



CITRUS MATURITY TEST RESULTS AND FRUIT SIZE

DECEMBER FORECAST

Cooperating with the Florida Department of Agriculture and Consumer Services

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December 10, 2020

Florida All Orange Production Down 2 Percent from October Forecast
Florida Non-Valencia Orange Production Down 4 Percent
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Down 2 Percent
Florida All Tangerine and Tangelo Production Unchanged

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

Citrus Production by Type – States and United States

Crop and State	Production ¹		2020-2021 Forecasted Production ¹	
	2018-2019 (1,000 boxes)	2019-2020 (1,000 boxes)	October (1,000 boxes)	December (1,000 boxes)
Non-Valencia Oranges ²				
Florida	30,400	29,650	23,000	22,000
California ³	42,000	44,300	42,000	42,000
Texas ³	2,210	1,150	1,300	1,300
United States.....	74,610	75,100	66,300	65,300
Valencia Oranges				
Florida	41,450	37,650	34,000	34,000
California ³	10,200	9,000	8,500	8,500
Texas ³	290	190	200	200
United States.....	51,940	46,840	42,700	42,700
All Oranges				
Florida	71,850	67,300	57,000	56,000
California ³	52,200	53,300	50,500	50,500
Texas ³	2,500	1,340	1,500	1,500
United States.....	126,550	121,940	109,000	108,000
Grapefruit				
Florida-All	4,510	4,850	4,500	4,400
Red	3,740	4,060	3,800	3,700
White	770	790	700	700
California ^{3,4}	4,200	3,800	3,800	3,800
Texas ³	6,100	4,400	4,900	4,900
United States.....	14,810	13,050	13,200	13,100
Lemons ³				
Arizona.....	1,350	1,800	1,300	1,300
California.....	23,700	25,700	22,000	22,000
United States.....	25,050	27,500	23,300	23,300
Tangerines and Tangelos				
Florida	990	1,020	1,100	1,100
California ³	26,500	22,000	23,000	23,000
United States.....	27,490	23,020	24,100	24,100

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 56.0 Million Boxes

The 2020-2021 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 56.0 million boxes, down 2 percent from the October forecast. If realized, this will be 17 percent less than last season's final production. The forecast consists of 22.0 million boxes of the non-Valencia oranges (early, midseason, and Navel varieties) and 34.0 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 22.0 Million Boxes

The forecast of non-Valencia production is lowered 1.00 million boxes from the October forecast to 22.0 million boxes. Current fruit size is above average and projected to be above average at harvest. Current droppage is above the maximum and is projected to be above the maximum at harvest. The Navel forecast, included in the non-Valencia forecast, is unchanged at 700 thousand boxes, and is 3 percent of the non-Valencia total. Both final Navel size and droppage are above the maximum.

Valencia Oranges 34.0 Million Boxes

The forecast of Valencia production is unchanged from the previous forecast at 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 4.40 Million Boxes

The forecast of all grapefruit production is down 2 percent from the October forecast and is now 4.40 million boxes. If realized, this will be 9 percent less than last season's final production. The red grapefruit forecast is down 100 thousand boxes to 3.70 million boxes. Fruit size of red grapefruit at harvest is projected to be above average, and droppage is projected to be above average. The white grapefruit forecast is 700 thousand boxes, unchanged from October. Projected fruit size of white grapefruit at harvest is above average; projected droppage is above average.

Tangerines and Tangelos 1.10 Million Boxes

The forecast for tangerine and tangelos is unchanged from the October forecast at 1.10 million boxes, but is 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 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 7.6 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 7.6 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 13.6 percent, or 13.3 percent excluding abnormal seasons.

Changes between the December 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 7.32 million boxes (6.64 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 2020

[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 ..	19,050	590	38	284
Navel.....	902	194	37	132
Valencia	30,169	441	28	243
GRAPEFRUIT				
Red	1,983	372	37	114
White.....	376	409	38	113

¹ Excludes Navels.

Maturity

Regular bloom fruit samples (315 orange and 90 grapefruit) were collected from groves on established routes in Florida's five major citrus producing areas on November 30 and December 1, 2020 and tested by the Florida Agricultural Statistics Service (FASS) on December 2-4, 2020.

Unadjusted Maturity Tests – Florida: 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)
ORANGES										
Early N-V (119-113)										
Sep 1.....	1.21	1.21	9.06	8.82	7.59	7.36	45.13	44.54	4.09	3.92
Oct 1.....	0.89	0.88	9.69	9.17	11.05	10.61	49.57	49.61	4.80	4.55
Nov 1.....	0.64	0.67	10.26	9.51	16.08	14.33	51.37	50.90	5.27	4.84
Dec 1.....	0.60	0.59	10.46	9.83	17.61	16.75	52.68	52.51	5.51	5.17
Midseason N-V (54-52)										
Sep 1.....	1.37	1.27	9.04	8.56	6.71	6.85	45.46	45.48	4.11	3.90
Oct 1.....	1.04	0.97	9.76	8.98	9.55	9.42	49.38	49.78	4.81	4.47
Nov 1.....	0.76	0.79	10.35	9.30	13.85	11.99	51.67	51.89	5.34	4.83
Dec 1.....	0.67	0.66	10.63	9.69	15.94	14.80	52.85	53.37	5.62	5.17
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
GRAPEFRUIT										
Red Seedless (48-45)										
Sep 1.....	1.53	1.45	10.11	9.82	6.65	6.78	39.51	39.07	4.00	3.84
Oct 1.....	1.31	1.25	10.25	9.77	7.87	7.85	46.29	44.42	4.74	4.34
Nov 1.....	1.19	1.08	10.39	9.51	8.77	8.85	49.12	51.25	5.11	4.87
Dec 1.....	1.17	1.02	10.09	9.13	8.65	9.03	51.96	52.15	5.23	4.77
White Seedless (46-45)										
Sep 1.....	1.63	1.46	10.32	9.96	6.36	6.86	38.72	39.69	3.99	3.95
Oct 1.....	1.40	1.31	10.36	9.96	7.40	7.60	46.11	44.13	4.77	4.39
Nov 1.....	1.25	1.17	10.07	9.70	8.12	8.32	49.72	48.20	5.01	4.67
Dec 1.....	1.21	1.07	10.05	9.30	8.34	8.70	53.53	52.11	5.38	4.84

(NA) Not available.

Unadjusted Maturity Test Averages, by Areas – Florida: December 2019-2020 and 2020-2021

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)
ORANGES										
Early N-V										
Indian River (9-9).....	0.61	0.63	10.74	10.16	17.64	16.33	51.37	53.41	5.52	5.42
Other Areas ¹ (110-104)	0.60	0.59	10.43	9.81	17.61	16.79	52.79	52.44	5.51	5.14
Midseason N-V										
Indian River (2-2).....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Other Areas ¹ (52-50) ...	0.67	0.66	10.63	9.69	16.01	14.85	52.47	53.30	5.57	5.16
Valencia										
Indian River (29-29).....	1.52	1.26	9.88	9.20	6.59	7.42	54.29	53.06	5.37	4.89
Other Areas ¹ (121-121)	1.17	1.21	9.39	9.16	8.19	7.68	53.70	52.84	5.04	4.84
GRAPEFRUIT										
Red Seedless										
Indian River (41-37).....	1.17	1.03	10.19	9.21	8.74	9.00	52.16	52.08	5.30	4.80
Other Areas ¹ (7-8).....	1.18	0.96	9.54	8.78	8.12	9.14	50.75	52.43	4.83	4.59
White Seedless										
Indian River (40-38).....	1.20	1.08	10.11	9.35	8.43	8.70	53.87	52.46	5.45	4.90
Other Areas ¹ (6-7).....	1.24	1.03	9.67	9.01	7.79	8.73	51.31	50.20	4.96	4.53

(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]

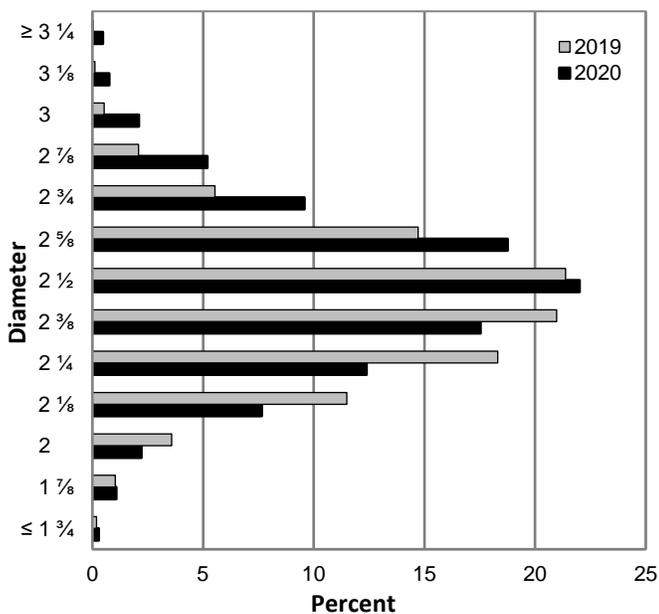
Type and number of fruit per 4/5-bushel containers	2018	2019	2020	Type and number of fruit per 4/5-bushel containers	2018	2019	2020
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
NON-VALENCIA ORANGES ¹				RED GRAPEFRUIT			
64 or less	0.1	0.1	0.7	32 or less.....	0.8	1.3	3.7
80	1.1	1.4	4.5	36	2.5	5.6	8.1
100	7.0	12.0	20.1	40	6.8	10.5	10.7
125	22.4	30.9	33.5	48	11.4	16.6	15.3
163 or more	69.4	55.6	41.2	56	13.6	17.5	16.7
				63 or more.....	64.9	48.5	45.5
NAVEL ORANGES				WHITE GRAPEFRUIT ²			
64 or less	45.2	50.9	65.3	32 or less.....	2.4	3.2	2.5
80	25.6	26.5	19.9	36	7.6	8.9	6.6
100	18.4	15.9	11.9	40	12.1	15.8	12.8
125	7.5	5.1	2.2	48	16.2	15.4	14.4
163 or more	3.3	1.6	0.7	56	13.1	13.9	16.3
				63 or more.....	48.6	42.8	47.4
VALENCIA ORANGES							
64 or less	0.2	0.3	0.8				
80	1.7	3.2	5.7				
100	13.5	20.3	21.7				
125	30.3	35.1	31.0				
163 or more	54.3	41.1	40.8				

¹ Excludes Navels.

² 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 ¹, by Diameter - Florida: November



¹ Excludes Navels.

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

