



CITRUS OCTOBER FORECAST

MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services

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October 11, 2024

Florida All Orange Production Down 16 Percent from Last Season
Florida Non-Valencia Orange Production Down 11 Percent
Florida Valencia Orange Production Down 20 Percent
Florida All Grapefruit Production Down 22 Percent
Florida All Tangerine and Tangelo Production Down 11 Percent

FORECAST DATES - 2024-2025 SEASON	
November 8, 2024 (Maturity only)	March 11, 2025
December 10, 2024	April 10, 2025
January 10, 2025	May 12, 2025
February 11, 2025	June 12, 2025
July 11, 2025	

Citrus Production by Type – States and United States

Crop and State	Production ¹			Forecasted Production ¹
	2021-2022 (1,000 boxes)	2022-2023 (1,000 boxes)	2023-2024 (1,000 boxes)	2024-2025 (1,000 boxes)
Non-Valencia Oranges ²				
Florida	18,250	6,150	6,760	6,000
California	31,500	36,000	38,200	39,000
Texas	170	570	690	400
United States	49,920	42,720	46,650	45,400
Valencia Oranges				
Florida	22,950	9,670	11,200	9,000
California	7,600	8,600	9,300	8,700
Texas	30	560	490	450
United States	30,580	18,830	20,990	18,150
All Oranges				
Florida	41,200	15,820	17,960	15,000
California	39,100	44,600	47,500	47,700
Texas	200	1,130	1,180	850
United States	80,500	61,550	66,640	63,550
Grapefruit				
Florida-All	3,330	1,810	1,790	1,400
Red	2,830	1,560	1,550	1,200
White ³	500	250	240	200
California ⁴	4,100	4,500	4,300	4,200
Texas	1,700	2,250	2,400	1,900
United States	9,130	8,560	8,490	7,500
Lemons				
Florida⁵	(NA)	(NA)	(NA)	500
Arizona	1,250	1,400	950	900
California	25,200	25,800	24,600	26,000
United States	26,450	27,200	25,550	27,400
Tangerines and Mandarins ⁶				
Florida	750	480	450	400
California	17,500	23,500	27,400	25,000
United States	18,250	23,980	27,850	25,400

(NA) Not Available.

¹Net pounds per box: oranges in California-80, Florida-90, Texas-85; grapefruit in California and Texas-80, Florida-85; Lemons in Arizona-80, California-80, Florida-90; tangerines, and mandarins in California-80, Florida-95.

² Early non-Valencia (including Navel) and midseason non-Valencia varieties in Florida; Navel and miscellaneous varieties in California; Early and mid-season varieties in Texas.

³ Includes seedy grapefruit.

⁴ Includes pummelos in California.

⁵ Estimates began with the 2024-2025 crop year.

⁶ Includes tangelos.

All Oranges 15.0 Million Boxes

The 2024-2025 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 15.0 million boxes, down 16 percent from last season's final production. The total includes 6.00 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 9.00 million boxes of Valencia oranges. The Navel orange forecast, at 190,000 boxes, accounts for 3 percent of the non-Valencia total.

The estimated number of bearing trees for all oranges is 30.3 million. Trees planted in 2021 and earlier are considered bearing for this season. Field work for the latest Commercial Citrus Inventory was completed in June 2024. Attrition rates were applied to the results to determine the number of bearing trees used to weigh and expand objective count data in the forecast model.

An 8-year regression was used for comparison purposes. All references to "average", "minimum", and "maximum" refer to the previous 10 seasons, excluding the 2017-2018 season, which was affected by Hurricane Irma, and the 2022-2023 season, which was affected by Hurricanes Ian and Nicole. Average fruit per tree includes both regular bloom and the first late bloom.

Non-Valencia Oranges 6.00 Million Boxes

The non-Valencia forecast of 6.00 million boxes is 11 percent less than last season's production. The estimated number of bearing trees (without Navels) is 9.72 million, down 17 percent from the previous season. The estimated fruit per tree for early and mid-season (non-Valencia) oranges is 392 pieces, an increase of 50 pieces from last season. Projected fruit size is below the minimum, requiring an estimated 344 pieces of fruit to fill a 90-pound box. At 31 percent, projected droppage is slightly below average. The Navel crop of 190,000 boxes, included in the non-Valencia forecast, is 6 percent more than last season's production.

Valencia Oranges 9.00 Million Boxes

The Valencia forecast of 9.00 million boxes is 20 percent lower than last season's production. The estimated number of bearing trees is 20.1 million, down 11 percent from the previous season. The estimated fruit per tree is 244, a decrease of 35 pieces from last season, and the lowest in a series dating back to the 1964-1965 season. Projected fruit size is below average, requiring an estimated 266 pieces of fruit to fill a 90-pound box. Projected droppage is above average at 38 percent.

Reliability

To assist users in evaluating the reliability of the October 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the October 1 production forecast and the final estimate is expressed as a percentage of the final estimate. The average of squared percentage deviations for the latest 20-year period is computed. The square root of the average becomes statistically the "Root Mean Square Error." Probability statements can be made concerning expected differences in the current forecast relative to the final end-of-season estimate, assuming that factors affecting this year's forecast are not different from those influencing recent years.

The "Root Mean Square Error" for the October 1 Florida all orange production forecast is 21.2 percent. However, if you exclude the four abnormal production seasons (four hurricane seasons), the "Root Mean Square Error" is 8.4 percent. This means chances are 2 out of 3 that the current all orange production forecast will not be above or below the final estimates by more than 21.2 percent, or 8.4 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 36.7 percent, or 14.8 percent excluding abnormal seasons.

Changes between the October 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 8.94 million boxes (5.35 million, excluding abnormal seasons), ranging from 0.30 million boxes to 42.3 million boxes including abnormal seasons, (0.30 to 20.4 million boxes excluding abnormal seasons). The October 1 forecast for all oranges has been below the final estimate 2 times, above 17 times, (below 2 times, above 13 times, excluding abnormal seasons). The difference does not imply that the October 1 forecast this year is likely to understate or overstate final production.

Forecast Components, by Type – Florida: October 2024

[Survey data is considered final in December for Navels, January for non-Valencia oranges, February for grapefruit, and April for Valencia oranges]

Type	Bearing trees (1,000 trees)	Fruit per tree (number)	Droppage (percent)	Fruit per box (number)
ORANGES				
Non-Valencia (excluding Navels)	9,725	392	31	344
Navel.....	480	123	30	141
Valencia.....	20,124	244	38	266
GRAPEFRUIT				
Red.....	1,357	271	33	122
White.....	161	369	29	109

All Grapefruit 1.40 Million Boxes

The forecast of all grapefruit production is 1.40 million boxes, 22 percent less than last season’s utilization of 1.79 million boxes. The total is comprised of 1.20 million boxes of red grapefruit and 200,000 boxes of white grapefruit.

The **red** grapefruit forecast at 1.20 million boxes is 23 percent less than last season’s final production. Bearing trees are down 2 percent from last season’s revised bearing tree numbers. The average fruit per tree at 271 pieces is 85 pieces less than last season. Fruit droppage is projected to be about average. Fruit size at the final month is expected to be above average.

The **white** grapefruit forecast of 200,000 boxes is 17 percent less than last season’s final production. White grapefruit bearing trees declined by 8 percent from last season’s revised bearing tree numbers. The average fruit per tree at 369 pieces is 110 pieces less than last season, and only 6 pieces more than the eight-year season minimum. Current fruit sizes are above average, and at the rate of growth measured in last month’s survey, are expected to be above average at harvest. Final drop is expected to be slightly above average.

Tangerines and Tangelos Total 400,000 Boxes

The forecast for tangerine and tangelos is 400,000 boxes, 11 percent less than last season’s utilization of 450,000 boxes. This forecast number includes all certified tangerine and tangelo varieties.

Distribution of Estimated Fruit Population, by Type, and Age Groups – Florida: September

[Distribution of fruit population in September as determined by multiplying average fruit per tree from the Limb Count Survey by bearing age trees]

Age groups	Oranges				Grapefruit			
	Non-Valencia		Valencia		Red		White	
	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
3 - 5 years.....	3	3	6	7	7	16	2	11
6 - 8 years.....	6	6	15	17	3	2	1	0
9 - 13 years.....	18	15	15	18	22	21	1	1
14 - 23 years.....	29	31	22	19	12	13	1	2
24 yrs & over.....	44	45	42	39	56	48	95	86

Forecast Procedures

All citrus forecasts are based on actual fruit counts and measurements. The objective count method uses four components:

- (1) bearing age trees provided from the latest Commercial Citrus Inventory;
- (2) average fruit per tree obtained from the Limb Count survey using randomly selected trees and limbs;
- (3) fruit size from the fruit measurement survey;
- (4) fruit loss from the drop survey.

These measurements are used in the forecast models; regression data are from the 2014-2015 through 2023-2024 seasons.

The latest Tree Inventory is used to determine estimated tree numbers. All trees planted in 2021 and earlier are included for the current season. An attrition factor was applied to these tree numbers (by age and area) to account for losses since the inventory period.

Statistically valid procedures are used to provide unbiased estimates of fruit count. Samples are drawn with known probabilities from the Commercial Citrus Inventory, taking into account the variability in fruit per tree. Limbs are randomly selected from sample trees. Fruit on these limbs is counted in the mid-July to mid-September period.

Estimated Non-Certified Usage, by Type – Florida: 2024-2025

Type	1,000 boxes
Navel Oranges.....	10
Non-Valencia Oranges (excluding Navels).....	30
Valencia Oranges.....	40
Red Grapefruit.....	20
White Grapefruit.....	10
Tangerines and Tangelos.....	25

Maturity

Regular bloom fruit samples (325 orange and 100 grapefruit) were collected from groves on established routes in Florida’s five major citrus producing areas and tested by the Florida Agricultural Statistics Service (FASS) from October 2-4, 2024.

Unadjusted Maturity Tests – Florida: 2023-2024 and 2024-2025

[Averages of regular bloom fruit from sample groves. Juice and solids per box are unadjusted and not comparable to juice processing plant test results. Samples were run through an FMC 091B machine using pneumatic pressure. This machine utilizes a 0.025 short strainer with a 1-inch orifice tube for the 3 inch cup and a 1.25 inch orifice tube for the 4 inch and 5 inch cups.]

Fruit type (number of groves) test date	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early N-V (120-120)										
Sep 1	1.07	1.17	9.64	8.95	9.15	7.76	45.60	44.16	4.40	3.95
Oct 1	0.82	0.85	9.05	8.92	11.22	10.65	45.91	47.84	4.16	4.27
Midseason N-V (54-55)										
Sep 1	1.20	1.46	9.18	8.77	7.73	6.09	43.61	44.81	4.00	3.93
Oct 1	0.98	1.07	9.26	8.74	9.56	8.27	46.74	49.00	4.33	4.28
Valencia (150-150)										
Sep 1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1	1.76	1.79	9.15	8.64	5.30	4.89	45.61	47.15	4.18	4.08
GRAPEFRUIT										
Red Seedless (50-49)										
Sep 1	1.49	1.56	10.86	9.52	7.33	6.14	40.08	37.29	4.35	3.55
Oct 1	1.26	1.31	10.24	9.46	8.18	7.24	44.11	45.12	4.52	4.26
White Seedless (50-50)										
Sep 1	1.65	1.60	10.93	9.43	6.67	5.93	39.25	37.85	4.28	3.58
Oct 1	1.41	1.36	10.50	9.44	7.47	7.00	42.98	44.50	4.51	4.19

(NA) Not available.

Weather and Crop Progress

The citrus growing region experienced normal rainfall throughout the bloom period. The citrus region was drought free with the exception of a small portion in the western area. Temperatures on most accounts were average or above, reaching the high 70s to low 80s consistently.

May and June days on most accounts were generally dry. Other than a few thunderstorms in isolated areas, the citrus belt received negligible rainfall. By the middle of June, all levels of drought conditions had expanded in the citrus growing area, leaving only a sliver in the north of the citrus belt drought free. Well cared for groves looked good, although it was evident the fruit set was lighter than normal. Grove operations during the summer months included spraying pesticides, herbicides, fertilizers, and nutritionals, mowing, discing, removal of dead trees, replanting young trees, and general grove maintenance. Irrigation was being run as needed in groves that had missed the recent rains.

Size surveys showed fruit sizes were average or above on grapefruit yet were average to smaller than average on oranges. During the September survey, early oranges measured smaller than the minimum of the past ten seasons and close to the minimum of the previous ten seasons on late oranges. Harvest of Navel oranges for the fresh market was observed in early October.

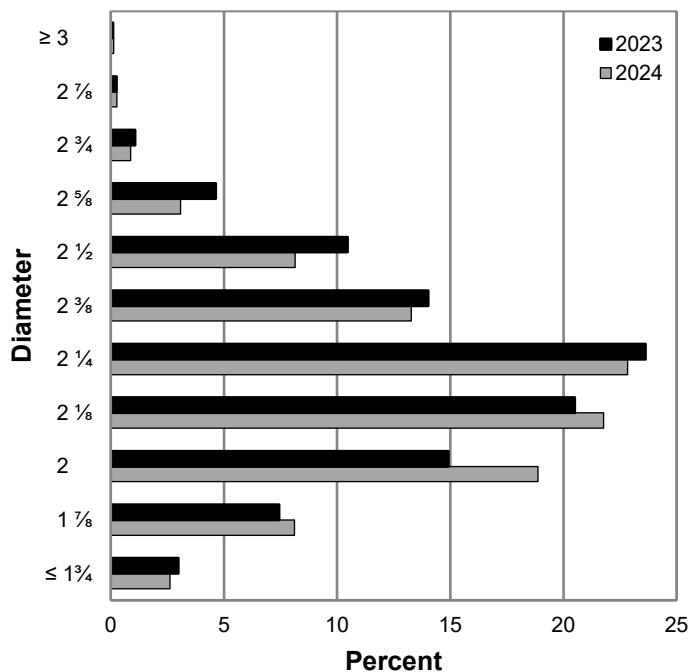
Citrus Size Frequency Measurement Distributions, by Type – Florida: September 2024

Type and number of fruit per 4/5 – bushel containers	2022	2023	2024	Type and number of fruit per 4/5 – bushel containers	2022	2023	2024
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
NON-VALENCIA ORANGES ¹				RED GRAPEFRUIT			
64 or less	0.0	0.0	0.0	32 or less	0.2	0.1	0.2
80	0.3	0.2	0.3	36	0.8	1.3	1.0
100	2.7	2.5	1.9	40	1.7	3.7	4.4
125	14.4	13.8	10.3	48	5.5	7.3	9.7
163 or more	82.6	83.5	87.5	56	11.1	13.6	14.2
NAVEL ORANGES				WHITE GRAPEFRUIT ²			
64 or less	26.6	23.7	19.0	32 or less	0.2	0.2	1.3
80	32.7	30.9	28.0	36	0.5	1.6	3.3
100	27.1	27.6	28.1	40	3.2	3.2	10.0
125	10.2	13.0	15.3	48	6.3	8.9	14.6
163 or more	3.4	4.8	9.6	56	15.5	18.2	14.2
VALENCIA ORANGES				63 or more			
64 or less	0.0	0.0	0.0		80.7	74.0	70.5
80	0.2	0.3	0.2				
100	2.7	2.7	3.9				
125	15.2	14.5	16.3				
163 or more	81.9	82.5	79.6				

¹ Excludes Navels.

² Excludes seedy variety.

Fruit Size Frequency Measurements, Non-Valencia Oranges ¹, by Diameter - Florida: September



¹ Excludes Navel variety.

Fruit Size Frequency Measurements, Red Grapefruit, by Diameter - Florida: September

