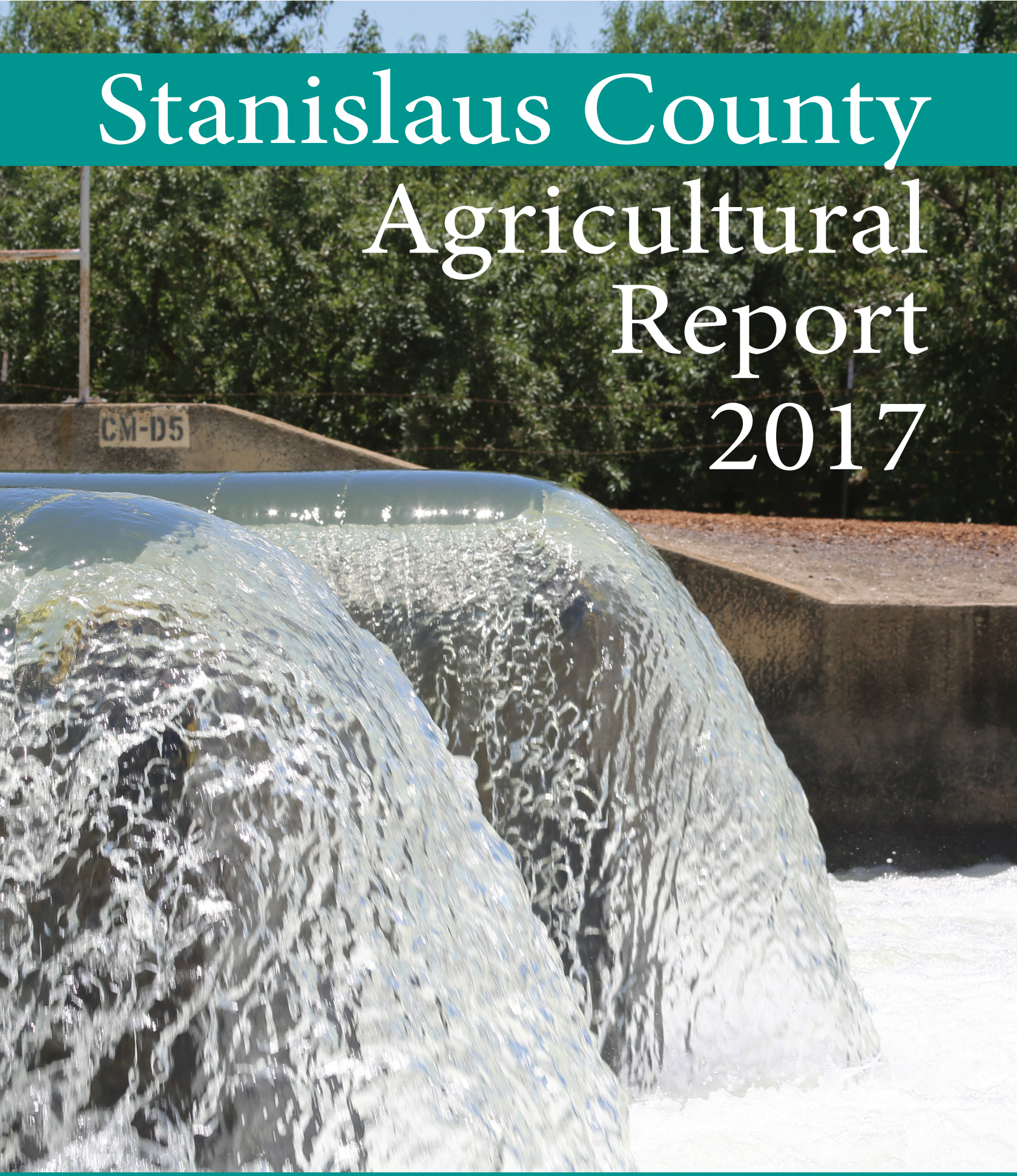
Stanislaus County Agricultural Report 2017



— It Begins with Water —

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STANISLAUS COUNTY AGRICULTURAL COMMISSIONER

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California Department of Food and Agriculture *and*

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Milton O'Haire
Agricultural Commissioner/
Sealer of Weights & Measures

In accordance with Section 2279 of the California Food and Agricultural Code, we are pleased to submit Stanislaus County's Agricultural Report for 2017. 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 increased by 12% to $3,648,192,000. This represents an increase of $386,781,000 from the 2016 report of $3,261,411,000. Almonds, organic commodities, nursery, milk, walnuts and vegetables all experienced significant increases in total value. Almonds posted the largest increase at $125 million with more harvested acres and higher yields, followed by organic products at $99 million which is attributed to higher prices and more organic producers in the county. Substantial decreases in the value of peaches and chickens were noted. Harvested acres increased by more than 18,000 as plantings continued to rebound from the drought that ended in 2015.

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 that compiled, designed and edited this report.

Respectfully submitted,

Milton O'Haire
Agricultural Commissioner/
Sealer of Weights & Measures
Stanislaus County

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"Our Economy is Based on Water as Much as it is Based on Agriculture"

It Begins with Water

Milton O'Haire
Agricultural Commissioner

It could be said that of the three major natural resources required to farm, water is the most important. A crop, although it might be limited, can be produced in poor soils and unfavorable weather conditions, but ***nothing will be grown without water.***

In the mid-1800's, the early settlers in the San Joaquin Valley were blessed with fertile soil and weather conducive for dryland farming and raising cattle. Having to rely on winter seasonal rainfall left much of the valley parched during the best growing months of the year. These were the conditions until farmers joined forces with urban residents to approve irrigation districts, harnessing the waters that flowed from the Sierra Nevada Mountains, turning the valley into the agricultural oasis we know today.

A quote attributed to Mark Twain after he visited California is, "Out there they use whiskey for drinking and they save the water for fighting." This quote could have easily applied to the formation of the irrigation districts in the Central Valley. Chief among those districts are the Turlock Irrigation District (TID) which is the first and oldest public irrigation district in the state having been formed on June 6th of 1887. Modesto Irrigation District (MID) formed a month later. There are now more than ten (10) irrigation and water districts in the county. The founding of the irrigation districts began with legal fights that were ultimately settled at the Supreme Court of the United States. The irrigation proponents knew their vision of a greener valley with a robust and diverse agricultural economy would not come about without great personal and material cost, but they believed it was worth their fight.

The development of the irrigation systems has transformed the landscape from large acreage wheat farms into a strong agricultural based economy producing hundreds of different crops. The agricultural industry, directly supports over 35% of the jobs in the county. ***In a sense, our economy is based on water as much as it is based on agriculture.*** Any major reduction in water supplies will have a ripple effect throughout our economy, negatively affecting agricultural and non-agricultural industries and every resident.

Today, California agriculture feeds the nation and the world and it would not be possible without the vision of the early irrigationist that fought to bring water to the best agricultural regions in the state. The San Joaquin Valley is a prime example of that vision.

Over the past 130 years, locally controlled irrigation and water districts have proven they are more than capable of managing our water supplies through times of drought and abundant rain. They have balanced the water demands of agriculture and urban residents, the necessity for safe drinking water, water for fish and the environment, and the need to replenish groundwater supplies. They continue to meet these demands in partnership with growers and residents utilizing numerous environmental studies and implementing water delivery methods to preserve water resources and lessen impacts to the environment.

The irrigation district founders determined that bringing water to a thirsty valley was worth the fight for them and for the generations that would follow. Without this continued commitment, parts of the valley are destined to return to something resembling the parched grasslands that preceded the formation of the irrigation districts. It took the farmer and the city resident joining forces to establish the irrigation districts that would green the valley and build an economy for all. The question for us now is, are we willing to continue that fight to keep this valley green?

TOP 10 COMMODITIES

	CATEGORY	2017 VALUE	2016 VALUE
1	Almonds, All	$1,056,184,000	$930,825,000
2	Milk, All	$663,650,000	$611,894,000
3	Chickens, All	$254,695,000	$295,132,000
4	Cattle & Calves, All	$232,962,000	$246,258,000
5	Nursery Fruit & Nut Trees & Vines	$226,748,000	$162,685,000
6	Walnuts	$163,644,000	$134,505,000
7	Silage, All	$134,103,000	$117,531,000
8	Turkeys, All	$84,096,000	$69,910,000
9	Pollination, Almond	$67,683,000	$65,383,000
10	Peaches, All	$52,198,000	$68,111,000
	TOTAL TOP 10	$2,935,963,000	$2,702,234,000
	All Other Commodities	$712,229,000	$559,177,000
	TOTAL ALL COMMODITIES	$3,648,192,000	$3,261,411,000

"WATER IS THE DRIVING FORCE OF ALL NATURE"

~ Leonardo da Vinci

SUMMARY

Category	Year	Harvested Acres	Total Value
Apiary Products	2017		$80,706,000
	2016		$76,768,000
Field Crops	2017	681,366	$207,574,000
	2016	674,310	$185,744,000
Fruit and Nut Crops	2017	250,757	$1,392,747,000
	2016	244,747	$1,248,457,000
Livestock and Poultry	2017		$582,477,000
	2016		$622,473,000
Livestock and Poultry Products	2017		$715,117,000
	2016		$649,556,000
Nursery Products	2017	2,884	$271,049,000
	2016	2,677	$204,797,000
Organic Products	2017	8,577	$199,409,000
	2016	8,507	$99,696,000
Other Agriculture	2017	779	$19,793,000
	2016	551	$17,738,000
Vegetable Crops	2017	28,630	$179,320,000
	2016	24,027	$156,182,000
Total	**2017**	**972,993**	**$3,648,192,000**
	2016	**954,819**	**$3,261,411,000**

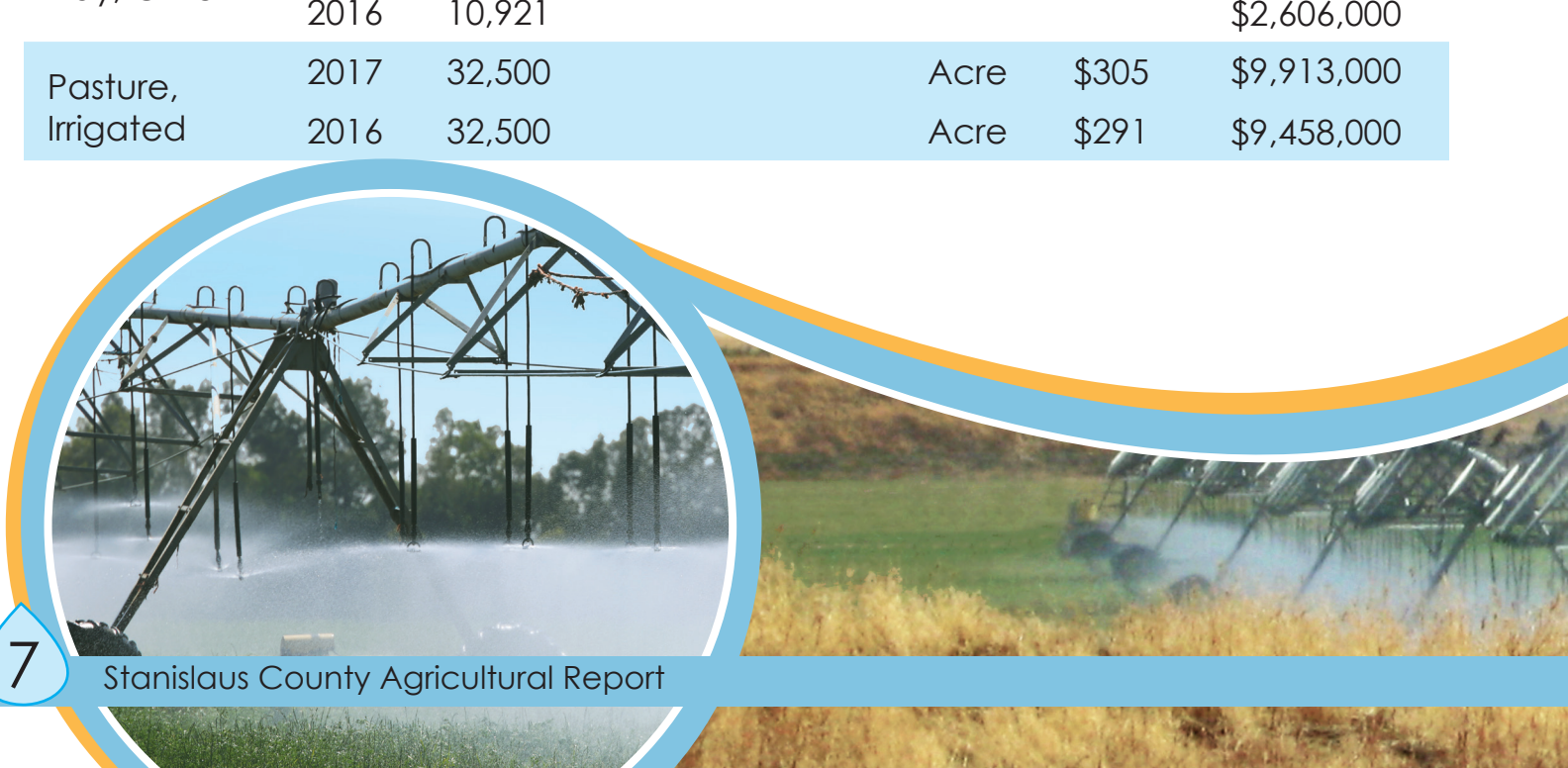
APIARY PRODUCTS

Category	Year	Total	Unit	Per Unit	Total Value
Beeswax [1]	2017	577,896	LB	$3.50	$2,023,000
	2016	559,400	LB	$3.37	$1,885,000
Honey [1]	2017	4,956,973	LB	$2.08	$10,311,000
	2016	4,798,400	LB	$1.85	$8,877,000
Pollination, Almond	2017	375,244	Colony	$180.37	$67,683,000
	2016	363,240	Colony	$180.00	$65,383,000
Pollination, Misc. [2]	2017				$689,000
	2016				$623,000
Total	**2017**				**$80,706,000**
	2016				**$76,768,000**

1 Honey and Beeswax are based on resident colonies plus the value of the colonies during almond pollination season
2 Pollination, Misc. includes: Apple, Blueberry, Cherry, Cucumber, Melons, Onion, Pumpkin, Queen & Bulk Bees, Squash

FIELD CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Beans, Dried All	2017	9,664					$13,011,000
	2016	11,018					$17,529,000
Black-Eyed	2017	1,007	1.19	1,200	Ton	$925	$1,110,000
	2016	1,313	1.27	1,670	Ton	$905	$1,511,000
Baby Limas	2017	625	1.05	656	Ton	$810	$531,000
	2016	508	1.45	737	Ton	$820	$604,000
Large Limas	2017	7,841	1.07	8,400	Ton	$1,295	$10,878,000
	2016	8,908	1.15	10,200	Ton	$1,450	$14,790,000
Beans, Dried Other	2017	191	1.30	248	Ton	$800	$198,000
	2016	289	1.10	318	Ton	$840	$267,000
Bean Straw	2017			8,400	Ton	$35	$294,000
	2016			10,200	Ton	$35	$357,000
Hay, Alfalfa	2017	21,351	6.44	138,000	Ton	$186	$25,668,000
	2016	22,968	7.08	163,000	Ton	$148	$24,124,000
Hay, Oat	2017	10,313	3.16	32,600	Ton	$111	$3,619,000
	2016	11,431	3.18	36,400	Ton	$100	$3,640,000
Hay, Other [1]	2017	10,974					$5,310,000
	2016	10,921					$2,606,000
Pasture, Irrigated	2017	32,500			Acre	$305	$9,913,000
	2016	32,500			Acre	$291	$9,458,000



FIELD CROPS (cont.)

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Rangeland	2017	421,949			Acre	$29	$12,237,000
	2016	421,949			Acre	$21	$8,861,000
Silage, All	2017	171,512					$134,103,000
	2016	161,401					$117,531,000
Corn	2017	92,472	25.82	2,388,000	Ton	$41	$97,908,000
	2016	91,247	26.63	2,430,000	Ton	$39	$94,770,000
Other [2]	2017	70,940					$32,865,000
	2016	61,216					$19,797,000
Sudan	2017	8,100	13.65	111,000	Ton	$30	$3,330,000
	2016	8,938	12.76	114,000	Ton	$26	$2,964,000
Misc. [3]	2017	3,103					$3,713,000
	2016	2,122					$1,995,000
Total	**2017**	**681,366**					**$207,574,000**
	2016	**674,310**					**$185,744,000**

1 Hay Other includes: Clover, Grass, Sudan, Wheat and Winter Forage
2 Silage, Other includes: Alfalfa, Barley, Broccoli Stalks, Grass, Oats, Ryegrass, Sorghum, Triticale, Vetch, Wheat, and Winter Forage
3 Miscellaneous includes: Barley, Corn Grain, Corn Human Consumption, Oat Grain, Rice, Safflower, Wheat Grain, and Wheat Straw

FRUIT & NUT CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Almonds, All	2017	188,000					$1,056,184,000
	2016	182,000					$930,825,000
Almond Meats	2017	188,000	1.13	212,000	Ton	$4,848	$1,027,776,000
	2016	182,000	1.04	189,000	Ton	$4,800	$907,200,000
Almond Hulls	2017			424,000	Ton	$65	$27,560,000
	2016			378,000	Ton	$60	$22,680,000
Almond Shells	2017			212,000	Ton	$4	$848,000
	2016			189,000	Ton	$5	$945,000
Apricots	2017	3,853	8.20	31,600	Ton	$649	$20,508,000
	2016	3,733	9.76	36,400	Ton	$658	$23,951,000
Cherries	2017	3,067	2.52	7,700	Ton	$3,493	$26,896,000
	2016	2,605	1.92	5,000	Ton	$3,420	$17,100,000
Citrus [1]	2017	514					$5,344,000
	2016	497					$4,966,000
Grapes, All	2017	9,811					$42,722,000
	2016	10,427					$50,180,000
Red	2017	5,995	10.57	63,000	Ton	$477	$30,051,000
	2016	6,755	10.06	68,000	Ton	$550	$37,400,000
White	2017	3,816	7.71	29,400	Ton	$431	$12,671,000
	2016	3,672	8.16	30,000	Ton	$426	$12,780,000

FRUIT & NUT CROPS (cont.)

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Peaches, All	2017	5,629					$52,198,000
	2016	5,456					$68,111,000
Cling	2017	4,949	17.07	84,000	Ton	$456	$38,304,000
	2016	4,978	24.28	121,000	Ton	$491	$59,411,000
Freestone	2017	680	12.20	8,300	Ton	$1,674	$13,894,000
	2016	478	12.21	5,800	Ton	$1,500	$8,700,000
Walnuts	2017	36,618	1.86	68,100	Ton	$2,403	$163,644,000
	2016	36,568	1.91	69,800	Ton	$1,927	$134,505,000
Misc.[2]	2017	3,265					$25,251,000
	2016	3,461					$18,819,000
Total	**2017**	**250,757**					**$1,392,747,000**
	2016	**244,747**					**$1,248,457,000**

1 Citrus includes: Grapefruit, Lemons, Oranges, Pomelos, and Tangerines
2 Miscellaneous Includes: Apples, Avocados, Berries (Blackberries, Boysenberries, Blueberries, Raspberries, and Strawberries), Chestnuts, Figs, Kiwi, Nectarines, Olives, Pears, Pecans, Persimmons, Pistachios, Plums, Pluots, Pomegranates, Prunes, Quince, and Table Grapes

LIVESTOCK & POULTRY

Category	Year	Number of Head	Total Value
Cattle & Calves, All	2017	320,460	$232,962,000
	2016	322,485	$246,258,000
Beef Feeders [1]	2017	132,440	$37,847,000
	2016	129,060	$34,927,000
Beef Slaughter [2]	2017	45,920	$12,864,000
	2016	48,125	$17,344,000
Dairy Slaughter [3]	2017	70,700	$61,584,000
	2016	75,300	$61,407,000
Dairy Replacement	2017	71,400	$120,667,000
	2016	70,000	$132,580,000
Goats [4]	2017	19,908	$2,972,000
	2016	19,008	$2,325,000
Sheep & Lambs [5]	2017	3,791	$661,000
	2016	3,822	$853,000
Hogs & Pigs	2017	22,992	$3,076,000
	2016	20,540	$4,108,000

LIVESTOCK & POULTRY (cont.)

Category	Year	Number of Head	Total Value
Chickens, All [6]	2017	156,946,000	$254,695,000
	2016	182,418,000	$295,132,000
Turkeys, All [7]	2017	8,550,000	$84,096,000
	2016	5,159,000	$69,910,000
Squab	2017	565,493	$3,008,000
	2016	539,683	$2,839,000
Game Birds [8]	2017	75,160	$1,007,000
	2016	225,281	$1,048,000
Total	**2017**		**$582,477,000**
	2016		**$622,473,000**

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
7 Turkeys, All includes: Turkeys, Poults
8 Game Birds includes: Chukar, Duck, Geese, Peacock, Pheasant, Partridge, Quail

LIVESTOCK & POULTRY PRODUCTS

Category	Year	Total	Unit	Per Unit	Total Value
Milk, All	2017	39,395,000	CWT		$663,650,000
	2016	39,990,000	CWT		$611,894,000
Market	2017	36,848,000	CWT	$16.72	$616,099,000
	2016	37,440,000	CWT	$15.14	$566,842,000
Manufacturing	2017	2,469,000	CWT	$18.21	$44,960,000
	2016	2,443,000	CWT	$16.79	$41,018,000
Milk, Goat	2017	78,000	CWT	$33.22	$2,591,000
	2016	107,000	CWT	$37.70	$4,034,000
Eggs, Chicken Market	2017	29,936,000	DOZ	$1.45	$43,407,000
	2016	24,030,000	DOZ	$1.25	$30,037,000
Eggs, Other [1]	2017				$4,373,000
	2016				$3,946,000
Wool [2]	2017	31,034	LB	$1.65	$51,200
	2016	31,300	LB	$1.75	$54,800
Manure [3]	2017	479,000	Ton	$7.59	$3,636,000
	2016	514,000	Ton	$7.05	$3,624,000
Total	**2017**				**$715,117,000**
	2016				**$649,556,000**

CWT = hundred weight

1 Eggs, Other includes: Turkey Hatching, Quail and Duck Eggs
2 Wool includes: Alpaca Fiber and Sheep Wool
3 Manure includes: Cow, Chicken and Turkey

NURSERY PRODUCTS

Category	Year	Field Acres	Quantity Sold	Total Value
Fruit & Nut Trees and Vines	2017	853	29,000,000	$226,748,000
	2016	780	27,388,000	$162,685,000
Ornamental Trees & Shrubs	2017	497	2,428,000	$28,321,000
	2016	516	2,509,000	$27,699,000
Miscellaneous [1]	2017	1,534		$15,980,000
	2016	1,381		$14,413,000
Total	**2017**	**2,884**		**$271,049,000**
	2016	**2,677**		**$204,797,000**

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

ORGANIC PRODUCTS

Category	Year	Harvested Acres	Total Value
All Organic Products	2017	8,577	$199,409,000
	2016	8,507	$99,696,000

OTHER AGRICULTURE

Category	Year	Total	Unit	Per Unit	Total Value
Firewood	2017	70,400	Cord	$235	$16,544,000
	2016	68,000	Cord	$225	$15,300,000
All Other Agriculture [1]	2017				$2,332,000
	2016				$1,738,000
Seed Crops [2]	2017	779	Acres		$917,000
	2016	551	Acres		$700,000
Total	**2017**				**$19,793,000**
	2016				**$17,738,000**

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

2 Seed Crops includes: Black-eyed Bean, Chickpea, Lima Bean, Oat, Onion, Rice, Squash, Tomato, Vegetable

VEGETABLE CROPS

Category	Year	Harvested Acres	Per Acre	Total	Unit	Per Unit	Total Value
Beans, Succulent	2017	1,882	1.10	2,070	Ton	$810	$1,677,000
	2016	2,033	1.25	2,540	Ton	$870	$2,210,000
Melons, All [1]	2017	2,931					$32,303,000
	2016	3,240					$32,026,000
Pumpkins	2017	377	17.00	6,400	Ton	$529	$3,386,000
	2016	239	16.62	3,970	Ton	$495	$1,965,000
Sweet Potatoes	2017	2,123	16.00	33,970	Ton	$660	$22,420,000
	2016	1,643	18.40	30,230	Ton	$925	$27,963,000
Tomatoes, All [2]	2017	10,377					$47,925,000
	2016	10,718					$47,541,000
Miscellaneous [3]	2017	10,940					$71,609,000
	2016	6,154					$44,477,000
Total	**2017**	**28,630**					**$179,320,000**
	2016	**24,027**					**$156,182,000**

1 Melons, All includes: Cantaloupe, Hami, Honeydew, Watermelon
2 Tomatoes, All includes: Fresh, Processing
3 Miscellaneous includes: Artichoke, Asparagus, Beet, Broccoli, Brussel Sprout, Cabbage, Carrot, Cauliflower, Chinese Greens, Cucumber, Daikon, Eggplant, Garlic, Herb-Spice, Kale, Kohlrabi, Lettuce-Head, Lettuce-Leaf, Mustard Greens, Okra,Onion-Dry, Onion-Green, Parsley, Pea, Peppers, Potato, Radish, Spinach, Squash All, Sweet Basil, Swiss Chard, Tomatillo, Turnip, Vegetable, Vegetable Leaf

Sorghum Silage - How Can We Best Utilize Sorghum in California Dairy Rations

Jennifer Heguy, Dairy Farm Advisor, UC Cooperative Extension, Stanislaus County

Stanislaus County ranks 4th in California milk production, accounting for ~10% of the state's milk. Forages are essential in dairy cow rations to ensure full rumen function and efficient utilization of ingested nutrients to support milk production. California dairy farmers have emphasized homegrown, high quality forages (e.g. hays and silages) to offset increases in commodity prices and enhance the economic security of their feed supply. This is particularly important for California dairy farms because the major operating cost is feed.

Water availability, and its uncertainty, may hinder our ability to produce the high-quality forage needed for California dairy cows. University of California Agriculture and Natural Resources has funded a project to determine sorghum's potential in California feeding systems. Unlike corn, sorghum is better adapted to drought/water stress conditions. The overall goal is to determine the value of sorghum as silage with regards to efficiency of irrigation water use, as well as quantity and nutritional quality of the silage produced.

What we've seen so far:
Advantages of sorghum for silage include decreased seed costs, decreased fertilizer needs, and potential for water savings. Unfortunately, the quality of sorghum we've sampled thus far has varied greatly.

- Sugarcane aphid more than likely impacted sorghum quality in 2016, which was the first year the pest was detected in California. Talk with your crop consultant and be on the lookout for this invasive pest.

- Plan before harvest. What animals will receive sorghum silage and what is the optimal chop length, stage of harvest, etc.? Particle separator results indicate very coarsely chopped, long particles that may be sorted in total mixed rations.

- Sorghum is not corn; our samples showed lower levels of starch and non-fibrous carbohydrates (NFC), with higher fiber content than typical corn silages. Talk with your nutritionist to best determine how to incorporate sorghum into your feeding system.

Still in the beginning phases of the work, we are analyzing the data to determine the most promising sorghum type and management system to conduct a commercial feeding study. The end goal is to determine maximum inclusion rates of sorghum silage into dairy rations, without compromising animal performance and health.

For project updates and more information, please visit:

http://cestanislaus.ucanr.edu/Agriculture/Dairy_Science/

Invasive Grasses on Rangelands

Theresa Becchetti, Livestock and Natural Resource Advisor, UC Cooperative Extension, Stanislaus County

Ranchers depend on a forage crop every winter to feed their cattle. However, we have had invasive grasses expand over the years, diminishing the grazing capacity. Late maturing, Medusahead and Barbed Goatgrass will still be green when cattle are shipped, giving the appearance that there is plenty of forage left for the fall. But look closer, that green grass is not what you want to see since they are not palatable to livestock. For these weeds, our seasonal grazing has allowed them to expand almost unchecked. Our most recent research has demonstrated the impact of Medusahead on the ranch bottom line. For every 10% reduction in Medusahead, there is an average increase of $40 per acre potential (range from $9 to $71) increase in revenue. This is not in individual animal gains, but the ability to increase the number of cattle that can be grazed per acre. Some of the practices to reduce Medusahead may cost upwards of $40 per acre in the first year and should remain effective for a few years, providing for a financial incentive to control Medusahead.

While Medusahead is fairly widely established and has been for many years (photo documentation from the early 1980's shows high levels of Medusahead), Barbed Goatgrass is still very limited in Stanislaus County and landowners should monitor their ranches for it.

BARBED GOATGRASS CLOSEUP

MEDUSAHEAD PATCH

Below is a table with management options we have found to be successful. There is no long-term, silver bullet, since the grasses tend to re-invade an area when surrounding areas are not controlled.

CONTROL	TIMING	SPECIAL CONSIDERATIONS
Grazing	Mid April – early May; prior to seed development in invasives	Create high stock density so livestock eat invasive grasses
Burning	Late spring - annual grasses are dry, invasives are green	Air Board restrictions; forage following fire
Fertilization	February; 30 - 60 lbs N/acre	Best in drought years. More forage and increases palatability of invasives
Mowing	Mid April - early May; prior to seed development in invasive grasses	If too many rocks, sparks may cause fire from mowing
Glyphosate	Late March before invasive grass seeds developed but after desirable grass seeds developed	Timing critical to not kill desirable forage
Aminopyralid	Fall	High rates (7-15 oz/acre) are needed
Aminopyralid	Spring	Sterilizes seed at low rates (3 oz/acre)

Barbed Goatgrass has recently started to increase on our rangelands, but with the similarities between the two grasses, we are confident the same strategies will work for both. For more information please visit http://ucanr.edu/sites/StanLivestock2017/Rangeland_Plants/Invasive_Plants/

PEST DETECTION EMERGENCY PROJECTS 2017

To protect the agricultural and horticultural industries in Stanislaus County, 6,290 traps were placed to monitor for specific invasive 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.

About 70% of traps are in residential yards, 20% in nurseries, and 10% in vineyards and orchards.

Trapping allows for early detection of invasive and destructive pests that would be detrimental to our economy, the environment, and public health.

Target pests are shown with corresponding trap

Red Imported Fire Ant

Properties Trapped: 15
Crops Affected: Infests agricultural and residential settings, as well as natural habitats - dangerous to children, pets, the elderly, and wildlife

European Corn Borer

Traps Deployed: 8
Crops Affected: Corn, green bean, oat, potato, and rhubarb

European Grapevine Moth

Traps Deployed: 432
Crops Affected: Grapes and spurge laurel

Mexican Fruit Fly

Traps Deployed: 221
Crops Affected: Apple, apricot, citrus, pear, plum, peach, nectarine, and pomegranate

Vine Mealybug

Traps Deployed: 41
Crops Affected: Grapes

Agricultural Commissioner

Pest Detection Program

Japanese Beetle

Traps Deployed: 204
Crops Affected:
Roses and turf

Gypsy Moth

Traps Deployed: 204
Crops Affected:
Most trees

Asian Citrus Psyllid

Traps deployed: 1,720
Crops Affected: Citrus
(vector for Huanglongbing Disease)

Glassy-Winged Sharpshooter

Traps Deployed: 1,876
Crops Affected: Almond, citrus, grape and peach
(vector for Pierce's Disease in grapes)

Apple Maggot

Traps Deployed: 39
Crops Affected:
Pome & stone fruit

Light Brown Apple Moth

Traps Deployed: 437
Crops Affected: Alfalfa, almond, apple, berries, broccoli, citrus, corn, grapes, stone fruit, and tomato

Oriental Fruit Fly

Traps Deployed: 436
Crops Affected: Apple, citrus, cucumber, fig, grape, pear, pomegranate, stone fruit, tomato, and walnut

Melon Fruit Fly

Traps Deployed: 221
Crops Affected: Apple, bean, cantaloupe, cucumber, grape, orange, peach, pear, tomato, and watermelon

Mediterranean Fruit Fly

Traps Deployed: 436
Crops Affected: Almond, apricot, apple, citrus, fig, grape, nectarine, olive, peach, pear, plum, pomegranate, tomato, and walnut

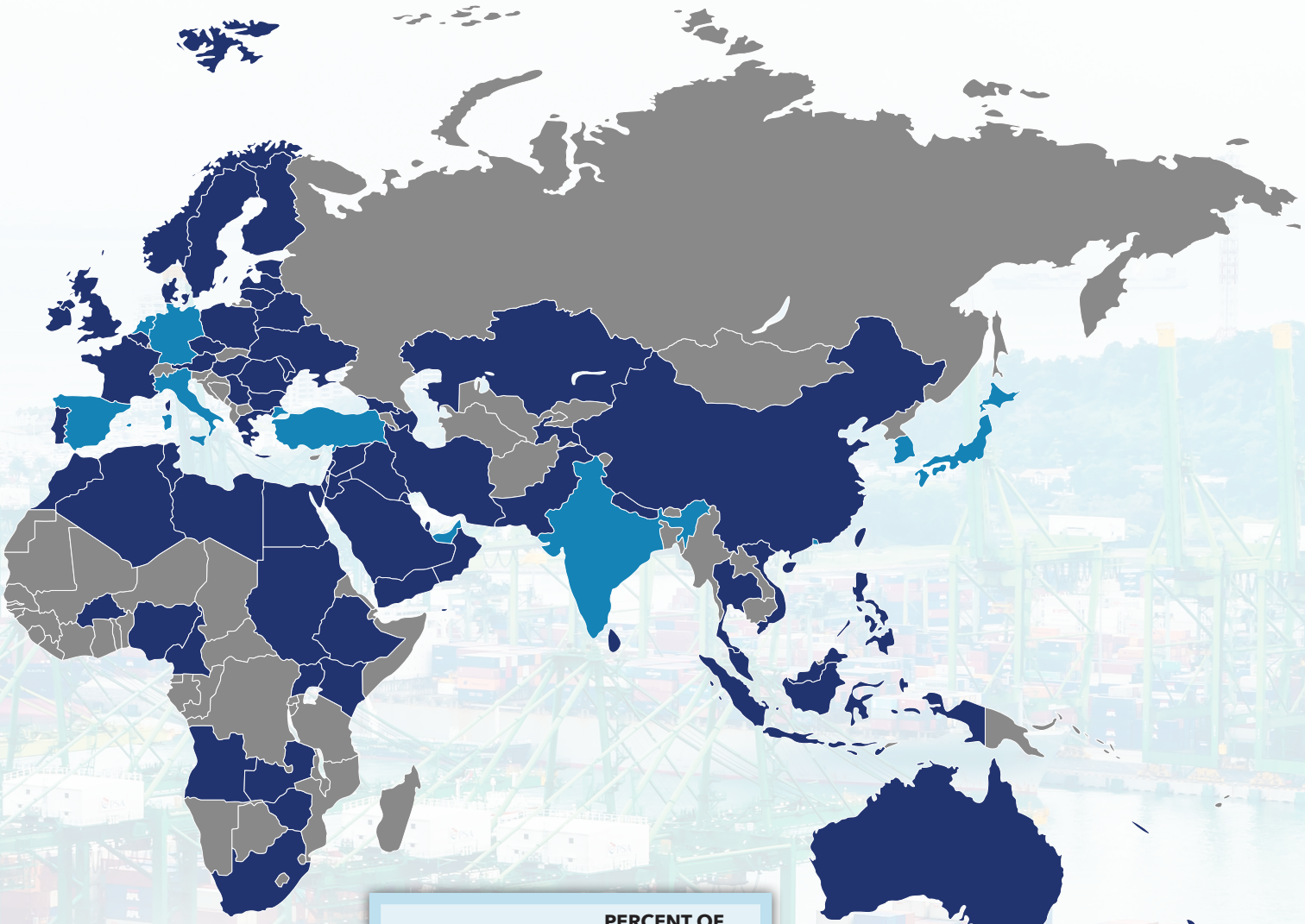
2017 EXPORT CERTIFICATES

Export Certificates are issued to certify that the commodity meets the plant cleanliness requirements of the importing country. Not all countries require export certificates.

Top 10 countries exported to in 2017

Other countries exported to in 2017

COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS
Japan	1012	Algeria	31	Bolivia	12	Croatia	6	France	122
Spain	919	Angola	1	Brazil	97	Czech Republic	3	French Polynesia	48
Hong Kong	752	Argentina	67	Bulgaria	21	Denmark	12	Georgia	1
Korea, Republic of	751	Australia	140	Burkina Faso	1	Dominican Rep.	16	Greece	29
Germany	536	Austria	15	Cameroon	1	Ecuador	15	Grenada	2
Turkey	473	Azerbaijan	3	Canada	19	Egypt	50	Guatemala	45
United Arab Emirates	443	Bahrain	18	Chile	98	El Salvador	6	Guyana	1
India	369	Barbados	4	China	263	Estonia	9	Honduras	17
Italy	336	Belarus	2	Colombia	30	Ethiopia	2	Hungary	2
Netherlands	270	Belgium	61	Costa Rica	17	Finland	1	Indonesia	87
								Iran, Islamic Rep.	25



Total Certificates Issued in 2017

9,895

to 106 Countries

COMMODITY	PERCENT OF CERTS ISSUED
ALMONDS	62%
WALNUTS	22%
SEEDS	12%
BEANS	1%
OTHER	3%

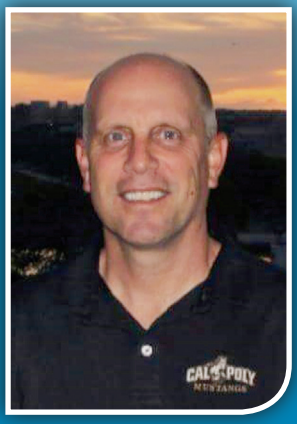
COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS	COUNTRY	CERTS
Iraq	27	Lithuania	27	Norway	38	Serbia	5	Thailand	167
Ireland	4	Macedonia	2	Oman	4	Singapore	81	Trinidad & Tobago	8
Israel	135	Malaysia	83	Pakistan	53	South Africa	58	Tunisia	7
Jamaica	14	Mexico	228	Panama	6	Sri Lanka	4	Uganda	1
Jordan	187	Moldova	1	Peru	89	Sudan	15	Ukraine	12
Kazakhstan	31	Morocco	39	Philippines	41	Suriname	1	United Kingdom	254
Kenya	6	Nepal	1	Poland	14	Sweden	35	Uruguay	7
Kuwait	39	New Caledonia	4	Portugal	22	Switzerland	82	Vietnam	220
Latvia	18	New Zealand	47	Qatar	24	Syrian Arab Rep.	9	Yemen	24
Lebanon	143	Nicaragua	7	Romania	3	Taiwan	182	Zambia	2
Libya	8	Nigeria	1	Saudi Arabia	108	Tajikistan	2	Zimbabwe	4

NATIONAL AG SCIENCE CENTER HALL OF FAME
2017 RECIPIENT - MODESTO JUNIOR COLLEGE

Adapted from the National Ag Science Center Press Release

For nearly 100 years, the Modesto Junior College Agriculture Department has prepared students for future careers. MJC Agriculture is one of the most exemplary and comprehensive community college agriculture programs in the nation offering 16 Associate of Science Degrees and 13 Technician Certificates. The department utilizes modern technology and practical hands-on approaches to student learning with industry collaboration.

The Modesto Junior College Agriculture and Environmental Sciences Department offers a unique blend of modern instruction offered by a diverse, talented and dedicated staff. It is the vision of the MJC Agriculture Department to continue to provide the most outstanding agricultural education experience for the existing and future leaders of this dynamic and rich agricultural industry.



2017 RECIPIENT: VITO CHIESA

STANISLAUS COUNTY FARM BUREAU DISTINGUISHED SERVICE AWARD

"Keep moving forward" are the guiding words that Vito learned from his father, Aroldo, at a young age. Vito's management skills began by assisting with the operation of the 350 acre family almond, walnut and peach ranch and walnut processing facility. A lifelong resident of Hughson, he attended Modesto Jr. College and Cal Poly, San Luis Obispo.

Vito has served locally as well as statewide in numerous leadership positions including President of the Stanislaus County Farm Bureau, 2017 Stanislaus County Fair Board, Director for the Modesto Chamber of Commerce, State Director for the California Farm Bureau and President of the California State Association of Counties.

Vito's adeptness in building consensus between differing parties by listening to all viewpoints has given him the reputation of a compassionate, dedicated and hard-working leader within the community. Most recently, as Stanislaus County Supervisor of District 2, Vito has been active in his role as public servant on issues ranging from agriculture, wildlife and water, to transportation and roadways, social services, and public safety, among others. Vito's commitment to civic service has proven a tremendous asset to the greater community, and especially those within agriculture.

CONNECTING WITH INDUSTRY

Bill Donahue, Ph.D

Senior Entomologist & Laboratory Director, Sierra Research Laboratories, Inc.

What is Integrated Pest Management (IPM)?
IPM is a process; methods that you can pick and choose to control various pests (weeds, insects, rodents, for example). IPM is ecology in action. It's applying the science to the boots on the ground pest management.

What challenges does IPM face?
Pests are very susceptible, initially, to new insecticides. But you don't ever control 100% in a field population. That remaining percentage becomes trouble. Insecticide resistance is a recurring theme, along with behavioral resistance. Robert van den Bosch from U.C. Berkeley called it the insecticide treadmill. We keep trying to come up with the silver bullet and the insects win every single time.

I understand farmers' complaints about regulations because they just want to get out and farm. I say the same thing about laboratory regulations-I just want to do research! Regulations are aimed at rogue operators that don't want to do it right, so everybody pays the price with increased regulation.

What is the future of IPM?
We've got to change our thinking about pest management. The farmers' livelihood is out there in the field. They don't want to vary too far from what's working. But if it's not working, I think people are more interested in looking at alternatives, so an IPM strategy becomes more appealing.

We're working on integrated pest management or resistance management strategies by understanding pest biology and ecology in relation to agricultural practices. For example, we're using insect growth regulators to control larval populations to break the reproductive potential of a pest population before they become adults. We're targeting applications and relying on pest trapping and using that data to see long term trends. We're really looking at a holistic approach to managing insects.

Rebecca Anderson

GLOBALG.A.P. Food Safety Technical Expert

How are food safety procedures implemented?
Pre-harvest, harvest and post-harvest sanitation are integral to food safety. This includes on-farm water microbial quality, timing of compost applications, sanitation of equipment between fields or commodities, cleanliness of gloves, cloths or brushes during harvest, and preventing infiltration of contaminated moisture to product in coolers. In the field, restrooms and handwashing stations encourage better hygienic practices.

What trends are on the horizon?
We often don't give enough credit to producers for how innovative and adaptable they are to change. Food safety will be a foundational tenet-not in addition to quality. It becomes an expectation.

Food Safety Modernization Act (FSMA) is being implemented, although private industry standards are already above and beyond what FSMA requires. FSMA contains common sense requirements (like handwashing). Training and record keeping will be the most significant challenge because of the time required to analyze and develop safer processes.

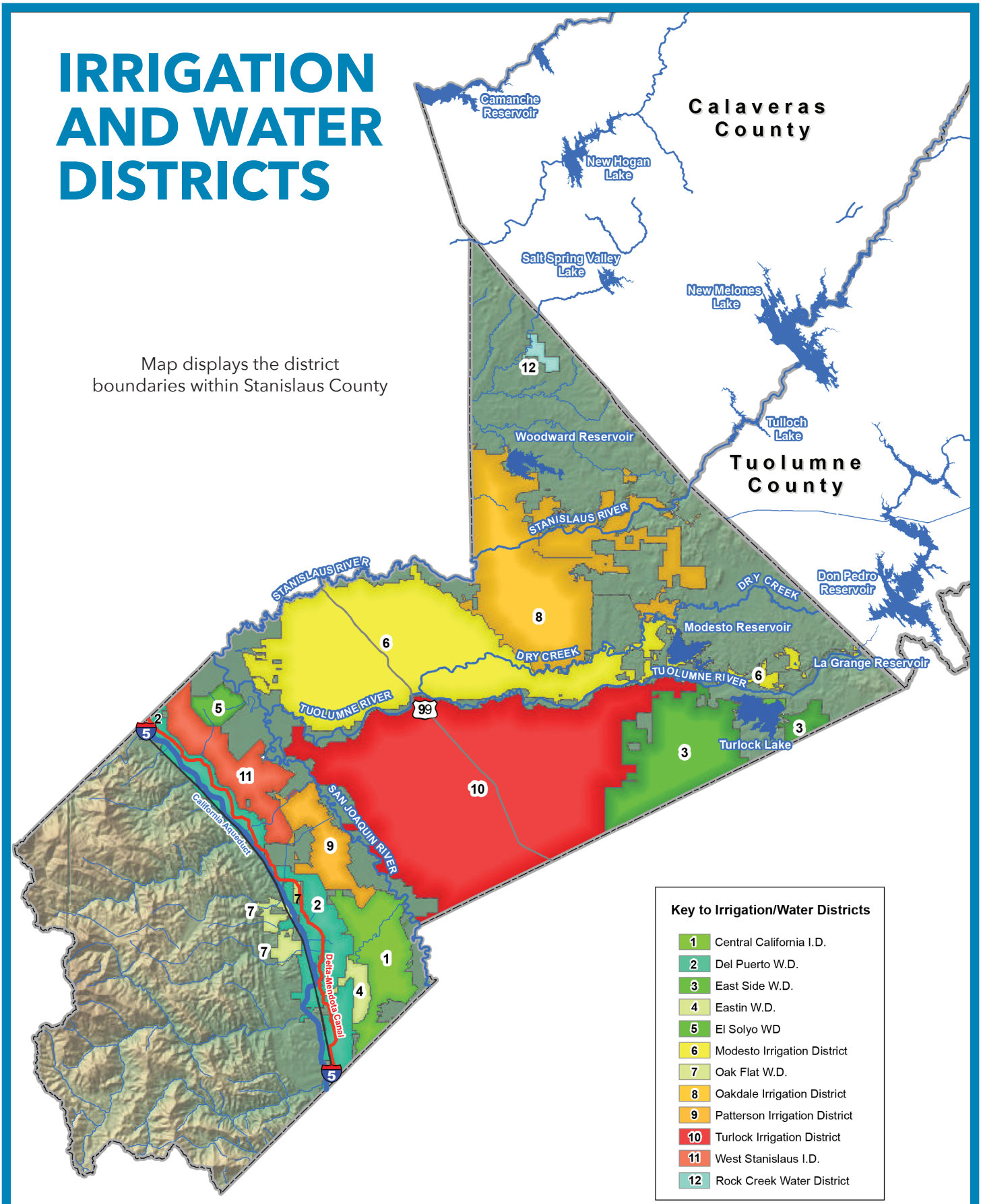
Companies are developing specific food safety training for farm labor contractors. Those certifications are becoming selling points for workers-who are usually involved in the risk-assessments. This makes the assessment stronger in real-life scenarios.

Food safety experts take assessments and prioritize risk-based approaches. This prevents illness in elevated risk products or processes, and products distributed over a large geographic area. Laboratory testing is not yet preventative. The lab infrastructure is not large enough to handle the potential workload.

Blockchain could standardize reporting of the movement of product, potentially in real-time. It's reliant on consistent and timely reporting, but could be an approach to increasing consumer demand for transparency and traceability–which is not required in FSMA.

IRRIGATION AND WATER DISTRICTS

Map displays the district boundaries within Stanislaus County



Key to Irrigation/Water Districts

1	Central California I.D.
2	Del Puerto W.D.
3	East Side W.D.
4	Eastin W.D.
5	El Solyo WD
6	Modesto Irrigation District
7	Oak Flat W.D.
8	Oakdale Irrigation District
9	Patterson Irrigation District
10	Turlock Irrigation District
11	West Stanislaus I.D.
12	Rock Creek Water District

Source: NOAA National Centers for Environmental Information (NCEI)

STANISLAUS COUNTY WATER HISTORY

1887 Turlock & Modesto Irrigation Districts founded; TID first irrigation district in the state

1891 Construction of La Grange Dam (finished in 1893); highest dam in the country at the time

1900 TID is the first publicly owned canal system in the nation to deliver irrigation water

1909 Oakdale Irrigation District established

1910 Patterson water company established (1998 became Patterson Irrigation District)

1911 Modesto Reservoir completed

1912-13 Lowest rainfall season recorded at 4.30 inches

1913 Low rainfall inspires construction of Lake Davis; later known as Owens Lake and now Turlock Lake

1920 West Stanislaus Irrigation District established

1925 El Solyo Water District established

1947 Del Puerto Water District established

1950 Record flooding on the Tuolumne River measured at 59,000 cfs in Waterford

1955 Large floods on the Stanislaus River inspire construction of New Melones Dam in 1966 (completed in 1979)

1958 Record flooding recorded on Orestimba Creek at 10,200 cfs in Patterson-Newman area

1965-66 Rain reported every month

1971 New Don Pedro Reservoir completed

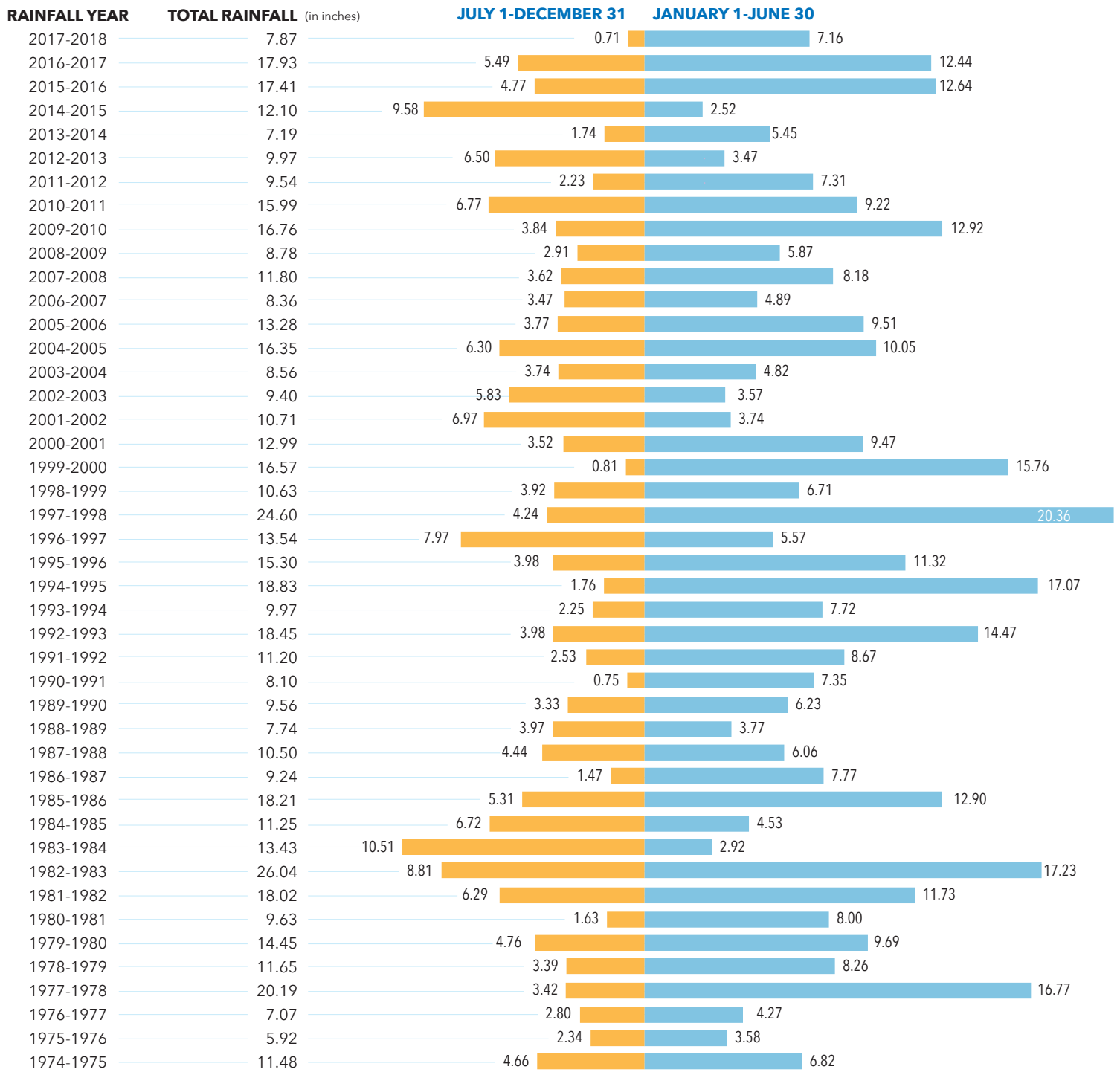
1978 Waterford Irrigation District merges with Modesto Irrigation District

1982-83 Highest Rainfall season, recorded at 26.01 inches

1997 Major flooding causes Don Pedro Reservoir spillway to be opened for the first time in history

2017 Don Pedro Reservoir spillway opens for the second time in history

50 YEARS OF RAINFALL



RAINFALL YEAR	TOTAL RAINFALL (in inches)	JULY 1-DECEMBER 31	JANUARY 1-JUNE 30
2017-2018	7.87	0.71	7.16
2016-2017	17.93	5.49	12.44
2015-2016	17.41	4.77	12.64
2014-2015	12.10	9.58	2.52
2013-2014	7.19	1.74	5.45
2012-2013	9.97	6.50	3.47
2011-2012	9.54	2.23	7.31
2010-2011	15.99	6.77	9.22
2009-2010	16.76	3.84	12.92
2008-2009	8.78	2.91	5.87
2007-2008	11.80	3.62	8.18
2006-2007	8.36	3.47	4.89
2005-2006	13.28	3.77	9.51
2004-2005	16.35	6.30	10.05
2003-2004	8.56	3.74	4.82
2002-2003	9.40	5.83	3.57
2001-2002	10.71	6.97	3.74
2000-2001	12.99	3.52	9.47
1999-2000	16.57	0.81	15.76
1998-1999	10.63	3.92	6.71
1997-1998	24.60	4.24	20.36
1996-1997	13.54	7.97	5.57
1995-1996	15.30	3.98	11.32
1994-1995	18.83	1.76	17.07
1993-1994	9.97	2.25	7.72
1992-1993	18.45	3.98	14.47
1991-1992	11.20	2.53	8.67
1990-1991	8.10	0.75	7.35
1989-1990	9.56	3.33	6.23
1988-1989	7.74	3.97	3.77
1987-1988	10.50	4.44	6.06
1986-1987	9.24	1.47	7.77
1985-1986	18.21	5.31	12.90
1984-1985	11.25	6.72	4.53
1983-1984	13.43	10.51	2.92
1982-1983	26.04	8.81	17.23
1981-1982	18.02	6.29	11.73
1980-1981	9.63	1.63	8.00
1979-1980	14.45	4.76	9.69
1978-1979	11.65	3.39	8.26
1977-1978	20.19	3.42	16.77
1976-1977	7.07	2.80	4.27
1975-1976	5.92	2.34	3.58
1974-1975	11.48	4.66	6.82
1973-1974	14.35	7.71	6.64
1972-1973	16.72	6.26	10.46
1971-1972	6.55	5.24	1.31
1970-1971	12.55	8.76	3.79
1969-1970	10.82	3.90	6.92
1968-1969	18.33	7.32	11.01

Source: Modesto Irrigation District

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

State	Income [1]
United States	**357,252,284,000**
California	46,041,467,000
Iowa	26,840,363,000
Nebraska	21,558,070,000
Texas	20,878,502,000
Minnesota	17,054,673,000
Illinois	16,258,840,000
Kansas	15,471,947,000
Wisconsin	10,767,618,000
North Carolina	10,576,290,000
Indiana	10,049,458,000
Washington	9,918,275,000
South Dakota	9,339,191,000
Missouri	8,914,581,000
Georgia	8,433,423,000
Ohio	8,348,246,000
Arkansas	8,214,004,000
North Dakota	8,177,694,000
Florida	7,745,136,000
Michigan	7,401,405,000
Idaho	7,127,397,000
Pennsylvania	6,406,362,000
Oklahoma	6,189,545,000
Colorado	6,168,553,000
Kentucky	5,440,918,000
Mississippi	5,206,292,000
New York	5,052,760,000
Alabama	4,953,354,000
Oregon	4,593,589,000
Arizona	4,155,758,000
Montana	3,673,102,000
Stanislaus County	**3,648,192,000**
Virginia	3,338,466,000
Tennessee	3,296,325,000
New Mexico	2,861,960,000
Louisiana	2,823,356,000
South Carolina	2,120,309,000
Maryland	2,102,778,000
Utah	1,657,941,000
Wyoming	1,392,407,000
Delaware	1,209,903,000
New Jersey	1,025,883,000
Vermont	785,934,000
West Virginia	690,610,000
Hawaii	648,559,000
Nevada	596,250,000
Maine	527,730,000
Connecticut	514,256,000
Massachusetts	386,879,000
New Hampshire	209,939,000
Rhode Island	72,080,000
Alaska	33,905,000

[1] USDA Economic Research Service 2016 info

STANISLAUS COUNTY AG 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 Production Rankings in the State

1ST	Apricots	Dry Beans
2ND	Honey Sweet Potatoes	Irrigated Pasture Turkeys
3RD	Almonds Peaches, All	Chickens Silage, All
4TH	Chicken Eggs Milk & Cream Sudan Hay	Grain Hay Nursery Products
5TH	Walnuts	

DAIRY FACTS

Five counties, including Stanislaus, represents 72% of the state's milk production. Stanislaus has 185 dairies, with an average of 932 cows per dairy.

Source: 2012 Census of Agriculture
Source: California Agricultural Statistics Review 2016-2017
Source: California Dairy Statistics Annual 2017 Data

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 & 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 & 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
Deana Guerrero
Richard Homer
Amy Lomeli
Melissa Lovett
Forrest Meares
Cari Miller
Sabrina Poth
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
Trina Lagier
Cheryl Horton
Michael Sise
Tania Thomas
Debbie Wohld

Seasonal Agricultural Assistants
Gay Allard-Johnson
Zach Baptista
Evelyn Barber
Sandra Blevins
Misael Canales-Salas
Susan Conyers
James Friedrich
George Gold
Becky Graham
Jose Hernandez
Nela Holsapple
Alexa Ladd
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
Kari Arnold, Area Orchards & Pomology
Theresa Becchetti, Livestock & Natural Resources
Marsha Campbell, Field & Annual Forage Crops, Dairy Manure Management (Emeritus)
Jennifer Heguy, Dairy
Ed Perry, Urban Horticulture (Emeritus)
Jhalendra Rijal, PhD, Integrated Pest Management
Zheng Wang, Vegetable Crops

Nutrition, Family & Consumer Sciences Programs
Dennis Carrasquilla, Community Education Specialist
Liz Carrillo, Community Education Specialist
Stephanie Martinez, Community Education Specialist
Miriam Sanchez, 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, Admin Secretary (4-H)
Kim Delucchi, Office Manager, Confidential Assistant IV
Daniel Green, Ag Assistant II
Tania Herrera, Student Ag Assistant
James Morrow, Admin Clerk II
Michael Rosenblum, Admin Secretary

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