



2014 Solano County



Accuracy



Equity



Industry



Agriculture

Crop and Livestock Report

WEIGHTS & MEASURES DIVISION

One type of commercial device that most people in Solano County are unaware of is scales used for weighing livestock. The Division of Weights & Measures currently has 20 livestock scales registered with the county. The Solano County Fairgrounds and the Dixon May Fair both have scales used for weighing of show animals including swine, sheep, goats, and steers. The balance of the livestock scales are private scales used by the area's local ranchers for weighing animals prior to shipment.



Testing of these scales is very labor intensive and requires specialized equipment. Shown here (left), is the Division's heavy weight truck and a tracked BobCat used to transfer the 500 pound certified test standards from the truck to the scale. The BobCat is extremely useful in maneuvering around corrals, through gates, and up ramps to the scale deck. A hand cart is then used to maneuver the standards around on the scale deck.

Accessing these scales can be a real challenge; many are located in remote areas, through gates, in paddocks, and sometimes down long rough dirt roads. Current weather must be considered when planning a livestock scale test. Wet and muddy conditions can make it impossible to do a proper test.



For ranchers who participate in the United States Department of Agriculture Packers and Stockyards Program, the scales are tested for accuracy using the prescribed procedures and forms. Each load cell is tested, and then the test weight is built up to the rated capacity of the scale. And finally a decreasing load test is done for scales with dials or digital read-outs. After testing the Sealer will affix the County of Solano Weights and Measures Seal and issue a Certificate of Inspection to the scale user.

JIM ALLAN
Agricultural Commissioner /
Sealer of Weights and Measures

**COUNTY AGRICULTURAL COMMISSIONER /
SEALER OF WEIGHTS AND MEASURES**

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SIMONE HARDY
Assistant Agricultural Commissioner /
Sealer of Weights and Measures



**SOLANO
COUNTY**

To: Karen Ross, Secretary
California Department of Food and Agriculture

and

The Honorable Board of Supervisors
County of Solano, California

Pursuant to the provisions of Sections 2279 and 2272 of the California Food and Agricultural Code, I am pleased to present the Solano County Crop and Livestock Report for 2014.

This report is the 65th annual report issued by the Agricultural Commissioner. The flexibility given to our growers through open space preservation, availability of water and the variety of soils and micro climates is what enabled them to achieve an all-time high farm gate value despite having been in the third year of a statewide drought. It is important to remember that this report is of farm gate values only. Processing capacity allows some growers to add or recapture value, but this report is not a measure of profitability, nor does it account for the re-spending and support multipliers generated by this production in the local economy.

The gross value of Solano County's agricultural production for 2014 was \$378,645,000 -- a new high, representing an increase of \$30,430,000, up 8% from 2013 values. There was a general re-shuffling of our top five crops from last report. Tomatoes are now our top crop at \$46,124,000. Walnuts, last year's leader came in second at \$45,422,000. Rounding out the very close top three is Alfalfa at \$43,700,000. Nursery Products and Cattle and Calves were fourth and fifth at \$35,594,000 and \$31,673,000 respectively.

This year's cover story celebrates the 100th anniversary of the Weights and Measures program in California. This important departmental function serves the county by ensuring consumer equity as well as maintaining a level playing field between businesses. It is a program that touches every citizen of the county every day in their purchases, consumption of goods and use of energy.

I would like to express my sincere appreciation to all of the farmers, ranchers, boards, commissions, and agencies who contributed vital data without which this report would not be possible, as well as my staff for their dedication to compiling and producing the 2014 Solano County Crop and Livestock Report.

To see this or any of the previous crop reports online or to learn more about the services provided and programs of the Solano County Department of Agriculture and Weights and Measures, please visit our website at www.solanocounty.com/ag .

Respectfully submitted,

A handwritten signature in blue ink that reads "Jim Allan".

Jim Allan
Agricultural Commissioner/Sealer of Weights and Measures

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GENERAL INFORMATION

POPULATION¹

Solano County Population: 425,169

Benicia 27,495	Dixon 19,029	Fairfield 110,283	Rio Vista 7,946
Suisun City 28,589	Vacaville 93,815	Vallejo 118,797	Unincorporated 19,215

AREA

Land Area (Square Miles) ²	909.95	Urban and Built Up Land Area (Acres) ²	60,027
Land Area (Acres) ²	582,368	Land Area in Farms (Acres) ³	407,101
Water Area (Square Miles) ²	84.61	Total Cropland (Acres) ³	169,637
Water Area (Acres) ²	54,153	Irrigated Cropland (Acres) ³	130,909

FARMS

Average US Size (Acres) ³	434	Number of Farms in Solano County ³	860
Average California Size (Acres) ³	328	Full Time	462
Average Solano County Size (Acres) ³	473	Part Time	398

STATE RANKING

County Rank by Gross Value of Agricultural Production (2013)⁴

27th

Commodity Rank by Gross Value of Production (2013)⁴

1st - Triticale	3rd - Sheep and Lambs	4th - Sunflower, Seed
2nd - Wheat, Seed	3rd - Sudan Hay	4th - Wool
3rd - Safflower		5th - Grain Hay

FARMING REGIONS

Dixon Ridge	Jepson Prairie	Suisun Valley
Elmira/Maine Prairie	Montezuma Hills	Western Hills
Green Valley	Pleasants/Vaca/Lagoon Valleys	Winters
	Ryer Island	

LOCAL ASSESSED PROPERTY VALUES (2014)⁵

\$44,136,703,132

TRANSPORTATION

Total Maintained County Road Miles

578

Major Roadways

Interstates 80, 505, 680, and 780
State Routes 12, 29, 37, 84, 113, and 220

¹Source: California Department of Finance, E-1: City/County Population Estimates as of January 1, 2014

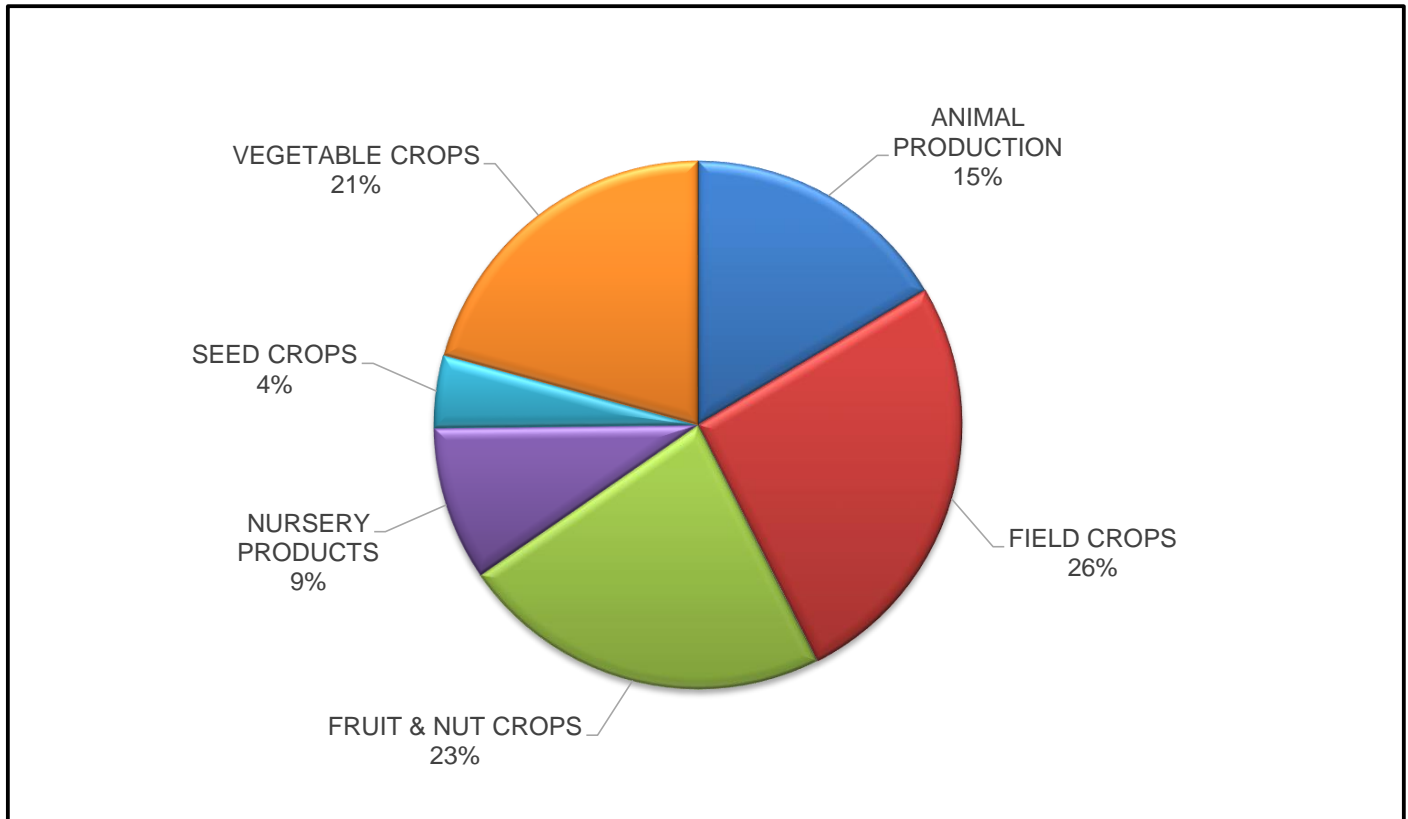
²Source: California Department of Conservation 2012 Land Use Conversion

³Source: USDA National Agricultural Statistics Service 2012 Census of Agriculture

⁴Source: CDFAs California Agricultural Statistics California County Agricultural Commissioners' Reports 2013

⁵Source: 2014 Solano County Annual Report

2014 Value by Crop Group



Value Summary

YEAR	ANIMAL PRODUCTION ¹	FIELD CROPS	FRUIT & NUT CROPS	NURSERY PRODUCTS	SEED CROPS	VEGETABLE CROPS	TOTAL VALUE
2004	45,207,000	50,423,000	29,286,000	43,645,000	7,115,000	36,903,000	\$212,579,000
2005	50,902,000	52,813,000	37,919,000	50,018,000	10,533,000	36,505,000	\$238,690,000
2006	47,852,000	46,946,000	39,964,000	47,856,000	9,988,000	40,899,000	\$233,505,000
2007	54,820,000	54,812,000	43,430,000	56,611,000	10,821,000	47,762,000	\$268,256,000
2008	49,873,000	89,365,000	44,037,000	43,056,000	10,828,000	55,624,000	\$292,783,000
2009	40,116,000	50,073,000	48,191,000	33,499,000	15,859,000	64,184,000	\$251,922,000
2010	46,011,000	57,072,000	54,874,000	23,352,000	14,391,000	63,698,000	\$259,398,000
2011	52,458,000	83,812,000	63,420,000	23,630,000	14,671,000	53,668,000	\$291,659,000
2012	63,425,000	84,604,000	87,368,000	32,707,000	17,680,000	56,911,000	\$342,695,000
2013	51,340,000	88,744,000	97,150,000	35,144,000	16,628,000	59,209,000	\$348,215,000
2014	62,387,000	98,672,000	86,624,000	35,594,000	16,900,000	78,468,000	\$378,645,000

¹Includes livestock and poultry, livestock and poultry products, and apiary production.



Top Ten Million Dollar Commodities

CROP	2014 CROP VALUE	2014 CROP RANKING	2013 CROP RANKING
Tomatoes (Processing)	46,124,000	1	5
Walnuts	45,422,000	2	1
Alfalfa (Hay)	43,700,000	3	3
Nursery Products	35,594,000	4	4
Cattle & Calves	31,673,000	5	2
Grapes (Wine)	17,621,000	6	6
Sunflower (Seed)	14,455,000	7	9
Almonds	14,156,000	8	7
Wheat	13,789,000	9	10
Corn (Grain)	8,666,000	10	8



Fruit & Nut Crops

CROP	YEAR	BEARING ACRES	PRODUCTION		UNIT	VALUE			
			PER ACRE	TOTAL		PER UNIT	TOTAL	% CHANGE	
Almonds (Meats)	2014	3,430	0.70	2,410	Ton	5,860.00	14,156,000	-17%	
	2013	3,330	0.95	3,160	Ton	5,410.00	17,113,000		
Grapes (Wine)^{1,2}	Dark Varieties	2014	-	-	10,000	Ton	833.00	8,365,000	-8%
		2013	-	-	8,880	Ton	1,020.00	9,096,000	
	White Varieties	2014	-	-	13,000	Ton	714.00	9,256,000	4%
		2013	-	-	12,300	Ton	723.00	8,901,000	
	Total Grapes	2014	4,380	5.26	23,010	Ton	-	17,621,000	-2%
2013	3,910	5.41	21,200	Ton	-	17,997,000			
Olives³	2014	162	1.31	213	Ton	1,710.00	277,000	-9%	
	2013	122	1.15	140	Ton	2,160.00	303,000		
Prunes (Dried)	2014	877	2.79	2,450	Ton	2,080.00	5,101,000	107%	
	2013	725	2.39	1,730	Ton	1,420.00	2,467,000		
Walnuts	2014	9,400	1.37	13,000	Ton	3,530.00	45,422,000	-18%	
	2013	8,910	1.71	15,200	Ton	3,640.00	55,435,000		
Miscellaneous⁴	2014	971	-	-	-	-	4,047,000	6%	
	2013	1,110	-	-	-	-	3,836,000		
TOTAL FRUIT & NUT CROPS	2014	19,200					\$86,624,000	-11%	
	2013	18,100					\$97,150,000		

Figures may not add due to rounding.

¹Includes acreage not harvested or sold.

²Total production and value per unit from the California Department of Food and Agriculture Grape Crush Report Final 2014.

³Value per unit based on oil value.

⁴Includes almond hulls, apples, apricots, blackberries, cherries, citrus, figs, grapes (table), kiwi, nectarines, peaches, pears, persimmons, pistachios, plums, pomegranates, and strawberries.



Field Crops

CROP	YEAR	HARVESTED ACRES	PRODUCTION		UNIT	VALUE			
			PER ACRE	TOTAL		PER UNIT	TOTAL	% CHANGE	
Beans, Dry	2014	2,000	1.27	2,550	Ton	1,200.00	3,042,000	1%	
	2013	2,120	1.26	2,670	Ton	1,130.00	3,016,000		
Corn (Grain)	2014	10,300	5.02	51,700	Ton	168.00	8,666,000	-35%	
	2013	12,300	5.61	69,200	Ton	193.00	13,391,000		
Hay	Alfalfa	2014	30,700	5.86	180,000	Ton	243.00	43,700,000	24%
		2013	26,000	6.45	168,000	Ton	211.00	35,368,000	
	Grain	2014	3,740	2.69	10,000	Ton	205.00	2,064,000	-18%
		2013	3,710	3.81	14,100	Ton	177.00	2,506,000	
	Ryegrass	2014	7,850	3.21	25,200	Ton	195.00	4,924,000	54%
		2013	7,070	3.00	21,200	Ton	151.00	3,197,000	
	Sudangrass	2014	7,500	3.46	26,000	Ton	186.00	4,825,000	-22%
		2013	10,100	3.56	36,100	Ton	172.00	6,201,000	
	Other ¹	2014	3,470	3.70	7,400	Ton	195.00	1,443,000	30%
		2013	1,760	3.51	6,190	Ton	179.00	1,106,000	
	Pasture, Irrigated ²	2014	27,600	-	-	Acre	129.00	3,557,000	1%
		2013	30,700	-	-	Acre	115.00	3,526,000	
Pasture, Rangeland ³	2014	183,000	-	-	Acre	25.90	4,746,000	35%	
	2013	178,000	-	-	Acre	19.60	3,505,000		
Safflower	2014	2,640	0.97	2,560	Ton	522.00	1,334,000	-26%	
	2013	3,760	0.92	3,460	Ton	524.00	1,811,000		
Triticale	2014	10,600	2.70	28,800	Ton	187.00	5,382,000	1%	
	2013	9,150	2.45	22,400	Ton	237.00	5,316,000		
Wheat ⁴	2014	21,700	2.75	59,600	Ton	231.00	13,789,000	50%	
	2013	18,300	2.09	38,300	Ton	239.00	9,164,000		
Miscellaneous ⁵	2014	1,850	-	-	-	-	1,200,000	89%	
	2013	1,470	-	-	-	-	636,000		
TOTAL FIELD CROPS	2014	313,000					\$98,672,000	11%	
	2013	305,000					\$88,744,000		

Figures may not add due to rounding.

¹Previously reported as grass hay.

²Acreage from the 2014 permit data.

³Acreage calculated using data from the California Department of Conservation 2010-2012 Land Use Conversion Report.

⁴Includes irrigated and dryland wheat.

⁵Includes barley, corn silage, corn stubble, sorghum/milo (grain), straw, and sunflower oil.



Apiary Production

ITEM	YEAR	PRODUCTION	UNIT	VALUE		
				PER UNIT	TOTAL	% CHANGE
Apiary Products ¹	2014	-	-	-	1,208,000	69%
	2013	-	-	-	715,000	
Pollination ²	2014	27,000	Colony	65.40	1,772,000	17%
	2013	22,500	Colony	67.50	1,517,000	
TOTAL APIARY PRODUCTION	2014				\$2,980,000	34%
	2013				\$2,232,000	

Figures may not add due to rounding.

¹Apiary products includes beeswax, honey, honeycomb, packaged bees, and queen bees.

²Value based on acreage of crops requiring bees for pollination and number of colonies required for adequate pollination. Colony fee varies by crop. Crops pollinated include, almond, apple, cherry, kiwi, prune, sunflower, and vine seed.



Nursery Products

ITEM	YEAR	ACREAGE	TOTAL VALUE	% CHANGE
Nursery Stock ¹	2014	1,920	31,939,000	3%
	2013	1,440	31,036,000	
Propagative Stock ²	2014	188	3,655,000	-11%
	2013	188	4,108,000	
TOTAL NURSERY PRODUCTS	2014	2,110	\$35,594,000	1%
	2013	1,630	\$35,144,000	

Figures may not add due to rounding.

¹Includes christmas trees, cut flowers, greenhouse plants, herbaceous and woody ornamentals, and turf.

²Includes grafted grapevines, grapevine rootstock, and grapevine cuttings.



Vegetable Crops

CROP	YEAR	HARVESTED ACRES	PRODUCTION		UNIT	VALUE			
			PER ACRE	TOTAL		PER UNIT	TOTAL	% CHANGE	
Tomatoes (Processing)	2014	11,900	46.31	552,000	Ton	83.50	46,124,000	55%	
	2013	10,400	39.95	417,000	Ton	71.30	29,745,000		
Misc. Vegetables	Processing¹	2014	1,090	-	-	-	-	3,680,000	6%
		2013	1,040	-	-	-	-	3,461,000	
	Fresh²	2014	1,990	-	-	-	-	28,663,000	10%
		2013	1,160	-	-	-	-	26,003,000	
TOTAL VEGETABLE CROPS	2014	15,000					\$78,468,000	33%	
	2013	12,600					\$59,209,000		

Figures may not add due to rounding.

¹Includes cucumbers (pickling) and peppers.

²Includes beans, brassicas, cucumber, endive, garlic, herbs, leafy greens, melons, mushrooms, onions, peas, peppers, pumpkins, root vegetables, salad greens, sprouts, squash, sweet corn, tomatoes, tubers, and watermelon.



Seed Crops

CROP	YEAR	HARVESTED ACRES	PRODUCTION		UNIT	VALUE		% CHANGE
			PER ACRE	TOTAL		PER UNIT	TOTAL	
Sunflower	2014	9,890	1210	11,963,000	Lb	1.21	14,455,000	11%
	2013	9,410	1436	13,517,000	Lb	0.97	13,070,000	
Watermelon	2014	218	267	54,000	Lb	4.96	268,000	-39%
	2013	210	342	71,600	Lb	6.11	438,000	
Wheat	2014	575	3.00	1,730	Ton	240	414,000	33%
	2013	442	2.95	1,300	Ton	238	311,000	
Miscellaneous ¹	2014	315	-	-	-	-	1,799,000	-36%
	2013	712	-	-	-	-	2,809,000	
TOTAL SEED CROPS	2014	11,000					\$16,900,000	2%
	2013	10,800					\$16,628,000	

Figures may not add due to rounding.

¹Includes asparagus, cabbage, carrot, cucumber, melon, onion, squash, and sudangrass.

Livestock & Poultry

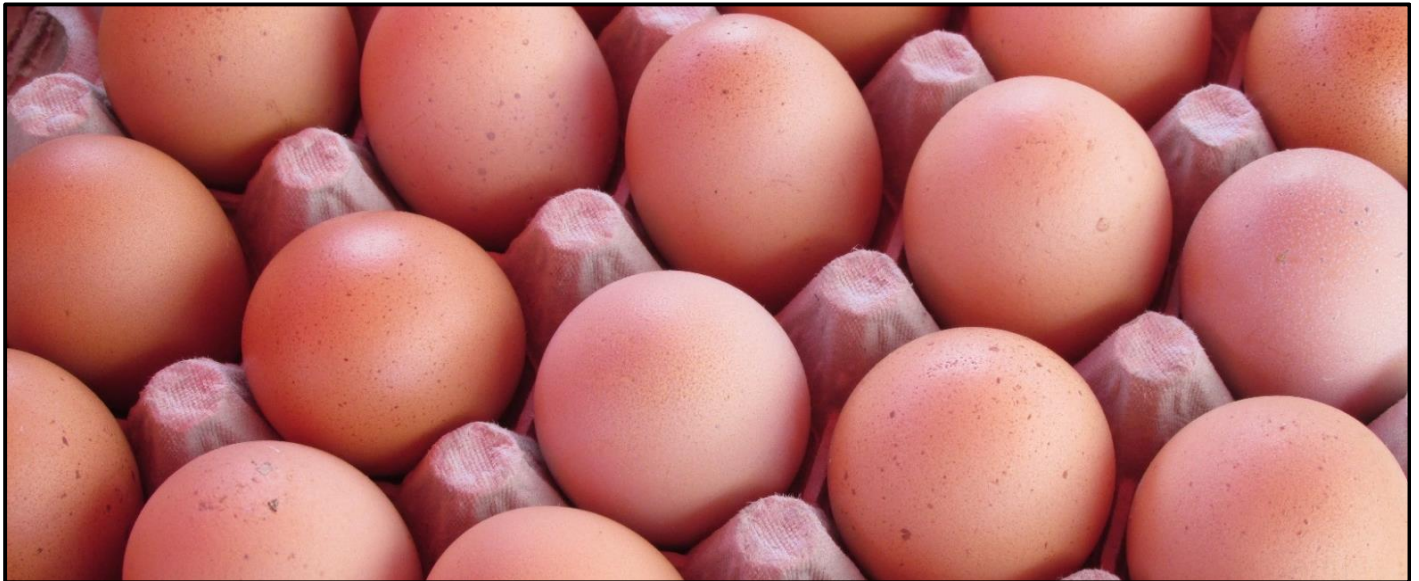
ITEM	YEAR	NUMBER OF HEAD	TOTAL LIVEWEIGHT	UNIT	VALUE		
					PER UNIT	TOTAL	% CHANGE
Cattle & Calves¹	2014	31,000	166,700	Cwt	190.00	31,673,000	-12%
	2013	30,400	242,000	Cwt	148.00	35,795,000	
Sheep & Lambs²	2014	32,950	48,540	Cwt	163.00	7,912,000	37%
	2013	32,700	45,100	Cwt	128.00	5,755,000	
Miscellaneous³	2014	-	-	-	-	716,700	-62%
	2013	-	-	-	-	1,875,000	
TOTAL LIVESTOCK & POULTRY	2014					\$40,302,000	-7%
	2013					\$43,425,000	

Figures may not add due to rounding.

¹Includes beef stocker gain, dairy calves, dairy yearlings, dairy replavement heifers, and dairy cull cows.

²Includes feeder lamb gain.

³Includes goats, hogs, and poultry (chickens, doves, geese, and turkeys).



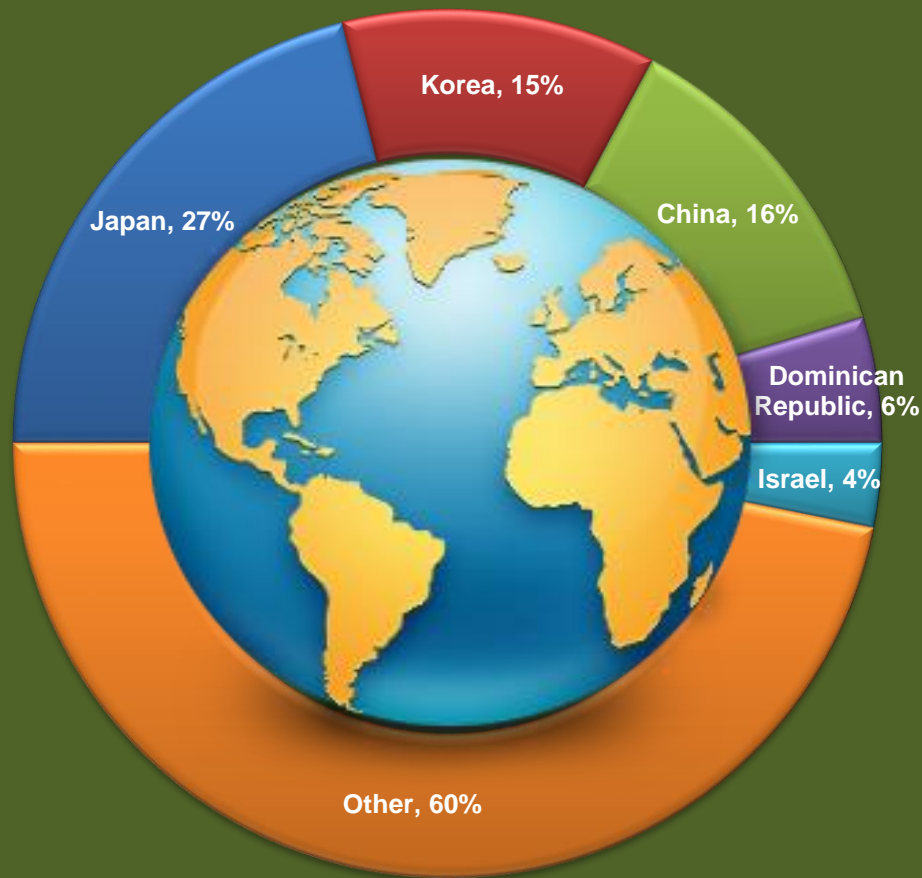
Livestock & Poultry Products

ITEM	YEAR	PRODUCTION	UNIT	VALUE		
				PER UNIT	TOTAL	% CHANGE
Eggs, Chicken	2014	204,000	Dozen	3.01	614,000	-17%
	2013	227,000	Dozen	3.26	741,000	
Wool	2014	213,000	Lb	0.55	117,150	-62%
	2013	213,000	Lb	1.45	308,000	
Miscellaneous⁴	2014	-	-	-	18,374,000	297%
	2013	-	-	-	4,633,000	
TOTAL LIVESTOCK & POULTRY PRODUCTS	2014				\$19,105,000	236%
	2013				\$5,683,000	

Figures may not add due to rounding.

⁴Includes alpaca fiber, goat milk, and market milk.

Solano County Export Market



In 2014, the Solano County Agricultural Department issued 1391 phytosanitary certificates for commodities bound for export markets in 50 countries.

Argentina	Georgia	Mexico
Australia	Germany	Netherlands
Belarus	Greece	Norway
Belgium	Hong Kong	Philippines
Brazil	India	Poland
Canada	Indonesia	Russian Federation
Chile	Ireland	Singapore
China	Israel	South Africa
Colombia	Italy	Spain
Costa Rica	Japan	Taiwan
Czech Republic	Jordan	Thailand
Denmark	Korea, Democratic People's Republic	Turkey
Dominican Republic	Korea, Republic of	United Arab Emirates
Ecuador	Lithuania	United Kingdom
Egypt	Macao	Venezuela
Estonia	Macedonia	Viet Nam
France	Malaysia	

Natural Enemies: An Important Part of Sustainable Agriculture

A key component to successful agricultural production is pest control. Producers have been moving toward a multi system approach utilizing biological control of certain pests when available and more selective pesticides. To meet this need, use of integrated pest management (IPM) techniques involving the introduction and conservation of natural enemies and use of less toxic pesticides allowing the balance of pests and their natural enemies to be sustained has become an integral part of agriculture production.

Natural enemies of insect pests, or biological control agents, include predators, parasitoids (parasites of parasites), and pathogens. Species selected for use as introduced natural enemies must have a high reproductive rate, good target host search ability, host specificity, be adaptable to host environmental conditions, and synchronize with its host life cycles. It is critical that imported and introduced biological control agents are specific to the target pest so that it too may not become a pest in its own right. Once the target pest is sufficiently controlled the control agent will go in search of other prey and may reduce the availability of prey to local native species.



The Vedalia Beetle (*Rodolia cardinalis*): In the winter of 1888-1889, the vedalia beetle was introduced into California from Australia to combat cottony cushion scale, an introduced species devastating California's citrus groves. Many citrus groves had infestations so severe that growers had to remove and burn trees. This also caused orchard values to plummet. By the fall of 1889, the cottony cushion scale was completely controlled in the areas of where the vedalia beetle had been introduced. The vedalia beetle literally saved the California citrus industry. However, once the cottony cushion scale was under control the vedalia beetle found prey which could have easily been controlled by native lady beetles and lacewings.

Rather than importing a natural enemy to control a pest, another technique, known as augmentation, is to enhance the population of established natural enemies by releasing a large numbers of the same beneficial organisms. Many commercial insectaries rear and market a variety of natural enemies including parasitoids, predaceous mites, lady beetles, lacewings, praying mantis. Success with augmentation requires appropriate timing to ensure that the target pest is present; otherwise the natural enemy may die out or leave the area.

Habitat or environmental manipulation is helpful in supporting natural enemy biological control agents. Many adult parasitoids and predators benefit from sources of nectar and the protection provided by refuges such as hedgerows, cover crops, and weedy borders. Recent work in California has demonstrated that planting prune trees in grape vineyards provides an overwintering refuge for a key grape pest parasitoid. The prune trees provide an alternate host pest for a wasp that controls Grape Leaf Hopper. Prior to the presence of the prune trees these parasitoids would overwinter at great distances from most vineyards.



Fungi can also be used as biological control agents. The extremely destructive Gypsy Moth has been found to be controlled by a fungus that was accidentally introduced from Japan. Aerial dispersal of the fungal spores or transport of infected moths has allowed the fungus to be spread across the contiguous infested areas of the moth in the Northeastern United States.

Integrated pest management programs involve on-going introduction and conservation of beneficial biological species, and careful monitoring of both pest and natural enemy populations. In turn, this allows for targeted determination and treatment of pests through a combined effort of natural enemies and appropriate pesticides within a crop system.