



# CITRUS JANUARY FORECAST MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services  
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January 12, 2021

**Florida All Orange Production Down 4 Percent from December Forecast**  
**Florida Non-Valencia Orange Production Down 9 Percent**  
**Florida Valencia Orange Production Unchanged**  
**Florida All Grapefruit Production Up 5 Percent**  
**Florida All Tangerine and Tangelo Production Unchanged**

FORECAST DATES - 2020-2021 SEASON			
February 9, 2021	May 12, 2021		
March 9, 2021	June 10, 2021		
April 9, 2021	July 12, 2021		

## Citrus Production by Type – States and United States

Crop and State	Production <sup>1</sup>		2020-2021 Forecasted Production <sup>1</sup>	
	2018-2019 (1,000 boxes)	2019-2020 (1,000 boxes)	December (1,000 boxes)	January (1,000 boxes)
<b>Non-Valencia Oranges <sup>2</sup></b>				
<b>Florida</b> .....	<b>30,400</b>	<b>29,650</b>	<b>22,000</b>	<b>20,000</b>
California .....	42,000	44,300	42,000	42,000
Texas .....	2,210	1,150	1,300	1,300
United States.....	74,610	75,100	65,300	63,300
<b>Valencia Oranges</b>				
<b>Florida</b> .....	<b>41,450</b>	<b>37,650</b>	<b>34,000</b>	<b>34,000</b>
California .....	10,200	9,000	8,500	9,000
Texas .....	290	190	200	200
United States.....	51,940	46,840	42,700	43,200
<b>All Oranges</b>				
<b>Florida</b> .....	<b>71,850</b>	<b>67,300</b>	<b>56,000</b>	<b>54,000</b>
California .....	52,200	53,300	50,500	51,000
Texas .....	2,500	1,340	1,500	1,500
United States.....	126,550	121,940	108,000	106,500
<b>Grapefruit</b>				
<b>Florida-All</b> .....	<b>4,510</b>	<b>4,850</b>	<b>4,400</b>	<b>4,600</b>
<b>Red</b> .....	<b>3,740</b>	<b>4,060</b>	<b>3,700</b>	<b>3,900</b>
<b>White</b> .....	<b>770</b>	<b>790</b>	<b>700</b>	<b>700</b>
California <sup>3</sup> .....	4,200	3,800	3,800	4,200
Texas .....	6,100	4,400	4,900	5,000
United States.....	14,810	13,050	13,100	13,800
<b>Lemons</b>				
Arizona.....	1,350	1,800	1,300	1,900
California.....	23,700	25,700	22,000	24,000
United States.....	25,050	27,500	23,300	25,900
<b>Tangerines and Tangelos</b>				
<b>Florida</b> .....	<b>990</b>	<b>1,020</b>	<b>1,100</b>	<b>1,100</b>
California.....	26,500	22,000	23,000	23,000
United States.....	27,490	23,020	24,100	24,100

<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> Includes pummelos in California.

## All Oranges 54.0 Million Boxes

The 2020-2021 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 54.0 million boxes, down 4 percent from the December forecast. If realized, this will be 20 percent less than last season's final production. The forecast consists of 20.0 million boxes of non-Valencia oranges (early, midseason, and Navel varieties) and 34.0 million boxes of Valencia oranges. A 9-year regression has been 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 and first late bloom.

## Non-Valencia Oranges 20.0 Million Boxes

The forecast of non-Valencia production is lowered 2.00 million boxes to 20.0 million boxes. Final fruit size is above average, requiring 277 pieces to fill a 90 pound box. Final droppage of non-Valencia oranges (excluding Navels) at 43 percent is above the maximum, and the highest in a series dating back to the 1960-1961 season. The Navel forecast, included in the non-Valencia forecast, is unchanged at 700 thousand boxes, and is 4 percent of the non-Valencia total.

## Valencia Oranges 34.0 Million Boxes

The forecast of Valencia production is unchanged from the December forecast and is 34.0 million boxes. Current fruit size is below average and is projected to be below average at harvest. Current droppage is above average and projected to be above average at harvest.

## All Grapefruit 4.60 Million Boxes

The forecast of all grapefruit production is raised 200 thousand boxes from December. If realized, this will be 5 percent less than last season's final production. The red grapefruit forecast is raised 200 thousand boxes to 3.90 million boxes. Fruit size of red grapefruit at harvest is projected to be above average. Projected droppage is above average. The white grapefruit forecast is unchanged at 700 thousand boxes. Projected fruit size of white grapefruit at harvest is above average. White grapefruit droppage is projected to be above average.

## Tangerines and Tangelos 1.10 Million Boxes

The forecast for tangerines and tangelos is unchanged from December and is 1.10 million boxes, 8 percent more than last season's utilization of 1.02 million boxes. This forecast number includes all certified tangerine and tangelo varieties.

## Reliability

To assist users in evaluating the reliability of the January 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the January 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 January 1 Florida all orange production forecast is 6.3 percent. If you exclude the three abnormal production seasons (three hurricane seasons) chances are still 6.3 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 6.3 percent, including or excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.9 percent including abnormal seasons, or 11.0 percent excluding abnormal seasons.

Changes between the January 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 5.57 million boxes (5.17 million, excluding abnormal seasons), ranging from 0.30 million boxes to 12.7 million boxes (including and excluding abnormal seasons). The January 1 forecast for all oranges has been below the final estimate 5 times, above 15 times, (below 5 times, above 12 times, excluding abnormal seasons). The difference does not imply that the January 1 forecasts this year are likely to understate or overstate final production.

## Forecast Components, by Type – Florida: January 2021

[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> ..	19,050	590	43	277
Navel .....	902	194	37	132
Valencia .....	30,169	441	31	241
<b>GRAPEFRUIT</b>				
Red .....	1,983	372	30	117
White .....	376	409	37	110

<sup>1</sup> Excludes Navels.

## Maturity

Regular bloom fruit samples were collected on December 28, 2020 from groves on established routes in Florida's five major citrus producing areas, and tested December 29-30, 2020. All comparisons in the first table are made to January 1, 2020. Ratios are higher on midseason non-Valencia oranges, but lower for early non-Valencia and Valencia oranges. Unfinished juice per box and solids per box are lower on all varieties.

All Indian River comparisons are made to fruit from other areas for this test period. Ratios are higher on early non-Valencia and Valencia oranges tested from the Indian River. Unfinished juice per box and solids per box are also higher for samples collected in the Indian River Area for early non-Valencia and Valencia oranges.

### Unadjusted Maturity Tests — Florida: January 1, 2019-2020 and 2020-2021

[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 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	
	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
<b>ORANGES</b>										
Early N-V (88-73)										
Sep 1 .....	1.21	1.23	9.04	8.81	7.52	7.26	44.73	44.36	4.04	3.91
Oct 1 .....	0.88	0.90	9.63	9.21	11.13	10.43	49.45	49.63	4.76	4.57
Nov 1 .....	0.64	0.67	10.24	9.47	16.05	14.28	51.24	50.94	5.24	4.82
Dec 1 .....	0.60	0.59	10.52	9.77	17.62	16.57	53.06	51.80	5.58	5.06
Jan 1 .....	0.55	0.58	10.74	10.41	19.57	18.17	52.10	50.83	5.60	5.29
Midseason N-V (38-35)										
Sep 1 .....	1.38	1.31	8.96	8.56	6.65	6.66	45.31	45.35	4.06	3.89
Oct 1 .....	1.02	0.97	9.77	9.04	9.72	9.49	49.56	49.72	4.84	4.50
Nov 1 .....	0.76	0.79	10.28	9.29	13.77	11.92	51.76	51.32	5.32	4.77
Dec 1 .....	0.66	0.66	10.54	9.67	16.23	14.86	53.10	53.50	5.60	5.17
Jan 1 .....	0.67	0.60	10.86	9.91	16.52	16.63	53.82	51.69	5.84	5.12
Valencia (150-150)										
Sep 1 .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1 .....	1.97	1.79	9.08	8.75	4.68	4.95	47.73	48.55	4.33	4.25
Nov 1 .....	1.47	1.48	9.48	8.84	6.57	6.06	51.73	50.65	4.90	4.48
Dec 1 .....	1.24	1.22	9.48	9.17	7.88	7.63	53.82	52.88	5.11	4.85
Jan 1 .....	1.04	1.08	10.14	9.61	9.88	8.97	54.50	53.59	5.53	5.15

(N-V) Non-Valencia

(NA) Not available.

### Unadjusted Maturity Test Averages, by Areas — Florida: January 1, 2019-2020 and 2020-2021

Fruit type (number of groves)	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021	2019-2020	2020-2021
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
<b>ORANGES</b>										
Early N-V										
Indian River (8-6) .....	0.56	0.57	11.04	10.79	19.82	19.14	52.51	53.25	5.81	5.75
Other Areas (80-67) .....	0.55	0.58	10.71	10.37	19.54	18.08	52.05	50.61	5.58	5.25
Midseason N-V										
Indian River (2-2) .....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Other Areas (36-33) .....	0.67	0.60	10.81	9.88	16.42	16.51	53.82	51.54	5.81	5.10
Valencia										
Indian River (29-29) .....	1.16	1.09	10.51	9.91	9.09	9.17	54.68	54.19	5.74	5.37
Other Areas (121-121) .....	1.01	1.08	10.05	9.54	10.07	8.93	54.46	53.45	5.47	5.10

(N-V) Non-Valencia

(D) Withheld to avoid disclosing data for individual operations.

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

[Size frequency distributions from the December 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]

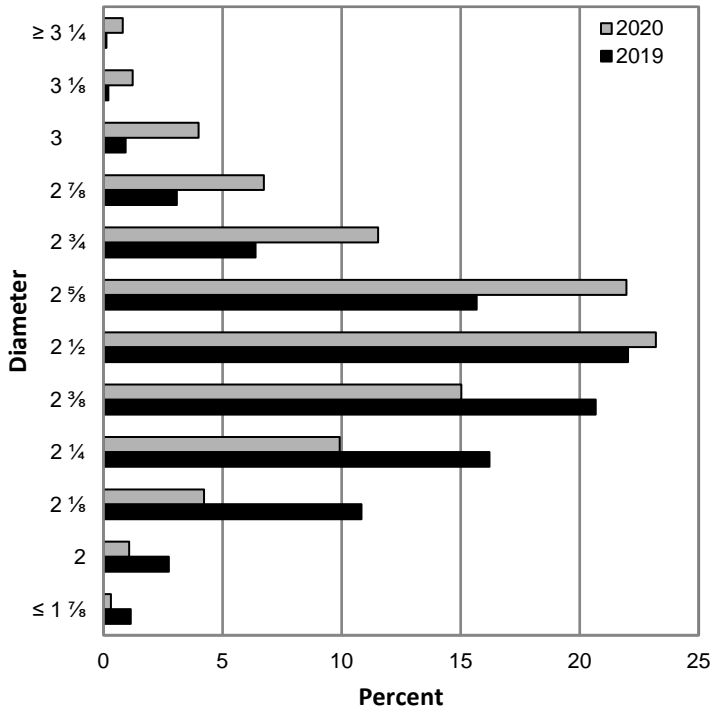
Type and number of fruit per 4/5 – bushel containers	2018 (percent)	2019 (percent)	2020 (percent)	Type and number of fruit per 4/5 – bushel containers	2018 (percent)	2019 (percent)	2020 (percent)
<b>NON-VALENCIA ORANGES <sup>1</sup></b>				<b>RED GRAPEFRUIT</b>			
64 or less .....	0.3	0.2	1.2	32 or less .....	0.5	2.3	3.6
80 .....	1.9	2.1	7.5	36 .....	2.4	7.7	8.3
100 .....	9.8	14.2	24.3	40 .....	6.2	12.2	10.4
125 .....	25.9	31.9	36.5	48 .....	11.7	16.8	13.4
163 or more .....	62.1	51.6	30.5	56 .....	13.5	16.3	17.4
				63 or more .....	65.7	44.7	46.9
<b>VALENCIA ORANGES</b>				<b>WHITE GRAPEFRUIT <sup>2</sup></b>			
64 or less .....	0.3	0.6	1.5	32 or less .....	5.5	7.1	2.9
80 .....	3.8	6.2	8.7	36 .....	8.4	9.6	10.3
100 .....	19.8	26.0	27.5	40 .....	10.0	16.6	16.1
125 .....	33.1	35.4	33.7	48 .....	9.1	17.9	15.5
163 or more .....	43.0	31.8	28.6	56 .....	13.7	12.3	17.7
				63 or more .....	53.3	36.5	37.5

<sup>1</sup> Excludes Navels.

<sup>2</sup> Excludes seedy.

The charts below show the distribution of fruit sizes in 2019 compared to 2020. 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: December Survey**



<sup>1</sup> Excludes Navel varieties.

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

