



CITRUS MATURITY TEST RESULTS AND FRUIT SIZE

APRIL FORECAST

Cooperating with the Florida Department of Agriculture and Consumer Services

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Florida All Orange Production Down 1 Percent from March
Florida Non-Valencia Orange Production Down 2 Percent
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Lowered 9 Percent
Florida All Tangerine and Tangelo Unchanged

FORECAST DATES - 2018-2019 SEASON	
May 10, 2019	June 11, 2019
July 11, 2019	

Citrus Production by Type – States and United States

Crop and State	Production ¹		2018-2019 Forecasted Production ¹	
	2016-2017 (1,000 boxes)	2017-2018 (1,000 boxes)	March (1,000 boxes)	April (1,000 boxes)
Non-Valencia Oranges ²				
Florida	33,000	18,950	31,000	30,500
California	39,300	35,900	40,000	40,000
Texas	1,090	1,530	2,000	1,300
United States.....	73,390	56,380	73,000	71,800
Valencia Oranges				
Florida	35,850	* 26,100	46,000	46,000
California	9,000	9,500	9,500	9,000
Texas	280	350	600	575
United States.....	45,130	* 35,950	56,100	55,575
All Oranges				
Florida	68,850	* 45,050	77,000	76,500
California	48,300	45,400	49,500	49,000
Texas	1,370	1,880	2,600	1,875
United States.....	118,520	* 92,330	129,100	127,375
Grapefruit				
Florida-All	7,760	3,880	5,400	4,900
Red	6,280	3,180	4,600	4,100
White	1,480	700	800	800
California	4,400	4,000	4,000	4,000
Texas	4,800	4,800	6,300	6,300
United States.....	16,960	12,680	15,700	15,200
Lemons				
Arizona	1,550	1,000	1,400	1,300
California	20,500	21,200	20,000	20,000
United States.....	22,050	22,200	21,400	21,300
Tangerines and Tangelos				
Florida-All ³	1,620	750	950	950
Early ⁴	600	(NA)	(NA)	(NA)
Royal	210	(NA)	(NA)	(NA)
Honey	530	(NA)	(NA)	(NA)
Tangelos	280	(NA)	(NA)	(NA)
California ⁵	23,800	19,200	23,000	22,000
United States.....	25,420	19,950	23,950	22,950

* Revised.

NA Not available.

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 Navel and miscellaneous varieties in California. Early and midseason non-Valencia (including Navel) varieties in Florida and Texas.

³ In 2016-2017, includes Fallglo, Sunburst, Royal, and Honey tangerine varieties and tangelos. Beginning in 2017-2018, includes all certified varieties of tangerines and tangelos.

⁴ Fallglo and Sunburst varieties.

⁵ Includes tangelos and tangors in California.

All Oranges 76.5 Million Boxes

The 2018-2019 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 76.5 million boxes, down slightly from the March forecast. The total includes of 30.5 million boxes of non-Valencia oranges (early, midseason, and Navel varieties) and 46.0 million boxes of Valencia oranges.

Non-Valencia Oranges 30.5 Million Boxes

The forecast of non-Valencia production is 30.5 million boxes, down 500,000 boxes from the March forecast. The Row Count survey conducted March 27-28, 2019, showed 98 percent of the early-midseason rows are harvested. Estimated utilization for non-Valencia oranges to April 1, with an allocation for non-certified fruit, is 30.4 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast, remains at 750 thousand boxes.

Valencia Oranges 46.0 Million Boxes

The forecast of Valencia production is unchanged at 46.0 million boxes. Final fruit size is below the minimum, requiring 265 pieces to fill a 90-pound box. Final droppage is above average. The Row Count survey conducted March 27-28, 2019 showed 27 percent of the Valencia rows are harvested. Estimated utilization for Valencia oranges to April 1, with an allocation for non-certified fruit, is 11.4 million boxes.

All Grapefruit 4.90 Million Boxes

The forecast of all grapefruit production is lowered 500 thousand boxes to 4.90 million boxes. The white grapefruit forecast is unchanged at 800 thousand boxes. The red grapefruit forecast is lowered 500 thousand boxes to 4.10 million boxes. Estimated utilization to April 1, with an allocation for non-certified use, of white grapefruit is 764 thousand boxes and of red grapefruit is 3.56 million boxes. The Row Count survey conducted March 27-28, 2019, indicated 94 percent of the red grapefruit rows and 93 percent of the white grapefruit rows are harvested.

Tangerines and Tangelos 950 Thousand Boxes

The forecast for the tangerine and tangelo production is unchanged at 950 thousand boxes. If realized, this production level will be 27 percent more than last season's hurricane affected production of 750 thousand boxes. This forecast number includes all certified tangerine and tangelo varieties. Estimated utilization to April 1, with an allocation for non-certified use is 930 thousand boxes.

Reliability

To assist users in evaluating the reliability of the April 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the April 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 April 1 Florida all orange production forecast is 2.9 percent. However, if you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 3.0 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 2.9 percent, or 3.0 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 5.0 percent. The results are 5.3 percent when excluding abnormal seasons.

Changes between the April 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 3.12 million boxes (3.27 million, excluding abnormal seasons), ranging from 0.05 million boxes to 5.7 million boxes including abnormal seasons, (0.70 to 5.7 million boxes excluding abnormal seasons). The April 1 forecast for all oranges has been below the final estimate 9 times, above 11 times, (below 9 times, above 8 times, excluding abnormal seasons). The difference does not imply that the April 1 forecasts this year are likely to understate or overstate final production.

Forecast Components, by Type – Florida: April 2019

[Survey data is considered final in December for Navels, January for early-midseason 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	19,718	813	26	335
Navel.....	951	213	26	142
Valencia	29,262	609	25	265
GRAPEFRUIT				
Red	2,573	369	34	137
White.....	540	362	36	124

Maturity

Regular bloom fruit samples were collected from groves on established routes March 27-28, 2019 in Florida's five major citrus producing areas and tested March 29, 2019. Only Valencia oranges were collected and tested this month. All comparisons are made to April 1, 2018. Acids are lower and solids (Brix) are higher, resulting in higher ratios. Unfinished juice per box and solids per box are higher.

Indian River comparisons are made to fruit from other areas for this test period. Indian River oranges have a higher acid level and a higher solids (Brix) with a lower ratio. Unfinished juice per box is lower and solids per box is higher for Valencia oranges in the Indian River District when compared to other areas.

Unadjusted Maturity Tests — Florida: April 1, 2017-2018 and 2018-2019

[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	
	2017-2018 (percent)	2018-2019 (percent)	2017-2018 (percent)	2018-2019 (percent)	2017-2018	2018-2019	2017-2018 (pounds)	2018-2019 (pounds)	2017-2018 (pounds)	2018-2019 (pounds)
Valencia Oranges (99-108)										
Oct 1	1.84	1.91	8.74	8.55	4.83	4.52	48.81	46.48	4.26	3.98
Nov 1	1.57	1.52	8.80	9.11	5.66	6.09	51.34	50.45	4.52	4.60
Dec 1	1.27	1.26	9.19	9.63	7.31	7.71	53.43	52.18	4.91	5.03
Jan 1	1.06	1.06	10.06	10.57	9.62	10.09	54.36	52.83	5.47	5.58
Feb 1	1.01	1.00	10.63	11.05	10.65	11.08	54.61	52.65	5.80	5.81
Mar 1	0.87	0.85	11.11	11.50	12.86	13.59	55.19	53.64	6.13	6.16
Apr 1	0.85	0.80	11.36	11.67	13.58	14.70	54.70	54.89	6.22	6.40

Unadjusted Maturity Test Averages, by Areas — Florida: April 1, 2017-2018 and 2018-2019

Fruit type (number of groves)	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2017-2018 (percent)	2018-2019 (percent)	2017-2018 (percent)	2018-2019 (percent)	2017-2018	2018-2019	2017-2018 (pounds)	2018-2019 (pounds)	2017-2018 (pounds)	2018-2019 (pounds)
Valencia Oranges										
Indian River (21-21)	0.91	0.85	12.09	12.07	13.42	14.36	54.54	54.01	6.59	6.51
Other Areas (78-87)	0.83	0.79	11.17	11.57	13.62	14.78	54.74	55.10	6.12	6.38

Fruit Size Comparisons to Previous Seasons

Size frequency distributions from the March size survey are shown in the below 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.

The chart to the right shows the distribution of fruit sizes in 2018 compared to 2019. The diameter measurements shown are the minimum values of fruit measured, except for the smallest value.

Citrus Size Frequency Measurement Distributions, by Type – Florida: March

Type and number of fruit per 4/5 – bushel containers	2017 (percent)	2018 (percent)	2019 (percent)
VALENCIA ORANGES			
64 or less	5.1	3.8	1.2
80.....	12.8	13.8	7.3
100.....	26.7	30.4	23.5
125.....	28.7	30.4	32.7
163 or more	26.7	21.6	35.3

Fruit Size Frequency Measurements, Valencia Oranges, by Diameter – Florida: March

