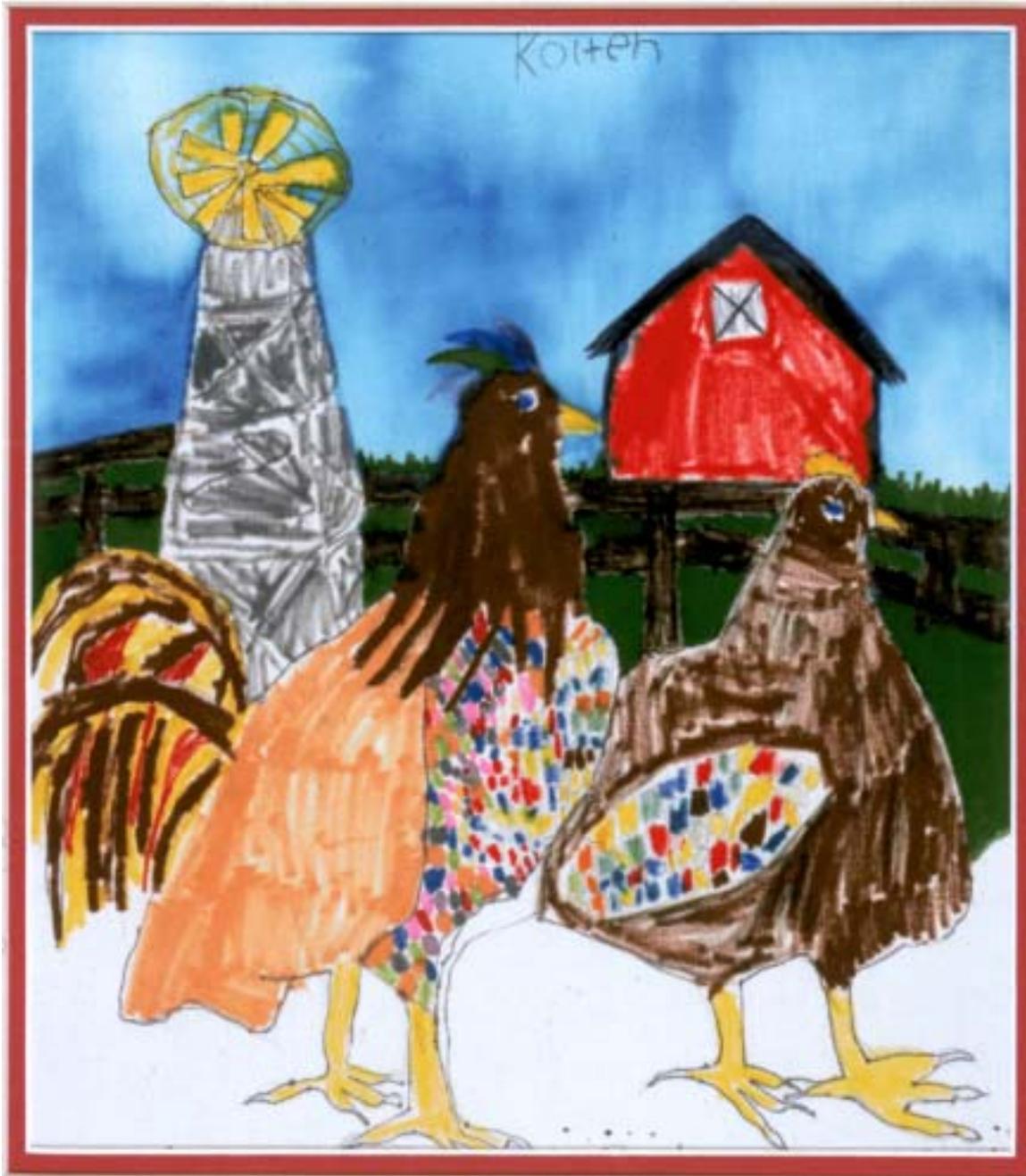


# 2000 Crop Statistics & Annual Report



**County of San Diego**  
Department of Agriculture, Weights & Measures

# In Memory . . .

This 2000 Crop Statistics & Annual Report is dedicated to the memory of Robert (Bob) Moore, Senior Agricultural/Standards Inspector. Bob passed away suddenly in June of 2000. He is remembered with great affection by all members of the Department of Agriculture, Weights and Measures.



Kolten J. Horner is the talented young artist who is responsible for the cover of this year's report. Kolten was five years old in 2000 when he created the barnyard scene. We extend our thanks to Kolten for his wonderful depiction of San Diego's poultry and livestock industry.



William J. Lyons, Jr.  
Secretary  
California Department of Food and Agriculture  
and  
The Honorable Board of Supervisors of the County of San Diego  
Supervisor Bill Horn, Chairman, 5<sup>th</sup> District  
Supervisor Ron Roberts, Vice Chairman, 4<sup>th</sup> District  
Supervisor Greg Cox, 1<sup>st</sup> District  
Supervisor Dianne Jacob, 2<sup>nd</sup> District  
Supervisor Pam Slater, 3<sup>rd</sup> District

I respectfully submit the report of acreage, yield and value of agricultural production in San Diego County in 2000. This report also contains the Department of Agriculture, Weights and Measures' 2000 Annual Report.

The total reported agricultural value for 2000 is \$1,253,884,664. This is the highest ever reported for San Diego County and is the 8<sup>th</sup> successive year of growth in value for the San Diego County agricultural industry.

Indoor flowering and foliage plants continues to be the number one crop for production value. This crop is also known for its long history of thriving side-by-side with urban development. San Diego County is unique in many ways, not the least of which is the mix of urban and agricultural activities. According to the California Department of Finance, Demographic Research Unit, San Diego is the only California county that can be classified as both a major urban county, while also being one of the top agricultural counties.

**Highlights:**

The nursery and flower industry continued to comprise the largest economic component of the San Diego agricultural industry, with 63% of the dollars generated. Indoor flowering plants and foliage produced \$310,212,511, or 24% of the County's agricultural industry value.

Fruit and nut commodities reported a mixed year. Persimmons (one of the crops most affected by the Mexican fruit fly quarantine) experienced a 26% loss in value. Much of the persimmon production areas lie within the quarantined area of Fallbrook. It should be noted that while there was a 110 acre decrease in persimmon acres harvested that is not a decrease in plantings, rather it reflects fruit not harvested due to the quarantine. The total value for the citrus industry reflected an 11% decline, with the greatest loss being 2% for navel oranges, part of a statewide trend. Strawberries were a standout for their 29% increase in value and a 35% increase in acreage.

Vegetable crops reported a 2% overall decline in value, but several crops reflected increases. Chili peppers reported value increased by 36%. Cabbage value increased by 303% in 2000, much of that attributed to a 38% increase in acreage. Tomato acreage declined by 25%, yet production value increased 17%.

All reported figures represent F.O.B. (Freight on Board) values for products, whether sold or used on the farm where grown. They are not net values and do not reflect cost of production. Total values do not add precisely due to rounding. Gross value of farm products does not reflect the total value to the economy. For every dollar value of an agricultural product, there is a multiplying factor (3.5) that may be applied, making an estimated economic impact of \$4,388,596,324.

My thanks to the many farmers and ranchers who provided information for this report. Also vital was cooperation from organizations, especially the San Diego County Farm Bureau and the San Diego Flower and Plant Association. My personal gratitude is extended to Lynn Parker, Senior Agricultural/Standards Inspector, who compiled the statistics and Delores Brandon, Supervising Agricultural/Standards Inspector, who edited and compiled this Year 2000 report.

KATHLEENA THUNER  
Agricultural Commissioner/  
Sealer of Weights and Measures

# Crop Report Highlights

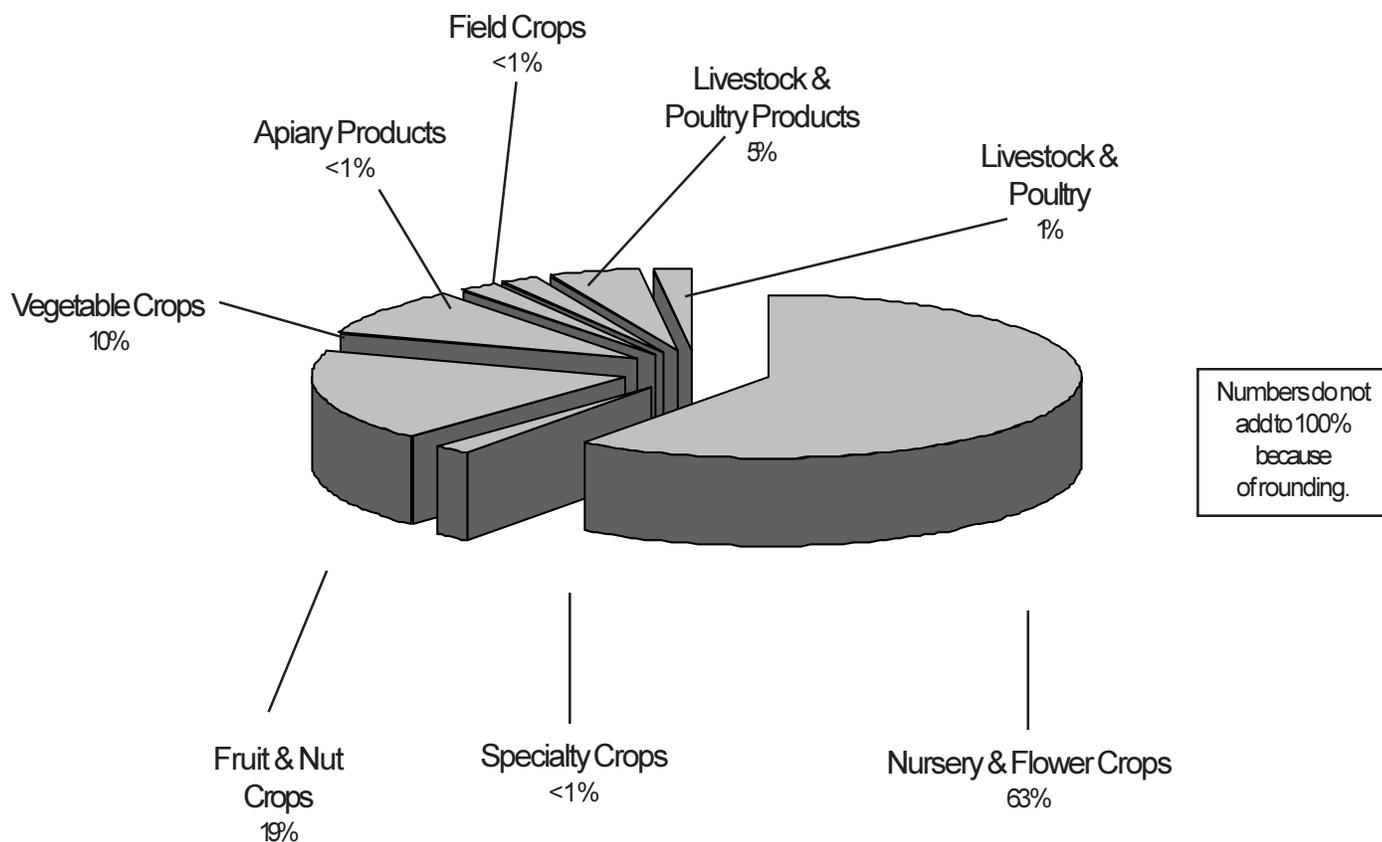
Total Value	\$1,253,884,664
Estimated Economic Impact	\$4,388,704,414
Change in Value from 1999	+\$17,541,551
–Percent of Change	9%
Total Acreage	164,357
Change in Number of Acres Harvested from 1999	-3,107 Acres
–Percent of Change	-2%
#1 Crop	Indoor Flowering & Foliage Plants
–Value	\$310,212,511
Crop with Greatest Percent Change in Value	Cabbage
–Percent of Change	303%
Crop with Highest Value Per Acre	Indoor Flowering & Foliage Plants
–Dollar Value Per Acre	\$619,187
Crop with Lowest Value Per Acre ( <i>excluding range</i> )	Oat, Grain
–Dollar Value Per Acre	\$102.40
Rank of Agriculture as a Component of San Diego County's Economy	4th**

\*\*Source: Greater San Diego Chamber of Commerce.

# Summary 2000 & 1999

	2000 Acres	2000 Hectares	2000 Value	1999 Acres	1999 Hectares	1999 Value
Nursery Products & Flower Crops	8,814	3,372	\$790,140,332	8,629	3,492	\$767,766,905
Fruit & Nut Crops	44,503	19,906	\$244,152,511	44,907	18,175	\$245,602,494
Vegetable Crops	9,240	3,739	\$129,159,542	*10,481	*4,242	*\$112,486,023
Field Crops	101,800	41,196	\$5,140,211	103,447	41,868	\$5,729,053
Apiary Products			\$1,263,279			\$1,259,718
Livestock & Poultry			\$18,258,802			\$14,909,685
Livestock & Poultry Products			\$65,294,742			\$68,371,153
Specialty Crops			\$475,245			\$503,568
	164,357	68,213	\$1,253,884,664	*167,464	*67,777	*\$1,216,628,599

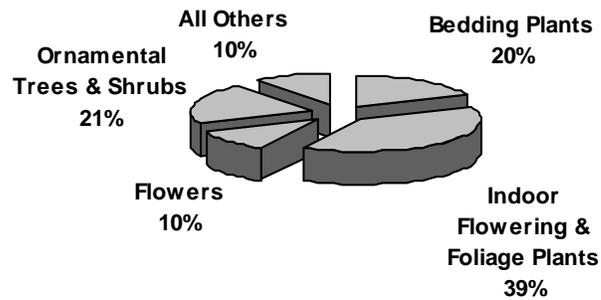
\* These totals were adjusted to reflect updated data for 1999.



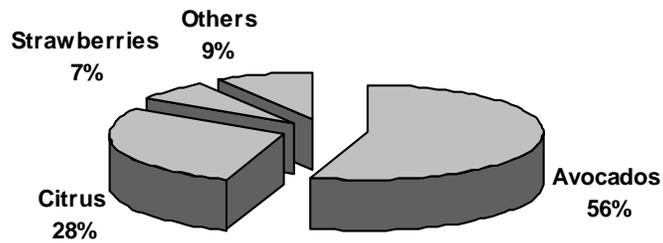
# Summary 2000 & 1999

## Percent of Values by Selected Commodity Groups

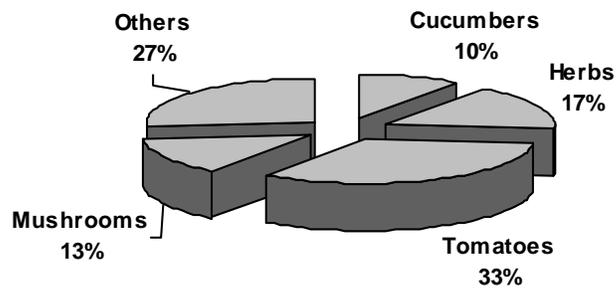
### Nursery & Flower Crops



### Fruit & Nut Crops



### Vegetable Crops





# Nursery & Flower Crops 2000 & 1999

CROP	Year	Acres	Hectares	TOTAL
<b>NURSERY PRODUCTS</b>				
BEDDING PLANTS, COLOR	2000	800	324	\$147,545,454
	1999	785	318	\$145,446,525
BULBS, CORMS, RHIZOMES, ROOTS, TUBERS	2000	145	59	\$1,758,454
	1999	140	57	\$1,603,025
CACTUS AND SUCCULENTS	2000	195	79	\$19,587,544
	1999	185	75	\$18,385,652
CITRUS, AVOCADO, AND SUBTROPICAL FRUIT TREES	2000	192	78	\$7,214,745
	1999	192	78	\$6,898,542
CUT CHRISTMASTREES	2000	185	75	\$1,381,201
	1999	185	75	\$1,352,512
HERBACEOUS PERENNIALS	2000	175	71	\$9,302,210
	1999	150	61	\$8,965,689
INDOOR FLOWERING PLANTS & FOLIAGE	2000	501	203	\$310,212,511
	1999	499	202	\$306,525,453
ORNAMENTAL TREES AND SHRUBS	2000	2,350	951	\$169,548,457
	1999	2,200	890	\$162,568,521
POINSETTIA	2000	130	53	\$34,541,214
	1999	125	51	\$33,565,221
TURF	2000	488		\$5,421,454
	1999	488		\$5,314,320
TOTAL NURSERY PRODUCTS	2000	5,161	1,893	\$706,513,244
	1999	4,949	1,807	\$690,625,460

# Nursery & Flower Crops 2000 & 1999



CROP	Year	Acres	Hectares	TOTAL
<b>FLOWERCROPS</b>				
CARNATIONS	2000	44	18	\$2,040,107
	1999	50	20	\$2,231,506
CARNATION, STANDARD	2000	12	5	\$785,325
	1999	15	6	\$845,854
CARNATION, MINI	2000	32	13	\$1,254,782
	1999	35	14	\$1,385,652
CUTFOLIAGE	2000	550	223	\$9,854,787
	1999	550	223	\$9,125,484
LEPTOSPERMUM	2000	380	154	\$2,845,554
	1999	380	154	\$2,535,254
PROTEAS	2000	475	192	\$4,015,464
	1999	475	192	\$3,758,458
ROSES	2000	30	12	\$5,024,485
	1999	45	18	\$6,587,452
WAXFLOWERS	2000	730	295	\$8,644,570
	1998	730	295	\$8,352,145
ALLOTHERS	2000	1,400	567	\$51,202,121
	1999	1,400	567	\$49,865,466
TOTALFLOWERPRODUCTS	2000	3,653	1,479	\$83,627,088
	1999	3,680	1,489	\$82,455,765
TOTALNURSERY& FLOWERCROPS	2000	8,814	3,372	\$790,140,332
	1999	8,629	3,296	\$773,081,225



# Fruit & Nut Crops 2000 & 1999

CROP	Year	Harvested		Production		Total Production		US\$/ Ton	US\$/ Metric Ton	TOTAL
		Acres	Hectares	Tons/ Acre	Metric Tons/ Hectare	Tons	Metric Tons			
APPLES	2000	450	182	2.25	5.04	1,013	918			\$350,190
	1999	505	204	2.22	4.98	1,121	1,016			\$405,394
FRESH	2000	450	182	1.05	2.35	473	428	532	586	\$251,370
	1999	505	204	1.12	2.51	566	512	538	593	\$304,293
CIDER	2000			1.2	2.69	540	490	183	202	\$98,820
	1999			1.1	2.47	556	504	182	201	\$101,101
AVOCADOS	2000	25,997	10,521			60,788	24,601			\$149,548,586
	1999	26,347	10,662			55,752	22,562			\$147,846,527
HASS	2000	23,147	9,367	2.41	5.40	55,784	50,582	2,585	2,849	\$144,202,416
	1999	23,147	9,367	2.16	4.84	49,998	45,336	2,840	3,131	\$141,992,900
FUERTE	2000	750	304	1.38	3.09	1,035	939	1,159	1,278	\$1,199,565
	1999	900	364	1.41	3.16	1,269	1,150	923	1,017	\$1,171,287
OTHER	2000	2,100	850	1.89	4.24	3,969	3,604	1,045	1,152	\$4,147,605
	1999	2,300	931	1.95	4.37	4,485	4,068	1,044	1,151	\$4,682,340
CITRUS	2000	15,921	6,443			281,641	113,979			\$70,135,403
	1999	15,946	6,453			287,671	116,419			\$79,378,027
GRAPEFRUIT	2000	2,800	1,133	16.59	37.19	46,452	42,136			\$7,310,100
	1999	2,800	1,133	16.7	37.44	46,760	42,420			\$7,245,980
FRESHMARKET	2000	2,800	1,133	12.58	28.20	35,244	31,951	190	209	\$6,692,560
	1999	2,800	1,133	12.75	31.38	35,700	35,554	185	204	\$6,604,500
BYPRODUCT	2000			4.01	8.99	11,228	10,186	55	61	\$617,540
	1999			3.95	8.85	11,060	10,027	58	64	\$641,480
KUMQUATS	2000	140	57	2.32	5.20	325	296	929	1,024	\$301,739
	1999	140	57	2.88	6.46	403	368	965	1,064	\$389,088
LEMONS	2000	3,211	1,299	19.12	42.86	61,394	55,675			\$22,480,395
	1999	3,211	1,299	19.37	43.42	62,197	57,078			\$23,778,152
FRESHMARKET	2000	3,211	1,299	14.25	31.94	45,757	41,490	452	498	\$20,682,074
	1999	3,211	1,299	14.62	32.77	46,945	42,568	467	515	\$21,923,222
BYPRODUCTS	2000			4.87	10.92	15,638	14,185	115	127	\$1,798,321
	1999			4.98	11.16	15,991	14,497	116	128	\$1,854,930
LIMES	2000	625	253	7.95	17.82	4,969	4,508			\$1,270,518
	1999	650	263	6.98	15.65	4,537	4,116			\$1,144,196
FRESHMARKET	2000	625	253	4.85	10.87	3,031	2,750	368	406	\$1,115,518
	1999	650	263	3.89	8.72	2,529	2,293	385	424	\$973,473
BYPRODUCT	2000			3.10	6.95	1,938	1,758	80	88	\$155,000
	1999			3.09	6.93	2,009	1,823	85	94	\$170,723

# Fruit & Nut Crops 2000 & 1999



CROP	Year	Harvested		Production		Total Production		US\$/ Ton	US\$/ Metric Ton	TOTAL
		Acres	Hectares	Tons/ Acre	Metric Tons/ Hectare	Tons	Metric Tons			
ORANGES, NAVEL	2000	1,455	589	14.64	32.82	21,301	19,331			\$4,149,386
	1999	1,455	589	15.34	34.39	22,320	20,256			\$5,343,042
FRESHMARKET	2000	1,455	589	10.95	24.55	15,932	14,460	220	243	\$3,505,106
	1999	1,455	589	12.51	28.04	18,202	16,516	263	290	\$4,787,152
BY PRODUCT	2000			3.69	8.27	5,369	4,871	120	132	\$644,280
	1999			2.83	6.34	4,118	3,734	135	149	\$555,890
ORANGES, VALENCIA	2000	6,790	2,748	19.81	44.41	134,510	122,039			\$28,881,265
	1999	6,790	2,748	19.84	44.47	134,714	122,204			\$33,818,749
FRESHMARKET	2000	6,790	2,748	14.95	33.51	101,511	92,085	226	249	\$22,941,373
	1999	6,790	2,748	16.59	37.19	112,646	102,198	263	290	\$29,625,924
BY PRODUCT	2000			4.86	10.89	32,999	29,926	180	198	\$5,939,892
	1999			3.25	7.29	22,068	20,033	190	209	\$4,192,825
TANGERINE, TANGELO	2000	900	364	14.10	31.61	12,690	11,506			\$5,742,000
	1999	900	364	17.78	39.86	16,002	14,509			\$7,658,820
FRESHMARKET	2000	900	364	10.00	22.42	9,000	8,161	597	658	\$5,373,000
	1999	900	364	13.88	31.11	12,492	11,324	585	645	\$7,307,820
BY PRODUCT	2000			4.1	9.19	3,690	3,345	100	110	\$369,000
	1999			3.9	8.74	3,510	3,181	100	110	\$351,000
GRAPES, WINE	2000	175	71	1.84	4.12	322	293	300	331	\$96,600
	1999	189	77	2.03	4.55	384	346	420	463	\$161,154
MACADAMIANUTS	2000	185	75	1.18	2.65	218	199	2,258	2,489	\$492,921
	1999	185	75	1.21	2.71	224	203	2,280	2,513	\$510,492
MISC. FRUITS & NUTS*	2000	765	310							\$3,658,755
	1999	850	344							\$3,856,854
PERSIMMONS	2000	340	138	4.31	9.66	1,465	1,333	378	417	\$553,921
	1999	450	182	4.29	9.62	1,931	1,751	388	428	\$749,034
STRAWBERRIES	2000	670	271	25.26	56.62	16,924	15,344			\$19,315,135
	1999	435	176	25.15	56.38	10,940	9,923			\$12,695,012
FRESHMARKET	2000	670	271	17.63	39.52	11,812	10,710	1,424	1,570	\$16,820,430
	1999	435	176	17.56	39.36	7,639	6,927	1,381	1,522	\$10,548,907
PROCESSING	2000			7.63	17.10	5,112	4,634	488	538	\$2,494,705
	1999			7.59	17.01	3,302	2,994	650	716	\$2,146,105
TOTAL FRUIT & NUTCROPS	2000	44,503								\$244,152,511
	1999	44,907								\$245,602,494

\*Includes apricots, cherimoyas, raspberries, peaches, pears, guavas and walnuts.



# Vegetable Crops 2000 & 1999

CROP	Year	Harvested		Production		Total Production		US\$/		TOTAL
		Acres	Hectares	Tons/ Acre	Metric Tons/ Hectare	Tons	Metric Tons	Ton	Metric Ton	
BEANS, SNAP	2000	381	154	4.31	9.66	1,642	1,488	1,143	1,260	\$1,876,920
	1999	290	117	4.28	9.59	1,241	1,122	1,158	1,276	\$1,437,310
BUNCH VEGETABLES*	2000	361	146							\$2,487,854
	1999	340	138							\$2,085,658
CABBAGE	2000	80	32	14.96	33.54	1,197	1,073	315	347	\$376,992
	1999	30	12	15.06	33.76	452	405	275	303	\$124,245
CORN, SWEET	2000	272	110	7.75	17.37	2,108	1,911	385	424	\$811,580
	1999	429	174	7.6	17.04	3,260	2,965	328	362	\$1,069,411
TOTAL CUCUMBERS	2000	1,526	618			21,413	19,449			\$12,641,906
	1999	1,777	719			21,277	19,304			\$12,127,382
FIELD GROWN	2000	1,514	613	13.85	31.05	20,969	19,034	571	629	\$11,973,242
	1999	1,765	714	11.81	26.47	20,845	18,900	551	607	\$11,485,430
HOT HOUSE GROWN	2000	12	5	37	82.94	444	415	1,506	1,660	\$668,664
	1999	12	5	36	80.7	432	404	1,486	1,638	\$641,952
HERBS	2000	469	190	18.65	41.81	8,747	7,944	2,452	2,703	\$21,447,399
	1999	486	197	20.25	45.39	9,842	8,942	2,468	2,720	\$24,288,822
MUSHROOMS	2000	25	10	276	618.70	6,900	6,187	2,501	2,757	\$17,256,900
	1999	25	10	279	625.43	6,975	6,254	2,486	2,740	\$17,339,850
PEPPERS, BELL	2000	494	200	14.88	33.36	7,351	6,672	581	640	\$4,270,757
	1999	626	253	14.52	32.55	9,090	8,235	579	638	\$5,262,821
PEPPERS, CHILI	2000	87	35	15.00	33.63	1,305	1,177	1,180	1,087	\$1,539,900
	1999	85	34	15.03	33.69	1,278	1,145	773	852	\$987,585
POTATOES	2000	957	387	20.58	46.13	19,695	17,852	125	138	\$2,461,888
	1999	1,725	698	20.58	46.13	35,501	32,199	110	121	\$3,905,055
SQUASH	2000	343	139	12.06	27.03	4,137	3,757	423	466	\$1,749,782
	1999	405	164	11.95	26.79	4,840	4,394	418	461	\$2,023,036
TOTAL TOMATOES	2000	3,331	1348			66,940	60,727			\$43,372,452
	1999	3,540	1433			64,583	57,357			\$28,769,282
TOMATOES, FRESH	2000	3,231	1308	20.15	45.17	65,105	59,082	645	711	\$41,992,725
	1999	3,425	1386	18.25	40.01	62,506	55,454	438	483	\$27,377,759
TOMATOES, CHERRY	2000	100	40	18.35	41.13	1,835	1,645	752	829	\$1,379,920
	1999	115	47	18.06	40.48	2,077	1,903	670	739	\$1,391,523
MISC. VEGETABLES**	2000	914	370							\$18,865,212
	1999	723	293							\$13,065,566
TOTAL VEGETABLES	2000	9,240								\$129,159,542
	*** 1999	10,481								\$112,486,023

\* Includes collards, Chinese cabbage, green onions, mustard & turnip greens, parsley, radishes and spinach.

\*\* Includes canteloupe, chayote, pumpkin, tomatillos, sweet potato, cauliflower, watermelon, leaf lettuce, celery & winter squash.

\*\*\* These totals were adjusted to reflect updated data for 1999.

# Field Crops 2000 & 1999



CROP	Year	Acres	Hectares	Production		Total Production		US\$/ Ton	US\$/ Metric Ton	TOTAL
				Tons/ Acre	Metric Tons/ Hectare	Tons	Metric Tons			
BARLEY, GRAIN	2000	75	30	1.87	4.19	140	126	105.29	116.06	\$14,772
	1999	90	36	1.65	3.7	149	133	102.65	114.85	\$15,244
GREENCHOP	2000	100	40	24.08	53.98	2,408	2,159	23.65	26.07	\$56,949
	1999	125	51	23.02	51.6	2,878	2,632	22.85	25.19	\$65,751
HAY, OAT	2000	3,285	1,329	2.15	4.82	7,063	6,406	53.06	58.49	\$374,752
	1999	3,750	1,518	2.2	4.93	8,250	7,484	52.81	58.21	\$435,683
OAT, GRAIN	2000	105	42	1.01	2.26	106	95	101.35	111.72	\$10,753
	1999	200	81	0.98	2.2	196	178	102.65	115.01	\$20,119
PASTURE, IRRIGATED	2000	2,500	1,012					1,600.00	1,763.68	\$4,000,000
	1999	2,750	1,113					1,560.00	1,719.59	\$4,290,000
RANGE	2000	95,000	38,446					5.01	5.52	\$475,950
	1999	95,000	38,446					4.97	5.48	\$472,150
SILAGE	2000	35	14	15.1	33.85	529	474	23.50	25.90	\$12,420
	1999	32	13	14.5	32.5	464	423	22.60	24.91	\$10,486
WHEAT	2000	700	283	2.05	4.60	1,435	1,302	135.62	149.49	\$194,615
	1999	1,500	607	2.09	4.69	3,135	2,847	133.85	147.54	\$419,620
TOTAL FIELD CROPS	2000	101,800								\$5,140,211
	1999	103,447								\$5,729,053

# Apiary Products 2000 & 1999



CROP	Year	TOTAL
HONEY	2000	\$1,102,121
	1999	\$1,099,565
BEESWAX	2000	\$22,055
	1999	\$21,032
BEES AND QUEENS	2000	\$87,545
	1999	\$88,656
POLLEN	2000	\$46,058
	1999	\$45,265
POLLINATION	2000	\$5,500
	1999	\$5,200
TOTAL APIARY	2000	\$1,263,279
	1999	\$1,259,718



# Livestock & Poultry 2000 & 1999

	Year	#Head	Total Weight		Per Unit		TOTAL
			CWT	Metric Ton	CWT	Metric Ton	
CATTLEANDCALVES	2000	29,000	217,500	9,865	71.08	1,567	\$15,459,900
	1999	27,050	202,875	9,201	64.85	1,430	\$13,156,444
HOGSANDPIGS	2000	1325	3,313	150	43.7	963	\$ 144,778
	1999	1450	3,625	164	35.1	774	\$ 127,238
CHICKENS,MISC.MEAT	2000	1,975,456	71,116	3,225	14.3	315.26	\$1,016,959
	1999	1,989,888	71,636	3,249	13	286.6	\$931,268
RABBITS	2000	12,500	625	28	61.4	1,285	\$38,375
	1999	15,000	750	34	63.3	1,396	\$47,475
FLIGHTLESSBIRD*TOTAL	2000						\$1,550,150
	1999						\$1,524,000
CHICKS	2000	3,950			85	/CHICK	\$335,750
	1999	3,800			86	/CHICK	\$326,800
MEAT	2000	368,000	LBS.		3.3	/LB	\$1,214,400
	1999	365,000	LBS.		3.28	/LB	\$1,197,200
LAMB,SHEEP	2000	640	640	29	76	1,650	\$48,640
	1999	768	768	35	71	1,565	\$54,528
TOTALLIVESTOCK ANDPOULTRY	2000	2,022,871					\$18,258,802
	1999	2,037,956					\$15,840,953



# Livestock & Poultry Products 2000 & 1999

	Year	Production		Per Unit		TOTAL
		CWT	Metric Ton	\$/CWT	Metric Ton	
MILK,MARKET	2000	1,432,755	64,982	11.81	260	\$16,920,837
	1999	1,607,564	72,910	13.75	303	\$22,104,005
MILK,MANUFACTURING	2000	224	10	9.97	220	\$2,233
	1999	631	29	12.23	270	\$7,717
EGGS,CHICKENMARKET	2000	97,875,453	doz	0.49	doz	\$47,958,972
	1999	97,598,789	doz	0.47	doz	\$45,871,431
FLIGHTLESSBIRD*PRODUCTS	2000					\$412,700
	1999					\$388,000
HIDES	2000	1,150		130	/HIDE	\$149,500
	1999	1,000		135	/HIDE	\$135,000
OIL	2000	2,350	GAL	112	/GAL	\$263,200
	1999	2,200	GAL	115	/GAL	\$253,000
TOTALLIVESTOCKAND POULTRYPRODUCTS	2000					\$65,294,742
	1999					\$68,371,153

\*Flightless Birds include ostriches, emus, rheas, etc.

# Specialty Crops 2000 & 1999



CROP	YEAR	TOTAL
TIMBER	2000	\$50,245
	1999	\$53,568
FIREWOOD	2000	\$425,000
	1999	\$450,000
TOTALSPECIALTYCROPS	2000	\$475,245
	1999	\$503,568

## Crops Valued at \$10 Million or More



CROP	2000	1990
Indoor Flowering & Foliage Plants	\$310,212,511	*\$195,224,800
Ornamental Trees a & Shrubs	\$169,548,457	\$94,044,242
Avocados	\$149,549,586	\$138,173,677
Bedding Plants	\$147,545,454	\$56,957,921
Cut Flowers (Flower Products)	\$83,627,088	**
Eggs	\$47,958,972	\$61,007,520
Tomatoes	\$43,372,452	\$40,061,507
Poinsettia	\$34,541,214	**
Valencia Oranges	\$28,881,265	\$46,028,372
Lemons	\$22,480,395	\$27,667,689
Herbs	\$21,447,399	**
Cactus & Succulents	\$19,587,544	\$13,335,069
Strawberries	\$19,315,135	\$21,772,070
Mushrooms	\$17,256,900	\$10,064,250
Milk, Market	\$16,920,837	\$23,871,625
Cattle & Calves	\$15,459,900	\$6,412,899
Cucumbers	\$12,641,906	\$10,968,250

\* Identified as Indoor Decoratives in 1990

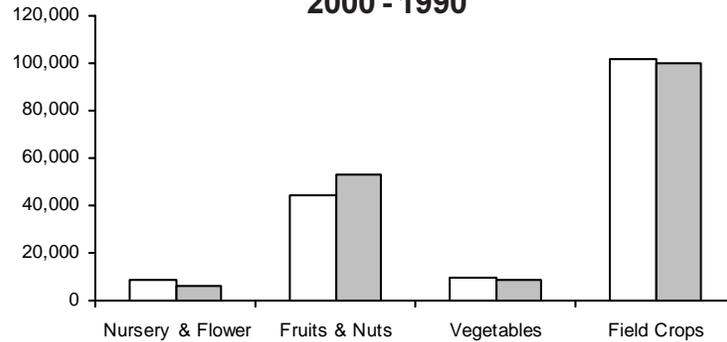
\*\* Category not reported separately in 1990.



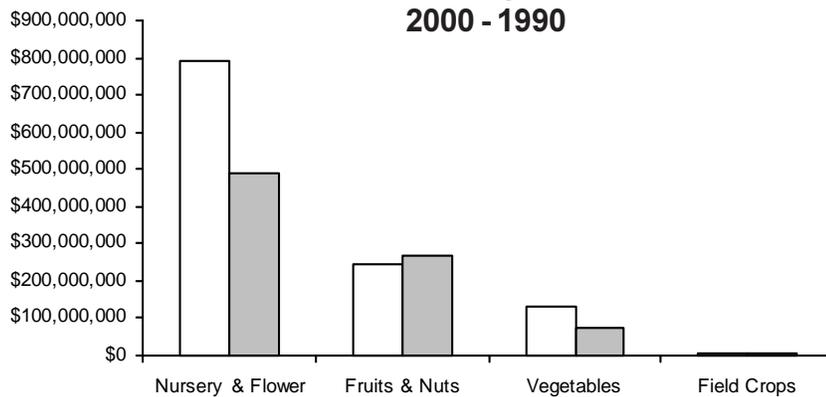
# Ten Year Comparison 2000 & 1990

Crop	2000			1990		
	Acres	Hectares	Value	Acres	Hectares	Value
Nursery & Flower Crops	8,814	3,567	\$790,140,332	6,681	2,704	\$491,353,316
Fruit & Nut Crops	44,503	18,010	\$244,152,511	52,996	21,447	\$267,583,441
Livestock & Poultry Products			\$65,294,742			\$84,879,145
Vegetable Crops	9,240	3,739	\$129,159,542	8,625	3,491	\$72,397,394
Livestock & Poultry			\$18,258,802			\$12,010,849
Field Crops	101,800	41,196	\$5,140,211	99,615	40,314	\$5,227,706
Apiary Products			\$1,263,279			\$577,088
Specialty Crops			\$475,245			\$682,000
<b>TOTAL</b>	<b>164,357</b>	<b>66,515</b>	<b>\$1,253,884,664</b>	<b>167,917</b>	<b>67,956</b>	<b>\$934,710,939</b>

**Acreage Comparison  
2000 - 1990**



**Value Comparison  
2000 - 1990**



# The Fallbrook Quarantine



## The Impact of the Mexican Fruit Fly

Much of the year 2000 was a difficult period for the northern San Diego agricultural community of Fallbrook. It all began on October 12, 1999, when a male Mexican fruit fly was trapped in a residential area. Twenty-four days later on October 28, a second Mexican fruit fly was trapped nearby. This second fly was a mature female. It was the discovery of this reproductive female that triggered the declaration of an agricultural quarantine.

You may be wondering just why anyone came to “trap” an insect, let alone a Mexican fruit fly. Since 1970 the County of San Diego Department of Agriculture, Weights and Measures has conducted a trapping program for exotic agricultural pests. This program has been funded through a contract with the California Department of Food and Agriculture since 1980, and supports the agricultural industry throughout the nation, the state and San Diego County. Agriculture is the fourth leading economic sector for the county. For eight successive years agriculture has added in excess of \$1 Billion to the local economy. Much as a medical quarantine protects a community from a serious health threat, an agricultural quarantine protects both agricultural industry and the home gardener from a serious economic pest.

The County of San Diego is the seventh leading agricultural producer in the state, and California is the number one agricultural producer in the nation. What impacts San Diego very much impacts the nation. Products are sold locally as well as on the national and the international market. Because of the global marketplace we must all be concerned about the possibility for the introduction of exotic pests and diseases that could devastate the food supply. The purpose of an agricultural quarantine is to prevent the spread of pests and diseases once they have been detected, and to ensure our trading partners that agricultural products are free from devastating economic pests.



The effect of this local quarantine was profound. The Mexican Fruit Fly Quarantine zone consisted of a 72-square mile area, including 11,000 acres of agricultural production, with 1,470 growers who produced over 20 different crops.

These basic facts do not begin to tell the whole story. This quarantine affected every aspect of the lives of the farmers and residents with backyard fruit trees and home gardens; it affected the lives of people who harvest, ship and pack fruit, including farm stands and farmers markets; it affected the numerous government agencies who oversaw the quarantine; it affected the reporters and various media who followed each development; and it affected the legislators who tried to respond to the concerns. And while the quarantine ended on June 6, 2000, many of these same people are still trying to resolve the details of this massive effort.



## The Saga Continues . . .

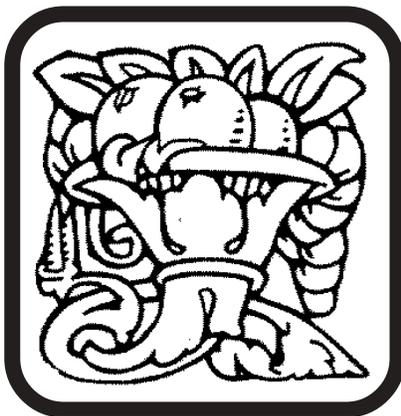
There have been many agricultural quarantines throughout California over the last few years. There have even been 11 fruit fly quarantines in San Diego County in the last 10 years. However, there has never been a quarantine quite like this one. San Diego County is unique in many ways, not the least of which is the mix of urban and agricultural activities. According to the California Department of Finance, Demographic Research Unit, San Diego is the only county that can be classified as both a major urban county and one of the top agricultural counties.

Fallbrook both typifies agriculture in San Diego County and at the same time stands out as unique. Sixty-five percent of farms in San Diego County are nine or fewer acres, according to the 1997 U.S. Census of Agriculture. Many of the growers affected by the quarantine were these small operations. Fallbrook stands out for the bounty and diversity of agricultural products produced.

It was this abundance and unique mix of commodities that brought such serious economic hardship. It is estimated that during this period affected growers would have produced about 30 million pounds of fruit, of at least 20 different regulated crops, valued at approximately \$49 million. Unfortunately, the quarantine came at the peak harvest time.

The quarantine essentially prohibited the movement of all fresh fruit that could provide host material for the pest — both commercial and backyard - from the property where grown. Soil and any other product, article, or means of conveyance that could theoretically present a hazard of spreading the live Mexican fruit fly was also prohibited movement. In addition, all potential host material had to be inspected and an approved treatment completed before the material could be moved out of the quarantine zone.

As Mexican fruit fly is both a Federal and State regulated pest, both the United States Department of Agriculture (USDA) and the California Department of Food and Agriculture (CDFA) established criteria for treatment of most common varieties of fruits and vegetables. The quarantine in Fallbrook primarily affected exotic fruit growers. The growers within the quarantined area had five options - treatment using a spray application of pesticides for fruit not yet harvested, fumigation of harvested fruit with methyl bromide, cold storage of harvested fruit, electing not to treat at all and wait until the quarantine was lifted. Finally, for those crops with no established treatment, disposal was the only option. Unfortunately, many of the specialty fruit crops grown in Fallbrook fell into the last category.



Fallbrook is an area where it is possible to produce high-value, specialty crops such as guavas, persimmons, cherimoyas, pomegranates and sapotes. As a result of the quarantine and the lack of available treatment protocols, growers watched as their fruit ripened, fell to the ground and rotted. It is reported that most of the soft fruit growers experienced a total loss of their 1999 - 2000 crop. Processing such as cooking, canning, and drying were the only possible alternatives. Unfortunately, there are no commercial facilities for this type of processing within the quarantine zone, nor areas who would accept quarantined fruit outside of the quarantine zone. The commercial market for these specialty crops remains fresh fruit, at peak of ripeness.



In addition, there were 134 registered organic growers within the quarantine area. The process to become a registered organic producer requires that the land be pesticide-free for a period of three years. Therefore, treatments using chemical pesticides were not acceptable to some certifying agencies and, if used, could have affected subsequent years of production. As a result, these growers experienced severe losses due to the quarantine.

San Diego continues to be the top avocado-producing county in the country, with Fallbrook being the leading area. Unlike some of the soft fruits, not all avocado varieties were at peak harvest as the quarantine was imposed. However, some were ripening and becoming ready for harvest very soon. In prior situations involving exotic pest quarantines, avocado growers had been able to utilize fumigation as a treatment option. Once again this quarantine for Mexican fruit fly proved different. After the quarantine was imposed, methyl bromide failed efficacy tests as a fumigant for avocados and was no longer approved as a post-harvest treatment option. Without the option to fumigate avocados, growers had to either implement a systems approach to applying Malathion on a weekly basis for up to 88 days or wait until the quarantine was lifted. Growers who opted to treat were required to obtain either a Special Local Need (SLN) permit from the County for the use of malathion or a Restricted Use Permit for the use of Spinosad (a material approved for use on organic commodities) and have each treatment supervised by State or Federal personnel.

Many avocado growers counted themselves lucky that their crop could simply remain on the tree and they could complete either the malathion or Spinosad treatment. Unfortunately, several episodes of high winds in late December, caused 1.5 to 2 million pounds of avocados to be blown off the trees. This caused further economic impacts for growers. The estimate for Fallbrook was 500,000 pounds of windfall fruit, but not all was within the quarantine area. Fruit that was picked up immediately, was within a few days of completing quarantine treatment and met maturity requirements was salvaged for sale. The quantities were extremely limited.



Yet another problem faced avocado growers. The quarantine period included the spring months when bees are used to pollinate the avocado trees for the next year's crop. The aerial and ground treatment of avocados with malathion posed a potential risk to the bees. The Malathion label specifically states it should not be applied or allowed to drift to blooming crops or weeds if bees are visiting the area to be treated. The regulatory agencies agreed that one solution could be aerial applications in the early morning while bees were inactive. As the bloom period for avocados progressed, the health and safety of bees became a concern for adequate pollination and fruit set. This quarantine affected a broad spectrum of the community. Early on, numerous local, state and federal legislators became involved in the quarantine. The San Diego County Board of Supervisors supported relief efforts from the very beginning by declaring a local emergency. The Board repeatedly renewed that



declaration throughout the many months of the quarantine. All of those affected were enormously frustrated when efforts to have the quarantine declared a disaster at the State level failed. This precluded a federal declaration of disaster and the immediate aid that might have resulted. However, in the face of that difficulty, there continued to be interest at the federal level.

On February 9, 2000, Dr. Isi Siddiqui, Senior Trade Advisor to the Secretary of the U.S. Department of Agriculture visited San Diego County. During this meeting at the San Diego County Farm Bureau, local growers who had suffered the loss of their crops were told not to expect any funding from the federal government unless special legislation was provided.

Later that month, Dr. Enrique Figueroa, Undersecretary of Agriculture, visited the ports of entry at San Ysidro and Otay Mesa. Dr. Figueroa stated that a stronger intelligence-gathering effort, coupled with proposed federal legislation, would dramatically increase maximum fines for smuggling and curtail smuggling activities. (This Federal effort to reduce smuggling of contraband foodstuffs from Mexico into the United States would shift the strategy aimed at apprehending recipients of food items illegally transported across the border.)



As the months went by with no additional pest discoveries, both industry and enforcement agencies began to look forward to the end of the quarantine. The regulatory portion of the quarantine ended on June 6, 2000, the effects were far from over. Through the efforts of a number of state and national legislators the United States Congress approved measures that allowed growers to apply for aide through the United States Department of Agriculture—Farm Services Agency. Unfortunately, only a small portion of the growers' documented losses proved eligible for compensation.

The growers, packers, shippers and all of the affected citizens of Fallbrook should be recognized for their contribution to the success of this quarantine effort in preventing the establishment and spread of the Mexican fruit fly. There has never been a quarantine in California quite like this one. The sheer variety of fruit produced by small family farming operations made this quarantine unique. The establishment of the quarantine could not have come at a more difficult time – the beginning of the harvest season for such highly perishable crops as persimmons, cherimoyas and guavas. Numerous individuals and organizations came together to provide information and training and to oversee the regulatory process. United States Senator, Dianne Feinstein, State Senators Ray Haynes and Bill Morrow, and former Assemblyman Bruce Thompson are to be commended for their efforts on behalf of the farmers of Fallbrook.

# Agriculture, Weights & Measures

## 2000 Annual Report



### Department Overview

The Department of Agriculture, Weights and Measures is a diverse department offering a wide variety of services. Although a County department, it is also part of a statewide network of County Agricultural Commissioners and Sealers of Weights and Measures that was created by the State legislature in the late 1800's. The Department has two primary missions that it works to achieve each business day. We strive to:

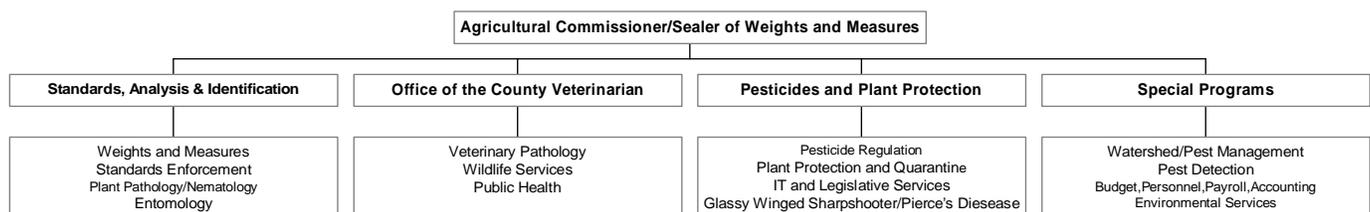
- Promote the sustainability of agriculture while protecting the environment and ensuring the health and safety of all citizens.
- Ensure equity in the marketplace by promoting awareness of laws and regulations and by enforcing them fairly and equally.

Some of the duties of the Agricultural Commissioner/Sealer remain the same as when the office was originally created, such as abatement of insect pests. However, the preservation, protection and regulation of the agricultural industry, as well as consumer and standards protection functions, have changed dramatically during that time. Besides the traditional activities of the Commissioner/Sealer, the office is now involved in endangered species conservation, agricultural land use issues, prescribed burning, animal health, habitat repair and certification of organic farms. As San Diego County grows and evolves, the Department of Agriculture, Weights and Measures strives to offer programs and services to meet the needs of our diverse community.

In addition to our role as a regulatory agency, the Department provides training programs for the regulated industry as well as community outreach to the public. These programs are often in collaboration with other governmental agencies and community groups. During 2000 the Department began an effort to develop and implement a cooperative approach regarding farmworker health issues. An intensive public awareness campaign for the Red Imported Fire Ant was also initiated. And reflecting the diversity of our programs and the public we serve, the Department was active in a number of consumer education programs such as the "Scam Jam" sponsored by the Better Business Bureau.

### Organizational Structure

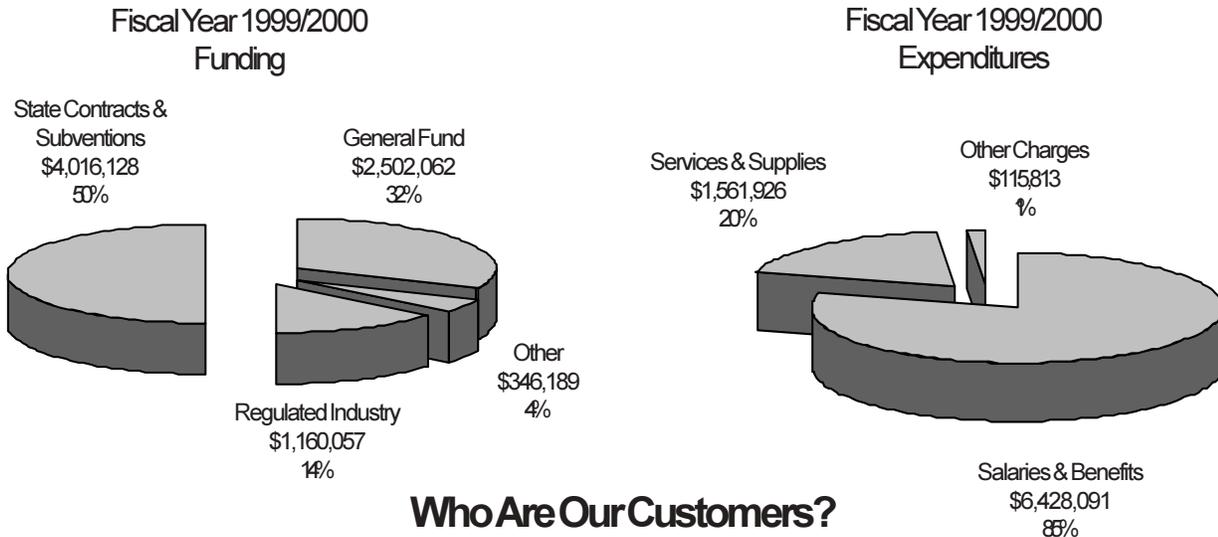
The Department of Agriculture, Weights and Measures reorganized during 2000 in order to provide more efficient and cost effective service. The Department has 135 budgeted staff persons, but the actual number of people on staff at any given time varies according to the seasonal needs of programs. The basic structure is shown below.





# Budget

The functions of the Department are funded by the regulated industry, county government and state government. Breakdowns of departmental budgeted expenditures and revenues are shown below.



## Who Are Our Customers?

The answer to that question might surprise many people. We provide service to everyone in San Diego County, from those who come into our office to request a service, to those who are silently served by our employees, never knowing we've made your shopping more equitable or your environment safer.

This year:

- Over 700 citizens a month visited the front counters
- Weights & Measures worked with 6,472 businesses with 142,078 commercial weighing devices.
- Wildlife Services assisted more than 800 citizens with skunk, coyote, and other wildlife problems.
- Our three labs provided analysis and identification of samples for homeowners and industry alike.

The Veterinary lab processed more than 3,000 samples this year.

The Entomology lab processed 6,455 insect samples for identification.

## Quality First: The Rewards of Good Fiscal Management

How do you reward employees for doing their part in ensuring that financial and customer service goals are met? You share the savings resulting from improved processes and efficiencies! A new program in the County, known as Quality First, was again a success in its second year. Employees devised creative ways to conserve resources and helped implement programs, ensuring that customer service ratings would not be reduced. The result was a 6% savings, one-third of which went into reserves and two-thirds of which was shared among employees.

# Standards Analysis & Identification



**Standards Enforcement** - Inspectors routinely test market scales, truck scales, gas pumps, electric, gas and water submeters, and commercially-used weighing and measuring devices to ensure that they are accurate and meet specification requirements. Packaged commodities are inspected for complete and accurate labeling and stated content. Scanners and other automated price look-up systems at retail locations throughout San Diego County are tested to verify that the prices charged at the checkstand match those advertised or posted in the stores. Produce inspectors conduct fruit and vegetable standardization inspections to make certain that produce meets maturity and quality requirements. Egg quality and grading standards are monitored through inspections at points of production, distribution and retail locations. The County's popular and successful Direct Marketing program, with 350 certified producers and over twenty different Certified Farmers' Markets, is regulated by inspecting every growing location and market throughout the year. Inspectors document that the fruits, vegetables, flowers, and other commodities sold by participating farmers are of the seller's own production.

**Entomology**—This essential program provides insect laboratory identification services to both home owners and industry. Staff conduct surveys of insects, such as Red Imported Fire Ant, Africanized Honey Bees and Formosan Termites, and work with university and other professionals to tackle local pest problems. Without the lab, identification of harmful bugs, like fire ants and fruit flies, could take much longer and infestations could become more widespread.

**Plant Pathology/Nematology**—Both the nursery industry and backyard gardeners find the service of these professionals invaluable. This laboratory specializes in identifying diseases and nematodes (microscopic worms) that are harmful to plants. Staff also survey for problems in nurseries and other farms to prevent widespread infections of uncommon diseases or meet requirements for exportation worldwide.

# Special Programs & Support



**Watershed Resources and Pest Management**—Staff reseed landfills to prevent erosion and runoff and work under contract with SDG&E to protect power poles and other equipment in wildfires. They conduct prescribed burns for habitat improvement and wildfire hazard reduction. They are responsible for a variety of pest control services in County-owned facilities and for vegetation control along County-maintained road rights-of-way and airports. Staff also manufacture anti-coagulant bait for control of ground squirrels and other rodents and administers the San Diego Weed Management Area.

**Pest Detection** - During 2000 Insect Detection Specialists inspected traps more than 211,000 times, and found a Mexican fruit fly, a Japanese beetle, a gypsy moth. Using this system of constant surveillance, staff are able to make early detection of potentially damaging exotic insects, ensuring timely quarantine and eradication efforts in order to prevent pests from spreading to other areas.

**Support** - This program includes all support functions, including fiscal, personnel, payroll, facilities and fleet management. Staff also coordinates County wide efforts within the Department, such as Strategic Planning, Quality First and staff development.

**Environmental Services**—This program provides technical expertise to Department programs and other County departments regarding land use issues that impact agriculture. Staff oversee the verification of active agricultural enterprise for the County's farmworker housing program, gather crop statistics for annual publication, as well as act as liaison to the agricultural and environmental communities.



## Plant Protection & Pesticides

**Pesticide Regulatory Program** - Personnel from this program enforce the laws and regulations governing the use of pesticides in San Diego County. They assure that registered pesticides are used properly throughout the County. The regulated community includes: farmers, structural pest control businesses, maintenance gardeners, golf courses, government agencies and individuals. Inspectors observe applications of pesticides, issue permits for use of restricted pesticides, conduct residue sampling as appropriate, investigate illnesses and complaints and participate in training activities for the regulated community. Outreach is an important aspect of this program and recent efforts have focused on the development of community contacts for Farm Worker education regarding pesticides and illness reporting.

**Plant Protection and Quarantine** - The Plant Protection and Quarantine program is the first line of defense against the introduction of new pests. New pests have no natural predators here and might thrive in San Diego County's temperate climates, causing harm to humans, the environment and agriculture. This program inspects incoming packages at the airport, post offices, express carriers and truck terminals, ensuring that shipments "don't pack a pest." Plant Protection and Quarantine also protects a progressive nursery, cut flower and cut foliage industry and enables export world wide. Because of the millions of dollars in damage that the introduction of exotic pests can cause, the program is of vital importance to the agricultural industry.

**Nursery, Seed and Pierce's Disease Control** - The department is working with other County Agricultural Commissioners, the California Department of Food and Agriculture, the USDA, as well as local industry in responding to the threat Glassy Winged Sharpshooter, and the Pierce's Disease it transmits, poses to grape and citrus crops and many others. The Glassy-Winged Sharpshooter is well established in this county but not found throughout the state. Inspectors are working checking nurseries and shipments to keep this pest from traveling to the wine and table grape producing areas of California.



## Office of the County Veterinarian

Required by the County Charter, the County Veterinarian leads efforts to find and limit infectious diseases of animals that can affect both other animals and humans. Veterinarians and other specialists perform necropsies (autopsies of animals), conduct a wide variety of laboratory tests, and cooperate with public health officials when outbreaks of diseases like Salmonella occur. Veterinary staff also work closely with the National Veterinary Services Laboratory providing tissue samples for ongoing surveillance of Bovine Spongiform Encephalopathy (Mad Cow Disease) and for the national scrapie eradication program.

The Office also includes Wildlife Services, a cooperative program with the State and Federal governments to control wildlife damage to people, other animals and property.

# Department Highlights



The year 2000 proved to be another one of leadership and collaboration for the Department of Agriculture, Weights and Measures. Shown below are a sampling of the highlights that showcase the department's vision and mission. They also demonstrate our desire to work both with other departments and agencies, but most importantly they show our commitment to the community.

- This year a Weed Management Area was formed to control the invasive weed Perennial Pepperweed. Staff worked with the California Department of Food and Agriculture and numerous community groups to form this innovative approach for dealing with noxious weeds.
- The department worked closely with Supervisor Cox and his staff and the community of Chula Vista to successfully open a museum in the former County of San Diego Insectary. The museum will serve school children and residents in highlighting awareness of the agricultural heritage of the south county area.
- Dr. Kerry Mahoney, County Veterinarian, was one of only 28 veterinary pathologists selected from veterinary schools and government diagnostic laboratories to receive training on Foreign Animal Diseases at Plum Island, New York in November of 2000.
- An infestation of Mexican fruit flies was discovered in the fall of 1999 and the north county community of Fallbrook was placed under a quarantine that lasted 200 days. The infestation was especially devastating to the exotic fruit producers of the area. The quarantine was lifted in June of 2000.
- Delegates from Korea visited San Diego County to inspect citrus groves. They were concerned about importing fruit and wanted to learn more about pest detection procedures for exotic fruit flies here in the United States, and specifically here in San Diego.
- The year 2000 was significant more for what diseases were **not** found in the county than what were found. In the previous three years chrysanthemum white rust caused by the fungus *Puccinia horiana* caused losses to growers. Thanks to efforts of growers to take preventative measures, this disease was not found in the county in 2000.
- The Entomology Lab processed 6,455 samples during 2000. An increase of 44% over the 2,876 samples the previous year. A significant portion of that increase was due to the new Glassy Winged Sharpshooter/Pierce's Disease Control program.
- The Pesticide Regulatory Program began a focused Farm Worker outreach project. This project involves working with other community-based organizations along with state and federal agencies. The goal is to improve pesticide communication to field workers and increase physician awareness of pesticide related illness.
- Gypsy moth was detected for the third consecutive year in the Bonsall area and is currently under eradication with a biological pesticide. The Plant Protection and Quarantine program is working with the California Department of Food and Agriculture to prevent the establishment of this pest.
- The Standards staff worked to assist local growers with new State laws regarding the Certified Producer program. Farmers' Market participants are verified to be the actual producer/growers and their products are checked to ensure they meet specific produce quality standards.

# Personnel

## Agricultural Commissioner, Sealer of Weights and Measures

Kathleen A. Thuner

### Administration

#### Deputy Director, Pesticides & Plant Protection

Projects/Support Sharon Geraty

#### Deputy Director, Standards, Analysis, Identification

Kurt Floren

#### Deputy Director, Special

Kathleen DaVee

#### County Veterinarian

Kerry Mahoney

### Administrative Support

Judi Dunlap JoAnn Jefferies Felisa Ordenez Marcia Powell

## Deputy Agricultural Commissioners/Sealers of Weights and Measures

Lisa Leondis Dawn Nielsen Simone Hardy

### Supervising Inspectors

John Blocker Delores Brandon Neil Connelly Cindy Davis Paul Davy Stephen Durso Cathy Neville Stasi Redding Rick Williams

### Analysis and Identification

David Kellum, Ph.D. Pat Nolan Paul Cadena George Jones Mark Martinez Bob Eisele Lisa Gabel Ron Hobgood Tawnie Makua

### Special Programs

## Office of the County Veterinarian

Jean Creek Tamara Gonzales Jesus Guajardo DVM Nikos Gurfield DVM Hubert Johnstone DVM Laurie Oliver-Perria Cynthia Shannon  
Alexina Wempren

### Agricultural/Standards Inspectors

Tony Avina  
Vincent Acosta  
Abdel Amador  
Veronica Anzaldo  
Chris Betschart  
Clark Bixby  
Thomas Bloomer  
Glenn Braaten  
James Byers  
Colleen Carr  
Stephen Desserich  
Katherine Dobbins

Jose-Concepcion Duran  
Manige Farhoomand  
Michael Feeley  
Ronald Flemming  
David Fritz  
Zoe Ginsky  
John Gionfriddo  
Lynn Gordon  
Lee Guidry  
James Hinton  
Atlaw Kebede  
Marco Mares

Ted Matsumoto  
Flo McCutcheon  
Howard Metcalf  
Robert Moore  
Megan Moore  
Charles Mosse  
Jorge Olivares  
Theodore Olsen  
Lynn Parker  
Richard Persky  
Vicente Rodriguez

Annie Silva  
Ann Sixtus  
Nestor Silva  
Ken Sims  
Kathryn Springer  
Neil Stalnaker  
Nancy Syzonenko  
Gregory Terhall  
Richard Waldrip  
Richard Walsh  
Ernie Webb  
Lindsay Worcester

### Pest Management Technicians

Steve Coyne James Daly Bruce Gardner George Kalin Brad Shipley

### Insect Detection Specialists

Sulpicio Agnes, Jr  
Guy Allingham  
Richard Andrews  
Terri Bennett  
Tim Breuninger  
Brian Burkman  
Jesus Calleros  
Linda Clark

Lisa Dumolt  
Jorge Fregoso  
Kahsai Ghebretse  
Charles Gross  
Linda Hamel  
Mark Huerta  
Lou Juarez  
Vickie Kitts

Shannon Lehtreter  
Robert MacGregor  
Loren Moreno  
Adrienne Moss  
Belinda Moss  
Quang Ong  
Lawrence Randall  
Steve Robinson

Joy Murray-Roseberry  
Alan Sharon  
Mazen Stevens  
Ellen Vanarelli  
Susan Wise  
Muluneh Wube  
Joseph Zumello

### Clerical Staff

Katherine Arntzen Armando Belenzo Gemma Bilog Rebekah Flutsch Linda Goff Anna Hayden Elyse Keon Marianne Lane  
Argia McKercher Bennette McKnight Lonnie Nopens Marilyn Marshall Tina Thomas Jacki Trost Evaluz Zarnes

### Student Workers

Michael Fichen Michael Krauss Scott Mikolich Emerald Narvaez