United States Department of Agriculture
National Agricultural Statistics Service

CITRUS

JANUARY FORECAST
MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services
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January 12, 2024

Florida All Orange Production Unchanged from December Forecast
Florida Non-Valencia Orange Production Unchanged
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Unchanged
Florida All Tangerine and Mandarin Production Unchanged

FORECAST DATES - 2023-2024 SEASON	
February 8, 2024	May 10, 2024
March 8, 2024	June 12, 2024
April 11, 2024	July 12, 2024

Citrus Production by Type – States and United States

Crop and State	Production [1]		2023-2024 Forecasted Production [1]	
	2021-2022	2022-2023	December	January
	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)
Non-Valencia Oranges [2]				
Florida	**18,250**	**6,150**	**7,500**	**7,500**
California	31,500	36,500	37,000	38,000
Texas	170	570	450	600
United States	49,920	43,220	44,950	46,100
Valencia Oranges				
Florida	**22,950**	**9,650**	**13,000**	**13,000**
California	7.600	6,700	7,500	7,800
Texas	30	560	350	350
United States	30,580	16,910	20,850	21,150
All Oranges				
Florida	**41,200**	**15,800**	**20,500**	**20,500**
California	39,100	43,200	44,500	45,800
Texas	200	1,130	800	950
United States	80,500	60,130	65,800	67,250
Grapefruit				
Florida-All	**3,330**	**1,810**	**2,400**	**2,400**
Red	**2,830**	**1,560**	**2,100**	**2,100**
White	**500**	**250**	**300**	**300**
California [3]	4,100	4,000	3,500	3,800
Texas	1,700	2,250	2,200	2,350
United States	9,130	8,060	8,100	8,550
Lemons				
Arizona	1,250	1,400	1,500	900
California	25,200	26,500	23,000	20,000
United States	26,450	27,900	24,500	20,900
Tangerines and Mandarins [4]				
Florida	**750**	**480**	**550**	**550**
California	17,500	23,700	23,000	22,000
United States	18,250	24,180	23,550	22,550

[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] Early non-Valencia (including Navel) and midseason non-Valencia varieties in Florida; Navel and miscellaneous varieties in California; Early and mid-season varieties in Texas.
[3] Includes pummelos in California.
[4] Includes tangelos.

All Oranges 20.5 Million Boxes

The 2023-2024 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 20.5 million boxes, unchanged from the December forecast. If realized, this will be 30 percent more than last season's final production. The forecast consists of 7.50 million boxes of non-Valencia oranges (early, mid-season, and Navel varieties) and 13.0 million boxes of Valencia oranges. An 8-year regression was 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, and the 2022-2023 season, which was affected by Hurricanes Ian and Nicole. Average fruit per tree includes both regular bloom and the first late bloom.

Non-Valencia Oranges 7.50 Million Boxes

The forecast of non-Valencia production is 7.50 million boxes. Final fruit size is smaller than the minimum, requiring 336 pieces to fill a 90-pound box. Final droppage of non-Valencia oranges (excluding Navels) at 43 percent is equal to the maximum. The Navel forecast, included in the non-Valencia forecast, is 300,000 boxes, and is 4 percent of the non-Valencia total.

Valencia Oranges 13.0 Million Boxes

The forecast of Valencia production is unchanged from the December forecast. Current fruit size is below average and is projected to be below the average at harvest. Current droppage is above average and projected to be above average at harvest.

All Grapefruit 2.40 Million Boxes

The forecast of all grapefruit production is unchanged from the December forecast. If realized, this will be 33 percent more than last season's final production. The red grapefruit forecast is 2.10 million boxes. Fruit size of red grapefruit at harvest is projected to be average, and droppage is projected to be above average. The white grapefruit forecast is unchanged at 300,000 boxes. Projected fruit size of white grapefruit at harvest is above average. White grapefruit droppage is projected to be below average.

Tangerines and Mandarins 550,000 Boxes

The forecast for tangerines and mandarins is 550,000 boxes, unchanged from December and 15 percent more than last season's utilization of 480,000 boxes. This forecast number includes all certified tangerine and tangelo varieties.

Reliability

To assist users in evaluating the reliability of the January 1 Florida production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the January 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 January 1 Florida all orange production forecast is 7.4 percent. If you exclude the four abnormal production seasons (four hurricane seasons) chances are 7.0 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 7.4 percent, including abnormal seasons, and 7.0 percent excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 12.5 percent including abnormal seasons, or 11.8 percent excluding abnormal seasons.

Changes between the January 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 5.26 million boxes (4.97 million boxes, excluding abnormal seasons), ranging from 0.30 million boxes to 12.7 million boxes (including and excluding abnormal seasons). The January 1 forecast for all oranges has been below the final estimate 4 times, above 16 times, (below 4 times, above 12 times, excluding abnormal seasons). The difference does not imply that the January 1 forecast this year is likely to understate or overstate final production.

Forecast Components, by Type – Florida: January 2024

[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) [1]	13,299	342	43	336
Navel	570	138	37	138
Valencia	24,868	279	40	265
GRAPEFRUIT				
Red	1,418	356	36	123
White	194	479	27	117

[1] Excludes Navels.

Maturity

Regular bloom fruit samples were collected on December 27-28, 2023 from groves on established routes across Florida's citrus producing region, and tested by the USDA, NASS, Florida Field Office on January 2-3, 2024.

Unadjusted Maturity Tests — Florida: January 1, 2022-2023 and 2023-2024

[Averages of regular bloom fruit from sample groves. Samples were run through an FMC 091B machine using pneumatic pressure. This machine utilizes a 0.025 short strainer with 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	
	2022-2023	2023-2024	2022-2023	2023-2024	2022-2023	2023-2024	2022-2023	2023-2024	2022-2023	2023-2024
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early N-V (64-37)										
Sep 1	1.24	1.07	9.19	9.67	7.46	9.16	43.44	45.11	3.99	4.36
Oct 1	0.88	0.84	9.09	8.99	10.40	10.87	46.92	46.05	4.26	4.14
Nov 1	0.77	0.68	9.12	9.14	12.04	13.58	49.77	47.79	4.54	4.37
Dec 1	0.63	0.61	9.21	9.39	14.64	15.41	51.17	50.69	4.71	4.76
Jan 1	0.61	0.60	9.04	9.63	14.97	16.29	49.60	49.70	4.49	4.79
Midseason N-V (34-20)										
Sep 1	1.38	1.22	8.94	9.02	6.54	7.47	42.01	42.62	3.76	3.84
Oct 1	0.98	0.96	8.87	9.23	9.15	9.81	47.58	47.45	4.23	4.38
Nov 1	0.83	0.77	8.85	8.96	10.75	11.68	50.28	48.92	4.45	4.37
Dec 1	0.73	0.71	8.96	9.31	12.39	13.21	51.89	50.77	4.66	4.73
Jan 1	0.69	0.64	9.03	9.04	13.19	14.19	52.76	51.03	4.76	4.60
Valencia (147-149)										
Sep 1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1	1.94	1.76	8.94	9.14	4.66	5.31	46.72	45.58	4.18	4.17
Nov 1	1.61	1.46	8.89	9.20	5.58	6.41	49.68	49.08	4.42	4.52
Dec 1	1.27	1.22	8.99	9.53	7.21	7.92	52.22	51.41	4.70	4.90
Jan 1	1.13	1.08	9.21	9.72	8.21	9.13	53.84	53.42	4.95	5.19

(N-V) Non-Valencia

(NA) Not available.

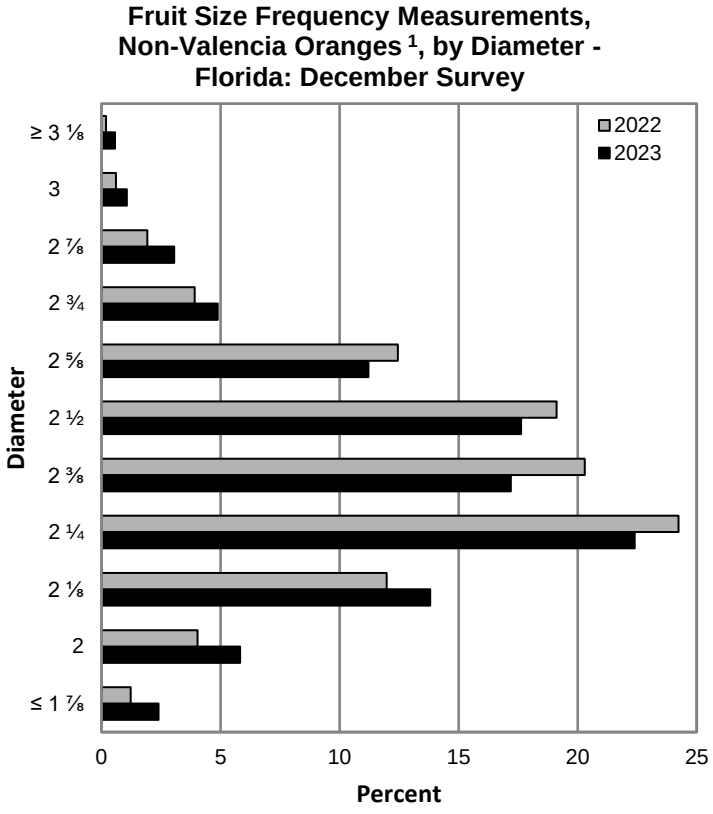
Size Frequency Measurement Distributions, by Type — Florida: December Survey

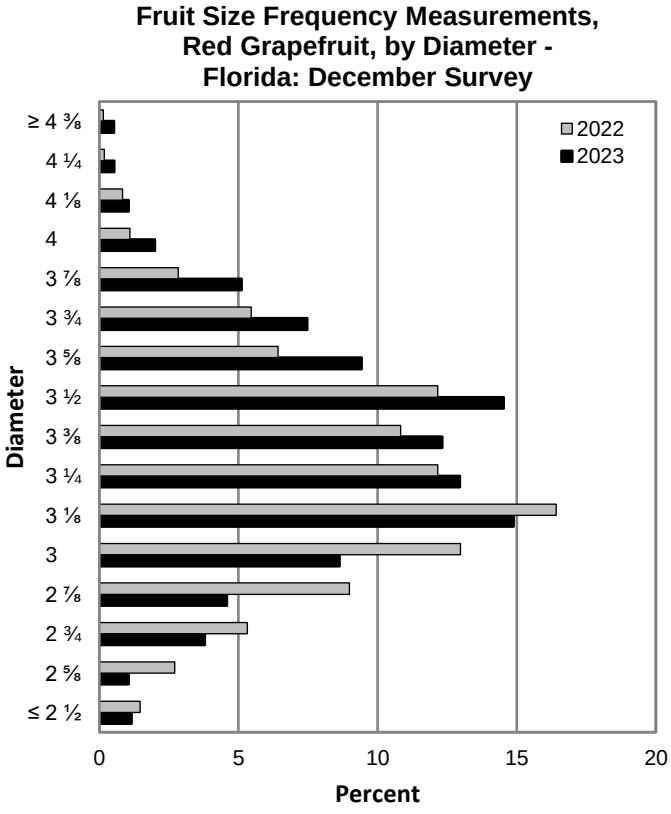
[Size frequency distributions from the December size survey are shown in the following table. The distributions are by percent of fruit falling within the size range of each 4/5-bushel container. These frequency distributions include fruit from regular bloom and exclude fruit from summer bloom]

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)
NON-VALENCIA ORANGES [1]				**RED GRAPEFRUIT**			
64 or less	0.1	0.1	0.3	32 or less	0.8	0.5	1.3
80	1.6	1.3	2.5	36	4.6	3.1	5.5
100	12.6	8.9	10.5	40	8.9	7.0	9.9
125	29.5	28.0	25.1	48	14.4	10.5	14.4
163 or more	56.2	61.7	61.6	56	17.0	13.2	14.4
				63 or more	54.3	65.7	54.5
VALENCIA ORANGES				**WHITE GRAPEFRUIT [2]**			
64 or less	0.6	0.2	0.7	32 or less	7.0	0.6	1.2
80	4.1	2.5	4.7	36	16.3	6.1	7.0
100	18.4	14.0	18.5	40	16.8	14.8	12.2
125	31.8	34.1	34.9	48	20.5	17.6	17.6
163 or more	45.1	49.2	41.2	56	14.2	22.6	21.2
				63 or more	25.2	38.3	40.8

[1] Excludes Navels.
[2] 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 values.





[1] Excludes Navels.