

Summary of results:

December 12, 2016

Total orange crop production forecast<sup>1</sup>: decrease of 1.9%

Hamlin, Westin e Rubi: without changes

Valencia Americana, Valencia Argentina, Seleta, Pineapple: without changes

Pera Rio: increase of 3.7%

Valencia and Valencia Folha Murcha: decrease of 5.7%

Natal: decrease of 8.4%

Forecast Dates 2016-2017	
3 <sup>rd</sup> forecast update:	February 10, 2017
Final estimate:	April 10, 2017

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

Month	Forecast components				Orange production forecast update 2016-2017					
	September / December (strike-through values were presented in September, to their left are their respective values updated in December)				September			December		
	Bearing trees	Fruits per tree at stripping <sup>2</sup>	Fruits forecasted by box	Fruit loss from droppage forecast	By tree	By hectare	Total	By tree	By hectare	Total
Sector and Variety Group	(1,000 trees)	(number)	(number)	(percentage)	(boxes/tree)	(boxes/hectare)	(1,000,000 boxes)	(boxes/tree)	(boxes/hectare)	(1,000,000 boxes)
<b>TOTAL</b>										
Hamlin, Westin and Rubi.....	28,304	523	255	9.4	1.71	744	48.31	1.71	744	48.31
Other early season <sup>3</sup> .....	8,256	475	237	10.3	1.65	744	13.62	1.65	744	13.62
Pera Rio.....	59,668	378	230 <del>245</del>	12.0 <del>16.0</del>	1.19	572	71.09	1.24	593	73.73
Valencia and V.Folha Murcha <sup>4</sup>	60,432	409	220 <del>230</del>	17.0	1.40	629	84.48	1.32	593	79.65
Natal.....	18,888	500	230 <del>235</del>	17.5 <del>17.0</del>	1.67	705	31.54	1.53	646	28.89
<b>Average.....</b>	(X)	<b>430</b>	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>1.42</b>	<b>644</b>	(X)	<b>1.39</b>	<b>632</b>	(X)
<b>Total.....</b>	<b>175,548</b>	(X)	(X)	(X)	(X)	(X)	<b>249.04</b>	(X)	(X)	<b>244.20</b>
<b>NORTH SECTOR</b>										
Hamlin, Westin and Rubi.....	7,995	440	255	9.4	1.44	620	11.49	1.44	620	11.49
Other early season <sup>3</sup> .....	2,025	407	237	10.3	1.42	714	2.87	1.42	714	2.87
Pera Rio.....	11,824	235	230 <del>245</del>	12.0 <del>16.0</del>	0.74	385	8.76	0.77	399	9.08
Valencia and V.Folha Murcha <sup>4</sup>	13,975	320	220 <del>230</del>	17.0	1.09	493	15.26	1.03	465	14.39
Natal.....	3,785	372	230 <del>235</del>	17.5 <del>17.0</del>	1.24	513	4.71	1.14	470	4.32
<b>Average.....</b>	(X)	(X)	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>1.09</b>	<b>504</b>	(X)	<b>1.06</b>	<b>493</b>	(X)
<b>Subtotal.....</b>	<b>39,604</b>	<b>328</b>	(X)	(X)	(X)	(X)	<b>43.09</b>	(X)	(X)	<b>42.15</b>
<b>NORTHWEST SECTOR</b>										
Hamlin, Westin and Rubi.....	2,811	203	255	9.4	0.66	286	1.86	0.66	286	1.86
Other early season <sup>3</sup> .....	1,384	257	237	10.3	0.89	387	1.23	0.89	387	1.23
Pera Rio.....	8,309	284	230 <del>245</del>	12.0 <del>16.0</del>	0.89	379	7.43	0.93	393	7.71
Valencia and V.Folha Murcha <sup>4</sup>	3,862	219	220 <del>230</del>	17.0	0.75	353	2.89	0.71	333	2.73
Natal.....	1,690	414	230 <del>235</del>	17.5 <del>17.0</del>	1.38	536	2.34	1.27	491	2.14
<b>Average.....</b>	(X)	(X)	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>0.87</b>	<b>377</b>	(X)	<b>0.87</b>	<b>375</b>	(X)
<b>Subtotal.....</b>	<b>18,056</b>	<b>268</b>	(X)	(X)	(X)	(X)	<b>15.75</b>	(X)	(X)	<b>15.67</b>
<b>CENTRAL SECTOR</b>										
Hamlin, Westin and Rubi.....	7,447	481	255	9.4	1.57	665	11.68	1.57	665	11.68
Other early season <sup>3</sup> .....	3,215	576	237	10.3	2.00	850	6.43	2.00	850	6.43
Pera Rio.....	17,263	386	230 <del>245</del>	12.0 <del>16.0</del>	1.21	589	20.97	1.26	611	21.75
Valencia and V.Folha Murcha <sup>4</sup>	16,915	388	220 <del>230</del>	17.0	1.32	587	22.40	1.25	554	21.12
Natal.....	4,647	494	230 <del>235</del>	17.5 <del>17.0</del>	1.65	638	7.67	1.51	584	7.02
<b>Average.....</b>	(X)	(X)	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>1.40</b>	<b>624</b>	(X)	<b>1.37</b>	<b>613</b>	(X)
<b>Subtotal.....</b>	<b>49,487</b>	<b>423</b>	(X)	(X)	(X)	(X)	<b>69.15</b>	(X)	(X)	<b>68.00</b>
<b>SOUTH SECTOR</b>										
Hamlin, Westin and Rubi.....	5,009	579	255	9.4	1.89	844	9.46	1.89	844	9.46
Other early season <sup>3</sup> .....	547	418	237	10.3	1.44	601	0.79	1.44	601	0.79
Pera Rio.....	12,073	423	230 <del>245</del>	12.0 <del>16.0</del>	1.33	621	16.08	1.38	644	16.68
Valencia and V.Folha Murcha <sup>4</sup>	13,210	454	220 <del>230</del>	17.0	1.55	638	20.49	1.46	602	19.32
Natal.....	2,895	558	230 <del>235</del>	17.5 <del>17.0</del>	1.87	771	5.40	1.71	706	4.94
<b>Average.....</b>	(X)	(X)	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>1.55</b>	<b>674</b>	(X)	<b>1.52</b>	<b>660</b>	(X)
<b>Subtotal.....</b>	<b>33,734</b>	<b>470</b>	(X)	(X)	(X)	(X)	<b>52.22</b>	(X)	(X)	<b>51.19</b>
<b>SOUTHWEST SECTOR</b>										
Hamlin, Westin and Rubi.....	5,042	840	255	9.4	2.74	1,240	13.82	2.74	1,240	13.82
Other early season <sup>3</sup> .....	1,085	610	237	10.3	2.12	1,024	2.30	2.12	1,024	2.30
Pera Rio.....	10,199	556	230 <del>245</del>	12.0 <del>16.0</del>	1.75	868	17.85	1.81	901	18.51
Valencia and V.Folha Murcha <sup>4</sup>	12,470	550	220 <del>230</del>	17.0	1.88	938	23.43	1.77	885	22.09
Natal.....	5,871	583	230 <del>235</del>	17.5 <del>17.0</del>	1.95	942	11.43	1.78	863	10.47
<b>Average.....</b>	(X)	(X)	<b>232 <del>240</del></b>	<b>13.73 <del>14.86</del></b>	<b>1.99</b>	<b>969</b>	(X)	<b>1.94</b>	<b>946</b>	(X)
<b>Subtotal.....</b>	<b>34,667</b>	<b>630</b>	(X)	(X)	(X)	(X)	<b>68.83</b>	(X)	(X)	<b>67.19</b>

(X) Not applicable.

<sup>1</sup> Hamlin, Westin, Rubi, Valencia Americana, Valencia Argentina, Seleta, Pineapple, Pera Rio, Valencia, Valencia Folha Murcha and Natal.

<sup>2</sup> Weighted average per stratum area.

<sup>3</sup> Valencia Americana, Valencia Argentina, Seleta and Pineapple.

<sup>4</sup> V. Folha Murcha – Valencia Folha Murcha.

**Total orange production forecast<sup>1</sup> update is 244.20 million boxes**

The 2016-2017 orange production forecast update of the São Paulo and West-Southwest Minas Gerais Citrus Belt published on December 12, 2016 by Fundecitrus, carried out in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp<sup>2</sup>, is 244.20 million boxes of 40.8 kg each. This amount represents a 1.9% decrease in comparison with the forecast update published in September and a 0.6% decrease compared to the initial estimate published in May. One year ago, in the 2015-2016 crop year, the December update was 5% below the final estimate.

The growth trend of the fruit size, which had already been noted as of the September forecast update, continued to be observed. This growth implies the modification of the quantity of fruits per box, requiring fewer fruits to achieve the weight of 40.8 kg or 90 lb box (240 fruits/box in September versus 232 fruits/box in December). The revision of the fruit weight of the early varieties was carried out in September. The mid-season variety, Pera Rio, is revised to 230 fruits/box, whereas in the September forecast update 245 fruits/box had been predicted. In the case of late varieties, the weight of the Valencia and Valencia Folha Murcha is now 220 fruits/box, and the Natal variety is now 230 fruits/box, respectively, ten and five fewer fruits per box compared to the September forecast update. The accumulated rainfall from May/2016 to November/2016 contributed to this growth, which was 19% above the forecast for the period. The average rainfall accumulated during those seven months in the whole citrus growing area reached 543 mm.

The average rate of fruit loss from droppage, considering all varieties, is updated to 13.73%, maintaining the figure below that initially expected for the crop year. The droppage rate of the early varieties remains the same as the September figures, which are lower than the May figures. The droppage rate of the Pera Rio variety has changed to 12%, below the projected 16% in the May estimate. There was no significant change in the droppage rate of the late varieties. The faster pace of the harvest explains the decrease in fruit droppage. As of November, on the basis of the blocks monitored by Fundecitrus, it is estimated that 81% of the production has already been harvested. During the same period last year, 72% had been harvested. The harvest of early varieties is about to be finished (exceeds 96%), Pera Rio is approximately 78%, Valencia and Valencia Folha Murcha 81%, and Natal 71%. The fruit from the fourth bloom is not taken into account in these percentages and will require another pass to pick such fruits, which may extend until the next year.

The revision for a smaller crop than that estimated in May and September is due to an alteration of the correction factor, which is increased by 8% in this update. The factor that had been previously used was the average of the deviations from orange production forecasts of a ten-year historical series. The appropriateness of the factor is justified due to the change in the configuration of the groves that has been observed in recent years, triggered primarily by the HLB (Huanglongbing or Greening) control management, with the elimination of diseased trees and their replacement with healthy seedlings, resulting in the formation of subsets of younger plants with lower productivity than the trees originally planted in the same block. The impact of these subsets is significant in the current season because of more marked differences in yield deviations between trees of different ages, since younger trees had a greater loss in terms of fruit set.

<sup>1</sup> Hamlin, Westin, Rubi, Valencia Americana, Valencia Argentina, Seleta, Pineapple Pera Rio, Valencia, Valencia Folha Murcha and Natal.

<sup>2</sup> Exact Sciences Department.