

1993 ALMOND OBJECTIVE MEASUREMENT SURVEY RESULTS

RELEASED: JUNE 29, 1993
12:00 NOON PDT



CALIFORNIA AGRICULTURAL
STATISTICS SERVICE

1993 CALIFORNIA ALMOND FORECAST

California's 1993 almond production is forecast at 470 million meat pounds. This is based on 395,000 acres. This forecast is down 10 percent from May's subjective forecast and down 14 percent from last year's crop. The Nonpareil variety is forecast at 220 million meat pounds, down 13 percent from last season. The Nonpareil variety represents 47 percent of total almond production.

The average nut set per tree is 5,871, down 19 percent from 1992. The Nonpareil average nut set of 5,849 represents an 11 percent decrease from last year's set. The average kernel weight for all varieties sampled was 1.78, up 8 percent from last year. A total of 96.4 percent of the nuts sized were sound. The updated 1992 bearing acreage forecast of 390,000 acres is up 2.0 percent from 1991.

The California almond crop appears to be in good condition. Nut quality is reported as excellent with both sizes and weights larger than 1992. Nut sets, however, are lighter. The light set in the Nonpareil variety is attributed to conditions during bloom. As a result of rain, orchards are in excellent condition and trees are experiencing minimal stress. It is also believed that rains may minimize the threat of insects.

SAMPLING PROCEDURES

To determine tree set, nuts are counted along a path within a randomly selected tree. Work begins at the trunk and progresses to

the end of the terminal branch. Since at each forking only one branch is randomly selected to continue the path, the procedure is random. A branch's probability of selection is directly proportional to its cross-sectional area. This methodology is used because of its statistical efficiency. The method also makes it possible to end up at any one of the tree's numerous terminal branches. Since the selected path has a probability of selection associated with it, this probability is used to expand counts along the chosen path and then arrive at an estimated set for the entire tree.

Along intermediate stages (i.e. the bearing surface between forkings), every fifth nut is picked. All nuts on the terminal branch are picked. These nuts are used to determine size and weight measurements.

FIELD SAMPLING ACTIVITIES

The survey began May 27. Sampling was completed by June 18. There were 1,534 trees sampled for the 1993 survey in 767 orchards. An additional 113 orchards were not sampled for one of the following reasons:

- 1) Orchard had been sprayed.
- 2) Orchard was wet.
- 3) Orchard had been pulled.
- 4) Owner refused to cooperate or could not be contacted.

The Objective Measurement Survey is funded by monies provided by the Almond Board of California in cooperation with the California Department of Food and Agriculture.

**TABLE 1: COMPARISON OF NUT ESTIMATES AND ORCHARDS SAMPLED
BY DISTRICT AND VARIETY, JUNE OBJECTIVE MEASUREMENT SURVEY COUNTS**

District and Variety	1989		1990		1991		1992		1993	
	Nuts Per Tree	Orchards Sampled	Nuts Per Tree	Orchards Sampled	Nuts Per Tree	Orchards Sampled	Nuts Per Tree	Orchards Sampled	Nuts Per Tree	Orchards Sampled
ALL DISTRICTS										
(All Varieties)	6,352	796	9,333	796	6,134	775	7,217	678	5,871	767
BY DISTRICTS										
<u>District I</u>										
Sacramento Valley	5,136	172	10,709	165	6,802	166	8,171	139	6,801	173
<u>District II</u>										
San Joaquin Valley	6,765	615	9,045	625	5,952	609	6,908	635	5,652	587
BY VARIETIES										
California Types ^{a/}	7,421	153	10,068	142	6,406	144	8,406	113	5,901	129
Carmel ^{b/}	7,855	90	9,776	88	6,116	94	8,301	73	5,317	85
Merced	6,581	43	8,773	47	5,518	43	6,618	34	6,332	30
Mission	6,768	78	9,018	85	6,197	76	8,097	70	6,117	70
Ne Plus Ultra	5,639	38	7,853	32	6,681	32	6,479	25	4,808	29
Nonpareil	6,019	431	9,378	438	6,163	429	6,567	376	5,849	447

^{a/} For survey purposes, the California classification includes the following varieties: Ballico, Carmel, Davey, Fritz, Harvey, Le Grand, Mono, Monterey, Norman, Price Cluster, Ruby, Tokoyo and Yosemite.

^{b/} Carmel breakdown was first provided in 1988. Please Note: Carmel variety is also included in California Types.

**TABLE 3: CALIFORNIA ALMOND ACREAGE,
PRODUCTION AND TREES/ACRE, 1986-93**

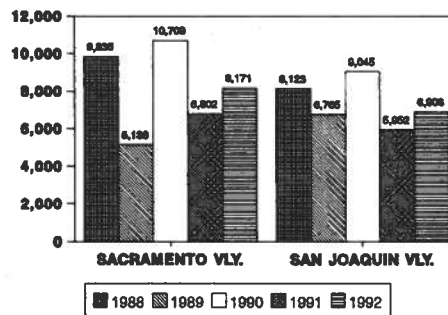
Year	Bearing Acres <u>a/</u>	Total Meat Production			Average Trees Per Acre
		Metric Ton <u>b/</u>	Million Lbs.	Lbs Per Acre	
1986	416,000	113,000	250	601	84.0
1987	417,000	299,000	660	1,580	85.4
1988	419,000	268,000	590	1,410	86.3
1989	411,000	222,000	490	1,190	87.3
1990	411,000	299,000	660	1,610	88.4
1991	383,000	222,000	490	1,279	89.6
1992	390,000	249,000	548	1,405	90.5
1993 <u>c/</u>	395,000	213,000	470	1,190	89.1

a/ Bearing acreage defined to be plantings 4 years and older.

b/ Rounded to nearest thousand.

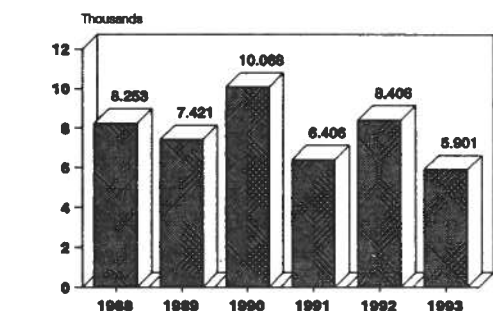
c/ July forecast.

DISTRICTS NUTS PER TREE



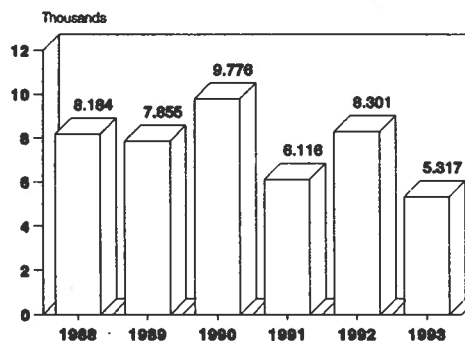
NUTS PER TREE

CALIFORNIA TYPES

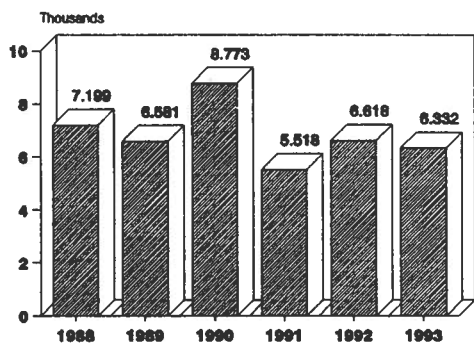


refer to footnotes for call. type

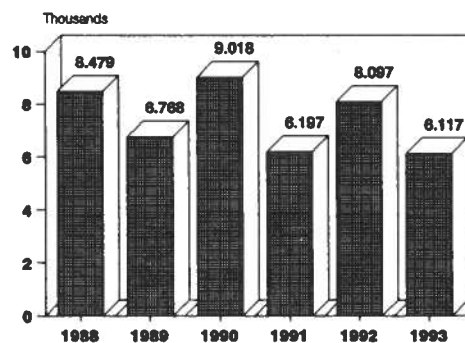
CARMEL



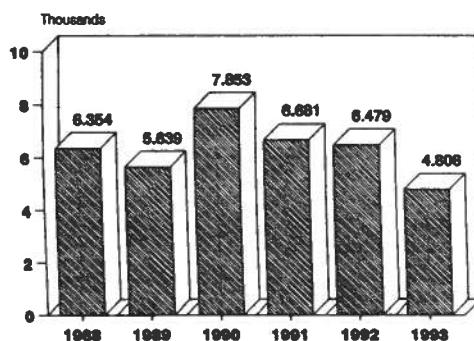
MERCED



MISSION



NE PLUS



NONPAREIL

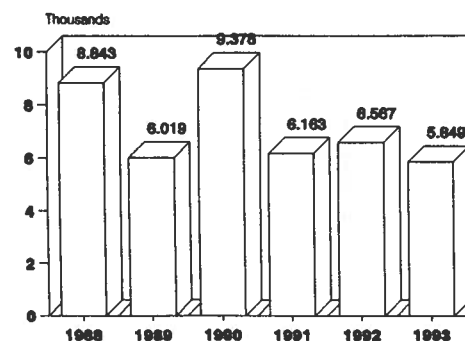


TABLE 2: WEIGHT, SIZE AND GRADE OF AVERAGE ALMOND SAMPLE

District and Variety	Weight (Grams)		Size (Millimeters)					Grade (Percent of Nuts) ^{a/}						
	In-Hull	Kernel	Suture		Kernel			Edible Nuts		Insect Damage	Shrivel	Natural Gum	Blank	Other
			In-Hull	In-Shell	Length	Width	Thickness	Singles	Doubles					
ALL DISTRICTS	(Weighted by Bearing Acreage)													
1988	10.91	1.57	26.30	20.73	22.75	13.20	10.21	93.7	3.1	b/	1.2	0.6	0.1	1.2
1989	11.52	1.54	26.34	20.79	23.84	13.04	9.64	95.1	2.1	b/	1.1	0.3	0.1	1.3
1990	10.51	1.53	25.73	20.71	23.38	12.98	9.94	92.6	5.3	b/	0.9	0.1	0.1	1.0
1991	f/	1.77	f/	f/	23.47	13.97	10.44	93.9	3.5	b/	1.2	0.2	0.1	1.0
1992	f/	1.65	f/	f/	23.80	13.24	9.90	95.3	2.8	b/	1.2	0.2	0.1	0.4
1993	f/	1.78	f/	f/	24.59	13.61	10.17	92.6	3.8	b/	2.6	0.4	b/	0.5
BY DISTRICT ^{c/}														
Sacramento Valley														
1988	10.46	1.50	25.69	22.22	22.58	12.74	10.00	93.8	3.9	b/	0.7	0.2	0.2	0.9
1989	12.70	1.60	27.67	23.94	24.60	13.30	9.46	93.0	5.0	b/	0.5	0.4	0.3	0.7
1990	9.31	1.39	24.85	19.58	21.85	12.63	9.70	91.4	7.4	b/	0.3	0.1	b/	0.8
1991	f/	1.68	f/	f/	22.23	13.68	10.19	93.7	4.2	b/	0.4	0.1	b/	1.5
1992	f/	1.59	f/	f/	23.56	13.25	9.81	95.1	3.3	b/	1.0	0.2	b/	0.3
1993	f/	1.71	f/	f/	24.84	13.44	9.71	93.1	4.4	0.1	2.0	b/	0.1	0.2
San Joaquin Valley														
1988	11.06	1.59	26.49	20.26	22.82	13.35	10.29	93.7	2.8	b/	1.4	0.7	0.1	1.3
1989	11.27	1.53	26.06	20.10	23.69	12.99	9.69	95.6	1.5	b/	1.2	0.3	b/	1.4
1990	10.88	1.57	26.01	21.07	23.84	13.09	10.02	92.9	4.6	b/	1.1	0.1	0.1	1.1
1991	f/	1.79	f/	f/	23.84	14.06	10.51	94.0	3.2	b/	1.5	0.2	0.2	0.8
1992	f/	1.67	f/	f/	23.88	13.24	9.94	95.4	2.6	b/	1.3	0.2	b/	0.5
1993	f/	1.81	f/	f/	24.50	13.67	10.34	92.4	3.6	b/	2.9	0.6	b/	0.6
BY VARIETY														
California Types ^{d/}														
1988	9.28	1.45	24.29	18.87	22.22	12.31	10.07	93.0	3.3	b/	1.8	0.7	0.1	1.2
1989	9.58	1.38	23.87	18.76	23.58	11.98	9.48	94.4	2.3	b/	1.4	0.1	b/	1.7
1990	8.57	1.39	23.47	18.96	23.19	12.01	9.93	89.9	7.8	b/	1.0	b/	b/	1.2
1991	f/	1.55	f/	f/	23.25	12.62	10.12	93.6	3.7	b/	1.3	0.3	b/	1.1
1992	f/	1.52	f/	f/	23.69	12.32	9.84	94.0	4.5	b/	0.9	0.1	b/	0.5
1993	f/	1.67	f/	f/	24.47	12.69	10.12	89.8	5.8	b/	3.8	0.3	b/	0.3
Carmel ^{e/}														
1989	9.44	1.39	23.56	18.37	23.96	11.89	9.47	95.3	1.7	b/	1.0	0.1	b/	1.8
1990	8.77	1.42	23.56	19.41	23.91	11.95	9.91	90.3	7.7	b/	1.1	b/	b/	0.7
1991	f/	1.61	f/	f/	24.22	12.74	10.11	94.7	2.8	b/	1.3	0.2	b/	1.0
1992	f/	1.54	f/	f/	24.27	12.27	9.81	94.2	4.5	b/	0.7	0.1	b/	0.5
1993	f/	1.69	f/	f/	25.03	12.68	10.06	91.7	5.2	b/	2.6	0.3	b/	0.2
Merced														
1988	11.04	1.59	26.34	20.08	21.92	13.35	10.65	88.0	4.1	b/	2.0	3.6	0.3	2.1
1989	10.42	1.49	25.28	19.18	22.30	12.77	10.07	92.6	3.6	b/	1.5	1.2	b/	1.1
1990	10.03	1.53	25.55	20.74	22.55	12.91	10.33	90.1	6.6	b/	2.1	0.4	b/	0.8
1991	f/	1.71	f/	f/	22.13	13.73	10.87	90.5	5.6	b/	2.1	0.8	b/	0.9
1992	f/	1.59	f/	f/	22.34	12.81	10.24	90.7	6.8	b/	1.2	0.8	0.1	0.3
1993	f/	1.70	f/	f/	23.13	13.32	10.53	88.1	8.5	b/	2.3	0.4	b/	0.6
Mission														
1988	8.22	1.33	24.77	19.19	19.36	12.61	10.76	95.5	1.4	b/	0.7	0.2	b/	2.0
1989	8.60	1.25	24.69	18.92	20.23	12.14	9.84	96.6	1.4	b/	0.4	0.2	b/	1.4
1990	7.45	1.31	23.46	18.17	19.43	12.17	10.62	85.9	11.1	b/	0.9	b/	0.1	1.9
1991	f/	1.43	f/	f/	19.68	13.11	10.74	95.2	2.2	b/	0.9	0.2	0.5	1.0
1992	f/	1.31	f/	f/	19.71	12.16	10.07	96.9	0.4	b/	1.6	0.3	0.2	0.5
1993	f/	1.45	f/	f/	20.61	12.34	10.62	90.1	7.5	0.1	1.6	0.1	b/	0.7
No Plus Ultra														
1988	12.61	1.88	27.65	21.95	26.64	13.65	10.27	78.3	16.3	b/	3.0	0.6	b/	1.4
1989	12.04	1.77	26.84	21.36	26.91	13.22	9.71	86.3	9.7	b/	1.9	0.2	b/	1.8
1990	11.44	1.79	26.35	20.97	26.84	13.39	10.20	85.1	12.2	b/	1.1	0.1	b/	1.3
1991	f/	1.98	f/	f/	26.58	13.99	10.37	85.2	12.0	b/	0.6	0.1	b/	1.8
1992	f/	1.87	f/	f/	26.61	13.37	10.05	87.8	10.1	b/	1.2	0.4	b/	0.4
1993	f/	2.11	f/	f/	28.50	14.22	10.12	87.9	8.5	b/	2.6	0.4	b/	0.6
Nonpareil														
1988	11.82	1.64	27.20	21.65	23.52	13.59	10.13	95.5	2.2	b/	1.0	0.3	0.1	0.8
1989	12.99	1.67	27.80	22.06	24.73	13.73	9.64	96.5	1.1	b/	1.0	0.2	0.1	1.1
1990	11.74	1.61	26.94	21.83	24.14	13.46	9.78	95.7	2.3	b/	0.8	b/	0.1	0.8
1991	f/	1.91	f/	f/	24.28	14.65	10.47	95.4	2.2	b/	1.3	0.1	0.1	0.8
1992	f/	1.80	f/	f/	25.01	13.95	9.87	96.6	1.7	b/	1.3	0.1	b/	0.3
1993	f/	1.89	f/	f/	25.37	14.12	10.10	95.0	1.4	b/	2.6	0.4	0.1	0.4

^{a/} Percentages may not add to 100 due to rounding.^{b/} Not shown if less than 0.07 percent.^{c/} San Luis Obispo County will no longer be published separately to maintain data integrity.^{d/} For survey purposes, the California classification includes the following varieties: Ballico, Carmel, Davey, Fritz, Harvey, Le Grand, Mono, Monterey, Norman, Price Cluster, Ruby, Tokoyo and Yosemite.^{e/} Carmel breakdown was available for the first time in 1988. Carmel variety is still included in California Types.^{f/} In-Hull and In-Shell measurements and In-Hull weight were discontinued in 1991.**NOTE:** Sacramento Valley includes these counties: Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo and Yuba.

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

CALIFORNIA FRUIT AND NUT ACREAGE AS OF 1992 -- VARIETIES AND AGE GROUPS -- STATE SUMMARY
ACREAGE PLANTED DURING YEARS SHOWN AND STANDING IN 1992

Crop And Variety	1980 And Earlier	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	Acres Standing in 1992		
														Bearing	Non-Bearing	Total
ALMONDS																
ALDRICH	7	0	7	3	8	14	8	13	13	29	43	63	18	98	124	222
BALLICO	61	0	0	0	0	0	0	0	0	0	0	0	0	61	0	61
BUTTE	1,216	1,376	856	377	272	216	205	447	973	977	1,271	1,517	404	6,915	3,192	10,107
CALIFORNIA/ CA PAPERSHELL	19	0	1	13	6	1	3	0	19	10	0	0	0	72	0	72
CARMEL	25,327	9,657	6,495	2,483	2,538	1,876	1,808	2,093	3,142	2,934	2,075	1,678	806	58,351	4,557	62,908
CARRIENS	114	50	9	18	0	1	4	11	13	12	0	0	28	232	28	260
CLAMPER	5	0	41	0	0	0	0	0	0	0	0	0	10	48	10	56
DAVEY	509	0	0	0	0	0	0	1	0	0	0	0	0	510	0	510
DOTTIE WON	28	0	11	4	0	0	0	0	0	0	6	5	0	43	11	54
DRAKE	1,152	0	0	0	0	0	1	3	1	0	0	3	0	1,157	3	1,160
EARLY MISSION	50	12	0	0	0	0	0	0	0	5	0	0	0	67	0	67
FRITZ	1,019	595	256	108	143	380	214	178	405	712	258	386	79	4,008	703	4,711
HARVEY	2,089	57	21	0	5	2	7	0	0	5	18	36	0	2,188	54	2,240
HASHAM	598	0	77	36	0	31	40	0	0	0	0	0	0	782	0	782
IXL	350	0	0	0	0	0	1	0	0	0	0	0	0	351	0	351
JEFFRIES	311	225	0	0	0	0	0	0	0	0	0	7	0	538	7	543
JORDANOLO	186	0	0	1	0	0	0	1	0	0	2	0	0	188	2	190
KAPAREIL	216	4	32	11	1	2	0	0	0	0	1	0	0	268	1	267
LE GRAND	1,288	116	57	41	0	3	8	8	0	0	8	0	0	1,521	8	1,529
LIVINGSTON	121	7	11	4	0	0	40	15	28	6	34	75	13	232	122	354
MERCED	16,461	80	15	24	26	111	23	14	38	15	13	23	33	16,797	69	16,866
MILO	192	0	0	0	0	0	0	0	0	0	0	0	0	192	0	192
MONO	1,016	74	96	24	122	17	34	15	5	0	28	36	0	1,403	64	1,467
MONTEREY	816	702	1,131	315	163	131	38	384	391	259	253	174	159	4,330	588	4,918
N-43	59	0	0	0	0	0	0	0	0	0	0	0	0	59	0	59
NE PLUS ULTRA	12,357	886	362	79	79	58	71	50	94	33	94	25	7	14,069	126	14,195
NONPAREIL	144,426	17,720	8,535	3,005	2,993	2,712	2,572	2,678	4,398	5,274	4,465	2,978	1,216	194,313	8,659	202,972
NORMAN	658	0	12	0	0	0	14	0	0	0	0	0	0	684	0	684
PADRE	5	0	37	19	4	8	32	100	312	313	510	480	252	828	1,222	2,050
PEERLESS	6,601	1,401	757	197	255	235	198	127	245	196	208	61	54	10,212	323	10,535
PRICE CLUSTER	9,135	4,450	1,778	658	631	729	467	457	761	736	731	286	89	19,802	1,106	20,908
RUBY	1,311	415	481	179	181	85	87	164	295	139	96	116	15	3,317	227	3,544
SAURET #1	388	84	37	7	2	15	0	1	3	0	8	0	0	497	8	505
SAURET #2	406	44	10	0	3	10	0	0	0	0	2	1	0	473	3	476
SCHELETTER	80	0	0	0	0	0	0	0	0	0	0	0	0	80	0	80
SONORA	0	0	0	0	18	40	8	27	161	703	496	107	141	957	744	1,701
TEXAS/MISSION	28,185	1,732	1,141	708	355	171	330	337	746	357	371	598	234	34,080	1,203	35,283
THOMPSON	7,488	56	184	172	23	24	0	7	28	5	10	11	0	7,965	21	7,986
TIOGA	52	12	1	0	0	0	0	0	0	0	0	0	0	65	0	65
TOKOYO	582	55	44	0	4	24	0	21	6	14	0	14	0	730	14	744
WOOD COLONY	24	0	0	0	2	6	0	14	38	113	90	53	54	197	197	394
YOSEMITE	556	58	80	11	4	0	0	0	0	0	4	0	0	709	4	713
OTHER	650	88	33	16	23	3	12	9	13	32	9	185	14	879	208	1,087
CROP TOTAL	266,042	39,936	22,608	8,511	7,857	6,893	6,223	7,173	12,128	12,879	11,104	8,876	3,626	390,240	23,806	413,946

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