

1989 CALIFORNIA WALNUT OBJECTIVE MEASUREMENT SURVEY RESULTS



RELEASED: SEPTEMBER 6, 1989
12:00 NOON PDT



CALIFORNIA AGRICULTURAL
STATISTICS SERVICE

1989 CALIFORNIA WALNUT ESTIMATE

The September forecast for California walnut production is 210,000 tons. This is 2 percent above the 1988 crop of 206,000 tons, but down 5 percent from July's forecast of 220,000 tons. The July forecast is based on subjective information provided by growers, while September is based on the Walnut Objective Measurement Survey and subjective grower information.

The average nut set was 1,785 nuts per tree, down 11 percent from the 1988 average set of 2,008. The percent of sound kernels was 97 which is about average compared to other years. The average in-shell weight per nut was 21.5 grams, while the average in-shell width measurement was 32.3 millimeters. These measurements are comparable with the last few years.

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 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 fifth nut is picked for use in size and grade determinations. If available, at least ten nuts are harvested from the accessible branch for this purpose.

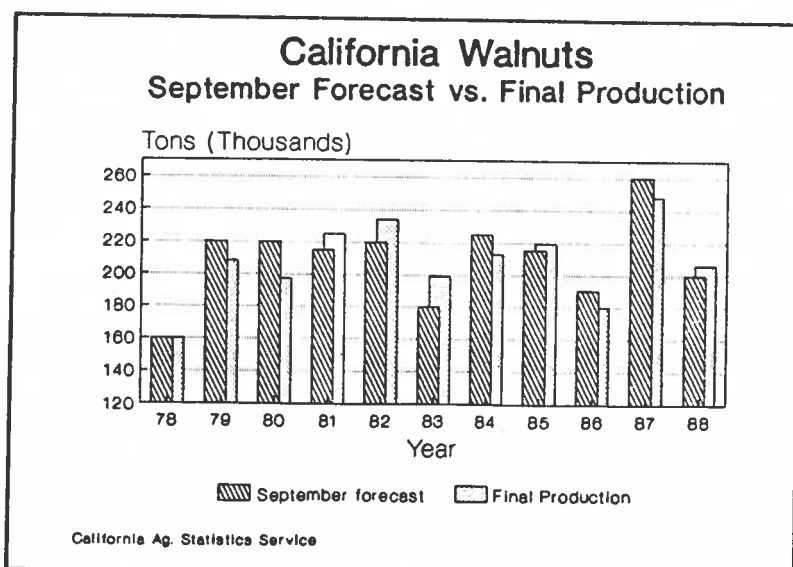
(Continued on Page 2)

Estimated nut sets, sizing measurements, average number of trees per acre, and estimated bearing acreage were used in the regression formulas utilizing the years 1978-1987.

PERMANENT RECORD

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 acreage beginning to bear, and refusals.



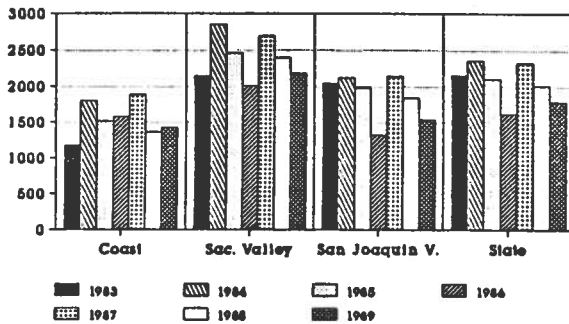
The following measurements are made on nuts selected for sizing:

1. Width of shell at suture.
2. Width of shell 90 degrees to suture line (cross-width).
3. Length of shell.
4. Kernel Grade.
5. Weight of nut.

ACREAGE

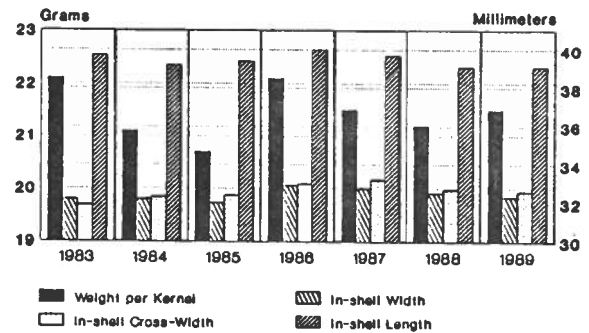
Bearing acreage for 1989 is forecast to be 174,600. Acreage table 2 is a county summary of the data published in the 1988 California Fruit and Nut Acreage Bulletin. These numbers are preliminary and will be revised in June of 1990.

**August Objective Measurement Survey
Total Nut Set per Tree**



Source:
California Ag. Statistics Service

**August Objective Measurement Survey
Kernel Data 1983-89**



Source:
California Ag. Statistics Service

JIM TIPPETT
STATE STATISTICIAN

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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	Short Tons	Dollars	000 Dollars
1981	175,100	204,000	225,000	1.28	\$1,014.00	\$228,150,000
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	236,000	247,000	1.41	\$984.00	\$243,048,000
1988	174,100	187,000	206,000	1.18	\$927.00 b/	\$190,962,000 b/
1989	174,600	191,000	210,000	1.20		

a/ Eight years and older for the Franquette variety, 6 years and older for Payne variety, 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 1988

County	Bearing	Non-Bearing	Total	County	Bearing	Non-Bearing	Total
Alameda	350	0	350	Sacramento	207	0	207
Amador	589	4	593	San Benito	3,835	199	4,034
Butte	12,901	2,470	15,371	San Joaquin	25,685	4,096	29,781
Calaveras	665	0	665	San Luis Obispo	2,349	516	2,865
Colusa	4,034	315	4,349	Santa Barbara	532	241	773
Contra Costa	1,826	318	2,144	Santa Clara	1,245	31	1,276
El Dorado	280	1	281	Shasta	1,514	30	1,544
Fresno	2,876	281	3,157	Solano	3,015	876	3,891
Glenn	5,475	493	5,968	Sonoma	335	26	361
Kern	1,791	32	1,823	Stanislaus	21,416	3,011	24,427
Kings	4,384	1,646	6,030	Sutter	13,096	1,616	14,712
Lake	8,295	153	8,448	Tehama	11,439	931	12,370
Madera	1,551	246	1,797	Tulare	23,298	2,156	25,454
Mendocino	148	0	148	Ventura	604	0	604
Merced	7,259	986	8,245	Yolo	6,251	1,065	7,316
Monterey	230	80	310	Yuba	5,083	209	5,292
Napa	544	3	547	Other	194	0	194
Placer	762	88	850	TOTAL	174,058	22,119	196,177

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/
1982	1,419	2,674	2,047	2,158	1986	1,579	2,008	1,321	1,613
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

See Page 4, Table 4 for footnotes.

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

		District Averages e/			
Measurement		Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State a/
In-Shell Weight (gm)					
A U G U S T	1983	23.3	21.9	22.0	22.1
	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
In-Shell Width (mm)					
O B J E C T I V	1983	32.6	32.2	32.1	32.2
	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
In-shell Cross-Width (mm)					
E M E A S U R	1983	32.6	32.0	31.7	31.9
	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
In-Shell Length (mm)					
E M E N T	1983	41.1	39.1	39.6	39.7
	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
Kernel Grade-Percent Sound					
S U R V E Y	1983	92.4	97.6	93.5	94.6
	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
	1989	94.4	97.8	96.8	97.0

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 - 1989 measurements are weighted by nuts set by tree.

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

	Measurement	Ashley	Chandler	Eureka	Franquette	Hartley
In-Shell Weight (gm)						
A U G U S T	1983	18.7	N/A	19.8	22.4	25.5
	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
In-Shell Width (mm)						
O B J E C T I V	1983	31.2	N/A	30.5	31.7	33.5
	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
In-shell Cross-Width (mm)						
E M E A S U R E M E N T	1983	30.9	N/A	30.6	31.5	33.3
	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
	1989	31.8	33.9	31.0	31.8	34.1
In-Shell Length (mm)						
S U R V E Y	1983	37.1	N/A	41.4	39.9	41.1
	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
	1988	37.3	N/A	43.0	38.6	39.6
	1989	37.3	40.8	42.5	38.4	40.1
Kernel Grade-Percent Sound						
S U R V E Y	1983	95.6	N/A	88.5	95.4	98.3
	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
Nuts Set Per Tree						
	1983	1,636	N/A	2,057	2,227	2,131
	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
	1989	1,338	2,761	2,051	2,411	1,767

See page 4, Table 4 for footnotes.

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

	Measurement	Payne	Serr	Tehama	Vina	Other
A U G U S T	In-Shell Weight (gm)					
	1983	20.5	20.5	21.8	20.2	21.4
	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
O B J E C T I V E	In-Shell Width (mm)					
	1983	31.8	32.5	33.0	30.8	31.6
	1984	32.1	34.2	32.8	30.5	31.6
	1985	32.5	34.1	32.8	30.3	31.3
	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
M E A S U R E M E N T	In-shell Cross Width (mm)					
	1983	31.5	31.2	32.3	30.7	31.1
	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
	1988	32.5	33.5	31.6	32.1	32.9
	1989	31.8	32.4	32.6	32.2	32.4
S U R V E Y	In-Shell Length (mm)					
	1983	38.3	38.2	38.8	39.4	39.3
	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
S U R V E Y	Kernel Grade-Percent Sound					
	1983	91.3	95.2	94.8	99.3	93.5
	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
	Nuts Set Per Tree					
	1983	1,574	1,148	1,502	2,103	1,702
	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

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/																													
	1985						1986						1987						1988						1989					
	Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth	Mth	Jmb	Lge	Med	Bby	Oth
DISTRICTS:																														
Percent of total b/																														
Coast	1	47	19	20	13	1	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	57	16	14	12	1	2	71	12	9	6	0	0	70	13	10	6	0	1	64	13	13	9	0	0	62	14	14	9	1
	1	57	17	14	10	0	1	60	15	12	11	1	1	65	17	11	6	0	0	66	15	12	7	0	0	64	19	12	5	0
Sacramento Valley																														
San Joaquin Valley																														
VARIETIES:																														
Ashley	0	63	16	12	9	0	0	69	11	14	5	1	0	63	12	16	8	0	0	57	17	17	9	0	0	54	21	17	8	0
Chandler	N/A						N/A						N/A						N/A						0 81 11 5 3 0					
Eureka	0	40	35	16	9	0	0	32	23	18	25	2	1	65	25	6	1	0	0	45	33	11	11	0	0	35	40	17	8	0
Franquette	0	19	16	31	32	0	1	50	22	14	12	1	0	41	24	20	14	0	0	37	20	24	18	1	1	40	19	23	16	1
Hartley	1	77	11	7	4	0	3	81	8	5	3	0	0	82	8	6	3	0	1	79	10	7	3	0	1	84	7	5	3	0
Payne	0	65	15	12	7	0	0	55	18	14	12	1	0	67	18	10	5	0	0	64	14	13	9	0	0	58	17	15	10	0
Serr	4	81	6	5	3	0	3	74	10	7	6	0	2	85	7	5	1	0	1	88	5	3	3	0	1	73	12	9	5	0
Tehama	0	74	10	6	9	0	1	81	9	6	3	0	0	83	12	4	1	0	0	56	18	14	12	0	0	76	14	5	5	0
Vina	0	27	27	19	24	3	1	52	19	17	10	1	0	35	22	26	15	1	0	43	22	19	14	2	0	40	22	25	13	0
Other	0	44	19	22	14	1	2	60	13	13	11	1	1	60	15	19	5	0	0	61	16	16	7	0	0	41	22	23	14	0
State	1	56	16	15	11	1	2	66	14	10	8	0	1	66	15	12	6	0	1	63	15	13	8	0	1	61	16	14	8	0
Number of Shells Measured	11,348						11,558						10,174						13,705						12,936					

a/ Sizes used are as follows: Mammoth -- Larger than 96/64" in diameter; Jumbo -- 80/64" to 96/64" 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".

b/ Percentage distributions based upon nut samples taken in the field, may not equal 100 percent due to rounding.

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