An aerial photograph showing a large agricultural area. In the foreground, there is a large rectangular area covered with dark, curved plastic mulch, likely for crop production. To the right of this area is a dirt road and a small, light-colored building with a grey roof. A white van is parked near the building. The background consists of vast, flat agricultural fields in various shades of green and brown, extending to the horizon under a clear sky.

**2016 CROP &
LIVESTOCK REPORT**

**MADERA
COUNTY**

Cover Photo Credit:

Maas Energy Works of Redding, California - email: info@maasenergy.com - Website: www.maasenergy.com

About the Verwey Family Dairy Digester in Madera County

Madera County is home to a new covered lagoon digester that is busy turning dairy wastewater into electricity. The project, located on Philip Verwey's dairy in Madera County is representative of the dairy industry's next steps towards reduced environmental impact. This project was one of five recently funded by the California Department of Food and Agriculture (CDFA) through its Dairy Digester Research and Development Program. These projects, designed to reduce odor and greenhouse gas emissions are triggering a wave of investment in Madera County and the San Joaquin Valley.

Dairy digesters are generally integrated into a dairy's existing waste water management system with a relatively elegant change. Instead of water sitting in settling ponds where the methane and carbon dioxide gas produced go to the atmosphere, the lagoon is lined and covered and the gas is captured and used. Since the methane produced is 22 times a more potent greenhouse gas than CO₂, the capture and use of that methane has a significant impact on improving climate change. The project also removes pollutants such as sulfur and reduces NO_x emissions, which will have a direct impact on local air quality.

This digester system provides enough energy to power a 600kW generator that produces 250,000 kWh of electricity a month. That is enough energy for the dairy farm's electricity needs, and would be enough to power 300 homes. It is claimed that the digester system will reduce the farm's emissions by 240,000 metric tons of carbon, equal to eliminating 5,000 cars from the road yearly.

This project was conceived nearly 10 years ago while Philip's son Brent was studying agricultural science at Cal Poly. After graduating, Brent researched the state of the art and worked to bring this technology to his father's larger dairy in Kings County, which has now been operating for almost a year. To do this, Brent worked with Daryl Maas of Maas Energy Works in Redding, California, and some other dairy contractors.

The next phase for the Verwey family is to bring the development experience gained at their Madera and Hanford dairies to other farms in the central valley. They are currently awaiting the results from the 2017 round of CDFA grants, and are hopeful to construct two more projects in Madera County, one in Merced County and another in Kings County.

In addition to providing a payment to the host farms, these projects and others like them will bring investment and jobs to the county and improve local air and water. The water board, air board and county agencies are actively supporting these projects with an eye on the broad benefits to the community.



Madera County Department of Agriculture Weights and Measures

Stephanie "Stevie" McNeill, Agricultural Commissioner
Sealer of Weights and Measures

Karen Ross, Secretary
California Department of Food and Agriculture

and

The Honorable Board of Supervisors
County of Madera, California

Max Rodriguez Chairman, District 4
Brett Frazier District 1
David Rogers District 2
Robert Poythress District 3
Tom Wheeler District 5

It is my pleasure to present the 2016 Madera County Agricultural Crop and Livestock Report. This annual statistical report is compiled in accordance with Sections 2271 and 2279 of the California Food and Agricultural Code, and contains data on the acreage, yield, and values of Madera County Agricultural commodities. The values in this report are gross values, and do not represent net income or loss to producers.

For 2016, the gross value of all production was \$1,819,489,000; this is a decrease of \$197,957,000 (9.81%) compared to 2015 production. This is mainly due to a decrease in some commodity prices as market prices continue to stabilize. Madera County is ranked 10th among the fifty-eight California counties in total agricultural production.

Crop values can vary from year to year due to the variables of production, market and weather conditions. Almonds (nut meats & hulls) retained the top crop rank for the seventh year in a row, with a value of \$593,487,000, but down 25% from 2015. Although there was an increase in bearing almond acreage, the price per ton dropped considerably. Milk overtook grapes for 2nd place, with grapes claiming the third spot. Pistachios and Cattle & Calves came in at the 4th and 5th rankings.

I wish to extend my appreciation to our Madera County farmers, ranchers, agricultural industries and agencies. Without their efforts and contributions of information, this report would not be possible. Additionally, I would like to express my thanks to my staff that contributed to compiling and preparing this report, and especially to Senior Agricultural and Standards Inspector Cha Vang and his dedication to producing the annual report.

To view the 2016 Madera County Agricultural and Livestock Report, and previous reports, please visit our website online at <http://madera-county.com/agcommissioner/cropreports/index.html>.

Respectfully submitted,

Stevie McNeill
Agricultural Commissioner/Sealer



MADERA COUNTY STAFF

Madera County Board of Supervisors

Brett Frazier...District 1 **David Rogers...District 2**
Robert L. Poythress...District 3 **Max Rodriguez...Chairman/District 4**
Tom Wheeler...District 5

County Administrative Officer

Eric Fleming

Agricultural Commissioner/Sealer of Weights & Measures

Stephanie "Stevie" McNeill

Deputy Agricultural Commissioner/Sealer

Heidi Wong

Supervising Agricultural & Standards Inspector

Page Berquist **Gavin Iacono**

Agricultural & Standards Inspectors

Judy Cumming **Sharon Seslowe**

Molly Glover **Alison Steen**

Jessica Graves **Cha Vang**

Agricultural & Standards Technicians

Bobby Arias **Gabriel Mejia**

Administrative Support Staff

Steve Monk, Administrative Analyst II

Tammy Dodson, Program Assistant II

Mary Arias, Program Assistant I

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TEN LEADING CROPS MADERA COUNTY 2016

Commodity	2016 Rank	2016 Dollar Value	2015 Rank
Almonds, Nuts & Hulls	1	\$593,487,000	1
Milk	2	\$271,816,000	3
Grapes	3	\$270,598,000	2
Pistachios	4	\$233,621,000	4
Cattle & Calves	5	\$62,377,000	5
Pollination	6	\$48,006,000	6
Replacement Heifers	7	\$32,400,000	8
Nursery Stock	8	\$29,977,000	10
Tomatoes, Fresh & Process	9	\$28,177,000	9
Oranges	10	\$21,746,000	*

* not in 2015 top ten

Madera County's Million Dollar Crops From 1966: 50 Years Ago

CROP	DOLLAR VALUE
CATTLE & CALVES	\$14,700,000
GRAPES	13,394,000
COTTON	8,982,000
ALFALFA HAY	7,911,000
MILK	6,984,000
TURKEYS	5,856,000
PASTURE	3,476,000
CORN, FIELD	1,955,000
PEACHES	1,823,000
POTATOES	1,781,000
BARLEY	1,622,000
BROILERS & FRYERS	1,289,000
TIMBER (BOARD FEET)	69,872,380

Field Crops

Item	Year	PRODUCTION			VALUE		
		Harvested Acreage	Per Acre	Total	Unit	Per Unit	Total
Alfalfa							
Hay	2016	13,100	7.24	94,844	Ton	\$158.00	\$14,985,000
	2015	16,000	7.11	113,760	Ton	188.00	21,387,000
Silage ^a	2016			21,265	Ton	49.00	1,042,000
	2015			28,120	Ton	53.00	1,490,000
Total	2016	13,100					16,027,000
	2015	16,000					22,877,000
Corn							
Grain	2016	300	4.13	1,239	Ton	181.00	224,000
	2015	300	4.50	1,350	Ton	220.00	297,000
Silage	2016	18,000	25.60	460,800	Ton	39.00	17,971,000
	2015	16,600	26.75	444,050	Ton	53.00	23,535,000
Total	2016	18,300					18,195,000
	2015	16,900					23,832,000
Cotton							
Lint	2016	630	1,634 ^b	2,145	Bale ^c	0.81 ^d	834,000
	2015	700	2,013	2,936	Bale	0.91	1,282,000
Seed	2016			858	Ton	290.00	249,000
	2015			1,174	Ton	296.00	348,000
Total	2016	630					1,083,000
	2015	700					1,630,000
Oat							
Hay	2016	1,800	3.20	5,760	Ton	92.00	530,000
	2015	1,100	3.33	3,663	Ton	132.00	484,000
Pasture							
Irrigated	2016	1,800			Acre	150.00	270,000
	2015	1,300			Acre	150.00	195,000
Rangeland	2016	387,000			Acre	22.00	8,514,000
	2015	390,000			Acre	13.00	5,070,000

a/ Alfalfa acreage yields both hay and silage

b/ Pounds

c/ Bale: 480 pounds

d/ Price per pound

Field Crops

Item	Year	PRODUCTION			VALUE		
		Harvested Acreage	Per Acre	Total	Unit	Per Unit	Total
Wheat							
Grain	2016	2,000	2.89	5,780	Ton	\$200.00	\$1,156,000
	2015	2,200	4.00	8,800	Ton	220.00	1,936,000
Silage	2016	21,300	13.68	291,384	Ton	31.00	9,033,000
	2015	22,400	13.15	294,560	Ton	43.00	12,666,000
Total	2016	23,300					10,189,000
	2015	24,600					14,602,000
Winter Forage	2016	1,900	9.33	17,727	Ton	29.00	514,000
	2015	1,900	14.32	27,208	Ton	43.00	1,170,000
Miscellaneous ^e	2016	2,400					3,238,000
	2015	3,100					3,710,000
TOTAL	2016	450,230					\$58,560,000
	2015	455,600					73,570,000

e/Includes barley hay, dried beans, oats, sorghum/milo silage, seed crops, sudangrass, wheat hay, field and stubble straw.

Vegetable Crops

Item	Year	PRODUCTION			VALUE		
		Harvested Acreage	Per Acre	Total	Unit	Per Unit	Total
Tomatoes							
Fresh	2016	500	19.62	9,810	Ton	\$462.00	\$4,532,000
	2015	600	25.19	15,114	Ton	456.00	6,892,000
Processed	2016	5,700	55.31	315,267	Ton	75.00	23,645,000
	2015	7,600	49.68	377,579	Ton	79.00	29,829,000
Total	2016	6,200					28,177,000
	2015	8,200					36,721,000
Miscellaneous ^a	2016	3,700					18,962,000
	2015	2,400					13,816,000
TOTAL	2016	9,900					\$47,139,000
	2015	10,600					50,537,000

a/ Includes artichokes, carrots, all cabbage, garlic, herbs, melons, onions, all peppers, potatoes, all squash and miscellaneous truck crops

FRUIT & NUT CROPS

Item	Year	PRODUCTION			VALUE		
		Harvested Acreage	Per Acre	Total	Unit	Per Unit	Total
Almonds ^a	2016	125,000	1.02	127,500 ^b	Ton	\$4,498.00	\$573,495,000
	2015	115,000	0.95	109,250	Ton	6,976.00	762,128,000
Almond Hulls	2016			249,900	Ton	80.00	19,992,000
	2015			214,130	Ton	119.00	25,481,000
Cherries	2016	590	3.66	2,159	Ton	3,873.00	8,362,000
	2015	590	5.01	2,956	Ton	4,800.00	14,189,000
Figs, Fresh & Dried	2016	5,600	1.65	9,240	Ton	2,353.00	21,742,000
	2015	5,500	1.93	10,615	Ton	2,290.00	24,308,000
Grapes							
Raisin Varieties							
Crushed	2016	3,400	8.76	29,784	Ton	199.00	5,927,000
	2015	2,600	10.91	28,366	Ton	202.00	5,730,000
Dried	2016	19,200	3.09	59,328	Ton	1,096.00	65,023,000
	2015	20,500	3.05	62,525	Ton	1,484.00	92,787,000
Fresh	2016	800	9.25	7,400	Ton	1,470.00	10,878,000
	2015	900	9.82	8,838	Ton	1,392.00	12,302,000
Table Varieties	2016	3,500	9.13	31,955	Ton	1,790.00	57,199,000
	2015	3,100	9.10	28,210	Ton	1,873.00	52,837,000
Wine Varieties^c							
Red Varieties	2016	23,000	10.78	247,940	Ton	327.00	81,076,000
	2015	23,500	11.32	266,020	Ton	311.00	82,732,000
White Varieties	2016	14,300	11.97	171,171	Ton	295.00	50,495,000
	2015	15,500	11.60	179,800	Ton	289.00	51,962,000
Total Grapes	2016	64,200					270,598,000
	2015	66,100					298,350,000
Olives	2016	820	2.40	1,968	Ton	1,500.00	2,952,000
	Fresh & Oil	2015	740	4.20	3,108	Ton	682.00

a/ Meat basis

b/ Reflects total production, including imperfect stock; price weighted accordingly

c/ Includes table grape crushed

FRUIT & NUT CROPS

Item	Year	PRODUCTION			VALUE		
		Harvested Acreage	Per Acre	Total	Unit	Per Unit	Total
Oranges	2016	3,000	15.26	45,780	Ton	\$475.00	\$21,746,000
	2015	2,900	15.27	44,283	Ton	469.00	20,769,000
Peaches							
Cling	2016	210	15.73	3,303	Ton	507.00	1,675,000
	2015	280	16.00	4,480	Ton	460.00	2,061,000
Freestone	2016	410	25.99	10,656	Ton	469.00	4,998,000
	2015	320	17.22	5,510	Ton	946.00	5,212,000
Total	2016	620					6,673,000
	2015	600					7,273,000
Pistachios	2016	33,500	1.75	58,625 ^b	Ton	3,985.00	233,621,000
	2015	32,700	0.92	30,084	Ton	5,790.00	174,186,000
Plums, Dried	2016	1,000	3.17	3,170	Ton	2,432.00	7,709,000
	2015	920	1.88	1,730	Ton	2,139.00	3,700,000
Walnuts	2016	2,000	1.74	3,480	Ton	1,778.00	6,187,000
	2015	1,900	1.70	3,221	Ton	1,822.00	5,869,000
Miscellaneous							
Fruits & Nuts ^d	2016	7,500					71,461,000
	2015	8,300					63,658,000
Orchard	2016			6,000	Cord ^e		1,110,000
Firewood	2015			5,500	Cord		908,000
TOTAL	2016	243,830					\$1,245,648,000
	2015	235,250					1,402,939,000

d/ Includes apples, apricots, berries, kiwis, nectarines, pears, pecans, persimmons, plums, pomegranates, tangelos, tangerines, almond and walnut shells

e/ Cord: 128 Cubic feet

APIARY PRODUCTS

Item	Year	PRODUCTION		VALUE	
		Total	Unit	Per Unit	Total
Apiary Products					
Beeswax	2016	44,133	Pound	\$3.40	\$150,000
	2015	82,773	Pound	3.40	281,000
Honey	2016	555,020	Pound	1.85	1,027,000
	2015	712,271	Pound	2.20	1,567,000
Pollination	2016	254,000	Colony	189.00	48,006,000
	2015	234,000	Colony	191.00	44,694,000
TOTAL	2016				\$49,183,000
	2015				46,542,000

FOREST PRODUCTS

Item	Year	PRODUCTION		VALUE	
		Production	Unit		Total
Timber	2016	4,400	MBF ^a		\$396,000
	2015	8,071	MBF		721,000
Firewood ^b	2016	6,700	Cord ^c		452,000
	2015	5,800	Cord		334,000
TOTAL	2016				\$848,000
	2015				1,055,000

a/ MBF: Thousand board feet

b/ Includes: Christmas trees, greenery, pinecones and saw logs

c/ Cord: 128 Cubic feet

NURSERY PRODUCTS

Item	Year	PRODUCTION		VALUE	
		Field Acres	House Sq. Foot		Total
Nursery Stock ^a	2016	350	257,000		\$29,977,000
	2015	270	229,000		26,725,000

a/ Includes grapevines, fruit trees, nut trees and ornamentals

LIVESTOCK AND POULTRY

PRODUCTION

VALUE

Item	Year	Head	Liveweight	Unit	Per	Unit	Total
Cattles and Calves ^a	2016	76,000	547,170	CWT ^b		\$114.00	\$62,377,000
	2015	76,200	547,980	CWT		133.00	72,881,000
Replacement Heifers ^c	2016	27,000				1,200.00	32,400,000
	2015	27,300				1,380.00	37,674,000
Poultry	2016	3,431,000					14,141,000
	2015	8,406,000					43,466,000
TOTAL	2016						\$108,918,000
	2015						154,021,000

a/ Range and dairy cattle sold for beef

b/ Hundredweight: 100 pounds

c/ Milk cows

LIVESTOCK AND POULTRY PRODUCTS

PRODUCTION

VALUE

Item	Year	Production	Unit	Per	Unit	Total
Milk Market ^a	2016	18,195,884	CWT		\$14.92	\$271,483,000
	2015	18,361,444	CWT		13.86	254,490,000
Milk Manufacturing ^a	2016	21,906	CWT		15.20	333,000
	2015	29,378	CWT		17.22	506,000
Other Products ^b	2016					7,400,000
	2015					7,061,000
TOTAL	2016					\$279,216,000
	2015					262,057,000

a/ Madera County has 42 dairies, with 70,000 lactating cows

b/ Includes: aquaculture, market eggs, hogs, manure, sheep, lambs and wool

AGRICULTURAL CROP REPORT SUMMARY

MADERA COUNTY 2016

Item	Year	Harvested Acres	Total Value
Apiary	2016		\$49,183,000
	2015		46,542,000
Field Crops	2016	450,230	58,560,000
	2015	455,600	73,570,000
Fruit and Nut Crops	2016	243,830	1,245,648,000
	2015	235,250	1,402,939,000
Forest Products	2016		848,000
	2015		1,055,000
Livestock and Poultry	2016		108,918,000
	2015		154,021,000
Livestock and Poultry Products	2016		279,216,000
	2015		262,057,000
Nursery Products	2016	350	29,977,000
	2015	270	26,725,000
Vegetable Crops	2016	9,900	47,139,000
	2015	10,600	50,537,000
TOTAL	2016		\$1,819,489,000
	2015		2,017,446,000

**MADERA COUNTY
HIGHLIGHTS**

County Established	March 11, 1893
County Seat	Madera (city)
Population ^a	154,697

Total County Acreage	1,366,925
2016 Harvested Acreage	707,310
Field Crop Acreage	63,230
Fruit and Nut Acreage	243,830
Nursery Acreage	350
Rangeland Acreage	390,000
Vegetable Acreage	9,900
Forest Acreage	414,300
U. S. Parkland Acreage	83,000

Bordering Counties

Merced County	Northwest
Mariposa County	North
Mono County	East
Fresno County	South and West

Ranking of Madera County Among Counties of California

Population ^a	32
Total Acreage	24
Total Agricultural Production ^b	10
Commodity, by Value	
Figs	1
Pistachios	3
Grapes, Raisin Variety	4
Almonds	4
Grapes, Table Variety	5
Cattles & Calves	6
Grapes, Wine Variety	7
Corn, Silage	7
Cherries	7
Milk, Market	8

Ranking of Madera County Among Counties of the United States

Total Agricultural Production ^c	14
--	----

- a/ US Bureau of Census, 2015 Estimate
- b/ County Agricultural Commissioner's Data, 2015
- c/ USDA Ag Census, 2012

Madera County Crop Reports from 2001 to 2016 are available at:
<http://www.madera-county.com/index.php/publications/crop-reports>

2016 Sustainable Agriculture Report 1

Pest Prevention

Pest prevention programs are mandated by the California Food and Agricultural Code to prevent the introduction and spread of pests in California. Pest prevention involves three strata: pest exclusion, pest detection and integrated pest management.

The **Pest Exclusion Program** prevents the introduction of injurious pests that are not of common occurrence in the county.

Over 290 beehive shipments received from Red Imported Fire Ants (RIFA) infested states, with over 118,000 beehives, were inspected for RIFA.

Countries receiving agricultural commodities require certification that the commodities are free from potentially injurious pests. Over 5,000 phytosanitary inspections were performed on Madera County commodities, which were exported to 67 countries.

The State of California's **Pest Detection Program** utilizes insect traps and surveys for the detection of foreign pests which may have eluded exclusion efforts. The trapping program targeted multiple pests, including the following:

Caribbean Fruit Fly (<i>Anastrepha suspens</i>)	European Corn Borer (<i>Ostrinia nubilalis</i>)
Gypsy Moth (<i>Lymentria dispar</i>)	Japanese Beetle (<i>Popillia japonica</i>)
Light Brown Apple Moth (<i>Epiphyas postvittana</i>)	Mediterranean Fruit Fly (<i>Ceratitis capitata</i>)
Melon Fruit Fly (<i>Dacus cucurbitae</i>)	Mexican Fruit Fly (<i>Anastrepha ludens</i>)
Oriental Fruit Fly (<i>Bactrocera dorsalis</i>)	

The **Integrated Pest Control Program** strives to eradicate infestations of new pests before they become widespread. Pink Bollworm (*Pectinophora gossypiella*) a non-established and economically significant pest of cotton, is controlled by post-season plowdown of cotton plants. Pink Bollworm was controlled by post-season plowdown of over 630 acres of cotton plantings.

2016 Sustainable Agriculture Report 2

Pest Management

The Glassy-winged Sharpshooter Program serves to detect and control the vector of Pierce's Disease, a potentially catastrophic disease of vineyards. This program involved the placement of traps in both urban and agricultural sites followed by subsequent trap servicings. In addition, incoming shipments of host material and susceptible county plantings were inspected.

Multiple Glassy-winged Sharpshooters were found in Madera County in 2016, which lead to additional placement of delimitation traps also followed by subsequent trap servicings.

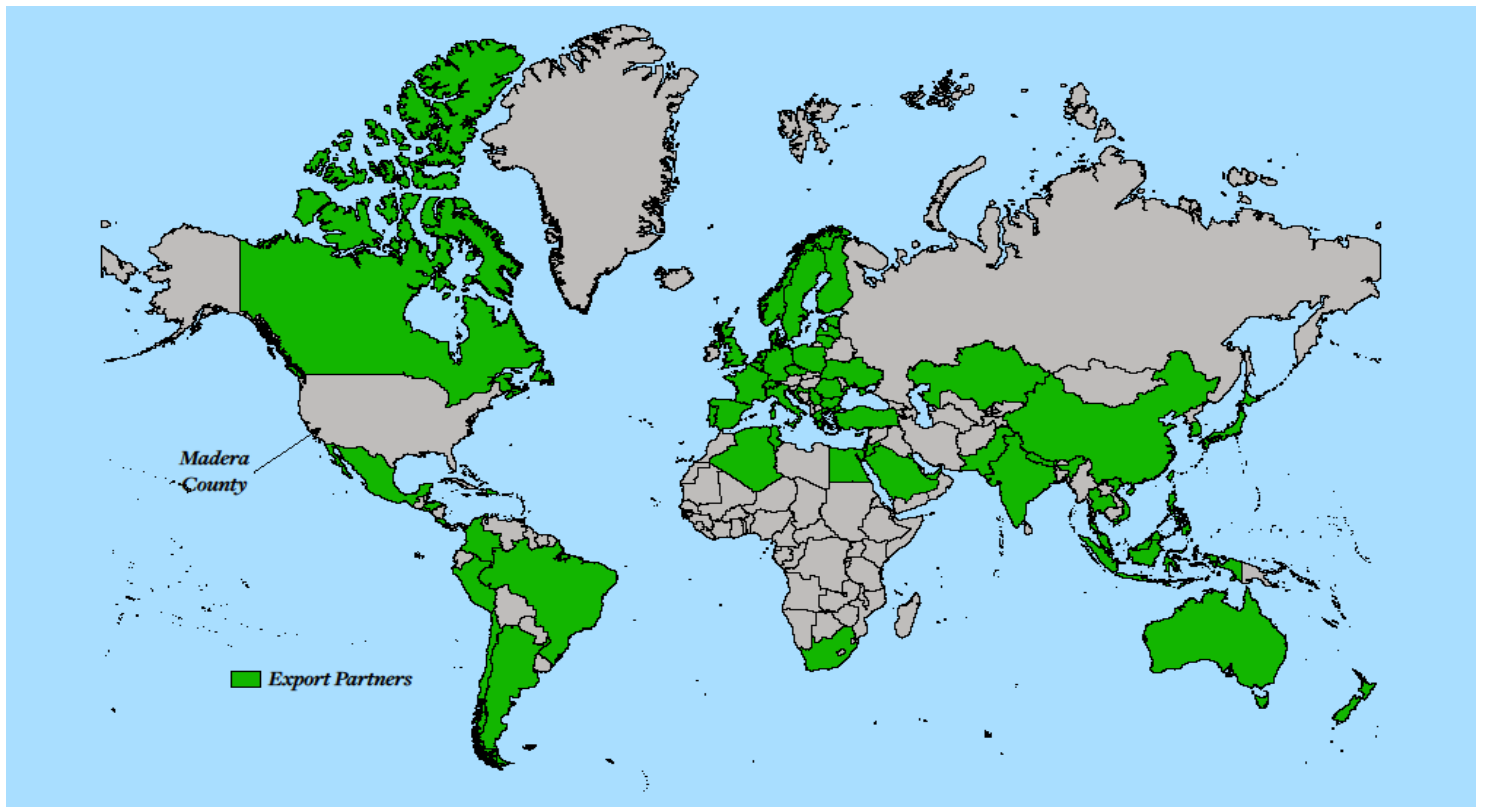
Additionally, the California Department of Food and Agriculture (CDFA) released three parasitic wasps (*Gonatocerus triguttatus*, *G. morgani* and *G. morrilli*) in 2016 to aid in the control of the Glassy-winged Sharpshooters. Over four hundred parasitoids were released in the Wildwood and Rolling Hills areas.

Organic Farming

Sixty-three organic farms and 9 handlers were registered in Madera County in 2016. Utilizing organic principles defined in the California Organic Products Act of 2003, these farms produce a wide array of commodities, such as:

alfalfa, almonds, apples, apricots, artichokes, basil, dried beans, green beans, beets, berries, broccoli, cabbage, cantaloupe, carrots, cauliflower, chard, cherries, cilantro, collards greens, coriander, sweet corn, cucumbers, daikon, dill, fennel, figs, garlic, gourds, grapes (table, raisin, wine), grapefruit, hay, herbs, kale, kiwifruit, kohlrabi, leeks, lemons, lettuce, livestock, mustard greens, oats, okra, olives, onions, oranges, parsley, pasture, peas, peppers, persimmons, pistachio, plums, pomegranates, popcorn, potatoes, poultry, prunes, pumpkins, radish, rutabagas, seed crops, spinach, squash, tomatillos, tomatoes, turnips, walnuts, watermelons, and wheat.

The value of organic production in Madera County in 2016 was **\$43,119,000**.



67 Countries Received Madera County Commodities in 2016:

Algeria	Egypt	Kuwait	Romania
Argentina	El Salvador	Latvia	Saudi Arabia
Australia	Estonia	Lebanon	Serbia
Bahrain	Finland	Lithuania	Singapore
Belgium	France	Malaysia	South Africa
Brazil	Germany	Mauritius	Spain
Bulgaria	Greece	Mexico	Sweden
Canada	Honduras	Nepal	Switzerland
Chile	Hong Kong	Netherlands	Taiwan
China	India	New Caledonia	Thailand
Colombia	Indonesia	New Zealand	Tunisia
Costa Rica	Israel	Norway	Turkey
Croatia	Italy	Pakistan	Ukraine
Cyprus	Japan	Peru	United Arab Emirates
Czech Republic	Jordan	Philippines	United Kingdom
Denmark	Kazakhstan	Poland	Viet Nam
Dominican Republic	Korea, Republic of	Portugal	

Madera County Commodities Exported:

- | | | |
|------------|--------------------|----------------------|
| *Almonds | *Masa (Corn Flour) | *Raisins |
| *Figs | *Pistachios | *Tillandsia (Plants) |
| *Grapes | *Plums | *Walnuts |
| *Kiwifruit | *Prunes | |

RAINFALL - MADERA, CALIFORNIA (1967 - 2016)

YEAR	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1967-68	0.00	0.00	0.10	0.02	1.37	1.45	0.84	1.57	1.58	1.02	0.31	0.00	8.26
1968-69	0.00	0.03	0.00	1.22	2.26	3.24	5.69	4.37	1.60	1.74	0.02	0.00	20.17
1969-70	0.07	0.00	0.13	0.52	1.01	1.45	3.42	0.84	2.09	0.21	0.00	0.19	9.93
1970-71	0.00	0.00	0.00	0.24	1.97	2.85	0.45	0.22	1.01	0.83	1.77	0.00	9.34
1971-72	0.00	0.00	0.02	0.04	0.58	1.72	0.19	0.70	0.00	0.56	0.03	0.05	3.89
1972-73	0.02	0.00	0.14	0.49	4.07	1.40	2.23	3.71	2.98	0.39	0.00	0.02	15.45
1973-74	0.00	0.00	0.00	1.55	1.15	2.36	2.26	0.42	2.32	0.72	0.00	0.00	10.78
1974-75	0.00	0.00	0.00	1.10	0.52	1.54	0.43	1.56	2.17	1.81	0.00	0.00	9.13
1975-76	0.00	0.15	0.19	1.26	0.34	0.10	0.10	3.64	0.64	1.60	0.00	0.00	8.02
1976-77	0.05	0.27	0.94	0.66	0.87	1.18	0.60	0.22	1.05	0.00	0.77	0.00	6.61
1977-78	0.00	0.00	0.00	0.00	0.58	2.36	3.14	4.27	5.04	2.90	0.00	0.00	18.29
1978-79	0.02	0.00	1.61	0.03	3.04	0.54	3.97	3.18	2.14	0.11	0.12	0.00	14.76
1979-80	0.00	0.00	0.00	0.66	1.00	1.50	3.61	3.81	1.50	0.63	0.25	0.00	12.96
1980-81	0.00	0.00	0.00	0.12	0.26	0.58	2.74	0.76	3.42	1.03	0.00	0.00	8.91
1981-82	0.00	0.00	0.00	1.36	1.99	0.81	1.97	1.42	3.44	2.94	0.00	0.20	14.13
1982-83	0.00	0.00	0.84	1.29	3.16	1.78	4.97	3.40	5.12	1.90	0.83	0.00	23.29
1983-84	0.00	0.00	0.22	0.66	2.58	2.45	0.35	1.48	0.59	0.18	0.00	0.00	8.51
1984-85	0.00	0.00	0.00	0.87	2.37	2.12	0.59	0.71	1.65	0.52	0.00	0.34	9.17
1985-86	0.00	0.12	0.11	0.54	2.76	1.03	1.37	5.22	3.16	0.51	0.15	0.00	14.97
1986-87	0.00	0.00	0.43	0.00	0.00	0.97	1.60	2.26	2.91	0.36	0.03	0.02	8.58
1987-88	0.00	0.00	0.00	1.96	0.48	1.52	0.90	0.50	0.59	2.03	0.29	0.03	8.30
1988-89	0.00	0.00	0.00	0.00	1.42	2.04	0.40	1.20	2.13	0.17	0.11	0.00	7.47
1989-90	0.00	0.03	0.94	0.55	0.54	0.00	2.32	1.38	0.71	1.41	2.36	0.00	10.24
1990-91	0.00	0.00	0.04	0.03	0.53	0.64	0.15	1.25	7.11	0.17	0.05	0.01	9.98
1991-92	0.00	0.02	0.00	0.87	0.23	1.08	1.43	2.88	2.13	0.02	0.00	0.00	8.66
1992-93	0.09	0.00	0.00	1.33	0.04	3.08	5.16	2.69	2.92	0.32	0.71	0.43	16.77
1993-94	0.00	0.00	0.00	0.06	0.77	1.39	1.85	1.77	0.43	1.89	2.61	0.00	10.77
1994-95	0.00	0.00	0.13	1.41	1.61	1.36	5.18	0.71	4.82	1.21	0.79	0.48	17.70
1995-96	0.00	0.00	0.00	0.00	0.00	2.42	2.62	3.98	2.34	0.84	0.52	0.32	13.04
1996-97	0.00	0.00	0.00	1.83	2.55	5.02	5.05	0.19	0.00	0.00	0.00	0.00	14.64
1997-98	0.00	0.01	0.13	0.00	2.55	1.65	4.22	5.69	4.26	2.03	1.38	0.74	22.66
1998-99	0.00	0.00	0.88	0.19	0.34	0.95	2.18	1.67	0.63	1.62	0.06	0.05	8.57
1999-00	0.00	0.00	0.00	0.00	0.61	0.08	3.59	6.13	1.35	1.26	0.16	0.46	13.64
2000-01	0.00	0.00	0.27	2.82	0.07	0.13	2.33	1.98	1.71	1.08	0.00	0.00	10.39
2001-02	0.02	0.00	0.02	0.51	1.89	2.42	1.40	0.34	1.14	0.23	0.33	0.22	8.52
2002-03	0.00	0.00	0.00	0.00	2.80	2.85	0.51	1.51	0.64	1.74	0.87	0.00	10.92
2003-04	0.00	0.06	0.00	0.00	0.34	2.88	0.95	2.20	0.56	0.00	0.00	0.00	6.99
2004-05	0.00	0.00	0.00	3.89	1.07	3.67	2.10	3.04	2.59	0.60	3.32	0.00	20.28
2005-06	0.00	0.04	0.01	0.00	0.00	2.49	3.10	0.65	3.80	2.55	0.00	0.00	12.64
2006-07	0.00	0.00	0.00	0.40	0.56	1.40	0.65	1.86	0.57	0.35	0.05	0.00	5.84
2007-08	0.00	0.00	0.15	0.32	0.09	2.13	2.78	2.21	0.00	0.00	0.26	0.00	7.94
2008-09	0.00	0.00	0.00	0.00	1.19	1.27	1.95	3.24	0.83	0.00	0.00	0.00	8.48
2009-10	0.00	0.00	0.06	1.14	0.17	2.69	2.48	2.77	2.04	2.69	0.22	0.00	14.26
2010-11	0.00	0.00	0.00	0.21	2.31	5.40	1.88	1.50	4.17	0.24	0.45	1.41	17.57
2011-12	0.00	0.00	0.00	0.72	0.89	0.08	0.89	0.46	2.92	2.61	0.00	0.12	8.69
2012-13	0.00	0.00	0.00	0.07	1.84	3.42	1.33	0.74	0.12	0.98	0.06	0.00	8.56
2013-14	0.00	0.00	0.02	0.07	0.25	0.23	0.32	2.16	0.48	1.11	0.00	0.00	4.64
2014-15	0.00	0.00	0.04	0.00	1.06	2.41	0.00	0.66	0.01	0.94	0.45	0.00	5.57
2015-16	0.02	0.00	0.14	0.29	1.81	2.24	4.14	0.46	3.84	3.14	0.01	0.02	16.11
2016-17	0.00	0.00	0.00	0.77	1.42	2.22	4.98	3.88	0.60	0.45	0.12	0.00	14.44
Average	0.01	0.01	0.15	0.64	1.23	1.81	2.15	2.07	2.00	1.03	0.39	0.10	11.59

50 YEAR AVERAGE RAINFALL



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