

2009 California Walnut Objective Measurement Report



Cooperating with the California Department of Food and Agriculture

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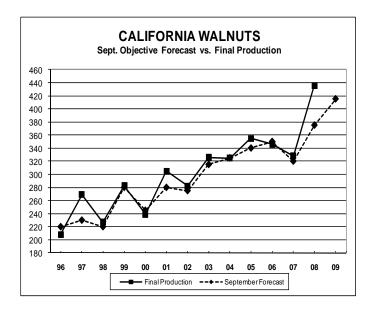
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WALNUT PRODUCTION FORECAST DOWN

The 2009 California walnut production is forecast at 415,000 tons, down 5 percent from 2008's production of 436,000 tons. This forecast is based on the 2009 Walnut Objective Measurement (O.M.) Survey, which was officially conducted August 1 through August 22, 2009. There were a few samples completed before August 1 for training and scheduling purposes.

Following a record crop, the 2009 walnut crop is generally in good condition. There were adequate chilling hours during the winter and mostly ideal weather conditions during the spring, with the exception of some rain which caused minimal blight damage in some areas. A mild summer, with the exception of some heat spells, has resulted in sunburn at modest levels. Irrigation water is a concern in some areas, but the crop was mostly unaffected by the drought.

The 2009 Walnut O.M. Survey utilized a total of 736 blocks with two sample trees per block. Survey data indicated an average nut set of 1,523 per tree, up 8 percent from 2008's average of 1,416. The Hartley nut set was up 34 percent; Chandler was down 6 percent; and Serr was down 22 percent from 2008. Percent of sound kernels in-shell was 97.9 percent Statewide. In-shell weight per nut was 22.0 grams, while the average in-shell suture measurement was 32.5 millimeters. The in-shell cross-width measurement was 33.0 and the average length in-shell was 39.3 millimeters.



Estimated nut sets, sizing measurements, average number of trees per acre, and estimated bearing acreage were used in the statistical models.

SURVEY HISTORY

The Walnut O.M. Survey began in 1958 to fulfill industry needs for an accurate walnut production forecast prior to harvest. The original sample was chosen proportionally to county and variety of bearing acreage. With each succeeding year, additions and deletions have been made in the sample to adjust for acreage removed, new bearing acreage, and operations that choose not to participate in the survey.

SAMPLING PROCEDURES

Once a block is randomly selected and permission is granted by the operation for enumerators to enter the block, two trees are randomly selected. An accessible branch is chosen, which is 5-15 percent of the total cross-sectional area of the primary limbs and reachable with a twelve-foot ladder. Measurements are made on the trunk, each primary, and each split leading to and including the accessible branch. The sample tree and accessible branch are marked by a single tag.

On the accessible branch, every first of five nuts is picked for use in size and grade determinations. If available, at least ten nuts are harvested from the accessible branch for this purpose.

The following measurements are made on nuts selected for sizing:

- 1. Weight of nut including hull
- 2. Width of shell at suture
- 3. Width of shell 90 degrees to suture line (cross-suture)
- 4. Length of shell
- 5. Kernel grade
- 6. Weight of nut in-shell

DATA RELIABILITY

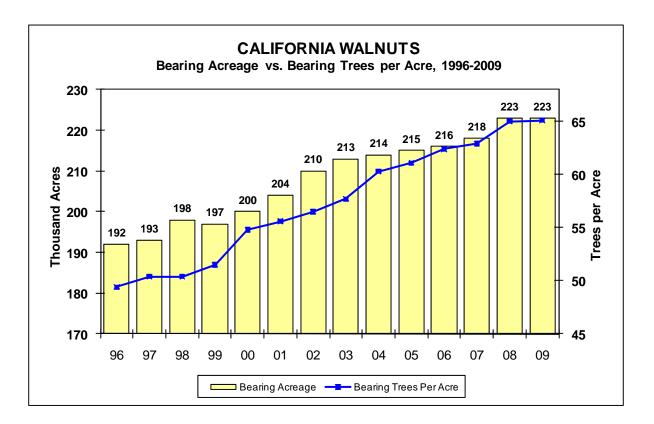
The 80 percent confidence interval is from 376,000 tons to 454,000 tons. This means there is an 80 percent chance the 2009 production will fall within this range.

Year Bearing Acres	Trees Per Acre	Per Bearing Acre	Total Production	Price Per Ton	Total Value				
	Tiees Fel Acle	То	ns	Dollars	1,000 Dollars				
1988	177,000	43.8	1.18	209,000	922	192,698			
1989	179,000	45.3	1.28	229,000	1,070	245,030			
1990	181,000	45.7	1.25	227,000	1,040	236,080			
1991	181,000	46.8	1.43	259,000	1,060	274,540			
1992	178,000	47.5	1.14	203,000	1,410	286,230			
1993	185,000	47.9	1.41	260,000	1,390	361,400			
1994	189,000	48.7	1.23	232,000	1,030	238,960			
1995	193,000	49.0	1.21	234,000	1,400	327,600			
1996	192,000	49.4	1.08	208,000	1,580	328,640			
1997	193,000	50.4	1.39	269,000	1,430	384,670			
1998	198,000	50.4	1.15	227,000	1,050	238,350			
1999	197,000	51.5	1.44	283,000	886	250,738			
2000	200,000	54.8	1.20	239,000	1,240	296,360			
2001	204,000	55.6	1.50	305,000	1,120	341,600			
2002	210,000	56.5	1.34	282,000	1,170	329,940			
2003	213,000	57.7	1.53	326,000	1,160	378,160			
2004	214,000	60.3	1.52	325,000	1,390	451,750			
2005	215,000	61.1	1.65	355,000	1,570	539,600			
2006	216,000	62.4	1.60	346,000	1,630	563,980			
2007	218,000	62.9	1.50	328,000	2,290	751,120			
2008 a/	223,000	65.0	1.96	436,000	1,210	527,560			
2009 b/c/	223,000	65.1	1.86	415,000					

a/ Price Per Ton and Total Value are July 2009 preliminary data.

b/ Bearing years include plantings of the following: Chandler, Chico, Howard, Tulare (2005 & Earlier); 50-55, 59-124, 4946, Amigo, Ashley, Bardoni, Cisco, Earhorn, Grove, Gustine, Honeycutt, Houston, Jensen, Lompoc, Marchetti, Nuggett, Payne, Pedro, Serr, Sunland, Tehama, Trinta, UCD 67-13, Vina, Westside (2004 and Earlier); Franquette, Franquette Scharsch, Mayette, Placentia, Poe, Willsons/Willsons Wonder, Woodland (2002 & Earlier); all other varieties not specified (2003 & Earlier).

c/ Price Per Ton and Total Value preliminary data will be released July 2010.



Walnut Objective Measurement Survey Date, By District

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In-Shell Length 1988 39.1 40.0 39.0 33 (mm) 1989 38.3 39.7 38.9 33 2000 37.4 38.2 38.4 33 2001 38.6 38.5 37.9 33 2002 37.5 38.4 38.8 33 2003 38.8 39.7 38.3 33 2004 37.7 39.1 38.7 33 2005 42.0 38.4 38.7 33 2006 38.6 39.6 39.5 33.1 33 2006 38.6 39.6 39.1 33 2007 37.4 37.3 38.1 33 2008 39.2 39.5 39.1 33 2009 36.9 39.2 98.3 99 Percent Sound 1999 96.8 98.2 97.4 99 2001 98.0 97.5 98.1 99 2006 96.5 <td></td> <td>2009</td> <td>29.9</td> <td>33.1</td> <td>33.1</td> <td>33.0</td>		2009	29.9	33.1	33.1	33.0
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2000 37.4 38.2 38.4 33 2001 38.6 38.5 37.9 33 2002 37.5 38.4 38.8 33 2003 38.8 39.7 38.3 33 2004 37.7 39.1 38.7 38.3 2005 42.0 38.4 38.7 33 2006 38.6 39.6 39.5 39 2007 37.4 37.3 38.1 33 2008 39.2 39.5 39.1 33 2009 36.9 30.6 39.1 33 2001 98.3 97.5 98.3 9 2002 96.0 95.3 98.1 9 2001 98.3 97.5 98.1 9 2002 96.0 95.3 98.7 9 2004 97.6 97.7 99.2 9 2005 97.4 96.5 98.8 9						39.4
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2003 38.8 39.7 38.3 3 2004 37.7 39.1 38.7 3 2005 42.0 38.4 38.7 3 2006 38.6 39.6 39.5 3 2007 37.4 37.3 38.1 3 2008 39.2 39.5 39.1 3 2009 36.9 39.6 39.1 3 2000 36.9 39.6 39.1 3 2001 98.3 9 9 9 2002 96.0 96.7 97.0 9 2001 98.3 97.5 98.1 9 2002 96.0 95.3 98.7 9 2003 95.5 95.4 99.3 9 2004 97.6 97.7 99.2 9 2005 97.4 96.5 97.2 9 2006 98.1 98.5 97.2 9 2006						38.5
2004 37.7 39.1 38.7 3 2005 42.0 38.4 38.7 3 2006 38.6 39.6 39.5 3 2007 37.4 37.3 38.1 3 2008 39.2 39.5 39.1 3 2009 36.9 39.6 39.1 3 2009 36.9 39.6 39.1 3 2009 36.9 39.6 39.1 3 2009 36.9 39.6 39.1 3 2001 98.3 96.7 97.4 9 2001 98.3 97.5 98.1 9 2002 96.0 95.3 98.7 9 2003 95.5 95.4 99.3 9 2004 97.6 97.7 99.2 9 2005 97.4 96.5 97.2 9 2006 98.1 98.5 97.2 9 2007 <td></td> <td></td> <td></td> <td></td> <td></td> <td>39.1</td>						39.1
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2001 98.3 97.5 98.1 9 2002 96.0 95.3 98.7 9 2003 95.5 95.4 99.3 9 2004 97.6 97.7 99.2 9 2005 97.4 96.5 98.8 9 2006 98.1 98.5 97.2 9 2007 97.8 97.9 99.2 9 2008 96.4 98.6 97.3 9 2009 94.9 97.0 99.6 9 2000 1,155 2,180 1,250 1,7 2000 1,195 1,812 1,204 1,4 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2001 937 2,020 1,478 1,7	Percent Sound		96.8	98.2	97.4	97.9
2001 98.3 97.5 98.1 9 2002 96.0 95.3 98.7 9 2003 95.5 95.4 99.3 9 2004 97.6 97.7 99.2 9 2005 97.4 96.5 98.8 9 2006 98.1 98.5 97.2 9 2007 97.8 97.9 99.2 9 2008 96.4 98.6 97.3 9 2009 94.9 97.0 99.6 9 2000 1,195 1,812 1,204 1,4 1999 1,355 2,180 1,250 1,7 2000 1,195 1,812 1,204 1,4 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 <td></td> <td></td> <td>98.0</td> <td></td> <td>97.0</td> <td>96.9</td>			98.0		97.0	96.9
2002 96.0 95.3 98.7 99 2003 95.5 95.4 99.3 99 2004 97.6 97.7 99.2 99 2005 97.4 96.5 98.8 99 2006 98.1 98.5 97.2 99 2007 97.8 97.9 99.2 99 2008 96.4 98.6 97.3 99 2009 94.9 97.0 99.6 9 2009 94.9 97.0 99.6 9 2000 1,195 1,812 1,253 1,4 1999 1,355 2,180 1,250 1,7 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2003 640 1,846 1,429 1,5 2004 924 1,943 1,168 1,5 2005 818 1,854 1,372 1,5		2001				97.8
2003 95.5 95.4 99.3 99 2004 97.6 97.7 99.2 9 2005 97.4 96.5 98.8 99 2006 98.1 98.5 97.2 9 2007 97.8 97.9 99.2 9 2008 96.4 98.6 97.3 9 2009 94.9 97.0 99.6 9 2000 1,195 1,812 1,204 1,7 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2003 640 1,846 1,429 1,5 2004 924 1,943 1,168 1,5 2005 818 1,854 1,372 1,5 2006 1,316 1,660 1,267 1,4 2006 1,316 1,660 1,267 1,4 2006 818 1,854 1,162 1,3			96.0		98.7	96.3
2004 97.6 97.7 99.2 99 2005 97.4 96.5 98.8 99 2006 98.1 98.5 97.2 99 2007 97.8 97.9 99.2 99 2008 96.4 98.6 97.3 99 2009 94.9 97.0 99.6 99 Nuts Set Per Tree 1998 1,070 1,654 1,253 1,4 2000 1,195 1,812 1,204 1,4 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2003 640 1,846 1,429 1,5 2003 640 1,846 1,429 1,5 2004 924 1,943 1,168 1,5 2005 818 1,854 1,372 1,5 2006 1,316 1,660 1,267 1,4 2007 1,221 1,548						97.0
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2006 98.1 98.5 97.2 99 2007 97.8 97.9 99.2 99 2008 96.4 98.6 97.3 99 2009 94.9 97.0 99.6 9 Nuts Set Per Tree 1998 1,070 1,654 1,253 1,4 1999 1,355 2,180 1,250 1,7 2000 1,195 1,812 1,204 1,4 2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2003 640 1,846 1,429 1,5 2004 924 1,943 1,168 1,5 2005 818 1,854 1,372 1,5 2006 1,316 1,660 1,267 1,4 2007 1,221 1,548 1,162 1,3						97.5
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$\left[\begin{array}{cccccccccccccccccccccccccccccccccccc$	INUIS SELFEL TIEE					,
2001 937 2,020 1,478 1,7 2002 1,254 1,982 1,142 1,5 2003 640 1,846 1,429 1,5 2004 924 1,943 1,168 1,5 2005 818 1,854 1,372 1,5 2006 1,316 1,660 1,267 1,4 2007 1,221 1,548 1,162 1,3						1,709
20021,2541,9821,1421,520036401,8461,4291,520049241,9431,1681,520058181,8541,3721,520061,3161,6601,2671,420071,2211,5481,1621,5						1,483
20036401,8461,4291,520049241,9431,1681,520058181,8541,3721,520061,3161,6601,2671,420071,2211,5481,1621,5						1,719
20049241,9431,1681,520058181,8541,3721,520061,3161,6601,2671,420071,2211,5481,1621,3						1,572
20058181,8541,3721,520061,3161,6601,2671,420071,2211,5481,1621,3						1,599
2006 1,316 1,660 1,267 1,4 2007 1,221 1,548 1,162 1,3						1,526
2006 1,316 1,660 1,267 1,4 2007 1,221 1,548 1,162 1,3		2005		1,854		1,575
2007 1,221 1,548 1,162 1,5		2006	1,316	1,660		1,458
						1,357
		2008	973	1,592	1,270	1,416
						1,523

1/

Coast includes: Contra Cost, Lake, Monterey, Napa, San Benito, San Luis Obispo, Santa Clara, and Sonoma counties. Sacramento Valley includes: Butte, Colusa, El Dorado, Glenn, Sacramento, Solano, Sutter, Tehama, Yolo, and Yuba counties. San Joaquin Valley includes: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties. District and State averages are derived by weighting county averages by county bearing acreage figures. 2/ 3/

4/

Walnut Objective Measurement Survey Date, By	Variety

Measurenet Vale Astrog Chandler Fundes Frage Transm Link Vision Payse Start Terams Link Vision Dist - Dist - Dist - Dist - Dist Dist - Dist				wa	1	tive Measure								
(gm) 106 20.3 24.9 22.1 12.0 24.6 16.8 10.8 10.8 80.8 10		Year	Ashley		Eureka	Franquette	Hartley	Howard	Payne	Serr	Tehama	Tulare	Vina	Other 1/
2000 17.5 22.9 21.7 11.3 22.8 11.8 11.3 12.9 11.9	In-Shell Weight	1998	19.2	21.9	20.8	20.2	24.0		19.6	19.5	19.5		19.2	19.9
2000 17.5 22.9 21.7 18.3 22.8 18.8 19.3 19.8 19.3 19.4 19.3 19.3 19.4 19.3 19.	(gm)	1999	20.3	24.9	22.1	20.0	24.6		19.0	20.3	19.1		20.7	20.9
2000 17.8 22.7 20.0 21.2 23.2 19.8 17.8 17.1 19.8 19.3 2007 18.0 24.1 23.6 21.0 23.7 24.6 19.3 19.4 19.8 19.8 19.4 19.8 19.8 19.7 15.5 23.6 19.8 19.7 15.6 23.6 19.8 24.2 12.8 17.6 18.8 19.8 19.8 19.7 19.8 19.7 19.8 19.7 19.8 21.1 22.0 21.0 18.0 22.2 11.2 19.1 22.0 19.3 19.6 19.8 19.3 19.6 19.8 19.3 19.6 19.8 19.3 19.6 19.6 19.7 19.8 19.7 19.6 19.7 19.8 19.7 19.6 19.7 19.8 19.7 19.8 19.7 19.8 19.7 19.8 19.7 19.8 19.7 19.8		2000	17.5	22.9	21.7	18.3	22.8		18.8	19.3	19.8		19.3	19.9
2002 11.60 92.41 20.8 11.3 21.6 11.3 12.6 10.6 17.7 18.5 -20.0 10.8 22.1 2004 11.4 23.2 24.2 24.2 17.7 18.5 20.3 11.3 22.6 2006 11.6 22.9 21.1 20.3 12.2 21.8 10.4 21.8 11.3 22.6 2006 11.9 22.9 21.1 20.3 25.0 22.8 13.1 2.7 23.8 13.1 30.4 2.1 13.6 2.1 7.7 33.9 33.1 31.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1		2001	17.8	22.7	20.0	21.2	23.2		16.9	17.8			19.9	19.3
2003 17.1 20.6 21.0 20.7 25.2 16.6 17.2 20.8 19.8 22.1 2004 16.3 19.8 19.8 20.3 22.2 16.4 16.7 16.8 18.1 22.0 2007 16.5 22.2 22.1 20.3 15.0 22.8 18.4 16.6 22.2 22.8 18.4 16.6 22.5 22.8 19.3 18.2 23.6 18.4 16.6 22.6 22.8 19.3 13.3 32.0 33.7 23.0 23.1 23.1 23.1 23.1 23.1 23.1 23.1 33.1 30.6 33.1 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.1 33.2 33.1 33.2 33.1 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.2 33.1 33.2														
2004 11.6 20.4 20.4 20.4 21.6 17.7 16.5 20.0 17.7 16.5 20.0 17.8 22.2 2005 16.1 22.0 22.0 22.0 22.0 10.0 22.0 2														
2005 16.3 18.8 18.9 20.3 22.9 16.4 16.7 16.8 18.1 22.0 12.3 22.6 12.7 15.7 15.8 22.2 18.2 12.2 15.7 15.8 22.1 12.7 15.7 15.8 22.1 12.7 15.7 15.8 22.1 12.7 13.7 22.3 13.2 13.2 13.3 13.7 13.0 22.1 12.7 13.7 13.0 13.7 13.0 13.1 13.0 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.3 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>														
806 18.1 23.0 22.2 19.2 24.8														
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1006 19.7 22.2 21.1 20.3 25.0 23.8 18.4 18.6 26.5 22.8 20.0 19.8 in-Shell Withi 1996 31.2 31.8 31.2 31.8 31.0 22.4 18.4 32.4 31.4 31.4 32.4 31.8 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.7 31.5 31.8 32.8 31.4 31.5 31.8 31.8 32.8 31.4 31.6 32.9 31.4 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 31.6 33.4 33.6 33.4 33.6 33.4 33.6 33.4 33.6 33.4 33.6 33.4 33.6 33.4 33.6 33.6														
in-Shell (Ving) 19.9 22.9 22.0 19.3 22.3 72.3 18.2 18.5 19.6 31.1 31.2 31.8 30.2 30.7 33.0 32.8 31.1 31.5 32.4 31.3 31.3 31.5 32.4 31.3 31.1 31.2 32.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1														
In-Shell Worth (mm) 198 31.2 31.3 31.2 31.3 31.3 31.2 31.3 31.3 31.3 31.3 31.3 31.3 31.3 31.3 31.3 31.3 31.4 31.3 31.4 31.3 31.4 31.3 31.4 31.3 31.4 31.3 31.4 31.3 31.3 31.3 31.3 31.3 <td></td>														
(mm) 199 30.7 32.8 31.0 31.6														
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2020 31.7 32.9 31.8 22.8 32.4 32.2														
203 31.0 32.9 32.1 32.2 31.8 32.9 31.4 31.6						30.5			31.2	31.8			30.3	
Partial 32.1 33.1 33.1 33.1 33.4 33.4 33.4 33.4 33.4 33.4 33.4 2005 31.0 31.1 33.0 33.4		2002	31.7	32.9	31.8	29.8	32.8		33.0	32.9	31.7		31.0	31.7
Part Start		2003	31.0	32.9	32.1	32.4	33.2		31.7	31.5	31.6		30.8	32.3
Part Str Str< Str Str< Str< Str		2004	32.1	32.5	31.5	31.8	32.8		32.9	33.4	31.5		30.8	33.4
Part of the second se		2005	31.4	31.1	30.7	31.6	32.5		31.7	32.2			31.4	32.4
end 31.0 31.7 31.1 29.9 32.3 32.2 32.6 32.4 32.6 32.4 32.6 32.4 32.6 32.4 32.6 32.4 32.6 32.4 32.6 32.4 32.6 32.7 32.7 32.7 32.7 32.7 32.8 34.8 34.4 31.1 In-Shell Cross-Width 1999 30.8 31.2 31.0 31.2 33.2 31.4 31.6 30.8 31.8 32.7 32.6 33.1 32.6 33.1 32.6 33.1 32.6 33.1 32.6 33.1 32.6 33.1 32.6 33.8 31.0 31.1 33.6 33.1 32.2 32.8 34.1 31.0 31.0 33.1 32.2 32.8 34.1 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4 31.4														
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In-Shell Lerges-Width 1998 31.2 30.9 30.5 31.2 32.2 31.4 31.6 30.8 31.4 31.6 30.8 31.7 32.0 (mm) 1998 30.8 32.0 33.0 33.2 32.4 31.6 31.6 31.6 31.6 31.6 31.8 32.0 31.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 33.4 31.0 31.6 31.6 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1 32.2 33.1														
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Part 30.1 32.0 31.1 30.6 32.2 31.1 32.6 31.8 32.4 2003 30.6 33.1 32.2 32.3 33.1 31.4 32.6 31.8 31.3 32.4 31.0 31.4 31.6 31.6 33.4 31.0 31.4 33.4 31.0 31.6 33.4 33.6 32.7 32.4 33.3 32.0 32.5 37.7 38.4 33.6 33.7 38.4 33.6 33.1 35.4 35.6 36.7 37.7 37.7 38.4 33.6 33.6 36	(mm)													
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2006 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9		2004	32.0	32.6		31.3	32.8		33.1	33.4	31.0		30.9	33.1
2007 31.6 32.7 32.0 30.9 32.8 34.1 32.2 31.4 34.8 31.7 31.9 2009 32.6 33.0 32.3 30.7 33.2 33.8 32.7 32.7 32.4 34.3 32.0 32.5 In-Shell Length (mm) 1998 36.2 40.0 40.8 39.6 40.9 38.1 38.7 37.3 38.4 39.6 2000 35.8 39.4 43.0 37.4 38.2 37.6 36.8 37.3 38.7		2005	30.9	31.1	31.7	31.4	32.1		31.4	31.5	30.1		31.6	32.6
2008 32.0 32.0 31.6 31.5 33.4 34.1 32.2 31.9 32.5 34.5 32.2 32.1 In-Shell Length (mm) 1998 37.2 40.0 40.8 39.6 40.9 38.1 38.5 37.3 38.4 38.5 37.3 38.1 38.5 37.3 38.7 39.5 2001 35.5 38.7 41.6 38.4 38.9 38.1 38.5 37.6 38.7 38.6 2002 36.1 39.7 41.4 37.0 38.7 36.6 36.0 37.6 38.0 39.1 2003 35.7 39.7 41.7 40.9 40.4 36.0 37.6		2006		33.9	32.9	32.2	34.0		32.6	33.0	32.9		33.1	34.0
2008 32.0 32.0 31.6 31.5 33.4 34.1 32.2 31.9 32.5 34.5 32.2 32.1 In-Shell Length (mm) 1998 37.2 40.0 40.8 39.6 40.9 38.1 38.5 37.3 38.4 38.5 37.3 38.1 38.5 37.3 38.7 39.5 2001 35.5 38.7 41.6 38.4 38.9 38.1 38.5 37.6 38.7 38.6 2002 36.1 39.7 41.4 37.0 38.7 36.6 36.0 37.6 38.0 39.1 2003 35.7 39.7 41.7 40.9 40.4 36.0 37.6		2007	31.6	32.7	32.0	30.9	32.8	34.1	32.4	32.3	31.4	34.8	31.7	31.9
2009 32.6 33.0 32.3 30.7 33.2 33.8 32.7 32.7 32.4 43.4 32.0 32.5 In-Shell Length (mm) 1999 36.9 40.4 42.6 39.6 38.1 38.5 37.7 38.7 39.5 2000 35.8 39.4 43.0 37.4 38.2 37.6 38.6 37.7 38.4 37.7 38.4 37.7 38.4 37.7 38.4 37.7 38.2 37.5 38.8		2008		32.9	31.6		33.4	34.1	32.2	31.9	32.5	34.5	32.2	32.1
In-Shell Length (mm) 1998 37.2 40.0 40.8 39.6 40.9														
(mm) 1999 36.9 40.4 42.6 38.2 39.6 38.1 38.5 37.3 38.7 38.5 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4 38.3 2002 36.1 39.7 41.7 40.9 40.4 38.2 37.6 36.8	In-Shell Length													
2000 35.8 39.4 43.0 37.4 38.2 37.6 36.9 37.3 38.3 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4 38.3 2002 36.1 39.7 41.7 40.9 40.4 36.2 37.5 36.8 38.0 39.1 2004 36.4 39.6 41.3 39.3 39.7 37.0 37.1 36.4 38.0 39.1 37.0 37.0 36.0 38.0 38.1 39.3 38.7 37.1 36.4 38.0 38.6 37.7 38.0 38.6 37.7 39.3 38.6 38.7 38.1 40.2 38.0 37.4 37.3 36.4 36.7 38.9 38.4 38.7 38.0 38.7 38.0														
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2006 36.3 38.4 41.6 40.3 38.8 37.2 37.0 36.0 38.0 38.4 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 37.7 39.3 38.7 2008 37.4 39.2 43.4 39.3 40.9 38.0 37.4 37.7 39.3 38.4 39.7 2008 37.4 39.2 43.4 39.3 40.9 38.0 37.4 37.7 39.3 38.4 39.7 2009 38.0 39.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 98.2 97.3 2001 99.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 97.3 2001 94.3 98.8 98.9 98.8 97.0 97.3 97.7 96.4 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>														
2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 38.7 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 37.7 38.0 37.7 38.9 36.8 37.7 2008 37.4 37.4 37.6 37.7 38.9 38.4 39.7 2009 38.0 39.9 43.5 38.1 40.2 38.0 38.6 37.7 38.9 38.4 39.7 Percent Sound 1998 94.4 91.4 99.8 89.5 94.4 96.3 96.4 95.2 95.2 97.3 2000 96.6 96.7 93.1 97.8 96.4 97.3 96.3 98.0 98.2 97.3 2001 94.4 96.8 97.2 96.1 97.8 99.0 98.4 95.7 97.0 98.4														
2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.7 2008 37.4 39.2 43.4 39.3 40.9 38.0 37.4 37.6 37.7 38.9 38.4 39.7 2009 38.0 39.9 43.5 38.1 40.2 38.0 37.4 37.6 37.7 38.9 37.9 37.9 40.1 Kernel Grade - 1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 95.2 Percent Sound 1999 96.1 98.1 97.1 98.3 96.4 97.3 97.5 97.4 98.8 97.0 97.3 98.1 91.4 98.9 98.3 98.7 97.0 99.2 98.1 91.8 98.0 99.7 98.0 99.7 98.0 9														
2008 37.4 39.2 43.4 39.3 40.9 38.0 37.4 37.6 37.7 39.3 38.4 39.7 Kernel Grade - 1988 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 95.2 95.2 95.2 95.2 95.2 97.3 30.0 37.4 37.9 36.4 96.3 97.9 96.4 97.3 97.7 96.4 98.2 97.3 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 97.3 2001 94.3 98.8 98.8 97.4 96.8 93.3 98.3 97.0 96.3 98.0 95.1 97.0 97.1 99.1 97.1 98.0 99.1 98.0 99.1 98.0 99.1 97.9 99.1 97.9 99.1														
2009 38.0 39.9 43.5 38.1 40.2 38.0 38.6 38.2 37.7 38.9 37.9 40.1 Kernel Grade - 1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 95.2 95.2 Percent Sound 1999 96.1 98.1 97.1 96.3 97.7 96.4 98.2 97.3 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 97.0 96.8 93.3 98.3 98.4 98.0 97.0 97.0 98.3 99.1 98.0 98.1 98.0 98.1 98.0 98.1 98.0 98.1 99.0 98.1 97.0 99.4 98.5 97.0 91.8 96.0 99.1 98.1 99.0 90.0														
Kernel Grade - Percent Sound 1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 95.2 Percent Sound 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 97.3 2000 95.6 96.7 93.1 97.8 96.4 97.3 96.3 96.4 98.2 97.3 2001 94.3 98.8 97.4 97.3 96.4 98.7 97.5 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 96.8 93.3 98.1 99.0 96.8 96.7 96.9 98.4 97.7 97.0 98.4 99.2 97.7 98.0 97.7 95.9 2007 96.5 98.1 99.1 97.7 95.9 2008 93.5			37.4	39.2	43.4	39.3	40.9	38.0	37.4	37.6	37.7	39.3	38.4	39.7
Percent Sound 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 97.3 2000 95.6 96.7 93.1 97.8 96.4 97.3 96.3 98.0 98.2 97.3 2001 94.3 98.8 98.9 98.7 96.1 97.3 96.3 98.0 98.7 98.7 96.1 97.3 96.3 98.3 98.7 96.1 97.3 96.1 91.8 97.0 98.6 97.0 99.4 98.3 99.1 98.0 99.1 98.0 99.1 98.0 99.1 98.0 99.1 98.0 99.1 98.0 99.1 98.0 99.7 96.5 98.1 99.1 99.1 99.1 99.1 99.1 99.1 99.1 99.1 99.1		2009	38.0	39.9	43.5	38.1	40.2	38.0	38.6	38.2	37.7	38.9	37.9	40.1
Percent Sound 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 97.3 2000 95.6 96.7 93.1 97.8 96.4 97.3 96.3 98.0 98.2 97.3 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 98.7 96.1 97.3 98.3 98.3 98.4 98.0 98.7 97.6 99.2 96.1 91.8 99.1 98.0 98.7 97.0 99.4 98.3 99.1 98.0 99.7 98.4 99.5 97.0 98.4 99.5 97.0 98.4 99.5 97.0 98.1 99.1 98.7 98.1 99.7 98.1 99.1 99.1 99.1 99.1 99.1 99.1 99.1	Kernel Grade -	1998	94.4	91.4	99.8	89.5	94.4			97.9	94.3		95.2	
2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 97.3 2001 94.3 98.8 98.9 98.8 97.2 96.1 97.3 96.3 98.0 98.7 97.5 2002 96.4 96.8 98.6 97.2 96.1 99.4 98.3 98.3 96.4 98.6 97.5 96.4 98.5 98.6 97.2 99.4 98.3 98.1 99.1 97.0 96.8 96.7 96.9 99.4 99.5 97.0 98.4 99.5 97.0 98.4 99.5 97.0 98.1 99.1 97.7 98.9 97.0 98.2 97.7 97.9 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 98.1 99.1 93.5 98.7 91.7 91.0	Percent Sound	1999	96.1	98.1	97.1	98.3	98.1		95.0	98.3	96.4		98.2	97.3
2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 97.5 2002 96.4 96.8 98.6 97.2 96.1 99.2 96.1 91.8 97.0 96.8 93.3 98.3 96.9 95.1 2004 97.7 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 96.7 2005 96.7 96.9 99.8 95.7 97.0 91.8 96.0 99.1 98.2 97.7 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 97.7 91.9 94.5 96.5 98.5 93.5 93.5 99.0 94.5 96.5 98.1 99.1 93.5 90.0 97.7 91.0 1.010 1.01 1.01 99.0 <td< td=""><td></td><td>2000</td><td>95.6</td><td>96.7</td><td>93.1</td><td>97.8</td><td>96.4</td><td></td><td>97.3</td><td>97.7</td><td>96.4</td><td></td><td>98.2</td><td>97.3</td></td<>		2000	95.6	96.7	93.1	97.8	96.4		97.3	97.7	96.4		98.2	97.3
2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 96.8 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 95.1 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 97.7 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 97.7 2007 96.5 99.4 99.5 96.0 98.5 98.5 93.5 98.7 99.1 99.2 99.0 99.0 94.5 98.1 99.1 93.5 93.5 98.7 91.7 91.0 94.5 96.5 98.1 99.1 93.5 93.0 97.7 91.0 94.5 96.5 98.1 99.1 93.5 93.0 97.7 91.0														
2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 95.1 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 96.7 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 98.4 99.5 97.0 98.4 99.5 97.0 98.4 99.5 97.0 97.9 97.9 97.9 99.0 99.1 97.7 91.8 96.0 98.5 98.5 98.5 98.5 98.5 98.5 98.5 98.1 99.1 97.7 95.9 2008 93.5 98.7 91.7 97.6 99.2 99.0 94.5 96.5 98.1 99.1 97.7 91.0 Nuts Set Per Tree 1998 1,221 1,326 1,899 1,878 1,076 8														
2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 96.7 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 97.0 99.1 97.0 98.4 99.5 97.0 98.4 99.5 97.0 98.4 99.5 99.0 99.0 99.1 98.2 97.7 2007 96.5 99.4 99.5 96.0 98.5 99.3 98.5 99.0 99.0 94.5 96.5 98.1 99.1 99.1 99.1 99.1 93.5 98.7 91.0 93.5 98.6 99.2 98.1 99.2 98.8 99.7 96.3 97.7 91.0 Nuts Set Per Tree 1998 1,212 1,360 1,369 2,818 2,241 1,474 1,566 1,379 1,504 1,566														
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200996.998.699.298.397.398.199.298.899.796.397.791.0Nuts Set Per Tree19981,2211,3061,3801,5121,4571,1701,6221,3471,5041,29019991,0731,5401,3692,8182,2411,0769891,2101,3741,53620001,6331,2121,3251,8991,8781,6968861,1671,5661,37920011,5101,7411,7181,8192,0491,4431,3421,5601,6861,61720021,5341,3151,2462,0721,9611,2461,2591,4461,6111,64220031,4211,5941,8581,1951,7351,9951,6791,0211,5441,37720041,5041,3811,2232,1082,0461,1521,1721,4881,4711,16720051,3231,7831,6391,2671,7291,4431,4291,6671,2511,25620061,1291,3861,6872,0041,8831,4431,4291,6671,2661,31920061,1291,3861,6872,0041,8831,4431,4291,667														
Nuts Set Per Tree 1998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1,290 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1,536 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1,379 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,611 1,642 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1,377 2004 1,504 1,381 1,223 2,108 2,046 1,152 1,172 1,488 1,471 1,167 2004 1,504 1,381 1,267 1,729														
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20041,5041,3811,2232,1082,0461,1521,1721,4881,4711,16720051,3231,7831,6391,2671,7291,4431,4291,0671,2511,25620061,1291,3861,6872,0041,8831,3451,1724621,2661,31920071,8751,0691,7311,5691,7381,1971,2021,7102,0589631,1831,64020081,6881,4252,2711,3431,4981,1561,3951,3711,1271,4381,2351,71220091,6911,3461,5122,2202,0011,4191,3061,0661,8931,2811,7551,074		2003	1,421	1,594	1,858	1,195	1,735		1,995	1,679	1,021		1,544	1,377
20051,3231,7831,6391,2671,7291,4431,4291,0671,2511,25620061,1291,3861,6872,0041,8831,3451,1724621,2661,31920071,8751,0691,7311,5691,7381,1971,2021,7102,0589631,1831,64020081,6881,4252,2711,3431,4981,1561,3951,3711,1271,4381,2351,71220091,6911,3461,5122,2202,0011,4191,3061,0661,8931,2811,7551,074		2004		1,381	1,223	2,108	2,046		1,152	1,172	1,488		1,471	
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2009 1,691 1,346 1,512 2,220 2,001 1,419 1,306 1,066 1,893 1,281 1,755 1,074														
	1/ Reginning in 2007 +									.,000	1,000	.,_01	.,, 00	1,014

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	U.S. Standards Size Intervals 1/																														
District and Variety							2006							2007 2/						2008							2009				
	Mth Jmb Lge Med Bby Oth				Mth	Jmb	Lge	Med	Bby	Oth							Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth			
														Perc	ent o	of to	tal 3/	/	·						i						
DISTRICTS:																															
Coast	1	71	15	9	4	0	0	30	15	18	26	11	9	30	17	24	20	0	0	49	18	17	15	0	0	25	13	25	37	0	
Sacramento Vly.	1	47	19	15	12	3	0	38	11	16	28	5	1	50	16	17	15	1	0	68	15	11	5	0	0	66	14	11	8	0	
San Joaquin Vly.	1	56	20	17	6	0	2	68	16	9	5	0	1	63	16	11	8	0	1	66	16	10	6	1	1	70	14	9	5	0	
VARIETIES:																															
Ashley	1	47	17	17	16	1	0	46	19	15	18	2	5	31	16	23	21	3	0	60	18	15	7	1	0	66	13	11	10	0	
Chandler	0	42	23	21	10	3	1	48	15	14	19	3	1	54	17	15	13	1	0	63	19	11	6	0	0	67	16	10	6	0	
Eureka	0	29	37	21	11	1	1	56	34	4	5	0	0	48	28	9	16	0	0	34	40	19	7	0	0	46	40	9	5	0	
Franquette	0	53	19	17	11	0	0	21	15	19	34	12	0	23	17	30	28	1	0	43	18	23	15	0	0	27	18	25	31	0	
Hartley	1	64	14	9	7	2	0	52	10	14	20	4	1	63	14	13	9	0	0	83	9	4	3	1	0	79	11	6	4	0	
Howard													1	55	19	15	10	0	0	58	21	15	6	0	0	61	18	12	9	0	
Payne	1	51	19	19	8	1	0	72	16	5	7	1	0	60	19	12	8	1	1	73	14	8	4	0	2	70	13	9	6	0	
Serr	2	60	16	11	11	0	2	69	11	8	10	1	1	69	11	10	8	1	0	73	11	9	5	1	0	74	13	7	6	0	
Tehama	0	45	19	18	15	1	1	52	14	12	17	5	0	38	26	21	14	1	0	74	10	10	6	0	0	62	19	10	9	0	
Tulare													8	76	7	6	3	0	7	82	5	4	2	0	5	80	6	4	3	0	
Vina	4	32	27	21	12	1	0	39	18	18	20	4	0	32	21	21	23	2	1	44	24	19	12	0	0	31	21	27	20	1	
Other	2	57	15	12	11	1	4	54	10	12	16	3	0	29	18	22	30	0	2	37	15	29	16	1	3	42	13	18	23	1	
STATE	1	51	19	16	10	2	1	51	13	13	18	3	1	55	16	15	12	1	1	67	16	11	6	0	1	66	14	11	8	0	
Number of																															
Shells Measured	d 12,736								13,4	491					13,	219					13,	485					14,	625			

1/ Sizes used are as follows: Mammoth -- Larger than 96/64" in diameter; Jumbo -- 80/64" to 96/64"; Large -- 76/64" to 80/64" for Eureka variety, 77/64" to 80/64" for all other varieties; Medium -- 73/64" to 76/64" for Eureka, 73/64" to 77/64" for all others; Baby -- 60/64" to 73/64"; and Others -- below 60/64".

Beginning in 2007, the Howard and Tulare varieties were taken out of "Other" and published separately.
Percentage distributions, based upon nut samples taken in the field, may not equal 100 percent due to rounding.

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

> VIC TOLOMEO, Director SARAH HOFFMAN – KELLY KRUG, Deputy Directors

> > DOUG FLOHR – JENNIFER VAN COURT Statisticians – Estimates Group

USDA, NASS, California Field Office publications are available free-of-charge on the Internet at: www.nass.usda.gov/ca