

*Amazing  
BUT TRUE*

*FACTS ABOUT  
MARIN COUNTY  
AGRICULTURE*



## HOW BIG IS AGRICULTURE?

Agriculture is California's number one industry, with sales of \$46 billion in 2016 and over 400 commodities. (Milk has the highest annual sales value, followed by grapes and almonds).

California provides a quarter of the nation's food and over 50 percent of its fresh fruits and vegetables.

Approximately 170,876 acres in Marin are farms or ranches. This amounts to 50 percent of the land in Marin. Of the 323 agricultural operations in Marin, 110 are considered large farms (annual gross income of \$100,000 or more), and 213 are considered small or mini-farms (annual gross income of less than \$100,000). The average size of a farm in Marin is 529 acres, and the majority are third- to fifth-generation family-owned operations.



Agriculture in Marin contributes over \$85 million annually to the local economy, with milk production dominating at 39% of total ag revenue. Nearly 90% of the dairy revenue in this county is derived from organic milk. In fact, the National Organic Program has created opportunities for many Marin growers. Currently, more than 20% of Marin's productive ag lands are certified organic and more than 75% of its agricultural sales are from certified organic products.

SUMMARY OF PRODUCTION	2016	2017
Dairy	43,135,000	34,153,000
Livestock (meat, eggs, wool, breeding stock)	31,564,000	28,650,000
Field Crops (hay, silage, harvested pasture)	12,408,000	12,122,000
Fruit, Grape & Vegetable	4,279,000	5,124,000
Aquaculture	4,760,000	5,414,000
Nursery Crops	360,000	243,000
<b>TOTAL</b>	<b>\$96,506,000</b>	<b>\$85,706,000</b>

*The figures quoted above represent gross values of production for the years listed. Net revenue is not calculated.*

Within the greater Bay Area, ag production and support activities represent only 0.5% of total jobs, but each farming job contributes an estimated 2.2 jobs in the economy as a whole, including food manufacturing and distribution as well as manufacture/retail of agricultural inputs like fertilizer and equipment. The Marin Economic Forum estimates that for every \$1 generated by the agricultural sector, \$2.50 is created within the local economy. This makes Marin farms and ranches' collective contribution close to \$215 million.

## WHAT DO WE GROW?

Marin's topography is one of rolling hills, coastal bluffs and flat interior valleys separated by hills. While the hilly topography, prevalence of nonprime soils and lack of reliable water supplies are deterrents to more intensive agriculture like row crops, some areas in Marin that are rich in alluvial soils support diverse vegetable and specialty crops.

Marin's coastal agriculture is well known for its quality grasslands due to foggy, moist conditions that keep the grasses green much of the year and make them well suited for grazing dairy, beef cattle and sheep.

Dairy farms in Marin generate the highest percentage of ag dollars in the county, creating \$34 million in gross revenue for 2017. There are approximately 29 dairies (including one sheep, one buffalo and two goat dairies) in the county, of which 75% are certified organic. Among the 43 counties in California that produce milk, Marin is ranked 15th, and all that milk doesn't just go into cartons, it is prized by processors for yogurt, butter and, of course, cheese. In fact, with 35 farmstead and artisan cheese makers around the county, some call Marin "the Normandy west of the Mississippi."



But although milk is the top product in Marin, the 2017 numbers reveal a discouraging trend. Down 21% from 2016 revenue, the industry here and across the nation has seen consistent drops in milk prices as a result of two concurrent dynamics: 1) Years of dairies converting from conventional production to organic has led to a glut of organic milk in the market, and 2) Consolidation within the industry has centralized processing to serve large producers, sometimes leaving smaller farms without a buyer in their area.

Livestock production is the second largest agriculture industry in the county, with 205 beef cattle, cow/calf, and sheep grazing operations producing animals for meat as well as breeding stock and replacement heifers for dairies. In many cases, local operators are producing grass fed and pasture raised livestock and selling products directly to clients.

From 2007 to 2012 the number of poultry producers increased from 25 to 47. 2017 poultry production in Marin, including both meat and eggs, was valued at \$17.8 million, over 20% of the total ag value.

The same cool, coastal conditions that make for good pastures are also well suited to a variety of greens such as lettuce, kale, chard and other cole crops like broccoli and cauliflower. Several innovative operations have built strong reputations among Bay Area restaurants and retailers for their high-quality vegetables. In fact, Marin is home to the longest continuously certified Organic farm in the state, Star Route Farms, which is one of 25 fruit and vegetable operations that collectively grossed nearly \$4 million on 440 acres in 2017.

Currently, a small percentage of revenue for Marin farms and ranches also comes from agritourism. In 2012, less than \$100,000 was directly generated from activities such as u-pick operations, educational tours, nature retreats, on-farm dinners and the like. Nevertheless, these activities are vital marketing tools for many producers. Experience shows that bringing people to the lands where food is produced expands public understanding of the food system and builds loyalty and appreciation for local products. Visits by school children and environmental groups also give ranches the opportunity to highlight the stewardship practices underway on these working landscapes.

Several nurseries in Marin grow a diversity of ornamental and edible crops, from roses and iris to heather and native plants.

Several ranchers are experimenting with growing cool-weather wine grapes and are hopeful of future market potential. A total of 14 commercial grape growers produced 291 tons on 195 acres in 2017.

Since 1983, the Marin Farmers' Market (now Agricultural Institute of Marin) has helped connect consumers directly to farmers and their produce. Now, there are 11 certified farmers' markets in the county and more than 750 statewide with 2,500 certified producers bringing their fruits, vegetables and eggs to sell. Despite the rapid growth in farmers markets over the last 20 years, however, their numbers have begun to plateau and even decline. Between 2007 and 2012, annual estimated revenue at farmers markets actually decreased by 1% after having risen by more than 32% between 2002-2007 and 36% between 1997-2002. For Marin farmers, the key to success at market is the loyalty of their customers. This requires high-quality product, consistent presence week after week and transparency in their farming philosophy.



Marin has 70 miles of open coastline and 40 miles of San Francisco Bay frontage, and from these waters come an array of fish and shellfish that are part of our agricultural tradition. Oyster culture is the oldest aquaculture industry in California, dating back to the 1850's, and Marin ranks second only to Humboldt Bay for shellfish production including oysters, clams and mussels. In 2017, five growers used bay bottom in Tomales Bay to grow shellfish worth over \$5.4 million. Many local restaurants serve fresh oysters and mussels for their customers, and tourists from the Bay Area and beyond frequently drive out to the coast to enjoy the fresh seafood on the lands (and waters) where they are farmed. During low tides, you can find hundreds of enthusiasts spread out on the mud flats of Tomales Bay to dig Washington clams and other bivalves to barbecue and use in chowder.



Many types of fish live in the waters of Marin, including salmon, rockfish, halibut, striped bass, sturgeon, ling cod, herring and others. These fish are sought by sport and commercial boats out of Sausalito, Bolinas Lagoon and Tomales Bay. Today, however, the populations of most of these species are in decline due to habitat loss, reduced fresh water flows into the bays and over-fishing.



The major fishery in San Francisco and Tomales Bay is for Pacific herring, which are processed for their roe (herring eggs). In 1995-1996 this fishery peaked during the Japanese craze for herring roe, aided by the development of new methods of production wherein giant kelp is hung from rafts and harvested after spawning fish deposit a layer of eggs on it. The fishery in Tomales Bay largely ended in 2007 due to a drop in the prices for roe and decreasing size of fish. Currently, the California Department of Fish & Wildlife is spearheading an effort to develop a new management plan for herring fisheries in Tomales Bay and the San Francisco Bay.

## WHO ARE WE?

Today's farmer and rancher is an expert in many areas, including genetics, nutrition, soil science, botany, business, marketing, and mechanical repair. Many farmers and ranchers have college degrees and most maintain off-farm jobs to supplement their household income. 54% of Marin's principal operators report having some kind of additional work off of the farm and 41% say that more than half of their time is spent working off of the farm. This is in keeping with 2016 federal statistics that show the average family farm in the US relies on off-farm sources for nearly 80% of their household income.



Dairying has been a family tradition in the North Bay for over 100 years. Marin and the region's first dairy ranchers were mostly Swiss, Italian, Portuguese and Irish. Their descendants continue the tradition of hard work, putting in seven days a week, 12 or more hours per day.



Dairies and their families have strong ties to their local communities. Bankers, accountants, feed suppliers, veterinarians, milk testers, equipment retailers, feed mills and milk haulers all work with agriculture in Marin. Manufacturing, marketing, and distribution of milk products employ an additional segment of the community.

Nearly three-quarters of Marin farms and ranches report hiring farm labor, providing full or part-time work to more than 575 employees. 32% of these farms employ 5 or more employees, and 12% include some kind of migrant farm labor. Collectively, this amounts to more than \$7.4 million in on-farm employee payroll.

Across Marin's agricultural industry, 100% of farms are principally operated by a white individual or individuals, but on 28% of them, women run the day-to-day operations, controlling more than 29,000 acres. The age and experience of Marin's farmers range widely. One-quarter of the county's principal operators have been farming for less than



10 years but the overall average is more than 24 years. 67% of farmers are over the age of 55 and the average age of Marin farm operators is 60.

## WHERE HAVE WE COME FROM?

Marin's lands and waters fed the Coastal Miwok people for more than 3000 years, supporting them with an abundance of wildlife and foraged foods. These communities were largely displaced in the early 1800's by the arrival of Spanish and, later, Mexican settlers whose home base was the San Rafael mission, established in 1817. The Mexicans raised thousands of longhorn cattle for their hides and tallow. The cattle ran wild along with herds of native tule elk and were rounded up yearly by Mexican and Miwok vaqueros.

After the mission was shut down in 1834, the land and the longhorns were divided up into vast ranchos. During the Gold Rush of 1849, the longhorns were driven to the gold country. After the Gold Rush faded, ranchers began to introduce American stock to replace the Mexican cattle and the tule elk, which was largely wiped out by hunting and loss of habitat.

The Gold Rush of 1849 helped start the dairy industry. In the 1850s a San Francisco law firm owned most of the Point Reyes peninsula and



established several very successful tenant ranches. These kinds of dairy ranches, owned by absentee landowners, were also set up in Sausalito. They not only produced dairy products, but also huge crops of fruit.

At that time, most dairy operations were small, 10 to 15 cows (compared with today's average of 309 head), or as many as they could milk by hand. Cows were milked twice a day.

Before refrigeration, all the milk produced was churned into butter. In 1862 Marin provided a quarter of California's butter. Fresh milk was poured into pans and cooled. The cream was skimmed from the top, churned into butter and salted to preserve it. Some families made their own cheese or used the skills of a cheesemaker who traveled from ranch to ranch. The invention of the milk bottle in 1884 made handling and distribution of milk much easier, and the California Cooperative Creamery was established in 1913 by local milk producers to process and distribute their milk products. Today, most Marin milk is transported in trucks to several creameries in Petaluma and elsewhere

Since early land travel was limited to horse trails and wagon roads, creeks and waterways were the major links to the San Francisco market. The Marin coastal towns of Bolinas and Tomales were shipping ports for agricultural products. Tons of potatoes, grains, clams and dairy products like cheese and butter were shipped from warehouses to eager markets in San Francisco.

Flat-bottomed hay schooners were important boats for moving hay to hungry San Francisco horses and livestock. They also carried wheat and barley, vegetables, salt, dairy

## PRESERVING AGRICULTURE

products, lumber and bricks from Marin brickyards. One can visit the Alma, a restored schooner now at the National Historical Park in San Francisco. Ross Landing in Kentfield was one of Marin's busiest ports until trains came in the 1880s.

Towns like Tomales, Olema and Nicasio were early trading centers for Marin's growing dairy ranches as well as producers of the humble potato. Potatoes were a huge crop in the Tomales area from the 1850s to 1900. The steep hillsides planted in vertical row crops couldn't take the intensive cultivation, however, and the resulting erosion caused tremendous sedimentation of Tomales Bay, the Esteros and Key's Creek.



In 1870 the North Pacific coast railroad was completed, traversing Marin and connecting coastal towns to San Francisco. All kinds of agricultural products traveled south on the railroad. Towns along the railroad (Fairfax, Mill Valley, San Rafael) blossomed, while those bypassed by the trains froze in time.

By the 1920s U.C. Berkeley, a land-grant university, was sending agricultural agents out to ranchers to spread new information and methods. M.B. Boissevain was the first farm advisor in Marin County. He was followed by successive advisors introducing innovations in dairy production, livestock grazing, and diversification that support production today.

The unique slice of Marin that is the Point Reyes Peninsula also has its history. Like the lands to the east, the peninsula was occupied by Miwok Indians for centuries before being displaced by Mexican land grantees and ultimately the American settlers of European descent. In 1962, the Federal government established the Point Reyes National Seashore, taking over lands that by that time had been owned independently by generations of farm families. Now, six dairies and 15 grazing ranches operate within the national park. Since 2012, the National Park Service has been engaged in a lengthy public process to evaluate the environmental impact of ranching in the National Seashore and map the future of these historic family operations.



Between 1949 and 1982 about 783,000 acres, or roughly one-quarter of the Bay Area's farmland, was lost to development. Since 1959 Marin has lost 32,000 acres of agricultural lands.



In the early 1970s, Marin's agriculture was further threatened when plans for major highway extensions to the coast were developed. In response, the county was rezoned to include three major planning corridors, of which two – the coastal recreation and inland rural corridors – contain most of the agriculture in Marin today. They are protected by A-60 zoning, which allows no more than one house per 60 acres.



In 1950 there were 200 dairy ranches in Marin. There were 150 in 1960 and fewer than 100 in 1972. A group of ranchers and local environmentalists came together to create the Marin Agricultural Land Trust as a way of preserving agricultural lands. Since MALT's beginning in 1980, it has acquired agricultural conservation easements on 83 ranches, protecting more than 50,000 acres. Of those 83 easements, 15 have the additional protection of a Mandatory Agricultural Use provision which not only forbids development of the land, it requires that the land must remain in productive commercial agriculture forever, regardless of a change in ownership. Nearly 9,000 acres of Marin farmland is protected by these MAU's.

With continued, loyal support from Bay Area consumers and the collaborative efforts of partner organizations like MALT, AIM and the County of Marin, our farms and ranches will prosper and carry the tradition of agriculture into the future.

-- David Lewis, U.C. Cooperative Extension, July 2018

(For more information and statistics, go to <http://www.co.marin.ca.us/depts/AG/Main/NEW/Ag/AgriculturalStats/Crop%20Report%20PDFs/2009.pdf>)



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Production Credits:  
Published by the University of California  
Cooperative Extension, Marin County  
David Lewis, Paige Phinney & Ellie Rilla, Editors  
Bonnie Nielsen, Layout and Design  
Steve Quirt, Photos

University of California and United States Department of Agriculture & County of Marin Cooperating