



# CITRUS DECEMBER FORECAST MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services  
851 Trafalgar Ct, Suite 310E, Maitland, FL 32751-4132  
(407) 648-6013 · (855) 271-9801 FAX · [www.nass.usda.gov/fl](http://www.nass.usda.gov/fl)

December 9, 2022

**Florida All Orange Production Down 29 Percent from October Forecast**  
**Florida Non-Valencia Orange Down 36 Percent**  
**Florida Valencia Orange Production Down 24 Percent**  
**Florida All Grapefruit Production Down 10 Percent**  
**Florida All Tangerine and Tangelo Production Down 14 Percent**

FORECAST DATES - 2022-2023 SEASON	
January 12, 2023	April 11, 2023
February 8, 2023	May 12, 2023
March 8, 2023	June 9, 2023
July 12, 2023	

## Citrus Production by Type – States and United States

Crop and State	Production <sup>1</sup>		2022-2023 Forecasted Production <sup>1</sup>	
	2020-2021 (1,000 boxes)	2021-2022 (1,000 boxes)	October (1,000 boxes)	December (1,000 boxes)
<b>Non-Valencia Oranges <sup>2</sup></b>				
<b>Florida</b> .....	<b>22,700</b>	<b>18,250</b>	<b>11,000</b>	<b>7,000</b>
California <sup>3</sup> .....	41,300	31,800	38,000	38,000
Texas <sup>3</sup> .....	1,000	170	900	900
United States.....	65,000	50,220	49,900	45,900
<b>Valencia Oranges</b>				
<b>Florida</b> .....	<b>30,250</b>	<b>22,800</b>	<b>17,000</b>	<b>13,000</b>
California <sup>3</sup> .....	7,700	8,600	9,100	9,100
Texas <sup>3</sup> .....	50	30	250	250
United States.....	38,000	31,430	26,350	22,350
<b>All Oranges</b>				
<b>Florida</b> .....	<b>52,950</b>	<b>41,050</b>	<b>28,000</b>	<b>20,000</b>
California <sup>3</sup> .....	49,000	40,400	47,100	47,100
Texas <sup>3</sup> .....	1,050	200	1,150	1,150
United States.....	103,000	81,650	76,250	68,250
<b>Grapefruit</b>				
<b>Florida-All</b> .....	<b>4,100</b>	<b>3,330</b>	<b>2,000</b>	<b>1,800</b>
<b>Red</b> .....	<b>3,480</b>	<b>2,830</b>	<b>1,800</b>	<b>1,620</b>
<b>White</b> .....	<b>620</b>	<b>500</b>	<b>200</b>	<b>180</b>
California <sup>3,4</sup> .....	4,200	4,100	4,100	4,100
Texas <sup>3</sup> .....	2,400	1,700	2,000	2,000
United States.....	10,700	9,130	8,100	7,900
<b>Lemons <sup>3</sup></b>				
Arizona.....	750	950	1,150	1,150
California.....	20,100	24,900	23,000	23,000
United States.....	20,850	25,850	24,150	24,150
<b>Tangerines and Tangelos</b>				
<b>Florida</b> .....	<b>890</b>	<b>750</b>	<b>700</b>	<b>600</b>
California <sup>3</sup> .....	28,800	17,400	20,000	20,000
United States.....	29,690	18,150	20,700	20,600

<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> 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.

<sup>3</sup> Estimates carried forward from October.

<sup>4</sup> Includes pummelos in California.

## All Oranges 20.0 Million Boxes

The 2022-2023 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 20.0 million boxes, down 8.00 million boxes from the October forecast. If realized, this will be 51 percent less than last season's final production. The forecast consists of 7.00 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 13.0 million boxes of Valencia oranges. A 9-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. Average fruit per tree includes both regular bloom and the first late bloom.

## Non-Valencia Oranges 7.00 Million Boxes

The forecast of non-Valencia production is lowered 4.00 million boxes from the October forecast to 7.00 million boxes. Current fruit size is below average and projected to be below average at harvest. Current droppage is projected to be above the maximum at harvest. The Navel forecast, included in the non-Valencia forecast, is 150,000 boxes, and is 2 percent of the non-Valencia total.

## Valencia Oranges 13.0 Million Boxes

The forecast of Valencia production is lowered 4.00 million boxes from the October forecast to 13.0 million boxes. Current fruit size is below the minimum and is projected to be below the minimum at harvest. Current droppage is projected to be above maximum at harvest.

## All Grapefruit 1.80 Million Boxes

The forecast of all grapefruit production is lowered 200,000 boxes from the October forecast to 1.80 million boxes. If realized, this will be 46 percent less than last season's final production. The red grapefruit forecast is lowered 180,000 boxes to 1.62 million boxes. Fruit size of red grapefruit at harvest is projected to be below average, and droppage is projected to be above the maximum. The white grapefruit forecast is decreased 20,000 boxes to 180,000 boxes. Projected fruit size of white grapefruit at harvest is below average; projected droppage is above average.

## Tangerines and Tangelos 600,000 Boxes

The forecast for tangerines and tangelos is decreased 100,000 boxes from the October forecast to 600,000 boxes and is now 20 percent less than last season's utilization of 750,000 boxes. This forecast number includes all certified tangerine and tangelo varieties.

## Reliability

To assist users in evaluating the reliability of the December 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the December 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 December 1 Florida all orange production forecast is 8.4 percent. However, if you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 8.3 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 8.4 percent, or 8.3 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 14.5 percent, or 14.4 percent excluding abnormal seasons.

Changes between the December 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 7.38 million boxes (6.71 million, excluding abnormal seasons), ranging from 0.95 million boxes to 18.2 million boxes including abnormal seasons, (1.30 to 16.3 million boxes excluding abnormal seasons). The December 1 forecast for all oranges has been below the final estimate 3 times, above 17 times, (below 3 times, above 14 times, excluding abnormal seasons). The difference does not imply that the December 1 forecasts this year are likely to understate or overstate final production.

## Forecast Components, by Type – Florida: December 2022

[Survey data is considered final in December for Navels, January for early-midseason (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-midseason (non-Valencia) <sup>1</sup> ....	15,841	474	71	329
Navel.....	653	106	69	137
Valencia.....	27,465	323	55	275
<b>GRAPEFRUIT</b>				
Red.....	1,574	381	54	133
White.....	180	448	33	123

<sup>1</sup> Excludes Navels.

## Maturity

Regular bloom fruit samples (312 orange and 93 grapefruit) were collected from groves on established routes in Florida's five major citrus producing areas on November 28-29, 2022 and tested by the USDA, NASS, Florida Field Office on November 30 -December 2, 2022.

### Unadjusted Maturity Tests – Florida: 2021-2022 and 2022-2023

[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 and 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	
	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
<b>ORANGES</b>										
Early N-V (118-113)										
Sep 1.....	1.16	1.25	9.11	9.14	7.92	7.37	43.69	43.21	3.98	3.95
Oct 1.....	0.90	0.90	9.00	9.15	10.06	10.32	48.05	46.69	4.32	4.27
Nov 1.....	0.71	0.76	9.53	9.15	13.47	12.18	50.28	49.61	4.79	4.54
Dec 1.....	0.65	0.64	9.49	9.21	14.58	14.63	51.46	51.33	4.89	4.73
Midseason N-V (52-50)										
Sep 1.....	1.32	1.37	8.76	8.89	6.78	6.54	45.05	43.21	3.95	3.84
Oct 1.....	1.02	0.99	8.79	8.95	8.75	9.13	48.72	47.60	4.29	4.26
Nov 1.....	0.80	0.83	9.19	8.91	11.68	10.85	50.44	50.32	4.64	4.48
Dec 1.....	0.74	0.72	9.34	8.96	12.86	12.62	52.40	51.94	4.90	4.66
Valencia (150-149)										
Sep 1.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1.....	2.00	1.94	8.66	8.95	4.37	4.66	46.41	46.77	4.02	4.19
Nov 1.....	1.57	1.61	9.07	8.89	5.88	5.58	48.98	49.63	4.44	4.42
Dec 1.....	1.35	1.27	9.25	9.00	6.91	7.21	51.36	52.20	4.75	4.70
<b>GRAPEFRUIT</b>										
Red Seedless (49-43)										
Sep 1.....	1.42	1.54	9.69	10.44	6.86	6.81	39.02	38.90	3.78	4.06
Oct 1.....	1.35	1.38	9.91	10.01	7.37	7.26	45.09	46.02	4.47	4.61
Nov 1.....	1.19	1.27	9.67	9.85	8.15	7.79	48.81	49.48	4.72	4.87
Dec 1.....	1.21	1.15	9.65	9.73	8.00	8.50	52.23	52.54	5.04	5.11
White Seedless (48-50)										
Sep 1.....	1.56	1.64	10.01	10.57	6.45	6.49	39.10	40.41	3.91	4.27
Oct 1.....	1.36	1.50	9.97	10.19	7.34	6.83	46.33	46.82	4.62	4.76
Nov 1.....	1.30	1.32	10.21	9.95	7.85	7.59	48.79	50.78	4.98	5.05
Dec 1.....	1.27	1.23	9.96	9.71	7.86	7.93	52.58	53.92	5.24	5.24

(NA) Not available.

## Size Frequency Measurement Distributions, by Type – Florida: November

[Size frequency distributions from the November 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]

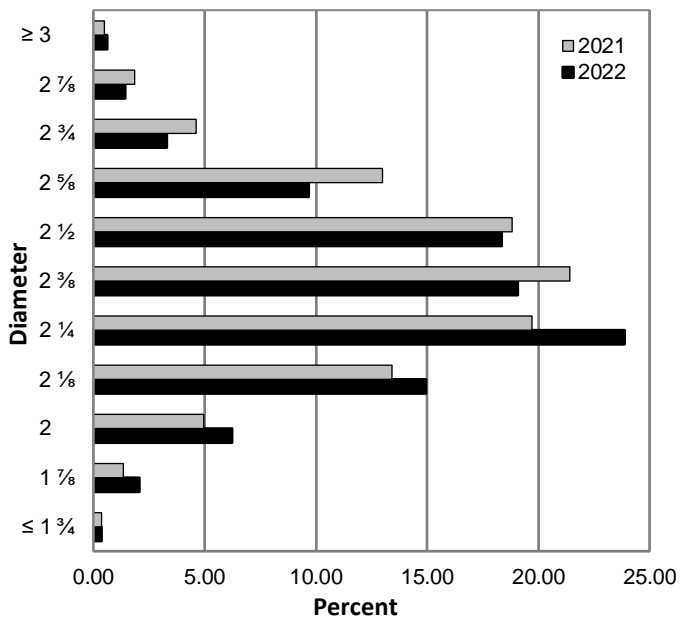
Type and number of fruit per 4/5-bushel containers	2020	2021	2022	Type and number of fruit per 4/5-bushel containers	2020	2021	2022
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
<b>NON-VALENCIA ORANGES <sup>1</sup></b>				<b>RED GRAPEFRUIT</b>			
64 or less .....	0.7	0.0	0.1	32 or less.....	3.7	1.0	0.2
80.....	4.5	1.1	1.1	36.....	8.1	5.8	2.3
100.....	20.1	10.1	7.2	40.....	10.7	11.1	6.1
125.....	33.5	27.6	25.0	48.....	15.3	18.1	9.1
163 or more.....	41.2	61.2	66.6	56.....	16.7	17.4	13.2
				63 or more.....	45.5	46.6	69.1
<b>NAVEL ORANGES</b>				<b>WHITE GRAPEFRUIT <sup>2</sup></b>			
64 or less .....	65.3	48.8	48.7	32 or less.....	2.5	5.0	1.2
80.....	19.9	26.6	29.0	36.....	6.6	16.7	5.2
100.....	11.9	17.6	16.7	40.....	12.8	20.9	7.7
125.....	2.2	5.4	5.0	48.....	14.4	24.7	13.3
163 or more.....	0.7	1.6	0.6	56.....	16.3	13.3	17.3
				63 or more.....	47.4	19.4	55.3
<b>VALENCIA ORANGES</b>							
64 or less .....	0.8	0.4	0.0				
80.....	5.7	3.0	1.5				
100.....	21.7	15.8	11.1				
125.....	31.0	30.4	30.7				
163 or more.....	40.8	50.4	56.7				

<sup>1</sup> Excludes Navels.

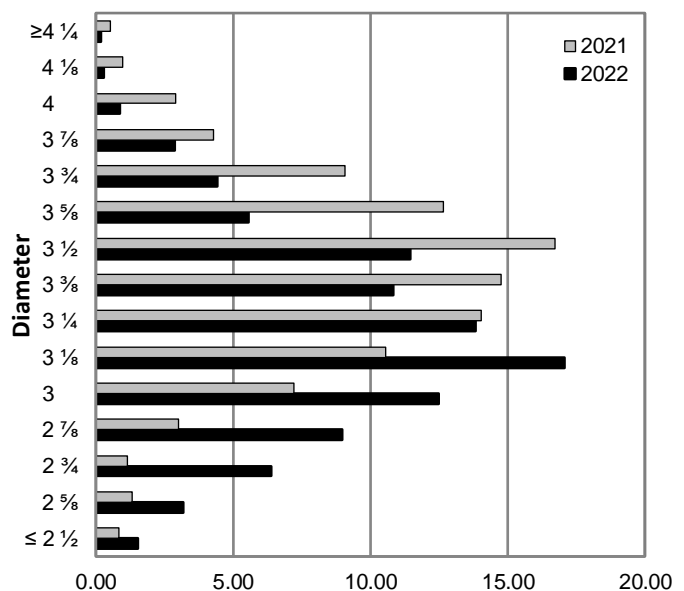
<sup>2</sup> Excludes seedy.

The charts below show the distribution of fruit sizes in 2021 compared to 2022. The diameter measurements shown are the minimum values of each eighth inch range, except for the smallest values.

**Fruit Size Frequency Measurements, Non-Valencia Oranges <sup>1</sup>, by Diameter - Florida: November**



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



<sup>1</sup> Excludes Navels.