



Current forecast update (variation regarding the December forecast):
Total orange crop production forecast: 316.23 million boxes (increased of 0.7%)
Hamlin, Westin and Rubi: 58.04 million boxes (unchanged)
Other early season: 16.69 million boxes (decreased of 0.9%)
Pera Rio: 96.35 million boxes (increased of 2.6%)
Valencia and Valencia Folha Murcha: 106.17 million boxes (increased of 0.5%)
Natal: 38.98 million boxes (decreased of 1.6%)

February 10, 2023

Publication Schedule 2022-2023

Final crop forecast: April 10, 2023

Table 1 – Orange crop forecast update by sector and variety group – citrus belt

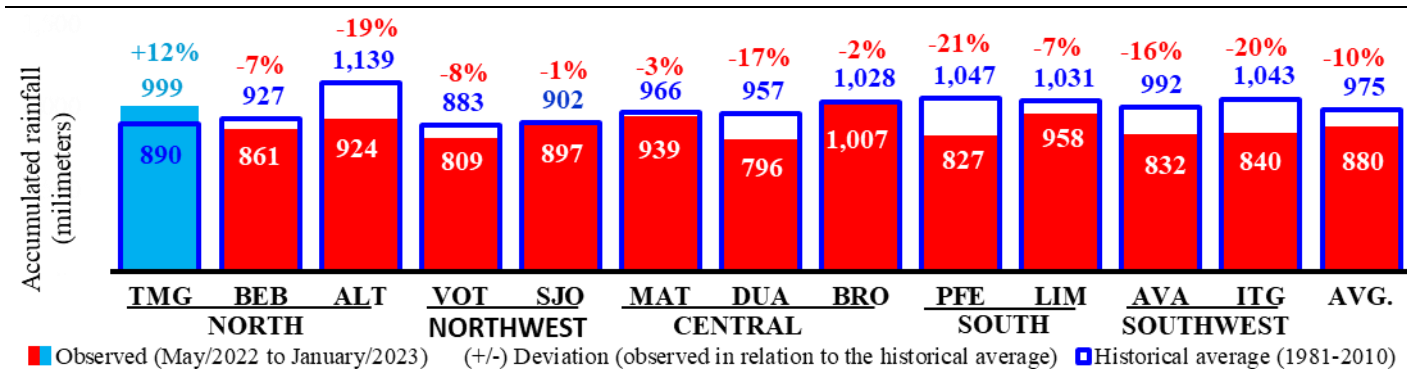
Month	Forecast components				Crop forecast update 2022-2023			Crop forecast update 2022-2023		
	December/2022 and February/2023 (strike-through values were presented in December, to their left are their respective values updated in February)				December/2022			February/2023		
Sector and variety group	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....	26,151	859	310	10.40	2.22	1,021	58.04	2.22	1,021	58.04
Other early.....	9,044	638	266 265	14.20 13.40	1.86	934	16.84	1.85	925	16.69
Pera Rio.....	62,037	560	258 260	20.30 21.70	1.51	791	93.95	1.55	811	96.35
Valencia and Folha Murcha	53,741	686	229 237	26.50 24.00	1.97	945	105.65	1.98	950	106.17
Natal.....	18,999	722	232 235	26.50 24.00	2.09	1,016	39.63	2.05	1,000	38.98
Total.....	169,972	668	256 260	20.80 20.10	1.85	912	314.11	1.86	918	316.23
NORTH SECTOR										
Hamlin, Westin and Rubi....	6,891	744	304	9.80	1.97	857	13.58	1.97	857	13.58
Other early.....	1,887	726	253 263	7.60 7.70	2.21	996	4.17	2.31	1,039	4.35
Pera Rio.....	12,908	705	231 261	19.90 22.00	1.29	678	16.69	1.50	785	19.33
Valencia and Folha Murcha	13,428	481	208 219	25.00 22.80	1.92	890	25.75	1.97	914	26.44
Natal.....	4,069	609	238 220	21.40 20.80	2.34	1,041	9.51	2.15	959	8.76
Subtotal.....	39,183	607	241 251	19.00 18.70	1.78	843	69.70	1.85	876	72.46
NORTHWEST SECTOR										
Hamlin, Westin and Rubi....	2,060	680	329	15.20	1.57	696	3.23	1.57	696	3.23
Other early.....	1,733	725	319 260	11.90 12.10	1.63	887	2.82	1.34	730	2.32
Pera Rio.....	7,289	540	292 263	12.00 13.10	1.83	824	13.37	1.67	750	12.17
Valencia and Folha Murcha	3,142	617	240 241	24.40 25.50	1.74	841	5.48	1.78	859	5.60
Natal.....	1,497	631	248 244	37.70 39.90	1.62	736	2.42	1.64	746	2.45
Subtotal.....	15,721	630	284 266	17.70 18.70	1.74	807	27.32	1.64	761	25.77
CENTRAL SECTOR										
Hamlin, Westin and Rubi....	6,951	886	300	10.70	2.36	1,132	16.38	2.36	1,132	16.38
Other early.....	3,046	625	251 254	14.20 13.10	2.04	991	6.22	2.05	996	6.25
Pera Rio.....	18,673	670	241 246	23.50 25.20	1.44	784	26.89	1.50	817	28.03
Valencia and Folha Murcha	14,585	526	222 236	22.10 20.70	1.85	908	26.91	1.93	952	28.20
Natal.....	4,484	614	219 224	18.40 18.00	2.04	990	9.17	2.09	1,010	9.36
Subtotal.....	47,739	624	246 253	19.30 19.30	1.79	911	85.57	1.85	939	88.22
SOUTH SECTOR										
Hamlin, Westin and Rubi....	4,802	932	324	10.70	2.29	1,077	11.02	2.29	1,077	11.02
Other early.....	477	895	331 305	23.80 23.70	1.36	610	0.65	1.26	563	0.60
Pera Rio.....	12,219	611	296 278	21.70 22.60	1.61	827	19.62	1.52	785	18.61
Valencia and Folha Murcha	9,934	641	268 259	27.00 26.50	2.10	932	20.83	2.02	898	20.07
Natal.....	2,956	827	254 276	24.40 22.70	2.24	1,157	6.62	2.39	1,234	7.06
Subtotal.....	30,388	772	287 280	21.80 21.70	1.93	931	58.74	1.89	909	57.36
SOUTHWEST SECTOR										
Hamlin, Westin and Rubi....	5,447	975	312	9.10	2.54	1,188	13.83	2.54	1,188	13.83
Other early.....	1,901	705	259 283	21.30 19.00	1.57	896	2.98	1.67	953	3.17
Pera Rio.....	10,949	614	253 262	19.90 21.00	1.59	873	17.38	1.66	915	18.21
Valencia and Folha Murcha	12,652	585	225 237	31.90 25.70	2.11	1,096	26.68	2.04	1,062	25.86
Natal.....	5,992	753	221 234	33.80 27.10	1.99	1,027	11.91	1.89	979	11.35
Subtotal.....	36,941	721	250 259	24.30 21.20	1.97	1,028	72.78	1.96	1,023	72.42



Updated orange production¹ forecast totals 316.23 million boxes

The third 2022-2023 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, published on February 10, 2023 by Fundecitrus in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp² amounted to 316.23 million boxes of 40.8 kg each, a volume 0.7% higher than the projected scenario in December 2022. This increase is mainly due to the production of the Pera Rio variety, whose harvest is close to the end with higher-than-expected yield. The heavy rains that occurred in the last two months could have further expanded the crop yield, since they contributed to the growth and weight increase of oranges. However, the highly frequent and intense rainfall (many in the form of storms), also significantly intensified the premature fruit drop, offsetting the positive effect of weight gain. This was especially true for the late varieties, as most of these cultivars had not been harvested when the heavy rains started. As such, the updated crop forecast still remains 0.2% lower than the initial projection, disclosed in May 2022. From the total crop production, approximately 23.37 million boxes should be produced in the Triângulo Mineiro.

According to data from Somar/Climatempo, the average rainfall in the citrus belt accumulated from May 2022 to January 2023 was 880 millimeters, 10% lower than the climatological normal (1981-2010). Rainfall only exceeded the historical average in Triângulo Mineiro, which recorded 999 millimeters in the period (+12%). In other regions, rainfall was below the climatological normal: 796 millimeters (-17%) in Duartina; 809 millimeters (-8%) in Votuporanga; 827 millimeters (-21%) in Porto Ferreira; 832 millimeters (-16%) in Avaré; 840 millimeters (-20%) in Itapetininga; 861 millimeters (-7%) in Bebedouro; 897 millimeters (-1%) in São José do Rio Preto; 924 millimeters (-19%) in Altinópolis; 939 millimeters (-3%) in Matão; 958 mm (-7%) in Limeira; and 1,007 mm (-2%) in Brotas, as shown in Graph 1.



Graph 1 – Accumulated rainfall from May 2022 to January 2023 (observed and historical averages) in the citrus belt regions
Source: Fundecitrus, according to data from Somar/Climatempo Meteorologia

The accumulated rainfall below the historical average reflects the climate conditions that marked the beginning of the crop season: relatively frequent rains, but with low and uneven volumes, even among neighboring municipalities. This scenario changed at the end of November 2022. In December 2022 and January 2023, more than 60% of the days were rainy throughout the citrus belt, with expressive rainfall volumes, whose sum amounts to half of the rainfall that has been registered since May 2022.

The more concentrated rains at the end of the crop season improved the average fruit size of mid-season and late-season varieties. Considering all varieties in this updated forecast, [x] fruits are needed to compose a 40.8 kg box, which means four fewer fruits compared to the scenario in December. This amount of fruit corresponds to oranges weighing 159 grams, a weight level slightly above the average observed in the last five crops (156 grams).

The average fruit size of the Hamlin, Westin and Rubi varieties resulted in 310 fruits per box (132 grams/4.64 oz per fruit) in December 2022, and now the other early-season varieties resulted in 266 fruits per box (153 grams/5.41 oz per fruit), instead of the projected amount of 265 fruits per box (154 grams/5.43 oz per fruit). The size of the Pera Rio variety goes from 260 fruits per box (157 grams/5.54 oz per fruit) to 258 fruits per box (158 grams/5.58 oz per fruit), and in the case of the Valencia and Folha Murcha varieties, from 237 fruits per box (172 grams/6.07 oz per fruit) to 229 fruits per box (178 grams/6.28 oz per fruit). The Natal variety goes from the projected amount of 235 fruits per box (174 grams/6.12 oz per fruit) to 232 fruits per box (176 grams/6.20 oz per fruit). Sizes by sector and variety are presented in Table 2.

Table 2 – Average fruit sizes by sector and variety¹

Group of varieties	Sector					
	North	Northwest	Central	South	Southwest	Total
Hamlin, Westin and Rubi.....	304	329	300	324	312	310
Other earlyies.....	253 263	319 260	251 254	331 305	259 283	266 265
Pera Rio.....	231 261	292 263	241 246	296 278	253 262	258 260
Valencia and V. Folha Murcha...	208 219	240 241	222 236	268 259	225 237	229 237
Natal.....	238 220	248 244	219 224	254 276	221 231	232 235
Total.....	241 251	284 266	246 253	287 280	250 259	256 260

¹ The precision of the overall average of the citrus belt is higher than that of the sectors, ages or variety groups, due to the larger sample size



The projection of the fruit drop rate increases from 20.10% to 20.80%, on average, all varieties considered. Regarding the distribution of the drop rate among varieties, Hamlin, Westin and Rubi closed at 10.40%, and the other early varieties at 14.20%; Pera Rio should go from 21.70% to 20.30%; and Valencia, Valencia Folha Murcha and Natal from 24% to 26.50%. The drop rated by sector and variety are shown in Table 3.

Table 3 – Average drop rates by sector and variety¹

Group of varieties	Sector					
	(hatched values were presented in December and their respective values updated in February are on the left)					
	North	Northwest	Central	South	Southwest	Total
	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)
Hamlin, Westin and Rubi.....	9.80	15.20	10.70	10.70	9.10	10.40
Other earlies.....	7.60 7.70	11.90 12.10	14.20 13.10	23.80 23.70	21.30 19.00	14.20 13.40
Pera Rio.....	19.90 22.00	12.00 13.10	23.50 25.20	21.70 22.60	19.90 21.00	20.30 21.70
Valencia and V. Folha Murcha....	25.00 22.80	24.40 25.50	22.10 20.70	27.00 26.50	31.90 25.70	26.50 24.00
Natal.....	21.40 20.80	37.70 39.90	18.40 18.00	24.40 22.70	33.80 27.10	26.50 24.00
Total.....	19.00 18.70	17.70 18.70	19.30 19.30	21.80 21.70	24.30 21.20	20.80 20.10

¹ The precision of the overall average of the citrus belt is higher than that of the sectors, ages or variety groups, due to the larger sample size

In mid-January, the harvest reached approximately 88% of the total production, with around 38 million boxes remaining to be harvested with most fruits from the third and fourth blooms. The harvesting of the early varieties Hamlin, Westin and Rubi has already been completed, together with the other early varieties Valencia Americana, Seleta, Pineapple and Alvorada. The Pera Rio harvest reached 96% of completion; Valencia and Valencia Folha Murcha, 80%; and Natal, 72%.

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

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