

2016 Stanislaus County Agricultural Report



— Weights and Measures in Agriculture —

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Cover photo by Charles Smith,
Stanislaus County Agricultural Assistant

STANISLAUS COUNTY AGRICULTURAL COMMISSIONER

Karen Ross, Secretary

California Department of Food and Agriculture *and*
The Honorable Board of Supervisors of Stanislaus County

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District 2, Chairperson

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District 5, Vice-Chairperson



Milton O'Haire
Agricultural
Commissioner/Sealer

In accordance with Section 2279 of the California Food and Agricultural Code, we are pleased to submit the Stanislaus County Agricultural Report for 2016. This report provides a statistical description of Stanislaus County's agricultural production and highlights some of the important issues the agricultural industry is facing. We must emphasize that this report represents gross values of agricultural commodities and does not reflect production costs or profits.

The value of agricultural commodities produced last year in Stanislaus County decreased by 16% to \$3,261,411,000. This represents a decrease of \$617,921,000 from the total in 2015 of \$3,879,332,000. This decrease is primarily attributed to a reduction in yields for many commodities due to residual impacts from the drought and a drop in the values of almond meats, cattle and calves, silage, milk, and walnuts. Almonds posted the largest decrease at \$366 million followed by cattle and calves at \$104 million and silage at \$46 million.

We wish to express our appreciation to the agricultural producers, industry representatives and public agencies that provided data for this report. We would also like to express our thanks to the Agricultural Commissioner and UC Cooperative Extension staff, especially Richard Homer and Amy Lomeli who compiled the statistical data and Susan Azevedo who prepared the report for publication.

Respectfully submitted,

Milton O'Haire
Agricultural Commissioner/Sealer
Stanislaus County

Roger Duncan
County Director, UC Cooperative Extension
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COUNTY OF STANISLAUS AGRICULTURAL COMMISSIONER

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WEIGHTS AND MEASURES



In every transaction, an impartial unseen third party has been essential in providing the citizens a basis of value comparison and fair competition in the marketplace. This is the role of the weights and measures official. Weights and measures officials use and preserve standards that are traceable to the National and International standards to prove the accuracy of weighing and measuring devices and to verify the net contents of packages.

As Secretary of State, John Quincy Adams wrote in his Report on Weights and Measures in 1821, that a system of common instruments was essential to establishing a social and friendly commerce and would link the inhabitants of the most distant regions.

In 1836, the U.S. Congress directed uniform weights and measures be established throughout the United States.

In 1861, one standard of weights and measures was established in California, at the same time establishing the County Sealer of Weights and Measures. Stanislaus County appointed its first Sealer of Weights and Measures in 1913. The positions of the Agricultural Commissioner and the Sealer of Weights and Measures were combined in 1944.

Weights and measures are some of the earliest tools used by humans. The American customary system of weights and measures is based on the British Imperial system which is based on parts of the human body and people's surroundings much like the early Hebrew, Greek and Roman systems. Measures of length came from the forearm, hand or finger. Seeds, grains, and stones were used for weights.

In the 1700's, Spanish missions in California used weights and measures derived from Spain in the mission agricultural statistics and private land grants. In today's agriculture, the accurate amount of fuel for the tractor, amount of fertilizer for the fields, the weight of produce, grain or livestock and the transportation of such by truck, rail, barge, or air, are all aspects of weights and measures. Ninety-one percent of the County's farm gate value is derived using either weight or measure.

Annually, Stanislaus County inspectors certify over 8,000 weighing and measuring devices, many of which have a direct impact on the agricultural industry. They conduct audits of weighmaster certificates that are used in establishing the weight of bulk agricultural products such as walnuts, tomatoes and grapes. Samples of gasoline and diesel fuel are collected and sent for testing at the state petroleum laboratory to see if they meet quality standards.

To the agricultural community, industry and consumer, a robust weights and measures system means a fair market and reduced production cost, and providing equity in commerce for both the buyer and seller. To the average consumer, it means getting what you pay for. For the grower, their livelihood depends on an accurate weight or measurement of the commodity or livestock they produce.



TOP 10 COMMODITIES

Category	Rank	2016 Value	Rank	2015 Value
Almonds, All	1	\$930,825,000	1	\$1,297,052,000
Milk, All	2	\$611,894,000	2	\$647,812,000
Chickens, All	3	\$295,132,000	4	\$304,226,000
Cattle & Calves, All	4	\$246,258,000	3	\$350,209,000
Nursery Fruit & Nut Trees and Vines	5	\$162,685,000	7	\$129,393,000
Walnuts	6	\$134,505,000	5	\$171,741,000
Silage, All	7	\$117,531,000	6	\$163,580,000
Turkeys, All	8	\$69,910,000	10	\$62,394,000
Peaches, All	9	\$68,111,000	11	\$57,420,000
Pollination, Almond	10	\$65,383,000	9	\$62,860,000
TOTAL TOP 10		\$2,702,234,000		\$3,246,687,000



Weights and Measures may be ranked among the necessities of life to every individual of human society. They enter into the economical arrangements and daily concerns of every family. They are necessary to every occupation of human industry; to the distribution and security of every species of property; to every transaction of trade and commerce; to the labors of husbandman; to the ingenuity of the artificer; to the studies of the philosopher; to the researches of the antiquarian; to the navigation of the mariner, and the marches of the soldier; to all the exchanges of peace, and all the operations of war. The knowledge of them, as in established use, is among the first elements of education and is often learned by those who learn nothing else, not even to read and write. This knowledge is riveted in the memory by the habitual application of it to the employments of men throughout life.



JOHN QUINCY ADAMS, Secretary of State

Excerpt from the Report on Weights and Measures by the Secretary of State, made to the Senate on February 22, 1821.

SUMMARY

Category	Year	Harvested Acres	Total Value
Apiary Products	2016		\$76,768,000
	2015		\$74,795,000
Field Crops	2016	674,310	\$185,744,000
	2015	669,482	\$256,892,000
Fruit and Nut Crops	2016	244,747	\$1,248,457,000
	2015	240,280	\$1,647,390,000
Livestock and Poultry	2016		\$622,473,000
	2015		\$731,506,000
Livestock and Poultry Products	2016		\$649,556,000
	2015		\$729,031,000
Nursery Products	2016	2,677	\$204,797,000
	2015	2,058	\$169,887,000
Organic Products	2016	8,507	\$99,696,000
	2015	8,301	\$89,413,000
Other Agriculture	2016	551	\$17,738,000
	2015	472	\$22,759,000
Vegetable Crops	2016	24,027	\$156,182,000
	2015	25,608	\$157,659,000
TOTAL	2016	954,819	\$3,261,411,000
	2015	946,201	\$3,879,332,000



APIARY PRODUCTS

Category	Year	Total	Unit	Per Unit	Total Value
Beeswax ¹	2016	559,400	LB	\$3.37	\$1,885,000
	2015	547,000	LB	\$3.38	\$1,849,000
Honey ¹	2016	4,798,400	LB	\$1.85	\$8,877,000
	2015	4,395,000	LB	\$2.17	\$9,537,000
Pollination, Almond	2016	363,240	COL	\$180.00	\$65,383,000
	2015	355,000	COL	\$177.07	\$62,860,000
Miscellaneous ²	2016				\$623,000
	2015				\$549,000
TOTAL ³	2016				\$76,768,000
	2015				\$74,795,000

¹ Honey and Beeswax are based on resident colonies plus the value of the colonies during almond pollination season

² Miscellaneous includes: Apple, Blueberry, Cherry, Cucumber, Melons, Pumpkin, Queen Bees, Squash

³ Total number adjusted due to rounding of categories combined (Queen Bees combined with Miscellaneous in 2016)



FIELD CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Beans, Dried All	2016	11,018					\$17,529,000
	2015	8,292					\$19,166,000
Black-Eyed	2016	1,313	1.27	1,670	Ton	\$905	\$1,511,000
	2015	249	1.10	274	Ton	\$1,105	\$303,000
Baby Limas	2016	508	1.45	737	Ton	\$820	\$604,000
	2015	3,621	1.30	4,710	Ton	\$1,050	\$4,946,000
Large Limas	2016	8,908	1.15	10,200	Ton	\$1,450	\$14,790,000
	2015	3,864	1.40	5,410	Ton	\$2,400	\$12,984,000
Beans, Dried Other ¹	2016	289	1.10	318	Ton	\$840	\$267,000
	2015	558	1.10	614	Ton	\$946	\$581,000
Bean Straw	2016			10,200	Ton	\$35	\$357,000
	2015			5,410	Ton	\$65	\$352,000
Hay, Alfalfa	2016	22,968	7.08	163,000	Ton	\$148	\$24,124,000
	2015	27,113	6.83	185,000	Ton	\$186	\$34,410,000
Hay, Oat	2016	11,431	3.18	36,400	Ton	\$100	\$3,640,000
	2015	26,283	3.38	88,800	Ton	\$153	\$13,586,000
Hay, Other ²	2016	10,921					\$2,606,000
	2015	13,004					\$6,748,000
Pasture, Irrigated	2016	32,500			Acre	\$291	\$9,458,000
	2015	32,500			Acre	\$248	\$8,060,000
Rangeland	2016	421,949			Acre	\$21	\$8,861,000
	2015	421,949			Acre	\$20	\$8,439,000



FIELD CROPS (cont.)

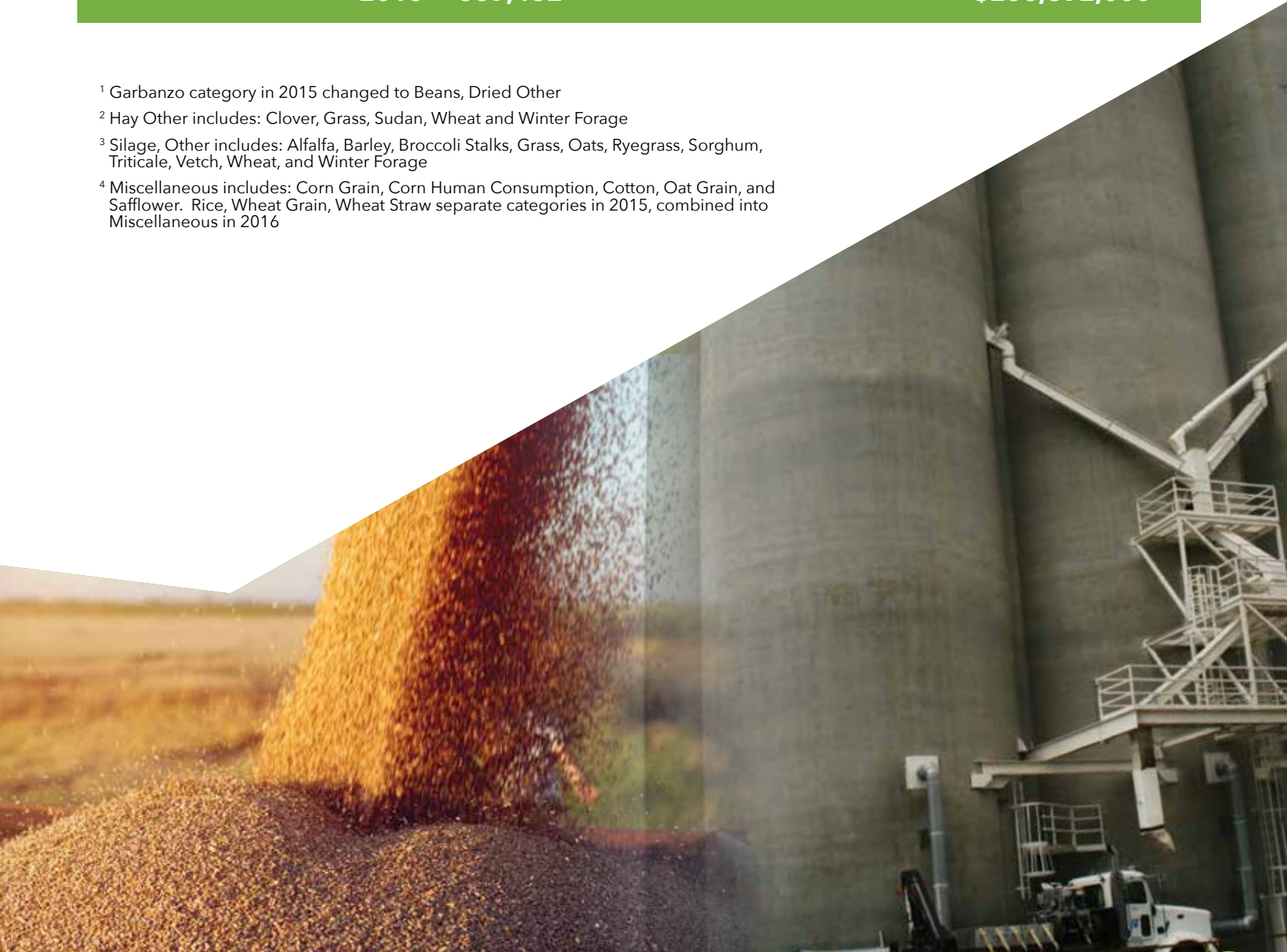
Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Silage, All	2016	161,401					\$117,531,000
	2015	138,070					\$163,580,000
Corn	2016	91,247	26.63	2,430,000	Ton	\$39	\$94,770,000
	2015	81,041	25.83	2,093,000	Ton	\$49	\$102,557,000
Other ³	2016	61,216					\$19,797,000
	2015	51,353					\$58,447,000
Sudan	2016	8,938	12.76	114,000	Ton	\$26	\$2,964,000
	2015	5,676	12.96	73,600	Ton	\$35	\$2,576,000
Miscellaneous ⁴	2016	2,122					\$1,995,000
	2015	2,271					\$2,903,000
TOTAL	2016	674,310					\$185,744,000
	2015	669,482					\$256,892,000

¹ Garbanzo category in 2015 changed to Beans, Dried Other

² Hay Other includes: Clover, Grass, Sudan, Wheat and Winter Forage

³ Silage, Other includes: Alfalfa, Barley, Broccoli Stalks, Grass, Oats, Ryegrass, Sorghum, Triticale, Vetch, Wheat, and Winter Forage

⁴ Miscellaneous includes: Corn Grain, Corn Human Consumption, Cotton, Oat Grain, and Safflower. Rice, Wheat Grain, Wheat Straw separate categories in 2015, combined into Miscellaneous in 2016



FRUIT AND NUT CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Almonds, All	2016	182,000					\$930,825,000
	2015	177,719					\$1,297,052,000
Almond Meats	2016	182,000	1.04	189,000	Ton	\$4,800	\$907,200,000
	2015	177,719	0.97	172,000	Ton	\$7,260	\$1,248,720,000
Almond Hulls	2016			378,000	Ton	\$60	\$22,680,000
	2015			344,000	Ton	\$130	\$44,720,000
Almond Shells	2016			189,000	Ton	\$5	\$945,000
	2015			172,000	Ton	\$21	\$3,612,000
Apricots	2016	3,733	9.76	36,400	Ton	\$658	\$23,951,000
	2015	3,956	6.44	25,500	Ton	\$885	\$22,568,000
Cherries	2016	2,605	1.92	5,000	Ton	\$3,420	\$17,100,000
	2015	2,649	2.34	6,200	Ton	\$3,882	\$24,068,000
Citrus ¹	2016	497					\$4,966,000
	2015	512					\$6,142,000
Grapes, All	2016	10,427					\$50,180,000
	2015	11,294					\$40,510,000
Red	2016	6,755	10.06	68,000	Ton	\$550	\$37,400,000
	2015	7,337	9.25	67,900	Ton	\$401	\$27,228,000
White	2016	3,672	8.16	30,000	Ton	\$426	\$12,780,000
	2015	3,957	9.04	35,800	Ton	\$371	\$13,282,000



FRUIT AND NUT CROPS (cont.)

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Peaches, All	2016	5,456					\$68,111,000
	2015	5,881					\$57,420,000
Cling	2016	4,978	24.28	121,000	Ton	\$491	\$59,411,000
	2015	5,404	20.32	110,000	Ton	\$462	\$50,820,000
Freestone	2016	478	12.21	5,800	Ton	\$1,500	\$8,700,000
	2015	477	12.65	6,000	Ton	\$1,100	\$6,600,000
Walnuts	2016	36,568	1.91	69,800	Ton	\$1,927	\$134,505,000
	2015	34,647	1.89	65,500	Ton	\$2,622	\$171,741,000
Miscellaneous ²	2016	3,461					\$18,819,000
	2015	3,622					\$27,889,000
TOTAL	2016	244,747					\$1,248,457,000
	2015	240,280					\$1,647,390,000

¹ Citrus includes: Grapefruit/Pomelos, Lemons, Oranges, and Tangerine

² Miscellaneous Includes: Apples, Avocados, Berries (Blackberries, Boysenberries, Blueberries, Raspberries, and Strawberries), Chestnuts, Figs, Jujube, Kiwi Fruit, Nectarines, Olives, Pears, Pecans, Persimmons, Pistachios, Plums, Pluots, Pomegranates, Prunes, Quince, Raisin Grapes, and Table Grapes



LIVESTOCK AND POULTRY

Category	Year	Number of Head	Total Value
Cattle & Calves, All	2016	322,485	\$246,258,000
	2015	321,600	\$350,209,000
Beef Feeders ¹	2016	129,060	\$34,927,000
	2015	130,175	\$69,162,000
Beef Slaughter ²	2016	48,125	\$17,344,000
	2015	47,125	\$27,327,000
Dairy Slaughter ³	2016	75,300	\$61,407,000
	2015	72,300	\$88,870,000
Dairy Replacement	2016	70,000	\$132,580,000
	2015	72,000	\$164,850,000
Goats ⁴	2016	19,008	\$2,325,000
	2015	21,421	\$1,445,000
Sheep & Lambs ⁵	2016	3,822	\$853,000
	2015	3,284	\$570,000
Hogs & Pigs	2016	20,540	\$4,108,000
	2015	18,877	\$3,015,000



LIVESTOCK AND POULTRY (cont.)

Category	Year	Number of Head	Total Value
Chickens, All ⁶	2016	182,418,000	\$295,132,000
	2015	183,355,000	\$304,226,000
Turkeys, All ⁷	2016	5,159,000	\$69,910,000
	2015	4,946,000	\$62,394,000
Squab	2016	539,683	\$2,839,000
	2015	441,991	\$2,325,000
Game Birds ⁸	2016	225,281	\$1,048,000
	2015	672,318	\$7,322,000
TOTAL	2016		\$622,473,000
	2015		\$731,506,000

¹ Beef Feeders includes: Feed Lots, Beef Steers, Beef Heifers, Beef Replacement Heifers, Transient Cattle, Drop Calves less Replacement Heifers

² Beef Slaughter includes: Beef Cows, Beef Bulls, Dairy Beef

³ Dairy Slaughter includes: Cull Cows and Cull Bulls

⁴ Goats includes: Cull Does, Cull Bucks, Meat Goats and Dairy Goat Kids

⁵ Sheep & Lambs includes: Cull Ewes, Cull Rams, Replacement Rams, Replacement Ewes, Lambs

⁶ Chickens, All includes: Chickens, Chicks; categories were combined in 2016

⁷ Turkeys, All includes: Turkeys, Poults; categories were combined in 2016

⁸ Game Birds includes: Chukar Partridge, Dove, Ducks, Geese, Guinea Keet, Quail



LIVESTOCK AND POULTRY PRODUCTS

Category	Year	Total	Unit	Per Unit	Total Value
Milk, All	2016	39,990,000	CWT		\$611,894,000
	2015	41,471,000	CWT		\$647,812,000
Market	2016	37,440,000	CWT	\$15.14	\$566,842,000
	2015	39,821,000	CWT	\$15.49	\$616,827,000
Manufacturing	2016	2,443,000	CWT	\$16.79	\$41,018,000
	2015	1,536,000	CWT	\$17.37	\$26,680,000
Milk, Goat	2016	107,000	CWT	\$37.70	\$4,034,000
	2015	114,000	CWT	\$37.76	\$4,305,000
Eggs, Chicken Market	2016	24,030,000	DOZ	\$1.25	\$30,037,000
	2015	29,160,000	DOZ	\$2.52	\$73,483,000
Eggs, Other ¹	2016				\$3,946,000
	2015				\$3,914,000
Wool ²	2016	31,300	LB	\$1.75	\$54,800
	2015	34,800	LB	\$5.04	\$175,000
Manure ³	2016	514,000	Ton	\$7.05	\$3,624,000
	2015	521,000	Ton	\$7.00	\$3,647,000
TOTAL	2016				\$649,556,000
	2015				\$729,031,000

¹ Eggs, Other includes: Turkey Hatching, Quail and Duck Eggs

² Wool includes: Alpaca Fiber and Sheep Wool

³ Manure includes: Cattle, Chicken and Turkey



NURSERY PRODUCTS

Category	Year	Field Acres	Quantity Sold	Unit	Per Unit	Total Value
Fruit & Nut Trees and Vines	2016	780	27,388,000	EA	\$5.94	\$162,685,000
	2015	1,022	24,322,000	EA	\$5.32	\$129,393,000
Ornamental Trees & Shrubs	2016	516	2,509,000	EA	\$11.04	\$27,699,000
	2015	428	2,311,000	EA	\$10.54	\$24,358,000
Miscellaneous ¹	2016	1,381				\$14,413,000
	2015	608				\$16,136,000
TOTAL	2016	2,677				\$204,797,000
	2015	2,058				\$169,887,000

¹ Miscellaneous includes: Christmas Trees, Fruit/Nut Rootstock Seed, Lavender, Raspberry Transplants, Tomato Transplants, Strawberry Transplants, and Turf



ORGANIC PRODUCTS

Category	Year	Harvested Acres	Total Value
All Organic Products	2016	8,507	\$99,696,000
	2015	8,301	\$89,413,000

OTHER AGRICULTURE

Category	Year	Total	Unit	Per Unit	Total Value
Firewood	2016	68,000	Cord	\$225.00	\$15,300,000
	2015	64,100	Cord	\$225.00	\$14,423,000
All Other Agriculture ¹	2016				\$1,738,000
	2015				\$7,596,000
Seed Crops ²	2016	551	Acre		\$700,000
	2015	472	Acre		\$740,000
TOTAL	2016				\$17,738,000
	2015				\$22,759,000

¹ All Other Agriculture includes: Aquaculture (Bass & Catfish), Compost, Vermiculture (Worms, Worm Castings)

² Seed Crops includes: Cow Pea, Lima Bean, Oat, Rice, Squash, Tomato, Vegetable (Seed Crop was listed as a separate category in 2015)



VEGETABLE CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Beans, Succulent	2016	2,033	1.25	2,540	Ton	\$870	\$2,210,000
	2015	1,428	1.40	2,000	Ton	\$1,352	\$2,704,000
Melons, All ¹	2016	3,240					\$32,026,000
	2015	2,576					\$22,966,000
Pumpkins	2016	239	16.62	3,970	Ton	\$495	\$1,965,000
	2015	181	23.00	4,160	Ton	\$360	\$1,498,000
Sweet Potatoes	2016	1,643	18.40	30,230	Ton	\$925	\$27,963,000
	2015	1,447	17.23	24,900	Ton	\$798	\$19,870,000
Tomatoes, All ²	2016	10,718					\$47,541,000
	2015	12,978					\$55,486,000
Miscellaneous ³	2016	6,154					\$44,477,000
	2015	6,998					\$55,135,000
TOTAL	2016	24,027					\$156,182,000
	2015	25,608					\$157,659,000

¹ Melons, All includes: Cantaloupe, Canary, Casaba, Crenshaw, Hami, Honeydew, Persian, Sharlyn, Watermelon

² Tomatoes, All includes: Fresh, Processing

³ Miscellaneous includes: Asparagus, Beet, Broccoli, Brussel Sprout, Cabbage, Cactus, Carrot, Cauliflower, Chinese Greens, Cucumber, Daikon, Edible Flower, Eggplant, Garlic, Herb-Spice, Kale, Kohlrabi, Lettuce-Head, Lettuce-Leaf, Mustard, Okra, Onion-Dry, Onion-Green, Pea, Peppers, Potato, Radish, Rutabaga, Spinach, Squash All, Sweet Basil, Swiss Chard, Turnip, Vegetable, Vegetable Leaf



Brown Marmorated Stink Bug Becomes Established in Stanislaus County Orchards

Jhalendra Rijal, IPM Farm Advisor,
UC Cooperative Extension, Stanislaus County

Brown marmorated stink bug (BMSB) is an invasive insect pest of several crops and ornamental plants. In addition to being an agricultural pest, BMSB can be a serious nuisance problem for residential areas when BMSB adults migrate en masse to warm places (houses, buildings, barns) during the winter. BMSB caused significant economic loss for the tree fruit industry in the Mid-Atlantic region in 2010 after it became established in Pennsylvania. Since then BMSB has spread rapidly to at least 43 states. In 2013, a large population of BMSB was detected in downtown Sacramento. This was the first detection of BMSB in California. Since then, it has spread to neighboring cities and counties. In Stanislaus County, the first reproducing population of BMSB was detected near Freeway 99 in Modesto during the summer of 2015. Since then, residents from Modesto, Ceres, Empire, Salida and Turlock have reported BMSB in their houses, backyard trees, and nearby parks. In 2016, several BMSB adults were detected in a peach orchard in the Empire area. This was the first documented case of BMSB established in an agricultural area in the state of California. Peach is one of the favorite hosts of BMSB. Reproducing populations have now been documented feeding in area almond orchards as well.

To understand the extent of spread and seasonal phenology in Stanislaus County orchards, UC Cooperative Extension expanded their monitoring effort in local orchards, particularly in areas where growers and residents reported BMSB activity. BMSB adults have now been captured in several orchard sites. The risk of economic loss to tree fruits and nut crops by BMSB is yet to be determined. Because crops like almonds and walnuts are not grown outside of California, we do not know if they will be preferred hosts of the insect or if BMSB will become a significant management problem.

At this point, we recommend that growers and pest control advisers (PCAs) scout their orchards for potential BMSB infestation. UC Cooperative Extension is continuing research into the best trap methods and management strategies for commercial orchards and delivering that information to local growers and their pest management professionals. More research regarding the control options for BMSB in California is needed.



Figure 1 Black pyramid trap used in BMSB monitoring.
Photos by J. Rijal

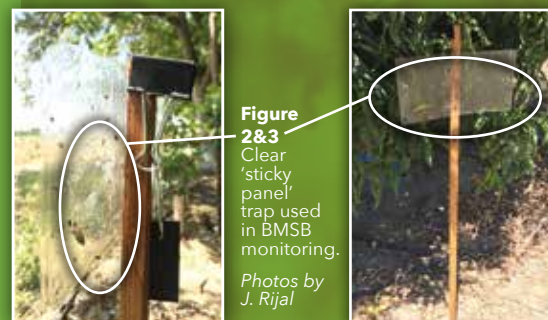


Figure 2&3 Clear 'sticky panel' trap used in BMSB monitoring.
Photos by J. Rijal



UC Cooperative Extension Explores Winter Irrigation of Almond Orchards to Replenish Groundwater

Roger Duncan, *County Director*
UC Cooperative Extension

Repeated drought cycles have put pressure on California's water resources. During the five-year drought that ended during the winter of 2016-17, groundwater was used to make up for the reduced availability of surface water supplies, which led to historic groundwater level declines. In Stanislaus County, there has been a rapid expansion of high value, orchard crops that are grown with more efficient drip and micro-sprinkler irrigation systems. These cropping systems have intensified the reliance on groundwater because it is available on demand for high frequency irrigation. Increased reliance on groundwater in combination with more efficient irrigation systems leads to less groundwater recharge on a large scale. This poses the threat of a steady decline in groundwater quantity and quality.

With funding from the Almond Board of California and in cooperation with the Modesto Irrigation District, the University of California Cooperative Extension and UC Davis are exploring what happens when a large amount of water is applied in the winter to dormant almond orchards. Almond trees don't use water in the winter and the assumption is that this excess water will make its way into the aquifer, replenishing groundwater supplies without damaging the dormant trees. In this study, MID captured storm runoff water from the City of Modesto and directed it into the canal system west of town. Two acre-feet of this water was applied to parts of a dormant almond orchard periodically through the month of January. UC researchers measured how much of the water moved deeply through the soil profile and if nitrogen and other impurities moved with it. They are also examining the effects on root development, tree health and yield. After two years of study, researchers have not measured any adverse effects of winter water application to the dormant almond orchard during the month of January. It is possible that dormant orchards may even benefit from winter irrigation. If this project is a success, there is an exciting potential to bank ground water by delivering city runoff or excess river water to dormant orchards during winters of plentiful rainfall while simultaneously reducing the danger of flooding along our river systems.

Pest Detection &

To protect the agricultural and horticultural industries in Stanislaus County, 6,009 traps were placed to monitor for specific insects. Some of the traps use an insect pheromone to attract the insect into the trap, while some use a food bait and others use a color attractant.



Mediterranean Fruit Fly

Traps Deployed: 437

Crops Affected:

Apricot, tomato, apple, almond, plum, peach, nectarine, pear, grape, citrus, fig, pomegranate, olive, and walnut



Oriental Fruit Fly

Traps Deployed: 437

Crops Affected:

Apple, citrus, cucumber, fig, grape, pear, pomegranate, stone fruit, tomato, and walnut



Melon Fruit Fly

Traps Deployed: 221

Crops Affected:

Peach, orange, bean, tomato, cucumber, apple, cantaloupe, grape, pear, and watermelon



Mexican Fruit Fly

Traps Deployed: 221

Crops Affected:

Apple, apricot, citrus, pear, plum, peach, nectarine, and pomegranate



Gypsy Moth

Traps Deployed: 203

Crops Affected:

Most trees

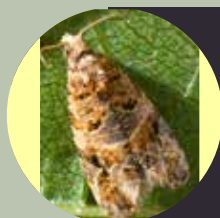


Light Brown Apple Moth

Traps Deployed: 437

Crops Affected:

Alfalfa, almond, apple, berries, broccoli, citrus, corn, grape, olive, stone fruit, and tomatoes

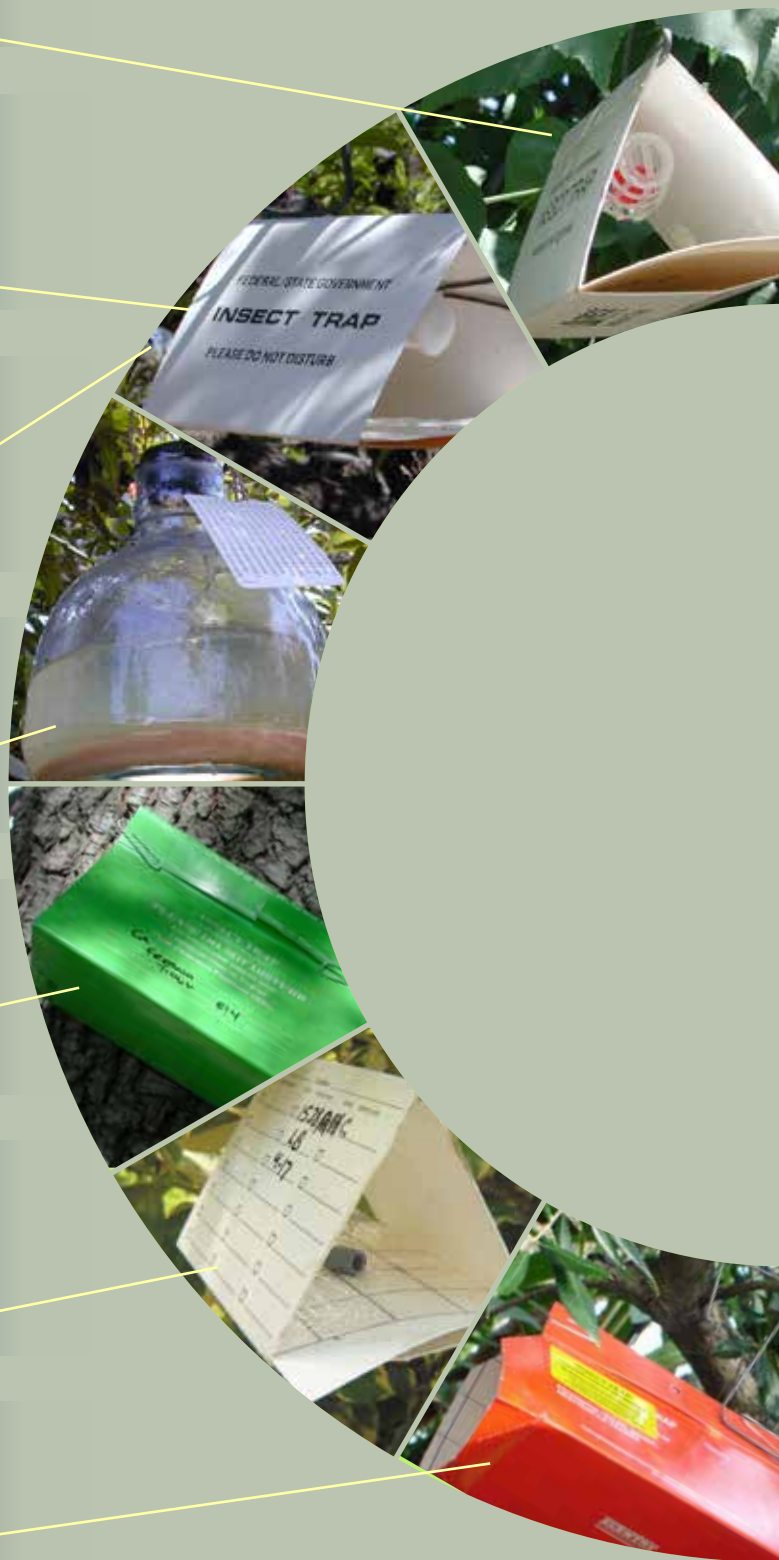


European Grapevine Moth

Traps Deployed: 0

Crops Affected:

Grapes and spurge laurel



Emergency Projects 2016

About 74.25% of traps are in residential yards, 22% in nurseries and 3.75% in vineyards/orchards. Trapping allows for the early detection of invasive and destructive pests that would be detrimental to our economy, the environment, and public health.

Japanese Beetle

Traps Deployed: 203

Crops Affected:
Turf and roses



Vine Mealybug

Traps Deployed: 41

Crops Affected:
Grapes



Asian Citrus Psyllid

Traps Deployed: 1722

Crops Affected:
Citrus
(vector for Huanglongbing Disease)



Glassy-Winged Sharpshooter

Traps Deployed: 1894

Crops Affected:
Grape, almond, peach, and citrus
(vector for Pierce's Disease)



Apple Maggot

Traps Deployed: 50

Crops Affected:
Stone and pome fruit



European Corn Borer

Traps Deployed: 8

Crops Affected:
Corn, potatoes, oat, green beans,
and rhubarb



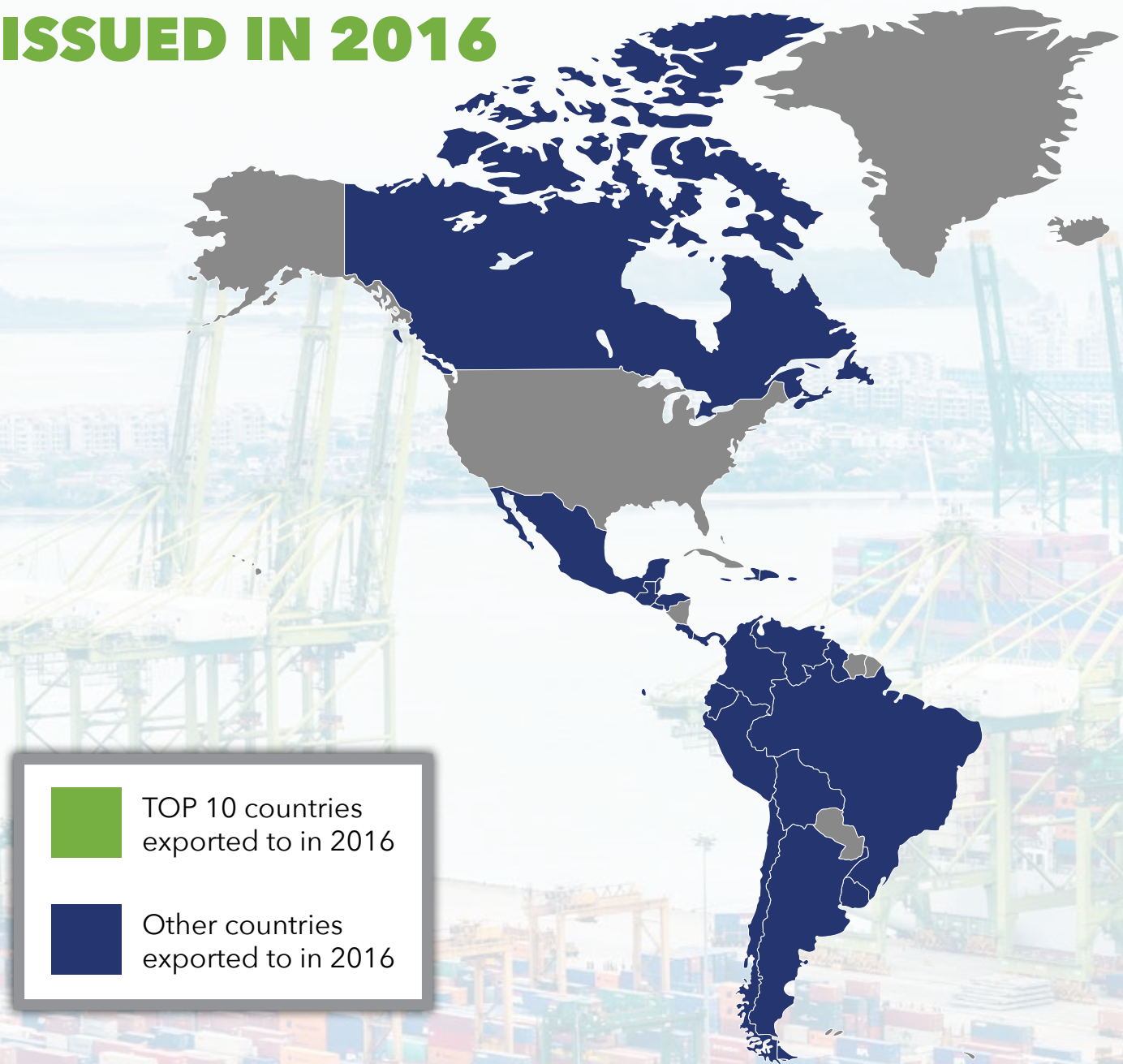
Red Imported Fire Ant

Traps Deployed: 135

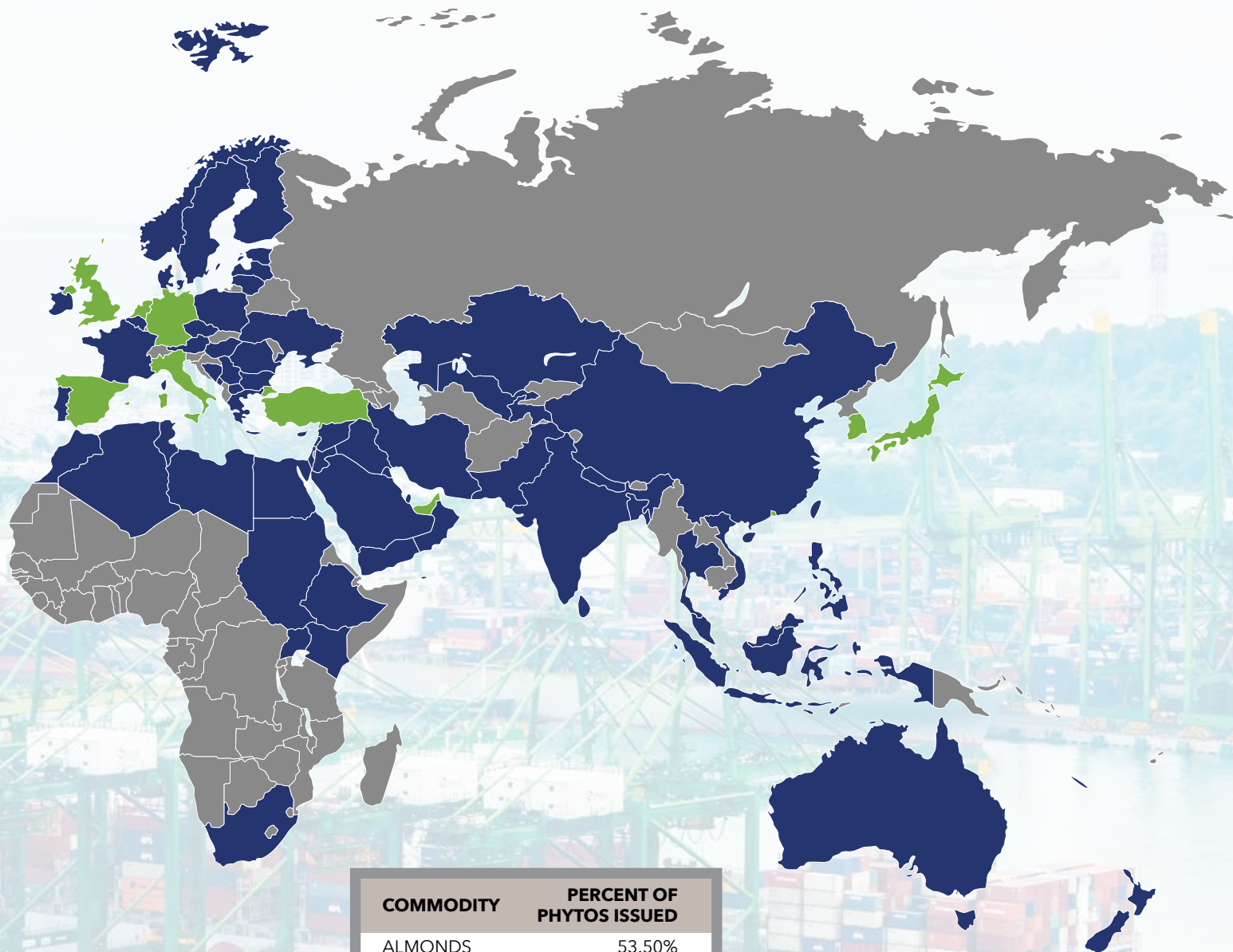
Crops Affected:
Infests agricultural and residential settings,
as well as natural habitats - dangerous to
children, pets, the elderly, and wildlife



EXPORT CERTIFICATES ISSUED IN 2016



COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS
Spain	1041	Mexico	254	Lebanon	140	Sweden	66	Algeria	46
Hong Kong	905	Vietnam	252	Thailand	126	Pakistan	62	Peru	44
Japan	860	India	245	Malaysia	108	Kuwait	61	New Zealand	43
Germany	773	Jordan	218	Brazil	92	Argentina	55	Iraq	35
Turkey	736	Israel	175	Belgium	91	Egypt	54	Canada	33
Korea	693	France	166	Switzerland	83	Indonesia	53	Ecuador	33
Italy	397	China	165	Singapore	82	French Polynesia	50	Philippines	30
United Arab Emirates	388	Taiwan	163	Chile	78	Norway	49	Iran	29
Netherlands	373	Saudi Arabia	149	Guatemala	76	Greece	48	Colombia	25
United Kingdom	257	Australia	145	South Africa	76	Morocco	48	Denmark	25



COMMODITY	PERCENT OF PHYTOS ISSUED
ALMONDS	53.50%
WALNUTS	21.40%
SEEDS	8.60%
BEANS	1.50%
OTHER	15%

Export Certificates are issued to certify that the commodity meets the plant cleanliness requirements of the importing country

COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS	COUNTRY	PHYTOS
Costa Rica	21	Jamaica	11	Ethiopia	6	Sri Lanka	4	Haiti	2
Estonia	21	Romania	11	Hungary	6	Tajikistan	4	Macedonia	2
Bulgaria	19	Honduras	10	Barbados	5	Bangladesh	3	Bosnia & Herzegovina	1
Portugal	18	Sudan	10	Ireland	5	Croatia	3	Kosovo	1
Yemen	18	Tunisia	10	Oman	5	Finland	3	Mauritius	1
Poland	17	El Salvador	9	Panama	5	Latvia	3	Montenegro	1
Lithuania	16	Kenya	9	Ukraine	5	Libya	3	Serbia	1
Bahrain	14	Trinidad & Tobago	9	Austria	4	Nepal	3	Uganda	1
Dominican Republic	14	Bolivia	7	Czech Republic	4	Syrian Arab Republic	3	Uruguay	1
Qatar	13	Cyprus	7	Kazakhstan	4	Belize	2	Uzbekistan	1
				New Caledonia	4	Guyana	2	Venezuela	1



2016 AG HALL OF FAME RECIPIENTS

Excerpt From National Ag Science Center's Press Release



FISCALINI FARMS & CHEESE

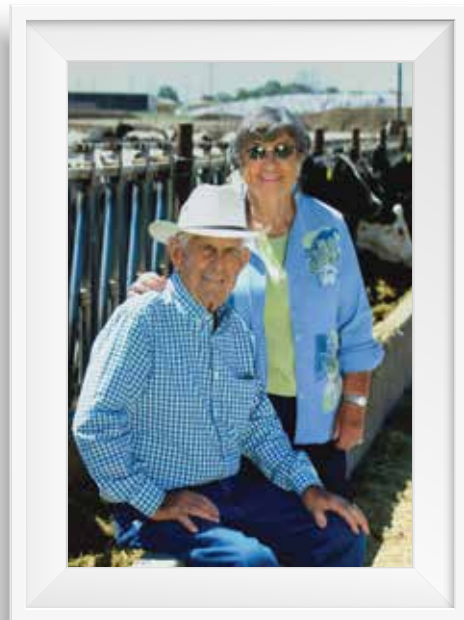
Fiscalini Dairy Farm was founded in 1914 by John B. Fiscalini. The farm started with 12 Holstein cows and some land for grazing. Mathew B. Fiscalini took over the farm upon his father's passing and grew the herd to 700 Holstein cows. Mathew was involved in protecting water rights for farms and was Director of the Modesto Irrigation District Board for many years. In 1993, John B. Fiscalini, Mathew's son, took over the business and grew the herd to 1,500 milking cows, farmed 480 acres, and added a cheese plant and methane digester. Today, John remains involved in the business while his son, Brian, and daughter Laura, continue the family tradition of dairy farming and cheese making.

"We are proud to continue our traditions in Modesto, CA, on the same property our forefathers purchased for a dairy site in 1914 and we are honored to be recognized for our history here in Stanislaus County," says Brian Fiscalini, Dairy Farmer and Cheese Operations Manager. Following in the footsteps of their ancestors from Switzerland who began producing cheese in the 1700's, Brian adds, "Our cheesemaker is a craftsman who believes all of our cheeses are works of art, they require great skill to create. We believe in making cheese by hand with the use of traditional methods. We use milk from our cows and are able to carefully provide attention to every detail from the care of our animals to the hand turning of our cheese wheels."

NORMAN AND FREDA LUCAS

Lucas Dairy was founded by Tony Lucas in 1938. Norman worked alongside his father learning to milk cows and farm the family land. In 1945, Norman met and married Freda DeHart and upon his return from serving in the military, he and Freda grew the business into what Lucas Dairy is today, truly a family owned and operated business with over 300 acres, approximately 800 Holstein cows in the milking herd and over 900 calves and young stock.

The greatest impact Norman and Freda have had upon agriculture is the example they have set for others. They ensured best practices were being utilized in their farm operations, implementing devices and machines to create an efficient operation. Norman and Freda milked and irrigated side-by-side, tirelessly working to build a successful dairy farm. Actively involved in the community, Norman and Freda played a key role in the Mountain View community, volunteering not only their time with the 4H and Little League, but also donating necessary equipment and funds to support the local elementary school and Grange Hall. The four Lucas children were so influenced by their parents that each, to this day, continue to be involved in farming and agriculture.



National Ag Science Center Ag Hall of Fame Members

Clare Berryhill-1998
Richard Lyng-1998
Ann Veneman-1998
Henry Voss-1998
Roland Starn-1999
Bill Ulm-1999
Gertie Zehrung-1999
Max & Verda Foster-2000
Bill & Mary Lyons-2000

Ernest & Julio Gallo-2001
The West & Benson Families,
J.S. West & Co.-2002
Perez Brothers-2003
Larry Carter-2003
Ernie Gemperle-2004
Floyd Zaiger-2004
A.L. Gilbert Co.-2005
Ratto Bros. -2006

The Burchell Nursery-2007
Flory Industries-2008
Dave Wilson Nursery-2009
Duarte Nursery-2010
Stanislaus Food Products &
the Cortopassi Family-2011
Veterinary Service Inc-2012

Ed Rocha & Rocha's
Valley Enterprises-2013
Save Mart Supermarkets-2014
Stanislaus Farm Supply-2015
Norman & Freda Lucas, Lucas Dairy-2016
Fiscalini Farms & Cheese-2016

WEIGHTS & MEASURES TRIVIA

1. What part of the body is an inch based upon?
2. Which government officials regulate the accuracy of companies like Uber and Lyft?
3. Where is the standard that is used to prove all standards throughout the world located?
4. What part of the body is a yard based upon?
5. What local agency oversees the accuracy of marketplace scanners?
6. What are the most abundant weighing or measuring devices in Stanislaus County?
7. Why is a pound of feathers heavier than a pound of gold and an ounce of gold heavier than an ounce of feathers?

WEIGHING AND MEASURING DEVICES IN STANISLAUS COUNTY

Measuring Devices

Electric Submeters.....	703
Fabric; Cord; Wire.....	43
LPG Meters	54
LPG Truck	13
Misc. Measuring	36
Odometer	112
Retail Motor Fuel	4,805
Retail Motor Fuel (HV)	95
Retail Water Meter	180
Taximeter	41
Vapor Submeters	2,136
Vapor Submeters (HP).....	1
Vehicle Meter	84
Vehicle Meter Oil	47
Water Submeters	2,928
Wholesale	2

Weighing Devices

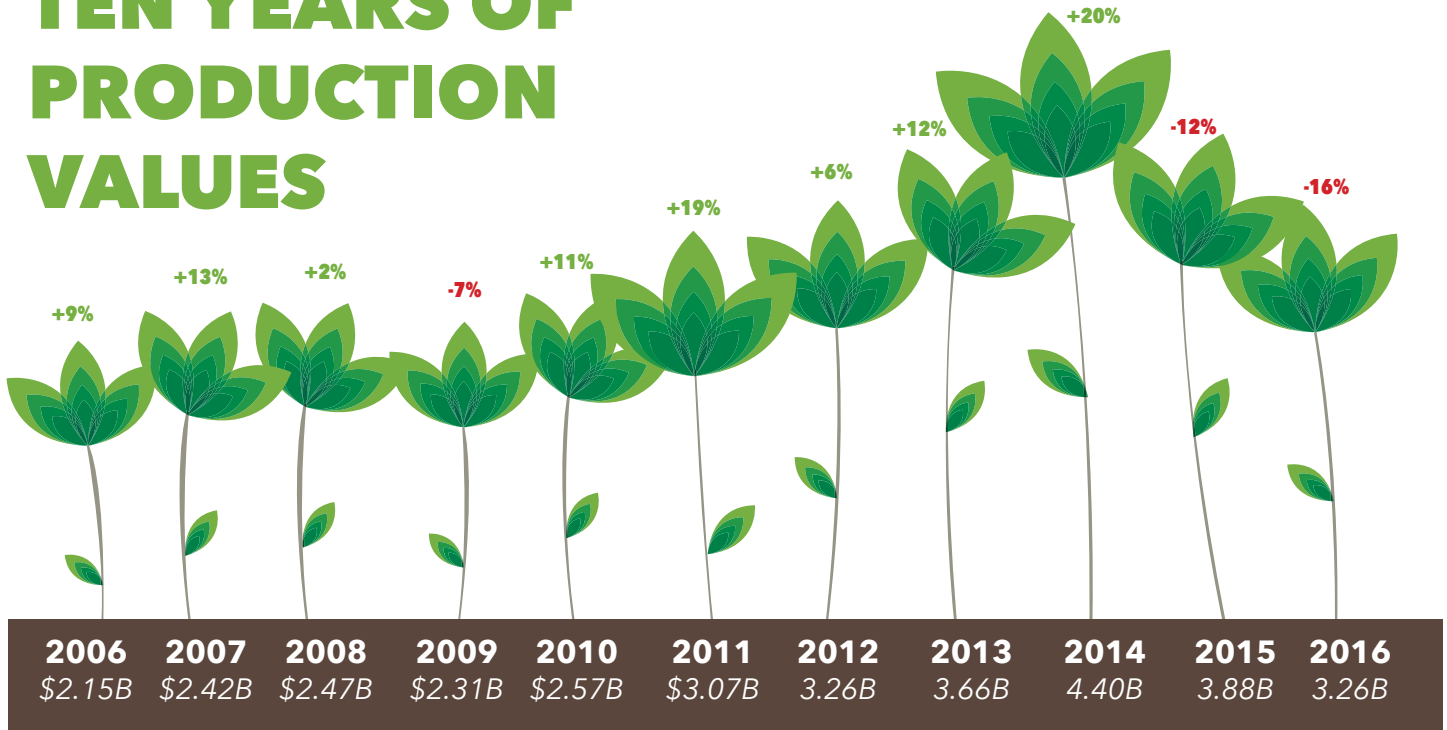
Animal	4
Computing	1,318
Counter	228
Dormant.....	194
Forklift	5
Hanging	115
Hopper & Tank	30
Hopper & Tank >20K.....	11
Livestock	45
Livestock >20K.....	3
Misc. Weighing	6
Monorail & Meatbeam	9
Portable Platform	113
Prescription/Jewelry.....	43
Railway	5
Vehicle Scale	232

Wheel Load Weighers

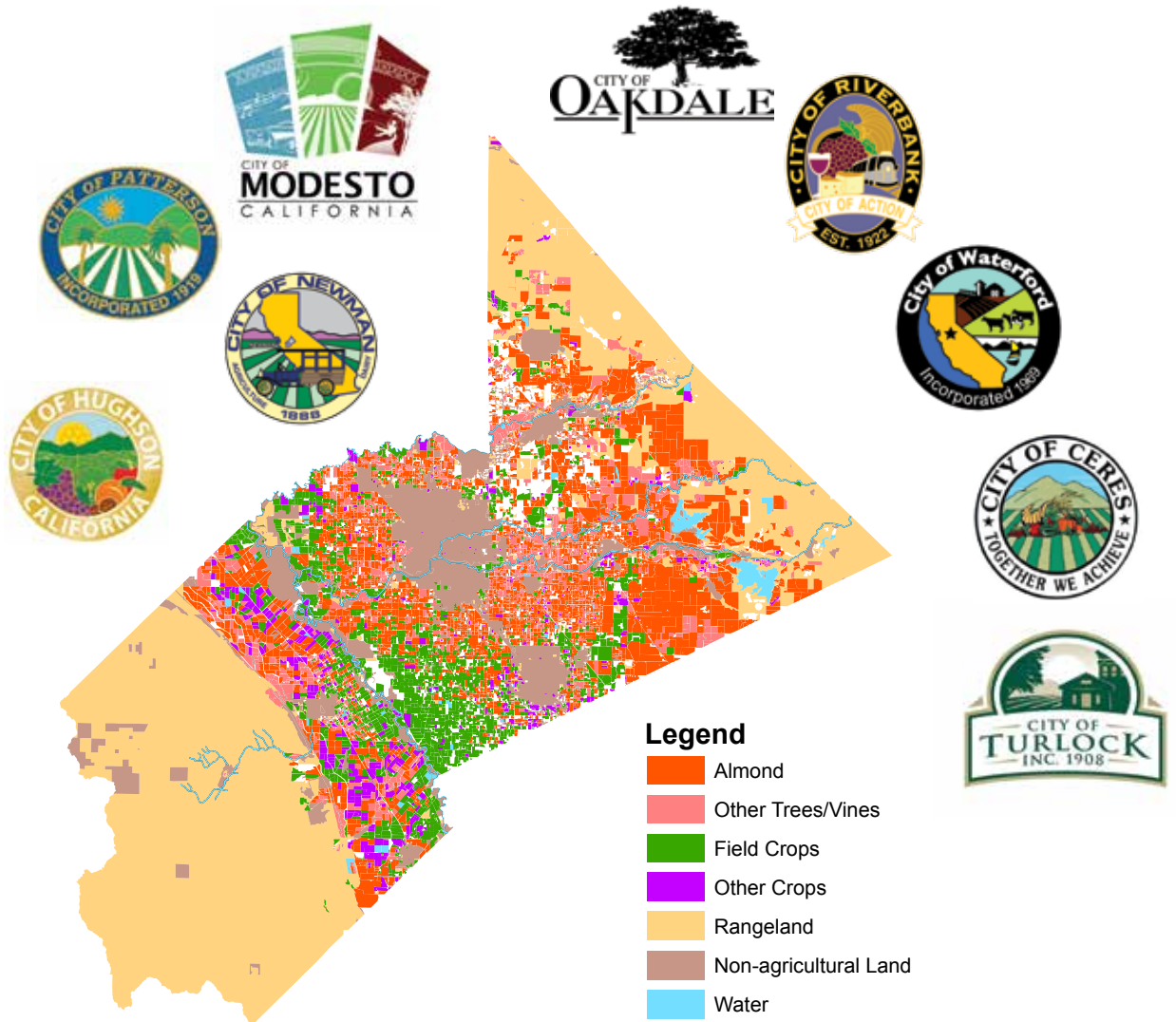
Stanislaus County inspects approximately 540 wheel load weighers annually for the California Highway Patrol, the California Department of Transportation and various law enforcement agencies throughout the state.

Trivia Answers:
1. The width of the thumb
2. State and County Weights & Measures officials
3. Sevres, France
4. The distance from the tip of a man's nose to the end of his outstretched arm
5. Department of Agriculture and Weights & Measures
6. Retail motor fuel meters
7. Gold is weighed using the troy weight system where feathers are weighed in the avoirdupois weight system. An avoirdupois pound has 16 ounces or 7,000 grains making it heavier than the troy pound of only 12 ounces or 5,760 grains. Conversely, the troy ounce is 480 grains which is heavier than the 437.5 grains in the avoirdupois ounce.

TEN YEARS OF PRODUCTION VALUES



CROP DISTRIBUTION



How Does Agricultural Income in Stanislaus County Compare to State Totals?

State	Income ¹
California	\$45,325,083,000
Iowa	\$25,666,329,000
Texas	\$21,173,578,000
Nebraska	\$21,138,084,000
Minnesota	\$16,835,033,000
Illinois	\$15,721,654,000
Kansas	\$14,999,812,000
Wisconsin	\$10,725,623,000
North Carolina	\$10,609,202,000
Washington	\$10,315,242,000
Indiana	\$9,935,836,000
South Dakota	\$9,057,132,000
Missouri	\$8,805,969,000
Georgia	\$8,398,714,000
Ohio	\$8,166,539,000
Arkansas	\$8,048,212,000
North Dakota	\$7,732,856,000
Florida	\$7,529,828,000
Michigan	\$7,294,315,000
Idaho	\$7,076,832,000
Pennsylvania	\$6,315,295,000
Colorado	\$6,265,281,000
Oklahoma	\$6,189,229,000
Kentucky	\$5,374,969,000
Mississippi	\$5,093,471,000
New York	\$4,989,945,000
Alabama	\$4,950,252,000
Oregon	\$4,639,122,000
Arizona	\$4,143,179,000
Montana	\$3,672,844,000
Virginia	\$3,319,652,000
Tennessee	\$3,304,210,000
Stanislaus County	\$3,261,411,000
New Mexico	\$2,861,617,000
Louisiana	\$2,809,666,000
South Carolina	\$2,112,440,000
Maryland	\$2,107,261,000
Utah	\$1,657,681,000
Wyoming	\$1,391,122,000
Delaware	\$1,200,724,000
New Jersey	\$1,018,148,000
Vermont	\$785,905,000
Hawaii	\$648,555,000
Nevada	\$596,273,000
Maine	\$527,280,000
Connecticut	\$514,624,000
West Virginia	\$389,389,000
Massachusetts	\$387,116,000
New Hampshire	\$210,291,000
Rhode Island	\$72,113,000
Alaska	\$33,887,000

¹ USDA Economic Research Service

STANISLAUS COUNTY FACTS

FARM DATA

Number of Farms: 4,143

Land in Farms: 768,046 Acres

Average Size of Farm: 185 Acres

Average Age of Farmer in Stanislaus County: 59.3 (US: 58.3)

Farm Operators: 2,450

Family Farms: 97% Family Farms (US), 88% Small Family Farms (US)

Full Time Farmers: 48% called farming their primary occupation, 52% had a different primary occupation (US)

Information obtained from the 2012 Census of Agriculture

AG FACTS

Stanislaus Ranks 5th in the State for Total Production Value

Stanislaus Commodity Rankings in the State



Number of Dairies (2015): 196

Avg No. Cows/Dairy: 901

Information obtained from the California Agricultural Statistics Review 2015-2016

WEIGHTS AND MEASURES PROGRAMS

Quantity Control

From time to time, inspectors conduct inspections on packaged goods to determine if the proper weight, measure, or count is being used. Package labels are examined for compliance with labeling requirements and scanner inspections are conducted to ensure pricing accuracy at the checkout.



Weighmaster - Persons who are licensed to certify the weighed, measured, or counted quantity of any commodity are weighmasters. Inspectors assure that commercial transactions certified on a Weighmaster Certificate are accurate.



Devices - All weighing and measuring devices used in commercial transactions are tested for accuracy and inspected to determine if they are appropriate for their intended use. Once this is determined, the inspector certifies the device by affixing a paper seal to it. Examples of commercial devices include livestock and vehicle scales, propane delivery trucks, fuel dispensers, deli scales, and taxi meters.



Service Agents - Inspectors review the work of licensed persons that sell, rent, install, service or repair commercial weighing and measuring devices to validate the accuracy of their work and to verify the appropriate use of commercial devices.



Petroleum - Inspectors enforce requirements for petroleum product quality, labeling and advertising. When a petroleum product's quality comes into question, an inspector will take an official sample of the product to determine compliance with minimum standards.



AGRICULTURAL COMMISSIONER PROGRAMS

PEST EXCLUSION:

- Interior Pest Exclusion - enforcement of quarantines, inspection of packages, phytosanitary certification of exports
- Exterior Pest Exclusion - enforcement of quarantines for materials subject to infestation that have crossed into California with a Stanislaus County destination
- Nursery and Seed - licensing, pest cleanliness inspections, registration and certification, truth in labeling and quality, soil and plant laboratory permitting

PEST DETECTION:

- Early detection of insect pests
- Administering specific "action plans" for unwanted agricultural pests
- Maintaining properly trained and equipped pest detection teams

PEST MANAGEMENT:

- Managing nuisance pests of agriculture & human health
- Programs include glassy-winged sharpshooter, ground squirrels, capeweed, etc

PEST ERADICATION:

- Local government liaison to CDFA after pest species discovered
- Eradication of particular pest species

PESTICIDE USE ENFORCEMENT:

- Provides for the proper, safe, and effective use of pesticides for agricultural production and protection of public health and safety
- Prohibiting, regulating or ensuring proper stewardship of pesticides for environmental protection
- Ensuring safe working conditions, use of proper protective equipment and training for employees working with or around pesticides
- Pesticide use reporting, incident investigations, outreach activities, and monitoring applications

SEED CERTIFICATION:

- Inspect retail and wholesale seed sellers
- Obtain samples for seed germination and purity testing
- Labeling inspections for compliance with state requirements
- Certification services for growers and processors in cooperation with the California Crop Improvement Association

NURSERY INSPECTION:

- Inspections of growing, propagation, production and sale sites of nursery stock to assure cleanliness from pests, true variety and vigorous healthy plants for sale to the consumer

FRUITS, NUTS AND VEGETABLE STANDARDIZATION:

- Compliance of California's minimum standards for quality and marketing produce commercially grown and/or marketed in the state
- Direct Marketing, Certified Producers and Certified Farmers Markets
- Organic law enforcement
- Local protection to growers, marketers and consumers

EGG INSPECTION:

- Inspection of retailers and packers of eggs in California
- Enforcement of state & federal health, quality, grade & labeling standards

APIARY INSPECTION:

- Registration and site location of honeybee colonies in the county
- Colony strength & health inspections

CROP STATISTICS:

- Annual crop report regarding the gross production and value of the county's commodities
- Agriculture disaster surveys used by other agencies offering disaster relief

STAFFING

AGRICULTURAL COMMISSIONER'S OFFICE

Agricultural Commissioner/Sealer of Weights & Measures

Milton O'Haire

Assistant Agricultural Commissioner/Sealer

Daniel Bernaciak

Deputy Agricultural Commissioner/Sealers

Marline Azevedo

Wendy Hahn

Steve Logan

Kelle Schroeder

Agricultural/Weights & Measures Inspectors

Angela Bates

Arpinder Brar

Greg Brockman

Mary Canchola

Gerardo Castaneda

Christopher Egli

Cristina Galvan

Harinder Grewal

Deana Guerrero

Richard Homer

Amy Lomeli

Forrest Meares

Kim Reed

Hector Rodriguez

Amit Sandhu

Carolyn Sizemore

Wesley Van Blair

Becky Van Cleave

Nathaniel Vieira

Information and Technology

Nathan Leon

Michael Funk

Sue Boelk

Administrative Support

Susan Azevedo

Bertha Castillo

Cassy Costa

Ramona Cunningham

Cheryl Horton

Michael Sise

Debby Tochez

Debbie Wohld

Seasonal Agricultural Assistants

Gay Allard-Johnson

Zach Baptista

Evelyn Barber

Sandra Blevins

Misael Canales-Salas

Jim Friedrich

George Gold

Becky Graham

Jose Hernandez

Alexa Ladd

Trina Lagier

Drew Lemos

Michael McFall

Danielle Mitchell

Eva Padilla

Rafael Ramirez

Charles Smith

Devin Thompson

Max Wilson

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION, STANISLAUS COUNTY

County Director

Roger Duncan, Orchard Crops

Farm Advisors

Theresa Becchetti, Livestock &
Natural Resources

Marsha Campbell, Field & Annual
Forage Crops, Dairy Manure
Management

Jennifer Heguy, Dairy

Ed Perry, Urban Horticulture
(Emeritus)

Jhalendra Rijal, PhD, Integrated
Pest Management

Nutrition, Family & Consumer Sciences Programs

Terri Spezzano, Nutrition, Family &
Consumer Sciences Advisor

Dodi Bridges,

Community Education Specialist

Dennis Carrasquilla,

Community Education Specialist

Liz Carrillo,

Community Education Specialist

Stephanie Martinez,

Community Education Specialist

Amanda Punzalan,

Community Education Specialist

Rosalinda Ruiz,

Community Education Specialist

Jaci Westbrook, Nutrition

Program Manager

4-H Youth Development Program

JoAnn Ratto,

4-H Program Representative

Administrative & Agricultural Assistants Staff

Yolanda Cruz, Administrative
Secretary (4-H)

Kim Delucchi, Office Manager,
Confidential Assistant IV

Daniel Green, Agricultural Asst II

Marie Harter, Admin. Secretary

James Morrow, Admin. Clerk II

STANISLAUS COUNTY WEIGHTS & MEASURES

then
& NOW



1950's



2017