PERMANENT RECORD

1993 CALIFORNIA WALNUT OBJECTIVE MEASUREMENT SURVEY RESULTS

RELEASED: September 2, 1993
12:00 Noon PDT

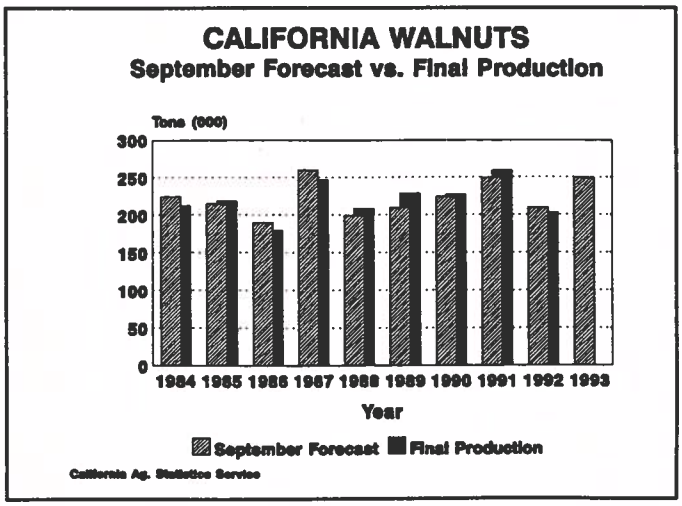
CALIFORNIA AGRICULTURAL STATISTICS SERVICE

WALNUT PRODUCTION FORECAST

The 1993 California walnut production forecast is 250,000 tons, up 23 percent from 1992's production of 203,000 tons. This is unchanged from the July forecast. The July forecast was based on subjective information provided by growers, while the September forecast is based on the Walnut Objective Measurement Survey. The Objective Measurement Survey was conducted July 26 through August 16, 1993.

The 1993 Objective Measurement Survey utilized a total of 589 blocks with two sample trees per block. The survey data indicated an average number of nuts per tree of 2,068, up 29 percent from 1992's average of 1,604. The Hartley nut set was up 37 percent; the Franquette, up 26 percent; and the Serr, up 78 percent. The percent of sound kernels in-shell was 95.8 percent Statewide. The in-shell weight per nut was 22.9 grams, while the average in-shell suture measurement was 32.6 millimeters. The average length in-shell was 40.0 millimeters.

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



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 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.

ACREAGE

Estimated bearing acreage for 1993 is 182,000 acres. The acreage table 2 is a county summary of the data published in the 1992 California Fruit and Nut Acreage Bulletin.

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

Year	Bearing Acres a/	Total Production	Per Bearing Acre	Price Per Ton	Total Value
		Tons	Tons	Dollars	Dollars
1984	178,000	213,000	1.20	730.00	155,490,000
1985	179,000	219,000	1.22	798.00	174,762,000
1986	180,000	180,000	1.00	1,080.00	194,400,000
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	181,000	203,000	1.12	1,320.00 b/	267,960,000 b/
1993	182,000	250,000	1.37	7/94	7/94

a/ Eight years and older for the Blackmer, Carmelo, Concord, Franquette, Grove, Mayette, Placentia, Poe, and Pride of Ventura varieties, 6 years and older for the Amigo, Ashley, Chandler, Gustine, Howard, Lompoc, Midland, Payne, Pedro, Serr, Sunland, Tehama, Trinta, Vina, Westside, and 4946 varieties, 5 years and older for the Chico and Marchetti varieties, and 7 years and older for all other varieties.

b/ Preliminary figures as of July 1, 1993.

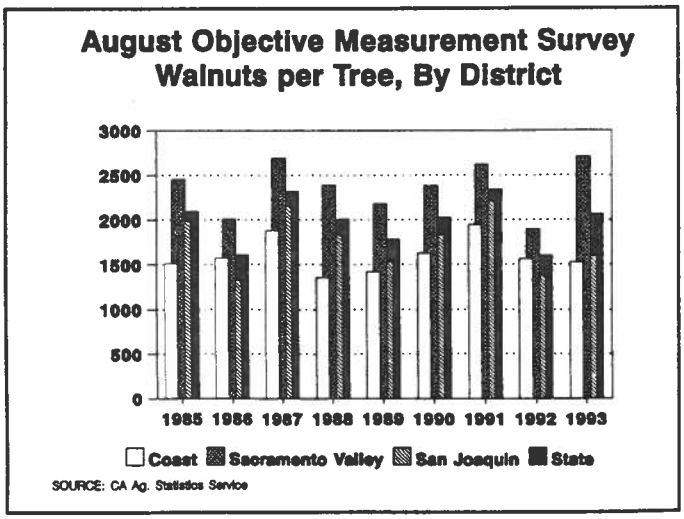
TABLE 2 -- Walnut Acreage By County As Of 1992

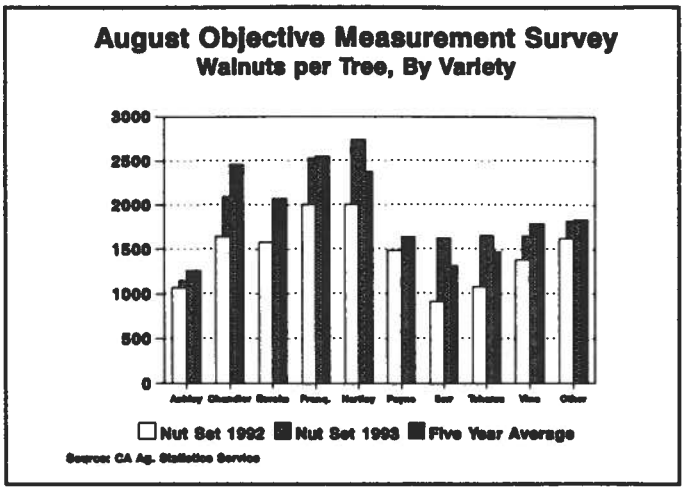
County	Bearing	Non-Bearing	Total
Alameda	228	0	228
Amador	567	2	569
Butte	15,540	1,074	16,614
Calaveras	671	45	716
Colusa	4,452	210	4,662
Contra Costa	1,606	143	1,749
El Dorado	277	1	278
Fresno	2,945	91	3,036
Glenn	5,699	467	6,166
Kern	1,610	17	1,627
Kings	5,430	474	5,904
Lake	7,306	110	7,416
Madera	943	35	978
Mendocino	148	0	148
Merced	7,178	555	7,733
Monterey	264	59	323
Napa	308	2	310
Placer	1,091	0	1,091
Sacramento	146	0	146
San Benito	3,834	122	3,956
San Joaquin	28,838	1,530	30,368
San Luis Obispo	2,793	324	3,117
Santa Barbara	746	21	767
Santa Clara	1,009	49	1,058
Shasta	1,483	1	1,484
Solano	3,425	931	4,356
Sonoma	357	1	358
Stanislaus	21,783	1,742	23,525
Sutter	13,250	1,681	14,931
Tehama	11,250	694	11,944
Tulare	22,839	1,635	24,474
Ventura	290	0	290
Yolo	7,294	616	7,910
Yuba	5,702	652	6,354
Other Counties	122	0	122
TOTAL	181,424	13,284	194,708

TABLE 3 -- Walnuts Per Tree, By District a/

Year	Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State
1985	1,512	2,457	1,982	2,099
1986	1,579	2,008	1,321	1,613
1987	1,883	2,696	2,143	2,320
1988	1,359	2,390	1,837	2,008
1989	1,427	2,182	1,537	1,785
1990	1,637	2,380	1,835	2,028
1991	1,955	2,620	2,210	2,340
1992	1,567	1,902	1,380	1,604
1993	1,530	2,703	1,596	2,068

See Table 5 for footnotes.





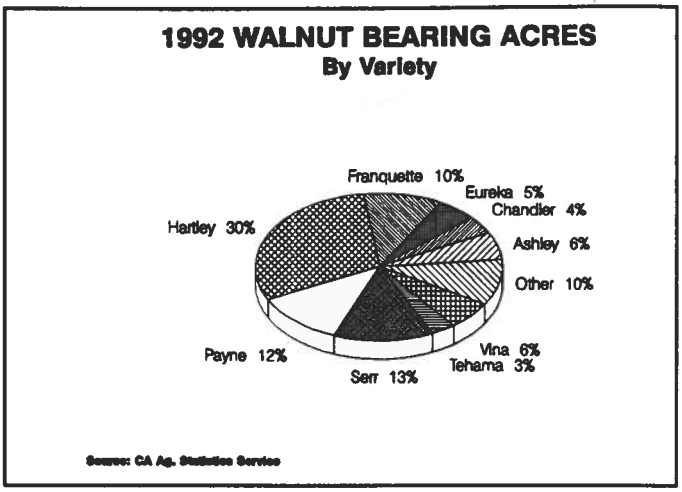


TABLE 4 -- August Objective Measurement Survey Averages For In-Shell Measurements, By District

Measurement	Coast b/	Sacramento Valley c/	San Joaquin Valley d/	State a/
In-Shell Weight (gm)				
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	21.9	21.8
1991	20.7	22.1	19.6	20.8
1992	21.4	23.8	21.6	22.7
1993	23.5	23.7	21.7	22.9
In-Shell Width (mm)				
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	31.5	31.9	33.0	32.3
1991	31.1	31.4	31.7	31.5
1992	32.1	32.7	32.6	32.6
1993	32.2	32.4	32.9	32.6
In-Shell Cross-Width (mm)				
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	31.6	32.3	32.7	32.4
1991	30.5	31.2	31.2	31.1
1992	32.5	33.1	32.8	32.9
1993	32.0	32.3	32.9	32.5
In-Shell Length (mm)				
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	38.5	38.3	39.5	38.8
1991	38.9	39.0	39.1	39.0
1992	39.0	39.7	39.5	39.5
1993	39.9	40.1	39.8	40.0
Kernel Grade-Percent Sound				
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
1990	96.1	97.1	95.4	96.3
1991	97.3	96.6	94.1	95.5
1992	93.6	96.9	97.6	96.9
1993	93.2	95.2	97.2	95.8

See Table 5 for footnotes.

TABLE 5 -- August Objective Measurement Survey Data, By Variety

Measurement	Ashley	Chandler	Eureka	Franquette	Hartley	Payne	Serr	Tehama	Vina	Other
In-Shell Weight (gm)										
1986	20.4	N/A	18.4	21.0	24.7	18.5	19.9	21.4	20.5	21.4
1987	20.3	N/A	23.1	19.7	23.7	19.3	20.5	22.1	18.8	22.1
1988	18.7	N/A	21.9	19.7	23.4	19.3	20.9	19.0	19.5	21.3
1989	19.1	24.8	21.0	20.4	24.7	20.4	19.6	21.5	20.1	20.2
1990	19.5	23.2	22.1	19.9	23.7	20.5	20.9	19.8	19.4	20.7
1991	18.7	22.8	20.1	19.2	23.4	18.2	18.7	20.3	18.8	19.9
1992	19.1	24.9	22.3	20.7	25.5	19.4	21.4	21.8	20.5	19.9
1993	19.8	23.5	21.7	21.2	25.2	20.8	20.8	20.3	20.2	21.7
In-Shell Width (mm)										
1986	32.7	N/A	30.4	31.7	34.0	31.9	33.4	33.7	31.6	32.5
1987	32.6	N/A	32.4	31.1	33.6	32.5	34.2	33.8	30.9	32.6
1988	32.0	N/A	31.4	30.9	33.5	32.4	34.1	31.8	31.2	32.2
1989	31.9	33.1	31.2	31.0	33.7	32.1	33.0	32.8	31.3	31.5
1990	32.3	32.8	31.1	30.7	33.1	33.0	34.2	31.4	30.0	31.4
1991	31.4	31.9	30.4	30.0	32.4	31.6	32.7	32.0	29.8	30.3
1992	32.0	33.3	31.6	30.9	33.6	32.3	34.1	33.1	31.3	31.0
1993	32.3	32.5	30.9	31.3	33.2	33.3	33.6	31.5	30.5	31.6
In-Shell Cross-Width (mm)										
1986	32.7	N/A	30.7	32.0	34.0	31.7	32.8	33.0	32.0	32.7
1987	33.2	N/A	32.7	32.0	34.0	32.7	33.4	34.1	32.7	33.5
1988	32.1	N/A	32.1	31.4	33.4	32.5	33.5	31.6	32.1	32.9
1989	31.8	33.9	31.0	31.8	34.1	31.8	32.4	32.6	32.2	32.4
1990	32.3	32.8	31.2	31.1	33.1	32.8	33.4	31.5	31.1	32.3
1991	30.7	32.3	30.5	30.1	32.1	30.7	30.7	31.0	30.2	30.5
1992	32.0	34.3	32.4	31.6	33.9	32.1	33.0	33.0	32.6	32.1
1993	32.2	32.9	31.7	31.4	33.0	33.0	32.7	31.3	30.8	32.1
In-Shell Length (mm)										
1986	39.1	N/A	40.7	39.8	40.8	38.4	39.3	38.7	40.2	39.8
1987	38.7	N/A	44.0	38.2	40.3	38.1	39.5	39.4	39.2	41.4
1988	37.3	N/A	43.0	38.6	39.6	37.6	39.1	37.5	39.1	40.5
1989	37.3	40.8	42.5	38.4	40.1	37.6	38.1	38.8	39.3	39.3
1990	36.9	39.7	42.6	37.5	39.7	38.1	38.9	37.1	37.3	38.4
1991	36.7	39.9	43.3	38.2	39.8	37.2	37.4	36.8	38.6	39.2
1992	37.2	40.5	42.8	37.9	40.6	38.0	38.8	38.3	39.3	38.7
1993	37.5	40.2	42.5	39.6	41.1	39.2	37.7	37.0	38.9	39.8
Kernel Grade-Percent Sound										
1986	95.9	N/A	79.8	96.0	97.0	90.6	96.3	96.8	98.9	96.0
1987	95.1	N/A	98.1	98.1	97.4	96.2	96.7	98.5	97.8	97.6
1988	94.3	N/A	97.9	95.1	98.1	93.2	94.9	95.0	97.6	97.1
1989	97.3	98.3	93.9	97.8	97.5	95.2	97.0	97.2	98.7	96.8
1990	96.6	99.5	94.2	96.7	97.7	94.5	91.0	98.5	94.1	96.8
1991	91.0	99.9	87.1	97.2	96.1	94.7	94.2	96.7	98.1	98.5
1992	94.7	99.2	96.1	96.7	97.2	95.4	96.5	99.1	98.0	96.9
1993	89.8	99.0	92.5	93.9	97.4	94.0	95.3	94.5	94.9	94.8
Nuts Set Per Tree										
1986	808	N/A	1,076	2,474	2,220	1,062	846	1,290	1,430	1,478
1987	2,029	N/A	2,633	3,267	2,595	1,853	1,204	2,031	2,561	2,424
1988	1,599	N/A	1,789	2,482	2,414	1,885	1,084	2,224	2,006	1,799
1989	1,338	2,761	2,051	2,411	1,767	1,543	1,603	1,461	1,645	1,877
1990	1,399	2,716	2,058	2,706	2,662	1,648	884	1,683	2,216	1,708
1991	1,372	3,092	3,212	3,116	2,712	2,067	1,553	1,487	2,055	2,161
1992	1,072	1,645	1,585	2,012	2,008	1,487	915	1,082	1,385	1,626
1993	1,147	2,099	1,452	2,532	2,742	1,444	1,626	1,653	1,654	1,818

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, El Dorado, 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.

TABLE 6 -- Percentage Distribution Of Walnut Shell Suture Sizes, By District And Variety

District And Variety	U.S. Standards Size Intervals a/																											
	1989						1990						1991						1992						1993					
	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
	- - - - - - - - - - - - - - - Percent of Total b/ - - - - - - - - - - - - - - -																											
DISTRICTS:																												
Coast	0	42	17	24	16	1	1	48	15	19	17	1	0	42	14	20	23	1	0	58	13	15	11	2	4	49	18	16	12	1
Sacramento Valley	0	62	14	14	9	1	2	55	12	17	13	1	0	48	17	19	15	1	1	65	13	12	8	0	1	65	13	11	10	1
San Joaquin Valley	0	64	19	12	5	0	2	71	12	8	5	1	0	51	21	16	11	0	1	64	15	12	8	0	1	72	12	10	6	0
VARIETIES:																												
Ashley	0	54	21	17	8	0	1	65	10	14	10	1	0	47	20	18	14	0	0	58	14	15	13	0	0	63	16	12	9	0
Chandler	0	81	11	5	3	0	3	66	11	19	1	0	0	56	24	14	5	0	1	75	13	6	4	0	0	64	17	11	7	0
Eureka	0	35	40	17	8	0	0	47	28	15	7	1	0	21	36	24	18	1	1	50	29	12	9	0	0	39	28	15	18	0
Franquette	1	40	19	23	16	1	0	36	17	24	22	2	0	23	20	27	29	1	0	36	21	25	17	1	0	46	17	21	14	2
Hartley	1	84	7	5	3	0	2	73	10	9	6	0	0	66	15	12	7	0	1	79	10	6	4	0	1	77	10	7	5	0
Payne	0	58	17	15	10	0	1	72	12	9	5	1	0	49	21	17	11	1	1	59	15	15	10	0	4	70	12	8	7	0
Serr	1	73	12	9	5	0	5	79	8	5	3	0	1	65	16	12	4	1	2	83	7	6	2	0	2	79	7	8	4	0
Tehama	0	76	14	5	5	0	0	46	13	25	14	0	0	61	16	14	10	0	1	75	11	8	6	0	0	51	20	16	13	1
Vina	0	40	22	25	13	0	0	37	13	24	17	4	0	20	17	30	31	1	0	46	20	18	15	1	0	36	17	19	24	3
Other	0	41	22	23	14	0	1	45	17	21	15	1	0	30	17	26	26	1	1	36	18	26	19	1	0	50	17	18	14	1
STATE	1	61	16	14	8	0	1	62	12	13	10	1	0	48	19	18	14	1	1	64	14	13	9	0	1	66	13	11	9	1
Number of Shells Measured	12,936						11,986						11,611						11,563						11,605					

a/ 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".

b/ 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!

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