

# COUNTY OF SAN DIEGO



# CROP STATISTICS & ANNUAL REPORT







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C O M M I S S I O N E R



# County of San Diego

**HA DANG**  
AGRICULTURAL COMMISSIONER/  
SEALER OF WEIGHTS & MEASURES

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**MĒGAN MOORE**  
ASST. AGRICULTURAL COMMISSIONER/  
SEALER OF WEIGHTS & MEASURES

Secretary Karen Ross  
California Department of Food and Agriculture  
and  
The Honorable Board of Supervisors of the County of San Diego  
Supervisor Nora Vargas, Chair  
Supervisor Terra Lawson-Remer, Vice Chair  
Supervisor Joel Anderson  
Supervisor Jim Desmond

I respectfully submit the County of San Diego Department of Agriculture/Weights & Measures' 2022 Crop Statistics and Annual Report of acreage, yield, and value of agricultural production for San Diego County. In 2022, the direct economic output from agricultural production totaled \$1,776,799,614. This equates to an increase of about \$24 million or 1.4% from 2021's total value of \$1,752,999,086. The overall acreage devoted to commercial agriculture went from 219,874 acres in 2021 to 214,438 acres in 2022 for a decrease of about five thousand acres or 2.5% overall.

This report details crop information and highlights the many diverse programs that promote the County's goals by supporting food security, agricultural trade, public health, consumer confidence, and a sustainable environment.

Special thanks to the producers, industry groups, and public agencies who provided vital information for this report. I would also like to express gratitude for your leadership and support. Finally, much appreciation to my outstanding staff for their continued superior service to our community.

Regards,

Ha Dang  
Agricultural Commissioner/  
Sealer of Weights and Measures





2 0 2 2 O V E R V I E W  
O F C H A N G E S

## 2022 Overview of Changes



**The overall value of commercial agriculture in San Diego county increased about \$24 million or 1.36% from 2021 to 2022.** This year, Avocados lead the overall increase as the crop increased in value by about \$40 million or 48%. The Fruit & Nuts, Vegetable & Vine, Livestock & Poultry, and Forest Products groups also rose in value. This growth is attributed to higher prices, as well as improved yields due to better weather. The Nursery & Cut Flower Products, Apiary Products, and Field Crops groups decreased in value, partially due to a reduction in acreage as well as less demand for the products. Overall, the value of total agricultural production was higher than last year, and is beginning to show some recovery from decreases attributed to the COVID-19 pandemic.

Bedding Plants, Color, Perennials, Cacti & Succulents is still the top crop group, bringing in a total of \$445,359,543 or 25% of the total value of agriculture production in San Diego county. The second most valuable group is Ornamental Trees and Shrubs, valued at \$375,080,420, equaling 21% of the region's overall agricultural production value.

The value of Nursery & Cut Flower Products dropped by 7% to \$1,219,074,411. Even though there were decreases in Nursery Products values, there was a 5% increase in Cut Flower Products' overall value. Foliage values decreased by 9%, while Other Cut Flower & Bulbs values increased by 10%. The reduction in the value of some Nursery & Cut Flower Products is due to a decrease in acreage, which, combined with overall reduced prices, attributed to the decline in value for the entire group.

Fruit & Nut Crops' value increased to \$306,016,589, a 29% change from the previous year. The overall value of Citrus increased by 20% compared to last year, despite a 5% decrease in acreage. All Citrus crops, except Limes, increased in value. Lemons and Oranges both rose by 24%, while Grapefruit rose by 14%. The Citrus value growth is attributed to increased prices and better yields, as the weather during the growing season was an improvement over the previous year. The value of Avocados increased due to a better yield compared to the previous year, as well as higher prices. This trend of an increase in value driven by rising prices was also seen in the Fruit & Nuts, Other group. The value of Wine Grapes decreased by 11% due to reduced yield. The value of Apples also decreased, by 52%, due to a lower yield, as growers reported being impacted by the weather at the beginning of the season.

Vegetable & Vine Crops' value increased to \$129,829,054, a 7% increase from last year. This increase was primarily due to combined increase in the value of Vegetables, Other and Herbs/Spices by 8% and 11%, respectively. On the other hand, there were decreases in the value of other crops, such as Squash, by 21%. These decreases did not offset the overall increase in the value of Vegetable & Vine Crops. The growth in the group's overall value is associated with price increases.

Apiary Products were valued at \$3,237,536, a 13% decrease from last year. This year's decline is due to the reduction in pollination services and their prices, which is a significant component of the overall value. However, there is some good news, as the value of Honey & Bees Wax grew 724% from the previous year's value, due to an increase in rainfall, which favored honey production.

Livestock & Poultry were valued at \$113,812,477, a 54% increase from last year. This growth is due to the increased value of most Livestock & Poultry Products.

Field Crops' value decreased to \$3,954,751, 7% lower than last year. This drop was seen in all the crops tracked in this group, except for Range. The decrease in the group's overall value was mainly attributed due to a decrease in acreage and yields.





H I G H L I G H T S

2022 HIGHLIGHTS

TOTAL VALUE OF PRODUCTION

\$1,776,799,614

Total Acreage	214,438
Commodity with Highest Reported Dollar Value	Bedding Plants, Color, Perennials, Cacti & Succulents
Highest Dollar Value Per Acre	Indoor Flowering & Foliage Plants (including Poinsettia)
Lowest Dollar Value Per Acre	Range
Greatest % Increase in Total Dollar Value from 2021	Honey & Bees Wax
Greatest % Decrease in Total Dollar Value from 2021	Apples
Commodity with Greatest Amount of Planted Acreage	Avocado

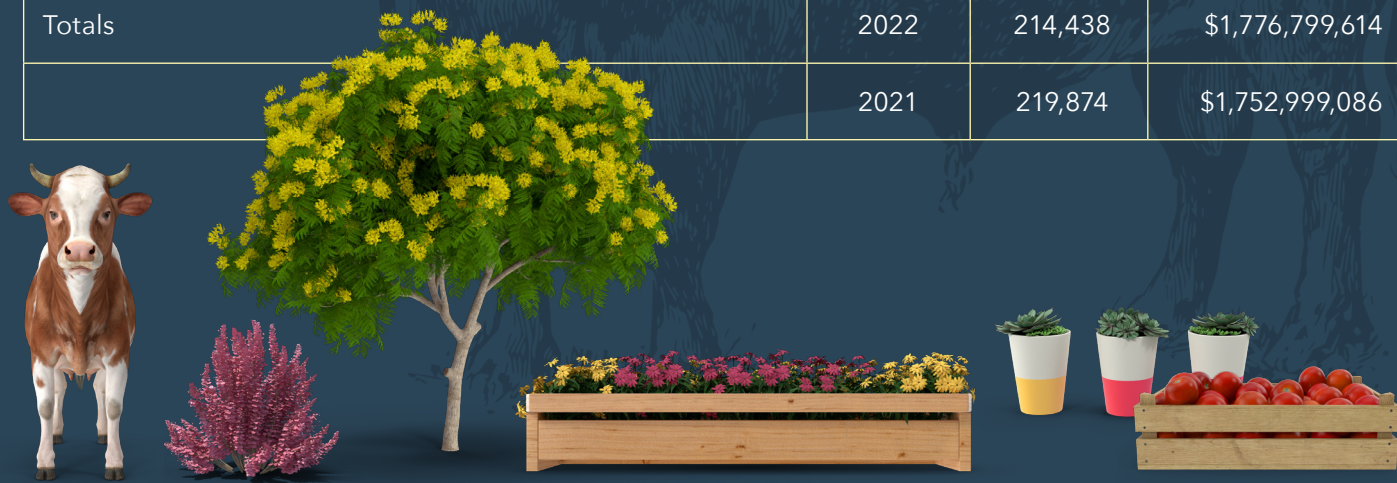


CROPS BY GROUP

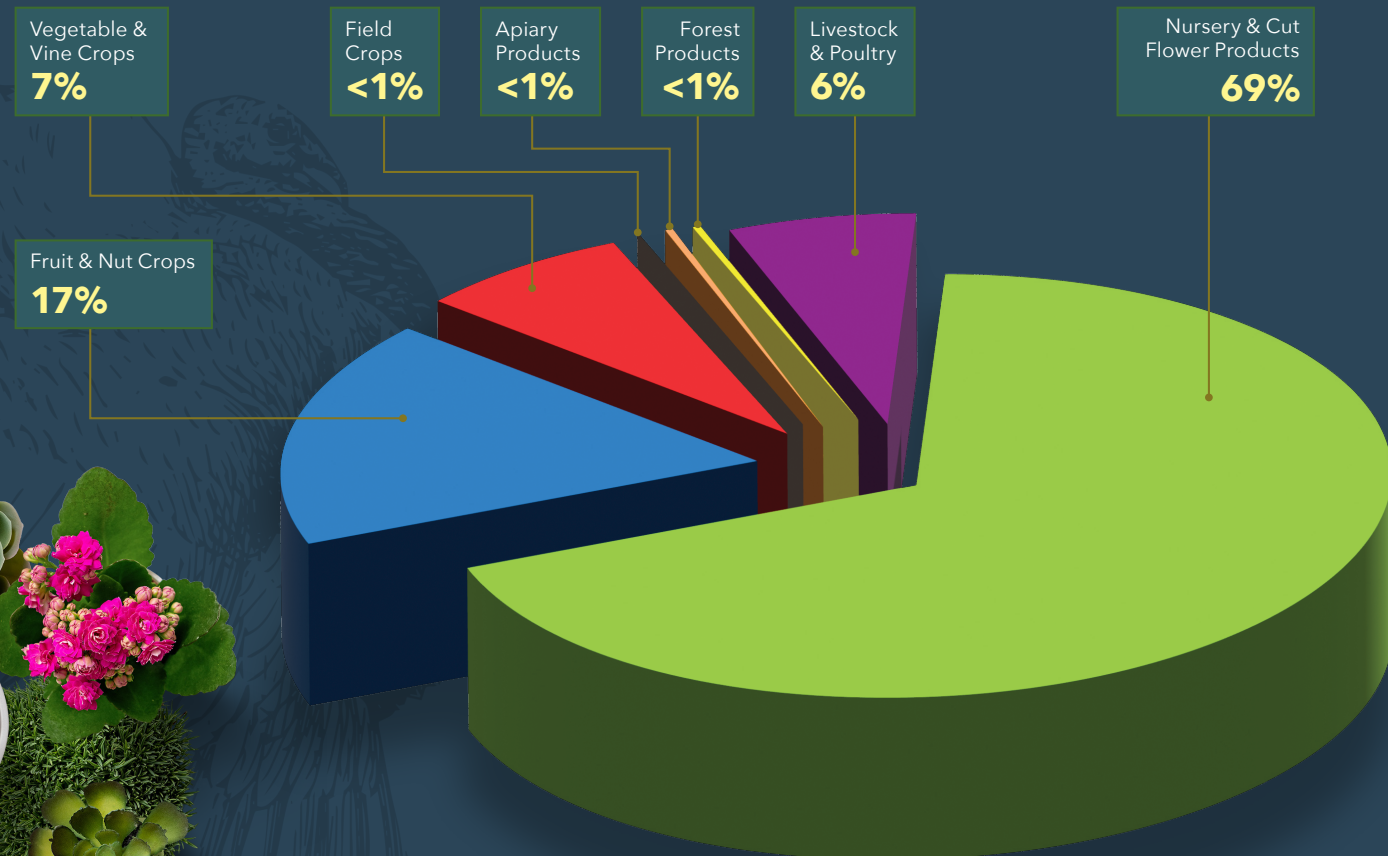
CROP	YEAR	ACRES	TOTAL VALUE
Nursery & Cut Flower Products	2022	11,089	\$1,219,074,411
	2021	11,429	\$1,312,707,724
Fruit & Nut Crops	2022	23,993	\$306,016,589
	2021	26,014	\$236,848,841
Vegetable & Vine Crops	2022	3,122	\$129,829,054
	2021	3,342	\$120,881,147
Field Crops	2022	176,234	\$3,954,751
	2021	179,088	\$4,257,868
Apiary Products	2022		\$3,237,536
	2021		\$3,741,323



CROP	YEAR	ACRES	TOTAL VALUE
Forest Products	2022		\$874,795
	2021		\$865,277
Livestock & Poultry	2022		\$113,812,477
	2021		\$73,696,906
Totals	2022	214,438	\$1,776,799,614
	2021	219,874	\$1,752,999,086



**CROPS BY GROUP OVERALL**

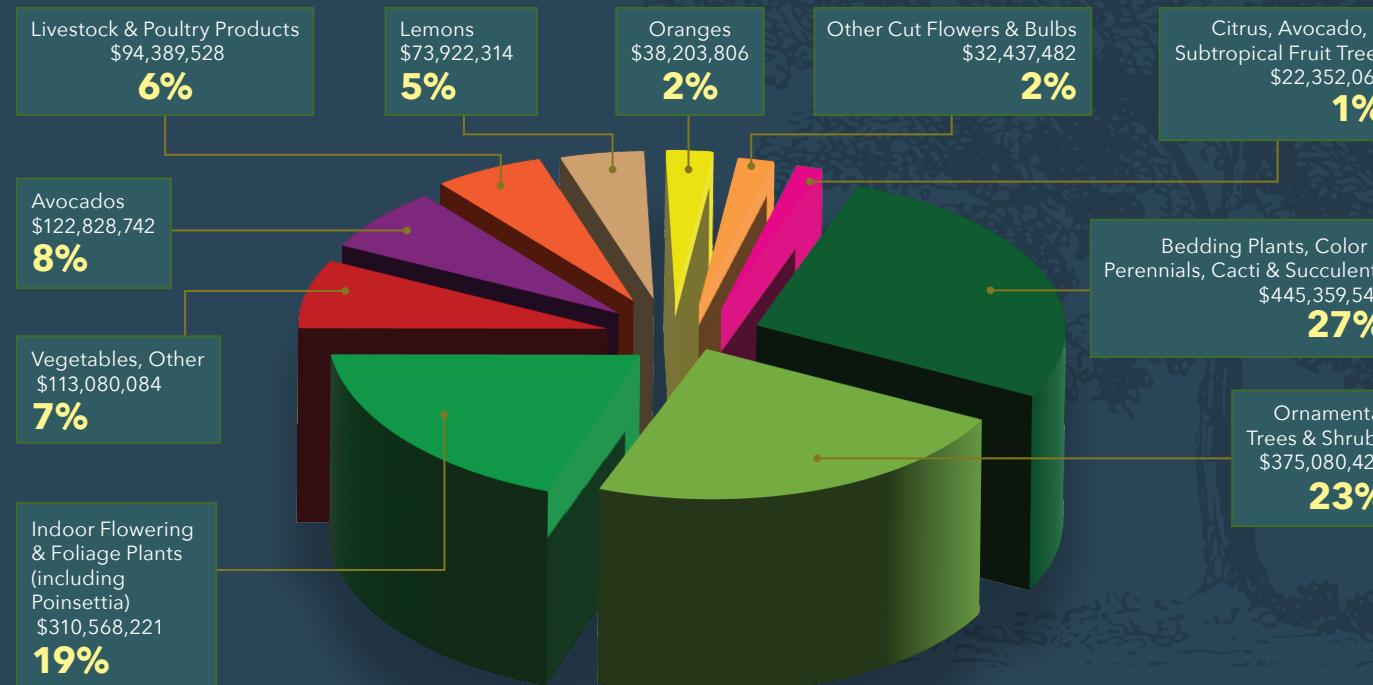


**TOP TEN CROPS**

TOP TEN CROPS	2022 VALUE	GROUP
Bedding Plants, Color, Perennials, Cacti & Succulents	\$445,359,543	Nursery & Cut Flower Products
Ornamental Trees & Shrubs	\$375,080,420	Nursery & Cut Flower Products
Indoor Flowering & Foliage Plants (including Poinsettia)	\$310,568,221	Nursery & Cut Flower Products
Total Avocados	\$122,828,742	Fruit & Nut Crops
Vegetables, Other	\$113,080,084	Vegetable & Vine Crops
Livestock & Poultry Products	\$94,389,528	Livestock & Poultry
Lemons	\$73,922,314	Fruit & Nut Crops
Oranges	\$38,203,806	Fruit & Nut Crops
Other Cut Flowers & Bulbs	\$32,437,482	Nursery & Cut Flower Products
Citrus, Avocado, & Subtropical Fruit Trees	\$22,352,065	Nursery & Cut Flower Products



**TOP 10 CROPS OVERALL**





NURSERY PRODUCTS



CROP	YEAR	ACRES	TOTAL VALUE
Bedding Plants, Color, Perennials, Cacti & Succulents	2022	1,967	\$445,359,543
	2021	1,976	\$488,376,727
Cacti & Succulents*	2022	969	
	2021	921	
Citrus, Avocado, & Subtropical Fruit Trees	2022	216	\$22,352,065
	2021	235	\$24,049,610
Indoor Flowering & Foliage Plants (including Poinsettia)	2022	870	\$310,568,221
	2021	881	\$356,408,291
Ornamental Trees & Shrubs	2022	4,662	\$375,080,420
	2021	4,950	\$382,387,500
Turf, Cut Christmas Trees	2022	806	\$17,097,737
	2021	790	\$15,267,941
<b>Total Nursery Products</b>	2022	8,521	\$1,170,457,986
	2021	8,832	\$1,266,490,069

\*Combined Cacti & Succulents with Bedding Plants, Color, Perennials



CUT FLOWER PRODUCTS



CROP	YEAR	ACRES	TOTAL VALUE
Leptospermum Outdoor	2022	203	\$608,219
	2021	205	\$599,231
Proteas Outdoor	2022	373	\$2,213,820
	2021	390	\$2,222,053
Wax Flowers Outdoor	2022	588	\$4,597,014
	2021	592	\$4,307,998
Other Cut Flowers & Bulbs	2022	830	\$32,437,482
	2021	830	\$29,420,566
Foliage	2022	574	\$8,759,891
	2021	580	\$9,667,807
<b>Total Flower Products</b>	2022	2,568	\$48,616,425
	2021	2,597	\$46,217,655
<b>Total Nursery &amp; Cut Flower Products</b>	2022	11,089	\$1,219,074,411
	2021	11,429	\$1,312,707,724





FRUIT & NUT CROPS

CROP	YEAR	ACRES HARVESTED	TONS/ ACRE	TONS	US \$/TON	TOTAL VALUE
Apples	2022	115	1	88	\$2,772	\$243,526
	2021	133	2	215	\$2,372	\$510,195
Total Avocados	2022	12,597	3	37,178	\$3,304	\$122,828,742
	2021	14,458	2	26,577	\$3,117	\$82,832,387
Hass*	2022					
	2021	13,656	2	25,304	\$3,123	\$79,012,440
Lamb*	2022					
	2021	598	2	927	\$3,067	\$2,843,217
Other*	2022					
	2021	204	2	346	\$2,823	\$976,730
Berries, Other	2022	222	7	1,579	\$9,463	\$14,945,121
	2021	209	6	1,358	\$8,989	\$12,208,403
Total Citrus	2022	8,404	16	136,327	\$1,013	\$138,115,277
	2021	8,812	14	125,165	\$917	\$114,746,057
Grapefruit	2022	1,010	18	18,612	\$858	\$15,963,251
	2021	1,062	17	18,246	\$769	\$14,024,594
Kumquats	2022	50	4	193	\$3,734	\$719,448
	2021	51	4	186	\$3,552	\$661,130
Lemons	2022	2,985	18	52,499	\$1,408	\$73,922,314
	2021	2,847	17	48,057	\$1,245	\$59,820,045

\*AWM is no longer reporting individual varieties of Avocados

FRUIT & NUT CROPS

CROP	YEAR	ACRES HARVESTED	TONS/ ACRE	TONS	US \$/TON	TOTAL VALUE
Limes	2022	192	4	728	\$1,916	\$1,394,735
	2021	244	4	1,081	\$1,620	\$1,751,534
Oranges	2022	3,728	16	58,692	\$651	\$38,203,806
	2021	4,052	13	51,015	\$603	\$30,746,548
Tangerines, Tangelos	2022	438	13	5,603	\$1,412	\$7,911,724
	2021	556	12	6,580	\$1,177	\$7,742,206
Grapes, Wine	2022	978	2	1,796	\$2,017	\$3,621,285
	2021	986	2	2,244	\$1,804	\$4,048,376
Fruit & Nuts, Other	2022	1,352				\$12,590,436
	2021	1,080				\$9,149,158
Persimmons	2022	111	3	346	\$2,484	\$860,348
	2021	136	3	422	\$2,717	\$1,145,563
Strawberries	2022	215	22	4,687	\$2,734	\$12,811,852
	2021	200	23	4,600	\$2,654	\$12,208,701
<b>Total Fruit &amp; Nut Crops</b>	2022	23,993				\$306,016,589
	2021	26,014				\$236,848,841



VEGETABLE & VINE CROPS



CROP	YEAR	ACRES HARVESTED	TONS/ ACRE	TONS	US \$/ TON	TOTAL VALUE
Cucumbers	2022	66	10	658	\$1,723	\$1,133,468
	2021	65	10	672	\$1,687	\$1,134,443
Herbs/Spices	2022	162	10	1,599	\$7,816	\$12,496,059
	2021	153	11	1,697	\$6,626	\$11,245,010
Squash	2022	369	12	4,385	\$711	\$3,119,444
	2021	383	12	4,460	\$889	\$3,966,134
Tomatoes *	2022	1,193				
	2021	1,307				
Vegetables, Other *	2022	2,526				\$113,080,084
	2021	2,741				\$104,535,561
<b>Total Vegetable &amp; Vine Crops</b>	2022	3,122				\$129,829,054
	2021	3,342				\$120,881,147

\*Combined Tomatoes with Vegetables, Other



LIVESTOCK & POULTRY

COMMODITY	YEAR	NUMBER OF HEAD	TOTAL WEIGHT CWT	US \$/CWT	TOTAL VALUE
Cattle & Calves	2022	13,300	119,700	\$120	\$14,364,000
	2021	13,200	118,800	\$118	\$13,992,000
Hogs & Pigs	2022	1,546	3,865	\$60	\$231,891
	2021	1,491	3,728	\$67	\$249,805
Chickens	2022		60,518	\$78	\$4,706,865
	2021		58,234	\$68	\$3,980,438
Lambs & Sheep	2022	923	923	\$130	\$120,194
	2021	923	923	\$118	\$109,267
Livestock & Poultry Products *	2022				\$94,389,528
	2021				\$55,365,396
<b>Total Livestock &amp; Poultry</b>	2022				\$113,812,477
	2021				\$73,696,906

\*Combined Milk and Eggs, Chicken Market with Livestock & Poultry Products



FOREST PRODUCTS

COMMODITY	YEAR	TOTAL VALUE
Firewood	2022	\$874,795
	2021	\$865,277
<b>Total Forest Products</b>	2022	\$874,795
	2021	\$865,277





FIELD CROPS

COMMODITY	YEAR	ACRES	TONS/ACRE	TONS	US \$/TON	TOTAL VALUE
Hay, Oat	2022	1,113	1	1,125	\$284	\$319,093
	2021	1,784	1	2,498	\$195	\$486,033
Pasture, Irrigated	2022	700				\$1,457,924
	2021	714				\$1,465,692
Range	2022	173,802				\$1,038,741
	2021	176,173				\$961,903
Field, Other *	2022	619				\$1,138,994
	2021	417				\$1,344,239
<b>Total Field Crops</b>	2022	176,234				\$3,954,751
	2021	179,088				\$4,257,868

\*Combined Industrial Hemp with Field, Other



APIARY PRODUCTS

COMMODITY	YEAR	TOTAL VALUE
Honey & Bees Wax *	2022	\$651,295
	2021	\$79,023
Pollination	2022	\$2,586,240
	2021	\$3,662,300
<b>Total Apiary Products</b>	2022	\$3,237,536
	2021	\$3,741,323

\*Combined Bees Wax with Honey



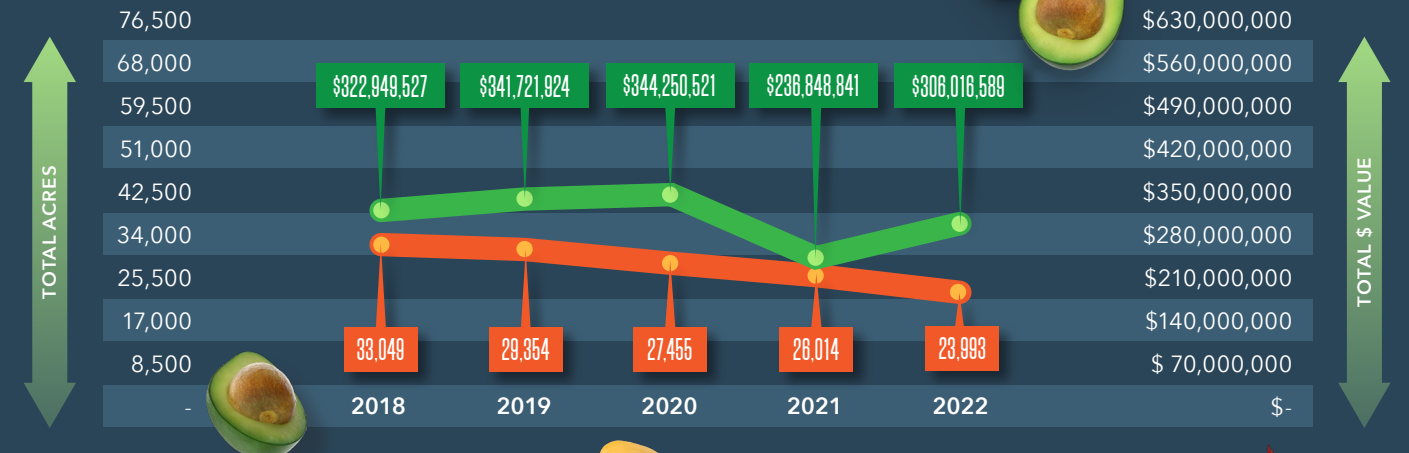
FIVE YEAR TREND ANALYSIS

TOTAL ACRES  
TOTAL \$ VALUE

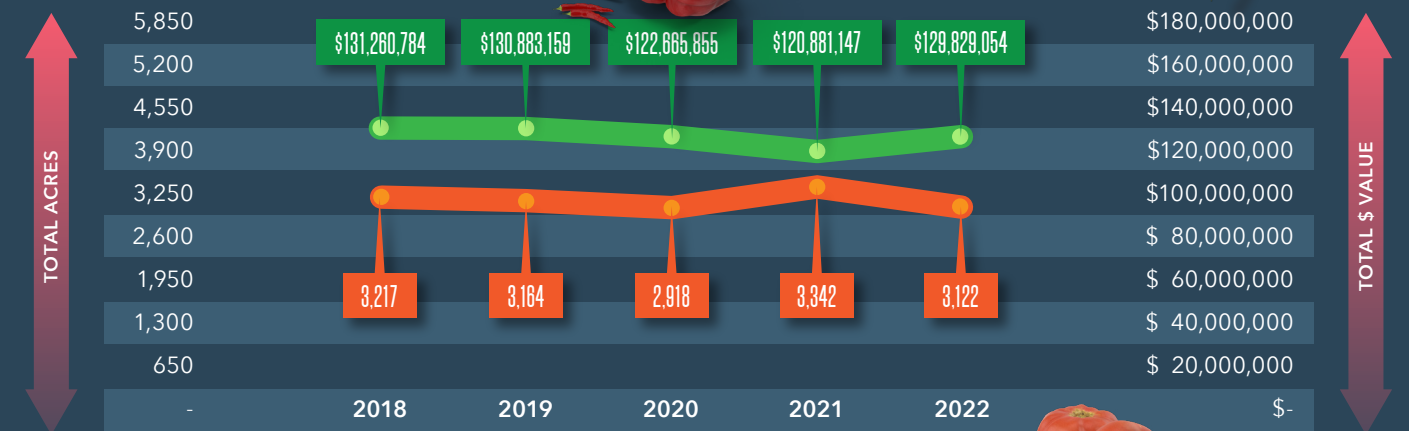
NURSERY & CUT FLOWER PRODUCTS



FRUIT & NUT CROPS



VEGETABLE & VINE CROPS





# INTERNATIONAL TRADING PARTNERS

IN 2022 WE CERTIFIED 6,865 SHIPMENTS OF PLANT MATERIAL (INCLUDING FRUITS AND VEGETABLES) GOING TO 43 COUNTRIES

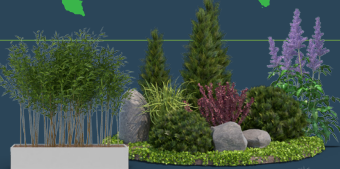
DOMESTIC TRADING

Top issued certificates of commodities grown in San Diego county exported in the United States



Commodity: **Ornamental Trees & Shrubs**

Certificates: **618**



Commodity: **Cacti & Succulents**

Certificates: **82**



Commodity: **Indoor Flowering & Foliage Plants (including Poinsettia)**

Certificates: **72**

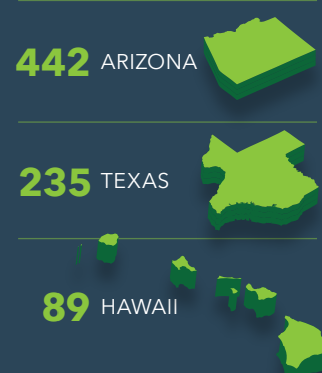


DOMESTIC PARTNERS

Top three counties by certificate count



Top three states by certificate count



TOP TRADING PARTNERS

**Mexico 5,021**

**Canada 1,048**

**Total 6,069**



CENTRAL AMERICA & THE CARIBBEAN

Guatemala	29
Honduras	7
Bahamas	5
Panama	5
Trinidad and Tobago	2
Bermuda	1
British Virgin Islands	1
Cayman Islands	1
El Salvador	1
<b>Total</b>	<b>52</b>

SOUTH AMERICA

Chile	4
Ecuador	2
Colombia	1
The Plurinational State of Bolivia	1
<b>Total</b>	<b>8</b>

AFRICA

South Africa	1
<b>Total</b>	<b>1</b>

EUROPE

Netherlands	56
Spain	6
Germany	5
Italy	3
France	2
Malta	2
Belgium	1
Ukraine	1
United Kingdom	1
<b>Total</b>	<b>77</b>

ASIA

Japan	286
South Korea	113
Taiwan	91
Thailand	29
Hong Kong	28
Singapore	8
United Arab Emirates	8
Armenia	7
China	7
Indonesia	5
India	4
Macao	3
Kazakhstan	2
Kyrgyzstan	1
Philippines	1
Vietnam	1
<b>Total</b>	<b>594</b>

AUSTRALIA & OCEANIA

New Zealand	39
Australia	25
<b>Total</b>	<b>64</b>







S U S T A I N A B L E  
A G R I C U L T U R E



Sustainable Agriculture 2022



Sustainable agriculture promotes the economic viability of local farms and residents' quality of life while preserving natural resources for future generations' needs in California. An important component of these sustainability efforts is related to mitigation activities that are essential to prevent the spread of invasive agricultural pests. This work contributes to the security of the food system and helps protect the region's most vulnerable populations.

The County of San Diego Department of Agriculture/Weights & Measures implements state regulatory programs for the detection, control, and eradication of invasive insect pests, plant diseases, and weeds that cause economic and environmental harm and supports the California Department of Food and Agriculture (CDFA) in enforcing agricultural quarantines to prevent the spread of invasive pests.

CDFA pest ratings inform county agricultural commissioners and the public of a pest's potential harm to agriculture and the environment. The pest rating also signifies its potential impact to the public by interfering with home/urban gardens and food security. Finally, the pest rating guides the regulatory actions that CDFA and county agricultural commissioners must take to mitigate these pest risks.

Below is a list of CDFA pest rating definitions our department follows:

**A-rated:** A pest or disease that is known to have a detrimental impact on agriculture and the environment, and is not known to be established in California.

**B-rated:** A pest or disease that is known to have a detrimental impact on agriculture and the environment, and is established in some areas of California.

**C-rated:** A pest or disease that commonly occurs in the agricultural industry and the environment, and is found throughout California.

**Q-rated:** A pest or disease requiring a temporary "A" rating pending the determination of a permanent rating. These organisms are usually new to California, or their impacts are unknown but are suspected of being economically harmful to agriculture.

The infographics on the following two pages show the sustainable agriculture efforts in San Diego.



HIGH RISK PEST EXCLUSION



**5,867**  
Incoming plant shipment inspections

**135**  
Notices of rejection

**65**  
**A**

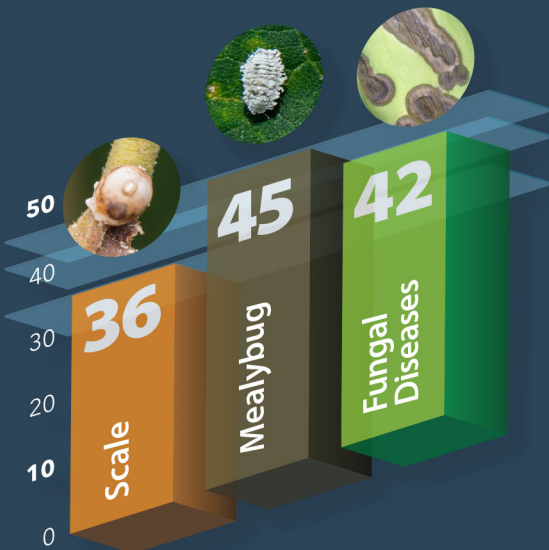
**44**  
**B**

**146**  
**Q**

Actionable pest finds

CALENDAR YEAR 2022

AWM inspectors intercepted and remedied a total of 45 mealybug and 36 scale insects (Families Coccidae, Diaspididae, Pseudococcidae, and Rhizoecidae) on incoming shipments of nursery stock. Seven of the mealybugs were root mealybugs, which have a wide host range, can decrease the value of nursery stock by disfiguring plants or reducing quality, and trigger loss of markets. Eleven of the scale insects were federally actionable pests. Both mealybug and scale insects can be hard to eradicate and damage horticultural crops including nursery stock and cut flower products. AWM also intercepted 42 fungal disease infestations (Genus Colletotrichum). Four of these interceptions were previously undescribed species and one was the first find in the United States. Colletotrichum spp. reduce plant quality and growth, affecting marketability of ornamental plants and cut foliage.



DETECTOR DOG TEAMS



**5,328**  
# of FedEx, UPS and Ontrac packages found by detector dogs

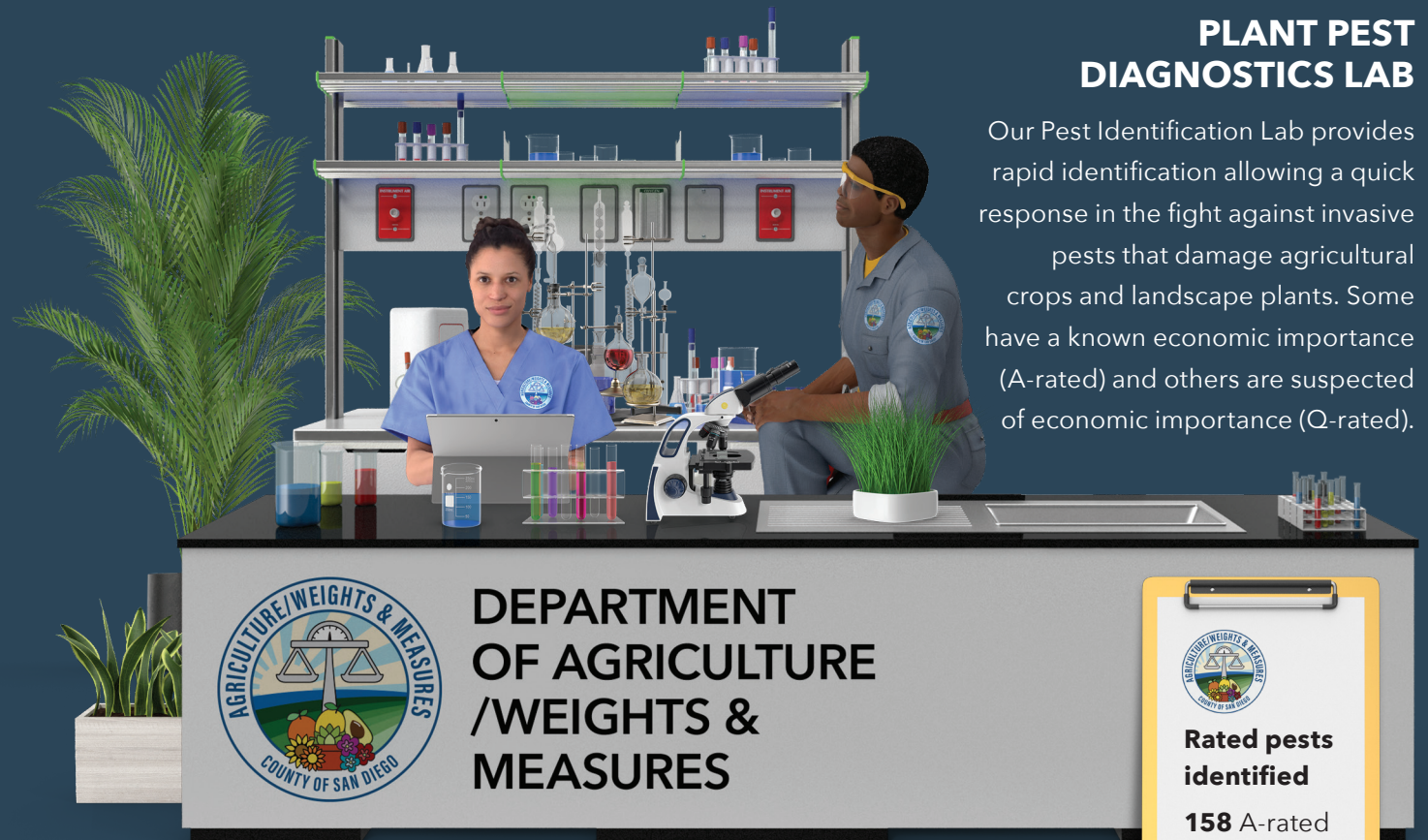
**185**  
# of pests found  
(55 A-rated, 19 B-rated, 111 Q-rated)

**491**  
Packages were in violation of State Pest Exclusion Laws

**491**  
**342**  
70% were incorrectly marked

PLANT PEST DIAGNOSTICS LAB

Our Pest Identification Lab provides rapid identification allowing a quick response in the fight against invasive pests that damage agricultural crops and landscape plants. Some have a known economic importance (A-rated) and others are suspected of economic importance (Q-rated).



DEPARTMENT OF AGRICULTURE /WEIGHTS & MEASURES

**Rated pests identified**  
**158** A-rated  
**143** Q-rated

INTEGRATED PEST CONTROL

The Integrated Pest Control Program (IPC) protects the county's agriculture, sensitive habitats, native wildlife, and endangered species by controlling noxious and invasive weeds in cooperation with other county departments and agencies.

INVASIVE WEED SPECIES

<p><b>Algerian sea lavender, <i>Limonium ramosissimum</i></b></p> <p>Rating: <b>A</b></p> <p>Acres Survey /Treated: 11.8</p>	<p><b>Ward's weed, <i>Carrichtera annua</i></b></p> <p>Rating: <b>A</b></p> <p>Acres Survey /Treated: 7.3</p>	<p><b>Bitou Bush (Boneseed), <i>Chrysanthemoides Monillifera</i></b></p> <p>Rating: <b>A</b></p> <p>Acres Survey /Treated: 3.6</p>	<p><b>Desert knapweed (Volutaria), <i>Volutaria tubuliflora</i></b></p> <p>Rating: <b>A/W</b></p> <p>Acres Survey /Treated: 232.9</p>	<p><b>European sea lavender, <i>Limonium duriusculum</i></b></p> <p>Rating: <b>B</b></p> <p>Acres Survey /Treated: 17.4</p>	<p><b>Croftonweed, <i>Ageratina adenophora</i></b></p> <p>Rating: <b>B</b></p> <p>Acres Survey /Treated: 2.1</p>	<p><b>Canary Island St. John's wort, <i>Hypericum canariense</i></b></p> <p>Rating: <b>B/W</b></p> <p>Acres Survey /Treated: 21.5</p>	<p><b>French broom, <i>Genista monspessulana</i></b></p> <p>Rating: <b>C/W</b></p> <p>Acres Survey /Treated: 7.5</p>
<p><b>Stinknet, <i>Oncosiphon piluliferum</i></b></p> <p>Rating: <b>Q</b></p> <p>Acres Survey /Treated: 4.3</p>	<p><b>Yellow starthistle, <i>Centaurea solstitialis</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 15.5</p>	<p><b>Spotted knapweed, <i>Centaurea maculosa</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 14.4</p>	<p><b>Artichoke thistle, <i>Cynara cardunculus</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 11.8</p>	<p><b>Carnation spurge, <i>Euphorbia terracina</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 8.3</p>	<p><b>Bridal broom, <i>Retama monosperma</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 3.5</p>	<p><b>Barbed goatgrass, <i>Aegilops triuncialis</i></b></p> <p>Rating: <b>W</b></p> <p>Acres Survey /Treated: 1.6</p>	<p><b>Total Acres Survey /Treated</b> <b>363.5</b></p>



# MONITORING PESTICIDES FOR A HEALTHY, SAFE, AND RESILIENT SAN DIEGO REGION



The County of San Diego Department of Agriculture/Weights & Measures (AWM) believes everyone who works, lives, or plays anywhere in San Diego deserves to live well in a healthy, safe, and resilient region. We help to achieve this vision by supporting the local food supply, agricultural trade, and environmental sustainability and ensuring pesticide use is safe and legal. Pesticide use is rightly scrutinized as it can pose a threat to human and environmental health when used improperly. But responsible pesticide use is also critical to protecting human health, the food supply, and agricultural trade. AWM is the local agency that manages this important balance for the region. We provide growers, businesses, and their workers a team of trained experts and inspectors to closely monitor and support safe pesticide applications. Our goal is to protect the health and safety of applicators, fieldworkers, and the public while supporting a sustainable environment and agricultural trade.

AWM does not do this critical work alone. We partner closely with the California Department of Pesticide Regulation (CDPR) to meet the State's science-based standards when enforcing pesticide laws and regulations. CDPR has a national reputation for having the most comprehensive state pesticide regulatory program in the country—they provide pesticide support and oversight not only to the San Diego region but to all of California's 58 counties. Throughout the year, CDPR eval-

uates our work performance by reviewing our issued permits, completed investigations, inspection reports, and conducts ride-alongs with our inspectors to observe our field work. Since 2016, AWM has received CDPR's highest rating possible every year in our annual performance evaluations, which reflects the rigor of our program and staff.

# \$5M

## AWM'S Annual Budget allocated to regulate pesticides

The County of San Diego is deeply invested in ensuring the safe use of pesticides in our communities and allocates about \$5 million of AWM's annual budget to do this work. We regulate all aspects of pesticide use from structural applications at a residence, to landscape applications in parks, to applications in orange groves. We do this by issuing permits, participating in education and outreach events, conducting inspec-



# 1,500 Inspections annually



tions and investigations, and taking regulatory actions when violations are found. We regularly engage with growers, fieldworkers, structural and agricultural pest control businesses, pest control advisors, pest control dealers, and the public to make sure they understand pesticide labels, laws, and regulations. We typically participate in one to two in-person or virtual outreach events a month.

There are varying levels of pesticide categories ranging from "Caution" category, the least toxic type, to "Restricted" pesticides which have the strictest regulatory controls. In the San Diego region, most of the pesticides that growers and pest control business use are "Caution" category. Occasionally, users may need to make "Restricted" applications, and in these cases,

we ensure only qualified users apply those pesticides under specific permitted conditions, which allows us to provide additional layers of regulatory oversight. Before issuing a permit, our inspectors work with users to determine if less toxic pesticides can be used instead; ensure users have the necessary qualifications to apply the pesticides; check out the proposed site; discuss restrictions; and go over requirements to ensure safety.

We conduct about 1,500 inspections annually at any site that uses pesticides, whether it's a farm, business park, or a residential location. We also monitor users who apply pesticides in landscaping and structures, like companies that treat yards for weeds, tent and fumigate homes for termites, and treat structures for common pests like fleas, ticks, and spiders. We also

# 130



## Complaints and illness investigations

# 90%



## Pesticide inspections compliance rate

conduct an average of 130 complaint and illness investigations across the region every year, which are possible pesticide-related illnesses and complaints of misuse. As a result, our region has a compliance rate of more than 90 percent for the pesticide inspections we conducted in 2022.

Of course, when violations occur, AWM takes them very seriously. We record the violation, review the user's history of compliance, and determine if there were any resulting health or environmental impacts. Ultimately, our goal is to get pesticide users to comply with State requirements by using various compliance tools including issuance of civil administrative penalties as required.

But our Program is much more than just inspectors monitoring pesticide use. We also take an active role in helping local growers and users navigate complex regulatory challenges, like invasive agricultural pest infestations, and guide them through the process when they are required to apply specific pesticides to ship their crop out of an agricultural quarantine area.

In August 2022, the California Department of Food and Agriculture (CDFA) and United States Department of Agriculture (USDA) implemented an agricultural quarantine after detecting several wild Mexican fruit flies in the Valley Center area of the San Diego region. Mexican fruit flies, which are bigger than a house fly, risk costing our region millions of dollars in lost crops if left untreated. During the quarantine, no one, including growers



*Anastrepha Ludens*



**\$51M**



## Mexican Fruit Fly quarantine boundary

or homeowners, could move any fruit that are hosts of this fly out of the area. Many growers who wanted to move their fruits to sell them had to apply pesticides to their groves using a timed schedule, and we helped them understand that timing and application process. AWM not only issued the permits allowing growers to apply the pesticides, but we also provided direct, one-on-one support to each grower at no cost to ensure the health and safety of applicators, fieldworkers, the public, and the environment. Our inspectors personally observed the first pesticide application made by each grower in the quarantine—28 total observations—as a testament to our commitment to the highest standards of public service.

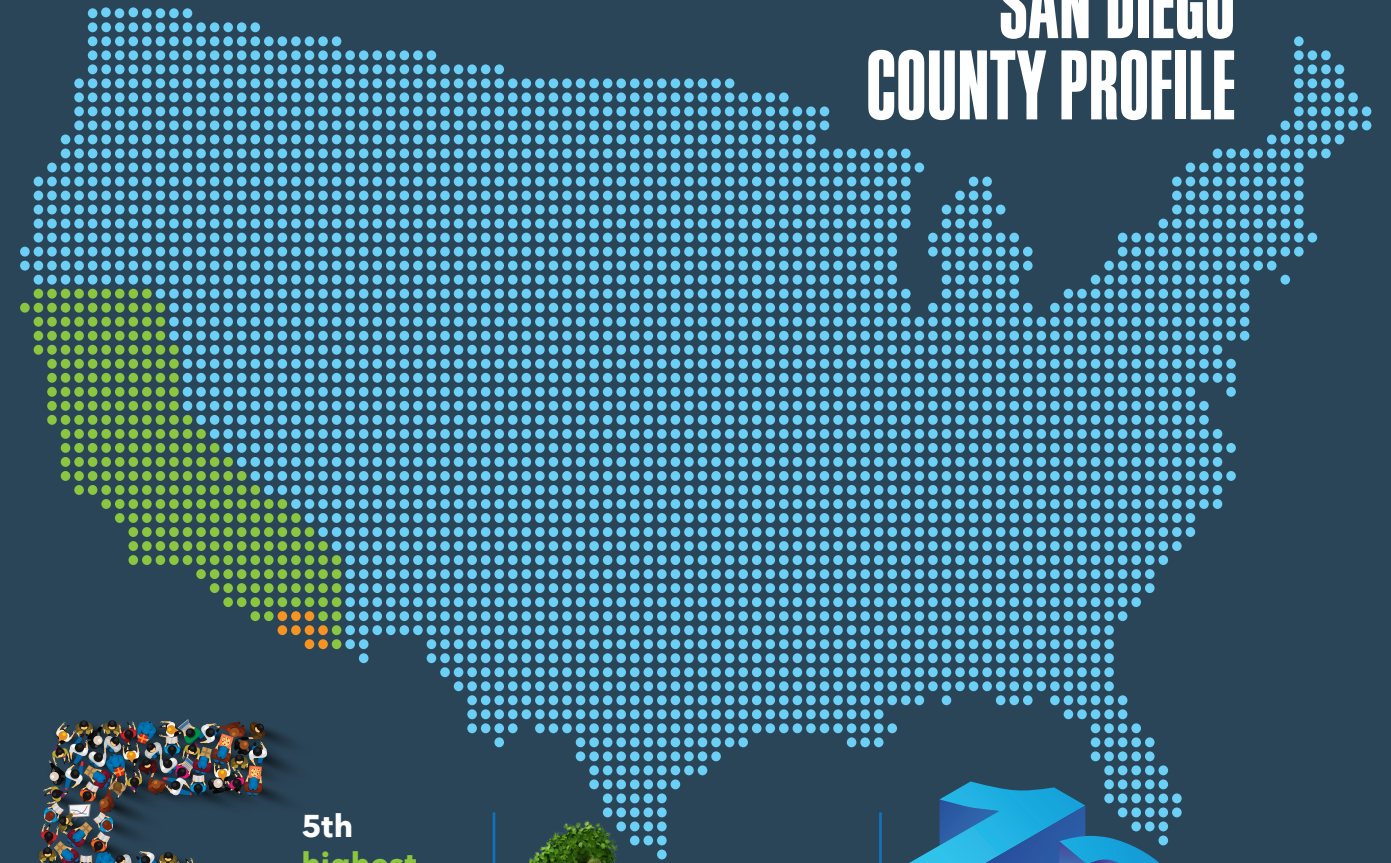
Ultimately, this quarantine helped prevent a larger outbreak that could potentially threaten the local food supply, agricultural trade, and the natural environment. For context, the 2022 value of all the host crops for this pest within the quarantine boundaries was \$51 million of the region's \$1.8 billion total agricultural industry. Pesticides had to be used to control the outbreak and support agricultural trade, and AWM helped ensure it was done safely and effectively by supporting about 200 impacted growers.

Our work ensures that pesticide use in the San Diego region is safe and available to support critical public, industry, or commercial needs. AWM works closely with the State to provide necessary regulatory oversight in our region. Our work is based on a science-based regulatory framework that is the best in the country to support safe and legal use of pesticides to advance public health, food security, and agricultural trade statewide. These efforts ultimately lower the cost for growers and consumers, reduce trade restrictions, and promote the effective use of this important agricultural tool. More broadly, our pesticide regulation efforts ensure that everyone who works, lives, and plays in San Diego—from growers to community members to businesses—lives in a healthy, safe, and resilient region.

**By Kara Roskop-Waters**

Deputy Agricultural Commissioner/Sealer

## SAN DIEGO COUNTY PROFILE



**5th highest population among counties in the United States**



**San Diego ranks 1st in nursery & cut flower products in California**



**13th largest agricultural economy in California**

**Ranks 1st in the number of organic producers in California**



**Ranks 2nd in the value of avocados in California**



**Crop value ranks in the top five in California  
4th oranges  
5th lemons  
4th grapefruit**



**SOURCE:**

- California Agricultural Organics Report 2021-2022. [https://www.cdfa.ca.gov/is/organicprogram/pdfs/2021-2022\\_california\\_agricultural\\_organics\\_report.pdf](https://www.cdfa.ca.gov/is/organicprogram/pdfs/2021-2022_california_agricultural_organics_report.pdf)
- California Review Agricultural Statistics 2021-2022. [https://www.cdfa.ca.gov/Statistics/PDFs/2022\\_Ag\\_Stats\\_Review.pdf](https://www.cdfa.ca.gov/Statistics/PDFs/2022_Ag_Stats_Review.pdf)
- U.S. Census Bureau QuickFacts: San Diego County, California. <https://www.census.gov/quickfacts/sandiegocountycalifornia>



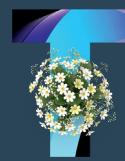




P R O G R A M S &  
S E R V I C E S



## Programs and Services - 2022 Highlights



**The Pest Exclusion Division** is the first line of defense in keeping invasive agricultural pests out of our region to protect the food supply and promote regional economy and environmental sustainability. We inspect imported and exported plant shipments and production nurseries to look for harmful agricultural pests and support agricultural trade.

5,867 imported plant shipments inspected with 146 actionable pest finds

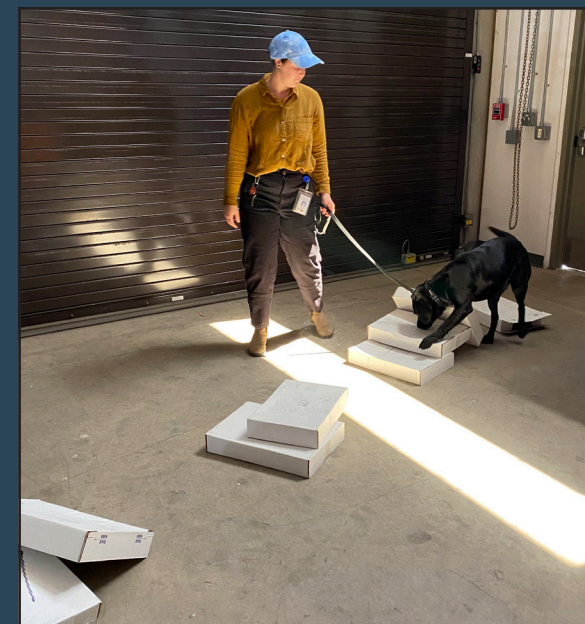
434 nurseries equivalent to 9,920 acres inspected for pests and diseases

156,100 Glassy-winged sharpshooter traps inspected in production nurseries

**The Detector Dog Team Program** supports the statewide pest prevention network and protects regional natural and agricultural resources by using two Agricultural Detector Dog Teams to check shipments at parcel facilities.

380 incorrectly marked packages containing plant material were intercepted by the Detector Dog Teams at terminal facilities and the United States Postal Service distribution center

**The Pest Detection Program** is a critical component of our statewide pest prevention network as it is the final line of defense against invasive pests to support agricultural trade and environmental sustainability. There were 143,646 insect





trap inspections conducted at residential locations throughout the county. The traps are used to detect insect pests, such as invasive fruit flies, spongy moth, Japanese beetle, and light brown apple moth that pose threats to California’s agricultural and horticultural crops. There were several pests detected within the county, and the program assisted both state and federal agencies in conducting activities to eradicate the pests promptly and effectively. Early detection of pests allows eradication efforts to begin before pests multiply and spread, becoming economically challenging to control.

**The Plant Pest Diagnostics Lab** provides rapid preliminary identification allowing a prompt response in the fight against invasive pests that damage agricultural crops and landscape plants. Our lab also partners with the California Department of Food and Agriculture’s Plant Pest Diagnostics Center, the University of California at Davis Department of Plant Pathology, the University of California Cooperative Extension (UCCE) Master Gardeners, and UCCE advisors to help residents and the agricultural industry identify weeds, insect pests, and plant diseases that may be harmful to agricultural crops and landscape plants. Samples received by the lab are routinely processed within 24 hours.

Processed 10,203 plant and insect samples



**The Citrus Quarantine Program** is tasked with ensuring that the citrus industry complies with State regulations and quarantines regarding the Asian citrus psyllid (ACP), the insect that spreads Huanglongbing (HLB), the most destructive disease known to citrus. Controlling the movement of ACP reduces the risk of HLB. The program’s primary goal is to mitigate the risk of HLB to protect the food supply and support agricultural trade.

Performed 157 grower inspections

Performed 136 transporter inspections

Performed 76 packinghouse inspections

Performed 59 fruit seller inspections

Issued 30 compliance agreements to ensure safe movement of citrus fruit and inhibit the spread of the ACP and the deadly citrus disease, HLB

Of the 428 shipments inspected by the program, 99% were in compliance with quarantine requirements

**The Apiary Program** educates beekeepers on County and State apiary regulations including the requirement of beekeepers to register their hive locations with the County. This program supports public health and safety, and pollinator protection. Registration promotes regulatory contacts with beekeepers for the exchange of important information on pesticide applications, quarantines, and best management practices.



Registered 319 beekeepers, totaling 22,191 managed honey bee colonies in 852 apiary locations

**The Pesticide Regulation Program (PRP)** protects human health and the environment by regulating pesticide use, and by fostering reduced-risk pest management through evaluations of Restricted Material Permits, outreach, inspections, complaint and illness investigations, and enforcement. PRP protects the health and safety of employees and the community while supporting a sustainable environment by identifying and reducing risk associated with the handling and storage of pesticides. The California Department of Pesticide Regulation (CDPR) evaluates PRP annually and provided an “Effective” performance rating since 2016. An “Effective” rating is the highest rating possible indicating the program has met all CDPR’s performance standards.

Conducted 1,506 Pesticide Regulation inspections with an approximate 90% compliance rate

Conducted 72 Hazardous Materials Inventory inspections



Completed 69 pesticide or antimicrobial illness investigations

Investigated 59 pesticide use and storage complaints

Issued 141 Restricted Materials Permits

Conducted 22 outreach events reaching over 1,074 people

Participated in 11 stakeholder meetings

Issued 9 Cease and Desist Orders

Took 87 enforcement actions and 313 compliance actions



**The Agricultural Standards Division (AGS)** supports the sustainability of local agriculture, ensures integrity in the marketplace, and promotes healthy families by inspecting fruits, vegetables, and other agricultural commodities for compliance with State laws and regulations. Activities include inspecting Certified Farmers Markets (CFM), Certified Producers (CP), organic growers and testing citrus for maturity and organic produce for pesticide residue. In addition, AGS promotes public safety and ensures the lawful cultivation of industrial hemp by overseeing grower registration and crop sampling, testing, and harvesting.

Issued certificates to 32 CFMs and conducted 61 inspections at these markets with a compliance rate of 86%



Issued 253 certificates to CP and conducted 785 inspections of CPs at CFMs with a compliance rate of 97%

Conducted 151 Fruit and Vegetable Standardization inspections with a compliance rate of 93%

Managed 406 active organic growers and conducted 217 organic programs inspections with a compliance rate of 95%

Issued registrations to 20 growers who harvested 12 acres of industrial hemp, and 47 routine cultivation activities were conducted on hemp registrants with a compliance rate of 90%



**The Agricultural Water Quality Program** performs inspections at irrigated commercial agricultural operations to support regional water quality by ensuring regulatory compliance with the County Stormwater Permit mandated by the San Diego Regional Water Quality Control Board. Outreach, inspections, and investigations focus on preventing potential pollutants such as fertilizers, pesticides, sediment, and organic waste generated by commercial agriculture activities from entering stormwater system and impairing water quality.

Completed 1,960 inspections

Investigated 14 complaints



**The Integrated Pest Control Program** supports human health and safety, and environmental sustainability by implementing the Board of Supervisors’ F-45 Policy “Pesticide Use Reduction” that mandates the use of Integrated Pest Management (IPM) strategy, an effective and environmentally-sound approach for pest prevention and management. IPM incorporates current scientific information and control methods to prevent, manage, and eradicate unwanted pests and weeds while mitigating the potential hazards to people, property, and the environment. IPMs’ weed control work preserves road visibility and clearance, reduces fire danger along roadways and intersections, and enhances drainage to prevent flooding. This program’s structural pest control work mitigates human disease, discomfort, or injury for County staff and customers by reducing pest populations known to be vectors of transmittable diseases through increased inspection and monitoring efforts.

Treated with herbicides or manually removed 2,391 acres of weeds

Treated 167 County facilities for structural pests

**The Weights and Measures Division** ensures consumers get what they pay for and supports fair competition in the marketplace to promote economic equity and sustainability. The division performs inspections to verify accuracy of product weight, measure, and price. These inspections include testing of commercial weighing and measuring devices, labeling and advertising requirements for petroleum products, price verification (price scanners), quantity control for packages, and weighmaster compliance.

Inspected 62,345 commercial weighing and measuring devices with an 89% compliance rate

Investigated 334 consumer complaints regarding commercial meters and scales, petroleum, package/ labeling, and price overcharges

Inspected 1,874 retail locations for price accuracy with 26,688 items scanned with an 82% compliance rate

**The Civil Actions Program** supports due process through administrative civil penalty actions, or fine actions, to gain regulatory compliance.

AWM conducted inspections to verify compliance with State laws and regulations and County ordinances. During some inspections, non-compliances were found that resulted in the issuance of 489 fines. AWM held nine requested administrative hearings (six in Weights and Measures and three in Pesticide Regulation) in which the hearing officer upheld the fines. Of the civil penalty actions:

393 were issued by Weights and Measures (96 device tolerance, 297 price verification)

87 were issued by Pesticide Regulation (27 structural, 60 agricultural)

9 were issued by Agricultural Standards (6 direct marketing, 3 standardization)

PROGRAM	SERVICES	HOW TO REACH STAFF
Agricultural Standards	Certified Farmers Markets and Certified Producer certificates; organic handler/producer; fruit and vegetable standardization; industrial hemp cultivation; agricultural stormwater	858-614-7786 FAX: 858-467-9273
AWM	All services	858-694-2739 www.sdcawm.org sdcawm@sdcounty.ca.gov
Citrus Quarantine	Inspections of Asian citrus psyllid quarantine requirements	858-614-7770 FAX: 858-467-9697
Civil Actions Program	Administrative civil penalty actions, or fine actions	858-614-7730
Detector Dog Teams	Parcel inspections at terminal sorting facilities and the USPS distribution center	858-614-7770 FAX: 858-467-9697
Hazardous Materials Inventory	Inspections and registrations of agricultural hazardous materials; and California Environmental Reporting System assistance	858-694-8980 FAX: 858-467-9277
Apiary Program	Apiary registration, hive inspections, complaint investigations, honey bee education, and outreach	858-614-7738 FAX: 858-467-9697
Integrated Pest Control	Weed control, habitat restoration, and structural pest control	858-614-7750 FAX: 858-467-9279
Pest Detection	Invasive insect trapping for invasive fruit flies, Gypsy moth, and Japanese beetles	858-614-7770 800-300-TRAP(8727) FAX: 858-467-9697
Pest Exclusion (Import/Export; Nursery; Light Brown Apple Moth; Pierce's Disease; Sudden Oak Death)	Inspections of incoming and outgoing plant commodity shipments; phytosanitary and quarantine compliance certificates; nursery inspections; Gypsy moth inspections	760-752-4700 Inspection Request Line: 760-752-4713 FAX: 760-724-4098
Pesticide Regulation	Pest control business registration, Restricted Materials Permits, Operator Identification Numbers, pesticide use reporting, employee pesticide training, and pesticide complaints	858-694-8980 FAX: 858-467-9277
Plant Pest Diagnostics Lab	Insect identification for regulatory purposes; pest surveys	858-614-7738 FAX: 858-467-9697
Weights and Measures	Price verification (price scanners) and commercial weighing and measuring device registration and inspections, weighmaster, petroleum quality/labeling, package and labeling inspections	858-694-2778 FAX: 858-467-9278 wm.awm@sdcounty.ca.gov Meter Testing Lab Hours: 8:00am-5:00pm M-F

**The 2022 Crop Statistics and Annual Report was produced by Program Coordinator Porfirio Mancillas, Operations Research Analyst Bosko Celic, and Information Technology Principal Vince Acosta. Photos were mostly taken by AWM employees with growers’ consent.**

All reported figures represent Freight on Board (F.O.B.) values for products. These are not net values and do not reflect cost of production. Total values may not add precisely due to rounding. Gross value of farm products does not reflect the total value to the economy. Values are aggregated to maintain growers' confidentiality.





**Ha Dang**  
Agricultural Commissioner/Sealer of Weights & Measures

**Megan Moore**  
Assistant Agricultural Commissioner/Sealer of Weights & Measures

**Garrett Cooper**  
Deputy Director

**PEST EXCLUSION**

- Travis Elder** Deputy Ag Commissioner/Sealer
- Claire Aicken** Supervising ASI
- Shady Hajjar** Supervising ASI
- David Navarro** Supervising ASI
- Dusko Pantovic** Sr. IDS
- Merle Van Cleve** Sr. IDS
- Cambria Jensen** Sr. Office Assistant
- Elba Volner** Supervising Office Assistant
- Leslie Bernal** Office Assistant
- Monique Coleman Thomas** Office Assistant

**SR. ASI**

- Nicolas Basinski**
- Brett Birdwell**
- Robert Delaval**
- Saiqa Javed**
- Lila Marko**
- Narriman McNair**
- Jorge Olivares**
- Evan Padgett**
- Gregory Terhall**

**ASI**

- Matthew Forgey**
- Kahsai Ghebretensea**
- Alice Larpthaveesarp**
- Annamarie McKellips**
- Ceres Phillips**
- James Riley**
- Sierra Wolf**
- Jacqueline Zelon**

**IDS I**

- Nicholas Bearmar**
- Michael Russ**
- Joshua Tidwell**

**IDS II**

- Richard Arne**
- Heriberto Avalos**
- Raul Duenas**
- Roy Joseph**
- Keegan Smock**

**DETECTION, DIAGNOSTICS, QUARANTINE**

- Jason Schwartz** Deputy Ag Commissioner/Sealer
- Jasmine Lopez** Supervising ASI
- Bonnie Wheeler** Supervising ASI
- Bodil Cass** Agricultural Scientist
- Susan Callies** Office Support Specialist
- Catrin Lewis** Supervising Office Assistant
- Rosa Sotomayor** Sr. Office Assistant
- Gregory Cox** Office Assistant

**SR. ASI**

- Jaime Garza**
- Nicole Goss**
- Jeremy Partch**
- Melissa Sinkovits**
- Tyler Tkachuk**
- William Walsh**

**ASI**

- Aprille Geier**

**IDS II**

- Nicole Orsi**
- Fran Wade**

**DETECTOR DOG**

- Owen**
- Podder (retired)**
- Yeti**

**PEST DETECTION**

- Pamela Jordan** Program Coordinator
- Vanessa Baltazar-Chavez** Sr. IDS
- Sulay Felix** Sr. IDS
- Lynne Gardner** Sr. IDS
- Mohamed Jama** Sr. IDS
- Ivonne Torres** Sr. IDS



**IDS II**

- Courtney Achenbach**
- Raul Burquez**
- Zsuzsa Carter**
- Manuel Casillas**
- Marilen Cepe**
- Louis Cheung**
- Casey Choate**
- Azolan Clarke**
- Russel Coniff**
- Oscar Contreras**
- Vanessa Figueroa**
- Caitlyn Fischer**
- Jorge Fregoso**
- Katherine French**
- Mannah Gbeh**
- Amy Geffre**
- Shanto George**
- Danielle Gomez-Heller**
- Grant Hassinger**
- Johanna Hoeniger**
- Conner Jordan**
- Svetozar Lazarevic**
- Loren Libolt**
- Joseph Marino**
- Marissa Mariscal**
- Rita McElroy**
- Antoinette McKinley**
- Madison O'Barr**
- Rafael Orozco**
- Jasmine Padilla**
- John Patino**
- Brenna Salvato**
- Roxanna Sanchez**
- Brien Spier**
- Steven White**

**JOB TITLES**

**ASI:** Agricultural/Standards Inspector  
**IDS:** Insect Detection Specialists  
**SR:** Senior





**PESTICIDE REGULATION**

**Kara Roskop-Waters** Deputy Ag Commissioner/Sealer  
**Ryan Wann** Program Coordinator  
**Tim Holbrook** Supervising ASI  
**Gabriel Hernandez** Supervising ASI  
**Tyler Lew** Supervising ASI  
**Gemma Bilog** Supervising Office Assistant  
**Suzanne Raymond** Sr. Office Assistant  
**Sabumon Joseph** Office Assistant  
**Kenneth Woodson** Environmental Health Tech

**SR. ASI**

**Abdel Amador**  
**Kristi Conway**  
**Daniel Desserich**  
**Sean Foley**  
**Chase Goodman**  
**Benjamin Jacobs**  
**Rocio Lara**  
**Brian Pennington**  
**Nancy Wickus**

**ASI**

**Matthew Buller**  
**Joseph Brettillo**  
**Eve Castillo**  
**Eric Gentry**  
**Timothy Hewitt**  
**Henderson Hsu**  
**Siobhan Lozada**  
**Amanda Mathews**  
**Juan Zazueta**

**AGRICULTURAL STANDARDS**

**Jordan Key** Deputy Ag Commissioner/Sealer  
**Kimberly Greene** Supervising ASI  
**Monica Winters** Supervising ASI  
**Elinor Weed** Office Support Specialist

**ASI**

**Angelica Aguilar Duran**  
**Camthao Ho**  
**Wesley Leonard**  
**Mario Maldonado**  
**Claire Orion**  
**Robert Roma**  
**John Utterback**  
**Richard Valentine**

**INTEGRATED PEST MGMT**

**Dustin Hylton** Supervising Pest Mgmt. Tech.  
**Mark Martinez** Supervising Pest Mgmt. Tech.  
**Stephanie Archuleta** Office Assistant

**PEST MGMT TECHNICIAN I**

**Chase Voight**

**PEST MGMT TECHNICIAN II**

**Paul Cadena**  
**Danny Luna**  
**Raul Macias**  
**Ivan Robles**  
**Marcel Sanchez**  
**Raymond Wood**

**WEIGHTS AND MEASURES**

**Austin Shepherd** Deputy Ag Commissioner/Sealer  
**Cynthia Davis** Supervising ASI  
**Jonathan Garcia** Supervising ASI  
**John Kinkaid** Supervising ASI  
**Claudia Verdugo** Supervising ASI  
**Victor Cruz Amaya** Supervising Office Assistant  
**Mark Roughton** Sr. Office Assistant  
**Areleous Burton** Sr. Office Assistant  
**Arianne Adair** Office Assistant

**SR. ASI**

**Annie Arcinue**  
**Randy Carrera**  
**Janice Deguzman**  
**Paula DeWall**  
**Katherine Dobbins**  
**Garrett Giles**  
**David Gonzalez Jr.**  
**Edith Heaton**  
**Darin Hinesly**  
**Atlaw Kebede**  
**Craig Lawson**  
**Margaret Maloney**  
**Kyle Moranton**  
**Johanna Northcote**  
**Quang Ong**  
**Chris Placek**  
**Kevin Porter**  
**Brad Shipley**  
**Mazen Stevens**

**ASI**

**Richard Cockroft**  
**Jade Kluge**  
**Jessica Shuck**

**CIVIL ACTIONS  
/ENVIRONMENTAL SERVICES**

**Jesus Amial Jr.** Administrative Analyst I  
**Paul Rushton** Office Support Specialist

**ADMINISTRATION**

**FISCAL**

**Madonna Bagsic** Chief of Departmental Operations  
**Rolinda Gelacio** Principal Administrative Analyst  
**Mary Cervantes** Sr. Accountant  
**Maria Victoria Medina** Staff Accountant  
**Joe Swaykos** Administrative Analyst III  
**Melissa Balino** Administrative Analyst II  
**Fery Samani** Associate Accountant  
**Sandra Luck** Administrative Analyst I  
**Gloria Lomibao** Accounting Technician  
**Nahid Chizani** Account Clerk Specialist  
**Mayda Pait** Account Clerk Specialist  
**Erlinda Espiritu** Accounting Technician  
**Josephine Aguinaldo** Office Support Specialist

**HR**

**Jenice Murray** Sr. HR Specialist  
**Oscar Gonzalez** HR Specialist  
**Kaitlin Woods** HR Assistant

**IT/GIS**

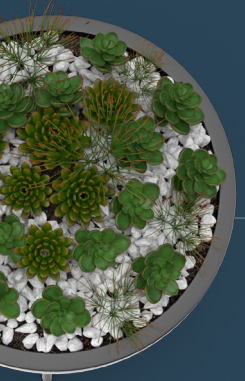
**Vincent Acosta** IT Principal  
**Jeffery Westrick** Sr. ASI  
**Lorie Roberts** GIS Technician

**POLICY, OUTREACH, DATA**

**Justin Aquino** Policy Analyst (Admin Analyst II)

**PROGRAM BUSINESS INTELLIGENCE**

**Porfirio Mancillas** Program Coordinator  
**Bosko Celic** Operations Research Analyst







**DEPARTMENT  
OF AGRICULTURE  
& MEASURES**

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