



CITRUS MARCH FORECAST MATURITY TEST RESULTS AND FRUIT SIZE

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Florida All Orange Production Unchanged from February Forecast
Florida Non-Valencia Orange Production Down 3 Percent
Florida Valencia Orange Production Up 2 Percent
Florida All Grapefruit Production Down 10 Percent
Florida All Tangerine and Tangelo Production Down 5 Percent

FORECAST DATES - 2018-2019 SEASON	
April 9, 2019	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)	February (1,000 boxes)	March (1,000 boxes)
Non-Valencia Oranges ²				
Florida	33,000	18,950	32,000	31,000
California ³	39,300	35,900	40,000	40,000
Texas ³	1,090	1,530	2,000	2,000
United States.....	73,390	56,380	74,000	73,000
Valencia Oranges				
Florida	35,850	26,000	45,000	46,000
California.....	9,000	9,500	9,000	9,500
Texas ³	280	350	600	600
United States.....	45,130	35,850	54,600	56,100
All Oranges				
Florida	68,850	44,950	77,000	77,000
California.....	48,300	45,400	49,000	49,500
Texas ³	1,370	1,880	2,600	2,600
United States.....	118,520	92,230	128,600	129,100
Grapefruit				
Florida-All	7,760	3,880	6,000	5,400
Red	6,280	3,180	5,000	4,600
White	1,480	700	1,000	800
California ³	4,400	4,000	4,000	4,000
Texas ³	4,800	4,800	6,300	6,300
United States.....	16,960	12,680	16,300	15,700
Lemons ³				
Arizona.....	1,550	1,000	1,400	1,400
California.....	20,500	21,200	20,000	20,000
United States.....	22,050	22,200	21,400	21,400
Tangerines and Tangelos				
Florida-All ⁴	1,620	750	1,000	950
Early ⁵	600	(NA)	(NA)	(NA)
Royal	210	(NA)	(NA)	(NA)
Honey	530	(NA)	(NA)	(NA)
Tangelo	280	(NA)	(NA)	(NA)
California ^{3,6}	23,800	19,200	23,000	23,000
United States.....	25,420	19,950	24,000	23,950

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

³ Estimates carried forward from February.

⁴ 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.

⁵ Fallglo and Sunburst varieties.

⁶ Includes tangelos and tangors in California.

All Oranges 77.0 Million Boxes

The 2018-2019 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 77.0 million boxes, unchanged from the February forecast. If realized, this will be 71 percent more than last season's hurricane affected production. The forecast consists of 31.0 million boxes of the non-Valencia oranges (includes Navel varieties) and 46.0 million boxes of the Valencia oranges. Regression data used are from the 2008-2009 through 2016-2017 seasons. All references to "average", "minimum", and "maximum" refer to those 9 seasons unless noted. The hurricane affected 2017-2018 season is excluded from the regressions.

Non-Valencia Oranges 31.0 Million Boxes

The forecast of non-Valencia production is lowered by 1.00 million boxes to 31.0 million. The Row Count survey conducted February 25-26, 2019, showed 97 percent of the early-midseason rows and 84 percent of the Navels rows are harvested. Estimated utilization for non-Valencia oranges to March 1, with an allocation for non-certified fruit, is 30.1 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast, is reduced to 750 thousand boxes.

Valencia Oranges 46.0 Million Boxes

The forecast of Valencia production is increased by 1.00 million boxes to 46.0 million boxes. Current fruit size is below the minimum and is projected to be below the minimum at harvest, requiring 268 pieces to fill a 90 pound box. Droppage is now projected to be average at harvest. Harvest of Valencia oranges has begun.

All Grapefruit 5.40 Million Boxes

The forecast of all grapefruit production is lowered to 5.40 million boxes. The white grapefruit forecast is lowered by 200 thousand boxes to 800 thousand boxes. The red grapefruit forecast is lowered by 400 thousand boxes to 4.60 million boxes. The Row Count survey conducted February 25-26, 2019, indicated 59 percent of the red grapefruit rows and 78 percent of the white grapefruit rows are harvested.

Tangerines and Tangelos 950 Thousand Boxes

The forecast for tangerine and tangelos is lowered to 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.

Reliability

To assist users in evaluating the reliability of the March 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the March 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 March 1 Florida all orange production forecast is 4.3 percent. However, if you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 4.5 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 4.3 percent, or 4.5 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 7.5 percent. The results are 7.9 percent when excluding abnormal seasons.

Changes between the March 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 4.02 million boxes (4.16 million, excluding abnormal seasons), ranging from 0.05 million boxes to 10.7 million boxes including abnormal seasons, (0.30 to 10.7 million boxes excluding abnormal seasons). The March 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 March 1 forecasts this year are likely to understate or overstate final production.

Forecast Components, by Type – Florida: March 2019

[Survey data is considered final in December for Navels, January for EM non-Valencia, 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	22	268
GRAPEFRUIT				
Red	2,573	369	34	137
White.....	540	362	36	124

Maturity

Regular bloom fruit samples were collected from groves on established routes February 25-26, 2019 in Florida's five major citrus producing areas and tested February 27, 2019. Only Valencia oranges were collected and tested this month. All comparisons are made to March 1, 2018. Acid levels are lower, solids (Brix) and ratios are higher. Unfinished juice per box is lower and solids per box is higher.

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

Unadjusted Maturity Tests — Florida: March 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	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019
Valencia Oranges (145-149)	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
Sep 1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1	1.84	1.91	8.74	8.56	4.81	4.54	48.57	46.28	4.25	3.96
Nov 1	1.54	1.52	8.80	9.15	5.80	6.10	51.64	49.82	4.55	4.56
Dec 1	1.26	1.26	9.18	9.59	7.43	7.68	53.18	52.16	4.88	5.01
Jan 1	1.06	1.05	10.10	10.54	9.70	10.18	54.30	52.78	5.49	5.56
Feb 1	1.00	1.00	10.69	11.12	10.78	11.18	54.59	52.24	5.83	5.80
Mar 1	0.86	0.85	11.16	11.54	13.05	13.71	54.63	53.65	6.10	6.19

NA Not available.

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

Fruit type (number of groves)	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2017-2018	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019
Valencia Oranges	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
Indian River (29-29)	0.93	0.92	11.73	12.18	12.69	13.36	54.30	54.65	6.37	6.65
Other Areas (116-120)	0.85	0.84	11.02	11.39	13.13	13.80	54.71	53.41	6.03	6.08

Size Frequency Measurement Distributions, by Type — Florida: February Survey

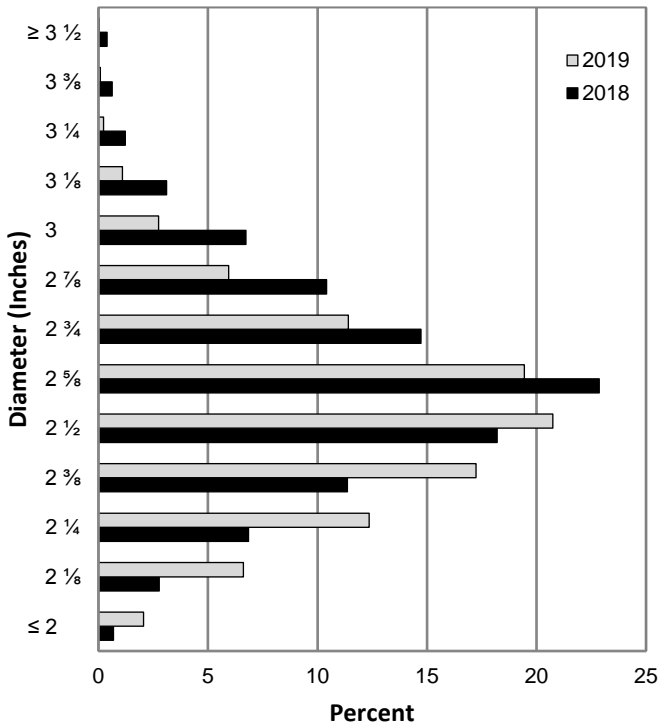
[Size frequency distributions from the February size survey are shown in the following table. The distributions are by percent of fruit falling within the size range of each 4/5-bushel container. These frequency distributions include fruit from regular bloom and exclude fruit from summer bloom]

Type and number of fruit per 4/5 – bushel containers	2017	2018	2019	Type and number of fruit per 4/5 – bushel containers	2017	2018	2019
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
VALENCIA ORANGES				RED GRAPEFRUIT ¹			
64 or less	4.1	3.4	0.8	32 or less	1.8	18.0	1.3
80	11.4	13.2	5.9	36	3.2	22.0	3.6
100	26.5	30.2	22.7	40	7.0	9.5	7.5
125	30.0	31.5	32.4	48	15.0	10.5	13.2
163 or more	28.0	21.7	38.2	56	12.5	8.0	16.8
				63 or more	60.5	32.0	57.6
HONEY TANGERINES				WHITE GRAPEFRUIT ¹			
80 or less	12.0	3.4	3.3	32 or less	1.9	0.0	5.6
100	27.8	14.7	17.2	36	4.7	0.0	6.4
120	27.2	27.9	23.9	40	5.8	0.0	7.5
176	12.2	19.8	20.4	48	13.7	15.0	8.6
210 or more	20.8	34.2	35.2	56	13.1	10.0	15.0
				63 or more	60.8	75.0	56.9

¹ Excludes seedy.

The charts below show the distribution of fruit sizes in 2019 compared to 2018. The diameter measurements shown are the minimum values of each eighth inch range, except for the smallest value.

Fruit Size Frequency Measurements, Valencia Oranges, by Diameter - Florida: February Survey



Fruit Size Frequency Measurements, Red Seedless Grapefruit, by Diameter - Florida: February Survey

