

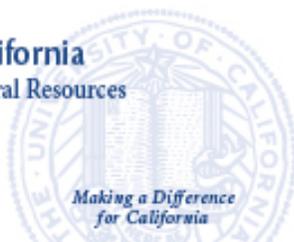
University of California Cooperative Extension
Merced County

ANNUAL REPORT
2015 - 2016



Making a Difference for Merced County

University of California
Agriculture and Natural Resources



University of California

Mission Statement

The Division of Agriculture and Natural Resources (ANR) is a statewide network of University of California researchers and educators dedicated to the creation, development and application of knowledge in agricultural, natural and human resources.

-Glenda Humiston, Vice President

Merced County

UC farm advisors, “ ... provide a significant asset to those who grow some of our main crops in the County – cotton, corn, alfalfa and wheat. This has been identified as an area of critical importance for our region as it would also provide valuable research and education into agricultural needs in the Central Valley.”

- Hubert "Hub" Walsh, Jr. -- Chairman, Merced County Board of Supervisors, July 2016

Cooperative Extension

Cooperative Extension

The University of California Cooperative Extension (UCCE) is the outreach arm of the University of California. UCCE has farm, 4-H, and nutrition, family and consumer sciences advisors based in more than 50 county offices. In addition, Cooperative Extension specialists are headquartered at UC Berkeley, UC Davis, UC Riverside and on Research and Extension Centers throughout the state. These specialists provide statewide leadership to teams of advisors and Agricultural Experiment Station (AES) faculty, and carry out outreach programs statewide and at the local level. As a land-grant institution, the Cooperative Extension mandate is to the welfare, development, and protection of California’s people, agriculture, and natural resources.

Mission

The University of California Cooperative Extension mission is to develop and extend through educational means the use of research-based knowledge to improve specific practices and technologies in its area of expertise. Cooperative Extension works in cooperation with county, state, and federal governments to provide local educational programs in the areas of agriculture and natural resources, youth development, family and consumer sciences, and community resource development. The system was established at the Federal level by the Smith-Lever Act in 1914 and at the State and County levels by acts of the California Legislature in 1915. The cooperative effort with Merced County began with the opening of the Agricultural Extension (Cooperative Extension) office in 1917 with J.F. Grass as the first Farm Advisor in Merced County. The University of California provides the professional staff and Merced County provides funds for the clerical support, operation, and maintenance of the program.

Cover:

*Photo courtesy of
David Doll*

University of California Cooperative Extension

Merced County

2015 marked a changing of the guard for Merced County Cooperative Extension, I became County Director as Maxwell Norton retired on June 30 after more than 36 years with UC as the viticulture and tree fruit farm advisor. Maxwell's retirement leaves the Merced County office with only three advisors – Russell Hill, 4-H Youth Development Program Advisor, Dave Doll, Farm Advisor (almonds, walnuts, and pistachios), and myself, Scott Stoddard, Farm Advisor (vegetable crops). As with other UC Cooperative Extension offices throughout the state, advisors from adjacent counties have cross-county assignments to fill vacancies. Lindsay Jordan was hired in 2015 as the new viticulture advisor for both Merced and Madera Counties, and Phoebe Gordon was hired in late 2016 as the new orchard systems advisor for Merced and Madera. So while retirements have reduced the number of advisors to half the historical norm, we are starting the process of rebuilding. Our request to UC for additional faculty was partially successful: recruitment for an agronomy advisor, a position vacant since the retirement of Bill Weir in 2002, was approved and should begin in the spring of 2017. This effort would not have been successful without the strong support of the Merced County Board of Supervisors, Merced County Farm Bureau, and various individual growers, consultants, master gardeners, and many others who took time to write letters advocating on our behalf.

In addition to finally receiving some rain, 2016 also marked the start of the new 4-H Latino Outreach initiative, in which Merced County was chosen as one of eight counties in the state to pilot a program directed at increasing Hispanic youth participation in 4-H. As a result of this program, Jose Campos was hired as a new program representative. The program has already seen significant impact: the number of youth enrolled in the county has increased 12% since 2014.

After years of budget cuts, financial support by the County stabilized in 2015 and increased slightly in 2016 as the general economy improved. Larry Burrow, our long-time agriculture field technician, retired in 2016, but thankfully his position was quickly filled. Anthony Cantu began work in September, and is only the third person to hold this position in the last 50 years. While retired, Larry Burrow continues to organize the continuing education class for pest management advisers (PCAs) and private applicators (growers), which had approximately 150 participants each year. This class has been a successful partnership with the County Agriculture Commissioner to provide pest management units in the spring and fall of each year to local clientele.

In 2017, UC Cooperative Extension will celebrate 100 years in Merced County. In 1917, the Merced County Board of Supervisors, at the request of the Farm Bureau, allocated \$2,000.00 to support a farm advisor from the University of California Cooperative Extension. J.F. Grass began as our first farm advisor that same year. One of his first projects was a peach pruning trial in the Hilmar area. Multiple activities are being planned to mark the 100 year occasion, including a display at the Merced County Courthouse Museum, co-participation at the annual Farm Bureau banquet (Farm Bureau is also celebrating 100 years in Merced), and displays at the Merced District Fair. Today, UC Cooperative Extension remains active in the Merced community, managing the 4-H youth development program and providing practical, research based agronomic, nutrition, and youth development information for local growers, gardeners, consultants, families, and citizens.

Scott Stoddard
County Director
University of California
Cooperative Extension
Merced County

Program Funding

2015 - 2016 Support for Operations and Programs

Cooperative Extension is a unique joint venture between the three levels of government. This partnership brings together the USDA at the federal level, The Land Grant University at the state level (University of California) and the County of Merced locally. While a small part is endowed each of the three partners have and play an important role in the overall functions of the Cooperative Extension office. This operations support is vital for organizing, preparing, and serving the clientele needs in our day to day functions. Clientele contacts take place in the office, on farm visits, by phone, via e-mail, by web, and general meetings.

Program Support

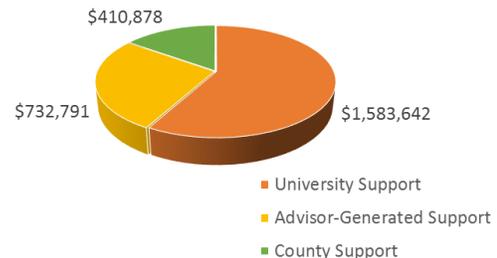
In addition to the general office support that provides an operational framework many specialized programs, studies, and research activities require additional support.

Our Advisors as UC academics have Principle Investigator (PI) status allowing them to lead and collaborate on research grants and projects.


University of California
 Agriculture and Natural Resources
Merced County
Budget for Fiscal Year 2014-2015

	\$	%
1. University Support		
a. ANR General Funds	335,427	12%
b. Endowment Funds	124,988	5%
c. Federal Funds	58,478	2%
d. Other Revenue	59,331	2%
e. Statewide Coop. Extension Support	1,005,418	37%
subtotal:	1,583,642	58%
2. Advisor-Generated Support		
a. Contracts & Grants	574,332	21%
b. Gift & Endowment Funds	129,863	5%
c. Other Revenue	28,596	1%
subtotal:	732,791	27%
3. County Support		
a. Direct Support	331,629	12%
b. Indirect Support	79,249	3%
subtotal:	410,878	15%
TOTAL	\$2,727,312	100%

UCCE Merced County Budget for Fiscal Year 2014-2015



Notes:

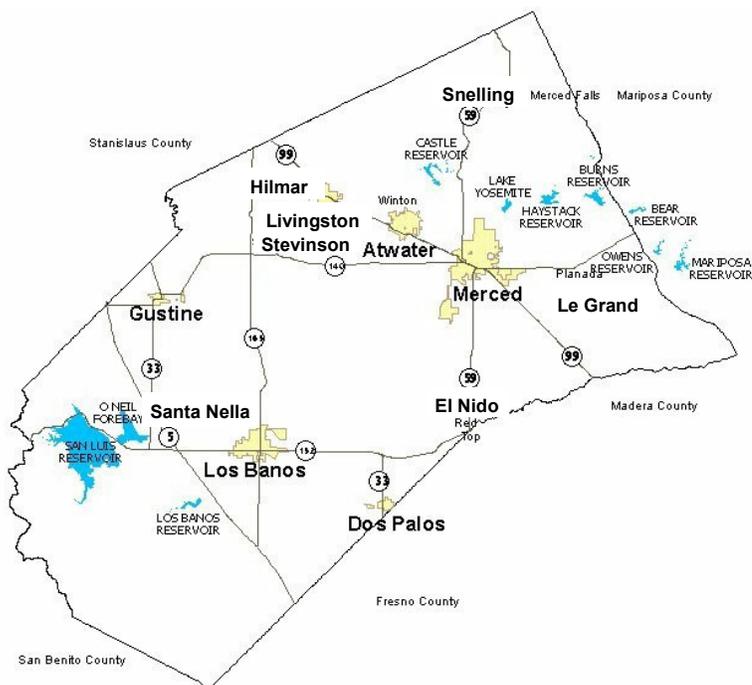
2a. Includes \$209,216 from total Calfresh award of \$523,040 shared between Merced County (40%), and Stanislaus County (60%).

2b. In addition to the support reported above, \$304,695 was raised locally in Merced County by 4-H Volunteer Councils and 4-H youth during FY 14-15 to support programs, participation scholarships, additional staff support and professional development for both the youth and adults. These funds are maintained at the local level under the guidance of County Cooperative Extension Director and 4-H staff, and are reported annually to the University.



Additional 4-H program support is provided through donations, fundraising, and participant fees. These funds are used for youth conferences, camps, and events. These are also used for recognition and awards for members and volunteers.

Service to the Community



Services to the Farmers, Consumers,
Youth, and Families of Merced County

UC Cooperative Extension

A Celebration of Science and Service



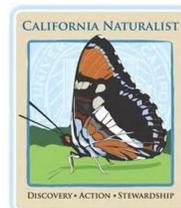
University of California
Agriculture and Natural Resources

2015 - 2016 Contacts:

- 10,499 Newsletters mailed
- 47,621 Newsletters emailed
- 114 Publications sold
- 3,205 Telephone calls received
- 1,401 Visitors to our office
- 17,056 Web site visitors

2015 - 2016 Formal Volunteers:

- 297 4-H Leaders
- 31 California Naturalists
- 52 Master Gardeners
- 15 Master Gardeners in training



Merced County Cooperative Extension Staff

2015 - 2016

County Director

Scott Stoddard

Advisors

David Doll

Pomology

Russell Hill

4-H Youth Development

Scott Stoddard

Vegetables

Cross-County Advisors

Jennifer Heguy

Dairy

Lindsay Jordan

Viticulture

Fadzayi Mashiri

Livestock and Range Management

Jalendra Rijal

Integrated Pest Management

Terri Spezzano - Stanislaus

Nutrition, Family, and Consumer Science

Emeritus Advisors

Alejandro Castillo

Richard Mahacek

Maxwell Norton

Bill Weir

Program and Support Staff

Larry Burrow

Agriculture Field Technician (retired)

Community Educator

Introducing:

Jose Campos

4-H Program Representative

Introducing:

Anthony Cantu

Agriculture Field Technician

Amelia Lopez

Office Assistant

Vivian Lopez

Staff Research Associate

Darlene McIntyre

4-H Program Representative

Cathy Marks

Office Manager

Stephanie Martinez

Community Educator

Andrew Ray

Staff Research Associate

Rosalinda Ruiz

Community Educator

Support Staff

Cathy Marks, Office Manager

Being a part of the UC Cooperative team was, again, a pleasure. The research and education for the benefit of the people of our county is a rewarding occupation. Supporting these goals is my position in this team. In that position I provided administrative duties, which included budget and financial, record keeping and reporting duties as well as personnel and business functions.



Along with my duties I continued to assist with 4-H program duties in the absence of a 4-H Secretary.

I watch the growth of our staff, volunteers, 4-H members, and services to the community and I feel honored to be a part of this team.

Amelia Lopez, Office Assistant

As office assistant I am also the receptionist. I greeted and helped the public connect with our advisors or Master Gardeners. I helped them find agriculture publications we sell or locate web sites to download free publications.



I provided clerical assistance to the advisors and the office manager. I also maintain our stock of educational publications. I manage our classroom reservations, office supplies, mailings, and kept statistical records of our office's contacts in service to the public.

With the 4-H I helped with the data entry of the new enrollments, assembled packets, handled filing, and assisted with events preparations.

Larry Burrow, Agriculture Field Technician



The Agricultural Field Technicians provides support to the research and outreach activities of all Merced County Cooperative Extension personnel. In 2015 this included planting, spraying and harvesting tomatoes, sweet potatoes, and almonds. Utilizing data from our county Ag Commissioner's files I generated reports and maps to be used in targeting specific groups of growers, posted research results and various other publications on our county website and coordinated bi-annual continuing education meetings for local pest management professionals.



Other activities included continued work with our pomology advisor, David Doll, on a 5 year UCANR grant to study and extend the use of Unmanned Aerial Vehicles (UAV's) in agriculture. As part of the outreach portion of this grant I have partnered with UC Merced to assist with their Engineering Department's Service Learning Program to involve engineering students in developing UAV hardware and software for use in ag production. I presented information on the use of UAV's in agriculture and gave demonstrations at Western Plant Health Association meetings in Sacramento and Fresno. My activities with the Merced County 4-H Program included assistance with various events and projects. This year I lead sessions on UAV's during 4-H Mechanical Skills Day and 4-H Summer Science Academy, as well as assisted with 4-H Camp and the Annual Dinner Auction.

As Office Safety Coordinator I oversaw our office response to a successful safety audit by the ANR Safety Team, organized employee safety training, and applied for funds for various safety projects.



Dairy Science

Jennifer Heguy, *Farm Advisor*
(Stanislaus, San Joaquin, Merced)



Applied Research - Silage



I served as Co-PI in a project looking at volatile organic compounds in silages (currently regulated in California); results will be important for silage regulatory considerations moving forward. Before now, no such data existed in the peer-reviewed literature, making it a very important study for the California dairy industry. Results indicated that real losses (shrink) from well-managed California corn and winter cereal silage structures were much lower than previously reported.

In late 2015, a team I am leading was awarded \$250,000 to look at the viability of sorghum silage in California. Given its drought tolerance and reduced water needs, sorghum silage could potentially have a place in California feeding systems when water allocations are reduced. The project will look at the viability (agronomic, nutritional, nutrient balance, etc.) of sorghum silage in the California dairy system. A survey of management practices is underway, as is sampling to determine feed quality and fermentation characteristics of sorghum silage in California.

Applied Research - Other Projects

Throughout my career, I have focused on projects that would both aid producers and contribute to the scientific literature. Four such projects were seen to completion in 2015 and peer-reviewed manuscripts were published. One project looked at current California silage management practices, while another dealt with the potential for compliance with current silage regulations. The other two projects tested a novel tomato seed byproduct for lactating cow diets.

I am also working with a team of UC Davis scientists on a project funded by the California Air Resources Board to characterize physical and chemical properties of manure in California dairy systems to improve greenhouse gas (GHG) emission estimates. This is a timely project as California dairies move toward GHG reduction targets identified in the Senate Bill 1383 legislation.



Extension Activities

I am editor of a quarterly UCCE newsletter distributed throughout California. I also authored 11 extension articles, four in nationally distributed magazines with circulations of more than 29,000 subscribers. I continue to deliver extension meetings, including seminars given in both English and Spanish (targeting Hispanic employee clientele). In 2016, we held the first statewide UC dairy conference.

I co-authored article on nutrient balances in July issue of California Agriculture.

Integrated Pest Management

Jalendra Rijal, *Farm Advisor*
(Stanislaus, San Joaquin, Merced)



The screenshot shows the IPM Corner website interface. At the top, there's a navigation bar with 'BLOG', 'ABOUT', 'RESOURCES', and 'LINKS'. Below that, a section titled '2016 insect monitoring and DD (Click here)' contains a 'Connect to us' link and a 'Join us' form with an email address field and a 'Subscribe Now' button. The main content area is titled 'updates on trap catches' and lists several pest species with their flight dates and degree days. A line graph at the bottom shows 'Navel orangeworm (NOW) male moth and egg trapping in almonds' with two data series: 'Moth catch' and 'Egg counts'.

Creation of the Pest Management Blog, www.IPMCorner.com

The IPM Corner site has been created to provide useful scientific information about agricultural pests and management. The information is relevant to growers, pest control advisers, and other stakeholders. The web page provides applied pest management information derived from the research conducted by the University of California. Other significant information includes weekly seasonal insect pest monitoring data for major insects of tree and nut crops, articles, news, and updates.

Use of Insect Monitoring Traps for Spray Decisions

Insect development depends on temperature. The amount of heat required (measured in Degree-days) to develop from one point of their lives to another is specific to a particular insect species. Combined use of weekly insect monitoring (using insect traps) and the local temperature (for degree-days calculation) have been used to predict the best spray timing. Determining suitable timing for insecticide sprays is crucial to target the most vulnerable stage (s) of the insect life cycle. Insect traps can also be used to detect the presence or absence of new insect species in the area (e.g. Asian citrus psyllid)



Speaking at Meetings and Outreach

In 2015 (July-December) I delivered eight extension and professional talks. I contributed to local news media (Modesto Bee, KCRA3) and newsletters (Field Notes) about the detection of a new invasive insect, Brown Marmorated Stink Bug, a serious pest of tree fruits and other crops. I also contributed to The Almond Doctor, Western Farm Press, and other news outlets.

Livestock and Range Management

Fadzayi Mashiri, *County Director (Mariposa)*
Farm Advisor (Mariposa and Merced)



Medusahead Control

The invasive grassy weed, Medusahead was monitored in demonstration plots where we used fall application of Milestone® herbicide as the control agent. Medusahead density declined in treated areas and treated areas were preferred for grazing by livestock more compared to the adjacent untreated areas. I hosted a field day on one of the sites to showcase the results, and discussed other methods of Medusahead control emphasizing the benefits of using herbicides with grazing as an integrated weed management approach to control this weed.

I also set up a second experimental site as a follow-up to the one established in 2014. In this experiment we compared the effectiveness of fall and spring applications of Milestone® to control Medusahead. Fall applications reduced Medusahead by inhibiting seed germination. Preliminary results show that at 3oz/acre, spring application of Milestone can also reduce Medusahead seed viability. If our results continue to support these initial indications, spring applications will make more economic sense for ranchers to adopt at 3oz/acre because it is more affordable, compared to recommended rates of 7-14oz/acre for a fall application.

Forage production monitoring

I continued to work with NRCS, collecting forage production data. In the long run, I plan to use the data for research that will help provide needed information for ranchers to make informed management decisions. In the meantime the data are being used for local drought determination. I am in the process of acquiring a weather station to install at the forage production sites. Climatic data associated with forage production data, I hope can be useful in future for landowners to make about appropriate levels of stocking.



Clover trials

I am part of a team of advisors and specialists carrying out trials on 11 clover varieties, to assess their germination, growth and persistence potential in difference parts of the state.

Nutrition, Family, and Consumer Science

Terri Spezzano, *NFCS Advisor*
(Stanislaus, Merced)



In Merced County the UC CalFresh Nutrition Education Program is part of a two-county program that includes partnering with Stanislaus County. Staff assigned to work in Merced County collaborate with school districts to provide a comprehensive nutrition education program that may include classroom Nutrition Education, Garden Enhanced Nutrition Education, Smarter Lunchrooms Movement, School Wellness Policy support and physical activity integration using Coordinated Approach to Child Health (CATCH). UC CalFresh provides technical support for Farm to School, retail and several community projects that will contribute to the health and well-being of Merced County residents.



In 2015-2016, the UC CalFresh team had the following accomplishments:

We collaborated with the Merced County Department of Public Health and Area Agency on Aging as part of the Supplemental Nutrition Assistance Program (SNAP-Ed) funding.

We received a **Recognition of Excellence Award** from the California Department of Social Services (CDSS) for developing a strongly coordinated and evidence-based SNAP-Ed Integrated Work Plan for Federal Fiscal Year 2016.

We contributed recommendations and support to two School Wellness Policy Committees.

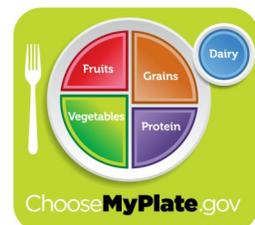
We engaged over 1,400 Merced County youth and adults in nutrition education classes.

Over 60% of youth said, Yes, they would be willing to ask for the foods they tasted again at home.

79% of adults, after completing a series of classes, now know easy ways to save money on food. “I check over our food and try to incorporate more healthy ingredients. I also organize my shopping more.” –class participant



The CalFresh Program, federally known as the Supplemental Nutrition Assistance Program (SNAP), can add to your food budget to put healthy and nutritious food on the table. The program issues monthly electronic benefits that can be used to buy most foods at many markets and food stores. The CalFresh Program helps to improve the health and well-being of qualified households and individuals by providing them a means to meet their nutritional needs.



Pomology

David Doll, Farm Advisor
(Merced)



Continuation of fumigant projects within soil types common to Merced County

Six research trials were continued through 2015. Four of the plots are providing yield data showing the effectiveness of the pre-plant soil fumigation treatments. Consistently, fumigant treatments containing 1,3-dichloropropene (Telone-II) have out yielded the un-fumigated plots. Trial work has also tested tree spot fumigation, the use of fumigant films to reduce emissions, and non-fumigant alternatives. Four new trials established are testing new fumigant alternatives, rootstock tolerance to the various replant problems, and deep shank injection. All of the trials will be continued into 2017.

Establishment of a new walnut rootstock and density trial

A new walnut plot testing VX211 and RX1 to seedling paradox was planted at three different planting densities. This trial will determine if there are any interactions between walnut spacing that are specific to the rootstocks. The newly established trial is performing well and it will be 3-4 years before the first harvest data is collected.

Third year of the water production function study has been completed

It is known that in most crops production increases with increasing water availability. At some point, however, production begins to stabilize or reduce based on water no longer being the limiting factor. This point for almonds has not been established, and determining it is important to the almond industry due to the ongoing drought and concerns about future water availability. Working with UC Davis faculty and UC ANR Advisors, we are applying varying percentages of water based on the tree's estimated water demand in order to determine how much water is needed to maximize almond yields. Although data is preliminary, increasing production has been observed at the Merced site up to about 80-90% of full water demand. This experiment finished its fourth year and will be concluded in 2017.

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Winter flood recharge project established near Hilmar, CA

A trial testing the effects of applying 24" of winter water to an almond orchard for recharge purposes was established in December of 2015. Conducted in a farmer's field, this plot is determining the possibility of using almond orchards as a location of groundwater recharge during the winter months. Yield and tree health will be followed.

Andrew Ray and Vivian Lopez, both staff research associates for the Pomology program, work to ensure that the proper amount of water is delivered to the test site.

Vegetable Crops

Scott Stoddard, Farm Advisor
(Merced, Madera)



2015 was a challenging year for Merced County vegetable producers. After four years of severe drought with rainfall of only about 58% of average (~7" per year), Lake McClure was essentially dry and the Merced Irrigation District had no irrigation season for the first time in its history. Growers on the west side of the county were hardly better off: restrictions in pumping for San Luis Reservoir resulted in water transfers from Friant Dam for the Exchange Contractor irrigation districts. With so little available water, the natural response by growers was to fallow fields, deficit irrigate, and use ground water. Well-drilling spiked to never-seen-before levels, and groundwater essentially carried agriculture in Merced County in 2015. Overall vegetable production was down about \$25 million as compared to 2014, but still very good considering the dire water situation. According to the Merced County 2015 Report of Agriculture, vegetable crops had an estimated value of over \$400 million, produced on nearly 64,000 acres. The water situation was much improved for the 2016 season thanks to a relatively wet winter, but groundwater and reservoir levels remain tenuous, and the state water policy and regulatory situation looks downright awful.



Tomatoes

One of the main issues impacting vegetable production in the county has been the wide spread increase in the incidence and severity of problems related to a new race of the soil pathogen *Fusarium*. In both tomatoes and melons, this disease causes late season vine collapse, which results in significant yield loss. There are few management options for control, other than variety resistance and long-term rotation. In 2016, I conducted two trials in processing tomatoes to evaluate variety resistance and fungicides in commercial fields with a history of *Fusarium* wilt. In the fungicide trial, applications made at transplanting initially appeared to reduce the onset of the disease, but unfortunately did not significantly improve yield by the end of the season. Variety

resistance, however, performed very well. New F3 resistant varieties were essentially 100% resistant, and had very good yields.

Melons

On-farm herbicide trials were conducted in cantaloupe and honeydew fields in the Dos Palos area. The objective of this work was to evaluate the impact of tank-mix combinations of two of the few registered herbicides on crop phytotoxicity and weed control. Results were mixed, but the projects did show that melon plants can be hurt by herbicides, especially at higher rates and with certain surfactants.



Sweetpotatoes

The use of soil fumigants continues to be a major regulatory issue for sweetpotato growers. Luckily, new chemical nematicides are being brought to the market that may provide relief from the regulatory headaches. One such new material is called Nimitz, which is a liquid material with a favorable environmental and worker safety profile. Projects were done in 2015-16 evaluating application methods and efficacy on controlling root knot nematodes and impact on yield of sweetpotatoes. Efficacy looks good, when applied with water. Further projects are planned to evaluate additional methods of application.

Viticulture

Lindsay Jordan, Farm Advisor

(Madera, Merced, Mariposa)



Evaluating Wine Grape Varieties for Warm Climate Viticulture in the San Joaquin Valley



Within California, a select few grape varieties dominate the wine market and the most popular grape originate from much cooler climates than most grape growing regions than the San Joaquin Valley (SJV), which creates challenges to quality wine production goals. By selecting grape varieties that can innately produce superior fruit in the heat of the SJV, some of the wine quality issues associated with warm climate wine production may be alleviated.

Currently I am evaluating a variety trial that was originally developed in 2009, where 29 red and 26 white varieties with a warm climate origin were established. These selections were planted in 20-vine sections for evaluation at the UC Kearney Research and Extension Center in Parlier. Partnering with Constellation Brands, fruit quality has been assessed and the top performing varieties made into wine, to fully understand the commercial wine making potential of the selections. The 55 selections have varied dramatically in their phenology, growth habits, yield, rot incidence and fruit quality. At the start of the 2016 season, I grafted 4 new selections within the trial - Nero d'Avola, Grand Noir, Petit Bouschet, and Assrytiko. By continuing to identify and evaluate varieties that can flourish in the SJV, variety trials help to contribute to the every-increasing quality wine production within the SJV.

Nematode Resistant Rootstock Evaluations

As microscopic plant parasites, nematodes can cause extensive damage to grape vineyards. As the nematodes feed on and damage root cells, vine health, vigor, and productivity will decline. Nematodes affect many regions of California, but vineyards within the San Joaquin Valley (SJV) are particularly vulnerable to nematode damage due to typically sandy soil profiles and the wide range of parasitic nematode species found within the region. One way to prevent losses from nematode damage is by using nematode resistant rootstocks.



Data is being taken from an already established trial site in Madera county to evaluate the viticulture characteristics of the newly released nematode resistant GRN and RS selections against two more conventionally used rootstocks in the SJV, 1103P and Freedom. A second site in Merced county is being developed to test the GRN and RS selections against 1103P. By using these two sites with a history of nematode pressure and managed under commercial conditions, grape growers from around the SJV and all of California can benefit from the better understanding of how these rootstocks may effect vine vigor and berry maturation, and accordingly make the best choices to remain economically viable while using the best rootstocks available to resist nematodes.

Extension and Outreach Efforts

The UCCE Viticulture Advisors in the SJV put out a collaborative newsletter covering topics for wine, raisin, and table grape production. To find the most recent and previous editions of our newsletter **Vit Tips** or to subscribe to our email listserv, please visit: http://ucanr.edu/sites/viticulture-fresno/newsletters_819/

4-H Youth Development

Russell Hill, 4-H Youth Development Advisor
(Merced, Madera, Mariposa)



4-H efforts focused on expanding the delivery of our programs into 6 sites during their afterschool time. STEM curriculum and activities, including *Junk Drawer Robotics*, *TechXcite*, *There's No New Water* and *Aerospace Adventures* were used to engage young people and developing their skills and understanding of Science. These sites included Tenaya, Cruickshank, Hoover, McSwain Elementary, Joe Stefani, and Chenoweth schools.

Along with delivering 4-H through the afterschool system, 148 youth were able to attend summer camp, 33 youth participate in our four week Summer Science Academy, and in our traditional club program. These 17 clubs are host to 1,105 youth and 287 adult volunteers which represents a 10% growth in enrollment over the previous year and our third year of double digit enrollment growth.

Continuing with our successes in growth and expansion we expect to see an increase in our work with afterschool programs in the future and reaching out even further to our underserved audiences.

4-H projects, events, and activities are developed to help youth explore, grow and improve skills in citizenship, leadership, science literacy, and healthy living. Our 4-H youth are learning leadership and goal-setting skills and how to become community-minded adults through youth / adult partnerships. Through experiential learning and leading together with adult mentors, youth focus their energy into their passions while also giving back to the community.



Girls in 4-H are **2X** more likely to plan to pursue science careers.

*The Positive Development of Youth: Comprehensive Findings from the 4-H Study of Positive Youth Development, 2011. <http://www.4-h.org/press/youth-development-research/positive-youth-development-study/>



4-H Youth Development continued



Darlene McIntyre, 4-H Program Representative



In 2015 Merced County 4-H had seventeen clubs representing 1,105 youth members and 287 adult volunteers. Our 4-H youth are learning leadership and goal-setting skills and how to become community-minded adults through youth/adult partnerships. Youth leaders, club officers, county All Stars and club leaders participated in an Officer Retreat at the 4-H



Office in Merced. Junior High and High School youth participated in LCORT (Leadership Conference for Regional Teens), CAL Focus, and State Leadership Conferences. Youth spent 2-3 days attending leadership workshops and meeting 4-H youth from other counties.

Mechanical Skills day was held in February at Merced College. 155 youth and adults participated in a variety of workshops dealing with various types of mechanical technology from 3D printing to learning about drones. Communication Day took place at Farmdale School in Merced where 108 4-H youth make presentations in various areas including prepared speech, demonstrations, and interpretive reading.

4-H offered afterschool programming to six Merced City school sites. Youth from 3rd-8th grade were involved in 4-H STEM activities led by 4-H interns, including projects in robotics, aerospace, Project Wild - outdoor education, and Tech X-cite - velocity of various project vehicles.



We held a Summer Science Academy for three weeks in July where 33 youth participated in science activities dealing with aerospace, woodworking, electricity, and mapping with GPS/GIS. Projects included clock-making, cooking, and GPS/GIS - local drought studies.

Our Science and Adventure Camp held in June focused on Astronomy and Compasses where 31 high school staff, 21 adult chaperones, and 148 campers in 4th - 8th grades worked together for five days and four nights at Camp Sylvester in Pincrest, CA.



In October our annual Achievement Day was held at Gustine High School where 4-H members received awards and honors for record book and project accomplishments.



Our 2015 annual Leaders' Recognition Night 260 supporters were in attendance as we recognized dedicated volunteer leaders with service awards from our office and local and state officials. They were also treated with a play of Mary Poppins performed by local actors.

4-H Youth Development continued



Introducing:

Jose Campos, 4-H Program Representative



I am excited to be working with Merced County 4-H Youth Development in its outreach efforts bringing awareness of 4-H to underrepresented youth, families, and communities. Although my main focus is conducting Latino Outreach, I will also be supporting established programs and community clubs to bring new members and adults to the organization. Having been hired in March of 2016 by University of California Cooperative Extension, I bring knowledge of the program since I was a previous member who moved on to become a volunteer leader for 30 years.

There are six communities I will be focusing great energy to establish 4-H programs which engages youth in reaching their fullest potential while advancing the field of youth development.

I have attended Municipal Advisory Council meetings in Delhi, Winton, and Franklin/Beachwood which have expressed great interest in bringing innovation for their youth. Two of these three should have an operating program very soon. The Winton Chamber Bike Fair on April 16th and the Delhi Multicultural Festival on May 1st were both great opportunities to share about the 4-H program. The next communities I will be visiting are Planada, southwest Merced, and Livingston.

I will be visiting schools during their Back to School Night events once the new school year has started providing information of how this organization is community-based, with adults and youth working together to make a positive difference.

With the assistance of Merced County Fair Board member Lee Lor, I was able to bring 19 youth and adults from Delhi & Winton areas to the county fair. They were able to see the culmination of 4-H projects on display-from livestock and Ag Mechanics to fine arts and special interest.



From June 17-23 I had the privilege of leading four Merced 4-H Youth to the 4-H California Focus Conference. It is held in Sacramento and the youth learn how the state government system works. Besides attending workshops learning about campaign strategies and the election process, a highlight of the trip was meeting State Senator Anthony Cannella and Assemblyman Adam Gray.

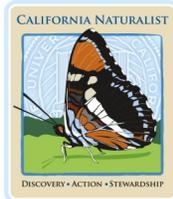


Merced County 4-H Latino Youth at California Focus, meeting Senator Cannella and Assemblyman Gray.

I look forward to working with the communities in Merced County to “Make the Best Better.”

California Naturalist Program

Fadzayi Mashiri, *County Director* (Mariposa)
Farm Advisor (Mariposa and Merced)



California Naturalist program

“The UC California Naturalist Program is designed to introduce Californians to the wonders of our unique ecology and engage the public in study and stewardship of California’s natural communities. The California Naturalist program uses a science curriculum, hands-on learning, problem-solving, citizen science, and community service to instill a deep appreciation for the natural communities of the state and to inspire individuals to become stewards of their local resources.

“The mission of the California Naturalist Program is to foster a diverse community of naturalists and promote stewardship of California's natural resources through education and service.

The California Naturalist Program promotes environmental literacy and stewardship through discovery and action. Many other states have similar naturalist programs, but this is the first statewide program in California.” (1)



I worked with UC Merced and Sierra Foothill Conservancy employees to apply for a grant to start three California Naturalist programs in the Central Valley. The funds provided partial scholarships to interested community members in the first year. Fifteen people were funded through this program. I continue to work with the program hosted at UC Merced by giving presentations on working rangelands ecology and leading field trips on rangeland and oak woodlands ecosystems for the program. For the field trip I cover topics including rangeland variability, drought, grazing, and rangelands monitoring techniques.



*Merced/ Mariposa's first California Naturalists
Graduation 2015*



California Naturalists: 31

Volunteer Hours Provided 2015: 461



*Merced/ Mariposa's California Naturalists
Graduation 2016*

http://calnat.ucanr.edu/about_the_program/

University of California Cooperative Extension Merced County

Master Gardener Program

David Doll, *Farm Advisor*



The Master Gardener Program is a volunteer-based program tasked with providing research-based information on any aspect of gardening to the general public. The year 2015 was a growing year for the Master Garden Program in Merced County marked by 3 graduates in the spring from our joint training program with Mariposa and 16 planned for our Merced 2016 class, our 4th class, in Merced County. We continue our outreach with our social media. We have a quarterly newsletter, a Facebook page, and a website.

Several projects highlight the 2015 year. The continuing drought brought several projects to the forefront of Master Gardeners. Several "Lawn Parties" were held in neighborhoods explaining what homeowners can do to reduce water use. Also a workshop was held in Merced to present many drought related topics to the public in conjunction with the City of Merced Public Works Department.



The manning of a helpline at the UCCE office continues. The helpline provides a resource for the public to talk to a Master Gardener who helps solve problems or answers questions callers have. A Master Gardener is in the office to deal with both walk-in and telephone calls on two different days. The Master Gardeners also continue to host a booth at the Merced downtown Certified Farmers Market on Saturdays and the Certified Market at the Promenade in North Merced on Wednesday mornings to have a public presence as well as answer questions to the public about gardening.

The Master Gardeners made over 40 presentations to groups in Merced County while attending over 35 community events. Our partnership with Merced Gardens as a location for gardening talks has worked out well. Our presence at the Merced County Fair is always strong with the UCCE booth as well as entries in the competition gardens.



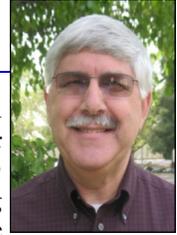
Expansion of our demonstration garden at the Cooperative Extension office continues and is doing well.



Community Events Attended: 36
Direct Contacts With the Public: 3,773
House Visits: 12
Presentations Made: 41
Trainees Selected for 2015 Training: 4
Volunteer Hours Provided: 3,490

Emeritus

Richard Mahacek, *4-H Youth Development Advisor Emeritus*



During this time, I worked mainly on 4-H STEM programs. I coached and mentored three teens in the planning and conducting of the 4-H Mechanical Skills Day held at the Merced College Career Technical area. This included various sessions from welding to rocketry, from woodworking to CAD and 3D printing. Over 175 participants attended and we had help from UC Merced engineering students. During the summer, I consulted and assisted in the 3rd annual 4-H Summer Science Academy. This included three weeks of sessions for youth 7-8 years old and for youth 9-12 years old. I lead a session on Maker Lab where members constructed clocks using various tools. This was the first time to use some of our new tools in the Maker Lab that 4-H is setting up. I have been assisting in getting the 4-H Maker Lab set up for 4-H leaders and member to use for their projects. We have also been connecting with the UCM ASME engineering group to collaborate on our Maker Lab and STEM programming.

The other area I led has been working with a task force to develop and plan for the 100 year celebration for Cooperative Extension and 4-H. We had a kickoff event with the MAC and Arts Council in August, local 4-H clubs are starting to develop community histories of 4-H, and we are beginning to gather stories about 4-H. This will lead up to a book of stories and displays in 2017 at the local fairs and courthouse museum, and a 4-H picnic day.

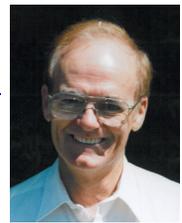
Maxwell Norton, *Tree and Vine Farm Advisor Emeritus*



In the past year and a half, I have provided basic training and continuing education to Master Gardeners from Fresno up thru San Joaquin Counties, including Mariposa. I have also answered questions from commercial growers about specialty tree fruit crops. I still have a small fig seedling evaluation project and I assist USDA with a large cultivar evaluation project near Chowchilla. I continue to work with local people who are interested in continuing on-going coordination and information sharing about ag tourism.

We are working on assembling a museum exhibit to commemorate Cooperative Extension and Farm Bureau serving Merced County for 100 years. The centennial for California Cooperative Extension was just a few years ago. Watch the Merced Historical Society and our web sites for more information.

Bill Weir, *Vegetables Farm Advisor Emeritus*



Dr. Weir continues to participate in the regional cotton variety trials.

Student Support

Alexxis Carvalho-Mires, *Student Intern - UC Merced*

Araceli Hernandez, *Student Intern - UC Merced*

Gabriel Rudich, *Student Intern - Fresno CSU*

Megan Tapley, *Student Intern - San Joaquin College*

University of California Cooperative Extension Merced County

Coming in 2017

Celebration of 100 Years of UC Cooperative Extension in Merced County



In cooperation with the University of California, the County of Merced, and the Merced County Farm Bureau Merced County's UC Cooperative Extension office was created and manned in March 1917.

University of California Cooperative Extension in Merced County will celebrate 100 years of UC Cooperative Extension researchers and educators living and working in Merced County to solve economic, agricultural, natural resource, youth development, and nutrition issues.



Celebrating 100 Years

Extending Knowledge Improving Lives



Planned Events Include:

Merced County Farm Bureau Banquet - March 17, 2017

Merced County Courthouse Museum Display

Reception on opening night

Merced County 4-H Picnic

Los Banos Spring Fair Display

Merced County Fair Display

Merced County 4-H Dinner and Auction

Reception at UC Cooperative Extension Office

University of California Cooperative Extension Merced County

Cooperating with and serving Merced County since 1917

Farm Advisors ...

... work to enhance California agricultural productivity and competitiveness. Together with farmers, pest control advisors, and industry representatives, they identify current and emerging agricultural opportunities and problems. The advisors collaborate with campus-based Cooperative Extension Specialists and Agricultural Experiment Station scientists to research, adapt, and field-test agricultural improvements or solutions and promote the use of research findings.

Nutrition, Family and Consumer Sciences Advisors ...

... focus on nutrition, food safety, food preparation, food preservation, and finance management. Collaborative partnerships with government and private agencies extend the reach of UC advisors. Workshops, public meetings, newsletters, the mass media, and other communications tools bring information to the community.

4-H Youth Development Advisors ...

... provide meaningful, learn-by-doing educational activities to children in 4-H clubs, camps, school enrichment and after-school programs. They also provide information and resources for youth development to the community.

University of California - Cooperative Extension - Merced County

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This report is also available on our website.



University of California, United States Department of Agriculture, and Merced County Cooperating

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