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 9, 2022

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

FORECAST DATES - 2021-2022 SEASON	
March 9, 2022	May 12, 2022
April 8, 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	2020-2021	January	February
	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)
Non-Valencia Oranges [2]				
Florida	**29,650**	**22,700**	**17,500**	**17,500**
California [3]	43,300	40,600	39,000	39,000
Texas [3]	1,150	1,000	300	300
United States	74,100	64,300	56,800	56,800
Valencia Oranges				
Florida	**37,750**	**30,100**	**27,000**	**26,000**
California [3]	10,800	9,500	8,600	8,600
Texas [3]	190	50	100	100
United States	48,740	39,650	35,700	34,700
All Oranges				
Florida	**67,400**	**52,800**	**44,500**	**43,500**
California [3]	54,100	50,100	47,600	47,600
Texas [3]	1,340	1,050	400	400
United States	122,840	103,950	92,500	91,500
Grapefruit				
Florida-All	**4,850**	**4,100**	**4,100**	**4,100**
Red	**4,060**	**3,480**	**3,300**	**3,300**
White	**790**	**620**	**800**	**800**
California [3]	4,700	3,900	3,500	3,500
Texas [3]	4,400	2,400	1,600	1,600
United States	13,950	10,400	9,200	9,200
Lemons [3]				
Arizona	1,800	800	1,400	1,400
California	25,300	21,300	23,000	23,000
United States	27,100	22,100	24,400	24,400
Tangerines and Tangelos				
Florida	**1,020**	**890**	**800**	**800**
California [3, 4]	22,400	28,100	21,000	21,000
United States	23,420	28,990	21,800	21,800

[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 (including Navel) and midseason varieties in Florida and Texas.
[3] Estimates carried forward from January.
[4] Includes tangors.

All Oranges 43.5 Million Boxes

The 2021-2022 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 43.5 million boxes, down 2 percent from the January forecast. If realized, this will be 18 percent less than last season's final production. The forecast consists of 17.5 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 26.0 million boxes of Valencia oranges. A 9-year regression has been 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 and first late bloom.

Non-Valencia Oranges 17.5 Million Boxes

The forecast of non-Valencia production is unchanged at 17.5 million boxes. Size and drop components were final last month. The Row Count survey conducted January 25-26, 2022, showed 87 percent of the early and mid-season non-Valencia rows, excluding Navels, are harvested. Estimated utilization for non-Valencia oranges (including Navels) to February 1, with an allocation for non-certified fruit, is 16.7 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast, is 480,000 boxes.

Valencia Oranges 26.0 Million Boxes

The forecast of Valencia production is reduced 1.0 million boxes from the January forecast and is now 26.0 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 4.10 Million Boxes

The forecast of all grapefruit production is unchanged from January. The red grapefruit forecast is unchanged at 3.30 million boxes. The white grapefruit forecast is unchanged at 800,000 boxes. Fruit size and drop are final in this report. White grapefruit final size is above average, while red grapefruit final size is below average. Drop for both white and red grapefruit is below average. Estimated utilization for white grapefruit to February 1, with an allocation for non-certified fruit, is 232,000 boxes and for red grapefruit is 1.56 million boxes. The Row Count survey conducted January 25-26, 2022 showed 50 percent of the grapefruit rows are harvested.

Tangerines and Tangelos 800,000 Boxes

The forecast for tangerines and tangelos is unchanged from the January forecast and is 800,000 boxes, 10 percent less 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 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 6.2 percent. If you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is still 6.2 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 6.2 percent, including or excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.7 percent including abnormal seasons and 10.8 excluding abnormal seasons.

Changes between the February 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 5.54 million boxes (5.19 million, excluding abnormal seasons), ranging from 0.05 million boxes to 12.7 million boxes including abnormal seasons, (0.70 to 12.7 million boxes excluding abnormal seasons). The February 1 forecast for all oranges has been below the final estimate 9 times, above 11 times, (below 8 times, above 9 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 2022

[Survey data is considered final in December for Navels, January for early and mid-season (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 & mid-season (Non-Valencia) [1]	18,171	571	39	326
Navel	864	150	28	137
Valencia	30,349	394	32	271
GRAPEFRUIT				
Red	1,776	393	28	127
White	314	481	15	104

[1] Excludes Navels.

Maturity

Regular bloom fruit samples were collected from groves on established routes January 25-26, 2022 in Florida's five major citrus producing areas and tested January 27-28, 2022. In the first table, all comparisons are made to the previous season. Ratios are lower on all varieties. Solids per box are higher on early and mid-season non-Valencia oranges, but lower on Valencia oranges.

In the second table, results from tests on Indian River fruit and from other areas for this period are displayed. Acid and Brix are higher in the Indian River fruit, resulting in lower ratios. Unfinished juice per box and solids per box are also higher in Indian River fruit.

Unadjusted Maturity Tests — Florida: February 1, 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 (17-11)										
Sep 1	1.26	1.26	8.89	9.29	7.15	7.44	43.56	41.19	3.87	3.82
Oct 1	0.89	1.01	9.10	9.20	10.32	9.40	48.55	46.36	4.43	4.27
Nov 1	0.69	0.72	9.55	9.69	14.04	13.48	53.43	50.78	5.10	4.92
Dec 1	0.60	0.69	9.63	10.19	16.05	14.91	50.53	50.37	4.87	5.15
Jan 1	0.56	0.63	10.24	10.33	18.29	16.37	52.83	49.74	5.41	5.13
Feb 1	0.59	0.66	10.89	11.39	18.61	17.43	50.81	50.21	5.55	5.72
Mid-season N-V (10-11)										
Sep 1	1.41	1.44	8.72	8.97	6.30	6.34	45.29	45.21	3.95	4.05
Oct 1	1.02	1.11	8.92	8.96	8.88	8.20	47.24	48.57	4.23	4.35
Nov 1	0.84	0.84	9.42	9.50	11.53	11.69	51.62	49.52	4.86	4.70
Dec 1	0.67	0.75	9.70	9.50	14.74	12.75	53.16	51.96	5.16	4.95
Jan 1	0.63	0.68	9.85	10.30	15.71	15.44	51.34	51.32	5.06	5.28
Feb 1	0.59	0.74	10.21	10.70	17.57	15.25	51.37	51.22	5.25	5.48
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
Jan 1	1.08	1.18	9.61	9.49	8.97	8.11	53.59	52.79	5.15	5.01
Feb 1	0.99	1.07	10.15	9.82	10.32	9.32	54.03	52.28	5.48	5.14

(N-V) Non-Valencia
(NA) Not available.

Unadjusted Maturity Test Averages, by Areas — Florida: February 1, 2020-2021 and 2021-2022

Fruit type (number of groves)	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)
Valencia Oranges										
Indian River (29-29)	1.07	1.17	10.54	10.19	10.00	8.78	54.65	52.51	5.77	5.37
Other Areas (121-121)	0.98	1.04	10.06	9.73	10.39	9.45	53.88	52.23	5.41	5.08

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	2020	2021	2022
	(percent)	(percent)	(percent)
VALENCIA ORANGES			
64 or less	1.3	1.7	0.6
80	8.2	10.0	4.0
100	28.2	29.1	18.6
125	34.1	32.9	32.2
163 or more	28.2	26.3	44.6
RED GRAPEFRUIT			
32 or less	4.5	4.0	1.7
36	8.8	8.7	4.7
40	14.7	12.1	7.3
48	15.9	15.6	12.6
56	17.7	18.2	16.7
63 or more	38.4	41.4	57.0

Type and number of fruit per 4/5 – bushel containers	2020	2021	2022
	(percent)	(percent)	(percent)
WHITE GRAPEFRUIT [1]			
32 or less	6.6	1.6	0.9
36	11.1	3.8	16.2
40	14.3	10.6	25.9
48	16.6	14.6	24.4
56	13.0	22.8	12.6
63 or more	38.4	46.6	20.0

[1] Excludes seedy.

The charts below show the distribution of fruit sizes in 2021 compared to 2022. The diameter measurements shown are the minimum values of each eighth inch range, except for the smallest value.