United States Department of Agriculture
National Agricultural Statistics Service

CITRUS

FEBRUARY FORECAST
MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services
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February 8, 2019

Florida All Orange Production Unchanged from January Forecast
Florida Non-Valencia Orange Production Unchanged
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Down 3 Percent
Florida All Tangerine and Tangelo Production Unchanged

FORECAST DATES - 2018-2019 SEASON	
March 8, 2019	May 10, 2019
April 9, 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	2017-2018	January	February
	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)
Non-Valencia Oranges [2]				
Florida	**33,000**	**18,950**	**32,000**	**32,000**
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	74,000
Valencia Oranges				
Florida	**35,850**	**26,000**	**45,000**	**45,000**
California [3]	9,000	9,500	9,000	9,000
Texas [3]	280	350	600	600
United States	45,130	35,850	54,600	54,600
All Oranges				
Florida	**68,850**	**44,950**	**77,000**	**77,000**
California [3]	48,300	45,400	49,000	49,000
Texas [3]	1,370	1,880	2,600	2,600
United States	118,520	92,230	128,600	128,600
Grapefruit				
Florida-All	**7,760**	**3,880**	**6,200**	**6,000**
Red	**6,280**	**3,180**	**5,200**	**5,000**
White	**1,480**	**700**	**1,000**	**1,000**
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	16,500	16,300
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**	**1,000**
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	20,000	23,000
United States	25,420	19,950	21,000	24,000

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 January.
[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 January forecast. If realized, this forecast will be 71 percent more than last season's final production. The forecast consists of 32.0 million boxes of the non-Valencia oranges (includes Navel varieties) and 45.0 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 32.0 Million Boxes

The forecast of non-Valencia production is unchanged at 32.0 million boxes. Size and drop components were final last month. The Row Count survey conducted January 28-29, 2019, showed 77 percent of the early-midseason non-Valencia rows, excluding Navels, are harvested. Estimated utilization for non-Valencia oranges to February 1, with an allocation for non-certified fruit, is 23.6 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast, remains at 800 thousand boxes.

Valencia Oranges 45.0 Million Boxes

The forecast of Valencia production is unchanged at 45.0 million boxes. Current fruit size is below the minimum and is projected to be below the minimum at harvest. Current droppage is above average and projected to be above average at harvest.

All Grapefruit 6.00 Million Boxes

The forecast of all grapefruit production is lowered to 6.00 million boxes. The white grapefruit forecast is unchanged at 1.00 million boxes. The red grapefruit forecast is lowered to 5.00 million boxes. Fruit size and drop are final in this report. White grapefruit size is below average, while red grapefruit size is below the minimum. White grapefruit drop is just above average while red grapefruit is well above average. Estimated utilization for white grapefruit to February 1, with an allocation for non-certified fruit, is 376 thousand boxes and for red grapefruit is 1.99 million boxes.

Tangerines and Tangelos 1.00 Million Boxes

The forecast for tangerine and tangelos remains at 1.00 million boxes, 33 percent more than last season's hurricane affected utilization of 750 thousand boxes. This forecast number includes all certified tangerine and tangelo varieties.

Reliability

To assist users in evaluating the reliability of the February 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the February 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 February 1 Florida all orange production forecast is 5.9 percent. However, if you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 5.8 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 5.9 percent, or 5.8 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.2 percent. The result are the same (10.2 percent) when excluding abnormal seasons.

Changes between the February 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 6.00 million boxes (5.74 million, excluding abnormal seasons), ranging from 0.05 million boxes to 14.0 million boxes including abnormal seasons, (0.30 to 14.0 million boxes excluding abnormal seasons). The February 1 forecast for all oranges has been below the final estimate 10 times, above 10 times, (below 10 times, above 7 times, excluding abnormal seasons). The difference does not imply that the February 1 forecasts this year are likely to understate or overstate final production.

Forecast Components, by Type – Florida: February 2019

[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	Fruit per tree	Droppage	Fruit per box
	(1,000 trees)	(number)	(percent)	(number)
ORANGES				
Early-midseason (Non-Valencia) .	19,718	813	26	335
Navel	951	213	26	142
Valencia	29,262	609	24	266
GRAPEFRUIT				
Red	2,573	369	34	137
White	540	362	36	124

Maturity

Regular bloom fruit samples were collected from groves on established routes January 28-29, 2019 in Florida's five major citrus producing areas and tested January 30-31, 2019

Indian River comparisons are made to fruit from other areas for this test period. Indian River Valencia 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 are higher for Valencia oranges in the Indian River District when compared to other areas.

Unadjusted Maturity Tests — Florida: February 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
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early N-V (NA-26)										
Sep 1	(NA)	1.26	(NA)	8.95	(NA)	7.21	(NA)	42.88	(NA)	3.84
Oct 1	(NA)	0.92	(NA)	9.23	(NA)	10.29	(NA)	48.38	(NA)	4.46
Nov 1	(NA)	0.71	(NA)	9.76	(NA)	14.05	(NA)	50.80	(NA)	4.95
Dec 1	(NA)	0.63	(NA)	10.12	(NA)	16.21	(NA)	51.74	(NA)	5.24
Jan 1	(NA)	0.58	(NA)	10.81	(NA)	18.83	(NA)	50.25	(NA)	5.44
Feb 1	(NA)	0.61	(NA)	11.27	(NA)	18.78	(NA)	49.38	(NA)	5.57
Midseason N-V (NA-14)										
Sep 1	(NA)	1.33	(NA)	8.95	(NA)	6.80	(NA)	43.97	(NA)	3.93
Oct 1	(NA)	0.93	(NA)	9.26	(NA)	10.21	(NA)	46.78	(NA)	4.34
Nov 1	(NA)	0.85	(NA)	9.95	(NA)	12.40	(NA)	46.67	(NA)	4.63
Dec 1	(NA)	0.68	(NA)	9.93	(NA)	15.28	(NA)	51.25	(NA)	5.09
Jan 1	(NA)	0.65	(NA)	10.86	(NA)	17.10	(NA)	51.79	(NA)	5.63
Feb 1	(NA)	0.67	(NA)	11.13	(NA)	17.24	(NA)	48.92	(NA)	5.44
Valencia (149-149)										
Sep 1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1	1.84	1.91	8.74	8.56	4.83	4.54	48.52	46.28	4.24	3.96
Nov 1	1.54	1.52	8.80	9.15	5.82	6.10	51.74	49.82	4.56	4.56
Dec 1	1.25	1.26	9.18	9.59	7.43	7.68	53.12	52.16	4.88	5.01
Jan 1	1.06	1.05	10.11	10.54	9.71	10.18	54.27	52.78	5.48	5.56
Feb 1	1.00	1.00	10.69	11.12	10.79	11.18	54.78	52.24	5.86	5.80

NA Not available.

Unadjusted Maturity Test Averages, by Areas — Florida: February 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
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
Valencia Oranges										
Indian River (29-29)	1.06	1.08	11.03	11.78	10.46	11.01	53.74	51.23	5.92	6.03
Other Areas (121-120)	0.99	0.98	10.61	10.96	10.87	11.23	55.03	52.48	5.84	5.75

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

[Size frequency distributions from the January 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	3.9	3.0	0.6	32 or less	1.0	8.2	0.4
80	11.0	12.5	5.2	36	4.6	12.6	2.7
100	25.5	29.7	20.8	40	7.2	14.0	5.0
125	29.5	32.2	31.6	48	15.2	16.2	11.9
163 or more	30.1	22.6	41.8	56	14.6	13.5	15.2
				63 or more	57.4	35.5	64.8
HONEY TANGERINES				**WHITE GRAPEFRUIT [1]**			
80 or less	8.7	5.2	1.6	32 or less	0.7	6.7	4.6
100	22.9	15.0	15.2	36	3.1	10.0	8.1
120	24.6	31.4	25.2	40	5.8	14.3	7.2
176	16.9	18.7	17.1	48	11.9	15.3	12.6
210 or more	26.9	29.7	40.9	56	13.6	15.3	14.2
				63 or more	64.9	38.4	53.3

[1] Excludes seedy.

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