

1990 ALMOND PERMANENT RECORD OBJECTIVE MEASUREMENT SURVEY RESULTS



RELEASED: JULY 6, 1990
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CALIFORNIA AGRICULTURAL
STATISTICS SERVICE

1990 CALIFORNIA ALMOND FORECAST

The July 1990 almond forecast is 655 million meat pounds based on 407,000 bearing acres. The July forecast is down 2 percent from June but 34 percent above 1989. The Nonpareil variety is forecast at 360 million meat pounds, up 45 percent from last season. The Nonpareil variety represents 55 percent of the total almond production.

The average nut set per tree was 9,333, up 47 percent from 1989. The average nut set for Nonpareil was 9,378, 56 percent above last year's set.

The average kernel weight was 1.53 grams, down slightly from last year. A total of 92.6 percent of the nuts sized were sound. A larger percentage of nuts were double this year with 5.3 percent compared with 1.5 percent in 1989.

The California almond crop generally remains in excellent condition despite the current drought conditions. Nut sizes are slightly smaller than 1989. Sets are heavier in northern California and become lighter toward the southern part of the central valley. No major insect or disease problems are being reported.

SAMPLING PROCEDURES

To determine tree set, nuts are counted along a path within a randomly selected tree starting at the trunk and progressing to the end

of the terminal branch. Each branch at a forking has a given probability of selection proportional to its cross-sectional area. This methodology is used because of its statistical efficiency. The path is random in that, at each forking, only one of the branches is randomly selected to continue the path. In this way it is possible to end up at any of the tree's terminal branches. Along intermediate stages, i.e., the bearing surface between forkings, every fifth nut is picked. All nuts on the terminal branch are picked. The path chosen has a known probability of selection associated with it and thus can be used to expand the counts along the path in order to arrive at an estimated set for the entire tree.

FIELD SAMPLING ACTIVITIES

The Survey began May 29th with sampling completed by June 20th. There were 1,587 trees sampled for the 1990 survey in 796 orchards. An additional 59 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.

CALIFORNIA FRUIT AND NUT ACREAGE AS OF 1989--VARIETIES AND AGE GROUPS--STATE SUMMARY
ACREAGE PLANTED DURING YEARS SHOWN AND STANDING IN 1989

CROP AND VARIETY	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	ACRES STANDING IN 1989
	EARLIER													BEARING: BEARING: TOTAL:
ALMONDS														
ALDRICH	1	6	0	0	0	1	6	7	13	7	10	12	2	41 24 65
BALLICO	65	0	0	0	0	0	0	0	0	0	0	0	0	65 0 65
BUTTE	448	93	245	556	1,049	776	372	238	141	162	442	773	308	4,080 1,523 5,603
CARNEL	11,010	2,567	6,124	6,136	9,665	6,290	2,402	1,904	1,385	1,089	1,266	1,748	1,269	48,572 4,283 52,855
CARRIENS	27	2	4	28	5	18	0	1	7	11	12	12	14	35 181
DAVEY	1,016	0	0	1	0	0	0	0	1	0	1	0	0	1,018 1 1,019
DRAKE	1,901	0	0	0	0	0	0	0	0	0	0	0	0	1,901 0 1,901
EARLY MISSION	60	3	6	1	0	0	0	0	0	0	13	0	0	70 13 83
FRITZ	397	169	130	282	589	292	98	102	264	176	147	316	404	2,499 867 3,366
HARVEY	1,759	28	385	73	124	68	0	8	0	4	5	0	0	2,449 5 2,454
HASHAM	50	136	236	145	0	78	62	0	0	0	0	0	0	707 0 707
IEL	744	0	0	2	1	0	0	0	0	0	0	0	0	747 0 747
JEFFRIES	31	30	177	152	261	0	0	0	0	0	0	0	0	651 0 651
JORDANOLD	363	0	6	0	0	1	0	0	0	0	1	0	0	370 1 371
KAPAREIL	308	14	3	25	4	32	11	1	2	0	0	0	0	400 0 400
LE GRAND	808	136	102	133	268	88	43	0	0	0	0	0	0	1,578 0 1,578
LIVINGSTON	64	21	25	30	7	11	4	0	0	6	15	28	0	168 43 211
MERCED	20,923	199	581	193	105	48	31	24	86	21	28	25	9	22,211 62 22,273
NILO	106	0	0	0	0	0	0	0	0	0	0	0	0	106 0 106
MONO	777	104	187	217	34	48	20	35	13	0	15	0	0	1,437 15 1,452
MONTEREY	66	48	301	457	670	1,222	327	177	127	25	162	262	123	3,420 547 3,967
N-43	0	0	0	60	0	0	0	0	0	0	0	0	0	60 0 60
NE PLUS ULTRA	14,389	644	532	778	650	350	75	96	32	23	45	97	3	17,569 165 17,714
NONPAREIL	146,920	6,714	12,071	12,834	17,013	7,909	2,842	2,691	2,099	1,595	1,729	2,775	2,746	7,250 219,938 7,250 219,938
NORHAM	729	23	63	0	0	12	0	0	0	1	0	0	0	828 0 828
PADRE	7	0	0	0	0	0	14	7	0	2	105	216	62	383 450
PEERLESS	4,047	292	634	1,128	1,387	559	195	186	164	90	99	187	74	10,682 360 11,042
PRICE CLUSTER	3,748	1,062	2,061	2,529	4,216	1,885	620	589	468	257	330	394	152	17,435 876 18,311
RUBY	756	50	248	244	465	426	177	105	70	37	142	249	39	2,578 430 3,008
SAURET #1	23	11	187	112	55	6	7	2	15	0	1	1	0	418 2 420
SAURET #2	65	6	117	128	44	0	0	3	10	0	1	0	0	373 1 374
SMITH AL	21	0	12	0	1	34	0	0	1	0	0	0	0	69 0 69
SONORA	0	0	0	0	0	0	0	18	40	4	29	80	540	62 649 711
TEXAS/MISSION	33,710	825	988	1,488	1,708	1,053	582	349	145	209	392	610	168	41,057 1,170 42,227
THOMPSON	9,106	165	123	93	58	167	57	23	9	0	2	5	0	9,801 7 9,808
TIOGA	13	8	0	34	12	1	0	0	0	0	0	0	0	68 0 68
TOKOTO	364	81	82	108	46	40	0	0	24	0	0	1	0	745 1 746
WOOD COLONY	0	0	0	0	0	0	0	2	0	0	19	26	68	2 113 115
YOSEMITE	395	66	137	152	46	40	8	0	0	0	0	0	0	844 0 844
OTHER	916	61	86	106	64	85	34	10	9	40	43	70	15	1,411 128 1,539
CROP TOTAL	258,133	13,564	25,853	28,225	38,594	21,567	8,006	6,577	5,119	3,755	5,053	7,887	5,994	409,393 18,934 428,327

TABLE 1: 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		Thick- ness	Edible Nuts		Insect Damage	Shrivel	Natural Gum	Blank	Other
			In- Hull	In- Shell	Length	Width		Singles	Doubles					
ALL DISTRICTS	(Weighted by bearing acreage)													
1986	13.53	1.84	28.22	22.16	24.80	14.23	10.73	94.2	1.8	b/	2.4	0.4	0.1	1.1
1987	10.41	1.53	26.38	20.82	23.00	13.53	10.12	93.8	4.4	b/	1.0	b/	0.1	0.7
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	23.36	12.98	9.94	92.6	5.3	b/	0.9	0.1	0.1	1.0
BY DISTRICT c/														
Sacramento Valley														
1986	13.39	1.81	28.08	23.40	25.14	13.67	10.77	93.7	3.5	b/	1.5	0.5	b/	0.7
1987	10.34	1.48	26.61	22.15	23.30	13.50	9.91	93.5	5.1	b/	0.6	0.1	0.2	0.5
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
San Joaquin Valley														
1986	13.57	1.85	28.27	21.78	24.69	14.40	10.72	94.4	1.3	b/	2.7	0.4	0.1	1.2
1987	10.43	1.54	26.31	20.43	22.92	13.55	10.19	93.9	4.2	b/	1.1	b/	b/	0.7
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
BY VARIETY														
California Types d/														
1986	12.16	1.69	26.21	20.36	25.18	13.10	10.40	94.4	1.4	b/	2.9	0.1	0.1	1.0
1987	9.00	1.42	24.31	18.94	22.40	12.49	10.15	91.9	6.4	b/	0.9	b/	b/	0.8
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
Carmel e/														
1988	9.44	1.48	24.34	18.70	22.84	12.29	10.01	93.9	2.6	b/	1.4	1.0	0.1	1.1
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
Merced														
1986	12.45	1.73	27.43	21.18	23.30	14.04	10.98	93.7	0.9	b/	2.5	1.7	b/	1.0
1987	9.74	1.53	25.99	20.03	21.33	13.51	10.77	88.2	8.4	b/	2.2	0.3	b/	0.7
1988	11.04	1.50	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
Mission														
1986	10.09	1.56	25.91	19.81	21.38	13.46	11.13	93.7	2.8	b/	1.4	0.4	b/	1.8
1987	8.53	1.28	25.09	19.33	19.94	12.89	10.67	93.4	4.5	b/	0.8	0.1	0.1	1.2
1988	8.22	1.33	24.77	19.19	19.36	12.62	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
Ne Plus Ultra														
1986	15.20	2.19	29.33	22.99	28.02	14.54	10.62	84.4	7.1	0.1	4.5	1.3	b/	2.6
1987	11.12	1.84	26.96	21.35	26.36	13.72	10.42	79.9	17.8	b/	1.7	b/	b/	0.5
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
Nonpareil														
1986	14.90	1.97	29.54	23.40	25.80	14.82	10.68	95.7	0.6	b/	2.5	0.2	0.1	0.7
1987	11.21	1.59	27.24	21.70	23.78	13.97	9.95	96.3	2.1	b/	1.0	b/	b/	0.6
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

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/ California types include the following varieties: Ballico, Carmel, Davey, Fritz, Harvey, Le Grand, Mono, Monterey, Norman, Price Cluster, Ruby, Tokoyo, and Yosemite.

e/ The Carmel breakdown was available for the first time in 1988. Carmel variety is still included in California Types.

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.

**TABLE 2: CALIFORNIA ALMOND ACREAGE,
PRODUCTION AND TREES/ACRE, 1986-90**

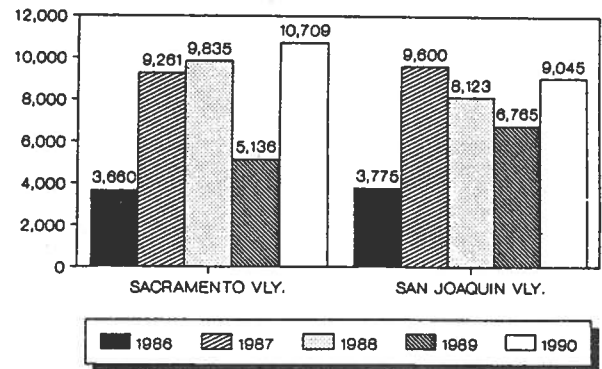
Year	Bearing Acres a/	Total Meat Production			Average Trees Per Acre
		Metric Tons b/	Million Lbs.	Lbs. Per Acre	
1986	415,700	113,000	250	602	84.0
1987	417,000	299,000	660	1,580	85.4
1988	418,000	268,000	590	1,450	86.3
1989	409,000	222,000	490	1,200	87.3
1990 c/	407,000	297,000	655	1,610	87.3

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

b/ Rounded to nearest thousand.

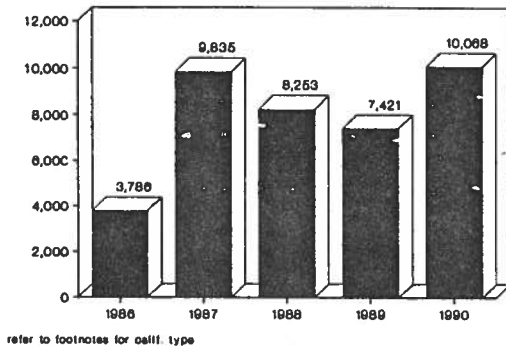
c/ July forecast.

DISTRICTS NUTS PER TREE

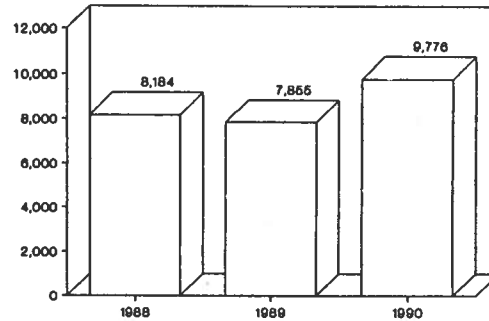


NUTS PER TREE

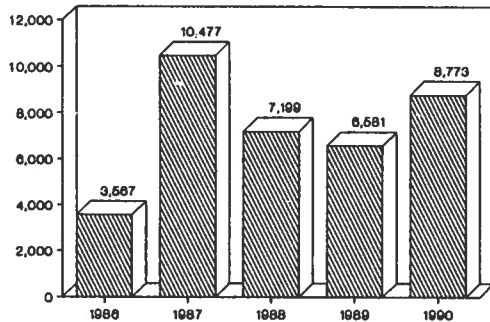
CALIFORNIA TYPES



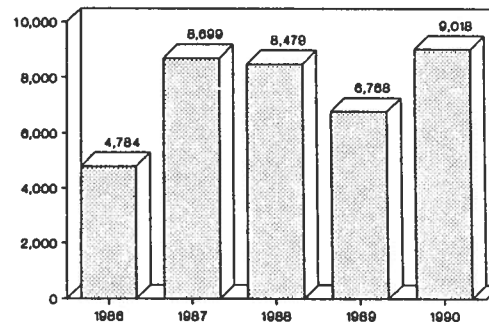
CARMEL



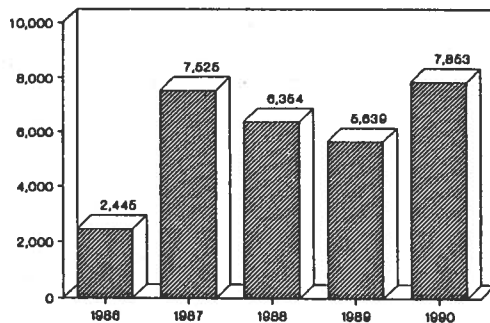
MERCED



MISSION



NE PLUS



NONPAREIL

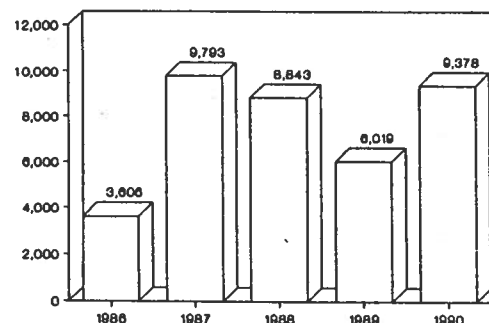


TABLE 3: COMPARISON OF NUT ESTIMATES AND ORCHARDS SAMPLED BY DISTRICT AND VARIETY, JUNE OBJECTIVE MEASUREMENT SURVEY COUNTS

DISTRICT AND VARIETY	1986		1987		1988		1989		1990	
	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)	3,171	808	9,410	835	8,386	850	6,352	796	9,333	796
BY DISTRICTS c/										
District I										
Sacramento Vly.	3,660	178	9,261	175	9,835	177	5,136	172	10,709	165
District II										
San Joaquin Vly.	3,775	624	9,600	647	8,123	661	6,765	615	9,045	625
BY VARIETIES										
Calif. Types d/	3,786	120	9,835	144	8,253	154	7,421	153	10,068	142
Carmel e/	N/A	N/A	N/A	N/A	8,184	88	7,855	90	9,776	88
Merced	3,567	50	10,477	46	7,199	51	6,581	43	8,773	47
Mission	4,784	92	8,699	94	8,479	87	6,768	78	9,018	85
Ne Plus Ultra	2,445	52	7,525	42	6,354	43	5,639	38	7,853	32
Nonpareil	3,606	417	9,793	443	8,843	457	6,019	431	9,378	438

See footnotes on page 2.

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