

# 1990 CALIFORNIA WALNUT OBJECTIVE MEASUREMENT SURVEY RESULTS



RELEASED: September 5, 1990  
12:00 NOON PDT



CALIFORNIA AGRICULTURAL  
STATISTICS SERVICE

## 1990 CALIFORNIA WALNUT FORECAST

The September forecast for California walnut production is 225,000 tons, down 2 percent from 1989 but up 2 percent from the July forecast. The July forecast is based on subjective information provided by growers while the September forecast is based on the Walnut Objective Measurement Survey along with subjective grower information. The Objective Measurement Survey was conducted from July 27 through August 17, 1990.

The 1990 Objective Measurement Survey utilized a total of 687 blocks, with two sample trees per block. The average nut set was 2,028 nuts per tree, up 14 percent from the 1989 average set of 1,785. The Serr average nut set was down 55 percent, while Ashley was off slightly. The Hartley average nut set was up 50 percent with all other varieties showing smaller increases. The percent of sound kernels in-shell was 96.3 percent, statewide. The impact of sunburn and drought stress was not apparent at the time kernel data were analyzed. Current expectations are that overall quality will be below last year. The average in-shell weight per nut was 21.7 grams, while the average in-shell suture measurement was 32.4 millimeters. These measurements are also average compared to the last few years. The average length in-shell was 38.8 millimeters, down slightly from 1989.

Estimated nut sets, sizing measurements, average number of trees per acre, and estimated bearing acreage were used in the regression formulas utilizing the years 1979-1988.

## SURVEY HISTORY

The Walnut Objective Measurement 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 refusals.

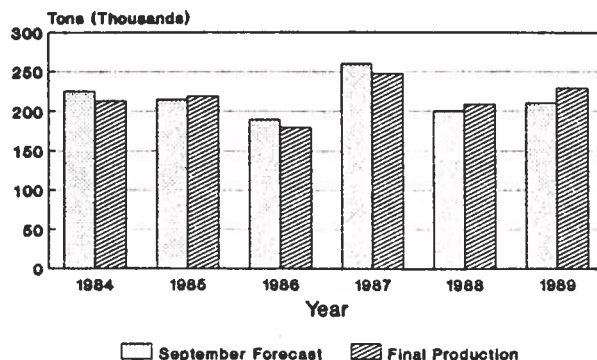
## SAMPLING PROCEDURES

Once a block is randomly selected and permission is granted, two trees are randomly selected. An accessible branch is chosen which is five to fifteen percent of the total cross-sectional area of the primaries 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.

*(Continued on Page 2)*

California Walnuts  
September Forecast vs. Final Production



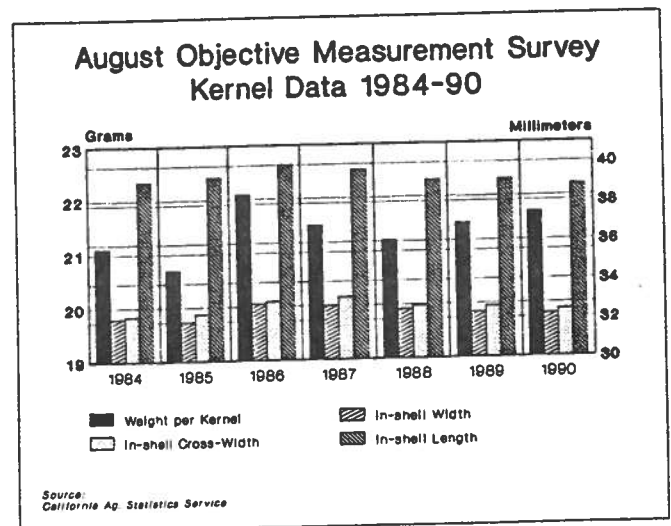
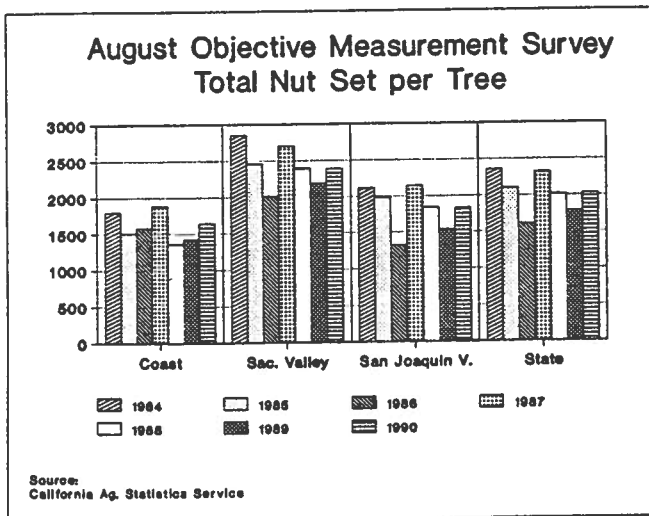
California Ag. Statistics Service

The following measurements are made on nuts selected for sizing:

1. Width of hull at widest point.
2. Width of hull 90 degrees to widest point (cross-width).
3. Length of hull.
4. Grade in-hull.
5. Weight of nut including hull.
6. Width of shell at suture.
7. Width of shell 90 degrees to suture line (cross-suture).
8. Length of shell.
9. Kernel Grade.
10. Weight of nut.

## ACREAGE

Bearing acreage for 1990 is forecast at 178,000 acres. The acreage table 2 is a county summary of the data published in the 1989 California Fruit and Nut Acreage Bulletin. These numbers are preliminary and will be revised in the 1990 Fruit and Nut Acreage publication to be released in June of 1991.



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

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TABLE 1 - California English Walnut Acreage, Production, Price, and Value In-Shell

Year	Bearing Acres a/	Total Production		Per Bearing Acre	Price Per Short Ton	Total Value
		Metric Tons	Short Tons			
1982	178,000	212,000	234,000	1.31	\$1,020.00	\$238,680,000
1983	175,700	181,000	199,000	1.13	\$631.00	\$125,569,000
1984	178,200	193,000	213,000	1.20	\$730.00	\$155,490,000
1985	178,600	199,000	219,000	1.23	\$798.00	\$174,762,000
1986	179,800	163,000	180,000	1.00	\$1,080.00	\$194,400,000
1987	175,200	224,000	247,000	1.41	\$984.00	\$243,048,000
1988	177,000	190,000	209,000	1.18	\$922.00	\$192,698,000
1989	177,500	208,000	229,000	1.29	\$972.00 b/	\$222,588,000 b/
1990	178,000	204,000	225,000	1.26		

a/ Eight years and older for the Franquette variety, 6 years and older for Payne variety, 5 years and older for Chico and Chandler varieties and 7 years and older for all other varieties.

b/ Preliminary figures as of July 1, 1989.

TABLE 2 -- Walnut Acreage by County as of 1989

County	Bearing	Non-Bearing	Total	County	Bearing	Non-Bearing	Total
Alameda	315	0	315	Sacramento	207	0	207
Amador	594	2	596	San Benito	3,828	152	3,980
Butte	13,755	1,884	15,639	San Joaquin	27,331	3,322	30,653
Calaveras	665	45	710	San Luis Obispo	2,468	355	2,823
Colusa	4,014	294	4,308	Santa Barbara	683	114	797
Contra Costa	1,800	252	2,052	Santa Clara	1,178	27	1,205
El Dorado	278	1	279	Shasta	1,531	5	1,536
Fresno	2,892	250	3,142	Solano	3,173	1,014	4,187
Glenn	5,483	421	5,904	Sonoma	363	3	366
Kern	1,825	32	1,857	Stanislaus	21,037	3,018	24,055
Kings	4,788	1,124	5,912	Sutter	14,092	1,598	15,690
Lake	7,285	218	7,503	Tehama	11,718	659	12,377
Madera	1,563	217	1,780	Tulare	22,737	1,852	24,589
Mendocino	144	0	144	Ventura	486	0	486
Merced	7,667	840	8,507	Yolo	6,501	832	7,333
Monterey	254	69	323	Yuba	5,082	244	5,326
Napa	496	0	496	Other	339	0	339
Placer	901	0	901	TOTAL	177,473	18,844	196,317

TABLE 3 -- Total Nut Set per Tree, by District a/

Average Set Per Tree									
Year	Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State a/	Year	Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State a/
1983	1,178	2,151	1,741	1,787	1987	1,883	2,696	2,143	2,320
1984	1,795	2,850	2,114	2,357	1988	1,359	2,390	1,837	2,008
1985	1,512	2,457	1,982	2,099	1989	1,427	2,182	1,537	1,785
1986	1,579	2,008	1,321	1,613	1990	1,637	2,380	1,835	2,028

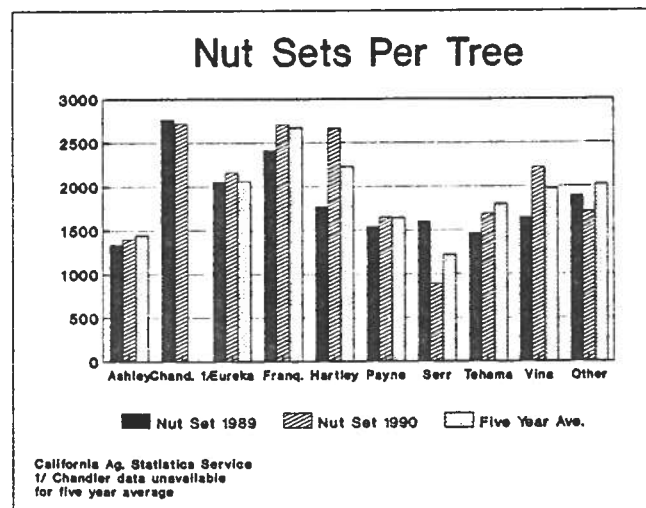


TABLE 4 -- Survey Averages for In-Shell Measurements, by Districts

	Measurement	District Averages e/			
		Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State a/
A U G U S T  O B J E C T I V E  M E A S U R E M E N T  S U R V E Y	In-Shell Weight (gm)				
	1984	20.5	21.2	21.1	21.1
	1985	20.2	21.1	20.6	20.7
	1986	22.9	23.7	19.9	22.1
	1987	20.7	22.5	20.9	21.5
	1988	20.6	22.0	20.5	21.2
	1989	19.7	22.0	21.4	21.5
	1990	21.3	21.8	21.8	21.7
	In-Shell Width (mm)				
	1984	31.7	32.2	32.4	32.2
	1985	31.5	32.0	32.1	32.0
	1986	32.8	33.3	32.3	32.9
	1987	31.9	33.0	32.6	32.7
	1988	31.7	32.6	32.6	32.5
	1989	31.2	32.3	32.7	32.3
	1990	31.4	31.8	32.9	32.3
M E A S U R E M E N T  S U R V E Y	In-shell Cross-Width (mm)				
	1984	32.1	32.4	32.2	32.3
	1985	31.9	32.5	32.3	32.4
	1986	32.7	33.5	32.3	33.0
	1987	32.2	33.8	32.9	33.2
	1988	32.3	32.9	32.4	32.7
	1989	32.0	33.0	32.2	32.6
	1990	31.8	32.3	32.7	32.4
	In-Shell Length (mm)				
	1984	40.0	39.3	39.3	39.2
	1985	38.9	39.4	39.6	39.4
	1986	40.4	40.6	39.2	40.0
	1987	38.9	40.2	39.5	39.7
	1988	39.0	39.4	38.9	39.1
	1989	38.2	39.1	39.3	39.1
	1990	38.0	38.4	39.4	38.8
S U R V E Y	Kernel Grade-Percent Sound				
	1984	91.4	98.3	94.4	95.9
	1985	97.2	97.3	94.1	95.8
	1986	97.2	98.0	91.3	95.3
	1987	99.1	97.9	96.6	97.3
	1988	88.7	97.8	95.9	96.2
S U R V E Y	1989	94.4	97.8	96.8	97.0
	1990	97.0	97.0	95.5	96.3

a/ District and State averages are derived by weighting county averages by county bearing acreage figures.

b/ Coast includes: Alameda, Contra Costa, Lake, Monterey, Napa, San Benito, San Luis Obispo, Santa Clara, and Sonoma counties.

c/ Sacramento Valley includes: Butte, Colusa, Glenn, Placer, Sacramento, Shasta, Solano, Sutter, Tehama, Yolo, and Yuba counties.

d/ San Joaquin Valley includes: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties.

e/ 1984 - 1990 measurements are weighted by nuts set by tree.

TABLE 5 -- Average Survey Measurements, by Variety e/

A U G U S T	Measurement	Ashley	Chandler	Eureka	Franquette	Hartley
	In-Shell Weight (gm)					
O B J E C T I V E	1984	17.5	N/A	21.1	20.2	24.2
	1985	19.8	N/A	21.0	17.6	23.5
	1986	20.4	N/A	18.4	21.0	24.7
	1987	20.3	N/A	23.1	19.7	23.7
	1988	18.7	N/A	21.9	19.7	23.4
	1989	19.1	24.8	21.0	20.4	24.7
	1990	19.5	23.2	22.1	19.9	23.7
M E A S U R E M E N T	In-Shell Width (mm)					
	1984	31.2	N/A	31.2	31.4	33.5
	1985	32.5	N/A	31.2	29.7	33.3
	1986	32.7	N/A	30.4	31.7	34.0
	1987	32.6	N/A	32.4	31.1	33.6
	1988	32.0	N/A	31.4	30.9	33.5
	1989	31.9	33.1	31.2	31.0	33.7
S U R V E Y	1990	32.3	32.8	31.1	30.7	33.1
	In-shell Cross-Width (mm)					
	1984	31.2	N/A	31.9	31.5	33.3
	1985	32.5	N/A	31.7	30.5	33.5
	1986	32.7	N/A	30.7	32.0	34.0
	1987	33.2	N/A	32.7	32.0	34.0
	1988	32.1	N/A	32.1	31.4	33.4
S U R V E Y	1989	31.8	33.9	31.0	31.8	34.1
	1990	32.3	32.8	31.2	31.1	33.1
	In-Shell Length (mm)					
	1984	36.5	N/A	42.5	38.8	40.5
	1985	38.4	N/A	43.3	37.3	40.2
	1986	39.1	N/A	40.7	39.8	40.8
	1987	38.7	N/A	44.0	38.2	40.3
S U R V E Y	1988	37.3	N/A	43.0	38.6	39.6
	1989	37.3	40.8	42.5	38.4	40.1
	1990	36.9	39.7	42.6	37.5	39.7
S U R V E Y	Kernel Grade-Percent Sound					
	1984	95.0	N/A	93.4	95.7	98.1
	1985	96.7	N/A	89.0	97.4	96.3
	1986	95.9	N/A	79.8	96.0	97.0
	1987	95.1	N/A	98.1	98.1	97.4
	1988	94.3	N/A	97.9	95.1	98.1
	1989	97.3	98.3	93.9	97.8	97.5
S U R V E Y	1990	96.6	99.5	94.2	96.7	97.7
	Nuts Set Per Tree					
	1984	2,063	N/A	2,297	3,406	2,497
	1985	1,460	N/A	2,721	2,728	2,135
	1986	808	N/A	1,076	2,474	2,220
	1987	2,029	N/A	2,633	3,267	2,595
	1988	1,599	N/A	1,789	2,482	2,414
S U R V E Y	1989	1,338	2,761	2,051	2,411	1,767
	1990	1,399	2,716	2,058	2,706	2,662

See page 4, Table 4 for footnotes.

TABLE 5 -- Average Survey Measurements, by Variety e/

A U G U S T	Measurement	Payne	Serr	Tehama	Vina	Other
	In-Shell Weight (gm)					
O B J E C T I V E	1984	18.8	21.5	20.4	18.2	20.4
	1985	20.1	20.9	20.5	18.3	20.3
	1986	18.5	19.9	21.4	20.5	21.4
	1987	19.3	20.5	22.1	18.8	22.1
	1988	19.3	20.9	19.0	19.5	21.3
	1989	20.4	19.6	21.5	20.1	20.2
	1990	20.5	20.9	19.8	19.4	20.7
	In-Shell Width (mm)					
	1984	32.1	34.2	32.8	30.5	31.6
	1985	32.5	34.1	32.8	30.3	31.3
M E A S U R E M E N T	1986	31.9	33.4	33.7	31.6	32.5
	1987	32.5	34.2	33.8	30.9	32.6
	1988	32.4	34.1	31.8	31.2	32.2
	1989	32.1	33.0	32.8	31.3	31.5
	1990	33.0	34.2	31.4	30.0	31.4
	In-shell Cross Width (mm)					
	1984	32.0	33.2	32.6	31.2	32.3
	1985	32.4	33.4	32.6	31.1	32.3
	1986	31.7	32.8	33.0	32.0	32.7
	1987	32.7	33.4	34.1	32.7	33.5
S U R V E Y	1988	32.5	33.5	31.6	32.1	32.9
	1989	31.8	32.4	32.6	32.2	32.4
	1990	32.8	33.4	31.5	31.1	32.3
	In-Shell Length (mm)					
	1984	37.7	39.0	37.7	38.6	39.9
	1985	38.3	39.8	38.7	38.0	39.8
	1986	38.4	39.3	38.7	40.2	39.8
	1987	38.1	39.5	39.4	39.2	41.4
	1988	37.6	39.1	37.5	39.1	40.5
	1989	37.6	38.1	38.8	39.3	39.3
	1990	38.1	38.9	37.1	37.3	38.4
	Kernel Grade-Percent Sound					
	1984	92.8	95.8	97.4	99.1	96.0
	1985	95.2	96.7	96.2	98.3	97.2
	1986	90.6	96.3	96.8	98.9	96.0
	1987	96.2	96.7	98.5	97.8	97.6
	1988	93.2	94.9	95.0	97.6	97.1
	1989	95.2	97.0	97.2	98.7	96.8
	1990	94.5	91.0	98.5	94.1	96.8
	Nuts Set Per Tree					
	1984	2,335	857	2,282	2,281	2,287
	1985	1,863	1,354	1,997	2,239	2,530
	1986	1,062	846	1,290	1,430	1,478
	1987	1,853	1,204	2,031	2,561	2,424
	1988	1,885	1,084	2,224	2,006	1,799
	1989	1,543	1,603	1,461	1,645	1,877
	1990	1,648	884	1,683	2,216	1,708

See page 4, Table 4 for footnotes.

TABLE 6 -- Percentage distribution of Walnut Shell Suture Sizes, by District and Variety

District & Variety	U.S. Standards Size Intervals a/											
	1986			1987			1988			1989		
	Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth
	Percent of total b/											
DISTRICTS:												
Coast	3	66	14	9	8	0	0	55	19	17	8	0
							1	47	20	20	12	0
							0	42	17	24	16	1
							1	48	15	19	17	1
Sacramento Valley	2	71	12	9	6	0	0	70	13	10	6	0
							1	64	13	13	9	0
							0	62	14	14	9	1
							2	55	12	17	13	1
San Joaquin Valley	1	60	15	12	11	1	1	65	17	11	6	0
							0	66	15	12	7	0
							0	64	19	12	5	0
							2	71	12	8	5	1
VARIETIES:												
Ashley	0	69	11	14	5	1	0	63	12	16	8	0
							0	57	17	17	9	0
							0	54	21	17	8	0
							1	65	10	14	10	1
Chandler		N/A						N/A				
								0	81	11	5	3
								0	81	11	5	3
								0	81	11	5	3
								0	81	11	5	3
Eureka	0	32	23	18	25	2	1	65	25	6	1	0
							0	45	33	11	11	0
							0	35	40	17	8	0
							0	47	28	15	7	1
Franquette	1	50	22	14	12	1	0	41	24	20	14	0
							0	37	20	24	18	1
							1	40	19	23	16	1
							0	36	17	24	22	2
Hartley	3	81	8	5	3	0	0	82	8	6	3	0
							1	79	10	7	3	0
							1	84	7	5	3	0
							2	73	10	9	6	0
Payne	0	55	18	14	12	1	0	67	18	10	5	0
							0	64	14	13	9	0
							0	58	17	15	10	0
							1	72	12	9	5	1
Serr	3	74	10	7	6	0	2	85	7	5	1	0
							1	88	5	3	3	0
							1	73	12	9	5	0
							5	79	8	5	3	0
Tehama	1	81	9	6	3	0	0	83	12	4	1	0
							0	56	18	14	12	0
							0	76	14	5	5	0
							0	46	13	25	14	0
Vina	1	52	19	17	10	1	0	35	22	26	15	1
							1	43	22	19	14	2
							0	40	22	25	13	0
							0	37	13	24	17	4
Other	2	60	13	13	11	1	1	60	15	19	5	0
							0	61	16	16	7	0
							0	41	22	23	14	0
							1	45	17	21	15	1
State	2	66	14	10	8	0	1	66	15	12	6	0
							1	63	15	13	8	0
							1	61	16	14	8	0
							1	61	16	14	8	0
							1	61	16	14	8	0
Number of Shells Measured	11,558			10,174			13,705			12,936		
										11,986		