2018-2019 ORANGE CROP FORECAST UPDATE FOR SÃO PAULO AND WEST-SOUTHWEST MINAS GERAIS CITRUS BELT – FEBRUARY/2019

Current forecast update (variation regarding the December forecast):   **February 11, 2019**

Total orange crop production forecast[1]: 284.88 million boxes (increase of 3.31%)
Hamlin, Westin and Rubi: 50.70 million boxes (unchanged)
Other early season[2]: 14.66 million boxes (unchanged)
Pera Rio: 78.66 million boxes (increase of 2.81%)
Valencia and Valencia Folha Murcha: 107.63 million boxes (increase of 8.45%)
Natal: 33.23 million boxes (decrease of 4.07%)

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

Sector and variety group	Bearing trees	Fruit per tree at stripping[3]	Fruit estimated per box	Estimated drop rate	Dec Per tree	Dec Per hectare	Dec Total	Feb Per tree	Feb Per hectare	Feb 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.......	26,649	766	320	11.00	1.90	833	50.70	1.90	833	50.70
Other early[2]...........................	7,959	664	282	12.30	1.84	810	14.66	1.84	810	14.66
Pera Rio...................................	61,575	454	263 ~~268~~	16.80 ~~17.80~~	1.24	612	76.51	1.28	630	78.66
Valencia and Folha Murcha[4]..	59,583	560	225 ~~240~~	18.40 ~~20.00~~	1.67	760	99.24	1.81	824	107.63
Natal......................................	19,503	603	240	23.80 ~~20.80~~	1.78	789	34.64	1.70	757	33.23
Total....................................	**175,269**	**564**	**260 ~~267~~**	**16.70 ~~17.20~~**	**1.57**	**729**	**275.75**	**1.63**	**753**	**284.88**
NORTH SECTOR										
Hamlin, Westin and Rubi.......	7,302	625	320	11.00	1.55	655	11.33	1.55	655	11.33
Other early[2]...........................	2,014	525	282	12.30	1.46	672	2.93	1.46	672	2.93
Pera Rio...................................	12,120	305	263 ~~268~~	16.80 ~~17.80~~	0.84	439	10.13	0.86	451	10.41
Valencia and Folha Murcha[4]..	14,055	449	225 ~~240~~	18.40 ~~20.00~~	1.34	594	18.78	1.45	644	20.37
Natal......................................	3,832	595	240	23.80 ~~20.80~~	1.75	753	6.71	1.68	722	6.44
Subtotal...............................	**39,323**	**456**	**260 ~~267~~**	**16.70 ~~17.20~~**	**1.27**	**585**	**49.88**	**1.31**	**604**	**51.48**
NORTHWEST SECTOR										
Hamlin, Westin and Rubi.......	2,658	487	320	11.00	1.21	540	3.21	1.21	540	3.21
Other early[2]...........................	1,303	596	282	12.30	1.65	707	2.16	1.65	707	2.16
Pera Rio...................................	8,814	262	263 ~~268~~	16.80 ~~17.80~~	0.72	327	6.32	0.74	336	6.49
Valencia and Folha Murcha[4]..	3,864	235	225 ~~240~~	18.40 ~~20.00~~	0.70	334	2.70	0.76	362	2.93
Natal......................................	1,711	283	240	23.80 ~~20.80~~	0.83	378	1.42	0.80	362	1.37
Subtotal...............................	**18,350**	**314**	**260 ~~267~~**	**16.70 ~~17.20~~**	**0.86**	**394**	**15.81**	**0.88**	**402**	**16.16**
CENTRAL SECTOR										
Hamlin, Westin and Rubi.......	6,782	685	320	11.00	1.70	730	11.54	1.70	730	11.54
Other early[2]...........................	2,938	637	282	12.30	1.77	728	5.19	1.77	728	5.19
Pera Rio...................................	17,777	465	263 ~~268~~	16.80 ~~17.80~~	1.27	636	22.59	1.31	654	23.23
Valencia and Folha Murcha[4]..	16,511	511	225 ~~240~~	18.40 ~~20.00~~	1.52	684	25.09	1.65	742	27.21
Natal......................................	4,585	587	240	23.80 ~~20.80~~	1.73	719	7.92	1.66	689	7.59
Subtotal...............................	**48,593**	**533**	**260 ~~267~~**	**16.70 ~~17.20~~**	**1.49**	**681**	**72.33**	**1.54**	**704**	**74.76**
SOUTH SECTOR										
Hamlin, Westin and Rubi.......	4,923	833	320	11.00	2.07	940	10.19	2.07	940	10.19
Other early[2]...........................	550	636	282	12.30	1.76	750	0.97	1.76	750	0.97
Pera Rio...................................	12,628	554	263 ~~268~~	16.80 ~~17.80~~	1.51	707	19.13	1.56	727	19.67
Valencia and Folha Murcha[4]..	12,911	537	225 ~~240~~	18.40 ~~20.00~~	1.60	695	20.62	1.73	754	22.36
Natal......................................	3,323	583	240	23.80 ~~20.80~~	1.72	749	5.70	1.65	719	5.47
Subtotal...............................	**34,335**	**592**	**260 ~~267~~**	**16.70 ~~17.20~~**	**1.65**	**740**	**56.61**	**1.71**	**767**	**58.66**
SOUTHWEST SECTOR										
Hamlin, Westin and Rubi.......	4,984	1,165	320	11.00	2.89	1,312	14.43	2.89	1,312	14.43
Other early[2]...........................	1,154	1,066	282	12.30	2.96	1,506	3.41	2.96	1,506	3.41
Pera Rio...................................	10,236	655	263 ~~268~~	16.80 ~~17.80~~	1.79	918	18.34	1.84	944	18.86
Valencia and Folha Murcha[4]..	12,242	880	225 ~~240~~	18.40 ~~20.00~~	2.62	1,303	32.05	2.84	1,413	34.76
Natal......................................	6,052	723	240	23.80 ~~20.80~~	2.13	1,025	12.89	2.04	983	12.36
Subtotal...............................	**34,668**	**834**	**260 ~~267~~**	**16.70 ~~17.20~~**	**2.34**	**1,152**	**81.12**	**2.42**	**1,190**	**83.82**

Note: Column groups "Crop forecast update 2018-2019 December/2018" and "Crop forecast update 2018-2019 February/2019" each span the Per tree / Per hectare / Total columns. The "Fruit per box", "Estimated drop rate", and several per-box columns show February/2019 updated values at left and the strike-through December/2018 values to their right.

[1] Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.
[2] Valencia Americana, Seleta and Pineapple.
[3] Weighted average per stratum bearing trees.
[4] Folha Murcha – Valencia Folha Murcha.

Updated orange[1] crop forecast totals 284.88 million boxes

The 2018-2019 orange crop forecast update for São Paulo and West-Southwest Minas Gerais citrus belt, published on February 11, 2019 by Fundecitrus – performed in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp[2] – is of 284.88 million boxes of 40.8 kg each. This update corresponds to an increase of 3.31 percent in relation to the previous estimate update published in December 2018 and comes close to the first estimated crop volume of 288.29 million boxes in May 2018, although still being 1.18 percent lower in comparison. Approximately 15.96 million boxes out of the total crop should be produced in the Triângulo Mineiro region.

According to Somar Meteorologia, the average rainfall in the citrus belt in December 2018 and January 2019 was 169 millimeters and 116 millimeters, respectively. Rainfall accumulated since May 2018 totals 896 millimeters, which is three percent below historical average (1981-2010). The driest period, with rainfall well below average, was mainly the beginning of the crop season, causing decreased fruit weight in early varieties, which was then updated in September 2018. Rainfall intensified in the beginning of spring, being below average for the last two months but satisfactory during the main harvesting period for the Pera Rio, Valencia and Valencia Folha Murcha orange varieties, increasing their fruit weight.

Therefore, the updated fruit size estimate for Pera Rio is 263 fruit per box, whereas in December 2018 it was projected to be 268 fruit per box. Fruit size for the late varieties Valencia and Valencia Folha Murcha increased to 225 fruit per box, as compared to the 240 fruit per box estimated in December 2018. Fruit size for Natal remained the same 240 fruit per box. Considering all varieties, the updated average fruit size estimate is 260 fruit per box (157 grams per fruit), as compared to 267 fruit per box (153 grams per fruit) projected in December 2018 and 256 fruit per box (159 grams per fruit) estimated in May 2018.

Updated average fruit drop rate for the citrus belt is 16.70 percent, which represents a decrease of 0.30 percentage point in comparison to the fruit drop rate estimated in May 2018. The increase in fruit drop expected in December 2018 was confirmed by monthly monitoring data for the group of varieties called other earlies – including Valencia Americana, Seleta and Pineapple – that reached 12.30 percent, as well as for the Natal variety, whose fruit drop rate increased again to 23.80 percent (as compared to 20.80 percent). For the other varieties, however, the new projection is lower in relation to the previous rate. Fruit drop rate for the Pera Rio variety moves from 17.80 percent to 16.80 percent and for the Valencia and Valencia Folha Murcha varieties it moves from 20.00 percent to 18.40 percent.

Harvest of early varieties is complete. Harvest of Pera Rio is 97 percent complete. Varieties Valencia, Valencia Folha Murcha and Natal are approximately 92 percent harvested. Considering all varieties, 95 percent of the crop has been harvested. A reduced harvest pace has been seen at the end of this crop season, as compared to the previous one, due to a larger volume of third and fourth bloom fruit produced in 2018-2019. At this same time last crop year, harvest was 97 percent 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. Details on the methodology are provided in the document "Methodology for Updating the Orange Crop Estimate" available at www.fundecitrus.com.br. Other data used in this study was 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.

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[1]   Hamlin, Westin, Rubi, Valencia Americana, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.
[2]   Departament of Math and Science at FCAV/Unesp Campus Jaboticabal.