2023 California Mandarin Objective Measurement Report

California Department of Food and Agriculture

Cooperating with the USDA, National Agricultural Statistics Service, Pacific Regional Office - California
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CALIFORNIA TANGO AND W. MURCOTT AFOURER MANDARIN FORECAST

RESULTS

The 2023-24 California forecast for only the Tango and W. Murcott Afourer Mandarin varieties is 21.0 million 40-lb. cartons. This forecast is based on the results of the 2023-24 Mandarin Objective Measurement (O.M.) Survey, which was conducted from July 1 to September 1, 2023. Estimated fruit set per tree, fruit diameter, trees per acre, bearing acreage, and mandarins per box were used in the statistical models estimating production.

Survey data indicated a fruit set per tree of 593, up 8% from the previous year. The average September 1 diameter was 1.244 inches, down 7% from last year for these varieties. Bearing acreage is estimated at 31,000, which results in a yield of 677 40-lb. cartons per acre.

The start to the growing season saw historic amounts of rainfall including precipitation from Hurricane Hilary, which brought relief to the state's drought. Continuous storms delayed the start of the season and may have contributed to smaller fruit size compared to the same week last year.

SURVEY HISTORY

This is the first time the USDA, National Agricultural Statistics Service, Pacific Regional Office has published a production forecast of Tango and W. Murcott Afourer Mandarin varieties. Fruit counts and size measurements have been collected each year since 2020 as three years of data are needed for the statistical models.

SURVEY SAMPLE

A sample of 300 Tango and W. Murcott Afourer Mandarin groves were randomly selected proportional to county and variety bearing acreage, with 280 of these groves utilized in this survey. Once a grove was randomly chosen and grower permission was granted, two trees were randomly selected from each grove. For each randomly selected tree, its trunk was measured along with all connected branches. A random number table was then used to select a branch, and then all connected branches from the randomly selected branch were measured.

This process was repeated until a branch was reached with no significant limbs beyond it. This randomly selected branch, called the terminal branch, was then closely inspected to count all fruit connected to it, as well as all fruit along the path from the trunk to the terminal branch. Since each selected path has a probability of selection associated with it, a probability-based method was then applied to estimate a fruit count for the entire tree.

In the last week of the survey period, fruit diameter measurements were collected on the right quadrant of four trees surrounding the two sampled trees. These measurements were used to estimate an average fruit diameter per tree.

The California Citrus Industry has been very supportive. We appreciate your continued cooperation!

California Mandarin Objective Measurement Survey Results, September 1, 2023

County	Number of samples	Average set per tree	Average diameter (inches)
Kern	73	677	1.242
Madera	33	339	1.350
Tulare	149	612	1.208
Other[1]	25	566	1.328
State Survey Avg.	280	593	1.244

[1]Other includes Fresno, Imperial, and Riverside counties.

State Average Set and Diameter by Year

Year	Number of samples	Average set per tree	Average diameter (inches)
2020	271	863	1.490
2021	287	263	1.363
2022	293	551	1.344
2023	280	593	1.244