



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

December 9, 2021

Florida All Orange Production Down 2 Percent from October Forecast
Florida Non-Valencia Orange Down 5 Percent
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Up 8 Percent
Florida All Tangerine and Tangelo Production Unchanged

FORECAST DATES - 2021-2022 SEASON	
January 12, 2022	April 8, 2022
February 9, 2022	May 12, 2022
March 9, 2022	June 10, 2022
July 12, 2022	

Citrus Production by Type – States and United States

Crop and State	Production ¹		2021-2022 Forecasted Production ¹	
	2019-2020 (1,000 boxes)	2020-2021 (1,000 boxes)	October (1,000 boxes)	December (1,000 boxes)
Non-Valencia Oranges ²				
Florida	29,650	22,700	19,000	18,000
California ³	43,300	40,600	35,000	35,000
Texas ³	1,150	1,000	450	450
United States.....	74,100	64,300	54,450	53,450
Valencia Oranges				
Florida	37,750	30,100	28,000	28,000
California ³	10,800	9,500	8,500	8,500
Texas ³	190	50	100	100
United States.....	48,740	39,650	36,600	36,600
All Oranges				
Florida	67,400	52,800	47,000	46,000
California ³	54,100	50,100	43,500	43,500
Texas ³	1,340	1,050	550	550
United States.....	122,840	103,950	91,050	90,050
Grapefruit				
Florida-All	4,850	4,100	3,800	4,100
Red	4,060	3,480	3,200	3,300
White	790	620	600	800
California ^{3,4}	4,700	3,900	3,900	3,900
Texas ³	4,400	2,400	3,100	3,100
United States.....	13,950	10,400	10,800	11,100
Lemons ³				
Arizona.....	1,800	800	1,300	1,300
California.....	25,300	21,300	21,000	21,000
United States.....	27,100	22,100	22,300	22,300
Tangerines and Tangelos				
Florida	1,020	890	900	900
California ³	22,400	28,100	21,000	21,000
United States.....	23,420	28,990	21,900	21,900

¹ 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.

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 Estimates carried forward from October.

⁴ Includes pummelos in California.

All Oranges 46.0 Million Boxes

The 2021-2022 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 46.0 million boxes, down 1.0 million boxes from the October forecast. If realized, this will be 13 percent less than last season's final production. The forecast consists of 18.0 million boxes of the non-Valencia oranges (early, mid-season, and Navel varieties) and 28.0 million boxes of the 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 18.0 Million Boxes

The forecast of non-Valencia production is lowered 1.0 million boxes from the October forecast to 18.0 million boxes. Current fruit size is below average and projected to be below average at harvest. Current droppage is above average and is projected to be above average at harvest. The Navel forecast, included in the non-Valencia forecast, is unchanged at 450,000 boxes, and is 3 percent of the non-Valencia total. Both final Navel size and droppage are above average.

Valencia Oranges 28.0 Million Boxes

The forecast of Valencia production is unchanged from the October forecast at 28.0 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 4.10 Million Boxes

The forecast of all grapefruit production is increased 300,000 boxes from the October forecast to 4.10 million boxes. If realized, this will equal last season's final production. The red grapefruit forecast is increased 100,000 boxes to 3.30 million boxes. Fruit size of red grapefruit at harvest is projected to be above average, and droppage is projected to be below average. The white grapefruit forecast is increased 200,000 boxes to 800,000 boxes. Projected fruit size of white grapefruit at harvest is above average; projected droppage is below average.

Tangerines and Tangelos 900,000 Boxes

The forecast for tangerine and tangelos is unchanged from the October forecast at 900,000 boxes and is 1 percent more than last season's utilization of 890,000 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 7.9 percent. However, if you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 7.7 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 7.9 percent, or 7.7 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 13.7 percent, or 13.5 percent excluding abnormal seasons.

Changes between the December 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 7.19 million boxes (6.49 million, excluding abnormal seasons), ranging from 0.95 million boxes to 18.2 million boxes including abnormal seasons, (1.00 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 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)
ORANGES				
Early-midseason (Non-Valencia) ¹ ...	18,171	571	37	320
Navel.....	864	150	28	137
Valencia.....	30,349	394	29	260
GRAPEFRUIT				
Red.....	1,776	393	28	119
White.....	314	481	25	103

¹ Excludes Navels.

Maturity

Regular bloom fruit samples (320 orange and 97 grapefruit) were collected from groves on established routes in Florida's five major citrus producing areas on November 29-30, 2021 and tested by the Florida Agricultural Statistics Service (FASS) on December 1-3, 2021.

Unadjusted Maturity Tests – Florida: 2020-2021 and 2021-2022

[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	
	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early N-V (113-118)										
Sep 1.....	1.21	1.16	8.82	9.11	7.36	7.92	44.54	43.69	3.92	3.98
Oct 1.....	0.88	0.90	9.17	9.00	10.61	10.06	49.61	48.05	4.55	4.32
Nov 1.....	0.67	0.71	9.51	9.53	14.33	13.47	50.90	50.28	4.84	4.79
Dec 1.....	0.59	0.65	9.83	9.49	16.75	14.58	52.51	51.46	5.17	4.89
Midseason N-V (52-52)										
Sep 1.....	1.27	1.32	8.56	8.76	6.85	6.78	45.48	45.05	3.90	3.95
Oct 1.....	0.97	1.02	8.98	8.79	9.42	8.75	49.78	48.72	4.47	4.29
Nov 1.....	0.79	0.80	9.30	9.19	11.99	11.68	51.89	50.44	4.83	4.64
Dec 1.....	0.66	0.74	9.69	9.34	14.80	12.86	53.37	52.40	5.17	4.90
Valencia (150-150)										
Sep 1.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1.....	1.79	2.00	8.75	8.66	4.95	4.37	48.55	46.41	4.25	4.02
Nov 1.....	1.48	1.57	8.84	9.07	6.06	5.88	50.65	48.98	4.48	4.44
Dec 1.....	1.22	1.35	9.17	9.25	7.63	6.91	52.88	51.36	4.85	4.75
GRAPEFRUIT										
Red Seedless (45-49)										
Sep 1.....	1.45	1.42	9.82	9.69	6.78	6.86	39.07	39.02	3.84	3.78
Oct 1.....	1.25	1.35	9.77	9.91	7.85	7.37	44.42	45.09	4.34	4.47
Nov 1.....	1.08	1.19	9.51	9.67	8.85	8.15	51.25	48.81	4.87	4.72
Dec 1.....	1.02	1.21	9.13	9.65	9.03	8.00	52.15	52.23	4.77	5.04
White Seedless (45-48)										
Sep 1.....	1.46	1.56	9.96	10.01	6.86	6.45	39.69	39.10	3.95	3.91
Oct 1.....	1.31	1.36	9.96	9.97	7.60	7.34	44.13	46.33	4.39	4.62
Nov 1.....	1.17	1.30	9.70	10.21	8.32	7.85	48.20	48.79	4.67	4.98
Dec 1.....	1.07	1.27	9.30	9.96	8.70	7.86	52.11	52.58	4.84	5.24

(NA) Not available.

Unadjusted Maturity Test Averages, by Areas – Florida: December 2020-2021 and 2021-2022

Fruit type (number of groves) test date	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early N-V										
Indian River (9-9).....	0.63	0.73	10.16	9.99	16.33	13.62	53.41	48.97	5.42	4.91
Other Areas ¹ (104-109)	0.59	0.65	9.81	9.45	16.79	14.66	52.44	51.67	5.14	4.89
Midseason N-V										
Indian River (2-2).....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Other Areas ¹ (50-50)....	0.66	0.74	9.69	9.34	14.85	12.84	53.30	52.48	5.16	4.91
Valencia										
Indian River (29-29)	1.26	1.53	9.20	9.52	7.42	6.29	53.06	49.45	4.89	4.72
Other Areas ¹ (121-121)	1.21	1.31	9.16	9.18	7.68	7.06	52.84	51.81	4.84	4.76
GRAPEFRUIT										
Red Seedless										
Indian River (37-42)	1.03	1.22	9.21	9.75	9.00	8.03	52.08	51.91	4.80	5.06
Other Areas ¹ (8-7).....	0.96	1.16	8.78	9.06	9.14	7.82	52.43	54.17	4.59	4.91
White Seedless										
Indian River (38-44)	1.08	1.27	9.35	10.00	8.70	7.88	52.46	52.73	4.90	5.28
Other Areas ¹ (7-4).....	1.03	(D)	9.01	(D)	8.73	(D)	50.20	(D)	4.53	(D)

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

¹ Includes Central, Northern, Southern, and Western areas.

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]

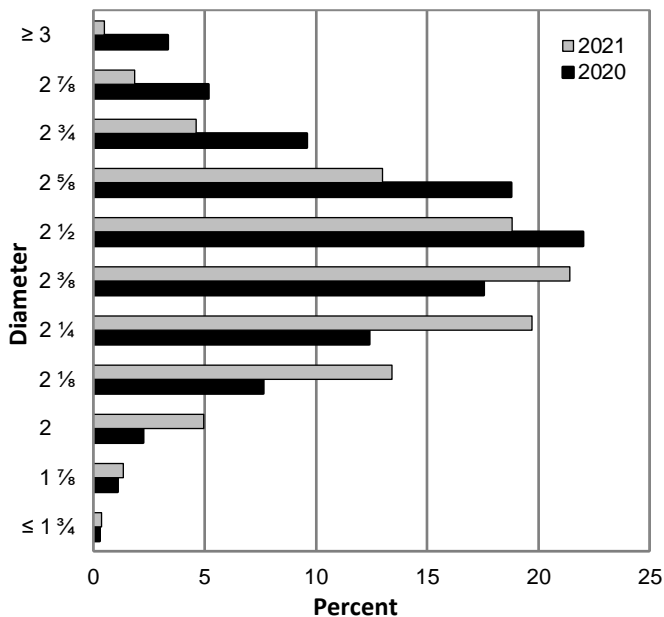
Type and number of fruit per 4/5-bushel containers	2019	2020	2021	Type and number of fruit per 4/5-bushel containers	2019	2020	2021
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
NON-VALENCIA ORANGES ¹				RED GRAPEFRUIT			
64 or less	0.1	0.7	0.0	32 or less.....	1.3	3.7	1.0
80.....	1.4	4.5	1.1	36.....	5.6	8.1	5.8
100.....	12.0	20.1	10.1	40.....	10.5	10.7	11.1
125.....	30.9	33.5	27.6	48.....	16.6	15.3	18.1
163 or more.....	55.6	41.2	61.2	56.....	17.5	16.7	17.4
				63 or more.....	48.5	45.5	46.6
NAVEL ORANGES				WHITE GRAPEFRUIT ²			
64 or less	50.9	65.3	48.8	32 or less.....	3.2	2.5	5.0
80.....	26.5	19.9	26.6	36.....	8.9	6.6	16.7
100.....	15.9	11.9	17.6	40.....	15.8	12.8	20.9
125.....	5.1	2.2	5.4	48.....	15.4	14.4	24.7
163 or more.....	1.6	0.7	1.6	56.....	13.9	16.3	13.3
				63 or more.....	42.8	47.4	19.4
VALENCIA ORANGES							
64 or less	0.3	0.8	0.4				
80.....	3.2	5.7	3.0				
100.....	20.3	21.7	15.8				
125.....	35.1	31.0	30.4				
163 or more.....	41.1	40.8	50.4				

¹ Excludes Navels.

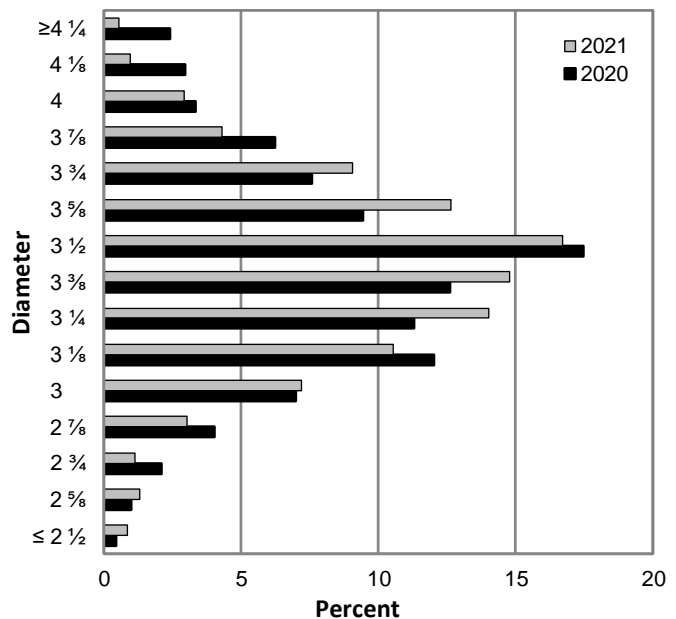
² Excludes seedy.

The charts below show the distribution of fruit sizes in 2020 compared to 2021. 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 ¹, by Diameter - Florida: November



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



¹ Excludes Navels.