SAN JOAQUIN
COUNTY
Greatness grows here.

2019

San Joaquin County Crop Report

Life of a Crop

Table of Contents

Agricultural Commissoner's Letter.....1

Board of Supervisors & Agricultural Commissioner's Staff.....2

Life of a Crop..... 3

Ten Leading Crops for 2019..... 4

Fruit and Nut Crops..... 5

Fruit and Nut Crops continued.....6

Vegetable Crops..... 7

Vegetable Crops continued.....8

Field Crops.....9

Apriary Products/Other Agriculture.....10

Nursery Products and Seed Crops.....11

Livestock and Poultry Production.....12

Trading Partners/Top Five Exports.....13

Top Ten Trading Partners.....14

Direct Marketing.....15

Organic Production.....16

Pest Exclusion.....17

Pest Detection..... 18

Integrated Pest Management.....19

Nutria.....20

Weights and Measures.....21

San Joaquin County Ag Facts & Our Partners.....22

SAN JOAQUIN COUNTY
Greatness grows here.

Office of the
Agricultural Commissioner/Sealer

Tim Pelican
Agricultural Commissioner
Sealer of Weights & Measures

Kamal Bagri
Asst. Agricultural Commissioner
Asst. Sealer of Weights & Measures

Karen Ross, Secretary
California Department of Food and Agriculture, and
The Honorable Board of Supervisors, San Joaquin County

Dear Secretary and Board Members:

In accordance with Section 2272 and Section 2279 of the California Food and Agricultural Code, I am pleased to present the eighty-sixth Annual Report of Agricultural Production in San Joaquin County.

The gross value of agricultural production for 2019 was $2,617,815,000. This represents a 0.91% increase over the 2018 value of $2,594,246,000.
Overall, agricultural commodity values showed a modest increase in 2019. Livestock and Poultry increased by 10.90% because of an increase in overall prices. Apiary Products increased by 15.02% with a total value of $37,853,000. Field Crops saw an increase of 1.84% due to increase in bearing acreages. Livestock and Poultry Products showed the largest increase by 15.6% valuing $540,204,000 due to an increase in Egg price per dozen and Milk price per hundredweight. Decreases were seen in Fruit and Nut Crops dropping in value by $48,979,000, which was a change of 3.49% from 2018. This decline was due to untimely weather events in the spring of 2018 that led to significant decrease in Almond production. Grapes also saw a large drop in value because of a large decrease in bearing acreage and drop in the price of Grapes related to low market demand. Fruit and Nut Crops continued to be the largest in total value at $1,354,789,000. The bearing acreage for Almonds continues to increase significantly showing a trend more towards permanent crops as can be seen in the trend of fewer row crop acreage. Vegetable Crops decreased in value by 6.92% totaling $228,893,000 and Seed Crops decreased by 15.96% totaling $3,281,000 because of a significant loss of planted acreage. Nursery Products decreased by 3.72% due to fluctuation in sales with a total value of $115,542,000.

The values shown are estimates based on the most common method of sale for the individual commodity, except for fresh fruits and vegetables where the value is based on the F.O.B. packed price at the shipping point. The figures contained in this report are gross values rather than net returns to the grower.

I wish to express my appreciation to all who cooperated in providing data for this report, including our agricultural producers, industry representatives and other public agencies. A special Thank You to San Joaquin Delta College students, Litzy Juarez Garcia and Vincent Lawraunce Jones, for their help to create this year's layout. I would also like to express my sincere thanks to the Agricultural Commissioners staff, especially Agricultural Biologist/Standards Inspectors Israel Arambula and Jatinder Gill, for compiling the necessary information that made this report possible.

Respectfully submitted,

Tim Pelican
Agricultural Commissioner/Sealer

Board of Supervisors

Miguel Villapudua
District 1

Katherine Miller
District 2
Chair

Tom Patti
District 3
Vice Chair

Chuck Winn
District 4

Bob Elliot
District 5

County Administrator
Monica Nino

Agricultural Commissioner's Office Staff

Agricultural Commissioner/Sealer
Tim Pelican

Assistant Agricultural Commissioner/Sealer
Kamal Bagri

Deputy Agricultural Commissioners
Martin Brockman, Jessica Fowler, Robert Pelletier

Deputy Sealer of Weights and Measures
Dave Singh

Agricultural Biologist/Standards Inspectors
I
Israel Arambula, Brendt Boyer, Barry Dagenbach, Joseph Geraldes, Angelica Goehring, Jana Labrucherie, Jordan McCain, Pauline Montemayor, Elena Perez-Razon, Mai Vang

II
Jonathan Brower
Jatinder Gill

III
Ben Delph, Josh Hanson, Matt Hoekman, Arif Kever, Kim Martin, Harrison McDowall, Rod Saiki

IV
Carrie Bassett
Agustin Diaz

Senior Agricultural Biologists
Colleen Bednarek, Humberto Castro, Raung Long, Rand Medina

Agricultural Biologist II
Erik Baxter

Administrative Secretary
Annette Lovato

Office Technician Coordinator
Hiromi Hernandez

Senior Office Assistants
Monica Hernandez, Mary Humphrey, Laura Nunes, Laurin Ortega

Account Technician
I
Amandeep Kalkat

II
Share Hawkins

Dept. Information Systems Analyst II
Ferdinand Pura

Agricultural & Standards Technician
Miles Lugo

Agricultural & Standards Program Aides
Robert Bradley, Kennedy Bruce, Hannah Cooley, Darla Durbin, Tracy Eaton, Rose Engstrom, Ashley Gerhardt, Robert Gilliland, Robert Guzzi, Alexandra Hara, Elizabeth Hinojosa, Leticia Hinojosa, Sadie Keller, Brett Koth, Gabino Martinez-Leung, Socorro Medina, Judy Nepote, Maria Oropeza Rodriguez, Joe Pimentel, Elvira Rios-Prock, Tanya Ray, Luis Salcedo, Tammy Schaefle, Kelly Valenzuela, Larry Wright, Paula Woodward

LIFE OF A CROP

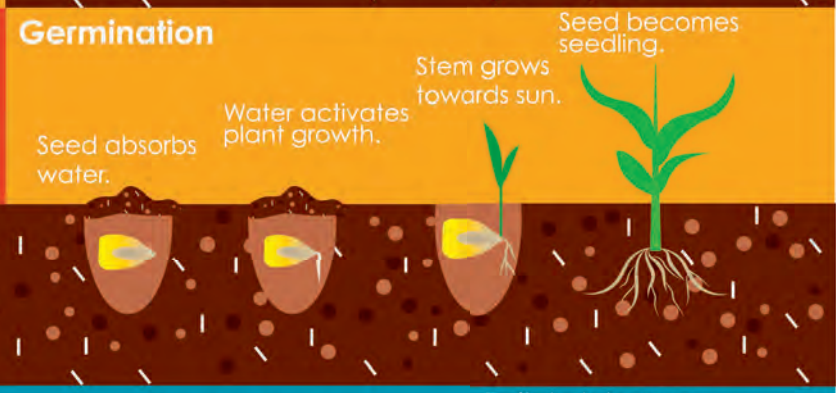
Crop Selection and Land Preparation

Crop selection best fitted for climate, soil condition, and water availability.

Sowing Seed/ Transplanting

Irrigation and Fertilization

Germination

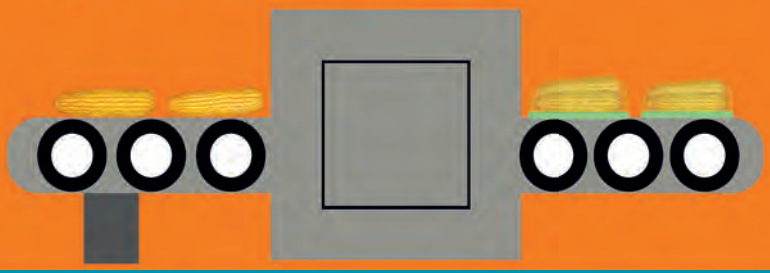


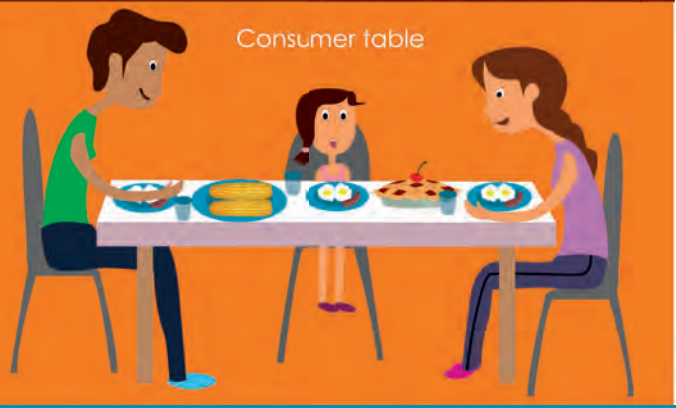
Growing Stages

Harvesting

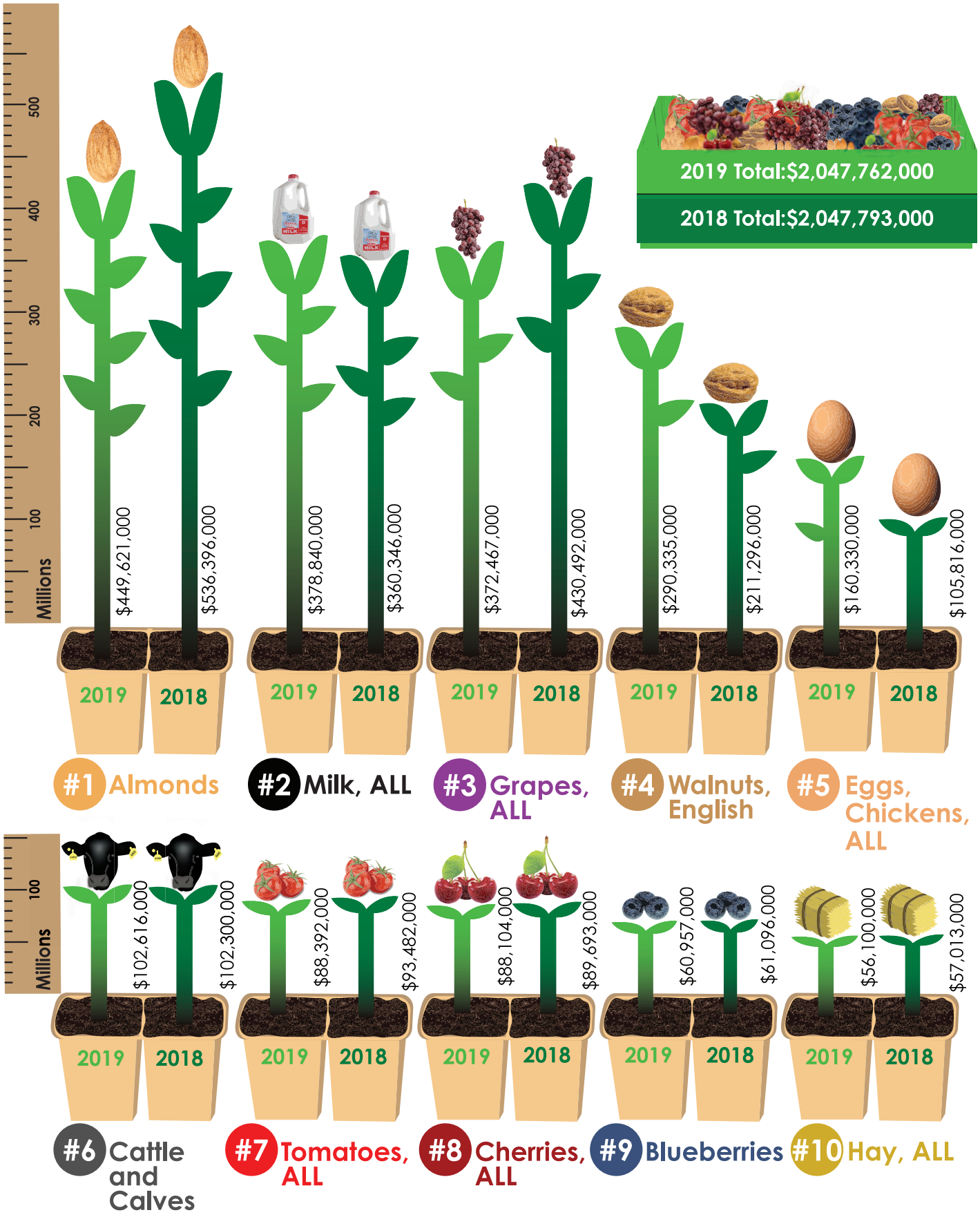
Packing and Consumption

Proper packaging protects crop during transport, storage, and distribution.





Ten Leading Crops for 2019



Fruit and Nut Crops

				Production				Gross Value
CROP	YEAR	BEARING ACREAGE	YIELD PER ACRE	TOTAL	UNIT	VALUE PER UNIT	SUBTOTAL	TOTAL VALUE
ALMOND, MEATS	2019	102,500	0.88	89,900	TON	$5,000.00		$449,621,000
	2018	87,300	1.25	109,500	TON	$4,900.00		$536,396,000
ALMOND, HULLS	2019			180,000	TON	$90.00		$16,186,000
	2018			219,000	TON	$90.00		$19,704,000
ALMOND SHELLS	2019			89,900	TON	$4.00		$360,000
	2018			109,500	TON	$3.00		$328,000
APPLES, ALL	2019	1,990	18.78	37,300	TON	$493.00		$18,377,000
	2018	2,000	16.58	33,200	TON	$505.00		$16,758,000
FRESH	2019			24,200	TON	$624.00	$15,114,000	
	2018			21,600	TON	$645.00	$13,926,000	
PROCESSING	2019			13,000	TON	$250.00	$3,262,000	
	2018			11,600	TON	$244.00	$2,832,000	
APRICOTS	2019	620	8.35	5,170	TON	$595.00		$3,079,000
	2018	618	6.04	3,730	TON	$797.00		$2,976,000
BLUEBERRIES	2019	2,210	4.68	10,370	TON	$5,880.00		$60,957,000
	2018	2,150	5.11	10,990	TON	$5,560.00		$61,096,000
CHERRIES, ALL	2019	20,000	3.74	74,700	TON	$1,180.00		$88,104,000
	2018	19,900	1.10	21,900	TON	$4,100.00		$89,693,000
FRESH	2019			43,200	TON	$1,950.00	$84,443,000	
	2018			16,400	TON	$5,370.00	$88,169,000	
PROCESSING	2019			31,460	TON	$116.00	$3,662,000	
	2018			5,470	TON	$279.00	$1,523,000	
GRAPES, ALL	2019	95,900	7.11	682,000	TON	$546.00		$372,467,000
	2018	97,200	7.73	751,000	TON	$573.00		$430,492,000
OLIVES, PROCESSING	2019	5,490	5.13	28,100	TON	$731.00		$20,575,000
	2018	4,890	2.19	10,700	TON	$880.00		$9,395,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING

Cherries

Cherries are typically propagated using budding or cutting techniques and grown on separate root-stock varieties. Cherry trees require deep, medium-textured soils, with good drainage, low alkalinity, and low salinity. Cherry trees produce flowers and fruit primarily on spurs that are at least two years old. Fruit growth occurs for approximately 60 days after bloom, and the fruit matures within 100 days of pollination. Cherries must ripen on the tree for proper flavor development, as they do not continue to ripen after harvest. California growers have an advantage over producers in other states because the fruit is produced from late April to late June, which makes it first to reach U.S. markets.

Greg Ferrari, Ferrari Farms:

"Linden soils and climate are ideally suited for both cherries and walnuts. Linden typically receives enough chill hours to grow and set premium cherry varieties, while having enough heat during the growing season to produce great flavor. These growing conditions ensure great quality and flavor for Linden cherries. We also enjoy a harvest that is a few weeks earlier than Washington."

Walnuts

A walnut tree can be planted as a plant propagated from seed (a seedling) or clonally produced rootstock. In both cases, they are eventually field grafted/budded to a desired English variety (cultivar). Until recently, most rootstocks have been seedlings varieties such as Seedling Black, Seedling Paradox hybrid (black x English), Seedling English (no longer available). For orchard plantings, most growers purchase two-year-old trees. A two-year old tree is grown in nursery settings where growth of the rootstock is started in the first year and growth of the English variety scion is completed in the second year. The scion is added either by budding the **rootstock** in the fall of year one or by grafting the rootstock in the spring of year two. Walnuts trees could also be purchased as own-rooted (also known as **self-rooted**) tree – An English variety rooted and grown on its own roots until ready for orchard planting. There is no graft or bud union.

Andrew Dasso, Dasso, A & A:

"Walnuts growing in the Linden and Stockton area have an advantage from the delta breeze and Mediterranean climate. The cooler nights allow the trees to replenish its moisture lost during the day. San Joaquin County's agriculture is among the most diverse in the world. Depending on the soil type, growers can choose which rootstock that is best suited for their orchard. There are several types of rootstocks that can be derived from seed or cuttings. The cuttings help minimize blackline disease in walnuts that is caused during pollination. The trees become infected and the disease travels down until it hits the graft union and chokes the tree due to the disruption of its normal growing cycle. A great choice is the Paradox Hybrid Rootstock, which is a hybrid between the Black Northern California and English variety. The Stockton and Linden area is known everywhere for some of the highest quality and lightest color of walnut meats available in the world."

Fruit and Nut Crops continued

			Production				Gross Value	
CROP	YEAR	BEARING ACREAGE	YIELD PER ACRE	TOTAL	UNIT	VALUE PER UNIT	SUBTOTAL	TOTAL VALUE
PEACHES, ALL	2019	1,900	21.05	40,000	TON	$438.00		$17,530,000
	2018	1,960	17.31	33,900	TON	$422.00		$14,290,000
CLINGSTONE	2019	1,240	16.22	20,000	TON	$491.00	$9,846,000	
	2018	1,270	14.78	18,800	TON	$463.00	$8,714,000	
FREESTONE	2019	665	30.00	19,960	TON	$385.00	$7,684,000	
	2018	685	22.00	15,070	TON	$370.00	$5,576,000	
PEARS	2019	33	13.00	420	TON	$380.00		$161,000
	2018	142	8.00	1,130	TON	$330.00		$374,000
PISTACHIO*	2019	407	1.07	435	TON	$4,166.00		$1,813,000
	2018							2018 Included in miscellaneous
WALNUTS, ENGLISH	2019	77,300	1.95	151,000	TON	$1,930.00		$290,335,000
	2018	73,600	2.10	155,000	TON	$1,360.00		$211,296,000
MISCELLANEOUS	2019	560						$1,758,000
	2018	1,020						$10,970,000
TOTAL	2019	309,000						$1,354,789,000
	2018	291,000						$1,403,768,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
* PISTACHIO ADDED AS NEW CATEGORY

Sweet Corn

Clark Mizuno, Mizuno Farms:

"We plant sweet corn from seed. We use a bicolor variety in the Tracy and Manteca area. Sweet Corn is planted from the 3rd week in April through the end of July. After the seed is planted, it is sprinkle irrigated so we can achieve uniform germination. If the weather is warm the seedlings germinate in about 7 days after planting and takes about 83-85 days to harvest."

Did you know?

- The average ear of corn has over 800 kernels.
- One acre of corn removes about 8 tons of carbon dioxide from the air during growing season.

Vegetable Crops

			Production				Gross Value	
CROP	YEAR	HARVESTED ACREAGE	YIELD PER ACRE	TOTAL	UNIT	VALUE PER UNIT	SUBTOTAL	TOTAL VALUE
ASPARAGUS	2019	630	3.15	2,000	TON	$3,580.00		$7,146,000
	2018	1,030	3.01	3,090	TON	$3,570.00		$11,041,000
CARROTS*	2019	1,130	18.92	21,400	TON	$598.00		$12,785,000
							2018 Included in miscellaneous	
CORN, SWEET	2019	2,880	4.84	13,900	TON	$196.00		$2,735,000
	2018	2,660	4.36	11,600	TON	$172.00		$1,997,000
CUCUMBERS	2019	2,040	7.52	15,300	TON	$190.00		$2,904,000
	2018	2,700	9.60	25,900	TON	$191.00		$4,948,000
GARLIC*	2019	2,142	6.40	13,706	TON	$420.00		$5,756,513
							2018 Included in miscellaneous	
MELONS, ALL	2019	3,730	37.19	138,700	TON	$308.00		$38,060,000
	2018	2,620	44.94	117,600	TON	$309.00		$36,038,000
WATERMELON	2019	1,950	52.11	101,700	TON	$325.00	$33,091,000	
	2018	1,950	54.05	105,500	TON	$308.00	$32,491,000	
OTHER	2019	1,777	20.80	36,960	TON	$262.00	$4,969,000	
	2018	666	18.24	12,150	TON	$315.00	$3,547,000	
ONIONS	2019	2,292	24.57	56,300	TON	$303.00		$17,071,000
	2018	1,385	44.66	61,900	TON	$227.00		$14,025,000
PEPPERS	2019	820	12.68	10,330	TON	$433.00		$4,475,000
	2018	1,250	14.31	17,890	TON	$740.00		$13,237,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
*CARROTS ADDED AS NEW CATEGORY, *GARLIC ADDED AS NEW CATEGORY

Asparagus

Clark Mizuno, Mizuno Farms:

"Asparagus is a perennial crop which last about 10 years and is a very labor intensive crop. We give the seed to nurseries to be grown into crowns (roots). The crowns are then planted in the dormant season around December or January. Once the crowns start to grow into asparagus ferns, irrigation begins. The irrigation period is May through August. The crop is first harvested in year 2 for a short period and by the third year full harvest takes place in March through May."

Tomatoes

Tomatoes are long-growing, heat-seeking, sun lovers! Due to a relatively long growing season, tomatoes are most commonly transplanted rather than direct-seeded into the garden. Farmers start from small plants or transplants grown in the nursery from a seed. Seedlings are transplanted after the last spring frost when the soil has warmed up and harvested in September. Tomatoes grow in many different soil types, but they need to drain well and never allow the pooling of water. They prefer a slightly acid soil with a pH of 6.2 to 6.8.

Brenna Aegerter, UCCE-Vegetable Crops Advisor:

"Tomatoes are very adaptive in general, and can be grown in most areas of the county, they do well on the east side of our county but are mostly grown in the Delta's peat soil and in the Tracy region. Tomatoes can grow in a heavy soil, as well as a sandy soil. Tomatoes are grown from a seed to transplant in a greenhouse for about 6-7 weeks and then are transplanted into the field. In our area, they are planted in April/May and are harvested in September/October generally 125 days from transplanting to harvest".

Vegetable Crops continued

			Production					Gross Value
CROP	YEAR	HARVESTED ACREAGE	YIELD PER ACRE	TOTAL	UNIT	VALUE PER UNIT	SUBTOTAL	TOTAL VALUE
POTATOES	2019	5,180	18.55	96,000	TON	$344.00		$33,045,000
	2018	5,950	18.35	109,300	TON	$337.00		$36,804,000
PUMPKINS	2019	2,560	23.43	59,900	TON	$414.00		$24,801,000
	2018	2,180	26.54	57,800	TON	$367.00		$21,196,000
SQUASH	2019	1,520	6.37	9,700	TON	$513.00		$4,972,000
	2018	1,270	7.33	9,300	TON	$574.00		$5,338,000
TOMATOES, ALL	2019	24,000	43.39	1,040,000	TON	$85.00		$88,392,000
	2018	20,800	48.02	999,000	TON	$93.50		$93,482,000
FRESH	2019	880	21.51	18,900	TON	$447.00	$8,461,000	
	2018	1,600	23.89	38,300	TON	$551.00	$21,101,000	
PROCESSING	2019	23,100	44.23	1,021,000	TON	$78.30	$79,931,000	
	2018	19,200	50.04	961,000	TON	$75.30	$72,382,000	
MISCELLANEOUS	2019	870						$5,292,000
	2018	2,680						$7,796,000
TOTAL	2019	45,000						$228,893,000
	2018	43,300						$245,902,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING

Pumpkins

Bryan Van Groningen, Van Groningen & Sons:

"We plant over 40 different varieties of pumpkins, mainly in Manteca and Stockton area but they can be grown pretty much anywhere in the San Joaquin County. The ideal soil is lighter clay or clay loam, nothing super sandy or heavy clay. About 2/3rd of our pumpkins are planted via seeds and rest are transplants. Growing from seed takes an extra 7-10 days for maturity due to extra time needed for seed germination. We start planting at the beginning April and finish sometime in the middle of July. Depending on the type of variety, it takes about 90-100 days from planting to maturity and some ranges from 120-130 days. Irrigation is via drip system and depending on the soil type and crop variety the irrigation ranges from every other day to every 3 days or so."

Field Crops

			Production				Gross Value	
CROP	YEAR	HARVESTED ACREAGE	YIELD PER ACRE	TOTAL	UNIT	VALUE PER UNIT	SUBTOTAL	TOTAL VALUE
BEANS, DRY, ALL	2019	6,000	1.28	7,500	TON	$1,100.00		$8,277,000
	2018	5,400	1.43	7,700	TON	$910.00		$7,048,000
LIMA	2019	2,410	1.48	3,570	TON	$1,250.00	$4,448,000	
	2018	1,950	1.42	2,760	TON	$1,070.00	$2,949,000	
BEANS, OTHER	2019	3,620	1.15	3,900	TON	$980.00	$3,829,000	
	2018	3,450	1.44	5,000	TON	$840.00	$4,099,000	
CORN, GRAIN	2019	27,100	4.80	130,000	TON	$170.00		$22,152,000
	2018	27,400	4.64	127,000	TON	$166.00		$21,047,000
HAY, ALL	2019	44,900	6.27	281,000	TON	$200.00		$56,100,000
	2018	47,400	5.83	276,000	TON	$206.00		$57,013,000
ALFALFA	2019	39,800	6.74	268,000	TON	$203.00	$54,324,000	
	2018	40,700	6.33	257,000	TON	$211.00	$54,182,000	
OTHER	2019	5,090	2.57	13,100	TON	$136.00	$1,776,000	
	2018	6,740	2.82	19,000	TON	$149.00	$2,830,000	
PASTURE & RANGE	2019	135,000			ACRE	$51.00		$6,888,000
	2018	135,000			ACRE	$50.40		$6,804,000
IRRIGATED	2019	14,500			ACRE	$225.00	$3,263,000	
	2018	14,500			ACRE	$219.00	$3,180,000	
OTHER	2019	120,000			ACRE	$30.00	$3,600,000	
	2018	120,000			ACRE	$30.00	$3,599,000	
RICE	2019	4,360	4.52	19,700	TON	$343.00		$6,767,000
	2018	3,620	4.81	17,400	TON	$365.00		$6,351,000
SAFFLOWER	2019	3,440	1.40	4,820	TON	$425.00		$2,047,000
	2018	2,310	1.55	3,570	TON	$422.00		$1,506,000
SILAGE, CORN	2019	45,000	27.63	1,243,000	TON	$42.00		$52,224,000
	2018	45,000	27.20	1,224,000	TON	$35.10		$43,418,000
SILAGE, OTHER GREEN CHOP INCLUDED	2019	85,000	11.03	941,000	TON	$37.10		$34,934,000
	2018	84,000	12.67	1,060,000	TON	$41.80		$44,251,000
SORGHUM MILO	2019	2,000	1.75	3,500	TON	$231.00		$798,000
	2018	1,500	3.79	5,500	TON	$245.00		$1,356,000
WHEAT	2019	25,000	2.75	68,900	TON	$199.00		$13,736,000
	2018	22,800	2.56	58,300	TON	$194.00		$11,317,000
MISCELLANEOUS	2019	201						$134,000
	2018	127						$258,000
TOTAL	2019	376,000						$204,057,000
	2018	373,000						$200,369,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
BEANS, OTHER INCLUDES,BLACKEYE, KIDNEY, GARBANZO AND ALL OTHER BEANS NOT LISTED

© Victoria Island, "Corn Field", Photo

Silage, Corn

Michelle M Leinfelder-Miles, UCCE- Farm Advisor, Delta Crops:

"Corn is one of the leading crops in the Delta by acreage. While most of the corn grown in California is for silage, the corn grown in the Delta is mostly for grain. Delta soil composition ranges from mineral to organic, and corn will grow in a wide range of soil types. Corn is generally grown from April to October.

Apiary

Did you know that sealed honey does not spoil, even after thousands of years? It is because most microorganisms do not grow in honey. Honeybees are also a vital force in agriculture and provides not only delicious honey but also pollination for many of the fruits, nuts, and vegetable crops grown in San Joaquin County. Under the San Joaquin County Agricultural Commissioner's Office apiary program agricultural biologist inspects colonies for hive strength, register apiaries, check bee health, apiaries for markings and investigate any reports of pesticide applications causing bee death.

Apiary Products

					Gross Value
COMMODITY	YEAR	PRODUCTION	UNIT	VALUE PER UNIT	TOTAL VALUE
HONEY	2019 2018	265,000 309,000	LBS LBS	$5.50 $5.00	$1,459,000 $1,547,000
POLLINATION	2019 2018	204,000 182,000	HIVE HIVE	$175.00 $169.00	$35,811,000 $30,831,000
MISCELLANEOUS	2019 2018				$583,000 $532,000
TOTAL	2019 2018				$37,853,000 $32,910,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
MISCELLANEOUS INCLUDES POLLEN, BEES, QUEENS, NUCLEUS, COLONIES AND BEESWAX

Pollination

Pollination is the act of transferring pollen grains from a male plant to female plant. This occurs either by cross-pollination or by self-pollination. Cross-pollination occurs when pollen is delivered from the stamen of one flower to the stigma of a flower of another plant of the same species. Self-pollination occurs when pollen from one flower pollinates the same flower or other flowers of the same plant. Flowers provide bees with nectar (an energy source) and pollen (a source of protein).

Other Agriculture

					Gross Value
CROP	YEAR	TOTAL	UNIT	VALUE PER UNIT	TOTAL VALUE
*FIREWOOD	2019	89,880	CORD	$170.00	$15,279,000 2018 Included in miscellaneous

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
*FIREWOOD ADDED AS NEW CATEGORY

© 2015 Satoshi Kaya, Flickr.com, Photo, "Batch of firewood" Edited for contrast and color in Photoshop

Nursery Products

		Production		
ITEM	YEAR	QUANTITY SOLD	UNIT	TOTAL VALUE
GRAPEVINES, STRAWBERRY PLANTS, FRUIT & NUT TREES	2019 2018	80,260,000 71,537,000	PLANT PLANT	$12,631,000 $11,007,000
VEGETABLE PLANTS	2019 2018	223,639,000 226,427,000	PLANT PLANT	$11,799,000 $13,319,000
FLOWERING POTTED PLANTS	2019 2018	1,846,000 1,936,000	EACH EACH	$9,486,000 $5,937,000
FOLIAGE PLANTS	2019 2018	696,000 613,000	EACH EACH	$4,843,000 $4,508,000
BEDDING PLANTS	2019 2018	367,000 495,000	PLANT PLANT	$4,977,000 $5,230,000
WOODY ORNAMENTALS	2019 2018	6,473,000 7,632,000	EACH EACH	$36,738,000 $40,962,000
BULBS, RHIZOMES, TURF, CACTUS, ETC.	2019 2018			$35,068,000 $39,041,000
TOTAL	2019 2018			$115,542,000 $120,004,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING

Nursery

CHIA-TE CHIEN, I HSIN ORCHIDS INC.

"We get our transplants from Taiwan. Once planted in the greenhouse, the first flower bloom is in about 18 weeks. The plant can grow 18 years or even longer. If the light and temperature are appropriate, the bloom can last for about 6 months. The plant should be watered once a week about 1/3 cup of water. When watering, let the water run freely through the pot. Allow the plant to drip dry before returning to decorative pot. Orchids do much better dry than too wet. Avoid direct sunlight, place by the window where it gets indirect sunlight".

Seed Crops

			Production				Gross Value
CROP	YEAR	HARVESTED ACREAGE	PER ACRE	TOTAL	UNIT	PER UNIT	TOTAL VALUE
*MISCELLANEOUS	2019 2018	1,579 1,750					$3,281,000 $3,904,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING
*MISCELLANEOUS INCLUDES BEAN, SEED

Livestock and Poultry

		Production				Gross Value
ITEM	YEAR	NO. HEAD	LIVE WEIGHT	UNIT	VALUE PER UNIT	TOTAL VALUE
CATTLE & CALVES	2019	127,000	1,016,000	CWT	$101.00	$102,616,000
	2018	128,000	1,023,000	CWT	$100.00	$102,300,000
SHEEP & LAMBS	2019	9,800	15,200	HD	$145.00	$2,203,000
	2018	16,000	20,800	HD	$110.00	$2,288,000
BROILERS	2019	540,000	2,361,000	LBS	$6.65	$15,700,000
	2018	938,000	4,770,000	LBS	$0.51	$2,423,000
TURKEYS	2019	226,000	4,729,000	LBS	$0.86	$4,067,000
	2018	162,000	3,658,000	LBS	$0.91	$3,332,000
MISCELLANEOUS	2019					$8,610,000
	2018					$9,757,000
TOTAL	2019					$133,196,000
	2018					$120,100,000

NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING

Livestock and Poultry Products

				Gross Value
ITEM	YEAR	PRODUCTION	UNIT	VALUE PER UNIT	TOTAL VALUE
MILK, ALL	2019	23,100,000	CWT	$16.40	$378,840,000
	2018	23,369,000	CWT	$15.40	$360,346,000
WOOL	2019	67,000	LBS	$2.20	$147,000
	2018	109,000	LBS	$2.20	$239,000
EGGS, CHICKEN, ALL	2019	63,299,000	DOZ	$2.53	$160,330,000
	2018	73,483,000	DOZ	$1.44	$105,816,000
MANURE	2019	220,000	TON	$4.03	$887,000
	2018	220,000	TON	$4.04	$888,000
TOTAL	2019				$540,204,000
	2018				$467,289,000

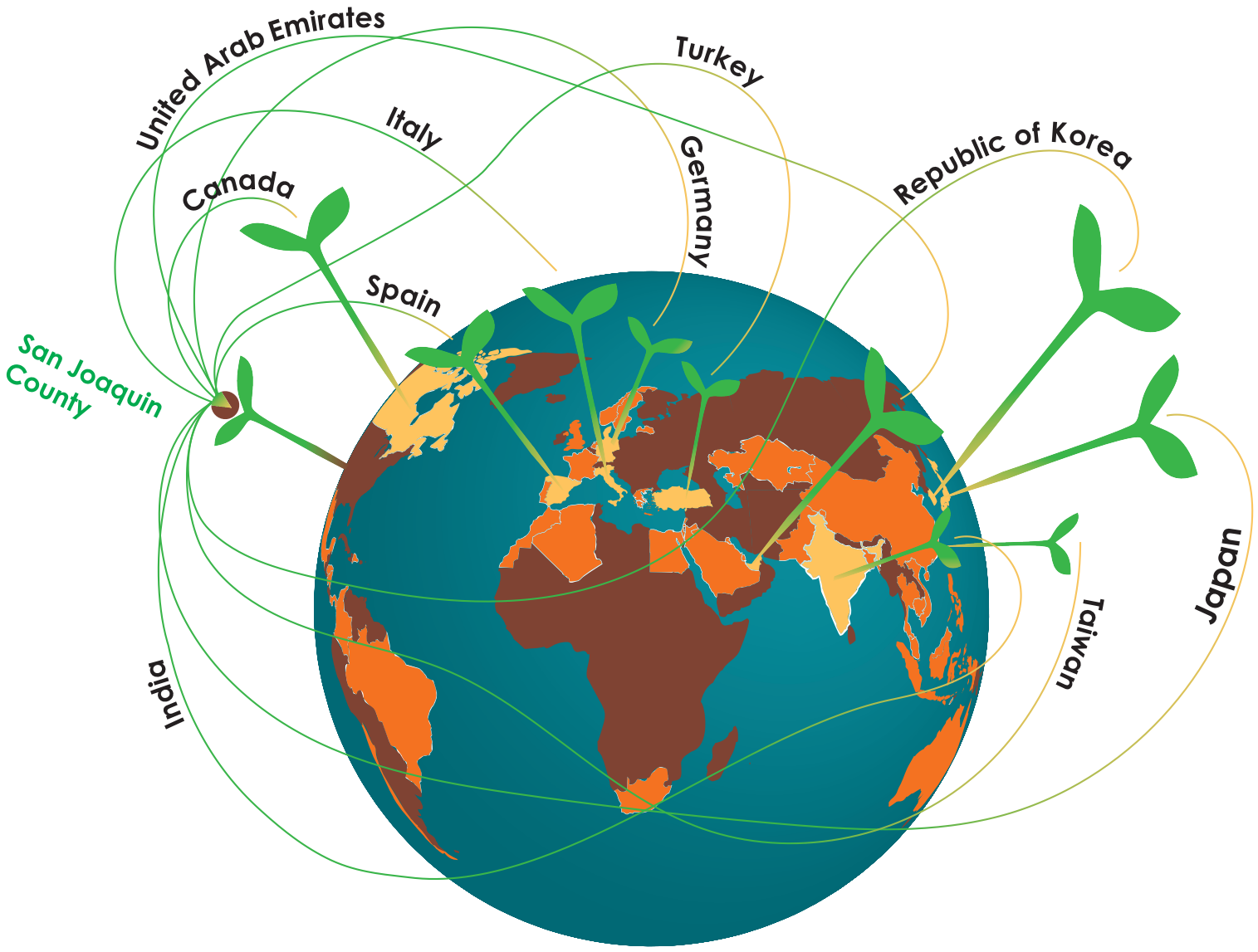
NUMBERS MAY NOT COMPUTE EXACTLY DUE TO ROUNDING

Trading Partners

Republic of Korea	1,664	Australia	98	New Zealand	30
Japan	1,212	Morocco	93	Greece	29
United Arab Emirates	963	Saudi Arabia	84	Egypt	28
Canada	720	Israel	81	Kuwait	26
Italy	663	Afghanistan	70	Latvia	24
Turkey	623	Kazakhstan	63	Jordan	22
Taiwan	484	Chile	62	Malaysia	22
India	469	Panama	61	Singapore	20
Spain	448	Algeria	56	Indonesia	20
Germany	399	Norway	55	Cambodia	18
Mexico	352	Lebanon	51	Dominican Republic	18
China	329	Brazil	44	Sweden	16
Vietnam	271	Nicaragua	38	Portrugal	15
United Kingdom	159	South Africa	38	Honduras	15
Hong Kong	147	Pakistan	33	Bangaladesh	14
Netherlands	129	Philippines	33	Columbia	14
Thailand	100	France	32	Bahrain	10

Total Certificates Issued: 10,662

Top Five Exports



Top Ten Trading Partners

Traded less than 400 times

Other Countries

Exports by country

Rice	Tons
Japan	70,554

Walnuts	Tons
Other Countries	10,826
Turkey	7,265
United Arab Emirates	5,810
Italy	4,523
Germany	4,357
Japan	3,310
Spain	2,710
Republic of Korea	2,166
Canada	1,643
Pakistan	1,540
Israel	1,248

Almonds	Tons
Other Countries	10,477
India	5,874
Spain	4,891
China/Hong Kong	3,202
Germany	2,762
Japan	2,032
Netherlands	1,805
United Arab Emirates	1,725
Italy	1,677
Canada	1,513
Vietnam	1,431

Cherries	Tons
Republic of Korea	2,412
Japan	2,304
Mexico	814,
Taiwan	504
Canada	369
Other Countries	200
Norway	183
China	100
Thailand	85
Vietnam	65
Australia	52

Pears	Tons
Mexico	2,376
Canada	801
Ecuador	124
Taiwan	94
El Salvador	55
Guatemala	39

Direct Marketing

WHAT IS A CERTIFIED FARMER'S MARKET?

A certified farmers' market (CFM) is where a certified producer can sell the produce they grow directly to the general public. The consumer benefits by buying high quality and fresh produce sold at certified farmer's market. The producer benefits from CFM by cutting down the middleman and the other added expenses of commercial packing. According to The California Department of Agriculture (CDFA) "there are 750 CFM's and approximately 2,700 certified producers in the state of California."

WHAT IS AGRICULTURAL COMMISSIONER'S OFFICE ROLE?

The Agricultural Commissioner's Office authorizes and certifies producers to sell at CFM after inspecting their production and storage sites. The certified producer's certificate lists all the crops and amounts produced and are certified by the Agricultural Commissioner's Office. In San Joaquin County there are **80** certified producers and the county hosts **8** certified farmer's markets.

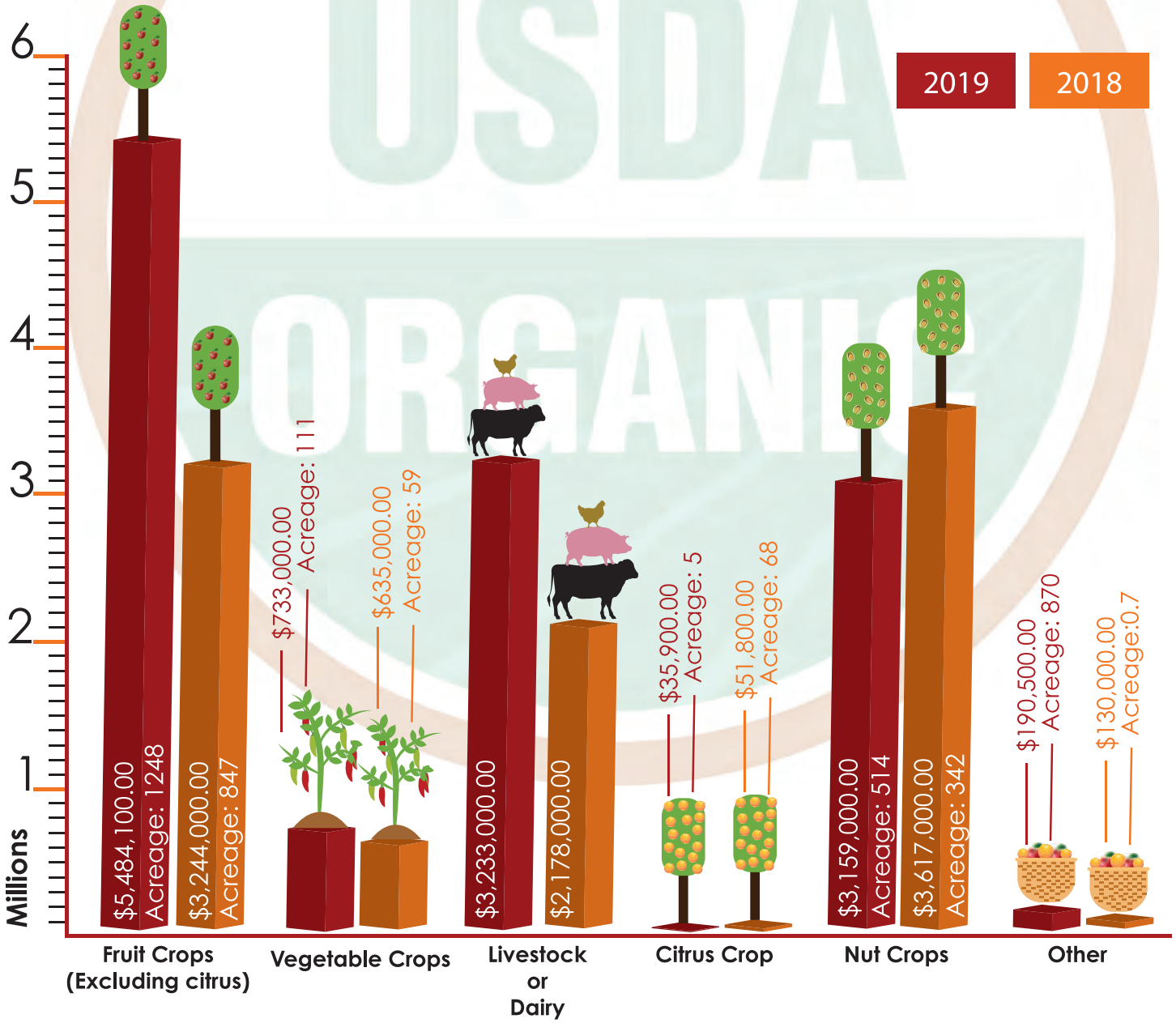
Organic Production

HOW IS ORGANIC FOOD GROWN?

Organic farmers rely on crop rotation, cover crops and dense planting to enrich the soil in which they grow their crops. According to Unites States Department of Agriculture (USDA), Organic 101 article, quote "produce can be called organic if it's certified to have grown on soil that has had no prohibited substances applied 3 years prior to harvesting."

WHAT IS AGRICULTURAL COMMISSIONER'S OFFICE ROLE?

The Agricultural Commissioner's Office conducts organic produce inspections, and residue sampling overseen by the California State Organic Program. San Joaquin County has registered **36** organic producers, **22** organic handlers, and **5** organic processors in 2019. There were **3,200** certified organic acres growing crops with a gross value of **$12,836,000.**



Pest Exclusion

This is our first line of defense against pests that are non-native to the San Joaquin County. Our mission is to prevent the introduction and spread of these exotic pests within San Joaquin County. To do so our Agricultural Biologists conduct thorough inspections at the various parcel facilities, nurseries and other shipping locations in the county.

Shipments Inspected

Type	Year	Number Inspected
PARCEL	2019	17,660
NURSERY BLUE TAGS	2019	2040
TRUCK	2019	701
AIR FREIGHT	2019	153
SEA FREIGHT	2019	3
SEED SHIPMENTS	2019	145
GYPSY MOTH	2019	6

Pests Intercepted

Intercepted Pests	Number of Finds	Pest Rating
SCALE INSECTS	1	Q
MEALY BUG	4	Q
SNAIL	3	Q
SLUG	1	Q
INSECT EGGS	5	Q
KEELBACK SLUG	1	Q
APHIDS	1	Q
LESSER SNOW SCALE	5	A
RUFOUS SCALE	1	A
FIG WAX SCALE	1	A
SCALE INSECTS	2	A
SLUG	1	A

Pest Detection

This is the second line of defense to protect our agriculture against invasive pest that can be devastating to our agricultural economy. Early detection and localized eradication is essential to stop infestation. Being able to prove to our trade partners that exotic pests do not reside in San Joaquin County is necessary for us in order to export many of the commodities we grow. In 2019, San Joaquin County pest detection surveyors placed and monitored a total number of **10,686** traps and **110,580** total servicing for the following pests:

Gypsy Moth

Trapping Season: June-Sept
Host: Shade Trees
Traps Deployed:250
Trap Type: Delta Trap

General Fruit Fly

Trapping Season: June- Sept
Host: Fruit Trees
Traps Deployed: 350
Trap Type: Mcphail Trap

Japanese Beetle

Trapping Season: June-Sept
Host: Turf/Landscape
Traps Deployed: 250
Trap Type: Japanese Beetle Trap

© 2017, Thomas Sahan/Oregon Department of Agriculture, "Japanese Beetle", Photo of a Japanese Beetle, Cut out with Photoshop

Asian Citrus Psyllid

Trapping Season: Year Around
Host: Citrus
Traps Deployed: 658
Trap Type: Yellow Panel Trap

European Grapevine Moth

Trapping Season: Feb- Sept
Host: Vineyards
Traps Deployed: 4,542
Trap Type: Red Delta Trap

© 2017, Ben Sale, Flickr.com, "[1107] Lobesia Botrana", Photo of a European Grapvine Moth, Cut out with Photoshop

Melon Fruit Fly

Trapping Season: June-Sept.
Host: Vegetable Garden
Traps Deployed: 350
Trap Type: Jackson Trap

Oriental Fruit Fly

Trapping Season: April-Oct
Host: Fruit Trees
Traps Deployed: 625
Trap: Jackson Trap

© 2008, IAEA Image Bank, "Bactrocera dorsalis (complex) (06410589)", Photo of a Oriental Fruit Fly, Cut out with Photoshop

General Fruit Fly

Trapping Season: April-Oct
Host: Fruit Trees
Traps Deployed: 56
Trap Type: Champ Trap

Light Brown Apple Moth

Trapping Season: April-Oct
Host: Fruit Trees
Traps Deployed: 625
Trap Type: Jackson Trap

© 2008 Donald Hobern, "Epiphyas postvittana", Photo of a Light Brown Apple Moth, Cut out with Photoshop

Glassy Winged Sharpshooter

Trapping Season: Feb-Oct/Apr-Oct
Host: Ornamentals
Traps Deployed:
Retail: Apr-Oct 625
Nursery: Feb-Oct 2,335
Trap Type: Yellow Panel Trap

© Katja Schulz, Flickr.com. Photo, "Mediterranean Fruit Fly" Cut out with Photoshop,

Mediterranean Fruit Fly

Trapping Season: April-Oct
Host: Fruit Trees
Traps Deployed: 625
Trap Type: Jackson Trap

Integrated Pest Management

LODI WINE CALIFORNIA
STEPHANIE L. BOLTON, PhD
Research & Education Director
Sustainable Winegrowing Director

VINE MEALYBUGS

Invasive vine mealybugs have 5-7 generations per growing season in Lodi vineyards, and each female lays about 300 eggs. This means that one mating pair of mealybugs in April can turn into **22,781,250,000,000** mealybugs by October. It only takes one mealybug about 15 minutes to infect a healthy grapevine with a virus. Mealybugs vector, or spread, both leafroll virus and vitiviruses. To complicate matters, mealybugs hide underneath the bark of the trunk so once a farmer actually spots mealybugs in his or her vineyard it often means that there is already a large (and dangerous, if there are virus-infected vines in the neighborhood) infestation.

BIOCONTROL

Two main forms of mealybug biological control are crucial to vine mealybug management: beneficial insects and pheromone mating disruption. Dr. Kent Daane released *Anagyrus* wasps in Lodi years ago, which are well-suited to our region and can be found naturally where mealybugs are present. Another important beneficial insect for mealybug control is the *Cryptolaemus beetle*, which farmers in Lodi have been deploying with the help of a drone. Growers are encouraged not to accidentally kill their "free" beneficial insects with their pesticide spray program, which they can ensure through monitoring and learning more about the effects of certain active ingredients on beneficials (see "More Information" below). When mealybug populations are low or in a newly planted vineyard, farmers can better protect their vines from mealybug-vectored viruses by using dispensed pheromones which confuse the male mealybugs so that they can't find the females to mate with, ultimately reducing the numbers of mealybugs in the vineyard. We hypothesize that using pheromones also helps to attract the beneficial insects into the vineyard.

MANAGEMENT

As with all pests and diseases, education is crucial. Learning about vine mealybugs and the viruses they spread is the first step. Many farmers are training everyone who enters their vineyard to identify vine mealybugs, mark the "hotspot" areas, and to scout for the presence of beneficial insects preying on mealybugs (scouting cards are available - see "More Information"). Insecticide materials with different modes of action are available to use right now, although there is concern for resistance development over time and some winegrape buyers have restrictions on these materials, making biocontrol of utmost importance. Since ants farm mealybugs for their honeydew, managing pest ants may become worthwhile once we figure out best practices (the Lodi Winegrape Commission is working with Dr. Kris Tollerup on ant bait trials). Rogueing (or removing) leafroll virus-infected vines is highly recommended - once you take away the virus source, there is no virus for the mealybugs to spread around to you and your neighbor's healthy vines.

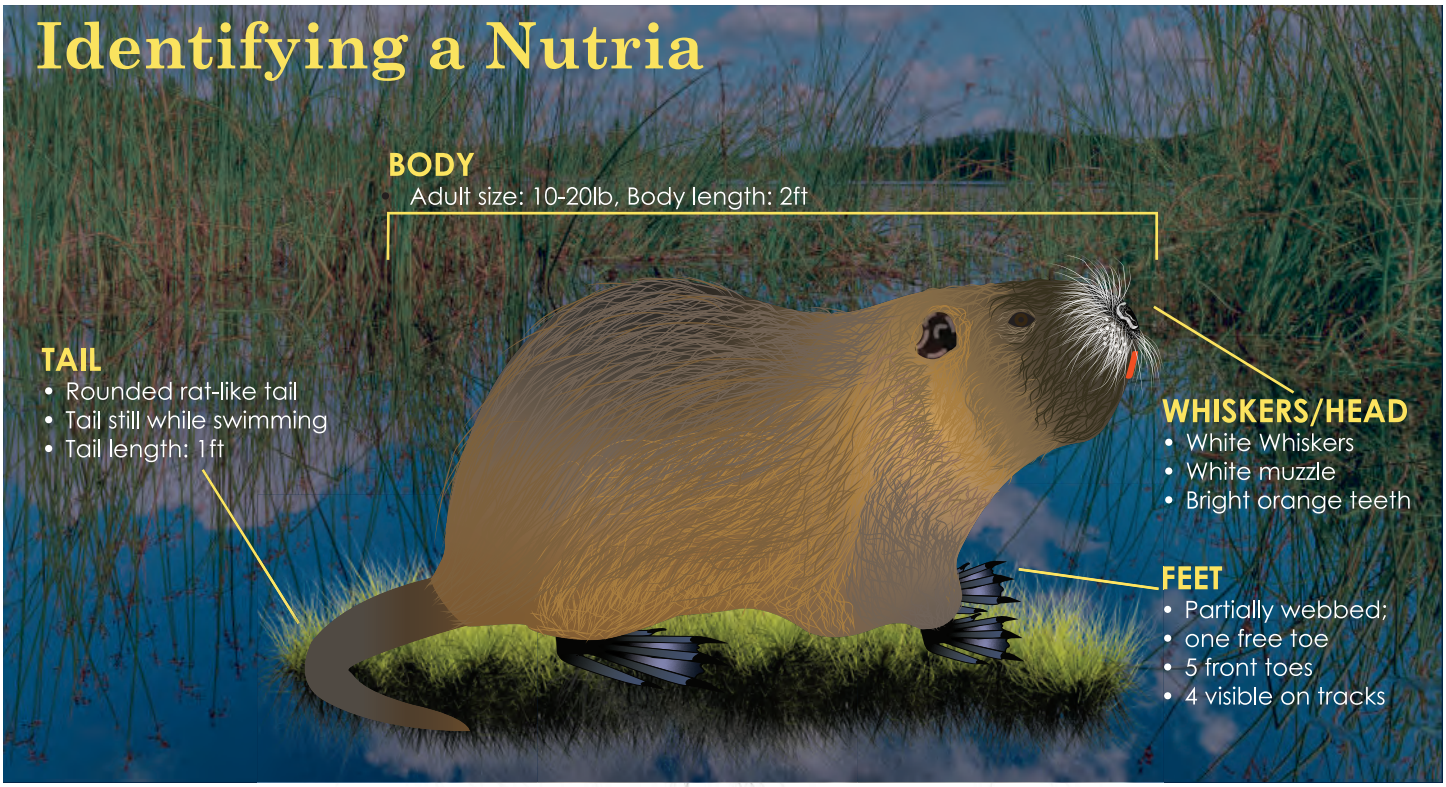
MORE INFORMATION

The Lodi Winegrape Commission, with lots of help from growers, pest control advisors, scientists, and industry, just released a 138-page book called "What Every Winegrower Should Know: Viruses" which includes a chapter on mealybug management and a special section on beneficial insects (funding provided by the CDFA PD/GWSS Board and the American Vineyard Foundation). Copies are available by calling **209-367-4727** or emailing **stephanie@lodiwine.com**. Educational videos and articles can be found at **lodigrowers.com/growereducation/viruses**.

What's new? Nutria (Myocastor coypus)

Nutria (Myocastor coypus) is a large, semi-aquatic rodent, which is native to South America and highly invasive in California; nutria are regulated as a California Department of Food and Agriculture(CDFA) A-rated pest and California Department of Fish and Wildlife (CDFW) live restricted animal (14 CCR § 671). Nutria are notorious for their ecological and economic impacts, causing extensive damage to wetlands, riparian habitat, restoration efforts, levees and other infrastructure, agriculture crops, and water supplies. They are destructive feeders, each day consuming up to 25% of their body weight in above- and below-ground vegetation, including crops, while destroying up to ten times the amount they consume. They also reproduce very rapidly and can potentially breed three times per year. Female nutria has a gestation period of 130 days, and can reproduce again 48 hours of giving birth. Litters can range from **1-13 offspring, with an average of 4-5 babies born.** This means that, not only they eat massively, but also multiply at an immense rate.

In 2018, Nutria were found in San Joaquin County near the town of Lathrop. Since then, a breeding population have been detected in Walthall Slough. In recent months, one nutria was captured near Rough and Ready Island in southern Sacramento San Joaquin Delta. Just recently, 17 Nutria's were trapped in Riley Slough (San Joaquin River National Wildlife Refuge and adjacent properties). San Joaquin Delta provides water to millions of farmland acres and people of California. San Joaquin County's agricultural production value in Delta is $839,796,206 with 222,867 producing acres. These Nutria sightings are troublesome because Delta has an extremely fragile levee system. Nutria are known to burrow in levees in the areas they are found which can cause them to collapse. Levee collapse can cause the weakening and collapse of surrounding levees and cause the incursion of saline water from the San Francisco Bay threatening the water quality not only in the Delta but also to those who receive water supplies from the Delta Mendota Canal. Since fall of 2018, **102** animals have been successfully trapped by Wildlife Services Trappers.
CACASA



The Division of Weights and Measures
Ensuring Equity in the Marketplace

The Division of Weights and Measures is mandated by state law to protect the economic interest of all buyers and sellers of every transaction involving the exchange of goods, property, and services. Our mission is to promote equity, protect consumers and businesses alike, and enforce when necessary laws and regulations to safeguard the economic health of every citizen and competing business in the county.

2019 DIVISION HIGHLIGHTS

This year the Division assisted with a statewide retail marketplace survey. The survey focused on retail grocery stores located in disadvantaged neighborhoods. Areas of importance were items sold in bulk, the net weight of pre-packaged commodities, and automated pricing systems that use barcodes at the registers. Below are few statistics of the different types and number of inspections that the San Joaquin County Weights and Measures officials performed in 2019 with the percentage of compliance for accuracy found during the preliminary inspection.

Counter Scales

Inspections: 362
Compliance: 98.6%

Railroad Scales

Inspections: 16
Compliance: 100.0%

Computing Scales

Inspections: 1703
Compliance: 97.9%

Retail Water Meters

Inspections: 219
Compliance: 92.0%

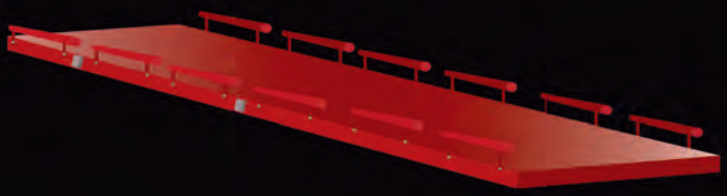
Taximeters

Inspections: 18
Compliance: 93.7%

Retail Motor Fuel Dispensers

Inspections: 7008
Compliance: 91.9%

Vehicle Scales



Inspections: 337
Compliance: 83.7%

San Joaquin County Ag Facts

County Seat:
Stockton

County Population:
745,424 (2017 Census)

Total # of Farms:
3,430 (2017 Census)

Land in Farms:
772,762 Acres (2017 Census)

Lowest Elevation in County (Delta Area):
12 Feet Below Sea Level

Highest Elevation in County (Southwest Hills):
3,065 Feet Above Sea Level

Incorporated Cities:
Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, Tracy

Unincorporated Cities:
Acampo, Clements, Collierville, Farmington, French Camp, Linden
Lockeford, Morada, Mountain House, Thornton, Victor, Waterloo, Woodbridge

In partnership with
Almond Alliance of California, American AgCredit, California Cherries Board, California Walnut Board, Lodi Winegrape Commission, Lodi Grape Growers Association, San Joaquin County Cooperative Extension, San Joaquin Delta College Students, San Joaquin Farm Bureau

Essential Workers

Protecting the people who grow our food

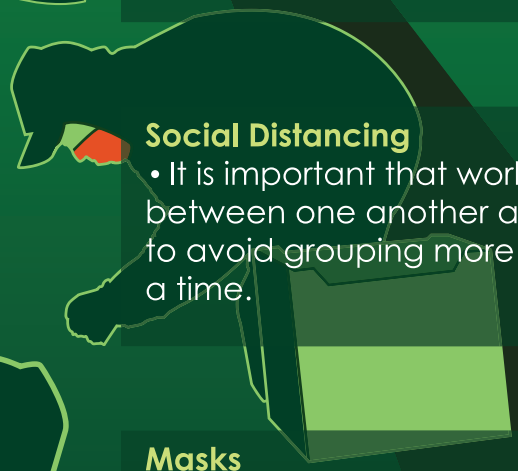
During these trying times, we in the San Joaquin County understand that the health of our agricultural workers designated as "essential" workers is vital to a functioning economy in the Central Valley. Farmworkers continued to work through the Covid-19 pandemic ensuring an adequate food supply for all. In order to better protect our "essential" workers against Covid-19 here are some basic health and safety guidelines.

Communication

• Basic information and training about infection prevention should be provided to all farmworkers in languages they can understand.

Sanitization

• Dirty hands must be washed using soap, for a period of twenty seconds. Hands that are not visibly dirty can be cleaned with hand sanitizer containing at least 60% rubbing alcohol.



Social Distancing

• It is important that workers maintain six feet of space between one another at all times. It is highly advised to avoid grouping more than two workers in a room at a time.

Masks

• In order to avoid transmission through bodily fluids it is required that you wear a mask. The criteria for what constitutes a proper mask are that it should be removable without help, be multilayered and fit snugly around the ears or neck.