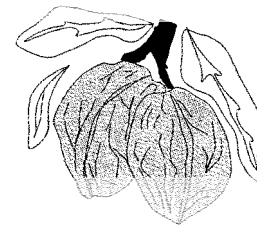


2002 California Walnut Objective Measurement Survey Report



Released: September 5, 2002
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CALIFORNIA AGRICULTURAL
STATISTICS SERVICE

WALNUT PRODUCTION FORECAST DOWN

The 2002 California walnut production is forecast at 275,000 tons, down 10 percent from 2001's production of 305,000 tons. This forecast is based on the 2002 Walnut Objective Measurement (O.M.) Survey, which was conducted August 1 through August 28, 2002.

The 2002 Walnut O.M. Survey utilized a total of 679 blocks with two sample trees per block. Survey data indicated an average nut set of 1,572, down 9 percent from 2001's average of 1,719. The Hartley nut set was down 4 percent; Chandler, was down 24 percent; Serr, was down 6 percent; Franquette, was up 14 percent from 2001. Percent of sound kernels in-shell was 96.3 percent Statewide. In-shell weight per nut was 22.0 grams, while the average in-shell suture measurement was 32.4 millimeters. The average length in-shell was 38.5 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 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 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 5-15 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.

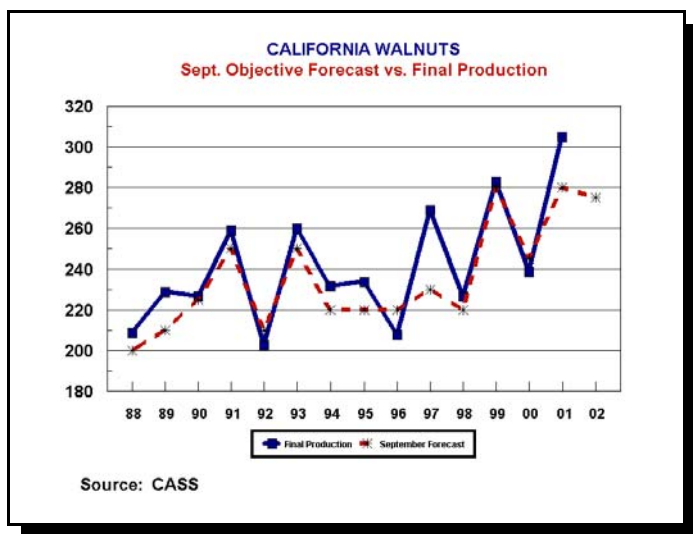
On the accessible branch, every first of five nuts is picked for use in size and grade determinations. If available, at least ten nuts are harvested from the accessible branch for this purpose.

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 248,000 tons to 302,000 tons. This means there is an 80 percent chance the 2002 production will fall within this range.



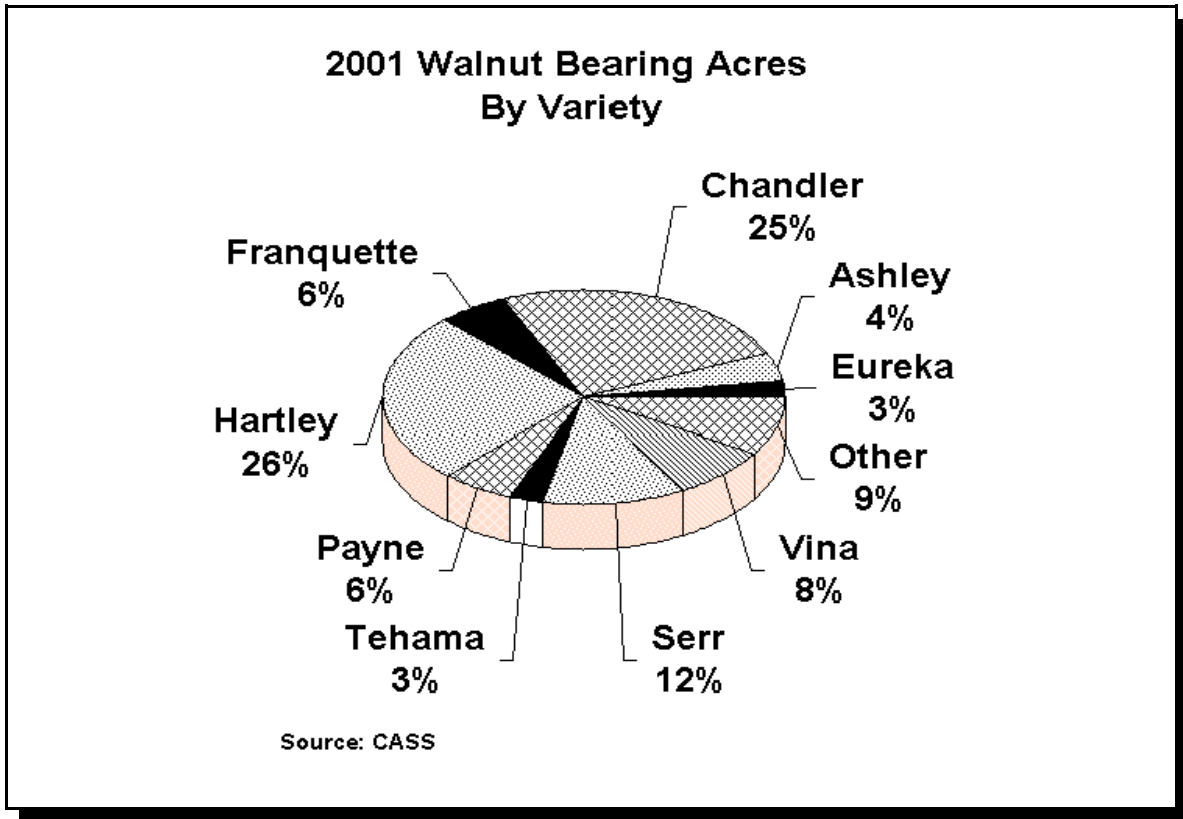
California English Walnut Acreage, Production, Price And Value In-Shell

Year	Bearing Acres	Total Production	Per Bearing Acre	Price Per Ton	Total Value
		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	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	193,000	227,000	1.18	1,050.00	238,350,000
1999	191,000	283,000	1.48	886.00	250,738,000
2000	193,000	239,000	1.24	1,240.00	296,360,000
2001 <u>a/</u>	196,000	305,000	1.56	1,120.00	341,600,000
2002 <u>b/ c/</u>	200,000	275,000	1.38	---	---

a/ Price Per Ton and Total Value are July 1, 2002 preliminary data.

b/ Bearing years include plantings of the following: Chandler, Chico, Howard, Tulare (1998 & Earlier); 50-55, 59-124, 4946, Amigo, Ashley, Bardonni, Cisco, Earhorn, Grove, Gustine, Honeycutt, Houston, Jensen, Lompoc, Marchetti, Nuggett, Payne, Pedro, Serr, Sunland, Tehama, Trinta, UCD 67-13, Vina, Westside (1997 and Earlier); Franquette, Franquette Scharsch, Mayette, Placentia, Poe, Willsons/Willsons Wonder, Woodland (1995 & Earlier); all other varieties not specified (1996 & Earlier).

c/ Price Per Ton and Total Value preliminary data will be released July 2003.



NOTE: Pie chart percentages are based on the sum of grower acreage reported and do not add to 100 due to rounding.

Walnut Objective Measurement Survey Data, By District

Measurement	Year	Coast ^{1/}	Sacramento Valley ^{2/}	San Joaquin Valley ^{3/}	State ^{4/}
In-Shell Weight (gm)	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
	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
In-Shell Width (mm)	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
	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
In-Shell Cross-Width (mm)	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
	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
In-Shell Length (mm)	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
	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	37.5	38.4	38.8	38.5
Kernel Grade – Percent Sound	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
	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
Nuts Set Per Tree	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
	1998	1,070	1,654	1,253	1,407
	1999	1,355	2,180	1,250	1,709
	2000	1,195	1,812	1,204	1,483
	2001	937	2,020	1,478	1,719
	2002	1,254	1,982	1,142	1,572

^{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.

Walnut Objective Measurement Survey Data, By Variety

Measurement	Year	Ashley	Chandler	Eureka	Franquette	Hartley	Payne	Serr	Tehama	Vina	Other
In-Shell Weight (gm)	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
	1998	19.2	21.9	20.8	20.2	24.0	19.6	19.5	19.5	19.2	19.9
	1999	20.3	24.9	22.1	20.0	24.6	19.0	20.3	19.1	20.7	20.9
	2000	17.5	22.9	21.7	18.3	22.8	18.8	19.3	19.8	19.3	19.9
	2001	17.8	22.7	20.0	21.2	23.2	16.9	17.8	21.7	19.9	19.3
	2002	18.0	24.1	20.8	18.3	23.6	19.3	19.4	19.6	20.0	21.0
In-Shell Width (mm)	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
	1998	31.2	31.8	30.2	30.7	33.0	31.4	32.1	31.2	30.6	31.1
	1999	30.7	32.8	30.4	31.0	32.8	31.5	32.6	30.9	30.4	31.2
	2000	31.0	32.8	31.3	30.6	32.8	32.3	33.1	31.1	30.9	31.0
	2001	30.3	32.0	32.0	30.5	32.3	31.2	31.8	31.3	30.3	30.7
	2002	31.7	32.9	31.8	29.8	32.8	33.0	32.9	31.7	31.0	31.7
In-Shell Cross-Width (mm)	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
	1998	31.2	30.9	30.5	31.2	32.5	31.4	31.6	30.8	30.8	31.7
	1999	30.8	34.0	31.0	31.2	33.2	31.4	31.9	30.8	31.5	32.0
	2000	31.2	33.9	32.0	30.5	33.2	32.7	32.6	31.6	32.0	32.3
	2001	30.1	32.0	31.1	30.6	32.2	31.0	31.2	30.9	30.6	30.8
	2002	31.8	33.7	32.7	30.1	32.9	33.1	32.6	31.8	31.8	32.4
In-Shell Length (mm)	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
	1998	37.2	40.0	40.8	39.6	40.9	38.0	37.7	37.7	38.4	39.6
	1999	36.9	40.4	42.6	38.2	39.6	38.1	38.5	37.3	38.7	39.5
	2000	35.8	39.4	43.0	37.4	38.2	38.2	37.6	36.9	37.3	38.3
	2001	35.2	38.7	41.6	38.4	38.9	37.0	36.4	37.2	37.4	38.3
	2002	36.1	39.7	41.4	37.0	38.7	38.2	37.5	36.8	37.6	38.5
Kernel Grade – Percent Sound	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
	1998	94.4	91.4	99.8	89.5	94.4	96.3	97.9	94.3	95.2	95.2
	1999	96.1	98.1	97.1	98.3	98.1	95.0	98.3	96.4	98.2	97.3
	2000	95.6	96.7	93.1	97.8	96.4	97.3	97.7	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	97.5
	2002	96.4	96.8	98.6	97.2	96.1	96.8	93.3	98.3	97.0	96.8
Nuts Set Per Tree	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
	1998	1,221	1,306	1,380	1,512	1,457	1,170	1,622	1,347	1,504	1,290
	1999	1,073	1,540	1,369	2,818	2,241	1,076	989	1,210	1,374	1,536
	2000	1,633	1,212	1,325	1,899	1,878	1,696	886	1,167	1,566	1,379
	2001	1,510	1,741	1,718	1,819	2,049	1,443	1,342	1,560	1,488	1,533
	2002	1,534	1,315	1,246	2,072	1,961	1,246	1,259	1,446	1,611	1,642

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

District And Variety	U.S. Standards Size Intervals 1/																													
	1998					2000					2001					2002														
	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 2/ -----																													
Coast	0	46	15	15	21	2	0	39	17	24	17	0	0	49	10	18	20	1	5	40	20	22	13	0	6	34	12	19	27	1
Sacramento Vly.	0	62	15	12	10	1	1	65	14	10	8	0	1	58	14	13	11	1	1	54	16	15	13	1	0	61	13	13	11	0
San Joaquin Vly.	0	49	19	16	14	1	0	48	19	16	13	3	0	56	19	13	8	0	0	48	23	17	12	0	1	68	15	10	6	0
VARIETIES:																														
Ashley	0	48	19	12	19	1	0	33	23	20	18	2	0	41	21	13	18	2	0	28	21	24	26	1	1	54	17	13	14	0
Chandler	1	53	20	15	11	0	1	66	15	10	5	0	2	64	14	9	7	0	1	55	21	16	8	0	0	74	13	9	3	0
Eureka	1	23	24	19	32	1	0	19	37	24	17	0	0	38	28	18	9	0	0	50	36	13	2	0	0	49	35	13	2	0
Franquette	0	35	20	24	20	1	0	38	20	23	16	0	0	28	21	28	20	1	0	27	25	29	18	1	0	19	15	31	33	1
Hartley	1	73	12	8	5	1	1	70	12	9	7	0	1	68	11	9	8	0	1	63	14	11	10	0	0	72	11	9	7	0
Payne	0	48	18	17	16	1	0	47	20	14	13	1	0	59	21	10	7	0	0	40	26	20	14	0	4	65	10	11	10	0
Serr	0	62	17	12	8	1	0	68	14	9	7	0	0	73	12	8	5	0	0	56	17	14	12	1	1	70	13	9	6	0
Tehama	0	46	21	13	20	1	0	46	15	10	26	0	0	43	22	14	16	1	0	48	16	20	15	1	0	55	18	14	12	1
Vina	0	32	19	25	23	1	0	26	24	24	22	1	0	33	23	26	15	1	1	28	16	25	28	2	0	40	21	22	16	1
Other	0	39	19	17	24	1	1	41	19	17	20	0	1	35	19	20	21	1	1	36	15	22	22	3	2	44	12	21	20	0
STATE	0	55	17	14	13	1	1	58	16	13	10	0	1	57	16	13	10	1	1	51	18	16	13	1	1	63	14	13	10	0
Number of Shells Measured	14,231					12,753					12,930					12,252					13,338									

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.

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

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**California Agricultural Statistics Service publications are available on the Internet at:
<http://www.nass.usda.gov/ca>**