



# CITRUS MARCH FORECAST MATURITY TEST RESULTS AND FRUIT SIZE

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March 8, 2024

**Florida All Orange Production Unchanged from February Forecast**  
**Florida Non-Valencia Orange Production Unchanged**  
**Florida Valencia Orange Production Unchanged**  
**Florida All Grapefruit Production Down 8 Percent**  
**Florida All Tangerine and Tangelo Production Down 9 Percent**

FORECAST DATES - 2023-2024 SEASON	
April 11, 2024	June 12, 2024
May 10, 2024	July 12, 2024

## Citrus Production by Type – States and United States

Crop and State	Production <sup>1</sup>		2023-2024 Forecasted Production <sup>1</sup>	
	2021-2022 (1,000 boxes)	2022-2023 (1,000 boxes)	February (1,000 boxes)	March (1,000 boxes)
<b>Non-Valencia Oranges <sup>2</sup></b>				
<b>Florida</b> .....	<b>18,250</b>	<b>6,150</b>	<b>6,800</b>	<b>6,800</b>
California <sup>3</sup> .....	31,500	36,500	38,000	38,000
Texas <sup>3</sup> .....	170	570	600	600
United States.....	49,920	43,220	45,400	45,400
<b>Valencia Oranges</b>				
<b>Florida</b> .....	<b>22,950</b>	<b>9,650</b>	<b>13,000</b>	<b>13,000</b>
California.....	7,600	6,700	7,800	8,000
Texas <sup>3</sup> .....	30	560	350	350
United States.....	30,580	16,910	21,150	21,350
<b>All Oranges</b>				
<b>Florida</b> .....	<b>41,200</b>	<b>15,800</b>	<b>19,800</b>	<b>19,800</b>
California.....	39,100	43,200	45,800	46,000
Texas <sup>3</sup> .....	200	1,130	950	950
United States.....	80,500	60,130	66,550	66,750
<b>Grapefruit</b>				
<b>Florida-All</b> .....	<b>3,330</b>	<b>1,810</b>	<b>2,400</b>	<b>2,200</b>
<b>Red</b> .....	<b>2,830</b>	<b>1,560</b>	<b>2,100</b>	<b>1,900</b>
<b>White</b> .....	<b>500</b>	<b>250</b>	<b>300</b>	<b>300</b>
California <sup>3</sup> .....	4,100	4,000	3,800	3,800
Texas <sup>3</sup> .....	1,700	2,250	2,350	2,350
United States.....	9,130	8,060	8,550	8,350
<b>Lemons <sup>3</sup></b>				
Arizona.....	1,250	1,400	900	900
California.....	25,200	26,500	20,000	20,000
United States.....	26,450	27,900	20,900	20,900
<b>Tangerines and Mandarins</b>				
<b>Florida</b> .....	<b>750</b>	<b>480</b>	<b>550</b>	<b>500</b>
California <sup>3,4</sup> .....	17,500	23,700	22,000	22,000
United States.....	18,250	24,180	22,550	22,500

<sup>1</sup> Net pounds per box: oranges in California-80, Florida-90, Texas-85; grapefruit in California and Texas-80, Florida-85; lemons-80; and tangerines and mandarins in California-80, Florida-95.

<sup>2</sup> Navel and miscellaneous varieties in California. Early (including Navel) and midseason varieties in Florida and Texas.

<sup>3</sup> Estimates for current month carried forward from previous forecast.

<sup>4</sup> Includes tangelos and tangors.

## **All Oranges 19.8 Million Boxes**

The 2023-2024 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 19.8 million boxes, unchanged from the February forecast. If realized, this will be 25 percent more than last season's final production. The forecast consists of 6.80 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 13.0 million boxes of Valencia oranges. 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 6.80 Million Boxes**

The forecast of non-Valencia production is unchanged at 6.80 million boxes. The Row Count survey conducted February 26-27, 2024, showed 98 percent of the early and mid-season non-Valencia rows, excluding Navels, are harvested. The Navel forecast, included in the non-Valencia portion of the forecast is 200,000 boxes.

## **Valencia Oranges 13.0 Million Boxes**

The forecast of Valencia production is unchanged from the February forecast at 13.0 million boxes. Current fruit size is below average and is projected to be below average at harvest, requiring 260 pieces to fill a 90-pound box. Current droppage is above average and projected to be above average at harvest. Harvest of Valencia oranges is still in the early stages.

## **All Grapefruit 2.20 Million Boxes**

The forecast of all grapefruit production is decreased 200,000 from February to 2.20 million boxes. The red grapefruit forecast is lowered 200,000 to 1.90 million boxes. The white grapefruit forecast is unchanged at 300,000 boxes. The Row Count survey conducted February 26-27, 2024, indicated 84 percent of grapefruit rows are harvested.

## **Tangerines and Tangelos 500,000 Boxes**

The forecast for tangerines and tangelos is lowered 50,000 from the February forecast and is now 500,000 boxes, 4 percent more than last season's utilization of 480,000 boxes. This forecast number includes all certified tangerine and tangelo varieties.

## **Reliability**

To assist users in evaluating the reliability of the March 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the March 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 March 1 Florida all orange production forecast is 4.8 percent. If you exclude the four abnormal production seasons (four hurricane seasons), the "Root Mean Square Error" is 5.2 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 4.8 percent, including abnormal seasons, or 5.2 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 8.2 percent including abnormal seasons or 9.1 percent excluding abnormal seasons.

Changes between the March 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 3.33 million boxes (3.93 million, excluding abnormal seasons), ranging from 0.00 million boxes to 10.7 million boxes including or excluding abnormal seasons. The March 1 forecast for all oranges has been below the final estimate 6 times, equal 1 time, and above 13 times, (below 5 times, equal 1 time, and above 10 times, excluding abnormal seasons). The difference does not imply that the March 1 forecasts this year are likely to understate or overstate final production.

## Forecast Components, by Type – Florida: March 2024

[Survey data is considered final in December for Navels, January for early and mid-season (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)
<b>ORANGES</b>				
Early & mid-season (Non-Valencia) <sup>1</sup>	13,299	342	43	336
Navel .....	570	138	37	138
Valencia .....	24,868	279	43	260
<b>GRAPEFRUIT</b>				
Red .....	1,418	356	34	119
White .....	194	479	25	109

<sup>1</sup> Excludes Navels.

## Maturity

Regular bloom fruit samples were collected from groves on established routes February 26-27, 2024 in Florida's five major citrus producing areas and tested February 28, 2024. All comparisons are made to the previous season.

## Unadjusted Maturity Tests — Florida: March 1, 2022-2023 and 2023-2024

[Averages of regular bloom fruit from sample groves. Samples were run through an FMC 091B machine using pneumatic pressure. This machine utilizes a 0.025 short strainer with a 1.00-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	
	2022-2023 (percent)	2023-2024 (percent)	2022-2023 (percent)	2023-2024 (percent)	2022-2023	2023-2024	2022-2023 (pounds)	2023-2024 (pounds)	2022-2023 (pounds)	2023-2024 (pounds)
<b>Valencia Oranges (142-132)</b>										
Oct 1 .....	1.94	1.78	8.95	9.17	4.66	5.27	46.74	45.80	4.19	4.21
Nov 1 .....	1.61	1.47	8.89	9.22	5.59	6.40	49.68	49.23	4.42	4.54
Dec 1 .....	1.27	1.23	8.98	9.56	7.20	7.91	52.18	51.49	4.69	4.92
Jan 1 .....	1.13	1.09	9.20	9.75	8.20	9.07	53.92	53.48	4.96	5.21
Feb 1 .....	1.00	0.96	9.47	10.06	9.58	10.61	54.51	54.76	5.16	5.51
Mar 1 .....	0.92	0.88	9.74	10.03	10.74	11.54	54.88	54.64	5.35	5.48

## Size Frequency Measurement Distributions, by Type — Florida: February Survey

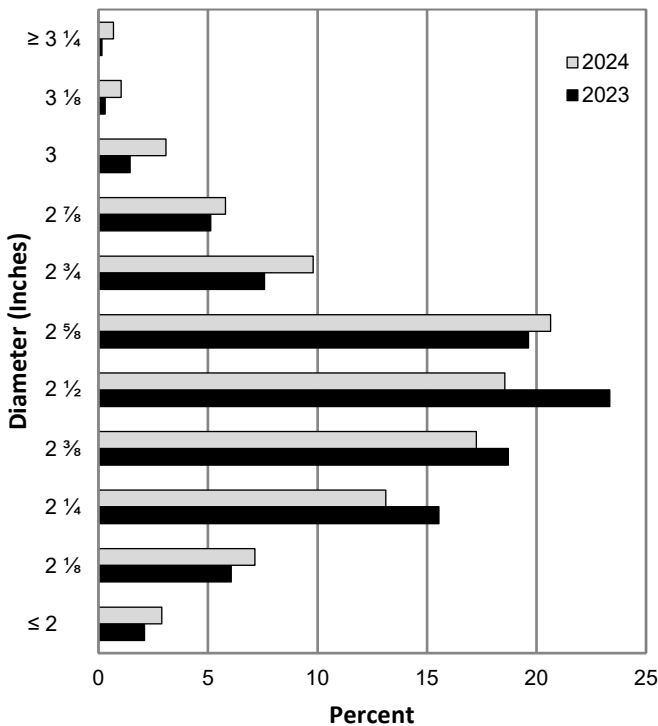
[Size frequency distributions from the February size survey are shown in the following table. The distributions are by percent of fruit falling within the size range of each 4/5-bushel container. These frequency distributions include fruit from regular bloom and exclude fruit from summer bloom.]

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)
<b>VALENCIA ORANGES</b>				<b>WHITE GRAPEFRUIT <sup>1</sup></b>			
64 or less .....	0.9	0.3	1.0	32 or less .....	11.4	2.7	1.2
80 .....	4.9	3.3	6.3	36 .....	18.6	8.2	9.2
100 .....	19.5	17.6	21.3	40 .....	26.4	18.0	16.9
125 .....	31.7	36.4	31.0	48 .....	20.0	22.0	16.2
163 or more .....	43.0	42.4	40.4	56 .....	7.9	20.2	13.8
<b>RED GRAPEFRUIT <sup>1</sup></b>				63 or more .....	15.7	28.9	42.7
32 or less .....	5.6	0.0	6.3				
36 .....	9.8	1.1	5.6				
40 .....	7.7	2.4	10.3				
48 .....	9.6	5.0	12.5				
56 .....	14.1	8.4	13.4				
63 or more .....	53.2	83.1	51.9				

<sup>1</sup> Excludes seedy.

The charts below show the distribution of fruit sizes in 2023 compared to 2024. The diameter measurements shown are the minimum values of each eighth inch range, except for the smallest value.

**Fruit Size Frequency Measurements, Valencia Oranges, by Diameter - Florida: February Survey**



**Fruit Size Frequency Measurements, Red Seedless Grapefruit, by Diameter - Florida: February Survey**

