



CITRUS MARCH FORECAST MATURITY TEST RESULTS AND FRUIT SIZE

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Florida All Orange Production Up 1 Percent from February Forecast
Florida Non-Valencia Orange Production Up 2 Percent
Florida Valencia Orange Production Unchanged
Florida All Grapefruit Production Up 7 Percent
Florida All Tangerine and Tangelo Production Unchanged

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

Citrus Production by Type – States and United States

| Crop and State | Production ¹ | | 2022-2023 Forecasted Production ¹ | |
|--|----------------------------|----------------------------|--|------------------------|
| | 2020-2021 (1,000 boxes) | 2021-2022 (1,000 boxes) | February (1,000 boxes) | March (1,000 boxes) |
| Non-Valencia Oranges ² | | | | |
| Florida | 22,700 | 18,250 | 6,000 | 6,100 |
| California ³ | 41,300 | 31,800 | 38,000 | 38,000 |
| Texas ³ | 1,000 | 170 | 900 | 900 |
| United States..... | 65,000 | 50,220 | 44,900 | 45,000 |
| Valencia Oranges | | | | |
| Florida | 30,250 | 22,800 | 10,000 | 10,000 |
| California..... | 7,700 | 8,600 | 8,100 | 8,100 |
| Texas ³ | 50 | 30 | 250 | 250 |
| United States..... | 38,000 | 31,430 | 18,350 | 18,350 |
| All Oranges | | | | |
| Florida | 52,950 | 41,050 | 16,000 | 16,100 |
| California..... | 49,000 | 40,400 | 46,100 | 46,100 |
| Texas ³ | 1,050 | 200 | 1,150 | 1,150 |
| United States..... | 103,000 | 81,650 | 63,250 | 63,350 |
| Grapefruit | | | | |
| Florida-All | 4,100 | 3,330 | 1,500 | 1,600 |
| Red | 3,480 | 2,830 | 1,320 | 1,440 |
| White | 620 | 500 | 180 | 160 |
| 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 | 8,100 |
| 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 | | | | |
| Florida | 890 | 750 | 500 | 500 |
| California ^{3,4} | 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 for current month carried forward from previous forecast.

⁴ Includes tangelos and tangors.

All Oranges 16.1 Million Boxes

The 2022-2023 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 16.1 million boxes, increased 100,000 boxes from the February forecast. If realized, this will be 61 percent less than last season's final production. The forecast consists of 6.10 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 6.10 Million Boxes

The forecast of non-Valencia production is increased by 100,000 boxes to 6.10 million boxes. The Row Count survey conducted February 22-23, 2023, showed 94 percent of the early and mid-season non-Valencia rows, excluding Navels, are harvested. Estimated utilization for non-Valencia oranges (including Navels) to March 1, with an allocation for non-certified fruit, is 6.09 million boxes. The Navel forecast, included in the non-Valencia portion of the forecast is 240,000 boxes.

Valencia Oranges 10.0 Million Boxes

The forecast of Valencia production is unchanged from the February forecast and remains at 10.0 million boxes. Current fruit size is below the minimum and is projected to be below the minimum at harvest, requiring 277 pieces to fill a 90-pound box. Current droppage is above the maximum and projected to be above the maximum at harvest. Harvest of Valencia oranges is still in the early stages.

All Grapefruit 1.60 Million Boxes

The forecast of all grapefruit production is increased 100,000 from February to 1.60 million boxes. The red grapefruit forecast is increased to 1.44 million boxes. The white grapefruit forecast is lowered 20,000 boxes to 160,000 boxes. The Row Count survey conducted February 22-23, 2023, indicated 72 percent of grapefruit rows are harvested. Estimated utilization to March 1 for all grapefruit, with an allocation for non-certified fruit 1.56 million boxes.

Tangerines and Tangelos 500,000 Boxes

The forecast for tangerines and tangelos is unchanged from the February 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 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 4.8 percent. If you exclude the three abnormal production seasons (three hurricane seasons), the "Root Mean Square Error" is 5.0 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 4.8 percent, including abnormal seasons, or 5.0 excluding abnormal seasons. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 8.3 percent including abnormal seasons or 8.8 percent excluding abnormal seasons.

Changes between the March 1 Florida all orange forecast and the final estimates during the past 20 years have averaged 3.83 million boxes (3.94 million, excluding abnormal seasons), ranging from 0.05 million boxes to 10.7 million boxes including abnormal seasons, (0.15 to 10.7 million boxes excluding abnormal seasons). The March 1 forecast for all oranges has been below the final estimate 7 times, above 13 times, (below 6 times, above 11 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 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 (1,000 trees) | Fruit per tree (number) | Droppage (percent) | Fruit per box (number) |
|--|--------------------------------|----------------------------|-----------------------|---------------------------|
| ORANGES | | | | |
| Early & mid-season (Non-Valencia) ¹ | 15,841 | 474 | 76 | 333 |
| Navel | 653 | 106 | 69 | 137 |
| Valencia | 27,465 | 323 | 64 | 277 |
| 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 February 22-23, 2023 in Florida's five major citrus producing areas and tested February 24, 2023. All comparisons are made to the previous season

Unadjusted Maturity Tests — Florida: March 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 (percent) | 2022-2023 (percent) | 2021-2022 (percent) | 2022-2023 (percent) | 2021-2022 | 2022-2023 | 2021-2022 (pounds) | 2022-2023 (pounds) | 2021-2022 (pounds) | 2022-2023 (pounds) |
| Valencia Oranges (140-142) | | | | | | | | | | |
| Oct 1 | 2.01 | 1.94 | 8.68 | 8.95 | 4.36 | 4.66 | 46.52 | 46.74 | 4.04 | 4.19 |
| Nov 1 | 1.58 | 1.61 | 9.10 | 8.89 | 5.86 | 5.59 | 49.07 | 49.68 | 4.47 | 4.42 |
| Dec 1 | 1.36 | 1.27 | 9.25 | 8.98 | 6.91 | 7.20 | 51.20 | 52.18 | 4.74 | 4.69 |
| Jan 1 | 1.18 | 1.13 | 9.47 | 9.20 | 8.11 | 8.20 | 52.76 | 53.92 | 5.00 | 4.96 |
| Feb 1 | 1.07 | 1.00 | 9.80 | 9.47 | 9.27 | 9.58 | 52.55 | 54.51 | 5.15 | 5.16 |
| Mar 1 | 0.98 | 0.92 | 10.02 | 9.74 | 10.25 | 10.74 | 53.89 | 54.88 | 5.40 | 5.35 |

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

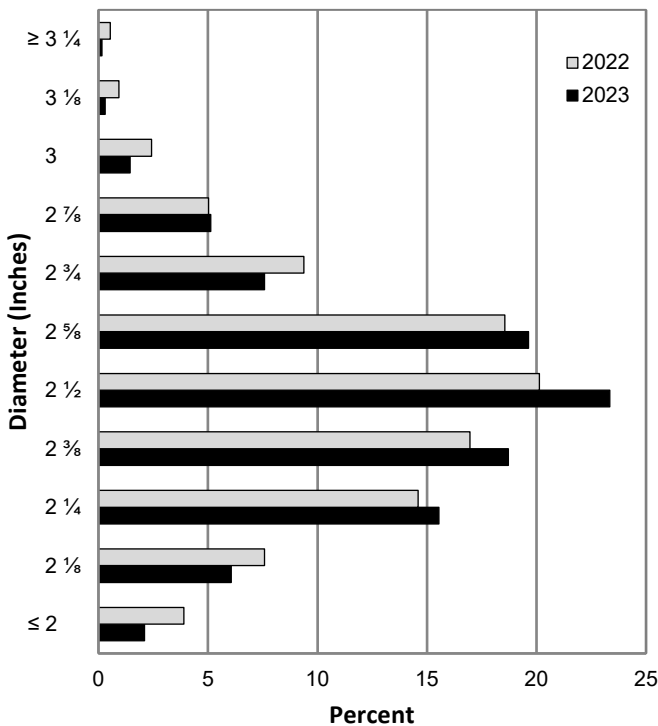
[Size frequency distributions from the February size survey are shown in the following table. The distributions are by percent of fruit falling within the size range of each 4/5-bushel container. These frequency distributions include fruit from regular bloom and exclude fruit from summer bloom]

| Type and number of fruit per 4/5 – bushel containers | 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 | 2.1 | 0.9 | 0.3 | 32 or less | 3.8 | 11.4 | 2.7 |
| 80 | 10.7 | 4.9 | 3.3 | 36 | 4.1 | 18.6 | 8.2 |
| 100 | 28.4 | 19.5 | 17.6 | 40 | 13.8 | 26.4 | 18.0 |
| 125 | 32.0 | 31.7 | 36.4 | 48 | 20.6 | 20.0 | 22.0 |
| 163 or more | 26.8 | 43.0 | 42.4 | 56 | 19.7 | 7.9 | 20.2 |
| RED GRAPEFRUIT ¹ | | | | 63 or more | 38.0 | 15.7 | 28.9 |
| 32 or less | 1.5 | 5.6 | 0.0 | | | | |
| 36 | 5.6 | 9.8 | 1.1 | | | | |
| 40 | 9.5 | 7.7 | 2.4 | | | | |
| 48 | 15.3 | 9.6 | 5.0 | | | | |
| 56 | 17.4 | 14.1 | 8.4 | | | | |
| 63 or more | 50.7 | 53.2 | 83.1 | | | | |

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: February Survey



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

