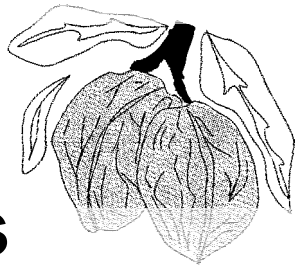
1997 California Walnut Objective Measurement Survey Results



Released: **September 5, 1997**
12:00 NOON PDT

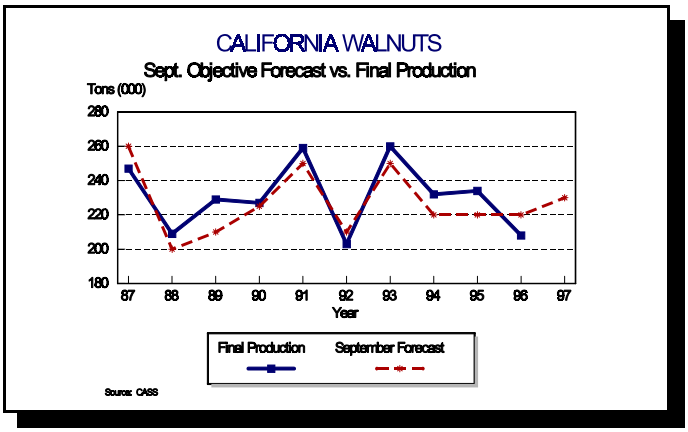
CALIFORNIA AGRICULTURAL STATISTICS SERVICE

WALNUT PRODUCTION FORECAST

The 1997 California walnut production forecast is 230,000 tons, up 11 percent from 1996's production of 208,000 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 (OM) Survey. The Objective Measurement Survey was conducted July 28 through August 23, 1997. Due to an earlier than usual spring, the crop is ahead of normal. Mild temperatures have resulted in the highest percent of sound nuts in the last ten years. OM samples show low levels of sunburn and insect damage.

The 1997 Objective Measurement Survey utilized a total of 678 blocks with two sample trees per block. Survey data indicated an average nut set of 1,753, up 8 percent from 1996's average of 1,630. The Hartley nut set was up 20 percent; Serr, down 44 percent; Franquette, down 8 percent from 1996. Percent of sound kernels in-shell was 97.3 percent Statewide. In-shell weight per nut was 22.9 grams, while the average in-shell suture measurement was 32.3 millimeters. The average length in-shell was 38.6 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 5 to 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 213,000 tons to 247,000 tons. This means there is an 80 percent chance the 1997 production will fall within this range.

1997 SEPTEMBER WALNUT SUBJECTIVE SURVEY

At industry request, a subjective grower survey was conducted August 28, 29, and September 2. Useable reports were received from 145 growers representing approximately 14 percent of the bearing acres in the State. Two indications were calculated from the survey. The **first** is a weighted average yield of all growers who reported acres and an expected yield for 1997. The weighted average yield from these growers was 2,501 pounds per acre (1.25 tons). Multiplying the average yield by the bearing acres (170,000) gives an indicated production of **213,000 tons.**

The **second** indication is the change in expected yield as indicated by growers who reported in both the July and September subjective surveys. Growers who responded to the July and September surveys stated that their yield will be 96.6 percent of what was reported in July. Applying that percent to the July indication shows **222,000 tons.**

To ensure the September forecast is comparable with previous year's, these indications were not considered in setting the September forecast. Without history, it is impossible to determine the relationship between these subjective indications and the final estimate.

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 - -		- - Dollars - -	
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	176,000	260,000	1.48	1,390.00	361,400,000
1994	171,000	232,000	1.36	1,030.00	238,960,000
1995	169,000	234,000	1.38	1,400.00	327,600,000
1996 b/	169,000	208,000	1.23	1,550.00	322,400,000
1997	170,000	230,000	1.35	7/98	7/98

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.

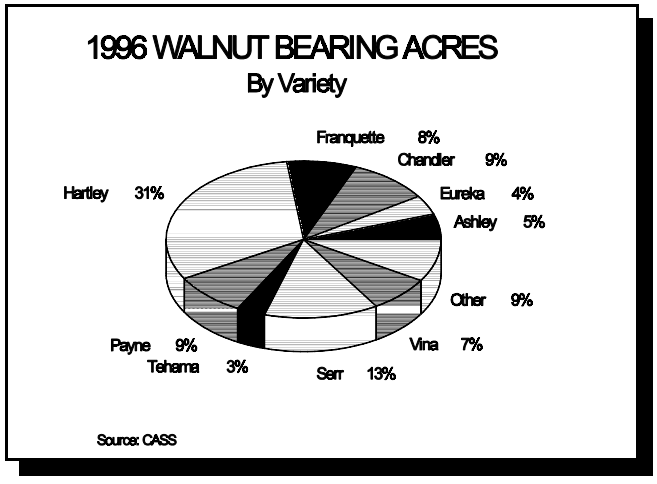
b/ Price Per Ton and Total Value are July 1, 1997 preliminary figures.

TABLE 2 -- Walnut Acreage By County As Of 1996

County	Bearing	Non-Bearing	Total
Alameda	90	1	91
Amador	479	70	549
Butte	16,533	2,711	19,244
Calaveras	846	17	863
Colusa	4,508	392	4,900
Contra Costa	1,066	82	1,148
El Dorado	257	1	258
Fresno	2,778	597	3,375
Glenn	5,795	2,011	7,806
Kern	1,411	30	1,441
Kings	4,995	1,588	6,583
Lake	6,309	132	6,441
Madera	845	190	1,035
Mendocino	75	2	77
Merced	4,852	1,270	6,122
Monterey	308	20	328
Napa	186	32	218
Placer	1,434	0	1,434
Sacramento	114	2	116
San Benito	2,578	197	2,775
San Joaquin	26,427	4,689	31,116
San Luis Obispo	2,827	247	3,074
Santa Barbara	723	33	756
Santa Clara	547	40	587
Shasta	1,273	24	1,297
Solano	3,899	908	4,807
Sonoma	238	19	257
Stanislaus	18,120	3,705	21,825
Sutter	12,545	3,036	15,581
Tehama	10,860	1,265	12,125
Tulare	20,491	4,198	24,689
Ventura	235	0	235
Yolo	7,961	1,295	9,256
Yuba	6,610	574	7,184
Other Counties	83	0	83
STATE TOTAL	168,298	29,378	197,676

TABLE 3 -- Walnut Acreage By Variety As Of 1996

County	Bearing	Non-Bearing	Total
Ashley	8,886	130	9,016
Chandler	15,960	18,652	34,612
Eureka	6,744	212	6,956
Franquette	13,828	603	14,431
Hartley	52,665	3,281	55,946
Payne	14,738	707	15,445
Serr	22,643	1,267	23,910
Tehama	5,673	121	5,794
Vina	12,466	1,907	14,373
All Others	14,695	2,498	17,193
CROP TOTAL	168,298	29,378	197,676



Percentages in the pie chart do not add to 100 due to rounding.

TABLE 4 -- Walnut Objective Measurement Survey Data, By District

Measurement	Year	Coast 1/	Sacramento Valley 2/	San Joaquin Valley 3/	State 4/
In-Shell Weight (gm)	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
	1994	20.9	23.6	20.7	22.1
	1995	19.8	21.3	20.3	20.8
	1996	20.0	24.4	19.9	22.1
	1997	20.9	23.7	22.2	22.9
In-Shell Width (mm)	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
	1994	31.4	32.4	32.2	32.2
	1995	30.6	31.7	32.0	31.7
	1996	31.4	32.5	32.2	32.3
	1997	32.3	33.0	31.1	32.3
In-Shell Cross-Width (mm)	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
	1994	31.3	32.4	32.3	32.2
	1995	30.2	31.3	31.7	31.3
	1996	31.4	32.6	32.5	32.5
	1997	32.3	33.2	31.9	32.6
In-Shell Length (mm)	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
	1994	38.7	39.7	39.3	39.4
	1995	39.2	39.0	39.5	39.2
	1996	38.4	39.4	38.7	39.0
	1997	38.2	39.4	37.6	38.6
Kernel Grade -- Percent Sound	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
	1994	92.6	94.7	97.5	95.6
	1995	89.2	91.4	96.1	93.1
	1996	92.6	93.8	95.3	94.4
	1997	97.8	97.4	97.3	97.3
Nuts Set Per Tree	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
	1994	1,813	1,961	1,602	1,773
	1995	1,420	2,253	1,451	1,777
	1996	1,362	1,836	1,497	1,630
	1997	1,128	2,233	1,439	1,753

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

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

Measurement	Year	Ashley	Chandler	Eureka	Franquette	Hartley	Payne	Serr	Tehama	Vina	Other
In-Shell Weight (gm)	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
	1994	19.3	24.3	20.9	20.3	24.7	19.7	20.0	21.1	19.7	21.0
	1995	18.0	20.7	19.1	18.6	23.1	19.5	18.6	18.7	18.4	19.3
	1996	20.0	23.3	20.6	20.1	24.8	18.1	19.8	21.2	20.1	21.1
	1997	19.8	24.4	23.2	21.1	24.8	20.4	21.3	20.5	20.5	22.2
In-Shell Width (mm)	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
	1994	31.8	32.7	30.9	30.8	33.2	32.1	33.3	32.4	30.5	30.8
	1995	31.0	31.7	30.6	30.1	32.6	31.9	32.4	31.6	29.7	30.6
	1996	31.7	32.4	31.6	31.1	33.0	32.2	33.0	32.3	30.9	31.2
	1997	31.8	32.3	30.7	30.6	33.3	31.5	33.3	32.0	31.0	30.8
In-Shell Cross-Width (mm)	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
	1994	31.6	33.2	31.4	31.3	33.0	31.9	32.3	31.9	31.6	31.9
	1995	30.6	31.7	30.5	30.1	32.1	31.3	30.9	30.7	30.1	31.0
	1996	31.7	33.1	32.1	31.5	32.9	32.2	32.1	32.5	32.1	32.3
	1997	31.9	33.0	32.2	31.3	33.2	32.0	33.0	32.1	32.1	32.0
In-Shell Length (mm)	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
	1994	37.1	40.9	43.0	38.7	40.3	37.9	37.9	38.0	38.6	39.2
	1995	36.8	39.6	41.2	38.8	40.1	38.4	37.5	37.8	38.6	38.6
	1996	37.0	39.4	41.4	38.6	40.0	37.8	37.3	37.6	38.8	39.2
	1997	36.2	39.2	41.0	37.8	39.5	36.6	37.4	37.2	38.1	38.5
Kernel Grade -- Percent Sound	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
	1994	91.3	96.6	95.7	95.7	95.3	96.9	96.9	96.4	94.0	97.3
	1995	91.6	93.6	93.4	89.8	93.8	95.2	95.6	88.7	92.4	93.5
	1996	92.3	95.1	93.4	89.8	95.1	95.4	96.6	92.7	95.8	94.2
	1997	96.2	97.8	94.9	96.6	98.1	96.5	97.0	96.7	97.5	96.6
Nuts Set Per Tree	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
	1994	1,391	1,711	1,905	2,781	1,974	1,540	1,154	1,207	1,619	1,643
	1995	1,392	1,912	1,590	2,348	2,284	1,404	984	1,961	1,260	1,157
	1996	1,353	1,659	1,296	2,356	1,853	1,285	1,417	958	1,355	1,472
	1997	1,406	1,570	1,414	2,162	2,228	1,304	796	1,703	1,894	1,839

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

District And Variety	U.S. Standards Size Intervals 1/																													
	1993						1994						1995						1996						1997					
	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 2/ - - - - - - - - - - - - - - -																													
DISTRICTS:																														
Coast	4	49	18	16	12	1	1	47	16	15	19	1	0	36	16	20	26	1	0	47	20	15	17	1	1	62	16	9	12	0
Sacramento Valley	1	65	13	11	10	1	0	64	12	12	10	1	0	53	16	14	15	1	0	65	14	11	9	0	0	73	11	9	6	0
San Joaquin Valley	1	72	12	10	6	0	0	60	18	13	9	0	0	59	17	13	10	1	0	61	18	12	8	0	0	51	14	12	19	4
VARIETIES:																														
Ashley	0	63	16	12	9	0	0	54	18	16	12	0	0	42	22	18	18	1	0	54	17	13	15	1	0	62	15	9	10	4
Chandler	0	64	17	11	7	0	0	69	17	9	5	0	1	52	19	19	10	0	1	67	16	9	7	0	1	67	11	10	10	1
Eureka	0	39	28	15	18	0	0	28	38	20	13	0	0	29	30	22	17	1	0	49	29	12	10	0	0	36	29	12	20	2
Franquette	0	46	17	21	14	2	0	39	21	18	21	1	0	24	21	24	28	2	0	41	25	17	16	1	0	35	19	21	23	1
Hartley	1	77	10	7	5	0	0	78	10	7	4	0	0	69	13	9	8	0	0	74	12	9	5	0	0	79	9	5	5	1
Payne	4	70	12	8	7	0	1	56	17	15	9	1	0	59	15	15	11	1	0	62	16	11	10	1	0	55	13	12	19	2
Serr	2	79	7	8	4	0	1	78	9	7	5	0	0	66	16	10	6	1	1	75	11	7	5	0	1	75	8	8	7	1
Tehama	0	51	20	16	13	1	0	66	12	11	10	0	1	53	15	15	16	1	0	59	22	11	7	0	0	61	15	11	14	0
Vina	0	36	17	19	24	3	0	30	22	26	21	1	1	25	16	22	31	5	0	38	19	22	20	1	0	45	18	18	15	3
Other	0	50	17	18	14	1	0	38	15	24	21	1	0	40	14	18	27	1	1	46	16	18	18	1	1	43	17	15	18	7
STATE	1	66	13	11	9	1	0	60	15	13	10	1	0	54	16	14	14	1	0	62	16	11	9	0	0	64	13	10	11	2
Number of Shells Measured	11,605						12,215						12,558						13,242						13,220					

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".

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