CITRUS

United States Department of Agriculture
National Agricultural Statistics Service
FEBRUARY FORECAST
MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services
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February 8, 2023

Florida All Orange Production Down 11 Percent from January Forecast
Florida Non-Valencia Orange Production Down 14 Percent
Florida Valencia Orange Production Down 9 Percent
Florida All Grapefruit Production Unchanged
Florida All Tangerine and Tangelo Production Unchanged

FORECAST DATES - 2022-2023 SEASON	
March 8, 2023	May 12, 2023
April 11, 2023	June 9, 2023
July 12, 2023	

Citrus Production by Type – States and United States

Crop and State	Production [1]		2022-2023 Forecasted Production [1]	
	2020-2021	2021-2022	January	February
	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)
Non-Valencia Oranges [2]				
Florida	**22,700**	**18,250**	**7,000**	**6,000**
California [3]	41,300	31,800	38,000	38,000
Texas [3]	1,000	170	900	900
United States	65,000	50,220	45,900	44,900
Valencia Oranges				
Florida	**30,250**	**22,800**	**11,000**	**10,000**
California [3]	7,700	8.600	8,100	8,100
Texas [3]	50	30	250	250
United States	38,000	31,430	19,350	18,350
All Oranges				
Florida	**52,950**	**41,050**	**18,000**	**16,000**
California [3]	49,000	40,400	46,100	46,100
Texas [3]	1,050	200	1,150	1,150
United States	103,000	81,650	65,250	63,250
Grapefruit				
Florida-All	**4,100**	**3,330**	**1,500**	**1,500**
Red	**3,480**	**2,830**	**1,320**	**1,320**
White	**620**	**500**	**180**	**180**
California [3]	4,200	4,100	4,300	4,300
Texas [3]	2,400	1,700	2,200	2,200
United States	10,700	9,130	8,000	8,000
Lemons [3]				
Arizona	750	950	1,500	1,500
California	20,100	24,900	22,000	22,000
United States	20,850	25,850	23,500	23,500
Tangerines and Mandarins [4]				
Florida	**890**	**750**	**500**	**500**
California [3]	28,800	17,400	22,000	22,000
United States	29,690	18,150	22,500	22,500

[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 tangelos and tangors.

All Oranges 16.0 Million Boxes

The 2022-2023 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 16.0 million boxes, down 2.00 million boxes from the January forecast. If realized, this will be 61 percent less than last season's final production. The forecast consists of 6.00 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 10.0 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 6.00 Million Boxes

The forecast of non-Valencia production is reduced 1.00 million boxes to 6.00 million boxes. Size and drop components were final last month. The Row Count survey conducted January 24-25, 2023, showed 92 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 5.77 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast, is 250,000 boxes.

Valencia Oranges 10.0 Million Boxes

The forecast of Valencia production is down 1.00 million boxes from the January forecast to 10.0 million boxes. Current fruit size is below the minimum and is projected to be below the minimum at harvest. Current droppage is above the maximum and projected to be above maximum at harvest.

All Grapefruit 1.50 Million Boxes

The February forecast of all grapefruit production is unchanged at 1.50 million boxes. The red grapefruit forecast is unchanged at 1.32 million boxes. The white grapefruit forecast also is unchanged at 180,000 boxes. Fruit size and drop are final in this report. White grapefruit final size is above average, while red grapefruit final size is below the minimum. Drop for white grapefruit is above average, while red grapefruit drop is above the maximum. Estimated utilization for white grapefruit to February 1, with an allocation for non-certified fruit, is 62,000 boxes and for red grapefruit is 1.11 million boxes. The Row Count survey conducted January 24-25, 2023 showed 47 percent of the grapefruit rows are harvested.

Tangerines and Tangelos 500,000 Boxes

The forecast for tangerines and tangelos is unchanged from the January forecast and is 500,000 boxes, 33 percent less than last season's utilization of 750,000 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 6.3 percent. If you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 6.4 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 6.3 percent, or 6.4 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.9 percent including abnormal seasons and 11.1 percent excluding abnormal seasons.

Changes between the February 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 5.55 million boxes (5.20 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 8 times, above 12 times, (below 7 times, above 10 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 2023

[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]	15,841	474	76	333
Navel...	653	106	69	137
Valencia	27,465	323	62	276
GRAPEFRUIT				
Red	1,574	381	45	140
White...	180	448	34	112

[1] Excludes Navels.

Maturity

Regular bloom fruit samples were collected from groves on established routes January 24-25, 2023 in Florida's five major citrus producing areas and tested January 26, 2023. In the table below, all comparisons are made to the previous season.

Unadjusted Maturity Tests — Florida: February 1, 2021-2022 and 2022-2023

[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	
	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Valencia (150-145)										
Oct 1	2.00	1.94	8.66	8.95	4.37	4.66	46.41	46.74	4.02	4.18
Nov 1	1.57	1.61	9.07	8.89	5.88	5.58	48.98	49.68	4.44	4.42
Dec 1	1.35	1.26	9.25	8.99	6.91	7.22	51.36	52.19	4.75	4.70
Jan 1................................	1.18	1.13	9.49	9.21	8.11	8.20	52.79	53.86	5.01	4.96
Feb 1	1.07	1.00	9.82	9.49	9.32	9.59	52.28	54.41	5.14	5.17

## 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	2021	2022	2023	Type and number of fruit per 4/5 – bushel containers	2021	2022	2023
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
VALENCIA ORANGES				**WHITE GRAPEFRUIT** [1]			
64 or less	1.7	0.6	0.3	32 or less	1.6	0.9	3.9
80	10.0	4.0	2.8	36	3.8	16.2	8.5
100	29.1	18.6	15.8	40	10.6	25.9	15.2
125	32.9	32.2	36.7	48	14.6	24.4	20.3
163 or more	26.3	44.6	44.4	56	22.8	12.6	19.4
				63 or more	46.6	20.0	32.7
RED GRAPEFRUIT							
32 or less	4.0	1.7	0.6				
36	8.7	4.7	2.3				
40	12.1	7.3	5.7				
48	15.6	12.6	6.5				
56	18.2	16.7	11.3				
63 or more	41.4	57.0	73.6				

[1] Excludes seedy.

The charts below show the distribution of fruit sizes in 2022 compared to 2023. 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: January Survey
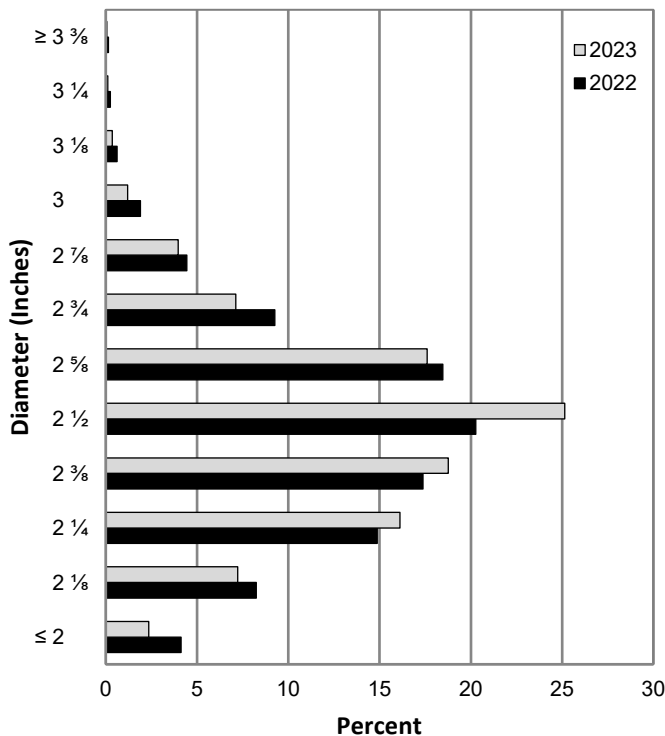
Fruit Size Frequency Measurements, Red Seedless Grapefruit, by Diameter - Florida: January Survey