
MONTEREY COUNTY
AGRICULTURE
'99
CALIFORNIA

MONTEREY COUNTY

AGRICULTURAL COMMISSIONER

(408) 758-3876 - 120 WILGART WAY - SALINAS, CALIFORNIA 93901

RICHARD W. NUTTER
AGRICULTURAL COMMISSIONER
ADMINISTRATOR OF WEIGHTS & MEASURES

Henry J. Voss, Director
California Department of Food and Agriculture

and

The Honorable Board of Supervisors of Monterey County:

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Tom Perkins, Third District
Karin Strasser Kauffman, Fifth District

In compliance with the provisions of Section 2279 of the California Food and Agricultural Code, I am pleased to submit the Monterey County Agricultural Crop Report for the calendar year 1991.

Monterey County's gross agricultural value for 1991 follows last year's record by increasing to an all-time high of $1,418,137,500. This is approximately 1.5% over last year.

As usual, Head Lettuce continued to be the leading crop, although the gross value dropped nearly 10%, while the acreage showed a slight increase.

Strawberries, the No. 2 crop last year suffered a $23,000,000 loss despite an 8% acreage increase.

Broccoli is still the No. 3 crop, with an increase in value of approximately 8%. This was due to increased acreage and production.

Wine grapes are still the seventh leading crop in the County, with an increase of approximately 16%. This was accomplished by increased production per acre and price paid per ton.

Total value for Livestock decreased again, primarily due to the continued drought and low inventories maintained by ranchers.

Salad and Food Service production showed dramatic increases over the previous year, as this niche in the produce market continues to expand.

Other crops on the plus side include Leaf Lettuce, Artichokes, Garlic, Cauliflower, Asparagus, Leeks, Cilantro, and Herbs. Many of these increases were due to increased acreage and production.

Those commodities showing decreases were Celery, Tomatoes, Mushrooms, Grain, Onions, Parsley, Brussels Sprouts, and Radicchio.

Vegetable crops, which make up nearly one billion dollars of our total value, were plagued by depressed markets and overproduction through much of the year. Growers were also faced with continuation of the drought and sea water intrusion.

Exports to Europe and the Pacific Rim countries continued to increase, as nearly 572,782,709 pounds were sent worldwide.

The values represented in this report are gross receipts of the producers, and do not take into account the various costs of production, marketing, or transportation. No attempt is made to reflect net income of the producer.

My thanks to the individuals and firms whose cooperation made this report possible, and to my staff members, under the direction of Deputy Agricultural Commissioner Gerry Willey and Agricultural Biologist III Katherine Smith, who coordinated and compiled this report.

Very truly yours,

Richard W. Nutter

Richard W. Nutter
Agricultural Commissioner

RWN:mls

****

We wish to acknowledge the following people for their art contributions to our 1991 Annual Crop Report:

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Nye Marnach
Tommy Spradling
Daniel Stebner

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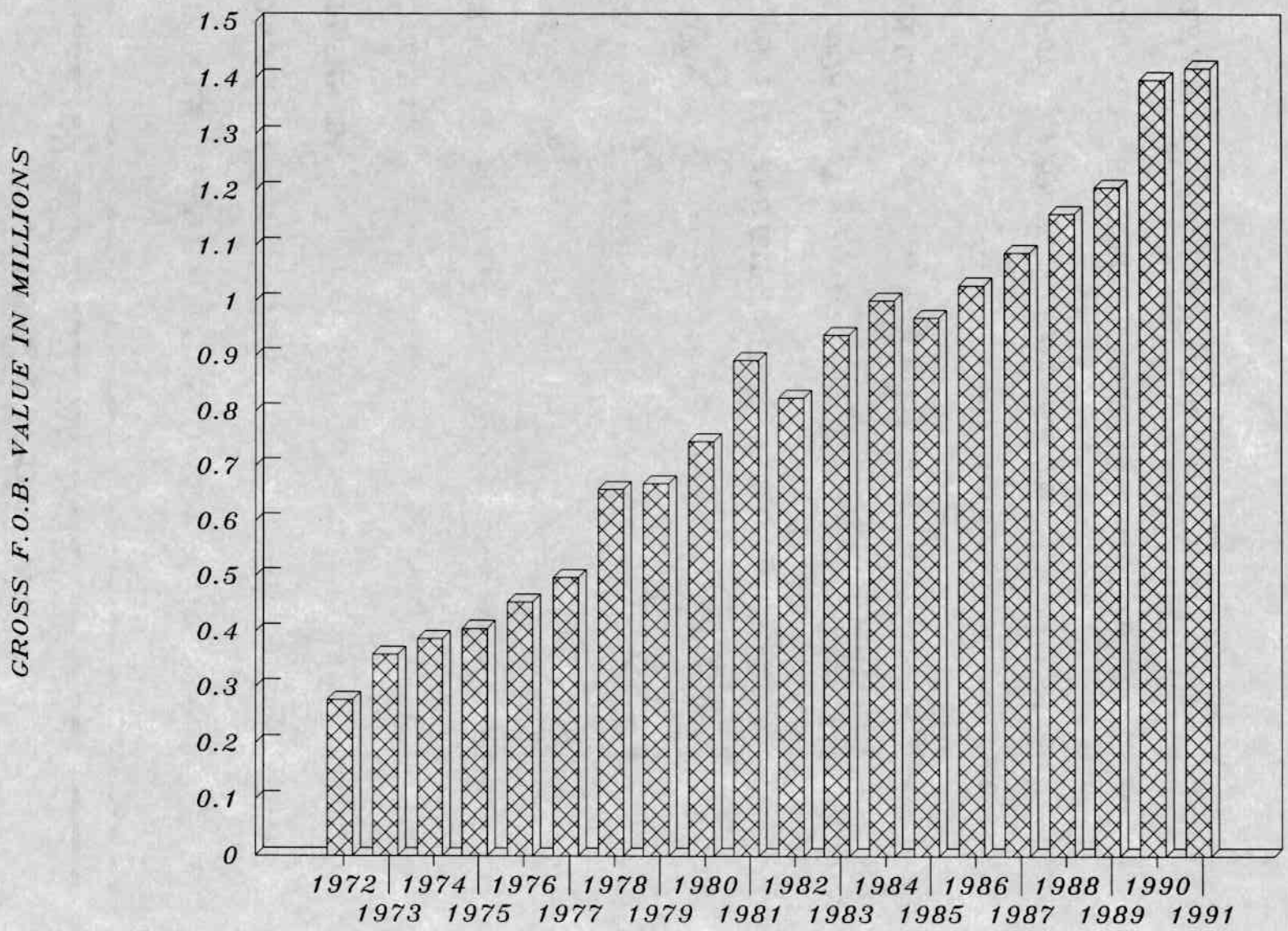
MONTEREY COUNTY AGRICULTURE

20 YEAR SUMMARY



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APPROXIMATE WEIGHTS
USED FOR FRESH MARKET CONVERSION

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ASPARAGUS	*32*
AVOCADOS	*26*
BOK CHOY	*50*
BROCCOLI	*23*
BRUSSELS SPROUTS	*25*
CABBAGE - All Varieties	*50*
CARROTS	*50*
CAULIFLOWER	*23*
CELERY	*60*
ENDIVE	*25*
ESCAROLE	*25*
NAPA	*50*
KALE	*20*
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CRATE	
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BUSHBERRIES	*9*
RASPBERRIES	*6*
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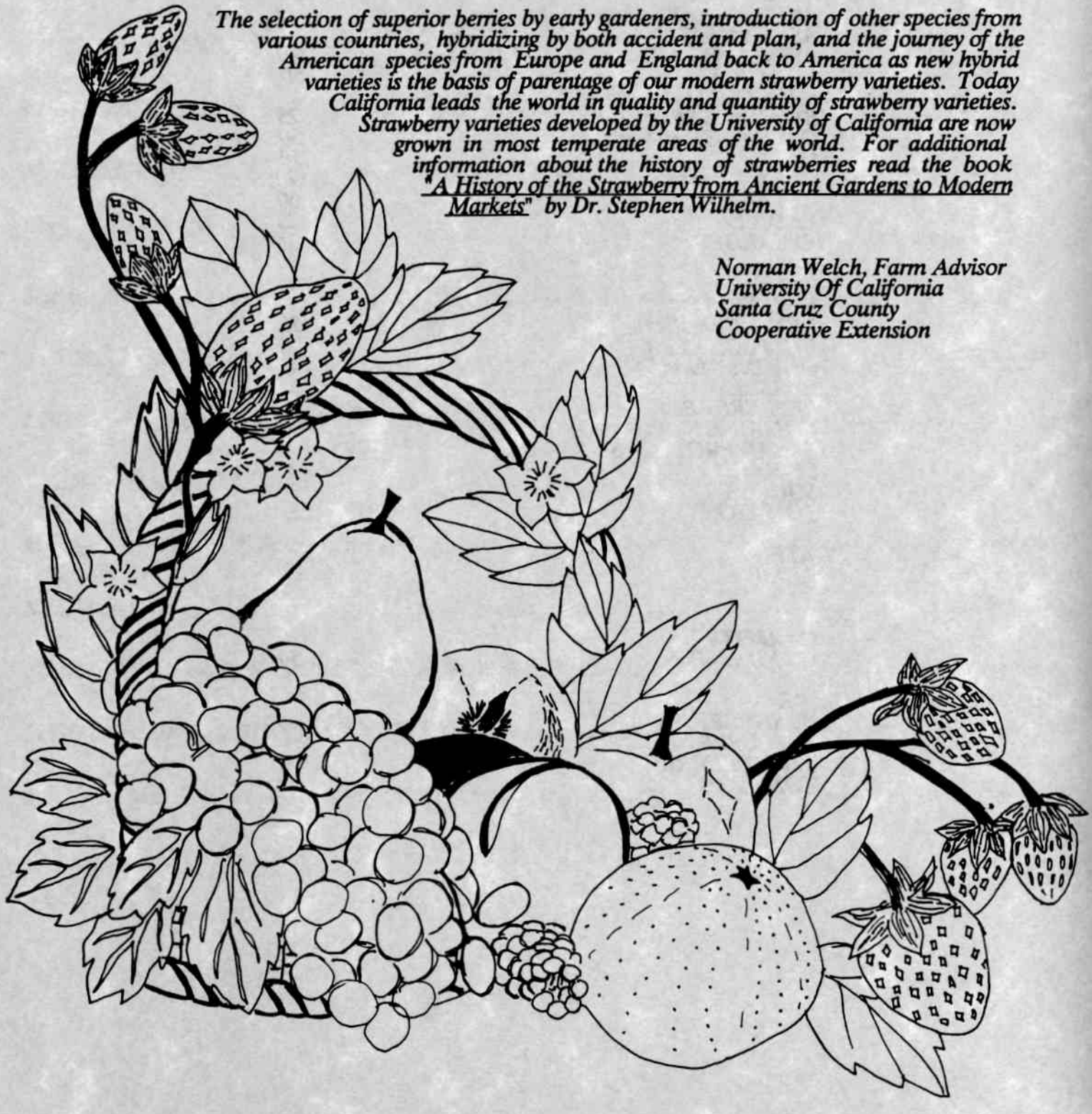
TOMATOES - Cherry	*12*

FRUITS AND NUTS

The strawberry we enjoy today traces its ancestry to the woods and fields of North and South America where Indians harvested wild types for centuries. Transplanted to gardens of the Old World, the American species hybridized spontaneously and established the present garden race. Subsequently, the California Beach strawberry gave the garden strawberry its long-bearing habit, a quality responsible for its prominence today among the world's dessert crops.

The selection of superior berries by early gardeners, introduction of other species from various countries, hybridizing by both accident and plan, and the journey of the American species from Europe and England back to America as new hybrid varieties is the basis of parentage of our modern strawberry varieties. Today California leads the world in quality and quantity of strawberry varieties. Strawberry varieties developed by the University of California are now grown in most temperate areas of the world. For additional information about the history of strawberries read the book "A History of the Strawberry from Ancient Gardens to Modern Markets" by Dr. Stephen Wilhelm.

Norman Welch, Farm Advisor
University Of California
Santa Cruz County
Cooperative Extension

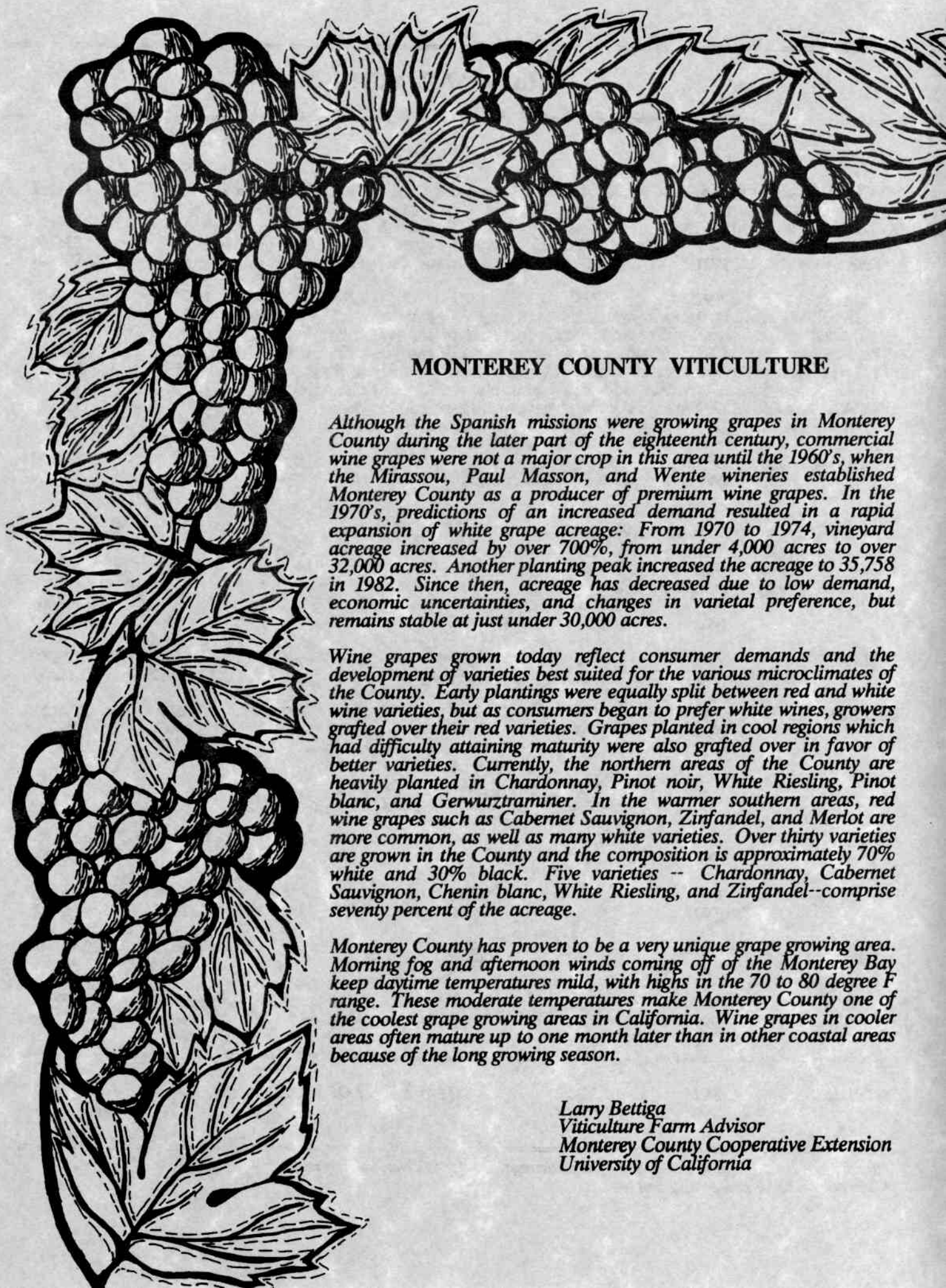


FRUITS AND NUTS

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
APPLES	1991	318		4,087	TON		$ 834,000
Total	1990	348		4,915	"		677,000
Fresh	1991	113	10.41	1,176	"	$ 234.00	275,000
	1990	158	7.88	1,245	"	179.90	224,000
Processing	1991	205	14.20	2,911	"	192.00	559,000
	1990	190	19.32	3,670	"	123.30	453,000
AVOCADOS	1991*	40					
	1990	40	1.10	44	"	1,253.70	55,200
BUSHBERRIES	1991	66	5.96	393	"	2,854.10	1,122,000
	1990	68	7.93	539	"	1,058.00	570,000
CITRUS FRUIT							
Non-bearing							
Bearing	1991*	569					
	1990**	370					1,195,000
GRAPES	1991	33,411.72					73,800,000
	1990	33,153.83					63,719,000
KIWI FRUIT	1991	12	3.58	43	"	3,000.00	129,000
	1990	12	1.00	12	"	3,000.00	36,000
RASPBERRIES	1991	737	4.94	3,640	"	3,027.30	11,019,000
	1990	723	5.19	3,755	"	3,264.30	12,257,000
STRAWBERRIES	1991	6,320		170,500	"		158,149,000
Total	1990	5,830		183,000	"		181,459,000
Fresh	1991		23.26	147,000	"	1,001.80	147,265,000
	1990		25.21	147,000	"	1,118.70	164,449,000
Processing	1991		3.72	23,500	"	463.55	10,893,000
	1990		6.24	36,400	"	467.30	17,010,000
WALNUTS	1991	334	1.29	432	"	1,016.30	439,000
	1990	319	1.25	400	"	1,130.00	452,000

TOTAL ACRES	1991	41,807.72	TOTAL VALUE OF FRUITS & NUTS	$ 245,492,000
	1990	40,863.83		260,420,200

*Insufficient to report due to severe winter freeze, acreage includes 412 Non-bearing, and 157 Bearing
**1990 data includes non-bearing and bearing



MONTEREY COUNTY VITICULTURE

Although the Spanish missions were growing grapes in Monterey County during the later part of the eighteenth century, commercial wine grapes were not a major crop in this area until the 1960's, when the Mirassou, Paul Masson, and Wente wineries established Monterey County as a producer of premium wine grapes. In the 1970's, predictions of an increased demand resulted in a rapid expansion of white grape acreage: From 1970 to 1974, vineyard acreage increased by over 700%, from under 4,000 acres to over 32,000 acres. Another planting peak increased the acreage to 35,758 in 1982. Since then, acreage has decreased due to low demand, economic uncertainties, and changes in varietal preference, but remains stable at just under 30,000 acres.

Wine grapes grown today reflect consumer demands and the development of varieties best suited for the various microclimates of the County. Early plantings were equally split between red and white wine varieties, but as consumers began to prefer white wines, growers grafted over their red varieties. Grapes planted in cool regions which had difficulty attaining maturity were also grafted over in favor of better varieties. Currently, the northern areas of the County are heavily planted in Chardonnay, Pinot noir, White Riesling, Pinot blanc, and Gerwurztraminer. In the warmer southern areas, red wine grapes such as Cabernet Sauvignon, Zinfandel, and Merlot are more common, as well as many white varieties. Over thirty varieties are grown in the County and the composition is approximately 70% white and 30% black. Five varieties -- Chardonnay, Cabernet Sauvignon, Chenin blanc, White Riesling, and Zinfandel--comprise seventy percent of the acreage.

Monterey County has proven to be a very unique grape growing area. Morning fog and afternoon winds coming off of the Monterey Bay keep daytime temperatures mild, with highs in the 70 to 80 degree F range. These moderate temperatures make Monterey County one of the coolest grape growing areas in California. Wine grapes in cooler areas often mature up to one month later than in other coastal areas because of the long growing season.

Larry Bettiga
Viticulture Farm Advisor
Monterey County Cooperative Extension
University of California

GRAPE SUPPLEMENTARY

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
GRAPES	1991	24,150.32	4.23	102,074.23	TON	$ 723.00	$ 73,800,000
Nonbearing or not Harvested		9,261.40					
TOTAL		33,411.72					
GRAPES	1990	25,247.95	3.96	100,075.97	TON	636.71	63,719,000
Nonbearing or not Harvested		7,905.88					
TOTAL		33,153.83					

TOTAL ACREAGE OF WINE GRAPES BY VARIETY

VARIETY	ACRES	AVERAGE PRICE PER TON*
Cabernet Sauvignon	3,135.94	$ 842.55
Chardonnay	6,694.10	1,187.59
Chenin blanc	4,720.61	327.67
French Colombard	1,189.14	256.99
Gamay	378.00	385.88
Gamay Beaujolais	560.61	576.81
Gewurztraminer	914.70	539.45
Grenache	189.60	625.00
Gray Riesling	893.79	292.00
Malvasia	557.60	414.59
Merlot	507.70	1,053.05
Muscat blanc/Canelli	191.10	539.75
Petite Sirah	765.04	542.51
Pinot blanc	1,299.10	553.20
Pinot noir	1,523.37	611.71
Sauvignon	1,663.15	540.31
Semillon	766.90	319.21
Sylvaner	719.60	188.73
White Riesling	3,738.67	425.78
Zinfandel	1,739.31	382.65
Other Red	879.66	135.72
Other White	384.03	300.00

TOTAL ACRES 33,411.72

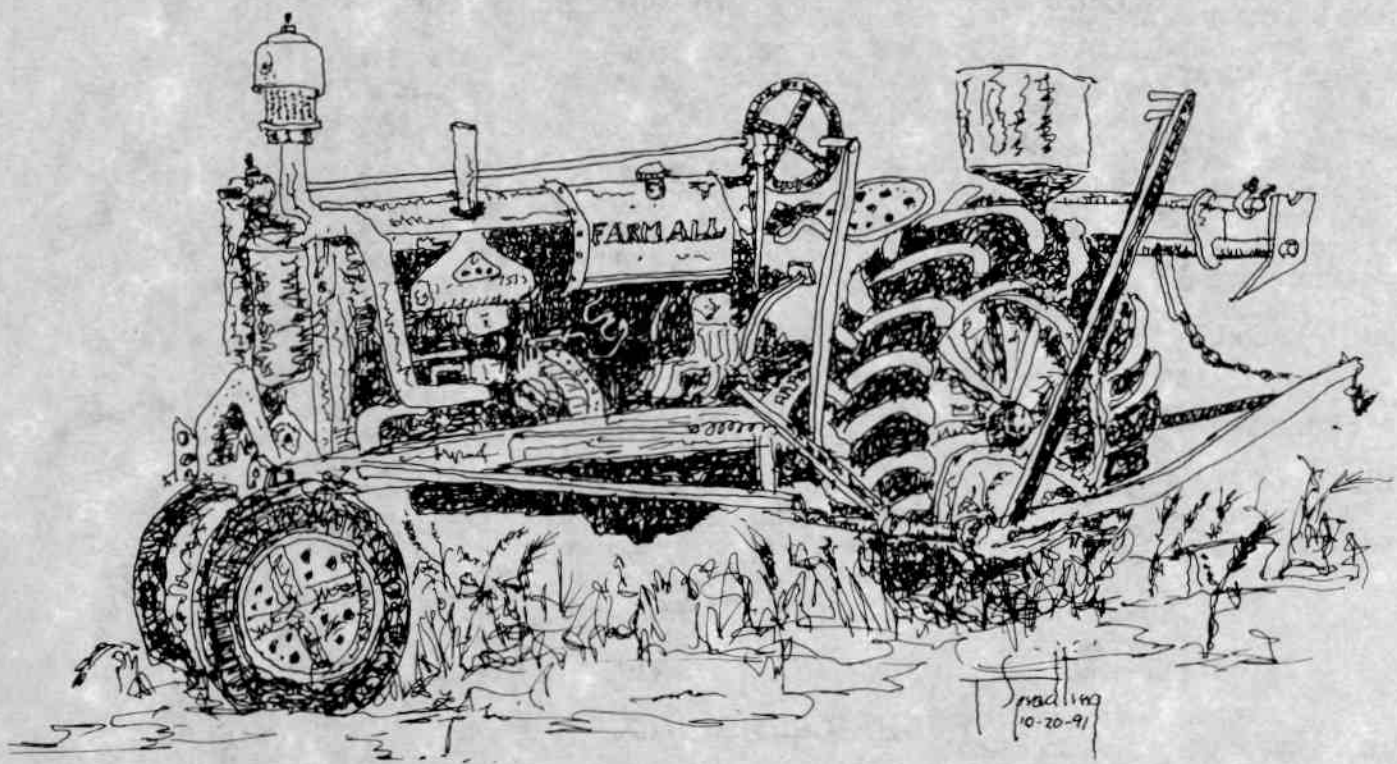
*CDFA weighted average price per ton

VEGETABLE CROPS

Pesticides are chemical substances used to control or eliminate pests. To the grower or farmer this includes insects, mites, and nematodes that damage crops, weeds that compete with crops for nutrients and moisture, and plant diseases caused by fungi, bacteria, and viruses. To the homeowner, pests may include disease transmitting flies, mosquitos, cockroaches, and beetles that infest packaged foods. Snails, aphids, mites, and insects that feed on lawns, gardens, and ornamental plants as well as the algae and mildew that grows on shower curtains are also pests that can be controlled by pesticides.

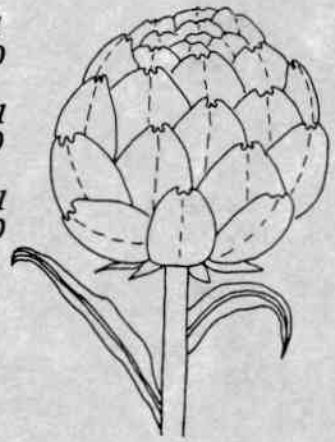
The pesticide industry is a multi-billion dollar world-wide industry today. It advanced rapidly beginning in the 1940's when synthetic chemistry was developed. Currently, 12,677 pesticides are registered with the California Environmental Protection Agency's Department of Pesticide Regulation, of which 7,625 are non-agricultural pesticides and 5,052 are agricultural pesticides. Development, testing, and USEPA approval takes eight to ten years and costs manufacturers between thirty and fifty million dollars for each pesticide product. Cal-EPA reviews data submitted and may require additional testing before use of the product is allowed in California.

The recommendation, distribution, and application of pesticides is the responsibility of Pest Control Advisors, Dealers, and Applicators who are licensed by the State of California Department of Food and Agriculture. The entire process is monitored daily at the county level by the Monterey County Agricultural Commissioner's Office. Through the combined efforts of the agricultural pest control industry and farmers, the safest food in the world is produced in Monterey County.



VEGETABLE CROPS

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
ANISE	1991	450	13.76	6,190	TON	$ 489.10	$ 3,028,000
	1990	466	14.16	6,600	"	505.20	3,334,000
ARTICHOKES	1991	7,545					29,136,000
Total	1990	6,970					23,147,800
Fresh	1991		4.62	34,900	"	721.10	25,166,000
	1990		4.13	28,790	"	679.80	19,571,000
Processing (Regular)	1991		1.57	11,800	"	328.30	3,874,000
	1990		1.53	10,690	"	327.80	3,504,000
Processing (Culls)	1991		0.49	3,700	"	26.00	96,000
	1990		0.40	2,800	"	26.00	72,800
ASPARAGUS	1991	4,535	2.89	13,100	"	1,464.00	19,178,000
	1990	4,830	3.21	15,500	"	1,077.00	16,694,000
BOK CHOY	1991	454	12.86	5,840	"	284.40	1,661,000
	1990	69	9.80	676	"	219.00	148,000
BROCCOLI	1991	50,160					139,343,000
Total	1990	48,700					129,195,000
Fresh	1991	40,600	6.38	259,000	"	467.75	121,147,000
	1990	40,000	5.83	233,000	"	473.20	110,256,000
Processing	1991	9,560	4.95	47,300	"	384.70	18,196,000
	1990	8,700	5.59	48,600	"	389.70	18,939,000
BRUSSELS SPROUTS	1991	942					4,076,000
Total	1990	1,255					4,709,000
Fresh	1991	270	7.74	2,090	"	689.00	1,440,000
	1990	301	7.38	2,222	"	654.60	1,455,000
Processing	1991	672	8.53	5,730	"	460.00	2,636,000
	1990	954	7.42	7,075	"	460.00	3,254,000
CABBAGE, ALL	1991*	862	14.20	12,240	"	263.90	3,230,000
CABBAGE, Green	1990	599	13.47	8,070	"	200.60	1,619,000



*First year reporting all cabbage varieties together

VEGETABLE CROPS - Continued

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
CARROTS	1991	3,100					$ 11,572,000
Total	1990	3,180					11,401,000
Fresh	1991	1,590	21.26	33,800	TON	$ 210.20	7,105,000
	1990	1,560	20.06	31,300	"	233.85	7,320,000
Processing	1991	1,510	33.58	50,700	"	88.10	4,467,000
	1990	1,620	28.09	45,500	"	89.70	4,081,000
CAULIFLOWER	1991	23,790					89,661,000
Total	1990	22,340					85,115,000
White	1991	19,390	7.47	144,900	"	558.00	80,854,000
	1990	19,410	7.32	142,000	"	551.00	78,242,000
Green	1991*	1,280	5.53	7,080	"	670.30	4,746,000
Processing	1991	3,120	4.58	14,300	"	284.00	4,061,000
	1990	2,930	4.30	12,600	"	545.50	6,873,000
CELERY	1991	6,929					40,103,000
Total	1990	7,290					53,346,000
Fresh	1991	6,710	32.79	220,000	"	178.30	39,226,000
	1990	7,150	33.01	236,000	"	222.70	52,557,000
Processing	1991	219	33.01	7,230	"	121.30	877,000
	1990	140	29.25	4,095	"	192.60	789,000
CILANTRO	1991	246	12.11	2,980	"	414.50	1,235,000
	1990	117	13.38	1,565	"	526.65	824,000
CUCUMBERS							
Processing	1991*	260	24.23	6,300	"	198.00	1,247,000
GARLIC	1991	482	9.52	4,590	"	1,400.00	6,426,000
	1990	132	8.30	1,095	"	1,113.65	1,219,000
HERBS**	1991	159	2,890	459,500	BUNCH	1.33	611,000
	1990	51					472,000
KALE	1991	538	7.55	4,060	TON	464.70	1,887,000
	1990***	153	8.41	1,285	"	401.00	516,000
LEEKS	1991	168	14.29	2,400	TON	594.00	1,426,000
	1990***	83	11.71	972	"	619.00	602,000

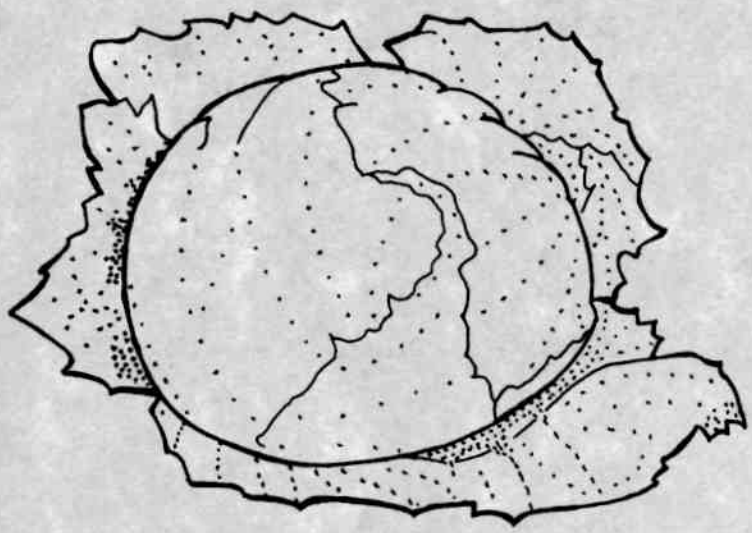
*First Year Reporting
**Includes Chervil, Dill, Oregano, Rosemary, Sage, Thyme, and Others
***Corrected Figures

VEGETABLE CROPS - Continued

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
LETTUCE, Head	1991						
Spring		17,300					
Summer		20,900					
Fall		24,800					
Naked Pack				25,061,000	CTN	$ 5.77	$ 144,602,000
Wrapped Pack				16,828,000	"	7.27	122,340,000
Bulk for Shredding				6,123,000	"	3.86	23,635,000
Bulk for Whole Cored Lettuce				344,000	"	7.90	2,718,000
SEASON TOTAL		63,000	768.00	48,356,000	"	$ 6.0700	$ 293,295,000
LETTUCE, Head	1990						
Spring		17,610					
Summer		18,440					
Fall		22,230					
Naked Pack				26,114,000	CTN	$ 6.80	$ 177,575,000
Wrapped Pack				14,243,000	"	8.30	118,217,000
Bulk for Shredding				6,394,000	"	4.00	25,576,000
Bulk for Whole Cored Lettuce				511,360	"	7.14	3,651,000
SEASON TOTAL		58,280	811.00	47,262,360	"	$ 6.8769	$325,019,000
HEAD LETTUCE	1991	63,000	768.00	48,356,000		$ 6.0700	$ 293,295,000
TOTALS	1990	58,280	811.00	47,262,360		6.8769	325,019,000

VEGETABLE CROPS - Continued

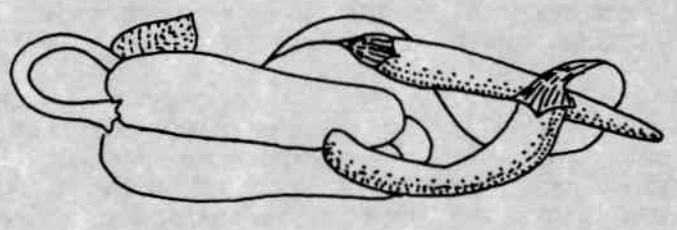
CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
BUTTER LETTUCE	1991	3,000	797.67	2,393,000	CTN	$ 4.20	$ 10,051,000
	1990	2,120	898.11	1,904,000	"	5.10	9,710,000
GREEN LEAF	1991	8,580	804.31	6,901,000	"	4.50	31,054,000
	1990	6,550	806.56	5,283,000	"	5.30	28,000,000
ENDIVE	1991	698	719.20	502,000	"	6.48	3,253,000
	1990	482	867.22	418,000	"	6.60	2,759,000
ESCAROLE	1991	443	720.09	319,000	"	6.24	1,991,000
	1990	359	846.80	304,000	"	6.60	2,006,000
RED LETTUCE	1991	3,690	797.02	2,941,000	"	4.43	13,029,000
	1990	3,040	821.71	2,498,000	"	5.30	13,239,000
ROMAINE	1991	9,790	757.92	7,420,000	"	5.44	40,365,000
	1990	7,980	756.52	6,037,000	"	5.80	35,015,000
LEAF LETTUCE TOTALS	1991	26,201	781.50	20,476,000	"		$ 99,743,000
	1990	20,531	800.94	16,444,000	"		90,729,000



LETTUCE CROP TOTALS	1991	89,201	HEAD & LEAF LETTUCE TOTAL VALUE	$ 393,038,000
	1990	78,811		415,748,000

VEGETABLE CROPS - Continued

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
MUSHROOMS	1991*			38,466,000	LB.	$ 0.96	$ 36,927,000
	1990*			46,412,000	"	0.92	42,699,000
NAPA	1991	528	13.75	7,260	TON	292.90	2,126,000
	1990**	322	13.60	4,380	"	282.40	1,237,000
ONIONS, Dry	1991	408	24.22	9,880	"	246.60	2,436,000
	1990**	383	24.36	9,330	"	155.00	1,446,000
ONIONS, Green	1991	1,290	7.66	9,880	"	765.50	7,563,000
	1990	1,020	9.50	9,686	"	1,083.80	10,498,000
PARSLEY	1991	1,794					4,143,000
Total	1990	817					5,408,000
Fresh	1991	579	8.74	5,060	"	480.90	2,433,000
	1990	315	12.97	4,085	"	523.00	2,136,000
Dry	1991	1,215	1.25	1,520	"	1,125.00	1,710,000
	1990	502	6.24	3,130	"	1,045.40	3,272,000

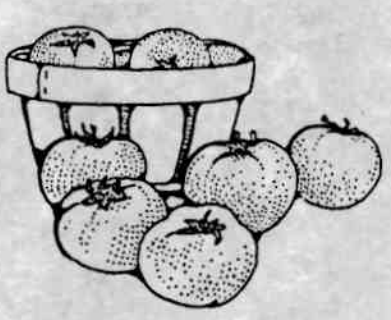


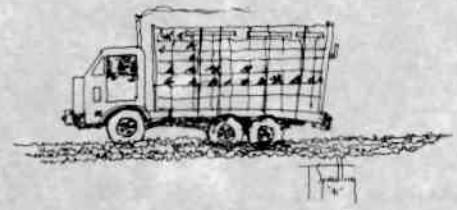
PEPPERS, Bell	1991	1,002					3,111,000
Total	1990	430					1,721,000
Fresh	1991	630	7.73	4,870	"	324.00	1,578,000
	1990	293	6.11	1,790	"	444.20	795,000
Processing	1991	372	20.63	7,675	"	199.80	1,533,000
	1990	137	30.22	4,140	"	223.60	926,000
PEPPERS, Chili Dry	1991	4,090	2.98	12,200	"	1,141.60	13,928,000
	1990	3,870	3.44	13,300	"	1,050.80	13,976,000
POTATOES	1991	937	17.72	16,600	"	180.00	2,988,000
	1990	1,000	20.00	20,000	"	135.00	2,700,000
RADICCHIO	1991	229	9.00	2,060	"	466.50	961,000
	1990	184	10.87	2,000	"	709.00	1,418,000
RADISH	1991	997	5.82	5,800	"	784.90	4,552,000
	1990	935	4.17	3,900	"	613.30	2,392,000

*Multiple harvested square footage
**Corrected Figures

VEGETABLE CROPS - Continued

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
SALAD PRODUCTS	1991			6,372,000	CTN	$7.35	$ 46,834,000
Shredded	1990			4,275,000	"	5.65	24,154,000
FOOD SERVICE							
Total	1991			31,650	TON	1,456.90	46,111,000
	1990						32,988,000
Broccoli Florets	1991			13,240	"	1,213.14	16,062,000
Cauliflower Florets	1991			3,240	"	2,096.30	6,792,000
Carrots	1991			1,700	"	1,328.24	2,258,000
Celery	1991			3,920	"	1,300.00	5,096,000
Cello Spinach	1991			4,820	"	2,237.56	10,785,000
Miscellanous	1991			4,730	"	1,081.40	5,115,000
SPINACH	1991	7,410					16,555,000
Total	1990	7,300					14,099,000
Fresh	1991	2,620	9.16	24,000	TON	494.30	11,863,000
	1990	1,780	7.87	14,000	"	573.90	8,035,000
Processing	1991	4,790	10.02	48,000	"	97.75	4,692,000
	1990	5,520	9.78	54,000	"	112.30	6,064,000
SQUASH, Fresh	1991	623	11.61	7,230	"	363.30	2,627,000
	1990	399	11.72	4,675	"	402.30	1,881,000
TOMATOES	1991	6,455					17,258,000
Total	1990	7,770					28,471,000
Fresh	1991	4,755	12.07	57,400	"	252.30	14,482,000
	1990	4,970	14.77	73,400	"	320.20	23,503,000
Processing	1991	1,700	30.24	51,400	"	54.00	2,776,000
	1990	2,800	32.14	90,000	"	55.20	4,968,000
TOMATOES,	1991	132	7.73	1,020	"	541.40	552,000
Cherry	1990	143	6.20	886	"	830.97	736,000





VEGETABLE CROPS - Continued

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
*MISCELLANEOUS VEGETABLES**	*1991*	*1,824*				*$ 8,880,000*
Total	*1990*	*1,348*				*7,331,000*
Fresh	*1991*	*1,540*				*8,112,000*
	1990	*1,250*				*6,961,000*
*Processing***	*1991*	*284*				*768,000*
	1990	*98*				*370,000*

DEFINING LETTUCE: (Lactuca sativa), the name given to a wide variety of annual salad plants. The chief varieties are cabbage (head) lettuce, which has a firm heart in a round and spreading head; cos (romaine) lettuce, which is erect and oblong with a small heart; and cutting (leaf) lettuce. This last is a very valuable type, as it does not run to seed but produces a succession of leaves for cutting during the summer months. Perennial lettuce is an uncultivated variety which grows freely on light and chalky soils in parts of France, and produces leaves rather like those of the dandelion, which are used for salads in early spring. Wild lettuce is found in many places, especially the Caucasus and India. The well-known Webb's wonder, also known as iceberg lettuce, is cabbage-shaped, very crisp and juicy, but without the fine flavour of cabbage or cos lettuce. Lettuce is mainly used in salads, but it is also braised like chicory. It has a crisp texture and fresh taste. It figures in the Passover ritutal, and in early time it was thought a sacred plant.

Lettuce is thought to have originated in Asia Minor, and was eaten by Persian kings as early as 550 B.C. Its easy growth led to its being cultivated all over Europe from an early date, and by the 14th century it was being eaten in Britain, largely by the poor people. In the 16th centruy John Gerard, the famous herbalist, wrote that it "cooleth the heat of the stomach called heartburn, quencheth thirst, and causeth sleep." In the 18th and 19th centuries in England, lettuce was thought to have faintly narcotic properties; in fact the milky juice of the lettuce contains a small trace of an alkaloid similar to that found in the opium poppy. It is possible that a variety called the "strong-scented lettuce" (Lactuca virosa) conatains an alkaloid resembling hyoscyamine, which has the power of dilating the pupils.

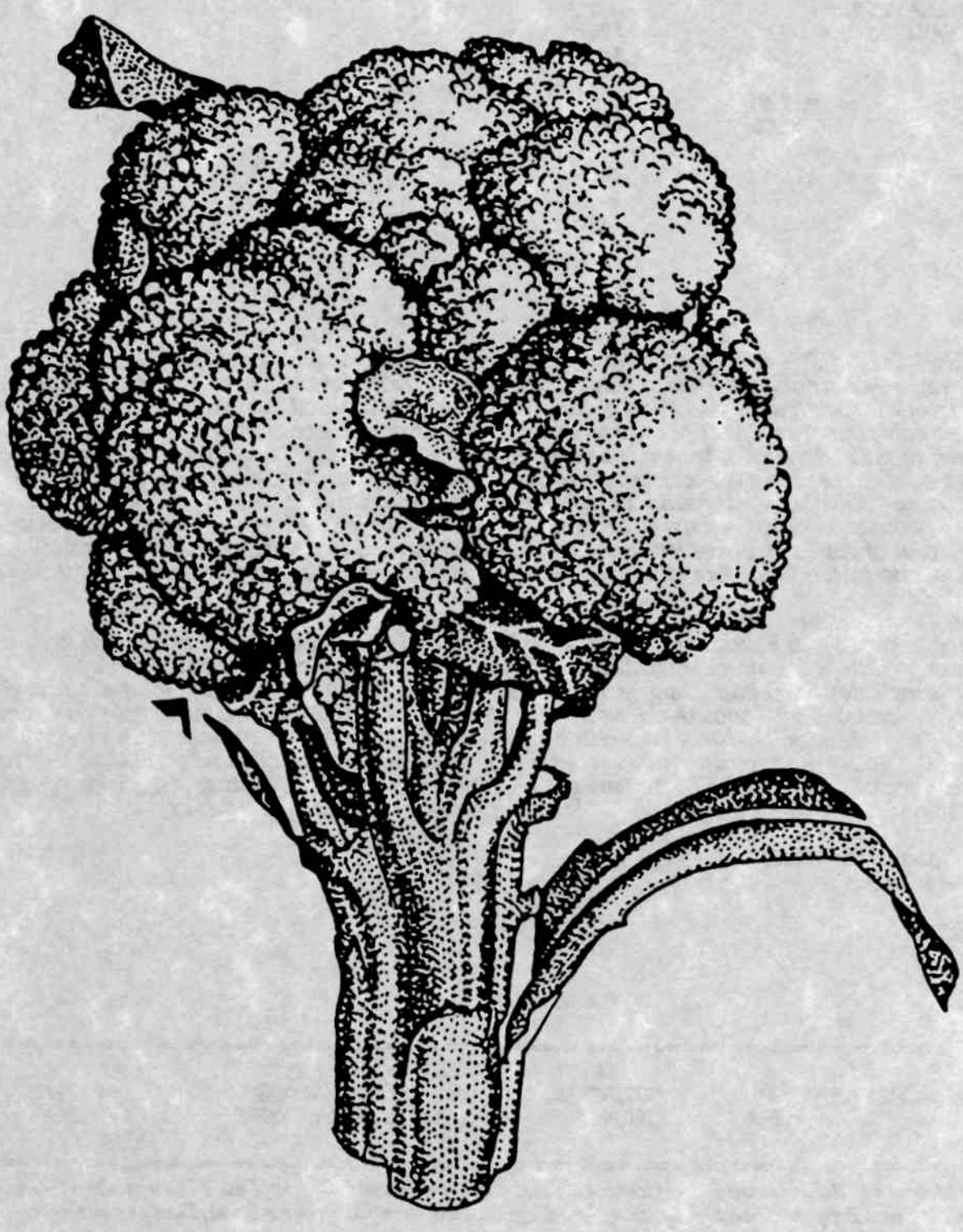
"The Food of the Western World"
R 641.3003

TOTAL ACRES	*1991*	*217,340*	*TOTAL VALUE*	*1991*	*$ 964,410,000*
	1990	*200,967*	*VEGETABLE CROPS*	*1990*	*943,395,800*

**Includes Beans, Beets, Cactus Pears, Cardone, Chives, Corn, Cucumbers, Daikon, Edible Flowers, Fava Beans, Fresh Peas, Gourds, Green Peppers, Koharabi, Rappini, Parsnips, Pimentos, Pumpkins, Spring Salad, Turnips and Others*

***Includes Bell Peppers, Celantro, Pimentos, and Squash*

FEATURE CROP



Broccoli Production In The Salinas Valley

"The quality of air and water is important to the production of quality food."

H.W. "Cy" Mann

Broccoli was the third largest million dollar crop in Monterey County in 1991 with $139,343,000 in generated revenue. Iceberg lettuce was again the number one crop with $293,295,000 and strawberries were second with $158,149,000 in revenue.

Some 50,160 acres of broccoli were grown in 1990 among the lush fields of Monterey County. There is probably no other region in the world where broccoli is produced at such a volume. The Salinas Valley farmer has been growing the crop for generations and relies on experience, technology and Mother Nature to produce this vitamin vegetable. A few key factors, superior in our Salinas Valley, play a role in growing quality broccoli.

CLIMATE

Whether you plant a home garden or commercial acres, uniformity of climate has a lot to do with the quality and production yield of broccoli. California's broccoli yields, particularly along the coastal valleys such as Salinas, are geared much to climate. The Salinas Valley, were the bulk of quality broccoli is grown, boasts temperatures favorable to commercial production of this crop. The mean temperature requirements to grow broccoli are similar to those of cabbage, which grows best at monthly means of 60 to 70 degrees F. As the monthly temperature goes above 60 degrees Fahrenheit, yields and quality are reduced.

SOIL

The growing of broccoli makes less demands upon soil and climate than, for instance, a vegetable such as cauliflower. Immediately after planting out, the crop must be able to develop rapidly; therefore, less fertile soils should be adequately dressed. On the other hand, growth which is too rank may result in hollow flower-stalks.

Broccoli demands a soil with a good moisture supply, yet good drainage of the soil is also important, particularly when the plants winter-over in the field. Sprouting broccoli is presumably salt-tolerant. In the Salinas Valley, where rich, fertile soil is abundant, it is not unusual for one acre of broccoli to yield 12-14,000 pounds.

SEED

Generations of skillful farmers in the Salinas Valley are well aware that quality broccoli begins with quality seed and that a good crop requires many skilled hands to achieve the nutritional qualities which makes it marketable and nutritious.

According to the Produce Marketing Association, Calabrese is the most common and chief commercial variety of broccoli seed. Other late varieties also include Marathon and Greenbelt.

Early seed varieties take as little as 90 days (usually 85 to 90) to become a harvestable commodity. Late varieties take up to 160 days form seed to harvest, with a range of 110 to 160 days.

In California broccoli production is year-round. Supplies peak from February through July with the smallest supply occurring in August. The usual planting dates for the spring crop are October to January 30, and the usual harvesting dates are from February to May 30.

HARVESTING

The harvesting of broccoli in a quality operation still depends much on the labor and skill of man. The classic bunched broccoli is cut with 8 to 10 inches of stem when the head is still compact and before the flower heads open enough to show premature green (yellowing). When mature , the central heads are usually three to six inches across.

Early broccoli production in the Salinas Valley resulted in broccoli being cut in the field and placed into bins. The bins were then brought to packing houses for bunching, or hauled to frozen food manufactures.

Today, broccoli is cut and bunched in the field with state-of-the-art harvesting machines. Though still dependent on the labor of man, this new advanced technology enables many Salinas Valley growers to also produce broccoli spears out in the field as well as the food service broccoli floret.

MARKETING

The Salinas Valley agricultural industry, though expanding from generation to generation, is extremely volatile. The majority of large frozen food companies that dominated Salinas Valley agricultural production in the past have since packed up and moved their operations to more cost-effective regions, such as Santa Maria, Mexico. The Salinas Valley farmer is having to diversify his markets into other areas. A few of these are:

Food Service

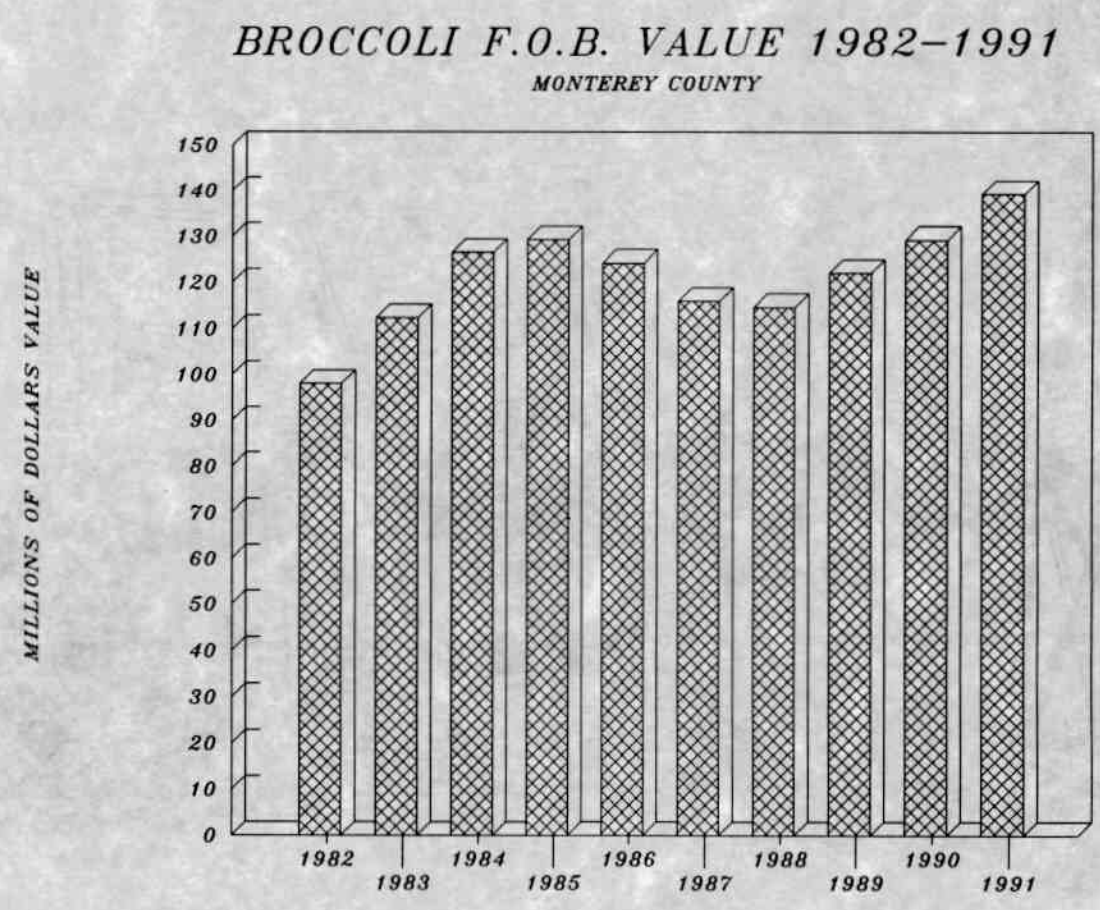
Broccoli is an extremely popular food service item. From salad bars to pizzas and pastas, broccoli is always a menu and plate pleasure due to its vibrant color and wide application. Many Salinas Valley broccoli producers are leaders in the food service broccoli production. Florettes are a very popular item as are plate-ready spears which are produced in the field. They offer the food service operator excellent plate coverage and visual appeal.

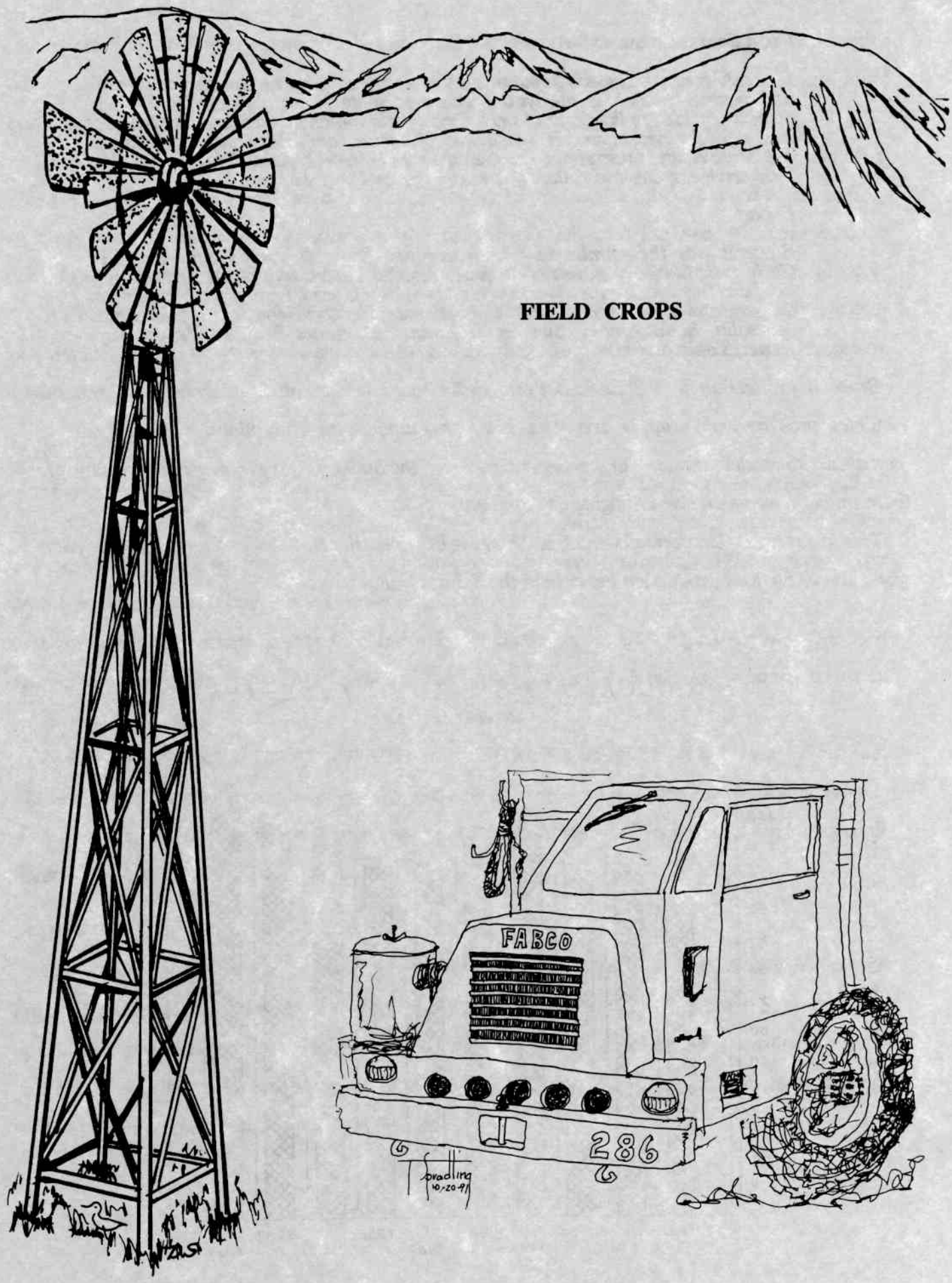
Export

Broccoli was the number three crop exported from Monterey County in 1991. Close to 86,000,000 pounds of the fresh vegetable were shipped to countries such as: Taiwan, Japan, Mexico, Great Britain, Guam, United Arab Emirates, Saipan, Italy, Panama, Netherlands, Kuwait, Federal Republic of Germany, Australia, Saudi Arabia, Sweden, Bahrain, Philippines, People's Republic of China, Tahiti and Denmark.

Broccoli production in the Salinas Valley will always be a challenge. From uncontrollable variables such as water supply and temperature fluctuations to controllable variables such as increased urban development and economic pressure, the Salinas Valley farmer must continue to listen to and observe an ever-changing environment.

This is for sure: California broccoli is booming in popularity and not one region in the entire world knows broccoli production better than the Salinas Valley.





FIELD CROPS

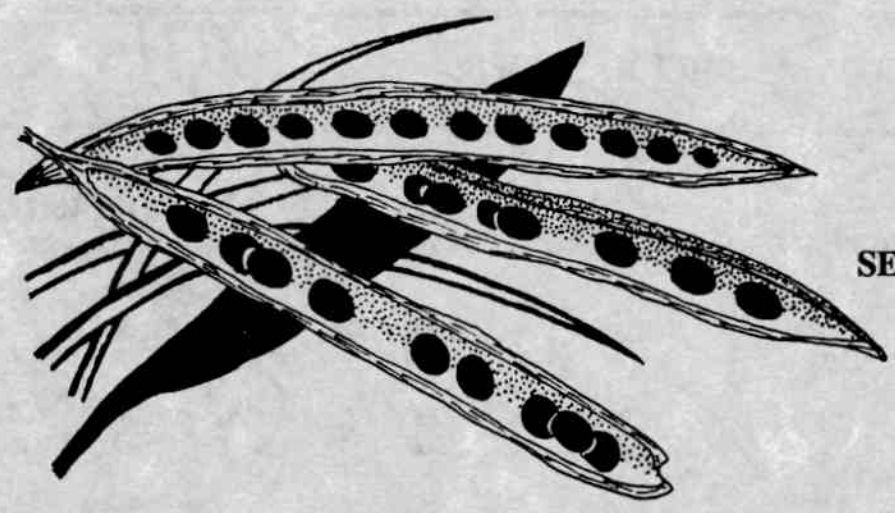
FIELD CROPS

CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
BARLEY, Grain	1991	12,600	0.65	8,200	TON	$ 102.00	$ 836,000
	1990	12,780	0.89	11,400	"	110.00	1,254,000
BEANS, Dry Large Lima	1991	2,200	1.24	2,735	"	1,140.00	3,118,000
	1990	1,570	1.44	2,260	"	1,175.00	2,656,000
Misc. Dry	1991	210	1.26	265	"	480.00	127,000
	1990*						
CORN, Processing	1991	650	5.00	3,250	"	235.00	764,000
	1990	440	5.50	2,420	"	235.00	569,000
HAY, Alfalfa	1991	2,650	6.45	17,100	"	91.90	1,571,000
	1990	2,970	5.82	17,300	"	110.00	1,903,000
HAY, Barley	1991	535	2.32	1,240	"	95.00	118,000
	1990	4,180	0.90	3,760	"	100.00	376,000
HAY, Oats	1991	215	1.34	287	"	180.00	51,700
	1990	1,310	1.03	1,355	"	106.00	144,000
PASTURE, Dry Land	1991	1,107,500			ACRE	6.50	7,199,000
	1990	1,107,500			"	6.50	7,199,000
PASTURE, Irrigated	1991	500	1AU**	500	AU	144.00	72,000
	1990	300	1.00	300	TON	80.00	24,000
SUGAR BEETS	1991	1,680	37.38	62,800	TON	40.11	2,519,000
	1990	2,740	39.42	108,000	"	39.10	4,223,000
WHEAT, Grain	1991	595	1.75	1,040	"	103.00	107,000
	1990	1,790	0.82	1,460	"	120.00	175,000

TOTAL ACRES	1991	1,129,335	TOTAL VALUE	1991	$ 16,483,000
	1990	1,135,580	FIELD CROPS	1990	18,523,000

*Insufficient to Report

**AU = 1000 lb animal unit: Formula 1AU/Acre/Year @ $12.00/month x $12/month = $144/year x 500 AU = $72,000



SEED CROPS

The history of seed production in North America can be traced back to the Indians, who primarily were domesticators of Beans, Maize, and Squash. As European settlers moved into California, they brought with them new cultivars and crops. The importance of importing new crop plants was recognized in the early 1800's by President Thomas Jefferson. Between 1836-1849 the U.S. patent office first started considering novel plant varieties for patent.

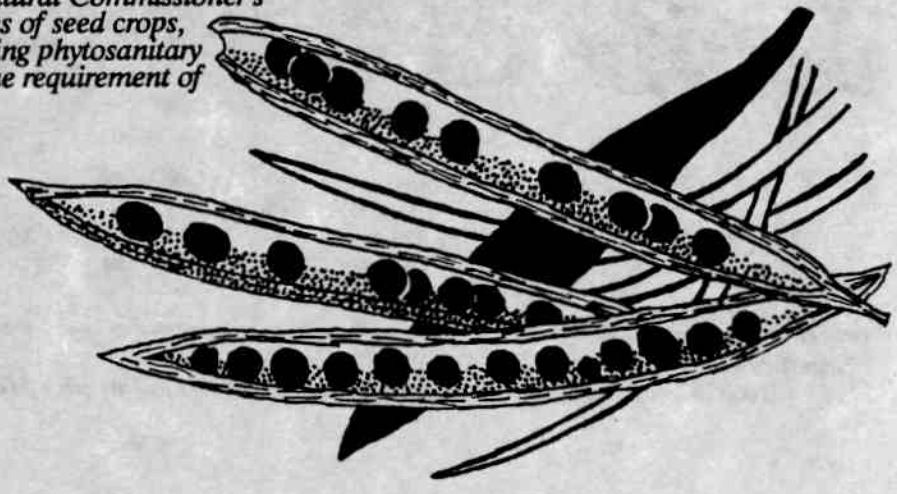
In the early 1800's most plant breeding was being done by innovative farmers, who had recognized that cross fertilization (hybridization) could produce improved characteristics over both parents. It was not until 1860 that companies specializing in seed production were becoming established in the U.S.; and by 1875 California was quickly becoming the center for this new seed industry. The central coast area of California currently has more than thirty seed companies that range from dealers to breeding and production based facilities.

Seed crops contribute significantly to Monterey County's overall agricultural economic picture. Seed production in Monterey County encompasses a wide variety of species. Asparagus, Barley, Beans, Broccoli, Cauliflower, Corn, Oat, Pea, Pepper and Wheat are among the many seed crops produced in the county. For example there are over twenty-five commercially available cauliflower varieties in use within the Salinas Valley for various time-slots throughout the season. Seed costs vary dependent upon seed characteristics such as resistance, hybrid or open pollinated; and can be as low as $80/# for open pollinated cauliflower to well over $300/# for hybrids.

Monterey County's seed industry is regulated by the Agricultural Commissioner under federal phytosanitary regulations, and California Seed Law insuring that maintenance of quality standards and specific import requirements are met on seed production for both domestic and export markets. Furthermore, Monterey County maintains a cooperative relationship with the mosaic control and seed research committee of the Grower Shipper Vegetable Association of Central California to test lettuce seed for freedom from lettuce mosaic virus.

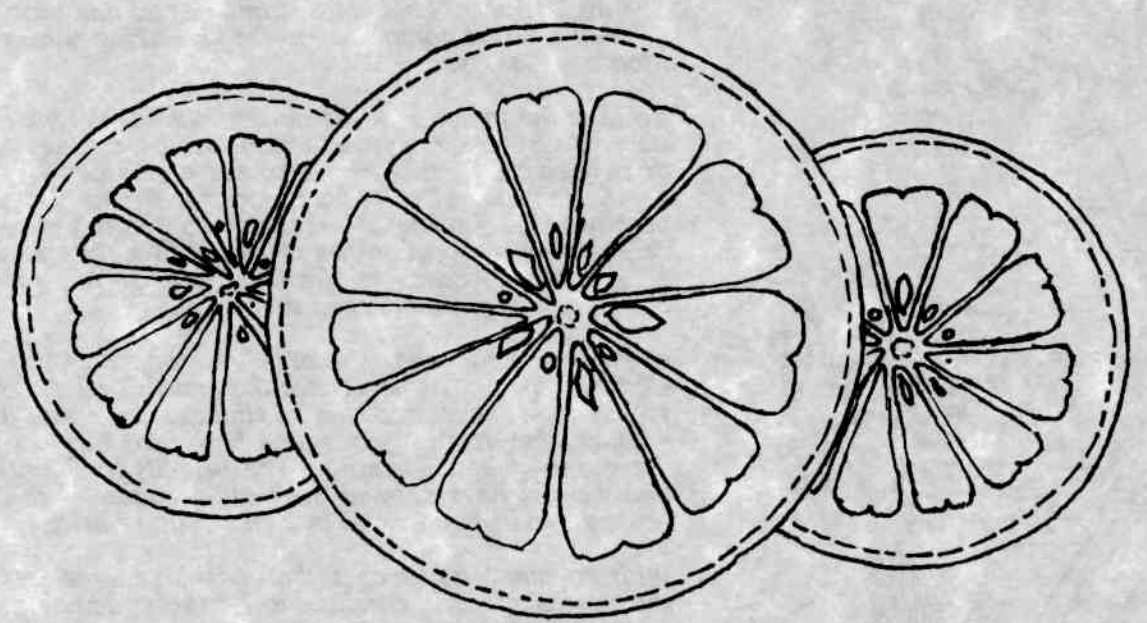
Monterey County is also the home for many seed pelleting operations, as well as research and development facilities for major seed firms. These companies use the most innovative seed treatment and enhancement techniques to augment the viability, germination and overall quality of seed. Growers worldwide benefit from this modern seed technology.

Much of the production of seed crops from Monterey county is destined for other states and overseas markets. The Monterey County Agricultural Commissioner's Office is responsible for field inspections of seed crops, during the growing season, and for issuing phytosanitary certificates when the seed crop meets the requirement of the importing countries or states.



SEED CROPS

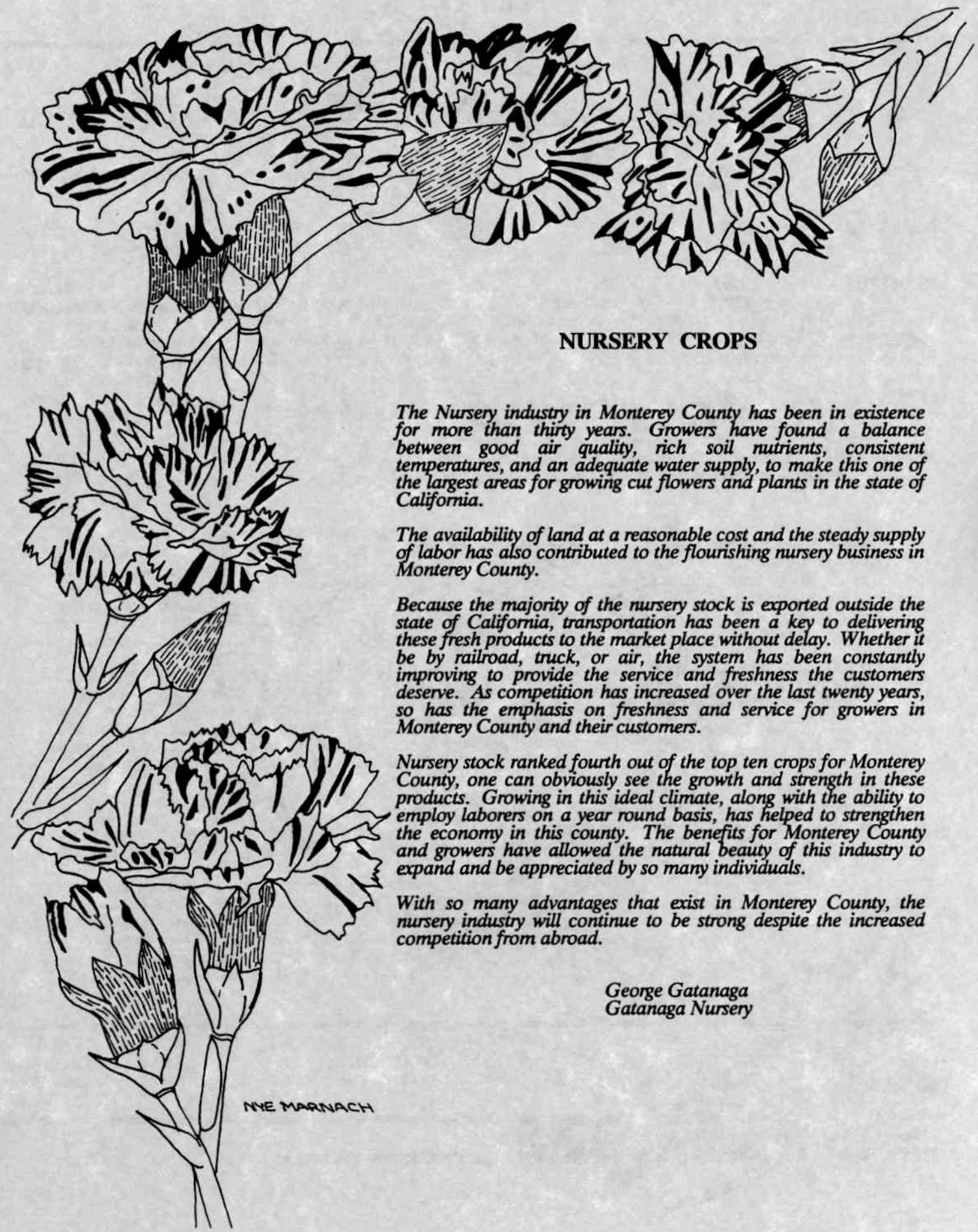
CROP	YEAR	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
ASPARAGUS	1991	328	.02	8	TON	$ 3,300.00	$ 26,400
	1990*						
BEANS (All)	1991	3,470	1.61	5,570	"	608.00	3,387,000
	1990	3,430	1.07	3,665	"	1,020.00	3,738,000
BROCCOLI	1991	101	0.09	9	"	34,951.00	315,000
	1990	157	0.13	20	"	29,000.00	580,000
CAULIFLOWER	1991	41	0.30	12	"	37,809.00	454,000
	1990	95	0.22	21	"	27,000.00	567,000
PEPPER	1991	26	0.12	3	"	11,333.00	34,500
	1990	22	0.14	3	"	24,000.00	72,000
MISC. SEED**	1991	1,280					395,000
	1990	1,450					1,244,000



TOTAL ACRES	1991	5,246	TOTAL VALUE	1991	$ 4,611,000
	1990	5,154	SEED CROP	1990	6,201,000

*Insufficient to Report

**Misc. Seeds includes Barley, Corn, Cucumber, Flowers, Parsley, Peas, Squash, and Wheat.



NURSERY CROPS

The Nursery industry in Monterey County has been in existence for more than thirty years. Growers have found a balance between good air quality, rich soil nutrients, consistent temperatures, and an adequate water supply, to make this one of the largest areas for growing cut flowers and plants in the state of California.

The availability of land at a reasonable cost and the steady supply of labor has also contributed to the flourishing nursery business in Monterey County.

Because the majority of the nursery stock is exported outside the state of California, transportation has been a key to delivering these fresh products to the market place without delay. Whether it be by railroad, truck, or air, the system has been constantly improving to provide the service and freshness the customers deserve. As competition has increased over the last twenty years, so has the emphasis on freshness and service for growers in Monterey County and their customers.

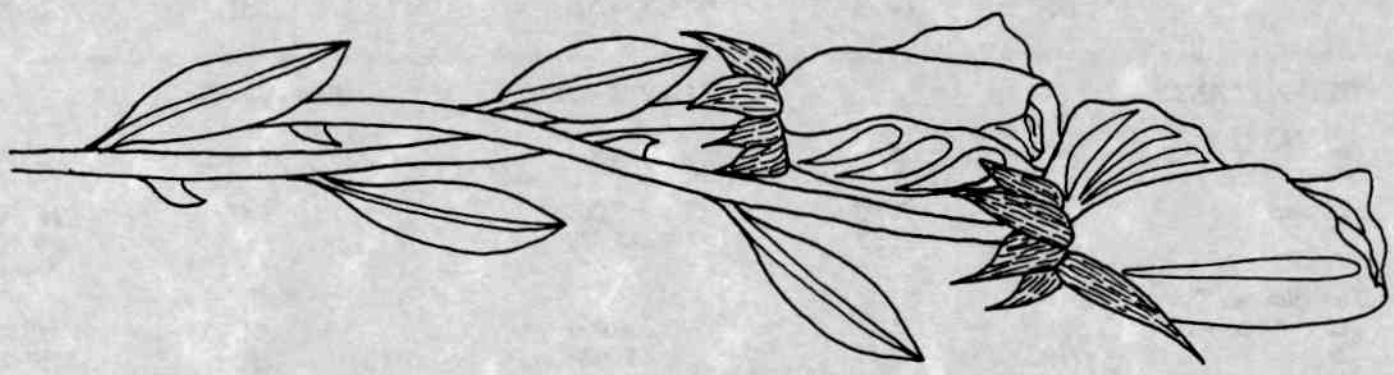
Nursery stock ranked fourth out of the top ten crops for Monterey County, one can obviously see the growth and strength in these products. Growing in this ideal climate, along with the ability to employ laborers on a year round basis, has helped to strengthen the economy in this county. The benefits for Monterey County and growers have allowed the natural beauty of this industry to expand and be appreciated by so many individuals.

With so many advantages that exist in Monterey County, the nursery industry will continue to be strong despite the increased competition from abroad.

George Gatanaga
Gatanaga Nursery

NURSERY CROPS

CROP	YEAR	ACREAGE	AMOUNT SOLD	AVERAGE PRICE	TOTAL
CUT FLOWERS					
			BLOOMS SOLD	*PER BLOOM*	
Rose	*1991*	*167.44*	*95,543,000*	*$ 0.2576*	*$ 24,612,000*
	1990	*159.30*	*89,138,000*	*0.2584*	*23,925,000*
Miniature Rose	*1991*	*13.06*	*13,300,000*	*0.1671*	*2,222,000*
	1990	*10.78*	*10,799,000*	*0.1826*	*1,972,000*
Carnation	*1991*	*214.77*	*126,209,000*	*0.1447*	*18,262,000*
	1990	*210.97*	*129,268,000*	*0.1331*	*18,421,000*
Chrysanthemum (Standard)	*1991*	*17.62*	*5,197,000*	*0.4540*	*2,359,000*
	1990	*24.66*	*6,701,000*	*0.4320*	*2,895,000*
Gardenia	*1991**		*234,000*	*1.20*	*281,000*
Orchid	*1991**		*75,000*	*2.50*	*188,000*



			BUNCHES SOLD	*PER BUNCH*	
Carnation (Miniature)	*1991*	*40.39*	*2,732,000*	*1.37*	*3,743,000*
	1990	*34.16*	*2,336,000*	*1.45*	*3,394,000*
TOTAL INDOOR CUT FLOWERS	*1991*	*453.28*			*$ 51,667,000*
	1990	*446.25*			*51,677,000*

**First year reporting.*

NURSERY CROPS - Continued

CROP	YEAR	ACREAGE	AMOUNT SOLD	AVERAGE PRICE	TOTAL
			BLOOMS SOLD	PER BLOOM	
ALSTROEMERIA	1991	24.00	793,000	$1.75	$ 1,388,000
	1990	20.69	636,000	2.35	1,495,000
			TRANSPLANT		
BEDDING PLANTS					
Vegetable	1991	53.25	769,198,000		18,311,000
Commercial	1990*	49.40	551,304,000		11,521,000
			BLOOMS SOLD	PER BLOOM	
CALLAS	1991	66.00	92,000	2.66	245,000
	1990	75.98	1,620,000	1.14	1,847,000
EUCALYPTUS	1991	380.50	1,906,000	1.64	3,126,000
	1990	169.17	1,121,000	2.46	2,758,000
GYPSOPHILA	1991	14.00	37,000	1.83	68,000
	1990	16.00	38,850	1.97	76,500
IRIS	1991	69.20	1,143,000	1.75	2,000,000
	1990	64.83	1,016,000	1.61	1,636,000
POTTED PLANTS			PLANTS SOLD	PER PLANT	
Orchids	1991	9.00	134,000	14.40	1,930,000
Poinsettia	1991	10.90	2,347,000	3.47	8,144,000
	1990	13.53	1,886,000	1.96	3,697,000
Miscellanous**					
Indoor Decorative	1991	36.34	7,550,000	2.20	16,610,000
	1990	40.34	6,665,000	1.95	12,997,000
Outdoor					
Woody Ornamentals	1991	42.10	1,175,000	3.70	4,348,000
	1990	45.75	1,426,000	2.73	3,893,000
MISC FIELD CROPS,	1991***	421.80			5,506,000
SUCCULENTS, BULBS	1990	532.77			20,070,000

*Corrected Figures

**Includes Cyclamen, Dieffenbachia, Ficus sp., Gloxinia, Kalancloe, Potted Mums, Saintpaulia, Seasonal potted plants (Easter Lily, etc), Spathiphyllum, Spring bulbs.

***Includes Agapanthus, Cactus, Commercial nursery propagative stock, Cornflower, Colum Stock, Curly Willow, Dianthus, Foxglove, Freesia, Godetia, Heather, Larkspur,Leptospermum, Myrtle, Orchids, Snapdragons, Stock, Succulents, Strawflower, Sunflower, Thistle varieties, Turf, Yarrow, and etc.

NURSERY CROPS - Continued

CROP	YEAR	ACREAGE	AMOUNT SOLD	AVERAGE PRICE	TOTAL
			BLOOMS SOLD	PER BLOOM	
PROPAGATIVE STOCK	1991*	22.60	41,736,000		$ 10,434,000
SEAFOAM	1991	15.40	88,000	$ 1.35	119,000
	1990	10.50	61,650	1.40	86,300
SNAPDRAGON	1991**	8.80	308,000	1.75	539,000
STATICE	1991	39.50	495,000	1.20	594,000
	1990	32.58	407,320	1.30	530,000
			TREES SOLD	PER TREE	
CHRISTMAS TREES	1991	106.00	15,000	15.00	225,000
	1990	103.00	8,009	20.45	164,000
TOTAL ACRES	1991	1,772.67	TOTAL VALUE		$ 125,254,000
	1990	1,672.20	NURSERY CROPS		112,447,800

APIARY

CROP	YEAR	COLONIES	PRODUCTION	UNIT	F.O.B. VALUE PER UNIT	TOTAL
APIARY Total	1991					$ 73,400
	1990					80,780
Honey	1991		30,000	POUND	$ 0.50	15,000
	1990		35,000	"	0.50	17,500
Pollination***	1991	2,400		COLONY	24.00	57,600
	1990	2,600		"	24.00	62,400
Wax	1991		1,000	POUND	0.80	800
	1990		1,100	"	0.80	880
			TOTAL VALUE APIARY		1991	$ 73,400
					1990	80,780

*Includes Bedding Plants, Carnations, Roses and Seedlings.
**First Year Reporting
***Crops Pollinated: Apple, Broccoli, Carrot, Cauliflower, Cucumber, Fava Bean, Melon, Onion, Parsley, Pepper, Spinach, and Squash

Artist: George N. Cominos

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LIVESTOCK, POULTRY, & DAIRYING

CROP	YEAR	HEAD	PRODUCTION	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
BEEF CATTLE	1991	96,000		CWT		$ 35,425,000
Total	1990	110,650		"		40,152,000
Cattle &	1991	50,000	330,000	"	$ 77.00	25,410,000
Calves	1990	55,750	367,950	"	76.00	27,964,000
Feeder	1991	21,000	59,000	"	85.00	5,015,000
	1990	25,000	70,000	"	78.00	5,460,000
Stocker	1991	25,000	62,500	"	80.00	5,000,000
	1990	29,900	74,750	"	90.00	6,728,000
SHEEP & LAMBS	1991	2,400	3,360	"	40.00	134,000
	1990	2,500	3,500	"	55.00	192,000
WOOL	1991		15,000	POUND	.20	3,000
	1990		20,000	"	.25	5,000
HOGS	1991	1,000	190,000	"	.50	95,000
	1990	1,400	266,000	"	.50	133,000
DAIRYING COWS	1991	4,000		HEAD	1,200.00	4,800,000
Breeding Stock	1990	4,230		"	1,025.00	4,336,000
Cull Cows	1991	1,050		"	7,000	735,000
	1990	861		"	668.00	575,000
Calves	1991	827		"	95.00	78,600
	1990	976		"	95.00	92,700
Fertilizer	1991		14,000	TON	6.00	84,000
	1990		15,060	"	6.00	90,400
MILK, Market	1991		716,282	CWT	11.13	7,972,000
Marketed	1990		728,625	"	11.80	8,598,000
Manufactured	1991		3,091	"	11.57	35,800
	1990		1,015	"	11.05	11,200

LIVESTOCK, POULTRY, & DAIRYING - Continued

CROP	YEAR	HEAD	PRODUCTION	UNIT	F.O.B. VALUE PER UNIT	TOTAL
GOATS	1991	375		HEAD	$ 260.00	$ 97,500
Breeding Stock	1990	450		"	250.00	112,000
Cull Goats	1991	520		"	35.00	18,200
	1990	450		"	40.00	18,000
Kids	1991	1,200		"	25.00	30,000
	1990	1,100		"	25.00	27,500
CHICKENS	1991	432,700				3,191,000
Total	1990	404,200				1,237,560
Broilers,						
Fryers,	1991	401,000	3,008,000	POUNDS	0.41	1,233,000
Roasters	1990	400,000	3,000,000	"	0.41	1,230,000
Meat Hens	1991	31,700	129,000	"	0.58	75,000
	1990	4,200	18,900	"	0.40	7,560
Misc. Poultry*	1991					441,000
	1990					390,000
Eggs	1991		1,620,000	DOZEN	0.89	1,442,000
	1990		609,000	"	0.92	560,000

TOTAL VALUE LIVESTOCK, POULTRY, & DAIRYING	1991	$ 52,699,100
	1990	56,530,360

*Includes Duck Eggs, Ducklings, Fryers, Goslings, Pullets, Quail eggs and others

TREND OF MAJOR CROPS IN MONTEREY COUNTY

CROP	YEAR	ACRES	VALUE
ARTICHOKES	1991	6,970	$ 29,136,000
Fresh & Processing	1986	10,385	28,748,000
	1981	8,265	36,510,000
BROCCOLI	1991	50,160	139,343,000
Fresh & Processing	1986	56,140	124,219,000
	1981	41,390	90,567,000
CARROTS	1991	3,100	11,572,000
Fresh & Processing	1986	5,290	16,456,000
	1981	5,095	16,870,000
CAULIFLOWER	1991	23,790	89,661,000
Fresh & Processing	1986	23,730	76,570,000
	1981	18,870	53,736,000
CELERY	1991	6,929	40,103,000
Fresh & Processing	1986	5,942	46,799,000
	1981	6,200	34,990,000
GRAPES	1991	33,411.72	73,800,000
	1986	27,304.93	35,706,000
	1981	27,947.25	49,628,000
LETTUCE, Head	1991	63,000	293,295,000
	1986	64,800	272,248,000
	1981	62,396	241,659,000
MUSHROOMS	1991	38,466,000 POUNDS	36,927,000
	1986	44,446,000 "	44,002,000
	1981	26,274,000 "	28,113,000
NURSERY CROPS	1991	1,772.42	125,254,000
	1986	960.53	78,441,000
	1991	812.14	62,127,000
STRAWBERRIES	1991	6,320	158,149,000
Fresh & Processing	1986	3,625	107,864,000
	1981	2,560	48,570,000
TOMATOES	1991	7,770	17,258,000
Fresh & Processing	1986	4,870	20,732,000
	1981	7,280	24,829,000

MILLION DOLLAR CROPS 1991

1. LETTUCE, HEAD	$ 293,295,000
2. STRAWBERRIES	158,149,000
3. BROCCOLI	139,343,000
4. NURSERY	125,254,000
5. LETTUCE, LEAF	99,743,000
6. CAULIFLOWER	89,661,000
7. GRAPES	73,800,000
8. SALAD PRODUCTS SHREDDED	46,834,000
9. FOOD SERVICE PRODUCTS	46,111,000
10. CELERY	40,103,000
11. MUSHROOMS	36,927,000
12. CATTLE	35,425,000
13. ARTICHOKES	29,136,000
14. ASPARAGUS	19,178,000
15. TOMATOES	17,258,000
16. SPINACH	16,555,000
17. PEPPERS, CHILI	13,928,000
18. CARROTS	11,572,000
19. RASPBERRIES	11,019,000
20. ORGANIC	9,115,000
21. MISCELLANEOUS VEGETABLES	8,880,000
21. MILK, MARKETED	7,972,000
22. ONIONS, GREEN	7,563,000
23. PASTURE LAND, DRY	7,199,000
24. GARLIC	6,426,000
25. DAIRYING COWS	4,800,000
26. SEEDS	4,611,000
27. RADISH	4,552,000
28. PARSLEY	4,143,000
29. BRUSSELS SPROUTS	4,076,000
30. CABBAGE, All	3,230,000
31. CHICKENS	3,191,000
32. BEANS, DRY	3,118,000
33. PEPPERS, BELL	3,111,000
34. ANISE	3,028,000
35 POTATOES	2,988,000
36. SQUASH	2,627,000
37. SUGAR BEETS	2,519,000
38. ONIONS, DRY	2,436,000
39. NAPA	2,126,000
40. KALE	1,887,000
41. BOK CHOY	1,661,000
42. HAY, ALFALFA	1,571,000
44. LEEKS	1,426,000
45. CUCUMBERS	1,247,000
46. CILANTRO	1,235,000
47. BUSHBERRIES	1,122,000

SUMMARY

FRUITS & NUTS	*1991*	*$ 245,492,000*
	1990	*260,420,200*
VEGETABLE CROPS	*1991*	*964,410,000*
	1990	*943,395,800*
FIELD CROPS	*1991*	*16,483,000*
	1990	*18,523,000*
SEED CROPS	*1991*	*4,611,000*
	1990	*6,201,000*
NURSERY CROPS	*1991*	*125,254,000*
	1990	*112,447,800*
APIARY	*1991*	*73,400*
	1990	*80,780*
LIVESTOCK, POULTRY, AND DAIRYING	*1991*	*52,699,100*
	1990	*56,530,360*
ORGANIC	*1991*	*9,115,000*

1991	*SUMMARY*	*$ 1,418,137,500*
1990	*TOTALS*	*1,397,598,940*

MONTEREY COUNTY EXPORTS TOP 20 PRODUCE SUMMARY 1991

	1989 Pounds	1990 Pounds	1991 Pounds	1991 with freeport Countries*
1. Lettuce, head	7,179,000	12,034,000	30,691,000	190,146,000
2. Celery	6,130,000	15,528,000	16,264,000	89,496,000
3. Broccoli	7,676,000	25,813,000	43,375,000	86,062,000
4. Cauliflower	206,000	2,203,000	1,360,000	32,289,000
5. Strawberry	4,377,000	4,329,000	5,027,000	28,066,000
6. Lettuce, leaf	0	102,000	182,000	26,596,000
7. Carrots	1,916,000	3,019,000	1,187,000	16,482,000
8. Apples	0	0	5,482,000	11,828,000
9. Tomatoes	943,000	6,998,000	9,639,000	11,067,000
10. Potato	0	4,191,000	7,795,000	7,795,000
11. Oranges	0	0	776,000	4,956,000
12. Onions, Dry	4,516,000	4,126,000	2,278,000	4,908,000
13. Grapes	0	0	2,428,000	4,383,000
14. Onions, Green	19,000	30,000	10,000	4,346,000
15. Artichokes	0	0	144,000	3,591,000
16. Grapefruit	0	0	1,846,000	3,591,000
17. Asparagus	1,545,000	2,338,000	1,625,000	2,919,000
18. Anise	0	0	5,000	2,342,000
19. Peppers	0	0	90,000	1,482,000
20. Cabbage	1,840,000	2,271,000	1,192,000	1,192,000
ALL SEED	28,585,000	7,213,000	9,332,000	9,332,000
NURSERY				
Cut Flower (Number of Stems)	2,313,000	2,983,000	1,871,000	4,683,000
Other Nursery Plants (Ornamental & Transplants)	1,882,000	10,574,000	18,652,000	18,652,000

NOTE: "0" indicates that commodity did not meet production amount for top 20 summary

*Freeport countries include, Canada, Hong Kong, Saipan, and Singapore

SUMMARY OF PRODUCE EXPORTS BY COUNTRY 1991

	Pounds
1. Canada	357,268,000
2. Hong Kong	67,704,000
3. Japan	59,156,000
4. Mexico	39,592,000
5. Taiwan	28,357,000
6. Singapore	7,867,000
7. United Kingdom	5,596,000
8. Sweden	826,000
9. Saipan	795,000
10. Panama	722,000
11. Federal Republic of Germany	718,000
12. United Arab Emirates	713,000
13. Netherlands	682,000
14. Italy	483,000
15. Norway	340,000
16. French Polynesia	331,000
17. Australia	331,000
18. Saudi Arabia	319,000
19. Finland	187,000
20. Indonesia	170,000

SUMMARY OF SUSTAINABLE AGRICULTURAL ACTIVITIES

PEST	*AGENT/MECHANISM*	*SCOPE OF PROGRAM**
COUNTY BIOLOGICAL CONTROL		
Yellow Starthistle *Centaurea solstitialis*	*Seed Weevil* *Bangasternus orientalis*	*2 sites*
Russian thistle *Salsola australis*	*Leaf & stem mining moths* *Coleophora spp.*	*7 sites*
Puncture vine *Tribulus terrestris*	*Stem & Seed weevils* *Microlarinus spp.*	*17 sites*
Aphid species	*Seven-spotted lady beetle* *Coccinella septempunctata*	*1 site*
Lettuce root aphid *Pemphigus bursarius*	*Alternate host destruction*	*1134 poplar trees removed*
Ash whitefly *Siphoninus phillyreae*	*Parasitic wasp* *Encarsia partenopea*	*2 sites* *1000 wasps released*
PEST ERADICATION		
Taurian thistle *Onopordum tauricum*	*Mechanical*	*91 plants removed*
Scotch thistle *Onopordum acanthium*	*Mechanical/chemical*	*1187 plants remvoved*
Dalmatian toadflax *Linaria dalmatica*	*Mechanical*	*10 plants removed*
Diffuse knapweed *Centaurea diffusa*	*Mechanical*	*11 plants removed*
Skeletonweed *Chrondrilla junceae*	*Mechanical/chemical*	*44 plants removed*
PEST EXCLUSION		
Lesser Snow Scale *Pinnaspis strachani*	*Truck shipment* *Nursery stock*	*1 rejected/destroyed*
Eulophid wasp *Aprostocetus sp.*	*Truck shipment* *Waxflower*	*1 rejected/destroyed*
Gypsy moth *Lymantria dispar*	*Truck shipment* *Household goods*	*1 rejected/destroyed*
Eastern tent caterpillar *Malacosoma americanum*	*Truck shipment*	*1 rejected/destroyed*

**Represents total number of individual sites, plants, etc. incorporated in program effort (surveys, collection, releases, etc.)*

ORGANIC PRODUCTION IN MONTEREY COUNTY

The Organic Foods Act of 1990 now requires organic producers to register their principal county of operation. The purpose of the legislation and registration is to provide protection for producers, handlers, processors, retailers, and consumers of organic foods marketing in California.

The range of organic products produced in Monterey County is very diverse. Some of the commodities included: Apples, Beans, Bok Choy, Broccoli, Cabbage, Carrots, Cauliflower, Celery, Chard, Collards, Corn, Cucumbers, Figs, Garlic, Herbs, Iceberg Lettuce, Kale, Kiwi Fruit, Leaf Lettuce, Leeks, Lemons, Melons, Mixed Salad Greens, Mushrooms, Onions, Oranges, Pears, Peas, Peppers, Parsley, Plums, Potatoes, Raddicchio, Radishes, Raspberries, Rhubarb, Salad Greens, Spinach, Squash, Strawberries, Tomatoes, and Walnuts.

There are 16 registered producers in Monterey County who declare a total acreage of 564 acres and a total gross value of $9,115,000.

PEST DETECTION

Pest detection is the systematic search for pests outside of a known infested area; or for pests not known to occur in California. The general goal is to detect the insects before they become established over an area so large that eradication is no longer biologically or economically feasible. Detection trapping is performed primarily by the County Agricultural Commissioner's offices.

TARGET PEST	*INSECT HOSTS*	*NO. OF SITES*
Medfly	*Fruit Trees*	*355*
Melon Fruit Fly	*Vegetable Gardens*	*70*
Mexican Fruit Fly	*Fruit Trees*	*140*
Oriental Fruit Fly	*Fruit Trees*	*70*
Gypsy Moth	*Shade Trees*	*328*
Japanese Beetle	*Turf, Roses*	*188*
Africanized Honey Bee	*High Risk Area*	*4*
European Corn Borer	*Corn*	*6*
Nantucket Pine Tip Moth	*Monterey Pine*	*10*
Trogoderma Beetle	*Grain*	*43*

LADY BEETLES

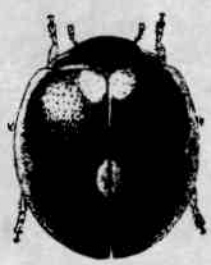
BIOLOGICAL CONTROL ACTIVITIES

In Monterey County various biological control organisms have been introduced to reduce insect pest populations on ornamentals and food crops. Biocontrol agents have also been introduced to control weeds. Releases of these organisms is through coordinated efforts of the Agricultural Commissioner's Office, C. D. F. A., Univ. of Calif., U. S. D. A., and the private sector.

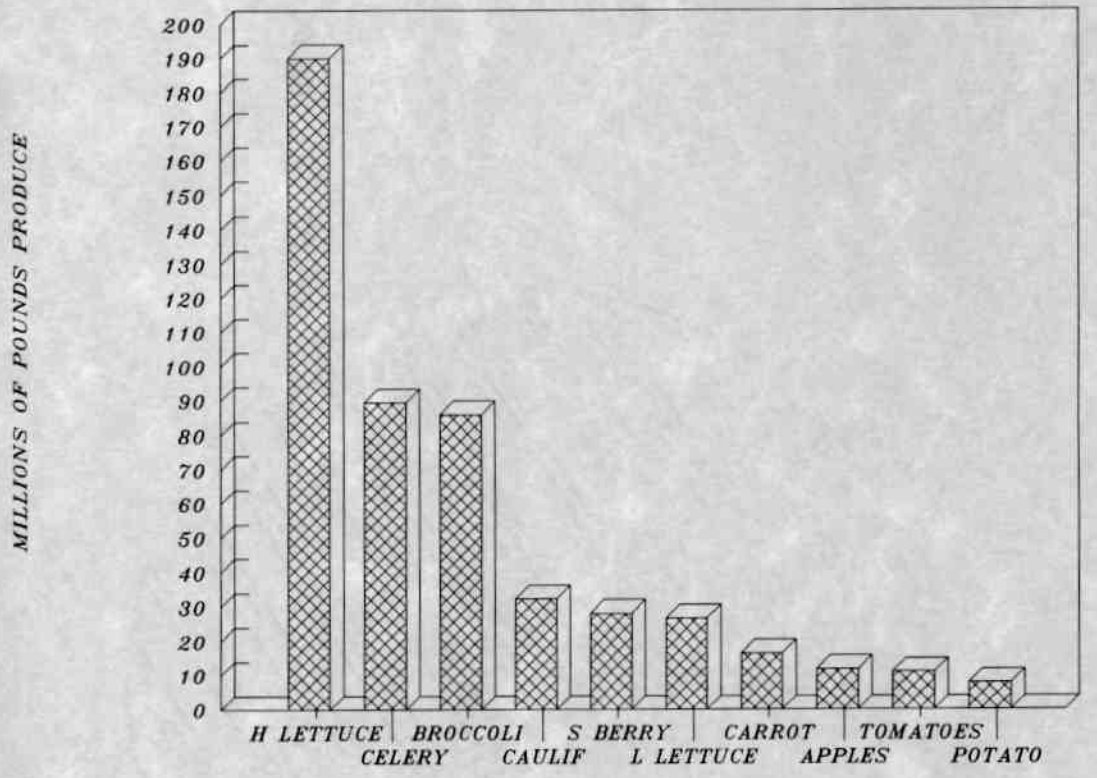
Biocontrol systems in place include: Release of lady beetles to control aphids on vegetable crops and the recently introduced Russian wheat aphid. Lacewings have also been introduced for aphid control on vegetables. Predatory mite species have been released for control of mite pests on strawberries. Nematodes have been released into artichoke fields for plume moth control as well as into a vegetable transplant greenhouse to control fungus gnats and shore flies. Wasps are also being evaluated for effectiveness in controlling a variety of vegetable insect pests including, asparagus aphid, cabbage aphid, celery leafminer, and the artichoke plume moth.

On ornamentals, wasp species of Encarsia have been released for controlling whiteflies on greenhouse grown poinsettias and for controlling the ash whitefly on trees and shrubs. Several other wasp species have been successfully released to control scales on iceplant.

Weed populations are being assaulted by introductions of carefully selected weed-specific herbivores. Russian thistle moths, both a leaf and a stem feeding species, have been released. The effectiveness of a seed-feeding weevil on yellow starthistle is being monitored at different locations in the County, while puncture vine is being attacked by another species of introduced seed and stem-feeding weevil.

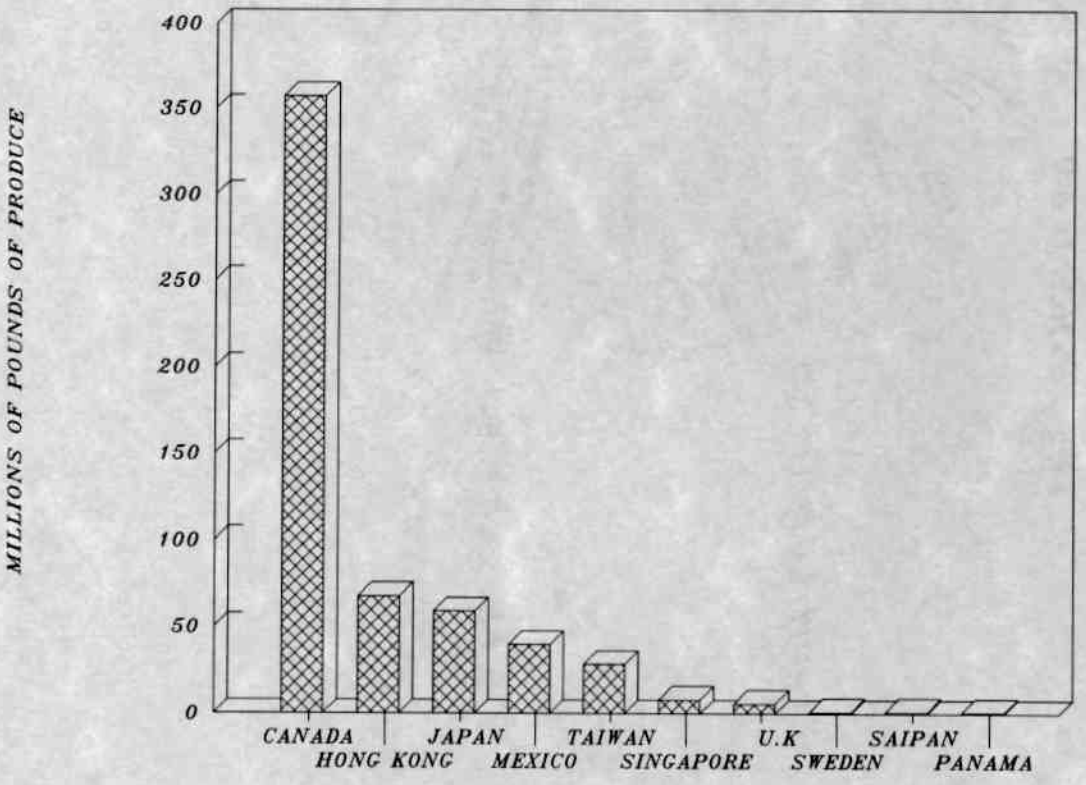


TOP 10 PRODUCE EXPORTS FOR 1991



TOP 10 IMPORTING COUNTRIES

FOR 1991



MONTEREY COUNTY AGRICULTURE 1991

TOTAL VALUE $1,418,137,500