559**	**512**	**261**	**21.20 ~~21.10~~**	**1.39**	**673**	**69.01**	**1.39**	**674**	**69.04**
SOUTH SECTOR										
Hamlin, Westin and Rubi.......	4,748	589	278	12.80	1.66	757	7.88	1.66	757	7.88
Other early............................	379	766	255	11.50	2.37	918	0.90	2.37	918	0.90
Pera Rio.................................	12,976	548	266 ~~276~~	22.20	1.39	670	18.02	1.44	695	18.70
Valencia and Folha Murcha...	11,986	608	252 ~~245~~	24.70	1.68	744	20.11	1.63	724	19.55
Natal......................................	3,176	594	249 ~~247~~	23.50 ~~22.70~~	1.67	764	5.29	1.64	751	5.20
Subtotal.............................	**33,265**	**582**	**261**	**21.20 ~~21.10~~**	**1.57**	**723**	**52.20**	**1.57**	**723**	**52.23**
SOUTHWEST SECTOR										
Hamlin, Westin and Rubi.......	5,166	907	278	12.80	2.56	1,199	13.20	2.56	1,199	13.20
Other early............................	1,305	669	255	11.50	2.08	1,091	2.71	2.08	1,091	2.71
Pera Rio.................................	10,158	722	266 ~~276~~	22.20	1.83	976	18.57	1.90	1,012	19.26
Valencia and Folha Murcha...	12,157	799	252 ~~245~~	24.70	2.21	1,109	26.83	2.14	1,077	26.07
Natal......................................	6,065	895	249 ~~247~~	23.50 ~~22.70~~	2.52	1,260	15.27	2.47	1,236	14.98
Subtotal.............................	**34,852**	**804**	**261**	**21.20 ~~21.10~~**	**2.20**	**1,112**	**76.58**	**2.19**	**1,107**	**76.22**

Updated orange[1] crop forecast totals 269.01 million boxes

The 2020-2021 orange crop forecast update for the São Paulo and West-Southwest Minas Gerais citrus belt, published on February 10, 2021 by Fundecitrus – performed in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp[2] – is 269.01 million boxes of 40.8 kg each (90 lbs). Approximately 19.27 million boxes of the total crop should be produced in West Minas Gerais.

In this third update on a downward trend, the crop accumulates a decrease of 6.52% in relation to the initial estimate. In comparison to the previous crop, the reduction is 30.45%, the worst index of all years in which the crop also withstood the physiological effects of the negative biennial bearing. This crop loss, unprecedented in the history of citriculture, evidences the severity of climatic issues in this season, although production losses due to orange trees that died from drought before harvest have not yet been included. The number of dead trees and fruit unharvested is being determined by a sample survey encompassing 5% of plots distributed throughout the citrus belt, aiming to update the tree inventory for the next crop season. The reduction in production of the 2020-2021 cycle, caused by this atypical tree mortality, will be presented on the final crop estimate of April 12, 2021.

After weather stations in the citrus belt recorded the highest December rainfall in at least one decade, with a volume that was 8% above historical average, the citrus belt went back to facing the shortage of rain in January 2021, which prevails since the beginning of the crop season as a result mainly from the La Niña phenomenon. According to data from Somar Meteorologia, in the first month this year rather irregular rains were 37% below reference value (climatological normal, 1981-2010), all citrus belt regions considered. Therefore, the accumulated volume of 742 millimeters since the beginning of the current crop season, that is, from May 2020 to January 2021, is still below historical average: approximately 230 millimeters less, which corresponds to a deficit of 24%. All regions of the citrus belt share the same situation at different levels: -54%, in Votuporanga (VOT); -37%, in Altinópolis (ALT); -33%, in Brotas (BRO), Limeira (LIM) and Matão (MAT); -31%, in Bebedouro (BEB); -27%, in Porto Ferreira (PFE); -26%, in São José do Rio Preto (SJO); -14%, in the Triângulo Mineiro (TMG); -13%, in Avaré (AVA); -9%, in Duartina (DUA) and -4% in Itapetininga (ITG). Graph 1 presents the accumulated rainfall for the nine months already gone by this crop year.

Graph 1: Accumulated rainfall volume from May 2020 to January 2021 for regions of the citrus belt
Source: Fundecitrus, according to data from Somar Meteorologia.

Owing to adverse climatic conditions, the average weight fruit should reach at harvest has been reduced since the last crop forecast update in December and fruit harvested so far have not pointed to a need to change that projection. Consequently, all varieties considered, the average size remains at 261 fruits per box, meaning each orange should weigh an average of 156 grams (5.51 oz), which is 8% below the average for the last five crop seasons (169 grams or 5.96 oz). Such parameter is not changed in this crop forecast update since it should be offset by sizes of fruit of different varieties: fruit of mid-season Pera Rio was harvested at a weight higher than projected in December, although late oranges are not expected to reach the projected average weights and therefore the overall average remains steady.

Harvest of early varieties is complete, with average fruit size corresponding to projections: the group including the varieties Hamlin, Westin and Rubi amounted to 278 fruits per box (147 grams or 5.18 oz per fruit), and the group including the varieties Valencia Americana, Seleta and Pineapple counted 255 fruits per box (160 grams or 5.64 oz per fruit). Halfway through January, harvest of mid-season Pera Rio had reached 82% completion and this forecast updates its size to 266 fruits per box (153 grams or 5.41 oz per fruit), unlike the projection of 276 fruits per box (148 grams or 5.21 oz). The weight of fruit of that variety increased with heavy rains that fell in December, when approximately 40% of Pera Rio production had not yet been harvested. Late varieties Valencia and Valencia Folha Murcha are 75% harvested with a third average fruit weight reduction from 167 grams (5.87 oz) to 162 grams (5.71 oz) per fruit, corresponding to a size variation from 245 to 252 fruits per box. Harvest of the late variety Natal is 65% complete with average fruit weight expected to be slightly reduced from May's projection of 165 grams or 5.83 oz (247 fruits per box) to 164

grams or 5.78 oz (249 fruits per box). Overall, 81% of the crop has been harvested. Harvest percentages are obtained from the monitoring survey of plots and depict the status of the whole citrus belt around January 15th.

The projected fruit drop rate that was already the highest since 2015, year when the crop forecast survey started, went up from 21.10% to 21.20% average for all varieties. The increase is due to the fruit drop rate for the late variety Natal that increased 0.8 percentage point. Fruit drop rates for early varieties reached the projected figures, which is also expected for the mid-season Pera Rio and late varieties Valencia and Valencia Folha Murcha when harvest is complete.

The method used for the update is the same adopted in the previous crop season. Information was obtained from the monitoring survey started in May on 1,200 plots that are no longer visited when fruit harvest is complete. Other data used in this study is size of fruit received throughout the crop season by orange juice companies associated to Fundecitrus – Citrosuco, Cutrale and Louis Dreyfus – for industrial processing. Each processing company supplies individual data under confidentiality to the independent consulting firm for the calculation of the average size of processed fruit.

[1]   Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.
[2]   Department of math and science, FCAV/Unesp Jaboticabal Campus.