History of Marin County Aquaculture Industry

The Marin oyster industry is an interesting example of man's adapting an otherwise unproductive part of the landscape to his benefit. The efforts to raise exotic oyster species on barren, tidal mud flats along a coast where there is no native oyster stock of commercial value have met with both success and failure, and the industry has been marked by wide fluctuations in activity over its one hundred year history. While oysters are the major aquaculture commodity being produced, Tomales Bay growers also produce mussels, clams, and abalone commercially.

Tomales Bay is a 15 mile-long, mile-wide drowned rift valley on the San Andreas Fault, a trough between the Point Reyes Peninsula and the undulating hills that are mostly used for grazing dairy cattle to the east. Another major growing location is in Drakes Estero located on the west side of Point Reyes Peninsula. This area is used for dairy cattle and sheep grazing and is part of the Point Reyes National Seashore.

Oysters have been grown commercially on the Tomales Bay since late in the last century, especially after pollution closed down shellfish harvesting in San Francisco Bay some fifty years ago. Oysters were first planted in Tomales Bay in 1875, the year the Northwestern Pacific Railroad linked it with Sausalito which had a good ferry service to San Francisco. Daily communication was maintained between Tomales Bay and San Francisco from 1875 to 1930, the period during which the railroad operated. Road development and the advancement of the trucking industry opened up San Francisco as one of the biggest seafood markets in the United States.

Tomales Bay and Drakes Estero oyster companies sell directly to the consumer and to various Bay area wholesale seafood dealers. The fresh packed oysters are trucked to San Francisco by the producer and delivered to the wholesalers, who in turn distribute them to retail dealers, and restaurants in the San Francisco Bay area. Restaurants' demands for fresh local foodstuffs have created a boom for the oyster grower. People from all parts of the Bay area drive many miles over a narrow winding road to buy oysters from the beds. Weekend tourists and sportsmen are also customers. The strong consumer desire for absolutely fresh shellfish is the principal explanation for the success of this marketing arrangement.

Marin is the state's second-largest shellfish producing area and growers are gearing up for expansion to grow more oysters, clams, mussels and abalone. Tomales growers have managed to carve out a niche for themselves, largely because the bay's water is clean and its watershed is being protected and restored. However, an isolated incident of water contamination caused by domestic pollutants and fluctuation in bay salinity during heavy winter rainfall plagued growers this past year. Only because local residents and officials have successfully worked to protect and restore their watershed is the Tomales Bay shellfish industry alive and well today. The 223 square mile Tomales Bay watershed drains into one of the least despoiled major coastal bays in California. Today, two-thirds of the Tomales Bay watershed remains in agricultural use.

Cover Photo: Maturing oysters in trays resting on mud flats awaiting the returning tides in Tomales Bay.

MARIN COUNTY DEPARTMENT OF AGRICULTURE • WEIGHTS AND MEASURES

April 1, 1997

STACY K. CARLSEN
COMMISSIONER/DIRECTOR
ANDREA DEGRASSI
DEPUTY COMMISSIONER/DIRECTOR

Ann M. Veneman, Secretary
California Department of Food and Agriculture
and
Marin County Board of Supervisors:
Harry Moore, Chairman, District 5
John Kress, District 1 — Annette Rose, District 3
Harold C. Brown, District 2 — Steve Kinsey, District 4

In accordance with the provisions of Section 2279 of the California Food and Agricultural Code, I am pleased to submit the Annual Crop Report for 1996. This report is a summary of counts, acreage, yields, and gross value of agricultural production in Marin County. The report represents gross returns to the producer and does not indicate actual net profit.

Marin County agriculture recovered nicely in spite of yet another year of harsh winter and spring storms. The value of all agricultural production rose to a record $56,409,423. The increase is due to greater production, new producers, and better market prices.

Milk was Marin's number one product, with production increasing 5% and the value increasing an impressive 18.9%. Fruit and vegetable production increased with the addition of a number of new small growers of fruits and vegetables who sell their crops at local farmers markets. Livestock value was up by $5.9 million due to increased production and market prices for cattle, sheep and poultry; poultry provided the greatest boost in value. Nursery products increased over last year because some areas were able to resume production. However, business remains tenuous due to high production costs, unreliable water supplies, and poor market prices. A large value gain was seen again this year in silage production, due to increases in crop acreage and in the value/price per ton.

Aquaculture value dropped due to problems in production and to a change in what products are included in the definition. To be in line with the California Fish and Game definition of aquaculture, the herring production value was removed and placed in a new category "Commercial Fishing." Aquaculture's oyster values decreased due to continued problems with juvenile seed mortality and harvest closures of Tomales Bay during the heavy storms.

I wish to thank all of the individuals and organizations for their cooperation in providing the information required for this report.

Respectfully submitted,

Stacy K. Carlsen
Agricultural Commissioner

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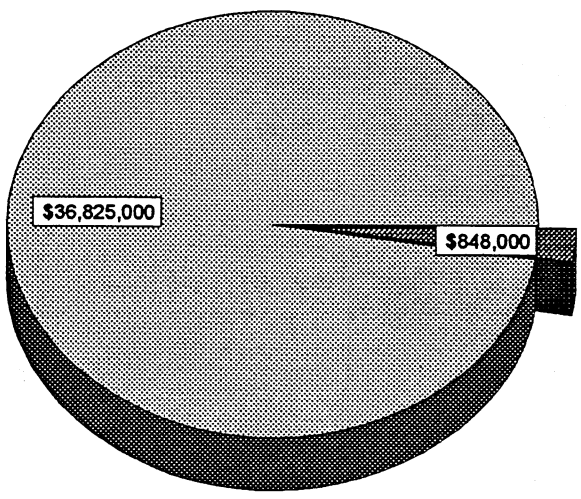
FIELD, FRUIT, NUT & VEGETABLE CROPS

	YEAR	HARVESTED ACREAGE	TOTAL UNITS	DOLLAR VALUE PER UNIT	TOTAL
Hay	1995	3,396	7,187	57.71	$414,811.00
	1996	2,929	6,502	58.89	$382,870.00
Silage	1995	3,067	32,820	15.16	$497,787.00
	1996	2,721	33,134	24.86	$823,573.00
Pasture, Irrigated	1995	820		110.0	$90,200.00
	1996	820		110.0	$90,200.00
Pasture, Other	1995	154,000		29.00	$4,466,000.00
	1996	154,000		29.00	$4,466,000.00
Fruits, Nuts & Vegetables	1995	199			$1,090,080.00
	1996	320			$1,334,013.00
TOTAL	**1995**	**161,482**			**$6,558,878.00**
	1996	**160,790**			**$7,096,656.00**

LIVESTOCK PRODUCTS

			DOLLAR VALUE	
ITEM	YEAR	PROD. UNIT	PER UNIT	**TOTAL**
Milk: Market	1995	2,503,612 Cwt	12.34	$30,906,000.00
	1996	2,581,377 Cwt	14.27	$36,825,000.00
Milk:Manufact.	1995	72,171 Cwt	11.01	$794,000.00
	1996	64,806 Cwt	13.09	$848,000.00
Wool	1995	55,124 Lbs	.68	$38,537.00
	1996	82,080Lbs	.65	$53,352.00
Mohair	1995	1,144 Lbs	2.88	$3,299.00
	1996	Not avail	Not avail	Not avail
TOTAL	**1995**			**$31,741,836.00**
	1996			**$37,726,352.00**

MILK PRODUCTION VALUES



LIVESTOCK AND POULTRY

ITEM	YEAR	NO. OF HEAD	DOLLAR VALUE TOTAL
Cattle	1995	16,452	$4,567,637.00
	1996	16,371	$4,551,616.00
Lambs	1995	9,963	$741,777.00
	1996	11,016	$1,029,217.00
Poultry and Eggs: Hatching	1995		$2,425,856.00
	1996		$2,950,910.00
TOTAL	**1995**		**$7,735,270.00**
	1996		**$8,531,743.00**

INVENTORIES OF LIVESTOCK & POULTRY

ITEM	January 1, 1996	January 1, 1997
All Cattle	44,000	44,407
Dairy Cows	13,500	13,486
Beef Cows	10,000	11,000
Stock Sheep	11,400	10,260
Poultry	431,782	455,624

NURSERY PRODUCTS

ITEM	YEAR	PRODUCTION AREA: HOUSE SQUARE FT	PRODUCTION AREA: FIELD AREAS	TOTAL
NURSERY	1995	224,000	50.50	**$556,050**
	1996	217,800	44.00	**$575,467**

AQUACULTURE/COMMERCIAL FISHING PRODUCTS

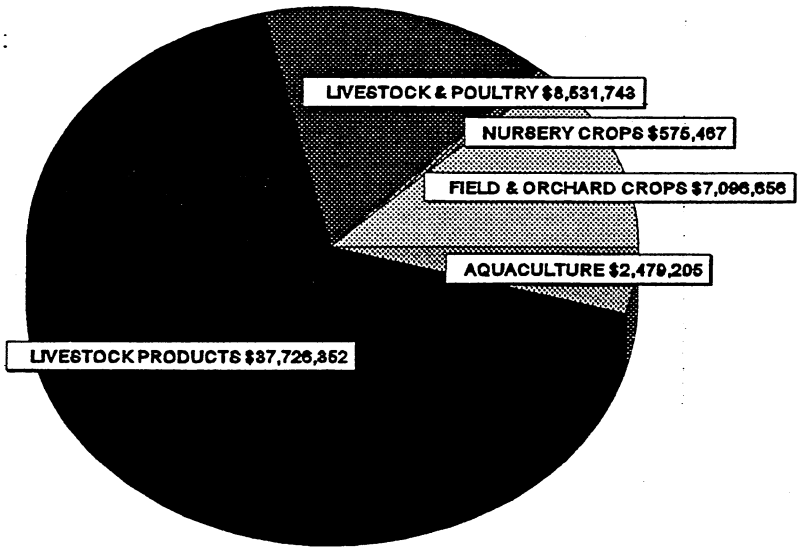
	YEAR	PRODUCTION ACREAGE	DOLLAR VALUE
Aquaculture:			
Oysters, Clams, Mussels, Abalone	1995	1,295	$2,733,487.00
	1996		$2,479,205.00
Commercial Fishing:			
Herring, Trout	1995	N/A	$1,405,000.00
	1996	N/A	$5,000,600.00
TOTAL	**1995**		**$4,138,487.00**
	1996		**$2,479,205.00***

*Total for 1996 does not include herring due to revision in definition for aquaculture

COMPILATION

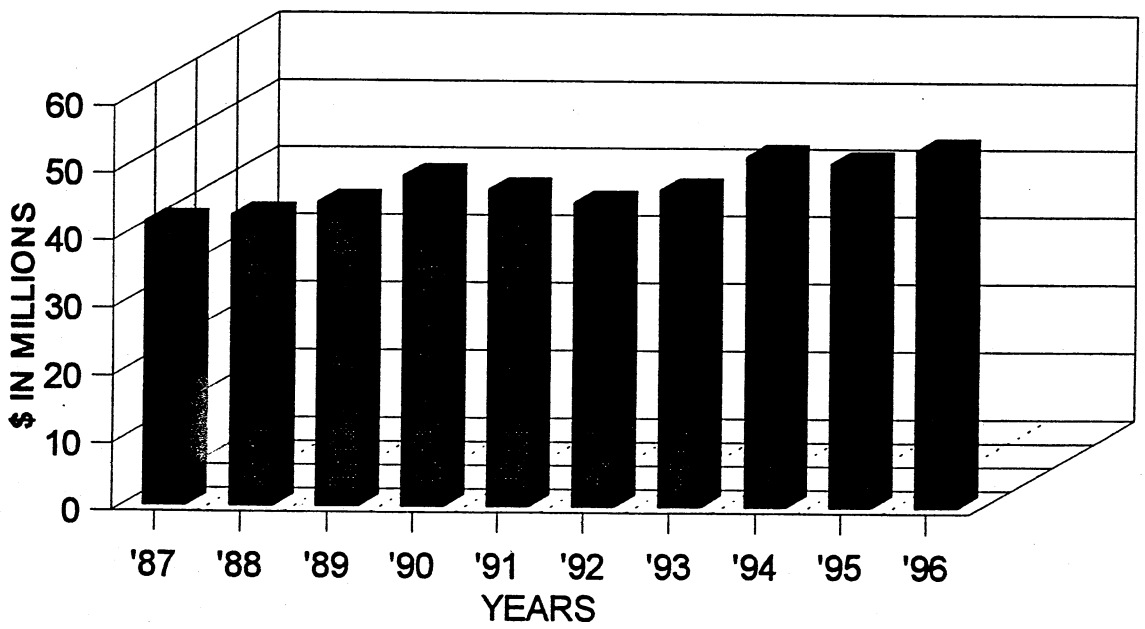
	1995	1996
Field & Orchard Crops	$6,558,878.00	$7,096,656.00
Nursery Crops	$556,050.00	$575,467.00
Livestock & Poultry	$7,735,270.00	$8,531,743.00
Livestock Products	$31,738,537.00	$37,726,352.00
Aquaculture Products	$4,138,487.00	$2,479,205.00
TOTAL	**$50,727,222.00**	**$56,409,423.00**

1996 COMPILATION



AGRICULTURAL PRODUCTION GROSS VALUE

TEN YEAR SUMMARY



SUMMARY OF THE SUSTAINABLE AGRICULTURAL ACTIVITIES

ORGANIC FOOD PRODUCTION

Organic farming emphasizes a greater cooperation with nature without reliance on synthetic chemical inputs. All organic producers register in their principal county of operation.

Organic commodities produced in Marin County included: Beans, berries, broccoli, cabbage, carrots, chard, cucumbers, cut flowers, garlic, herbs, leaf lettuce, mixed salad greens, oat hay, onions, parsley, potatoes, silage, spinach, sprouts, squash, tomatoes, turnips, vegetable starts and watercress. Organic dairy products included: Milk, cheese, butter, yogurt, and whipping cream.

There are 28 registered organic producers in Marin County farming 184 acres, producing a total gross value of 3.3 million dollars.

BIOLOGICAL CONTROL

Biological pest control is the use of natural enemies to help suppress pest populations to acceptable levels. Once the agent becomes established, control is self perpetuating, potentially reducing the need to use pesticides.

PEST	BIOLOGICAL AGENT/MECHANISM
Gorse	Gorse Mite, Seed Weevil
Bull Thistle	Bull Thistle Gall Fly
Yellow Star Thistle	Seed Head Weevil, Gall Fly, Hairy Weevil, Peacock Fly
Scotch Broom	Seed Weevil, Stem Boring Moth
Ash White Fly	Parasitic Wasp
Italian Thistle	Seed Weevil
Puncture Vine	Seed Weevil
Kalamath Weed	Beetle
Canada Thistle	Mechanical removal
Plumeless Thistle	Mechanical removal

PEST PREVENTION

Pest prevention is the systematic search for injurious pests before they have become established to help prevent costly and environmentally disruptive eradication programs.

Exclusion	4,365 shipments of incoming plant material inspected at UPS, Federal Express, Postal and delivery trucks. 65 shipments placed under quarantine for violation of plant quarantine laws.
Detection	714 exotic pest traps are placed in Marin County as front line to detect pests such as Medfly, Japanese Beetle, and Gypsy Moth.

1996

ANNUAL CROP REPORT
COUNTY OF MARIN

Agricultural Commissioner
Director of Weights and Measures
STACY K. CARLSEN

Deputy Agricultural Commissioner
Deputy Director of Weights and Measures
ANDREA DE GRASSI

Agricultural/Weights and Measures Inspectors
ALBERT POWELL
ANITA SAUBER
CHARLES HSU

Senior Secretary
JAN WARREN

Departmental Mission Statement

Our mission is to serve the public's interest by ensuring equity in the market place, promoting and protecting agriculture, protecting environmental quality and health and welfare of Marin County's citizens.

This document is available in alternative format upon request.