



Forecast update (variation in the September forecast):

December, 10 2024

Total orange crop production forecast: 223.14 million boxes (3.4% increase)

Hamlin, Westin and Rubi: 37.63 million boxes (3.2% increase)

Other early season: 15.40 million boxes (3.4% increase)

Pera Rio: 72.51 million boxes (14.3% increase)

Valencia and Folha Murcha: 71.87 million boxes (3.4% decrease)

Natal: 25.73 million boxes (3.3% decrease)

Publication Schedule 2024-2025

3rd Crop forecast update: February 10, 2025

Final crop forecast: April 10, 2025

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

Month	Forecast components				Crop forecast update 2024-2025			Crop forecast update 2024-2025		
	September/2024 and December/2024 (strike-through values were presented in September, to their left are their respective values updated in December)				September/2024			December/2024		
	Bearing trees	Fruit per tree at stripping	Fruit estimated per box	Estimated drop rate	Per tree	Per hectare	Total	Per tree	Per 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)
CITRUS BELT										
Hamlin, Westin and Rubi....	26,437.06	501 485	283 282	10.60	1.38	645	36.47	1.42	666	37.63
Other early.....	10,834.96	478 450	262 260	13.40 11.50	1.37	715	14.89	1.42	740	15.40
Pera Rio.....	59,601.12	422 401	258 279	17.30 17.50	1.06	559	63.42	1.22	639	72.51
Valencia and Folha Murcha	53,100.14	501 482	253 247	24.00 20.00	1.40	688	74.39	1.35	665	71.87
Natal.....	18,569.39	525 493	258 247	24.30 20.00	1.43	714	26.61	1.39	691	25.73
Total.....	168,542.67	474 453	261 264	19.00 17.10	1.28	642	215.78	1.32	664	223.14
NORTH SECTOR										
Hamlin, Westin and Rubi....	6,872.89	488 490	272 265	12.40 16.20	1.38	616	9.51	1.41	628	9.69
Other early.....	2,146.81	506 447	236 239	12.20 11.70	1.47	703	3.16	1.69	805	3.62
Pera Rio.....	12,164.10	375 333	246 247	13.10 14.80	1.03	545	12.48	1.19	630	14.43
Valencia and Folha Murcha	12,734.31	421 391	233 216	21.50 17.80	1.33	597	16.94	1.28	572	16.24
Natal.....	3,910.89	395 324	233 210	9.70 11.50	1.22	559	4.76	1.37	630	5.36
Subtotal.....	37,829.00	420 386	245 237	15.40 15.70	1.24	588	46.85	1.30	619	49.34
NORTHWEST SECTOR										
Hamlin, Westin and Rubi....	2,043.73	220 216	263 244	7.10 8.20	0.72	341	1.48	0.69	327	1.42
Other early.....	1,906.61	288 281	246 236	8.60 9.00	0.97	527	1.84	0.96	524	1.83
Pera Rio.....	6,993.74	322 258	232 246	12.50 15.30	0.79	376	5.55	1.09	515	7.60
Valencia and Folha Murcha	2,613.54	362 301	233 243	15.60 17.20	0.92	444	2.40	1.18	570	3.08
Natal.....	1,125.00	174 196	268 227	24.70 36.90	0.49	252	0.55	0.44	229	0.50
Subtotal.....	14,682.62	299 258	239 243	12.70 15.20	0.81	392	11.82	0.98	478	14.43
CENTRAL SECTOR										
Hamlin, Westin and Rubi....	6,775.50	484 444	296 309	12.50 9.30	1.16	570	7.88	1.28	629	8.69
Other early.....	4,208.31	450 428	274 279	11.80 12.00	1.20	650	5.07	1.30	700	5.46
Pera Rio.....	18,007.25	379 369	260 287	20.90 20.60	0.91	497	16.42	1.03	563	18.59
Valencia and Folha Murcha	14,350.90	451 419	260 247	23.70 19.30	1.22	642	17.57	1.19	624	17.08
Natal.....	4,661.85	535 459	257 247	33.40 26.60	1.22	595	5.67	1.24	608	5.79
Subtotal.....	48,003.81	437 409	267 273	21.10 18.30	1.10	575	52.61	1.16	607	55.61
SOUTH SECTOR										
Hamlin, Westin and Rubi....	4,586.72	489 471	276 278	8.40 8.10	1.39	660	6.38	1.45	690	6.67
Other early.....	637.46	527 501	287 283	7.40 7.90	1.46	729	0.93	1.52	761	0.97
Pera Rio.....	10,649.26	466 440	268 291	23.20 22.50	1.05	543	11.15	1.20	620	12.74
Valencia and Folha Murcha	9,649.05	551 515	267 258	24.00 22.20	1.39	652	13.40	1.41	662	13.60
Natal.....	2,523.71	628 552	268 246	30.40 24.30	1.52	786	3.83	1.46	757	3.69
Subtotal.....	28,046.20	515 482	269 272	21.60 19.90	1.27	627	35.69	1.34	662	37.67
SOUTHWEST SECTOR										
Hamlin, Westin and Rubi....	6,158.22	638 626	287 281	9.10 8.40	1.82	845	11.22	1.81	841	11.16
Other early.....	1,935.77	680 651	267 253	20.30 12.50	2.01	1,036	3.89	1.82	938	3.52
Pera Rio.....	11,786.77	557 567	265 291	13.70 13.10	1.51	801	17.82	1.62	860	19.15
Valencia and Folha Murcha	13,752.34	616 642	255 260	26.80 20.70	1.75	910	24.08	1.59	827	21.87
Natal.....	6,347.94	620 651	265 260	21.80 16.80	1.86	969	11.80	1.64	854	10.39
Subtotal.....	39,981.04	606 619	265 271	19.20 15.70	1.72	883	68.81	1.65	848	66.09



Total orange production¹ is updated at 223.14 million boxes

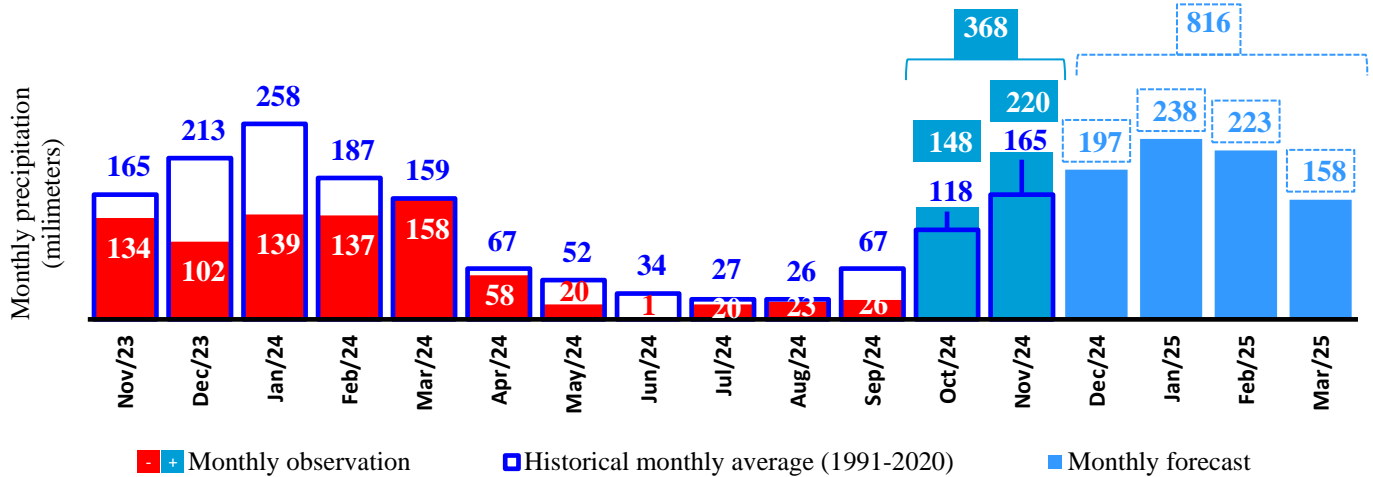
The second update of the 2024-2025 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, published on December 10, 2024 by Fundecitrus, carried out in cooperation with Markestrat, and full professors from FEA-RP/USP and FCAV/Unesp², is 223.14 million boxes of 40.8 kg, which corresponds to a reduction of 9.24 million boxes, the equivalent to -4.0% in relation to the initial estimate projected in May. Of the total volume, 202.91 million boxes are from the first three blooms, while 20.23 million correspond to the fourth bloom. It is also estimated that around 14.79 million boxes will be harvested in the Triângulo Mineiro region.

In comparison to the last forecast in September, which projected 215.78 million boxes, the new update indicates an increase of 3.4%, corresponding to an addition of 7.36 million boxes. This increment arises from the addition of 4.91 million boxes originating from the fourth bloom and approximately 2.45 million boxes from the first three blooms. This total of 2.45 million boxes reflects the increase of 7.06 million boxes of the Pera Rio variety, offset by the reduction of 4.61 million boxes of the other varieties from the first three blooms.

To project the crop in May 2024, the number of fruits per tree was estimated based on the harvest of 2,560 orange trees, carried out between March 14 and April 26, 2024. Although this is the traditional period for harvest, the atypical emission of the fourth bloom, extremely late in this crop, brought additional challenges to the forecast. With this bloom occurring later than usual, the fruits of the fourth bloom were still in a very early stage of development (smaller than a coffee bean) when they were harvested, and in many trees, there were still flowers present, making it challenging to estimate the amount of fruit from this bloom that would effectively set, that is, the fruit set rate. In addition, in several samples, it was found that the fourth bloom was emitted after the harvest, which made it impossible to fully count the fruits of these trees.

Thus, a new harvest of 520 orange trees was carried out between September 23 and October 25, 2024, with the objective of obtaining a more accurate estimate of the number of fruits from the fourth bloom, since the period of physiological drop had ended and the fruits were already set on the trees. The new sampling revealed an average of 54 fruits from the fourth bloom per tree, surpassing the initial estimate of 32 fruits, an increase of 22 fruits per tree. Analyzing the data by variety, the increases were: 16 fruits per tree for the Hamlin, Westin, and Rubi varieties; 28 fruits for the other early varieties; 22 fruits for Pera Rio; 19 fruits for the Valencia and Folha Murcha varieties; and 33 fruits for the Natal variety. With this new data, the share of the fourth bloom in the harvest, initially projected at 7.1%, increased to 9.1%.

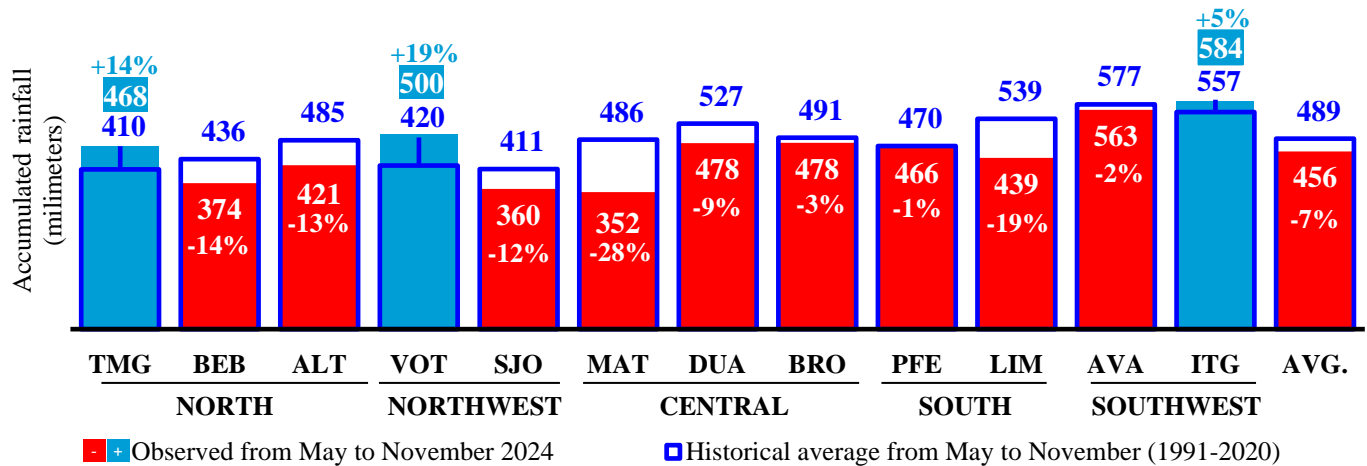
The arrival of the rainy season revitalized the groves that had been affected by the drought. After 11 consecutive months of rainfall below the historical average (1991-2020), as shown in Graph 1, the scenario began to change in October 2024, when rainfall volumes exceeded the historical average - a pattern that remained in November. According to data from Climatempo Meteorologia, during these two months, the rains were well distributed across all regions, with averages of 148 millimeters in October and 220 millimeters in November, totaling 368 millimeters for the period. The forecast for the months of December 2024 to March 2025 is for the continuation of significant precipitation, with an accumulation of over 800 millimeters.



Graph 1 - Observed precipitation from November 2023 to November 2024 and forecast from December 2024 to March 2025 in the citrus belt

Source: Fundecitrus, based on data from Climatempo Meteorologia

The voluminous rains of the last two months were crucial to reduce the deficit in relation to the historical average. Based on the total accumulated precipitation since the beginning of the crop, the deficit, which in the last forecast was at -54%, decreased to -7%. This index is the result of the comparison between the total rainfall accumulated from May to November 2024, which was 456 millimeters, and the historical average of 489 millimeters for the same period. Although the average volume in the citrus belt is still slightly below the historical average, three of the twelve regions already have higher volumes: Votuporanga, with 19% above average; Triângulo Mineiro, with 14%; and Itapetininga, with 5%, as demonstrated in Graph 2.



Graph 2 - Total accumulated precipitation from May to November 2024 in the citrus belt regions

Source: Fundecitrus, based on data from Climatempo Meteorologia

The intense rains contributed to the growth of the fruits of all varieties. However, this rainfall did not significantly affect the final average size of the early varieties of oranges, as 96% of the production of this group had already been harvested before the start of the rains. The fruits of the first, second and third blooms of the Pera Rio, Valencia and Folha Murcha varieties should be harvested with weights greater than those estimated in the September forecast. On the other hand, the Natal variety oranges, despite having grown, should not reach the weights previously predicted. The oranges from the fourth bloom of all varieties, despite also having shown growth, will be harvested with smaller weights compared to the fruits of the first three blooms, especially if harvesting continues at an accelerated pace.



Therefore, in this update, the average weight of the fruits of the first, second and third blooms, considering all varieties, was projected at 161 grams (5.68 oz), while the weight of the fruits of the fourth bloom was estimated at 126 grams (4.44 oz). On the general average, the fruit should be harvested with 156 grams, slightly larger than what was predicted in September. With that, it is estimated that 261 fruits will be needed to fill a 40.8 kg box (90 lbs), three fruits less than previously estimated.

Considering all blooms, the Pera Rio variety was the only one that showed an increase in fruit weight compared to the September projection, while the others showed reductions. For the Hamlin, Westin and Rubi varieties, the number of oranges per box increased from 282 fruits (145 grams / 5.11 oz per fruit) to 283 fruits (144 grams / 5.09 oz per fruit). Among the other early varieties, the quantity increased from 260 fruits per box (157 grams / 5.54 oz per fruit) to 262 fruits (156 grams / 5.49 oz per fruit). The Pera variety, previously projected with 279 fruits per box (146 grams / 5.15 oz per fruit), was adjusted to 258 fruits per box (158 grams / 5.58 oz per fruit). The Valencia and Folha Murcha varieties had the number of fruits per box revised from 247 (165 grams / 5.82 oz per fruit) to 253 (161 grams / 5.69 oz per fruit). The Natal variety also showed a change, from 247 fruits per box (165 grams / 5.82 oz per fruit) to 258 fruits (158 grams / 5.58 oz per fruit). The detailed sizes by sector and variety are shown in Table 2.

Table 2 – Average fruit size, as pieces of fruit per box, by sector and variety³

Group of varieties	Sector (hatched values were presented in September and their respective values updated in December are on the left)					
	North	Northwest	Central	South	Southwest	Total
	(Fruits per box)	(Fruits per box)	(Fruits per box)	(Fruits per box)	(Fruits per box)	(Fruits per box)
Hamlin, Westin and Rubi.....	272 265	263 244	296 309	276 278	287 281	283 282
Other earlies.....	236 239	246 236	274 279	287 283	267 253	262 260
Pera Rio.....	246 247	232 246	260 287	268 291	265 291	258 279
Valencia and Folha Murcha.....	233 216	233 243	260 247	267 258	255 260	253 247
Natal.....	233 210	268 227	257 247	268 246	265 260	258 247
Total.....	245 237	239 243	267 273	269 272	265 271	261 264

³ 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 fruit drop rate rose to 19%, up from the initially projected 18.5% in May and 17.1% in September, mainly due to greening and mechanized operations, particularly pruning. Another factor that contributed to this increase is the production from the fourth bloom, whose volume was revised to a level higher than initially estimated. This increase in production should extend the harvest period compared to previous crops, intensifying losses caused by fruit drop.

The indices by variety show that the drop rate for Hamlin, Westin and Rubi oranges remained at 10.60%. For the other early varieties, the index was revised to 13.40%. The Pera Rio variety has an estimated rate of 17.30%, while the Valencia and Folha Murcha varieties have a projected rate of 24.00%. The Natal variety, in turn, had its rate adjusted to 24.30%. Drop rates by sector and variety are detailed in Table 3.



Table 3 – Average drop rates by sector and variety⁴

Group of varieties	Sector					
	(hatched values were presented in September and their respective values updated in December are on the left)					
	North	Northwest	Central	South	Southwest	Total
	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)
Hamlin, Westin and Rubi.....	12.40 16.20	7.10 8.20	12.50 9.30	8.40 8.10	9.10 8.40	10.60
Other earlies.....	12.20 11.70	8.60 9.00	11.80 12.00	7.40 7.90	20.30 12.50	13.40 11.50
Pera Rio.....	13.10 14.80	12.50 15.30	20.90 20.60	23.20 22.50	13.70 13.10	17.30 17.50
Valencia and Folha Murcha.....	21.50 17.80	15.60 17.20	23.70 19.30	24.00 22.20	26.80 20.70	24.00 20.00
Natal.....	9.70 11.50	24.70 36.90	33.40 26.60	30.40 24.30	21.80 16.80	24.30 20.00
Total.....	15.40 15.70	12.70 15.20	21.10 18.30	21.60 19.90	19.20 15.70	19.00 17.10

⁴ 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.

Based on field data, it is estimated that by mid-November, around 80% of the production had been harvested. In the early varieties, Hamlin, Westin and Rubi, the harvest reached 97%, while the other early varieties reached 96%. The harvest of the Pera variety was at 78%. Among the late varieties, Valencia and Folha Murcha registered 71%, and the Natal variety, 72%.

This forecast was projected based on the data available so far and will continue to be updated until the end of the harvest. The next forecast will be published on February 10, 2025.

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 – Citrusuco, 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, Folha Murcha and Natal.

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