

STANISLAUS COUNTY AGRICULTURAL REPORT



OH, FOR THE LOVE OF
DAIRY!

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OUR STAFF

Agricultural Commissioner/ Sealer of Weights & Measures

Linda Pinfold

Assistant Agricultural Commissioner/ Sealer of Weights & Measures

Jatinder Gill

Deputy Agricultural Commissioner/Sealers

Judith Arroyo	Melissa Lovett*
Wendy Hahn	

Supervising Agricultural/Weights & Measures Inspectors

Cari Baughman*	Amy Lomeli*
Jonathan Brower	Melanie Pellegrino

Agricultural/Weights & Measures Inspectors

Ana Arzate	Claudia Holt
Zachary Baptista	Monica Lopez
Arpinder Brar	Kristen Martinez
Greg Brockman	Charizma Mendoza
Gerardo Castaneda	Socorro Medina
Taylor Dougherty	Marcos Rodriguez
Christopher Egli	Amit Sandhu
Cristina Galvan	Pearl Tanner
Deana Guerrero	Trevor Wingett
Tania Herrera	

Administrative Support

Josie Alvarez	Corinne Rheinschild
Susan Azevedo	Francisco Sanchez
Cassy Costa*	Michael Sise
Cheryl Horton	Ramona Cunningham

Full Time Agricultural Assistants

Maddison Cortese	Nela Holsapple
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Seasonal Agricultural Assistants

Gay Allard-Johnson	Kaylee Marquardt
Sandra Blevins	Michael McFall
Patrick Conrad	Ivan Ojeda
John Freeman	Rafael Ramirez
James Friedrich	Charles Smith
Erica Kendrix	Becky Swanson
Alexa Ladd	Sheila Noel

* Crop Report Committee Members



**DEPARTMENT OF AGRICULTURE &
WEIGHTS AND MEASURES**

Linda Pinfold
AGRICULTURAL COMMISSIONER/
SEALER OF WEIGHTS AND MEASURES

Jatinder Gill
ASSISTANT AGRICULTURAL COMMISSIONER/
SEALER OF WEIGHTS AND MEASURES

Karen Ross, Secretary
California Department of Food and Agriculture
and

The Honorable Board of Supervisors of Stanislaus County

Buck Condit District 1, Chairman
Vito Chiesa District 2, Vice Chairman
Terry Withrow District 3

Mani Grewal District 4
Channcce Condit District 5

It is my pleasure to present the 2024 Agricultural Report for Stanislaus County, pursuant to Sections 2272 and 2279 of the California Food and Agricultural Code. As required by law, this report provides information on the condition of the agricultural industry, including production, value, and the presence of pests or quarantines within the county. Reported values represent estimated gross farm-gate values and do not account for production costs; they should not be interpreted as profit or loss. Local re-spending and support multipliers are not included in these figures.

In 2024, Stanislaus County's total gross value of agricultural production was \$3,150,321,000, a 6% decrease from 2023. Almonds experienced a modest increase in value to \$824 million, maintaining their position as the county's highest-valued commodity. Milk and poultry remained in second and third place, with slightly lower values of \$755 million and \$292 million, respectively. Together, these three commodities form the backbone of local agriculture, representing nearly 60% of the county's total agricultural value.

Dairy holds prominence in this years' report for its historical and economic significance to our county, and the extraordinary ways dairy farmers have embraced technology. However, both the poultry and dairy sectors faced significant challenges in 2024 due to Highly Pathogenic Avian Influenza. This disease has wreaked havoc in commercial poultry across the United States since 2022, particularly turkey and egg-laying operations locally. In 2024, the virus jumped species, infecting dairy cattle for the first time. In Stanislaus County, the outbreak caused milk production losses in the final quarter and led to the quarantine of more than 80% of the county's dairies.

In addition, 2024 marked the first detection of the Glassy-winged Sharpshooter in Stanislaus County, prompting the implementation of a quarantine and the use of integrated pest management strategies. Our department continues to take a multi-faceted approach to eliminate this invasive pest from our county and protect local agriculture.

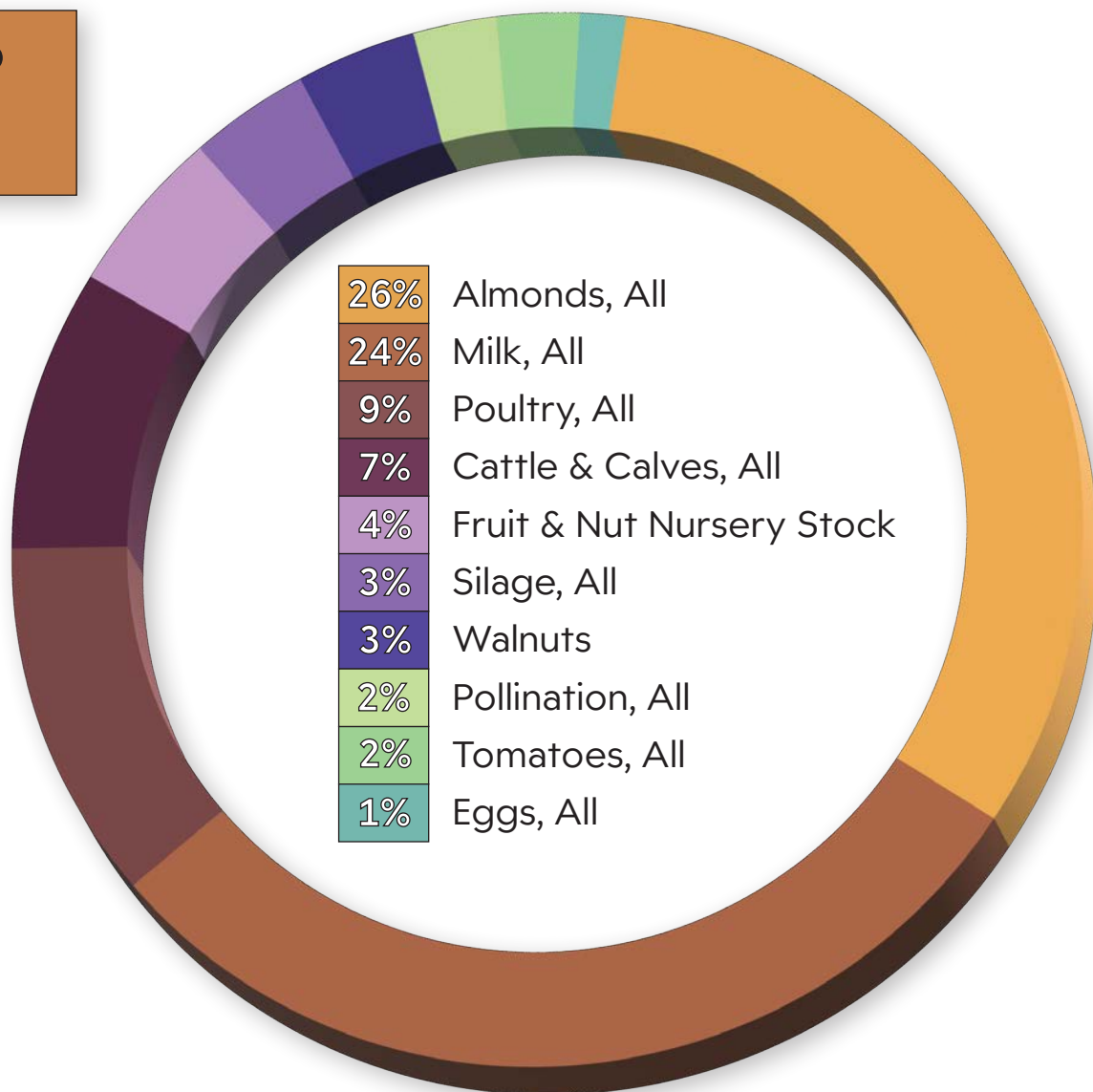
I extend my sincere appreciation to my team, as well as to the producers, industry representatives, and public agencies that contribute data for this report. Their dedication and resilience exemplify the grit that has kept agriculture an economic driving force in our community—yesterday, today, and well into the future.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Linda Pinfold'.

Linda Pinfold
Agricultural Commissioner
Sealer of Weights and Measures

TOP TEN



#1



ALMONDS, ALL
26%

2024 = \$824,208,000
2023 = \$813,444,000

#2



MILK, ALL
24%

2024 = \$754,567,000
2023 = \$761,529,000

#3



POULTRY, ALL
9%

2024 = \$291,768,000
2023 = \$399,855,000

#7 WALNUTS
3%

2024 = \$87,837,000
2023 = \$55,509,000

#8 POLLINATION, ALL
2%

2024 = \$78,552,000
2023 = \$85,341,000

#9 TOMATOES, ALL
2%

2024 = \$60,230,000
2023 = \$107,111,000

2024

SUMMARY OF CATEGORIES

2023

APIARY	APIARY
▼ \$90,907,000	▼ \$99,844,000
FIELD CROPS	FIELD CROPS
▼ \$181,414,000	▼ \$200,498,000
▲ FRUIT & NUT CROPS	▲ FRUIT & NUT CROPS
\$1,089,326,000	\$1,056,480,000
LIVESTOCK & POULTRY	▲ LIVESTOCK & POULTRY
▼ \$524,957,000	\$662,659,000
LIVESTOCK & POULTRY PRODUCTS	LIVESTOCK & POULTRY PRODUCTS
▼ \$816,331,000	▼ \$823,099,000
NURSERY PRODUCTS	NURSERY PRODUCTS
▼ \$173,134,000	▼ \$207,910,000
▲ OTHER AGRICULTURE	OTHER AGRICULTURE
\$33,598,000	▼ \$29,921,000
VEGETABLE CROPS	▲ VEGETABLE CROPS
▼ \$240,654,000	\$285,671,000
GRAND TOTAL	GRAND TOTAL
▼ \$3,150,321,000	▼ \$3,366,082,000

Totals may not calculate due to rounding.

#4



CATTLE & CALVES, ALL
7%

2024 = \$208,204,000
2023 = \$208,749,000

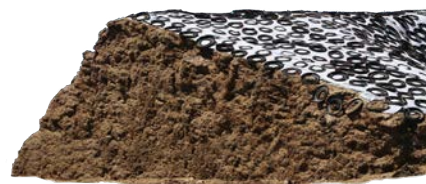
#5



**FRUIT & NUT
NURSERY STOCK**
4%

2024 = \$110,792,000
2023 = \$146,328,000

#6



SILAGE, ALL
3%

2024 = \$108,454,000
2023 = \$121,373,000

#10 EGGS, ALL
1%

2024 = \$47,075,000
2023 = \$54,335,000

CATEGORY	% VALUE	2024	2023
TOP TEN	82%	\$2,571,687,000	\$2,753,574,000
ALL OTHER	18%	\$578,634,000	\$612,508,000
TOTAL	100%	\$3,150,321,000	\$3,366,082,000

SUMMARY

TOP TEN

FIELD CROPS

CATEGORY	YEAR	HARVESTED ACRES	YIELD PER ACRE	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Beans, Dried All	2024	5,780					\$10,581,000
	2023	2,945					\$10,184,000
Limas ¹	2024	5,383					\$9,818,000
	2023	2,743					\$9,948,000
Other ²	2024	397					\$763,000
	2023	203					\$236,000
Hay, All	2024	46,572					\$37,533,000
	2023	45,509					\$42,880,000
Alfalfa	2024	11,714	6.56	76,846	TON	\$213.93	\$16,440,000
	2023	12,734	6.85	87,231	TON	\$235.42	\$20,536,000
Oat	2024	25,429	3.71	94,340	TON	\$164.26	\$15,496,000
	2023	23,790	3.62	86,119	TON	\$182.70	\$15,734,000
Wheat	2024	8,544	3.86	32,980	TON	\$159.73	\$5,268,000
	2023	8,169	4.85	39,621	TON	\$155.31	\$6,153,000
Other ³	2024	886					\$330,000
	2023	815					\$456,000
Pasture, Irrigated ⁴	2024	23,544			ACRE	\$264.62	\$6,230,000
	2023	24,085			ACRE	\$318.89	\$7,587,000
Rangeland	2024	399,057			ACRE	\$39.17	\$15,631,000
	2023	399,057			ACRE	\$37.83	\$15,096,000
Seed Crops ⁵	2024	128					\$297,000
	2023	202					\$378,000

1 Limas Includes: Baby, Large

2 Beans, Other Includes: Black-eyed, Garbanzo

3 Hay, Other Includes: Forage, Sudangrass, Teff

4 Pasture, Irrigated Includes: Clover, Lovegrass, Pasture

5 Seed Crops Includes: Black-eyed Bean, Lima Bean, Rice

THE DAIRY DIET

More than 80% of a dairy cows' diet cannot be consumed by humans.



Silage, hay, and grains are harvested and processed.



Byproducts, vitamins, and minerals are added to achieve a specific nutrient balance.



A mixer truck is used to ensure an even blend.

FIELD CROPS - CONTINUED

CATEGORY	YEAR	HARVESTED ACRES	YIELD PER ACRE	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Silage, All	2024	109,108					\$108,454,000
	2023	104,835					\$121,373,000
Corn	2024	56,047	26.15	1,465,625	TON	\$49.55	\$72,622,000
	2023	54,088	26.30	1,422,508	TON	\$56.09	\$79,788,000
Oat	2024	10,386	14.49	150,497	TON	\$34.85	\$5,245,000
	2023	9,717	15.53	150,904	TON	\$48.72	\$7,352,000
Sorghum	2024	2,536	17.62	44,686	TON	\$46.00	\$2,056,000
	2023	2,472	17.82	44,053	TON	\$37.37	\$1,646,000
Sudangrass	2024	13,334	14.07	187,604	TON	\$36.00	\$6,754,000
	2023	12,635	17.37	219,477	TON	\$45.83	\$10,059,000
Triticale	2024	2,231	19.73	44,025	TON	\$43.42	\$1,912,000
	2023	2,258	21.38	48,284	TON	\$57.98	\$2,800,000
Wheat	2024	19,017	19.42	369,315	TON	\$46.62	\$17,217,000
	2023	18,183	16.47	299,475	TON	\$54.45	\$16,306,000
Other ⁶	2024	5,557					\$2,649,000
	2023	5,481					\$3,422,000
Organic	2024	1,847					\$652,000
	2023	2,342					\$711,000
Miscellaneous ⁷	2024	5,421					\$2,036,000
	2023	2,199					\$2,289,000
TOTAL	2024	591,459					\$181,414,000
	2023	581,174					\$200,498,000

6 Silage, Other Includes: Alfalfa, Barley, Bermuda Grass, Forage, Ryegrass

7 Miscellaneous Includes: Bean Straw, Corn Grain, Rice, Safflower, Wheat Grain, Wheat Straw

FIELD CROPS - CONTINUED

Cows enjoy a nutritious meal known as TMR.



"Total Mixed Ration" (TMR) Example

38% Byproducts
36% Silage
12% Hay
12% Grains
2% Vitamins & Minerals

Byproduct Examples

Almond Hulls
Cheetos
Citrus Pulp
Food Mfg. Waste
Produce Culls
Grape Pomace
Surplus Bakery
Whey

APIARY PRODUCTS

CATEGORY	YEAR	PRODUCTION TOTAL	PRODUCTION UNITS	VALUE PER UNIT	TOTAL VALUE
Honey ¹	2024	5,534,547	LB	\$2.10	\$11,623,000
	2023	6,086,433	LB	\$2.27	\$13,816,000
Pollination, All	2024	414,413			\$78,552,000
	2023	455,228			\$85,341,000
Almond	2024	395,325	COLONY	\$194.70	\$76,970,000
	2023	434,745	COLONY	\$192.38	\$83,636,000
Other ²	2024	19,088	COLONY		\$1,582,000
	2023	20,482	COLONY		\$1,705,000
Miscellaneous ³	2024				\$732,000
	2023				\$687,000
TOTAL	2024				\$90,907,000
	2023				\$99,844,000

1 Honey Includes: Resident colonies plus value of migratory colony production during almond pollination.
2 Pollination, Other Includes: Apple, Blueberry, Cherry, Cucumber, Melon, Pumpkin, Squash
3 Miscellaneous Includes: Beeswax, Queens

FRUIT AND NUT CROPS

CATEGORY	YEAR	HARVESTED ACRES	YIELD PER ACRE	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Almonds, All	2024	217,352					\$824,208,000
	2023	211,149					\$813,444,000
Kernel	2024	217,352	1.11	241,260	TON	\$3,254.81	\$785,257,000
	2023	211,149	1.12	235,431	TON	\$3,212.77	\$756,385,000
Hull	2024			453,570	TON	\$75.24	\$34,127,000
	2023			470,862	TON	\$109.29	\$51,461,000
Shell	2024			241,260	TON	\$20.00	\$4,825,000
	2023			235,431	TON	\$23.78	\$5,599,000



FRUIT AND NUT CROPS - CONTINUED



CATEGORY	YEAR	HARVESTED ACRES	YIELD PER ACRE	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Apricots, All ¹	2024	1,820					\$10,698,000
	2023	1,962					\$13,798,000
Cherries, All ¹	2024	4,254					\$29,444,000
	2023	4,238					\$36,647,000
Grapes, Wine All	2024	6,307					\$30,464,000
	2023	6,462					\$32,211,000
Red	2024	3,532	10.46	36,944	TON	\$479.17	\$17,703,000
	2023	3,575	10.81	38,640	TON	\$474.00	\$18,316,000
White	2024	2,775	10.30	28,584	TON	\$446.43	\$12,761,000
	2023	2,887	11.23	32,422	TON	\$428.57	\$13,895,000
Olives, Oil	2024	1,569	5.63	8,835	TON	\$936.25	\$8,272,000
	2023	1,492	3.47	5,170	TON	\$944.00	\$4,880,000
Peaches, All ¹	2024	2,676					\$32,540,000
	2023	3,560					\$37,427,000
Pistachios	2024	2,437	1.20	2,924	TON	\$4,200.00	\$12,281,000
	2023	1,777	1.62	2,870	TON	\$3,514.50	\$10,085,000
Walnuts	2024	29,792	1.88	56,009	TON	\$1,568.28	\$87,837,000
	2023	30,781	2.16	66,334	TON	\$836.81	\$55,509,000
Organic	2024	2,981					\$28,651,000
	2023	4,703					\$23,898,000
Miscellaneous ²	2024	1,788					\$24,931,000
	2023	1,667					\$28,581,000
TOTAL	2024	270,976					\$1,089,326,000
	2023	267,791					\$1,056,480,000

1 Apricots/Cherries/Peaches, All Includes: Fresh, Processing

2 Miscellaneous includes: Apples, Avocados, Berries (Blackberries, Blueberries, Boysenberries, Raspberries, Strawberries), Chestnuts, Citrus (Grapefruit, Lemons, Mandarins, Oranges), Figs, Grapes (Raisin, Table), Jujubes, Kiwis, Pears, Pecans, Persimmons, Pomegranates, Stone Fruit (Nectarines, Plums, Pluots)

NURSERY PRODUCTS

CATEGORY	YEAR	FIELD ACRES	UNITS SOLD	TOTAL VALUE
Fruit & Nut	2024	1,271	16,486,681	\$110,792,000
	2023	1,252	32,852,306	\$146,328,000
Ornamental	2024	547	1,948,911	\$40,320,000
	2023	447	2,330,027	\$41,110,000
Miscellaneous ¹	2024	388		\$22,022,000
	2023	338		\$20,472,000
TOTAL	2024	2,206		\$173,134,000
	2023	2,038		\$207,910,000

1 Miscellaneous Includes: Cut Flowers, Strawberry Transplants, Turf, Vegetable Transplants



OTHER AGRICULTURE

CATEGORY	YEAR	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Firewood, All ¹	2024	44,990	CORD	\$456.67	\$20,546,000
	2023	43,943	CORD	\$340.00	\$14,941,000
Miscellaneous ²	2024				\$13,052,000
	2023				\$14,980,000
TOTAL	2024				\$33,598,000
	2023				\$29,921,000

1 Firewood, All Includes: Fruit, Nut Trees

2 Miscellaneous Includes: Aquaculture (Channel Catfish, Largemouth Bass, Silver Carp), Compost, Organic, Vermiculture, Wood Products (Mulch, Chips)

VEGETABLE CROPS

CATEGORY	YEAR	HARVESTED ACRES	YIELD PER ACRE	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Melons, All ¹	2024	3,783					\$36,185,000
	2023	3,405					\$39,559,000
Pumpkins	2024	742	24.00	17,803	TON	\$507.00	\$9,026,000
	2023	425	17.45	7,408	TON	\$332.75	\$2,465,000
Sweet Potatoes	2024	1,605	19.80	31,774	TON	\$634.50	\$20,161,000
	2023	1,588	21.75	34,541	TON	\$563.50	\$19,464,000
Tomatoes, All ²	2024	9,286					\$60,230,000
	2023	11,767					\$107,111,000
Organic	2024	1,299					\$21,720,000
	2023	1,369					\$11,038,000
Miscellaneous ³	2024	3,841					\$93,332,000
	2023	6,953					\$106,034,000
TOTAL	2024	20,556					\$240,654,000
	2023	25,507					\$285,671,000

1 Melons, All Includes: Cantaloupe, Hami, Honeydew, Piel de Sapo, Watermelon

2 Tomatoes, All Includes: Fresh, Processing

3 Miscellaneous Includes: Asparagus, Basil, Bean, Beet, Bok Choy, Broccoli, Brussels Sprout, Cabbage, Carrot, Cauliflower, Celeriac, Chinese Greens, Cilantro, Cole Crop, Collards, Corn (Human Consumption, Sweet), Cucumber, Daikon, Dandelion Green, Dill, Edible Flower, Eggplant, Endive, Fava Bean, Garlic, Herb-Spice, Jicama, Kale, Kohlrabi, Lettuce (Head, Leaf, Romaine), Mint, Mustard Greens, Onion, Parsley, Pea, Pepper, Potato, Radish, Rutabaga, Spinach, Squash, Swiss Chard, Turnip



LIVESTOCK AND POULTRY

CATEGORY	YEAR	NUMBER OF HEAD	TOTAL VALUE
Cattle & Calves, All ¹	2024	242,482	\$208,204,000
	2023	270,225	\$208,749,000
Goats, All ¹	2024	19,935	\$3,996,000
	2023	18,730	\$3,307,000
Poultry, All ²	2024	190,559,357	\$291,768,000
	2023	190,338,469	\$399,855,000
Sheep, All ¹	2024	3,164	\$676,000
	2023	3,456	\$615,000
Swine	2024	23,795	\$4,419,000
	2023	23,610	\$4,180,000
Organic	2024		\$15,894,000
	2023		\$45,953,000
TOTAL	2024		\$524,957,000
	2023		\$662,659,000

1 Cattle & Calves/Goats/Sheep, All Includes: Dairy, Meat
2 Poultry, All Includes: Chickens, Chicks, Chukar, Pheasant, Poults, Quail, Squab, Turkeys

Life on an Automated Dairy



Electronic collars allow access to the milking barn; plus track health, diet, and milk production.



Udders and teats are cleaned to keep cows healthy, ensuring milk quality.

Milking usually lasts only 5-7 minutes, 2-3 times a day.

LIVESTOCK AND POULTRY PRODUCTS

CATEGORY	YEAR	YIELD TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
Eggs, All ¹	2024	19,622,135	DOZ		\$47,075,000
	2023	30,171,114	DOZ		\$54,335,000
Milk, All	2024	37,582,360	CWT		\$754,567,000
	2023	38,067,141	CWT		\$761,529,000
Cow	2024	37,455,552	CWT	\$21.77	\$745,759,000
	2023	37,970,722	CWT	\$19.82	\$752,390,000
Other ²	2024	126,808	CWT		\$7,365,000
	2023	96,420	CWT		\$5,236,000
Manure, All ³	2024	465,697	TON		\$5,899,000
	2023	530,526	TON		\$3,316,000
Wool, All ⁴	2024	14,210	LB		\$8,000
	2023	15,151	LB		\$7,000
Organic	2024				\$8,782,000
	2023				\$3,912,000
TOTAL	2024				\$816,331,000
	2023				\$823,099,000

*CWT = Hundred Weight

1 Eggs, All Includes: Chicken, Duck, Quail

2 Other Includes: Goat, Sheep

3 Manure, All Includes: Chicken, Cow, Turkey

4 Wool, All Includes: Alpaca Fiber, Sheep Wool



Soft milking cups are attached using gentle pressure to milk the cow.



Cows are fed grain and nutritional supplements correlating to the information gathered by their collars.

Milk flows through sanitized pipes, filters, and quality sensors into refrigerated storage tanks.



DAIRY IN STANISLAUS COUNTY

We can thank immigrants and irrigation for the longstanding history of dairy in our county. After local irrigation districts were formed and water became available near the turn of the last century, farmers gravitated towards high value crops like alfalfa. This ideal feed for cattle allowed cows to be kept closer to milking barns, rather than on open range.

Early immigrants familiar to European dairying began to shape the industry. Small family dairies with a few dozen milking cows supplying nearby communities were a common sight in the area. Many local dairies still bear Portuguese, Swiss, and Dutch names.

California's unique, isolated position bordered by the mountains, desert and sea made it an island market. Advances and efficiencies in technology such as pasteurization, refrigeration, and transportation allowed creameries and cooperatives to process safer milk with longer shelf life for shipment to metropolitan areas in the state.

By 1909, 73% of land irrigated by Modesto Irrigation District was planted to alfalfa for cattle feed. The dairy industry had doubled between 1904 and 1909, surpassing the longstanding dominance of wheat production. The local Milk Producers Association grew to one of the nations' largest dairy cooperatives. By the mid 20th century, Stanislaus County became one of the top producing dairy counties in the nation. It even hosted a weekly dairy radio show, which played a key role in the passage of the California Milk Pooling Act in 1969 – legislation modeled after the Federal Milk Marketing Orders.

Far from the hand milked 30 cow dairies and home-marketed dairy products of the past, the average California dairy today is around 1,000 head, some of the nation's largest. Yet, nearly all are still exclusively family owned.

Nutritionists are employed to optimize diets — even to the specific individual cow's production. A typical Holstein — the most common breed of dairy cow — now produces over 10 gallons of milk per day thanks to diet and genetic selection. In fact, according to the National Ag Statistics Service, milk production per cow has increased 8.1% over just the last 10 years!



Photo: Cadence Egli at her family dairy

Technology continues to advance dairy production to levels unfathomable at the turn of the 20th century. Artificial insemination increases premier genetic availability and is safer for farmers and cows. Sexed semen facilitates marketing animals to meet both dairy replacement heifer and even beef demand. Barns are designed for optimal cow comfort with fans, misters, free stalls, and various bedding materials - some even have water beds! Cows are milked more efficiently and even robotically in some cases. Milk barn designs are more ergonomic for workers, reducing the need to squat or bend.

Being the leader in dairy production comes with environmental responsibility. Municipal and food manufacturing wastes are being diverted from landfills to feed cattle. Scientists and dieticians are experimenting with feed combinations that create less methane in the cow's digestive system. Manure methane is also being captured and utilized for power production.

Stanislaus County's 132 dairies produce nearly 12% of the milk in the state, putting the county third highest in production. Local modern dairies continue to set the pace in advances in milk production and serve a major role of importance to our county's economy.

DAIRY INSPECTIONS



As one of California's leading dairy-producing regions, public health standards and consumer confidence is maintained by rigorous inspection by Stanislaus County Department of Environmental Resources' two Milk and Dairy Inspectors. Stanislaus is one of only eight counties with a California Department of Agriculture Approved Milk Inspection Service.

Milk on-farm is sampled for bacteria levels and antibiotic residues, and farm sanitation practices are observed. Milk production and handling must

comply with California Food and Agricultural Code, California Code of Regulations, and the current edition of the US Public Health Service Pasteurized Milk Ordinance. Inspectors also assist with best practices for facilities and equipment, investigations, permitting, and other special projects.



Photos: Ryan Barney, Stanislaus Dept. Environmental Resources

The importance of our sister agency in maintaining compliance with established rules and regulations upholds the safety, quality, and integrity of milk produced within the County.

Highly Pathogenic Avian Influenza in Dairies: A New Challenge

Since 2022, Highly Pathogenic Avian Influenza (H5N1) has decimated commercial poultry flocks across the country, including in Stanislaus County. In 2024, the disease crossed species into dairy herds out of state. The first occurrence of H5N1 in Central Valley dairy cows was reported in late August and Stanislaus confirmed an initial case in early September.

In response to the new viral threat, dairies increased biosecurity and quarantine measures and provided personal protective equipment to employees. Disinfection stations, new or infected animal isolation and frequent cleaning of water troughs and other shared spaces became routine.



AI generated image. Cows do not wear masks

Despite these precautions, the virus spread rapidly among high-density cow populations, leading to the quarantine of more than 110 dairies — over 80% of the dairy production in Stanislaus County between November 2024 and April 2025. In December, a state-wide emergency was declared to expedite preparedness and cross-agency response. Unlike poultry, infections in cattle did not result in high mortality, but notable losses in milk production occurred over the last quarter of the year and into 2025.

CALIFORNIA BYPRODUCT USAGE IN DAIRY RATIONS: A SURVEY OF DAIRY CATTLE NUTRITIONISTS

INTRODUCTION:

California is a leading agricultural state, producing over 400 commodities, many of which generate byproducts that can be used as feed for dairy cattle. Stanislaus County, with strong almond and dairy industries, is an example of this integration: almond hulls, a byproduct of almond processing, are routinely fed to dairy cows. Byproducts have become an essential part of dairy rations, offering cost-effective feed solutions while enhancing the State’s sustainability practices. However, little research has been done to quantify the extent of byproduct use in California dairy farms. Given the increasing regulations on water usage, byproducts may play an even more critical role in feeding dairy cattle in the coming years. This survey aimed to identify commonly used byproducts, estimate the proportion of dairy rations made up of byproducts, and assess trends in their usage.

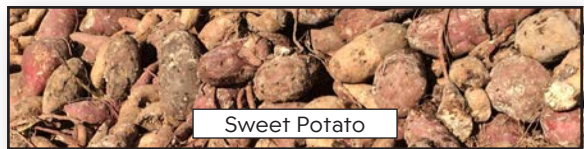
SURVEY RESPONDENTS:

In March 2022, an electronic survey was sent to 61 nutritionists across the state. We received 26 returned surveys (46% response rate). Respondents provided services to 498 dairy farms, representing approximately 936,700 milking cows. These farms accounted for 44.5% of all California dairies, providing a comprehensive assessment of byproduct usage in dairy rations. Most herds were in the San Joaquin Valley (87.6%), with smaller numbers in Northern California (5.5%) and Southern California (6.9%).

COMMONLY USED BYPRODUCTS:

A total of 58 byproducts were reported as being used in dairy rations; the most commonly utilized are described in Table 1.

Table 1.	NUMBER OF NUTRITIONISTS UTILIZING (N = 26)
BYPRODUCT	
Almond Hulls	25
Whole Cottonseed	25
Canola Pellets	24
Soybean Meal	24
Dry Distiller’s Grains	23
Wheat Straw	22
Wheat Midds/Millrun	21
Corn Gluten Feed	20
Molasses	20



Almond hulls were the most frequently cited byproduct used as a forage replacement in lactating cow rations, reported by 88.5% of responding nutritionists. When used as concentrate replacements, citrus byproducts (30.8%) were the most frequently mentioned. A 2012 survey of California dairy farms found that almond hulls were included in lactating cow diets at an average of three pounds per cow per day. A more recent survey (conducted in 2022) reported increased almond hull utilization, averaging five pounds per cow per day. As California produces nearly 80% of the world’s almonds, an abundant supply of almond hulls is available for dairy rations. Their moderate neutral detergent fiber (NDF) content and highly fermentable carbohydrates make them suitable as replacements for both forages and concentrates. Similarly, California accounts for 79% of total U.S. citrus production, ensuring a steady supply of citrus byproducts. Rich in pectin and sugars, citrus byproducts serve as substitute for traditional high-energy concentrates.

BYPRODUCT INCLUSION RATES IN DAIRY RATIONS:

In this study, the weighted, average byproduct inclusion rate in California lactating cow rations was estimated at 40.9% on a dry matter (DM) basis. This estimate was calculated by weighting nutritionists' reported average DM byproduct inclusion rates with the number of lactating cows they served. For comparison, 2021 work estimated a national average of 32% inclusion for lactating dairy diets. The higher byproduct inclusion rates observed in California likely reflect the state's abundant supply of agricultural byproducts.

The inclusion rate of byproducts in dairy rations varied widely as follows:

- **LACTATING COWS:** 10-80% (average: 39.8%, not weighted by cow numbers)
- **DRY COWS:** 5-80% (average: 35.4%)
- **HEIFERS:** 5-80% (average: 36.0%)

TRENDS IN BYPRODUCT USAGE:

Over the previous five years, most nutritionists (68%) reported an increase in byproduct usage. A smaller proportion reported decreased (12%) or unchanged (20%) usage. Looking ahead, 80% of nutritionists anticipate further increases in byproduct use, while 12% predict a decrease and 8% foresee no change.

IMPLICATIONS FOR DAIRY INDUSTRY:

The extensive use of byproducts in California dairy rations provides numerous benefits

- **COST-EFFECTIVE:** Byproducts offer an economical alternative to traditional feed ingredients.
- **FLEXIBILITY IN DIET FORMULATION:** Nutritionists can adjust rations based on the availability and price of products.
- **SUSTAINABILITY:** Feeding byproducts reduces landfill waste and water consumption.
- **DEMONSTRATING SUSTAINABILITY TO CONSUMERS AND LEGISLATORS:** As environmental concerns and regulatory pressures increase, it is essential for the dairy industry to highlight its sustainable feeding practices. By incorporating byproducts, dairies contribute to a circular economy, repurposing agricultural residues into valuable feed sources. Effectively communicating these efforts to consumers and policymakers can strengthen support for the industry.

CONCLUSIONS:

The results of this survey confirm that byproducts are a key component of California dairy rations, with an average inclusion rate of 40.9%. The large range of byproduct feeding rates for lactating rations (0-80% DM) may indicate an opportunity to increase byproduct inclusion rates in California dairy rations on some farms. Overall, the consumption of byproducts benefits not only the dairy industry, but those industries that produce the byproducts.

ACKNOWLEDGMENTS:

Funding for this study was provided by the California Dairy Research Foundation. The authors thank the participating dairy nutritionists for their contributions.

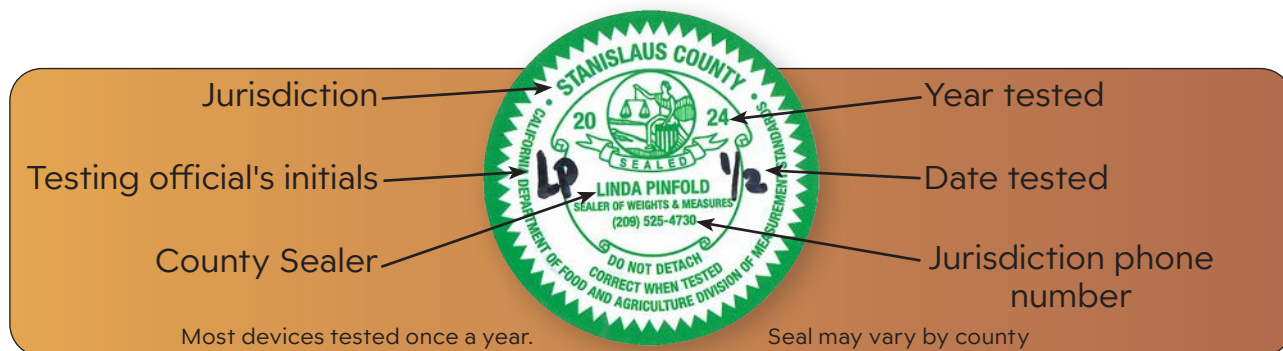
WEIGHTS AND MEASURES

Maintaining Fairness in the Marketplace

The Weights and Measures Division upholds the integrity of commercial transactions involving weight or measurement within the county. Enforcing state regulations ensures consumers receive exactly what they have paid for and that businesses compete fairly, protecting buyers, and sellers alike.

Look for the Seal

A device with this seal indicates it has been tested and found to be accurate to legal tolerances and specifications. Look for the seal next time you buy something by weight or measure.



7,000
Measuring Devices

2,800
Weighing Devices

Consumer Protections

Service Agents

Agencies and/or agents must be licensed and notify the county when commercial devices are sold, rented, installed, serviced, or repaired. Officials can request information on service records, equipment, and licensing.

2,400 Agents Statewide
580 Agencies Statewide

15+ Weighmaster Audits

Checking state requirements at locations performing commercial transactions where a purchaser or seller may not be present as witness.

Quantity Control and Price Verification

Most packages are required to have Identity, Responsibility, and Quantity statements, and checkouts must reflect accurate prices.

150+ Petroleum Audits

Enforcement of state requirements for advertising, labeling, and fuel quality.

Questions or Concerns



Questions or concerns about a device or accuracy of a label or register? Contact Weights and Measures through the county online notification system.

www.stancounty.com/crm/

Or use the mobile app, StanConnect, available in your app store.



PESTICIDE SAFETY EFFORTS

County Agricultural Commissioners are essential partners with California Department of Pesticide Regulation's comprehensive pesticide regulatory program. County inspectors issue necessary permits, enforce regulations, and provide vital local oversight. Counties ensure safe and legal use of pesticides, protection of human health, agriculture, and the environment.

Online, Not In-Line

Customers can now schedule appointments online for the following services at stanag.org

Restricted Material / Operator ID permit renewal appointments



Continuing Education classes

Private Applicator Certificate exam & review session registration



Stewardship

Limited options exist for disposal of used chemical containers.

In 2024 Stanislaus hosted:

2 Pesticide container recycling events

with **205** growers participating,

diverting **54,000 lbs** of plastic from landfills.

Community Outreach

Our staff participated in...

10+ Community and industry events.

5+ School events.

Streamlining Data Submission

In December of 2024, California Code of Regulations were updated to require electronic submission of Notices of Intent for restricted materials. Many farm management platforms are compatible with the statewide permitting system, CalAgPermits, streamlining submission and review by the Commissioner.



Setting the Standard

As regulatory experts, inspectors present continuing education classes for licensees.

14 Review and exam sessions.

2 Exam-only sessions.

581 Private Applicator Certificates issued.

Community Transparency

Stanislaus County launched Open Data for frequently requested information. Requests for permit sites, pesticide use reports, crops, and registrations are now more consistent and quicker to process.



[open-data-stancounty-gis.hub.
arcgis.com/pages/agricultural-
commissioner-open-data](https://open-data-stancounty-gis.hub.arcgis.com/pages/agricultural-commissioner-open-data)

PEST EXCLUSION

Like gatekeepers for agriculture, Pest Exclusion is often the first, last, and only means to prevent harmful agricultural pests from entering the county. Inspectors conduct inspections at production and harvest locations, packing and shipping facilities, nurseries, markets, and commercial parcel carriers to ensure quarantine compliance and intercept hitch-hiking pests. When pests or diseases of concern are discovered, immediate quarantine action may be taken to eliminate or limit pests spreading.



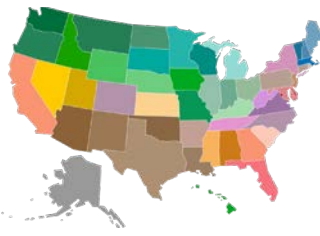
6,708
Packages
(FedEx and UPS)



138
Interstate apiaries

16,000
Inspections

Highlights



450
Interstate nursery
shipments



216
Interstate seed
shipments

1,328
Intrastate
nursery
shipments
(for GWSS)



DIRECT MARKETING

Certified Farmers Market (CFM)

CFMs offer a direct link between grower and customer. The county inspects and certifies production areas to ensure produce sold at a CFM is grown by the Certified Producer selling it – not a reseller. CFMs are expected to maintain program integrity through marketing and county inspections. Because of this direct marketing, Certified Producers are exempt from many of the standardization regulations that would otherwise be required of resellers.



Kaiser Modesto Farmers Market
4601 Dale Rd.
Monday 9:30 am to 1:30 pm




Modesto Certified Farmers Market
16th St. between H St. and I St.
Thursday & Saturday 8:00 am to 1:00 pm



Turlock Certified Farmers Market
Broadway Ave. between Palm St. and Center St.
Saturday 8:00 am to 1:00 pm

PEST DETECTION

Pest Detection is the second line of defense against the establishment of detrimental, non-native agricultural and environmental pests through early detection and prompt eradication. Annually, the Agricultural Commissioner's Office deploys, inspects, and maintains a county-wide network of traps targeting a variety of significant pests of concern.



PESTS OF CONCERN	TRAPS DEPLOYED	INSPECTION VISITS	PROPERTIES TRAPPED
Asian Citrus Psyllid	498	6,249	2,765
Apple Maggot	18	198	3
European Corn Borer	19	235	19
European Grapevine Moth	194	1,849	36
Glassy-winged Sharpshooter	2,094	31,585	2,242
Japanese Beetle	204	1,423	204
Khapra Beetle	116	738	33
Mediterranean Fruit Fly Jackson Trap	426	4,937	1,704
Mediterranean Fruit Fly Champ Trap	96	636	480
Melon Fruit Fly	218	1,928	436
General Fruit Fly McPhail Trap	426	4,937	1,704
Oriental Fruit Fly	430	4,972	1,720
Spongy Moth	204	1,421	204
TOTALS	4,943	61,108	11,550

Images not to scale.



For more information about the pest detection program SCAN HERE




www.stanag.org/pest-detection

EXPORTS

Many countries and states importing agricultural products require commodities be free from harmful plants, pests, and diseases. Inspectors with federal accreditation as Authorized Certification Officials issue **Phytosanitary Certificates** to confirm commodity cleanliness and quarantine compliance before shipping.

2024 International Certificates

Stanislaus issued 13,328 to 107 countries
 41% Of certificates went to five countries
 84% For two commodities
 67% Almond
 17% Walnut
 Remaining 16 % went to 48 commodities



#1

ARIZONA


99 Certificates - 29%



#2

OREGON

66 Certificates - 20%



#3

WASHINGTON


54 Certificates - 16%



#1

INDIA


1,463 Certificates - 11%



#2

UNITED ARAB EMIRATES


1,245 Certificates - 9%



#3

THE REPUBLIC OF KOREA

1,154 Certificates - 9%



#4

SPAIN

826 Certificates - 6%



#5

JAPAN

819 Certificates - 6%

2024 Domestic Certificates

Stanislaus issued 339 to 23 states
 65% Went to three states
 99% For nursery stock

GWSS QUARANTINE

In 2024 staff found Glassy-winged Sharpshooter (GWSS) in Turlock. GWSS can vector the bacteria *Xylella fastidiosa* that causes disease in many agricultural commodities. GWSS is a sap sucking insect that will feed and lay eggs on over 300 species of plants. Notable host include Crape Myrtles and citrus.

The discovery triggered an all-hands-on-deck search-and-destroy mission, known as delimitation. Traps are set systematically in an expanding grid until we have defined the parameters of the infestation. Then eradication efforts get underway with the use of integrated pest management.

The Problem

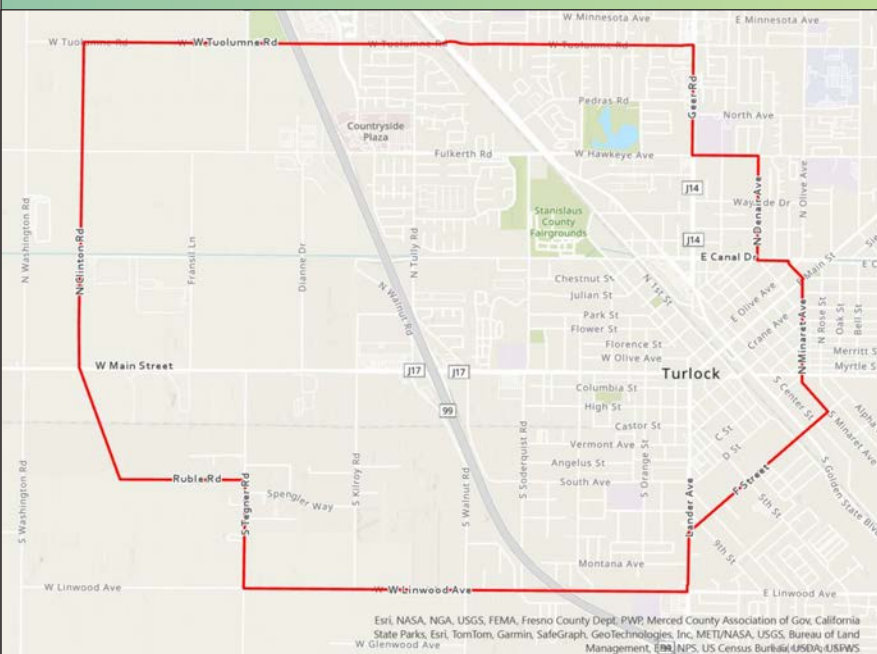


Adult GWSS and Nymph



GWSS Egg Mass

Quarantine Area



As of: 8/30/2024

Traps are deployed



Yellow panel sticky trap

The Good Guys

Parasitic wasps are released to prey on the eggs of the Glassy-winged Sharpshooter.



Cosmocomoidea ashmeadi

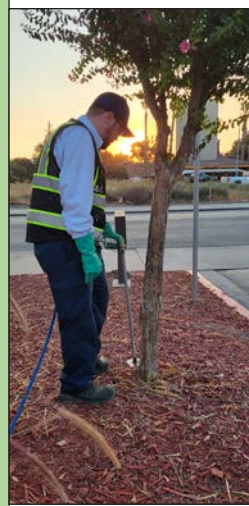


Gonatocerus truguttatus



Cosmocomoidea morrilli

Treatments are applied



Applicator

DAIRY FACTS

Stanislaus Dairies

132
cow dairies



435 million gallons
of milk produced annually

> 20
milk processing facilities

Source: Stanislaus County



11.6%
of California milk

3rd

in California milk production

Source: CDFA California Ag Statistics Review 2022-2023

California Jobs

>1,100

family owned & operated dairy farms

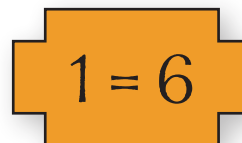


180,000 Jobs

statewide depend on dairy industry
including

47,500

in milk production & processing



One job on the farm creates
six jobs beyond the farm.

Source: CA Milk Advisory Board



Sustainability



About 40%
of a California dairy cow's diet
consists of byproducts from
food & fiber production,
keeping it out of landfills.



Water needed to
produce a gallon of milk
has decreased 88% ↓
over the last 50 years.



Milk production up to 24,354 lbs
per cow, from 15,000 lbs
(2019 - 1984)



Average California dairy
carbon footprint down

45% ↓
(1964 - 2014)



Source: Real California Milk & Milk Advisory Board

DAIRY FACTS

California Economy



milk
producer
in U.S.

Source: USDA

\$57.7 Billion
in dairy related
economic activity

including

\$20 Billion
in direct
economic activity

41.9 Billion lbs
total annual dairy
production

655 lbs
total annual dairy
consumption per person
Source: CA Milk Advisory Board

Cheese



The Fastest Growing
Dairy Category

46%

of California's milk supply
goes to cheese production



Hispanic-style
cheeses

Mozzarella

Monterey
Jack

>50 California
cheesemakers produce

250+ varieties & styles



Source: CA Milk Advisory Board

Standards

California milk has more
protein, calcium & nutrients
than federal standards.

Source: Real California Milk

Milk Classes

I - Fluid Milk

II - Milk for Soft Dairy
(Yogurt, Ice Cream, etc.)

III - Milk for Hard Cheeses

IV - Milk for Butter & Dry Milk

Established by the Federal Milk
Marketing Order (FMMO)

Source: USDA Agricultural Marketing
Service

Dairy Grades



Grade A dairies have the
highest health & sanitation
standards.

Most Stanislaus dairies are
Grade A.

Grade B dairies can only sell milk
for processing.

Source: Stanislaus County
Environmental Resources

Where's My Dairy From?

Curious about where your dairy is from? Find out at www.whereismymilkfrom.com
Enter the code on your container (see example) in the search query. The first two
numbers, which range from 01 to 56, tell you the state of origin, and the series
after the dash tell you the dairy that it came from.



(06-253)

06 = California

253 = Crystal Dairy, Modesto

*The series after the dash can
be numeric or alpha-numeric.*

DAIRY FACTS

World Milk Supply



81% - Cow

15% - Buffalo

2% - Goat

1% - Sheep

.04% - Camel

.07% - Other

Source: www.fao.org/dairy-production-products/production

Cows

On average, dairy cows produce milk for

305 days.



BROWN SWISS
8.8 Gallons per day

Additional breeds: Jersey, Ayrshire, Guernsey, & Milking Shorthorn

Source: www.FarmCreditVirginias.com

Queen Holstein



Holstein cows produce more milk than any other dairy breed in the U.S.

10.3 Gallons per day

About 90%

of the 9 Million

dairy cows in the U.S. are of Holstein descent.



Typically weighing around

1,500 lbs,

they are the largest of the U.S. dairy breeds.

In 2017, the world record for milk production was set by a Holstein cow from Wisconsin that produced

78,170 lbs of milk that year.

Sources: www.holsteinusa.com
www.FarmCreditVirginias.com

Goats

On average, dairy goats produce milk for

294 days



SAANEN
1.1 Gallons per day

Additional breeds: Sable, Nubian, Toggenburg, La Mancha, Oberhasli, Nigerian Dwarf, Alpine

Source: Penn State Extension, Farm Bureau of the Virginias

Sheep

On average, dairy sheep produce milk for

230 days.



EAST FRIESIAN
.53 Gallons per day

Additional breeds: Lacaune, Awassi, Assaf

Sources: www.sheep101.info,
www.breedslist.com

FARMWORKER OF THE YEAR

WINNER: FRANK HERNANDEZ

Vermeulen Almond Hulling, Modesto

Having worked for three generations of the same family, Frank Hernandez has the experience and the knowledge to keep things rolling at Vermeulen Almond Hulling. From the field to all things mechanical, and even new technologies, Hernandez takes it all in stride. Combined with loyalty and a faithful disposition, Hernandez epitomized the description of Farmworker of the Year and was nominated by Paul Vermeulen, who considers Hernandez a mentor and integral to the business' growth. "He's kind of the soul behind all of us," said Vermeulen. "He makes sure everyone has what they need to get going. And talk about knowledge — there's not a job in almond farming that he hasn't done."

(Original Story by Vicky Boyd, Stanislaus County Farm Bureau)



GOLD AWARDS:

Antonio Arias - Durrer Dairy LP, Modesto
Alfred Gomez - Cox & Perez Farms, Westley
Miguel Lopez - Ratto Brothers Inc, Modesto
Jesus Pantoja - Gambini Farms, Oakdale

SILVER AWARDS:

Maximillano "Max" Camberos - Five Rings Harvesting, Modesto
Jorge Mercado - Bays Ranch, Westley
Hector Ruiz - Cox & Perez Farms, Westley

HONORABLE MENTION:

Juan Acosta - Five Rings Harvesting, Westley
Jesse Camarena - Dave Wilson Nursery, Hickman
Tristan Vos - Winters Farming, Various Locations

Now in the fifth year, the Farm Worker of the Year program was started by the Stanislaus Farm Bureau, AgSafe and the Modesto Rotary Club during the COVID pandemic as a way to recognize essential workers vital to producing, harvesting, and packing food.

(2025 Sponsors: Stanislaus Farm Bureau, AgSafe, Modesto Rotary Club, Central Valley Opportunity Center, Stanislaus County Agricultural Commissioner)



IT'S BEEN UDDERLY GREAT!



www.stanag.org/agricultural-statistics.shtm

