2012-13 California Navel Orange Objective Measurement Report

California Department of Food and Agriculture, California Agricultural Statistics Service

Cooperating with the USDA, National Agricultural Statistics Service, California Field Office
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NAVEL ORANGE PRODUCTION FORECAST UP

The initial 2012-13 Navel orange forecast is 93.0 million cartons. Of the total Navel orange forecast, 90.0 million cartons are estimated to be in the Central Valley. This forecast is based on the results of the 2012-13 Navel Orange Objective Measurement (O.M.) Survey, which was conducted from July 15 to September 3, 2012. Estimated fruit set per tree, fruit diameter, trees per acre, bearing acreage, and oranges per box were used in the statistical models estimating production.

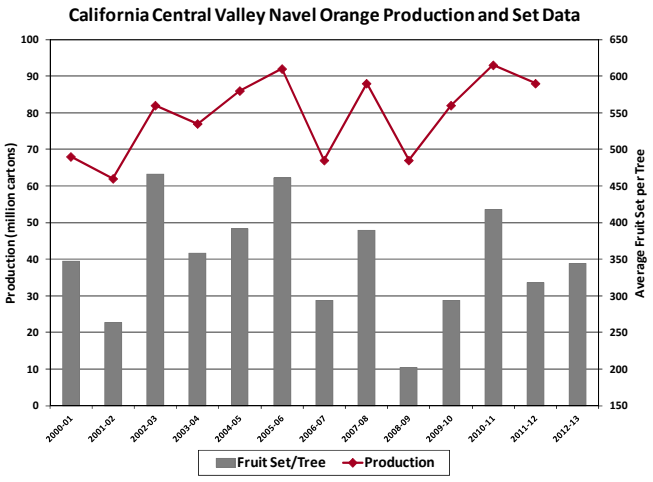
The varieties forecast in this report include conventional, organic, and specialty Navel oranges (including Cara Cara and Blood orange varieties).

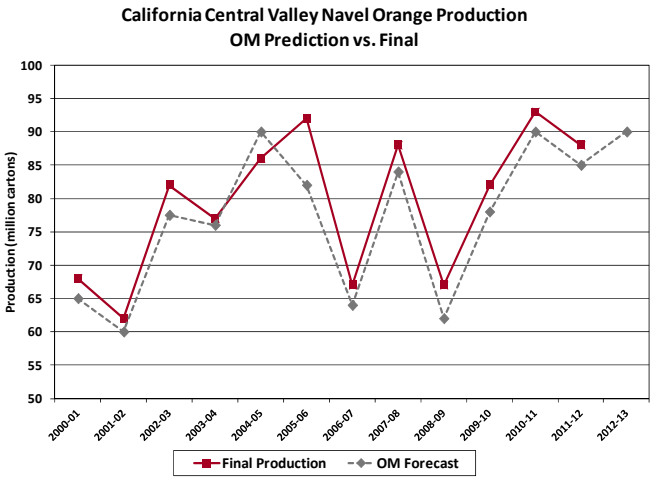
Survey data indicated a fruit set per tree of 344, above the five-year average of 324. The average September 1 diameter was 2.195 inches, below the five-year average of 2.254.

CALIFORNIA NAVEL ORANGE
AVERAGE SET PER TREE BY COUNTY

Year	Fresno	Tulare	Kern	Central Valley 1/
2000-01	485	293	392	347
2001-02	201	260	299	264
2002-03	289	465	592	466
2003-04	524	305	388	358
2004-05	432	356	465	392
2005-06	571	445	465	461
2006-07	285	280	358	294
2007-08	380	384	429	390
2008-09	179	183	262	202
2009-10	247	286	337	294
2010-11	318	417	484	418
2011-12	301	281	413	318
2012-13	349	309	435	344

1/ Includes Madera, Fresno, Tulare, Kings, and Kern counties.





SURVEY SAMPLE

A sample of 576 Navel orange groves was randomly selected proportional to county and variety bearing acreage, and 539 of the groves were utilized in this survey. Once a grove was randomly chosen and grower permission was granted, two trees were randomly selected. The Navel orange sample included organic, Cara Cara, and Blood orange groves.

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 of the 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 made on the right quadrant of four trees surrounding the two trees of every third grove. These measurements were used to estimate an average fruit diameter per tree. Of the 539 utilized groves, 10 were in Madera County, 92 were in Fresno County, 306 were in Tulare County, and 131 were in Kern County.

SURVEY HISTORY

A Navel Orange Objective Measurement Survey has been conducted in the Central Valley every year since the 1984-85 crop year, except for the 1991-92 season due to a lack of funding. The data from the first two years were used for research purposes in developing crop-estimating models.

CALIFORNIA CENTRAL VALLEY NAVEL ORANGE DATA

Crop Year 1/	Number of Sampled Groves	Final Utilized Production (Cartons) 2/	Forecast Utilized Production (Cartons) 2/	Bearing Acres	Average Trees Per Acre	Average Set Per Tree	Average September 1 Diameter 3/ (Inches)
1987-88	300	53,588,000	46,000,000	96,110	126	361	2.343
1988-89	350	58,326,000	61,000,000	98,766	126	570	2.195
1989-90	350	79,242,000	61,000,000	101,525	125	541	2.250
1990-91	431	25,514,000	70,000,000	104,560	124	498	2.213
1991-92	---	60,406,000	---	102,000	124	---	---
1992-93	398	81,034,000	66,000,000	102,612	121	572	2.296
1993-94	488	63,800,000	68,000,000	106,381	121	452	2.365
1994-95	480	66,358,000	65,000,000	107,049	121	457	2.232
1995-96	498	69,750,000	68,000,000	113,000	121	460	2.258
1996-97	498	71,700,000	66,000,000	115,000	121	359	2.470
1997-98	531	81,000,000	80,000,000	116,500	121	407	2.481
1998-99	498	37,000,000	61,000,000	118,000	121	380	2.184
1999-00	478	76,000,000	75,000,000	119,000	122	458	2.224
2000-01	478	68,000,000	65,000,000	122,000	122	347	2.311
2001-02	527	62,000,000	60,000,000	122,000	122	264	2.483
2002-03	510	82,000,000	77,500,000	129,000	122	466	2.200
2003-04	498	77,000,000	76,000,000	129,000	124	358	2.410
2004-05	526	86,000,000	90,000,000	131,000	125	392	2.495
2005-06	569	92,000,000	82,000,000	133,000	127	461	2.230
2006-07	539	67,000,000	64,000,000	135,000	129	294	2.268
2007-08	543	88,000,000	84,000,000	135,000	130	390	2.245
2008-09	527	67,000,000	62,000,000	135,000	131	202	2.276
2009-10	533	82,000,000	78,000,000	134,500	132	294	2.336
2010-11	519	93,000,000	90,000,000	133,500	133	418	2.143
2011-12 4/	535	85,000,000	85,000,000	132,000	133	318	2.270
2012-13 5/	536		90,000,000	131,000	134	344	2.195

1/ Data for 1990-91, 1998-99, and 2006-07 (freeze years) were not used in forecasting the 2010-11 crop. An objective measurement survey was not conducted for the 1991-92 season due to lack of funding.

2/ Prior to the 2010-11 season, cartons had a standard equivalent weight of 37.5 lbs. Beginning in the 2010-11 season, cartons have a standard equivalent weight of 40 lbs.

3/ Size data for 1984-85 through 1993-94 are from the Navel Orange Administrative Committee, while the data from 1993-94 through 2006-07 are from the orange industry. Size data beginning 2007-08 are from the USDA-NASS, California Field Office objective measurement survey.

4/ Subject to revision September 20, 2012.

5/ USDA, NASS, California Field Office preliminary forecast.

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