

United States Department of Agriculture National Agricultural Statistics Service

2007 California Walnut Objective Measurement Survey Report



Cooperating with the California Department of Food and Agriculture

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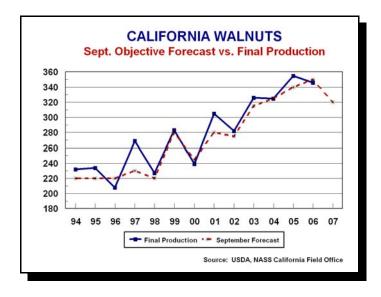
Released: September 5, 2007, 12:00 Noon PDT

WALNUT PRODUCTION FORECAST DOWN

The 2007 California walnut production is forecast at 320,000 tons, down 8 percent from 2006's production of 346,000 tons. This forecast is based on the 2007 Walnut Objective Measurement (O.M.) Survey, which was officially conducted August 1 through August 25, 2007. There were a few samples completed before August 1 for training and scheduling purposes.

The 2007 Walnut O.M. Survey utilized a total of 665 blocks with two sample trees per block. Survey data indicated an average nut set of 1,357 per tree, down 7 percent from 2006's average of 1,458. The Hartley nut set was down 8 percent; Chandler was down 23 percent; Serr was up 46 percent; Vina was down 7 percent from 2006. Percent of sound kernels in-shell was 98.4 percent Statewide. In-shell weight per nut was 20.3 grams, while the average in-shell suture measurement was 31.9 millimeters. The average length in-shell was 37.6 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
- Kernel grade
- 6. Weight of nut in-shell

DATA RELIABILITY

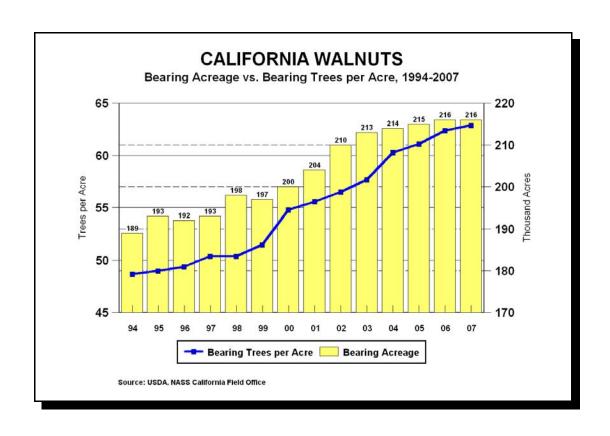
The 80 percent confidence interval is from 298,000 tons to 342,000 tons. This means there is an 80 percent chance the 2007 production will fall within this range.

California English Walnut Acreage, Production, Price And Value In-Shell

Year	Bearing Acres	Total Production	Per Bearing Acre	Price Per Ton	Total Value
real	bearing Acres	To	ons	Doll	ars
1987	176,000	247,000	1.40	984.00	243,048,000
1988	177,000	209,000	1.18	922.00	192,698,000
1989	179,000	229,000	1.28	1,070.00	245,030,000
1990	181,000	227,000	1.25	1,040.00	236,080,000
1991	181,000	259,000	1.43	1,060.00	274,540,000
1992	178,000	203,000	1.14	1,410.00	286,230,000
1993	185,000	260,000	1.41	1,390.00	361,400,000
1994	189,000	232,000	1.23	1,030.00	238,960,000
1995	193,000	234,000	1.21	1,400.00	327,600,000
1996	192,000	208,000	1.08	1,580.00	328,640,000
1997	193,000	269,000	1.39	1,430.00	384,670,000
1998	198,000	227,000	1.15	1,050.00	238,350,000
1999	197,000	283,000	1.44	886.00	250,738,000
2000	200,000	239,000	1.20	1,240.00	296,360,000
2001	204,000	305,000	1.50	1,120.00	341,600,000
2002	210,000	282,000	1.34	1,170.00	329,940,000
2003	213,000	326,000	1.53	1,160.00	378,160,000
2004	214,000	325,000	1.52	1,390.00	451,750,000
2005	215,000	355,000	1.65	1,570.00	557,350,000
2006 a/	216,000	346,000	1.60	1,600.00	553,600,000
2007 <u>b</u> / <u>c</u> /	216,000	320,000	1.48		

a/ Price Per Ton and Total Value are July 2007 preliminary data.

c/ Price Per Ton and Total Value preliminary data will be released July 2008.



b/ Bearing years include plantings of the following: Chandler, Chico, Howard, Tulare (2003 & 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 (2002 and Earlier); Franquette, Franquette Scharsch, Mayette, Placentia, Poe, Willsons/Willsons Wonder, Woodland (2000 & Earlier); all other varieties not specified (2001 & Earlier).

Walnut Objective Measurement Survey Data, By District

	Walr	ut Objective Measurem	ent Survey Data, By Distric	t	
Measurement	Year	Coast <u>1</u> /	Sacramento Valley 2/	San Joaquin Valley 3/	State <u>4</u> /
In-Shell Weight (gm)	1996	20.0	24.4	19.9	22.1
	1997	20.9	23.7	22.2	22.9
	1998	21.2	22.4	20.3	21.4
	1999	21.0	24.9	19.5	23.0
	2000	19.7	22.4	19.7	21.2
	2001	21.9	23.7	18.1	21.5
	2002	19.1	22.9	20.5	22.0
	2003	23.0	24.6	19.2	22.4
	2004	22.0	24.1	19.7	22.5
	2005	23.1	21.3	18.1	20.0
	2006	19.8	24.1	21.0	22.7
	2007	19.1	21.4	18.7	20.3
In-Shell Width (mm)	1996	31.4	32.5	32.2	32.3
	1997	32.3	33.0	31.1	32.3
	1998	31.4	32.2	31.5	31.9
	1999	31.2	32.6	31.6	32.2
	2000	31.5	32.4	32.1	32.2
	2001	31.7	31.8	31.6	31.7
	2002	31.4	32.2	32.7	32.4
	2003	32.1	32.8	32.0	32.5
	2004	31.4	32.5	32.7	32.6
	2005	32.9 30.5	31.4	32.1	31.7
	2006 2007	29.5 31.6	30.3 31.5	32.9 32.4	31.4 31.9
In-Shell Cross-Width (mm)	1996	31.4	31.5	32.5	31.9
in-onen oross-vvidur (min)	1997	32.3	33.2	31.9	32.6
	1998	31.2	32.1	31.5	31.8
	1999	31.6	33.3	31.8	32.7
	2000	31.3	33.0	32.6	32.8
	2001	31.1	31.7	31.5	31.6
	2002	31.0	32.6	33.1	32.7
	2003	31.7	32.7	32.0	32.4
	2004	31.5	32.2	33.1	32.5
	2005	32.2	31.3	32.0	31.6
	2006	32.3	34.0	33.2	33.6
	2007	31.6	32.5	32.9	32.6
In-Shell Length (mm)	1996	38.4	39.4	38.7	39.0
	1997	38.2	39.4	37.6	38.6
	1998	39.1	40.0	39.0	39.5
	1999	38.3	39.7	38.9	39.4
	2000	37.4	38.2	38.4	38.2
	2001	38.6	38.5	37.9	38.3
	2002 2003	37.5	38.4 39.7	38.8	38.5 39.1
	2003	38.8 37.7	39.7 39.1	38.3 38.7	39.1 39.0
	2004	42.0	38.4	38.7	38.6
	2005	38.6	39.6	39.5	39.5
	2007	37.4	37.3	38.1	37.6
Kernel Grade – Percent Sound	1996	92.6	93.8	95.3	94.4
	1997	97.8	97.4	97.3	97.3
	1998	79.9	93.2	98.3	94.4
	1999	96.8	98.2	97.4	97.9
	2000	98.0	96.7	97.0	96.9
	2001	98.3	97.5	98.1	97.8
	2002	96.0	95.3	98.7	96.3
	2003	95.5	95.4	99.3	97.0
	2004	97.6	97.7	99.2	98.2
	2005	97.4	96.5	98.8	97.5
	2006	98.1	98.5	97.2	98.0
Nuto Cat Dar Trac	2007	97.8	97.9	99.2	98.4
Nuts Set Per Tree	1996 1997	1,362 1,128	1,836 2,233	1,497 1,439	1,630 1,753
	1997	1,128	2,233 1,654	1,439	1,753
	1996	1,355	2,180	1,250	1,709
	2000	1,195	1,812	1,204	1,483
	2000	937	2,020	1,478	1,719
	2001	1,254	1,982	1,142	1,719
	2002	640	1,846	1,429	1,599
	2003	924	1,943	1,168	1,526
	2005	818	1,854	1,372	1,575
	2006	1,316	1,660	1,267	1,458
	2007	1,221	1,548	1,162	1,357
1/ Coast includes: Contra Costa, Lake, M					

Coast includes: Contra Costa, 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.

Walnut Objective Measurement Survey Data, By Variety

In-Shell Weight					•	ective Measi	1	1 1			1		.	1
(gm)	Measurement	Year	Ashley	Chandler	Eureka	Franquette	Hartley	Howard	Payne	Serr	Tehama	Tulare	Vina	Other <u>1</u> /
(gm)	In-Shell Weight	1996	20.0	23.3	20.6	20.1	24.8		18 1	19.8	21.2		20.1	21.1
1998														22.2
1999	(giii)													
2000														19.9
2001 17.8 22.7 20.0 21.2 23.2 16.9 17.8 21.7 19.9														20.9
2002 18.0 24.1 20.8 18.3 23.6 19.3 19.4 19.6 20.0 20.0 20.0 17.1 23.6 21.0 23.7 25.2 16.6 17.2 20.6 19.8 20.0 20.0 18.4 23.4 20.4 22.1 24.5 17.7 18.5 20.3 19.1 20.0 20.0 18.4 23.4 20.4 22.1 24.5 17.7 18.5 20.3 19.1 20.0 2			17.5						18.8		19.8		19.3	19.9
2002 18.0 24.1 20.8 18.3 22.6 19.3 19.4 19.6 20.0 20.0 20.0 20.0 18.4 22.4 22.4 22.7 22.5 16.6 17.2 20.5 19.8 20.0 20.0 18.4 22.4 22.4 22.1 22.5 16.6 17.2 20.5 19.8 20.0		2001	17.8	22.7	20.0	21.2	23.2		16.9	17.8	21.7		19.9	19.3
2003 17.1 23.6 21.0 23.7 25.2 16.6 17.2 20.8 19.8 20.0 20.0 18.4 23.4 20.4 22.1 24.5 17.7 18.5 20.3 19.1 20.0 18.3 23.0 22.3 18.8 18.9 20.3 22.9 16.4 16.7 16.6 18.1 20.0 20.0 20.1 21.8 22.2 13.2 21.8 22.2 21.3 20.0 20.4 21.8 22.2 21.3 20.0 20.4 21.8 22.2 13.2 20.0 20.0 20.4 21.8 22.2 21.3 20.0		2002	18.0	24.1		18.3	23.6		19.3	19.4	19.6		20.0	21.0
2004 18.4 23.4 20.4 22.1 24.5 17.7 18.5 20.3 19.1														22.1
2006 16.3 19.8 18.9 20.3 22.9 16.4 16.7 16.6 18.1 20.0 20.0 20.1 21.3 22.8 18.2 20.0 20.1 21.5 21.0 18.6 22.2 22.5 17.2 15.7 15.8 22.2 18.2 21.0 20.0 20.1 21.3 20.0 20.1 21.5 21.0 18.6 22.2 22.5 17.2 15.7 15.8 22.2 18.2 20.0 20														
														22.2
In-Shell Width 1996 31.7 32.4 31.6 31.1 33.0 32.2 33.0 32.3 30.9														20.0
In-Shell Width														22.6
(mm)		2007	15.8		21.0	18.6	22.2	22.5		15.7	16.8	22.2	18.2	17.5
(mm)	In-Shell Width	1996	31.7	32.4	31.6	31.1	33.0		32.2	33.0	32.3		30.9	31.2
1998 31.2 31.8 30.2 30.7 33.0 31.4 32.1 31.2 30.6 1999 30.7 32.8 30.4 30.6 32.8 32.3 33.1 31.1 30.9 2001 30.3 32.0 32.0 30.5 32.3 31.2 31.8 31.3 31.1 30.9 2002 31.7 32.9 31.8 29.8 32.8 33.0 32.9 31.7 31.0 2003 31.0 32.9 32.1 32.4 33.2 31.7 31.5 31.6 30.8 2004 32.4 32.5 31.5 31.8 32.8 33.0 32.9 31.7 31.0 2005 30.1 32.9 31.7 31.1 30.8 2006 31.0 31.7 31.1 30.8 32.8 32.9 33.4 31.5 30.8 2007 31.0 31.7 31.1 29.9 32.3 32.0 32.1 32.5 31.0 30.8 In-Shell Cross-Width 396 31.7 31.1 29.9 32.3 32.0 32.1 32.5 31.0 34.5 30.3 In-Shell (mm) 497 31.9 33.0 32.2 31.3 33.2 32.2 32.1 1998 30.8 34.0 31.0 31.2 33.2 31.4 31.6 30.8 30.8 1999 30.8 34.0 31.0 31.2 33.2 31.4 31.6 30.8 30.8 2000 30.1 32.0 30.5 32.2 33.3 32.0 31.4 31.6 30.8 30.6 2001 30.1 32.0 30.5 32.2 33.3 32.0 31.4 31.6 30.8 31.5 2003 30.6 33.1 32.1 30.5 30.2 31.4 31.6 30.8 30.8 2004 30.1 32.0 30.5 31.2 32.5 31.4 31.6 30.8 31.5 2005 30.1 32.0 30.5 31.2 33.2 31.4 31.6 30.8 31.5 2006 30.1 32.0 31.1 30.6 32.2 31.4 31.6 30.8 31.5 2007 31.8 33.7 32.2 32.3 33.1 31.2 30.9 30.6 2008 30.8 30.1 31.1 30.6 32.2 31.4 31.5 30.9 30.6 2009 30.8 30.1 31.1 30.6 32.2 31.4 31.5 30.9 30.6 2001 30.1 32.0 31.1 30.6 32.2 31.1 31.2 30.8 31.6 31.5 2004 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 30.5 3	(mm)	1997	31.8	32.3	30.7	30.6	33.3		31.5	33.3	32.0		31.0	30.8
1999 30.7 32.8 30.4 31.0 32.8 31.5 32.6 30.9 30.4	` ,		31.2											31.1
2000 31.0 32.8 31.3 30.6 32.8 32.3 33.1 31.1 30.9 30.9 2001 31.7 32.9 31.8 29.8 32.8 33.0 32.9 31.7 31.0 31.0 2003 31.0 32.9 31.5 31.8 29.8 32.8 33.0 32.9 31.6 30.8 2004 32.1 32.5 31.5 31.8 32.8 32.9 33.4 31.5 30.8 2005 31.4 31.1 30.7 31.6 32.5 31.7 31.5 31.6 30.8 31.5 31.6 30.8 31.5 31.6 30.8 31.5 31.6 32.5 31.7 32.2 31.0 31.4 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.8 31.5 30.5 31.0 31.5 31.6 32.5 32.1 31.5 32.1 31.5 32.1														31.2
2001 30.3 32.0 32.0 30.5 32.3 31.2 31.8 31.3 30.3														31.0
2002 31.7 32.9 31.8 22.8 32.8 33.0 32.9 31.7 31.0 2004 32.1 32.2 32.4 33.2 31.5 31.5 31.6 30.8 2005 31.4 31.1 30.7 31.6 32.5 32.5 31.7 31.5 31.6 30.8 2006 31.4 31.1 30.7 31.6 32.5 31.7 32.2 31.0 31.4 30.5 30.8 30.9 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.9 30.8														
2003 31.0 32.9 32.1 32.4 33.2 31.7 31.5 31.6 30.8														30.7
2004 32.1 32.5 31.5 31.8 32.8 32.9 33.4 31.5 30.8 2005 31.4 31.1 30.7 31.6 32.5 31.7 32.2 31.0 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.6														31.7
2004 32.1 32.5 31.5 31.8 32.8 32.9 33.4 31.5 30.8 2005 31.4 31.1 30.7 31.6 32.5 31.7 32.2 31.0 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 31.4 30.5 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.8 30.6	 		31.0	32.9		32.4					31.6		30.8	32.3
2005 31.4 31.1 30.7 31.6 32.5 31.7 32.2 31.0 31.4 30.5	 		32.1		31.5	31.8	32.8		32.9	33.4	31.5		30.8	33.4
2006	 													32.4
In-Shell Cross-Width Mathematics Mathem	.													32.1
In-Shell Cross-Width 1996	 													30.3
(mm)	In Chall Crass Midth													
1998 31.2 30.9 30.5 31.2 32.5 31.4 31.6 30.8 30.8 1999 30.8 34.0 31.0 31.2 33.2 31.4 31.9 30.8 31.5 2000 31.2 33.9 32.0 30.5 33.2 31.4 31.9 30.8 31.5 2001 30.1 32.0 31.1 30.6 32.2 31.1 30.6 32.2 31.1 2002 31.8 33.7 32.7 30.1 32.9 33.1 32.6 31.8 31.8 2003 30.6 33.1 32.2 22.3 33.1 31.2 30.6 31.6 31.3 2004 32.0 32.6 32.3 31.3 32.8 33.1 33.4 31.0 30.9 2005 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 30.1 2006 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1 2007 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 In-Shell Length 1996 37.0 39.4 41.4 38.6 40.0 37.8 37.3 37.6 38.8 (mm) 1997 36.2 39.2 41.0 37.8 39.5 36.6 37.4 37.2 38.1 1998 36.9 40.4 42.6 38.2 39.6 38.1 38.5 37.7 37.7 38.4 2000 35.8 39.4 41.6 38.2 39.6 38.1 38.5 37.6 36.9 37.3 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.6 37.6 37.4 2002 36.1 39.7 41.4 37.0 38.7 38.9 37.0 36.6 37.8 Ekernel Grade - 196 92.3 39.5 41.3 39.3 39.7 37.0 36.6 38.0 Ekernel Grade - 1996 92.3 95.1 93.4 98.8 95.1 96.5 97.0 96.7 97.5 Percent Sound 1997 96.2 97.8 94.9 96.6 98.1 96.5 97.0 96.7 97.5 Nuts Set Per Tree 1996 1.353 1.659 1.296 1.295 1.446 99.9 99.1 99.2 96.1 98.1 99.1 99.1 99.0 90.1 99.8 99.8 99.7 97.0 99.2 99.1 99.1 99.1 99.1 99.0 90.1 99.8 99.8 99.7 97.0 99.2 99.1 99.2 99.1 99.1 99.2 99.1 99.1 99.2 99.1 99.1 99.2 99.1 99.2 99.1 99.1 99.2 99.1 99.2 99.1														32.3
1999 30.8 34.0 31.0 31.2 33.2 31.4 31.9 30.8 31.5	(mm)													32.0
2000 31.2 33.9 32.0 30.5 33.2 32.7 32.6 31.6 32.0 2001 30.1 32.0 31.1 30.6 32.2 31.0 31.2 30.9 30.6 32.0 2002 33.8 33.7 32.7 30.1 32.9 33.1 32.6 31.8 31.8 33.7 32.7 30.1 32.9 33.1 32.6 31.6 31.3 32.8 33.1 32.6 31.6 31.3 32.0 32.1 33.1 32.6 33.1 32.6 31.6 31.3 32.8 33.1 33.4 31.0 31.0 31.2 2005 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 31.6 32.7 32.0 32.2 34.0 32.6 33.0 32.9 32.2 34.0 32.6 33.0 32.9 33.1 33.4 31.5 30.1 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 31.4 32.1 37.8 37.3 37.6 38.8 31.7 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 37.6 38.8 38.8 37.3 37.6 38.8 37.4 37.2 38.1 38.8 37.4 37.2 38.1 38.8 37.4 37.2 38.1 38.8 37.4 37.2 38.1 38.4 38.9 36.6 37.4 37.2 38.4 38.9 37.0 36.4 37.2 38.4 38.9 37.0 36.4 37.2 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.3 37.6 37.5 38.8 38.0 37.7 37.7 38.1 38.0 37.7 37.7 38.0 37.6 37.8			31.2	30.9						31.6			30.8	31.7
2001 30.1 32.0 31.1 30.6 32.2 31.0 31.2 30.9 30.6 31.8 2003 31.8 33.7 32.7 30.1 32.9 33.1 32.6 31.8 31.8 2004 32.0 32.6 32.2 32.3 33.1 31.2 30.6 31.6 31.3 20.0 32.0 32.6 32.2 32.3 33.1 31.2 30.6 31.6 31.3 32.2 32.3 33.1 32.4 32.1 31.4 31.5 30.1 31.6 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 31.6 31.6 31.6 31.6 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 32.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 33.6 31.4 34.8 31.7 31.6 33.1 33.5 33.1 34.8 31.7 31.6 34.1 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 31.6 31.7 31.6 31.8 31.5 30.1 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.7 31.6 31.6 31.7 31.6 31.8 31.7 31.6 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.8 31.7 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7		1999	30.8	34.0	31.0	31.2	33.2		31.4	31.9	30.8		31.5	32.0
2001 30.1 32.0 31.1 30.6 32.2 31.0 31.2 30.9 30.6 31.8 2003 31.8 33.7 32.7 30.1 32.9 33.1 32.6 31.8 31.8 2004 32.0 32.6 32.2 32.3 33.1 31.2 30.6 31.6 31.3 20.0 32.0 32.6 32.2 32.3 33.1 31.2 30.6 31.6 31.3 32.2 32.3 33.1 32.4 32.1 31.4 31.5 30.1 31.6 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 31.6 31.6 31.6 31.6 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 32.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 33.4 31.7 31.6 33.0 32.9 33.1 33.6 31.4 34.8 31.7 31.6 33.1 33.5 33.1 34.8 31.7 31.6 34.1 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 34.8 31.7 31.6 31.6 31.7 31.6 31.8 31.5 30.1 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.6 31.7 31.6 31.7 31.6 31.6 31.7 31.6 31.8 31.7 31.6 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.6 31.8 31.7 31.8 31.7 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.8 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7 31.7		2000	31.2	33.9	32.0	30.5	33.2		32.7	32.6	31.6		32.0	32.3
2002 31.8 33.7 32.7 30.1 32.9 33.1 32.6 31.8 31.3 32.0 32.0 32.6 33.1 32.2 32.3 33.1 31.2 30.6 31.6 31.3 32.0 32.0 32.6 32.3 31.3 32.8 33.1 33.4 31.0 30.9 32.0 32.0 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 33.4 34.8 31.7 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 31.5 30.1 32.9 33.8 33.9 32.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 34.1 32.4 32.3 31.4 34.8 31.7 34.1 32.4 32.3 31.4 34.8 31.7 34.1 32.4 32.3 34.4 34.8 31.7 34.1 32.4 32.3 34.4 34.8 31.7 34.1 32.4 32.3 34.4 34.8 31.7 34.1 32.4 32.3 34.4 34.8 31.7 34.1 32.4 32.3 34.4 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 32.4 32.3 34.1 34.8 34.1 3														30.8
2004 30.6 33.1 32.2 32.3 33.1 31.2 30.6 31.6 31.3 20.9 32.6 32.3 31.3 32.8 33.1 33.4 31.0 30.9 30.9 2005 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 31.6 2006 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1 33.4 34.0 31.6 2007 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 20.7 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 21.0 20.0 31.6 32.7 32.0 30.9 32.8 34.1 32.4 32.3 31.4 34.8 31.7 21.0 20.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 3														32.4
2004 32.0 32.6 32.3 31.3 32.8 33.1 33.4 31.0 30.9														
2005 30.9 31.1 31.7 31.4 32.1 31.4 31.5 30.1 31.6														32.2
2006 32.1 33.9 32.9 32.2 34.0 32.6 33.0 32.9 33.1														33.1
Nester 196 37.0 39.4 41.4 38.6 40.0 37.8 37.3 37.6 38.8 38.6 (mm) 1997 36.2 39.2 41.0 37.8 39.5 36.6 37.4 37.2 38.1 38.6 (mm) 1998 37.2 40.0 40.8 39.6 40.9 36.0 37.7 37.7 38.1 38.7 39.9 36.9 40.4 42.6 38.2 39.6 40.9 38.0 37.7 37.7 38.4 38.7 2000 35.8 39.4 43.0 37.4 38.2 38.2 37.6 36.9 37.3 37.4 2001 35.2 38.7 41.6 38.4 38.9 38.2 37.6 36.9 37.4 2002 36.1 39.7 41.4 37.0 38.7 38.2 37.5 36.8 37.4 2002 36.1 39.7 41.7 40.9 40.4 36.5 36.0 37.6 38.0 37.4 2005 36.3 38.4 41.6 40.3 39.8 37.2 37.0 36.4 37.4 2005 36.3 38.4 41.6 40.3 39.8 37.2 37.0 36.0 38.0 37.4 37.3 38.4 38.9 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 37.4														32.6
In-Shell Length			32.1	33.9		32.2	34.0		32.6		32.9		33.1	34.0
(mm)		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
(mm)	In-Shell Length	1996	37.0	39.4	41.4	38.6	40.0		37.8	37.3	37.6		38.8	39.2
1988 37.2 40.0 40.8 39.6 40.9 38.0 37.7 37.7 38.4 1999 36.9 40.4 42.6 38.2 39.6 38.1 38.5 37.3 38.7 2000 35.8 39.4 43.0 37.4 38.2 38.2 37.6 36.9 37.3 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4 2002 36.1 39.7 41.4 37.0 38.7 38.2 37.5 36.8 37.6 2003 35.7 39.7 41.7 40.9 40.4 36.5 36.0 37.6 38.0 2004 36.4 39.6 41.3 39.3 39.7 37.0 36.1 39.3 2005 36.3 38.4 41.6 40.3 39.8 37.2 37.0 36.0 38.0 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 38.0 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 Kernel Grade - 1996 92.3 95.1 93.4 89.8 95.1 95.4 96.6 92.7 95.8 Percent Sound 1997 96.2 97.8 94.9 96.6 98.1 96.5 97.0 96.7 95.2 1999 96.1 98.1 97.1 98.3 98.1 96.3 97.9 94.3 95.2 1999 96.1 98.1 97.1 98.3 98.1 96.3 97.9 94.3 96.2 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.6 98.8 97.4 97.3 97.7 96.4 98.2 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 99.1 98.0 2004 97.9 99.0 98.4 95.6 98.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.2 96.1 98.5 99.0 97.7 Nuts Set Per Tree 1996 1,353 1,659 1,296 2,356 1,853 1,265 1,417 958 1,504 1999 1,073 1,540 1,369 2,818 2,241 1,076 98.9 1,201 1,504 1999 1,073 1,540 1,369 2,818 2,241 1,066 88.6 1,167 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,504 1,50	(mm)		36.2	39.2	41.0	37.8	39.5		36.6	37.4	37.2		38.1	38.5
1999 36.9 40.4 42.6 38.2 39.6 38.1 38.5 37.3 37.3 37.3 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4 2002 36.1 39.7 41.4 37.0 38.7 38.2 37.5 36.8 37.4 37.6 2003 35.7 39.7 41.7 40.9 40.4 36.5 36.0 37.6 38.0 2004 36.4 39.6 41.3 39.3 39.7 37.0 37.1 36.4 37.4 2005 36.3 38.4 41.6 40.3 39.8 37.0 37.1 36.4 37.4 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 39.8 37.0 37.1 36.4 38.0 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 38.8 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 37.4 37.3 36.4 36.7	` '													39.6
2000 35.8 39.4 43.0 37.4 38.2 38.2 37.6 36.9 37.3 37.4 2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4 2002 36.1 39.7 41.4 37.0 38.7 38.2 37.5 36.8 37.6 2003 35.7 39.7 41.7 40.9 40.4 36.5 36.0 37.6 38.0 2004 36.4 39.6 41.3 39.3 39.7 37.0 37.1 36.4 38.0 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 39.7 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 36.4 36.7 38.9 36.8 37.9 36.4 36.7 38.9 36.8 36.8 37.9 36.4 36.7 38.9 36.8 36.8 37.9 36.4 36.7 38.9 36.8 36.8 37.9 36.4 36.7 38.9 36.8														39.5
2001 35.2 38.7 41.6 38.4 38.9 37.0 36.4 37.2 37.4														
2002 36.1 39.7 41.4 37.0 38.7 38.2 37.5 36.8 37.6														38.3
2003 35.7 39.7 41.7 40.9 40.4 36.5 36.0 37.6 38.0														38.3
2004 36.4 39.6 41.3 39.3 39.7 37.0 37.1 36.4 37.4		2002	36.1	39.7	41.4	37.0	38.7		38.2	37.5	36.8		37.6	38.5
2005 36.3 38.4 41.6 40.3 39.8 37.2 37.0 36.0 38.0 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 39.3 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 37.9 36.7 37.5 37.5 37.4 38.8 39.5 39.1 96.5 97.0 96.4 97.5 37.9 39.3 37.5 37.9 36.4 97.5 39.1 39.8 39.1 97.3 39.3 39.3 98.2 39.1 98.2 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1		2003	35.7	39.7	41.7	40.9	40.4		36.5	36.0	37.6		38.0	39.1
2005 36.3 38.4 41.6 40.3 39.8 37.2 37.0 36.0 38.0 2006 37.4 39.5 44.2 38.5 40.4 38.1 39.2 37.8 39.3 39.3 2007 35.7 38.1 43.3 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 38.9 36.8 37.9 37.4 37.3 36.4 36.7 38.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 36.8 37.9 37.9 36.7 37.5 37.5 37.4 38.8 39.5 39.1 96.5 97.0 96.4 97.5 37.9 39.3 37.5 37.9 36.4 97.5 39.1 39.8 39.1 97.3 39.3 39.3 98.2 39.1 98.2 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.8 39.1 98.0 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.0 39.1 39.8 39.1 98.2 39.1 39.8 39.1 98.2 39.1		2004	36.4	39.6	41.3	39.3	39.7		37.0	37.1	36.4		37.4	38.8
Remel Grade														38.4
Kernel Grade – Percent Sound 1996 92.3 95.1 93.4 89.8 95.1 95.4 96.6 92.7 95.8 Percent Sound 1997 96.2 97.8 94.9 96.6 98.1 96.5 97.0 96.7 95.8 1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.2 96.1 96.3 98.0 98.2 2001 94.3 98.8 98.6 97.2 96.1 96.3 98.0 99.2 96.1 <t< 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>38.7</td></t<>														38.7
Kernel Grade – Percent Sound 1996 92.3 95.1 93.4 89.8 95.1 95.4 96.6 92.7 95.8 Percent Sound 1997 96.2 97.8 94.9 96.6 98.1 96.5 97.0 96.7 97.5 1998 94.4 91.4 99.8 89.5 94.4 96.3 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 2001 94.3 98.8 98.9 98.8 97.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 98.0 <t< 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>37.7</td></t<>	 													37.7
Percent Sound 1997 96.2 97.8 94.9 96.6 98.1 96.5 97.0 96.7 97.5 1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 Nuts Set Per Tree 1996 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 1997 1,406 1,570 1,414 2,162 2,228 1,170 1,622 1,347 1,504 1998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 2000 1,633 1,212 1,325 1,899 1,878 1,443 1,342 1,560 1,488 1,421 1,504 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1,611 1,504 1,505 1,735 1,99	Kamal Cook													
1998 94.4 91.4 99.8 89.5 94.4 96.3 97.9 94.3 95.2 1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 1,406 1,570 1,414 2,162 2,228 1,285 1,417 958 1,355 19.9 19.9 1,073 1,540 1,369 2,818 2,241 1,170 1,622 1,347 1,504 19.9 1,073 1,540 1,369 2,818 2,241 1,076 98.9 1,210 1,374 1200 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1200 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1200 1,554 1,554 1,554 1,554 1,559 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1														94.2
1999 96.1 98.1 97.1 98.3 98.1 95.0 98.3 96.4 98.2 2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 98.5 99.3 98.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 93.5 99.0 97.7 97.0 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.5 99.3 98.5 93.5 99.0 97.7 97.0 98.0 97.0 99.0 97.7 97.0 98.0 97.0 99.0 97.7 97.0 98.0 97.0 99.0 97.7 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 99.0 97.0 97	Percent Sound													96.6
2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 98.0 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 19.99 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 19.99 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 19.99 1,073 1,540 1,369 2,818 2,241 1,076 98.9 1,210 1,374 12.000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 12.001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 12.002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1,200 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 	1998	94.4	91.4	99.8	89.5	94.4		96.3	97.9	94.3		95.2	95.2
2000 95.6 96.7 93.1 97.8 96.4 97.3 97.7 96.4 98.2 2001 94.3 98.8 98.9 98.8 97.4 97.3 96.3 98.0 98.7 2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 98.0 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 19.99 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 19.99 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 19.99 1,073 1,540 1,369 2,818 2,241 1,076 98.9 1,210 1,374 12.000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 12.001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 12.002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1,200 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 	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														97.3
2002 96.4 96.8 98.6 97.2 96.1 96.8 93.3 98.3 97.0 2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.5 99.3 98.5 93.5 99.0 97.7 1,355 1.28 1.29 1.29 1.29 1.29 1.29 1.29 1.29 1.29	.													97.5
2003 97.5 97.4 98.8 97.0 97.2 99.2 96.1 91.8 96.9 2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 91.8 96.0 97.7 1,355 1.997 1,406 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,395 1.703 1,394 1.703 1.703 1,394 1.703 1.703 1.704 1.705 1.704 1.705	.													96.8
2004 97.9 99.0 98.4 95.6 98.2 99.4 98.3 99.1 98.0 2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 2008 2009 2009 2009 2009 2009 2009 2009	 													
2005 96.7 96.9 99.8 95.7 97.0 98.4 99.5 97.0 99.1 2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 Nuts Set Per Tree 1996 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 1 1,997 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 1 1,998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1 1,999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													95.1
2006 98.4 99.2 95.1 99.6 97.7 91.8 96.0 99.1 98.2 2007 96.5 99.4 99.5 96.0 98.5 98.5 99.3 98.5 93.5 99.0 97.7 Nuts Set Per Tree 1996 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 1 1,997 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 1 1,998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1 1,999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													96.7
Nuts Set Per Tree 1996 1,353 1,659 1,296 2,356 1,853 1,285 1,417 958 1,355 1 1997 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 1 1998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													97.9
Nuts Set Per Tree 1996	 	2006	98.4	99.2	95.1	99.6	97.7		91.8	96.0	99.1		98.2	97.7
Nuts Set Per Tree 1996		2007	96.5	99.4	99.5	96.0	98.5	<u>9</u> 8.5	99.3	98.5	93.5	99.0	97.7	95.9
1997 1,406 1,570 1,414 2,162 2,228 1,304 796 1,703 1,894 1,894 1998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544	Nuts Set Per Tree													1,472
1998 1,221 1,306 1,380 1,512 1,457 1,170 1,622 1,347 1,504 1 1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544			,	,	,				,					1,839
1999 1,073 1,540 1,369 2,818 2,241 1,076 989 1,210 1,374 1 2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													
2000 1,633 1,212 1,325 1,899 1,878 1,696 886 1,167 1,566 1 2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													1,290
2001 1,510 1,741 1,718 1,819 2,049 1,443 1,342 1,560 1,488 1 2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													1,536
2002 1,534 1,315 1,246 2,072 1,961 1,246 1,259 1,446 1,611 1 2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 													1,379
2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	 	2001	1,510	1,741	1,718	1,819	2,049		1,443	1,342	1,560		1,488	1,533
2003 1,421 1,594 1,858 1,195 1,735 1,995 1,679 1,021 1,544 1	I	2002	1,534	1,315	1,246	2,072	1,961		1,246	1,259	1,446		1,611	1,642
	I													1,377
1 ZUVIT 1 JUVIT 1 JUVI 1 JZZU Z JUVI Z JUPU 1 JUZ 1 JUZ 1 JUVI 1 ZUVIT 1 JUVIT	 													1,167
	 													
	 													1,256
	 													1,319
2007 1,875 1,069 1,731 1,569 1,738 1,197 1,202 1,710 2,058 963 1,183 1 1/ Beginning in 2007, the Howard and Tulare varieties were taken out of "Other" and published separately.		2007	1,875							1,710	2,058	963	1,183	1,640

^{1/} Beginning in 2007, the Howard and Tulare varieties were taken out of "Other" and published separately.

Percentage Distribution Of Walnut Shell Suture Sizes. By District And Variety

						5		U.S. Standards Size Intervals 1/		5		U.S.	Stan	Standards Size Intervals 1,	Size	Interva	1/slt	1										
District			2003						2004					20	2005					2006	0					2007 2/	/	
and variety	Mth Jmb Lge Med	up L	ge M	led Bk	Bby Of	th	Oth Mth Jmb		Lge Med	d Bby	, Oth		Jmb	Mth Jmb Lge Med	Med	Bby	Oth	Mth Jmb		Lge Med		Bby C	Oth	Mth Jmb		Lge Med	d Bby	oth /
						•				!	!		Pe	- Percent of Total	of Tota	al <u>3</u> / -		:	!				•					
DISTRICTS:																												
Coast	<u>-</u>	26	4	16 1	ဗ	0	0 50	0 12	2 20) 16	_	_	71	15	တ	4	0	0	30	15	18	56	1	6	30 1	7 24	4 20	0
Sacramento VIy.		02	13	10	9	0	2 62	2 15	11	10	_	_	47	19	15	12	က	0	38	7	16	28	2	-	50 1	16 17	7 15	_
San Joaquin Vly.	0	. 99	19 1	16	8	0	2 65	5 15	5 11	7	0	_	56	20	17	9	0	2	89	16	6	2	0	1 (63 1	16 11	1 8	0
VARIETIES:																												
Ashley	··	8	19	26 1	6	0	1 56	6 16	3 12	2 16	~	_	47	17	17	16	_	0	46	19	15	18	7	2	31 1	16 23	3 21	က
Chandler	0	74	41	ω	4	0	1 63	3 16	3 11	-	0	0	45	23	21	10	က	_	48	15	4	19	က	1	54 1	17 15	5 13	_
Eureka	0	63	56	9	4	0	1.4	17 30	0 10) 12	0	0	29	37	21	7	_	_	99	34	4	2	0	0	48 2	28	9 16	0
Franquette	0	92	15 1	13	9	0	0 5	1 21	1 18	3	_	0	53	19	17	7	0	0	21	15	19	34	7	0	23 1	17 30) 28	_
Hartley		92	12	7	4	0	1 6	9 14	9	9 (_	_	64	4	တ	7	2	0	25	10	4	20	4	1	63 1	14 13	3	0
Howard	ł	1		; ;	'	<u> </u>	; ;	!	!	!	-	!	ŀ	ł	ł	ŀ	ŀ	ŀ	1	ŀ	1	1	<u> </u>	1	55 1	19 15	5 10	0
Payne	0	49	27 1	15	œ	_	1 6.	37 13	3 10	8	0	_	21	19	19	80	_	0	72	16	2	7	_	0	60 1	19 12	8	~
Serr	0	48	19	22	0	_	2 7.	7 10	9 (5	0	7	09	16	7	7	0	7	69	7	8	10	_	1	69	1 10	9	~
Tehama	0	25	17 1	15 1	16	0	0	3 13	3 18	3 15	~	0	45	19	18	15	_	~	52	14	12	17	2	0	38 2	26 21	14	_
Tulare	ŀ			; ;	'	;	!	1	!	!	1		1	1	ŀ	1		ŀ	1	1	1		-	8	92) _	9	0
Vina	0	34	19	26 1	19	_	0 39	9 18	3 18	3 22	7	4	32	27	7	12	_	0	39	18	18	20	4	0	32 2	21 21	1 23	7
Other	4	52	15 1	16 1	14	0	8 60	0 11	1 12	9	0	2	57	15	12	11	7	4	54	10	12	16	3	0	29 1	18 22	2 30	0
STATE	_	64	15 1	12	7	0	2 63	3 15	5 11	6	_	1	51	19	16	10	2	_	51	13	13	18	3	1	55 1	16 15	5 12	_
Number of Shells Measured			13,539	6				-	13,822					12,	12,736					13,491	7				Ì	13,291		

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.

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

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