

#### COOPERATIVE EXTENSION RIVERSIDE COUNTY



# Annual Report 2011-2012



Agriculture



Nutrition, Family and Consumer Sciences



4-H



Environmental Horticulture/ Master Gardener

Serving Riverside County residents in delivering research and educational programs in: Agriculture, Nutrition, Youth Development, and Natural Resources Since 1917

University of California, County of Riverside and U.S. Department of Agriculture Cooperating

http://ceriverside.ucanr.edu/

### **Cooperative Extension Riverside County**

The University of California Cooperative Extension (UCCE) is an educational program cooperatively funded by the University of California (the Land Grant Institution in California), the county government, and the federal government to provide research based education to county residents in agriculture, natural resources, environmental horticulture, nutrition, consumer sciences and 4-H youth development. Cooperative Extension exists in almost every county in the United States and always involves a partnership between the United States Department of Agriculture (USDA), the state's Land Grant University, and the county or local government. In Riverside County, Cooperative Extension has a long standing Memorandum of Understanding (MOU) between the County of Riverside and the Regents of the University of California dating back to ~1917 (updated in 2002).

The Cooperative Extension administration falls under the Office of the Vice President of the University of California Division of Agriculture and Natural Resources; Barbara Allen-Diaz. Locally, the Director of Cooperative Extension for Riverside County, Etaferahu (Eta) Takele, is the liaison between the University of California and the County Board of Supervisors. She is responsible for ensuring that the Cooperative Extension programs conform to University policy; federal, state, and local laws; safety and health regulations; and affirmative action guidelines.

Funding for Cooperative Extension and staffing includes:

- Academic and program support personnel by the University of California;
- Program support funds including staffing for Expanded Food & Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) now named UC CalFresh by USDA; and
- Clerical and support staff, office spaces, travel, communication and other operational funds by the County of Riverside.

The mission of the University of California Cooperative Extension in Riverside County is to serve the citizens of the County by providing science-based research, education and public services for:

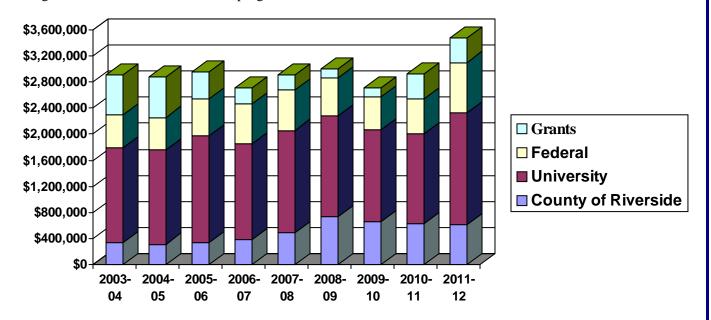
- Improving agricultural productivity by searching for best practices including plant nutrition, control of diseases and invasive species, pest management, irrigation and water management, meeting regulatory requirements and ensuring the viability and sustainability of growers returns as well as the local and state economies.
- Increasing public wellness with nutrition education which targets low-income populations and the prevention of childhood obesity and diabetes.
- Improving the community environment resulting in better landscape and plant growth.
- Ensuring the sustainability and quality of water and natural resources.
- Training 4-H Youth to develop good life skills, good citizenship and leadership.

#### Our staff:

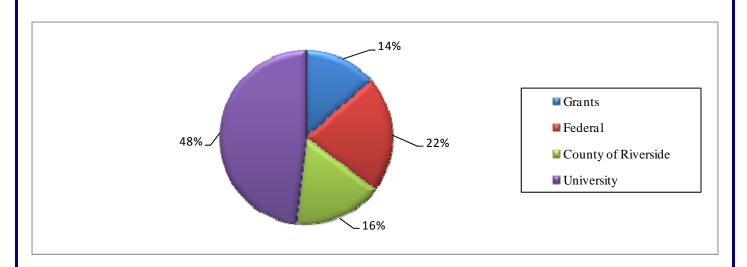
- In agriculture, we have expertise in agronomy, vegetable crops production, integrated pest management, entomology, field crops production, viticulture, plant pathology, subtropical crops production, agricultural economics, animal sciences, environmental horticulture, water and natural resources. Our staff include 4 academic advisors in Riverside, 5 cross county advisors, and 3 program staff. We serve a diversified and viable agricultural industry averaging in the past five years over \$1 billion in the production of over 101 crops, nursery, and egg and dairy. We also strive to ensure the sustainability and quality of our water and natural resources.
- In Nutrition and Consumer Sciences, we have an academic advisor and eight program staff: We are reaching thousands of families with education and training helping them improve their nutrition, physical activity, health, and money management. In 4H, we have a staff working in youth skills and leadership development. Also, we work with hundreds of volunteers assisting us with our outreach in 4-H for youth development and Master Gardener education for urban environmental enhancement and community development.

### **Cooperative Extension Funding**

The following bar graph shows Cooperative Extension funding trends by funding source including the County of Riverside, the University of California, USDA Federal funding and Grants from 2003-2012. The pie graph shows the proportion of funding by source for FY 2011-2012. The budget compositions as presented here provide only the direct incomes from the various sources. The value of services provided to the County through the collaborating effort of our academic advisors and program staff with the research and educational activities of faculty and specialists of the University of California and other institutions, however, is significantly higher than presented here. Also the funding graph does not include the multimillion dollar value of volunteer services we acquire through our 4-H and Master Gardener programs.



UCCE funding from various sources by Fiscal Year.



UCCE funding from various sources, Fiscal Year 2011-2012.

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# Examples of Program Accomplishments, 2011-2012

#### **Agriculture**

**Searching for New Crops:** Pitahaya trials are being conducted to examine potential for production in the Coachella Valley climate. This high returns crop will be valuable for crop diversification for the Coachella Valley Small Scale Producers.

Variety Trials: Table Grape variety research over three years showed market window advantage for grape growers. Sweet Scarlet and Scarlet Royal have opened a high return market window as late season reds for the Coachella Valley table grape growers. Also, a white selection has been identified as an excellent grape variety to meet the early season market window.

Pest and Disease Control: The Asian Citrus Psyllid (ACP)/Citrus Greening identification and control education has succeeded in reaching over 4,000 clientele. We have been fighting the deadly disease from establishing in the California citrus orchards since 2009. We used 175 presentations and distributing displays and information at events. We collaborated in providing pest locations to Riverside County Agricultural Commissioner for quarantine and to avoid spread of the pest and disease.

**Integrated Pest Management** (**IPM**): Research and education in the Palo Verde Valley is experimenting ways of reducing chemical applications in alfalfa for improving the environment without reducing grower returns.

Economic Analysis: Avocado grove establishment and production costs in a recent study in Riverside county showed huge cost increases since our last study (in Year 2000); mainly due to high water prices. UCCE advisors are examining the potential of increasing yield and returns through narrow space planting and mitigating the high water costs. A second study also investigated the profit prospects of organic avocado production in the county.

Projects of our cross county and emeritus status advisors are striving to ensure

expanding our nursery industry and ensuring a sustainable dairy and poultry industries.

#### **Nutrition, Family and Consumer Sciences:**

Research based education with emphasis on childhood obesity and diabetes prevention helped improve the nutrition, physical activity and health of thousands of low income families and youth in Riverside County. Also, many families and youth in the UC CalFresh programs improved their knowledge in money management and nutrition. This year the CalFresh program received a proclamation from the Riverside County Board of supervisors for a collaborating effort with other county departments and attracting funding from USDA for expanding the program.

We are pleased to have a staff funded by the UC Expanded Nutrition Education Program (EFNEP) to manage the growing program.

## Youth Leadership and Good Citizenship Training:

Our 4-H program has continued to achieve recognition in youth leadership, and good citizenship skills. In the California Focus program, 4-H youth visited our state Capitol and met with elected officials including Senator Bill Emmerson of the 37th District.

#### **Improving our Environment:**

The Master Gardner program in Riverside County has grown significantly. We opened a new training center in Palm Desert; an on-line training and a new hot line in our Indio Satellite office on Monday mornings to answer gardening questions. The number for the hot-line is 760-342-6437.

This year, our Master Gardner Program was honored by receiving a special recognition and accomplishment certificates including one from Supervisor Bob Buster at our Volunteers Training graduation of Class 2011.

#### **Overall**

Total Projects conducted by UCCE reached 1,322 (54 research and 1,268 educational projects).



Jose Aguiar, Vegetable Crops/ **Small Farms** Advisor

### **Vegetable Crops/Small Farms** — Coachella Valley

### **Program Overview**

The vegetable crops/small farms program in Riverside County provides applied research and educational programs that address critical needs and issues affecting vegetable crop producers in the Coachella Valley. Farm Advisor Jose Aguiar is responsible for establishing an extension research and education program that promotes the viability and sustainability of the area farms. He advises growers on the efficient management of irrigation, soil and crop fertility, and integrated pest management for the purpose of improving production and grower returns.

### **Program Highlights**

#### **New Crops for the Coachella Valley**

Pitahaya, a relatively new crop in California is expected to be a high income crop suitable for diversification especially to benefit small scale producers. Farm Advisor Aguiar in collaboration with Ramiro Lobo; the Small Farms advisor from San Diego County is conducting an experiment for selecting varieties, that would adapt in the Coachella Valley extremely hot summers. The trials include determining genetic diversity of the *Hylocereus* species; as well as looking into the irrigation and postharvest handling requirements.

Reference article: http://ceimperial.ucanr.edu/news\_359/

Ag Briefs/?newsitem=44455

The Coachella Valley climate is suitable for growing many vegetable crops. Advisor Aguiar is now exploring the adaptability of Pitahaya to the Coachella Valley climate.





Pitahaya production research trail in the Coachella Valley: top picture without cover crop and bottom picture with cowpea cover crop.

Crop Disease Identification and Control: Farm Advisor Aguiar has been working to resolve the following disease problems:

- A relatively new race 4 of downy mildew (an extremely aggressive foliar disease) has been identified in the local spinach fields. Not all of the commercial spinach varieties were bred to be tolerant for it. The farm advisor is educating growers to be on guard and treating for it once it is identified in their fields. Please check: http://ceimperial.ucanr.edu/ news 359/Ag Briefs/?newsitem=42076 for reference article
- An Okra pest is also causing economic loses; reference article http://ceimperial.ucanr.edu/news\_359/Ag\_Briefs/? newsitem=44455

### **Coachella Valley Farmers Educational Meetings**

Educational meetings provide clientele (growers, pest control advisors and farm labor) knowledge and skill in production, pest and disease management for vegetable crops in the Coachella Valley. These meetings are conducted in collaboration with advisor and specialist colleagues in the University and USDA -Natural Resources and Conservation Services.

#### Subjects addressed in 2011-2012

- Soil Reclamation using sulfur burner: A method of lowering the pH of irrigation water with the effect of leaching salinity out of the field. This presentation was supported by data from field tests with local vegetable growers.
- Pitahaya research update. There is a lot of enthusiasm for this project locally. Article The Desert Sun: http:// www.mydesert.com/apps/pbcs.dll/article? AID=/201210160600/NEWS01/310160003
- Production Practices of Vegetable crops collaboratively conducted with the California Hispanic Association Professionals in Agriculture. Our trainings provide credit for pest control advisors.

Collaboration with local agencies and community resources ensured success of these meetings: Collaborators included the Coachella Valley Resource Conservation District, USDA-NRCS and the Coachella Valley Mosquito and Vector Control District and the California Hispanic Professionals in Agriculture. We strive to build partnerships to better serve our clientele.



Carmen Gispert, Viticulture and Pest Management Farm Advisor

### Viticulture and Pest Management

### **Program Overview**

The viticulture program provides applied research and education addressing critical needs and issues that affect the wine and table grape production in Riverside County.

The overall goal is to conduct a program that provides vineyards and growers with

sustainable and viable production practices including developing efficient management of water and the vineyard floor and reduction of chemical use to control pests and pathogens.

### **Program Highlights**

The viticulture research program during this period focused on two main areas:

- Evaluation of new table grape selections suitable for desert production; potential for market window and improving crop quality; and
- Integrated Pest Management (IPM) with the search for strategies to protect vines against trunk

Table grape production in the Coachella Valley is one of the high value crops; exceeding \$92 million in 2010.



Sweet Scarlet red variety identified for production in the Coachella Valley



Scarlet Royal red variety identified for production in the Coachella Valley

### **New Table Grape Selections**

A three years research by Viticulture Advisor Carmen Gispert and colleagues identified red grape varieties suitable for production in the Coachella Valley. The variety will provide market windows for enhancing growers returns. Scarlet Royal is a mid season red selection. Also, a white selection, not yet released showed excellent quality grapes to meet the early market demand.

#### **Trunk Diseases Control**



Advisor Gispert has been evaluating the effectiveness of fungicide sprays on the incidence of trunk diseases after pruning. The goal is to develop a program that protects young vineyards from canker diseases.

### **Crop Production/Entomology/Integrated Pest Management-Palo Verde Valley**

**Program Overview** 



Vonny Barlow, Crop Production/ IPM/Entomology Advisor

The Crop Production/IPM/Entomology Advisor in the Palo Verde Valley is responsible for designing and implementing applied research programs related to crop production with emphasis on maximizing

production, quality, and economic returns.

Primary/target crops include field and forage crops: seed crops, vegetable crops, and commercial fruit trees (such as citrus). Research and education areas include entomology, plant pathology, weed sciences, integrated pest management (IPM), plant nutrition and variety testing.

### **Program Highlights**

#### **Progressive Farmers Meeting**

Advisor Barlow's monthly educational meetings addressed the following in 2011-2012 FY:

- Insecticide management of leafhoppers in alfalfa;
- The present and future of management of *Fusarium* race-4 in cotton;
- Alfalfa weevil and aphid control;

- IPM from the field to the landscape;
- Insect Pest management in Desert-Grown Alfalfa;
- Water and nutrient management for optimum cotton production efficiency;
- Pesticide residues as an environmental and consumer issue.

#### **Research Projects**

#### **Pesticide Application Reduction in Alfalfa**

Advisor Barlow has been developing IPM programs to manage alfalfa pests such as the three cornered alfalfa and Potato leafhopper. These IPM methods are useful in reducing the number of insecticide applications necessary to manage these pests. Repeated insecticide applications, necessitated by migration from wild areas are not only costly, but increase the possibility of secondary pest outbreak. The advisor provides the IPM programs to clientele via various means including articles, newsletters, technical reports, field meetings and professional grower meetings.

Pest management research and education in the Palo Verde Valley is addressing ways of reducing chemical applications in alfalfa for improving the environmental impact without reducing growers returns.



Sweep sampling alfalfa



## Continued research on Lettuce, Melons, Alfalfa investigates:

- Efficacy of select insecticides for Whitefly control, *Bemisia tabaci* and Lepidoptera Management on iceberg and romaine lettuce:
- Spring Stubble Application in Alfalfa for Season Long Management of Three cornered Alfalfa Tree Hopper, Spissistilus festins;
- Impact of kaolin clay particle films on silverleaf whitefly, natural enemy assemblages, and bee pollination;
- Brassica oilseeds as alternative winter crops for California.

Advisor Barlow discussing his lettuce trials at a field day with clientele

### **Agricultural Economics/Farm Management**



Etaferahu (Eta) Takele, County Director and Area Advisor, Agricultural Economics/Farm Management

### **Program Overview**

The Agricultural Economics Program in Farm Management provides research-based education and analyses in crop production economics including investment estimates, production costs, profitability analyses, risk and financial management. Area Advisor, Takele is responsible for programs in Riverside County as well as several other southern California counties.

### **Program Highlights**

A multidisciplinary educational program reaches our clientele with up to date information for improving productivity and returns:

 Avocado Growers Seminars: Farm Advisor Takele conducted bi-monthly regional educational seminars in conjunction with the statewide subtropical horticulture crops advisors and reached over 2,000 clientele. Topics this year include: potential of new varieties; winter irrigation management, avocado pest identification and control methods; irrigation tools and phytophthora control and avocado rootstocks.

**Topics in Subtropics Newsletters:** A statewide quarterly newsletter written in conjunction with other subtropical horticulture advisors reached clientele with current research results including herbicide use, early variety assessments; Asian Citrus Psyllid control; impact of water pricing on profitability and soil analyses.



UCCE Advisors are researching narrow space avocado planting for increasing returns and mitigating high water cost

#### **Economics of Producing Avocados:**

A recent cost return analyses by Takele and colleagues for establishing and producing avocados in Riverside County showed marginal benefits for new establishment due mainly to the high cost of water. Existing orchards that do not have debt leverage against long term assets show positive gross margin. Narrow spacing may be a focus for future study as one way of mitigating the high cost of water through increased yield and returns.

A second study also showed that the cost of producing avocados organically is higher than conventional practices. Potential profitability of producing organically will depend on the price premium that growers receive for the crop.

Riverside County is the 3rd largest avocado producer in California with crop value approximating \$60 million in 2011. Research and education have led to a stable acreage and increased value.

#### Farm Management Resource Websites:

http://ucanr.org/sites/Farm\_Management/;
http://coststudies.ucdavis.edu;

http://anrcatalog.ucdavis.edu;
http://www.sfc.ucdavis.edu

### **Subtropical Horticulture**

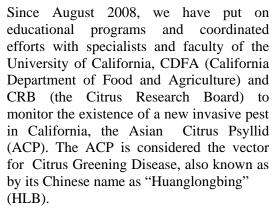


Tom Shea, Subtropical Hort. Staff Research Associate

The Subtropical Horticulture Program Staff Research Associate, Tom Shea is supervised by the County Director, Eta Takele. His main responsibility is outreach to growers helping them diagnose field problems and answering questions related to subtropical horticulture production. He links with specialists and advisors in the UC system to learn about most recent research results for use in his outreach.

### **Educational Activities Highlights**

#### Asian Citrus Psyllid (ACP)/Citrus Greening Identification and Protection



HLB will kill a citrus tree in 3 to 5 years and the fruit becomes bitter, sour and not usable.

ACP has been found in all Southern California counties. Our program has provided growers and back yard gardeners education on how to identify the ACP and its effect on their citrus trees. We have presented education to over 4,000 growers, gardening clubs, Master Gardeners, etc. Through this effort, we have helped the public to identify the pest and made reports to the County Agricultural Commissioner when found.



The Asian Citrus Psyllid

Several research projects are being conducted by the University of California scientists to understand more about the ACP/HLB in order to protect our citrus industry from this insect and disease.



Two adult Asian citrus psyllids on a young tree leaves: The yellow-orange nymph feeding on the top right edge of the leaf (left panel) and the white tubules from nymphs above adult on right panel.



The Huanglongbing disease symptoms are asymmetrical yellow mottling of the citrus leaves

#### **The Annual National Citrus Institute**

We collaborate annually with UCCE San Diego, the CRB, the California Citrus Mutual, The National Orange Show and the University of California, Riverside to bring the public and scientists working on citrus to a one day program to highlight current results and topics of interest and concerns to the citrus industry of California for future investigation.

### **Environmental Horticulture**

### **Program Overview**



Mike Henry, Environmental Horticulture Advisor, Emeritus

The Environmental Horticulture Advisor, Emeritus, Mike Henry is still involved in the Master Gardener program in Riverside County. He was actively involved in expanding our classes to the Palm Desert Center and also helping the Indio office phone squad.

Volunteer Services Coordinator, Stephanie Pocock provides leadership via organizing and coordinating training as well as providing guidance concerning rules, policies and regulations.

### **Master Gardener Program (MGP): Volunteer Services**



Stephanie Pocock, Master Gardener Volunteer Services Coordinator



The Riverside County Cooperative Extension Master Gardener Volunteer Program contributed more than 12,000 hours in improving our environment through back yard and public gardening education.

The program includes 249 active volunteer members of which 93 are new volunteer trainees (35% increase). We now have Master Gardener volunteer training at the UCR Palm Desert Center; and in Riverside at the Western Municipal Water District. We also have 14 trainees from throughout the County in our on-line class.

This year, Master Gardener volunteers contributed more than 12,000 volunteer hours (200% more from previous year) to the County educating the gardening public with University of California science based gardening information. They provide information and education via two phone squads, one in the Moreno Valley UCCE office and the other in the Indio UCCE office.

Volunteer Program contributed more than 12,000 hours in improving our environment through Volunteers also have a Speaker's Bureau that do presentations; and they displays information tables throughout the county at a variety of public events and meetings including:

back yard and public gardening education.

Earth Night at the Western Municipal Water District Garden; the Lavender Festival in Cherry Valley; the Lemon Lily Festival in

Idyllwild; Home Shows in Riverside; and Desert Garden Day in Palm Desert. This year new projects were added including:

- Participation in propagation plants and sold (2000+) at both the spring and fall plant sales at the Botanic Gardens of the University of California, Riverside.
- MGP volunteers as docents at the WMWD Southern California Lifestyles Garden giving presentations of various gardening topics to the public on Saturdays.
- Apple tree propagation training at the Jurupa Mountains Discovery Center Propagation Garden; volunteers propagated 250 bare root bench grafts of apple trees.

This year we received special recognition certificates of achievement from our Board of Supervisor at the 2011 graduation of the Master Gardener Volunteer Training class and from the WMWD. We also received \$5,000 gift funding towards the support of he program.



2000+ Plants propagated at Growlab



Train the trainers session at the WMWD Southern California lifestyles garden



IPM Train the Trainers session at UCR



Chutima Ganthavorn, Nutrition, Family & Consumer Sciences Advisor

### **Nutrition, Family and Consumer Sciences**

### **Program Overview**

Nutrition, Family and Consumer Sciences Program (NFCS) provides research-based education in the areas of nutrition, food safety and consumer economics. This program has one academic advisor and eight program staff.

The Program has two on-going nutrition education projects that are federally funded:

- 1) Expanded Food and Nutrition Education Program (EFNEP) and
- 2) UC CalFresh Nutrition Education Program (UC CalFresh)



### **Expanded Food and Nutrition Education Program**

Riverside residents are adopting the teachings of healthy life styles from the UCCE Expanded Food and Nutrition Education Program

During FY 2011-2012 Expanded Food and Nutrition Education Program worked with many agencies and enrolled hundreds of families in Eating Smart Being Active, conducted a series of nutrition lessons to help low income parents with young children adopt healthy lifestyles. Adult EFNEP graduates surveyed reported behavior changes as follows:

- ✓ Made healthy food choices when deciding what to feed their family;
- ✓ More often prepared foods without adding salt;
- ✓ Reported that their children ate breakfast more often.



Youth EFNEP worked with several sites to deliver Reading Across MyPlate/MyPyramid (RAMP) to youth groups for a total of 1,469 children. Our big success was in partnering with Think Together and Moreno Valley Parks and Community Services after school programs.

Nicole Ogosi presenting RAMP to primary leaders from Think Together after school program.





Myriam Acevedo's Eating Smart Being Active class at Edgemont Elementary and Cloverdale Elementary.





The UC CalFresh Cooperative E x t e n s i o nprogram Riverside County reached a total of **3,365** youth and **929** adults through direct education. youth and The adults were contacted several times making a total of 129,265 participant contacts in FY 2011-12



UC Food Stamp Nutrition Education Program has changed its name to UC CalFresh Nutrition Education Program. The UC CalFresh State Office is located on UC Davis campus. The State's overarching goal is to provide nutrition focused educational programs that increase the likelihood of Supplemental Nutrition Assistance Program (SNAP) recipients achieving nutrition and physical activity goals consistent with the Dietary Guidelines for Americans and MyPyramid.

UC CalFresh program staff delivered over a hundred fifty workshops and 35 posters to CalFresh target audience at 55 schools and agencies. We partnered with 69 teachers to deliver nutrition education to children and teens.



Dalia Zamora delivered a Plan, Shop, Save, Cook workshop at Carbot Yerxa Head Start.



Jeanie Charuwatee conducted a food demo at Banning DPSS.



Claudia Carlos made a tropical smoothie for parents and students at Healthy Gator Workout at Gage Middle School.

Liz Armijo and Dalia Zamora set up a Choose MyPlate booth at Torres Martinez Health Fair.







Riverside County children and adults who participated in UC CalFresh showed changes in behavior including



- Making improvements in fruit and vegetable consumption;
- Eating more breakfast;
- Making improvement in beverage choices.
- ✓ Adult participants more often used:
  - The "Nutrition Facts" on food labels to make food choices:
  - A list for grocery shopping;
  - Planned meals in advance.



### **4-H Youth Development**



Cheryl Eggleston, Prog. Rep. II, 4-H Youth Development Program

### **Program Overview**

The 4-H Youth Development program objective is to help youth become responsible, self-directed, and productive members of society. The goal is to develop productive leaders and good citizens in youth and to improve their well being as well as their families, and their communities.

The 4-H Youth Development Program has 621 youth and 169 Adult Volunteers



involved in 24 club units. We also have afterschool programs. Program Representative Jeanne Lothridge provided leadership via training volunteers about 4-H rules, policies and regulations.

Currently, the 4-H program representative is Cheryl Eggleston, who replaced Jeanne Lothridge upon her retirement on April 1, 2012

### **Program Highlights**

Riverside County 4-H provided several opportunities for the young, and old, to have fun experimenting and learning about the power of wind.

4-H youth activities at National Youth Science Day and at 4-H Fun Fair Day: Wind power may be a very important source of electricity in the future. Experimenting with the power of wind fosters creativity and innovation, while getting young people interested in science, engineering, and technology (SET).

The promotional booth set up by 4-H youth at the Southern California Fair in Lake Perris and at 4-H Fun fair activities attracted the attention of many who attended the events. The youth demonstrated how the power of wind turns into usable power. They were able to build windmills and capture the wind.



Volunteers and 4-H youth at Power of Wind demonstration

#### **Other Outreach:**

 4-H members handed out promotional flyers for Summer Camps, Winter Camps and other 4-H activities.

#### **Community Services by 4-H members:**

- Members chose names from a Christmas Tree and delivered gifts to senior citizens. Also, leaders went Christmas Caroling in the community and stopped by the Mayor's house to sing!
- Sponsored a Clothing and Toy Drive for the Holidays so that needy families in Riverside would have something for Christmas.



Our youth at California Focus meeting with Senator Bill Emmerson of the 37th District and others in Sacramento. They spent time learning about our government.

**TechXcite Project**: Youth members also used K'NEX materials to construct and evaluate different sources of power for several different kinds of cars. They learned how to scientifically measure the performance of the vehicles to study the effects of their design "improvements" on speed.

### **Cross County Advisors Programs in Riverside County**



Chris McDonald, Desert Natural Resources Advisor



Carl E. Bell, Invasive Pests, Regional Advisor



Nyles Peterson, Dairy Advisor

**Natural Resources and Invasive Pests**: Chris McDonald and Carl Bell conducted several projects for the maintenance and sustainability of Riverside County natural resources and the control of invasive pests. Projects included:

- Weed populations reduction to increase habitat for the endangered Stephens Kangaroo Rat;
- An eradication program for Sahara mustard (a nonnative invasive weed) from Western Riverside County;
- Research on improving habitat for the California gnatcatcher and the cactus wren and continued research on assessing management techniques for Sahara mustard in Eastern Riverside County including seed bank dynamics of Sahara mustard (to better help managers eradicate this species);
- Restoring coastal sage scrub communities in San Timoteo Canyon; Restoring degraded chaparral communities in San Timoteo Canyon; Restoring grassland/wildflower fields in San Timoteo Canyon;
- The advisors also provided scientific resources to land managers in Riverside County by:
- Attending 14 meetings with land managers;
- Providing a workshop on the safe and efficient use of herbicides;
- Organizing a workshop on climate change strategies for land managers;
- Giving talks on pollinators to land mangers and gardeners; and writing three newsletters on relevant management issues.

**Dairy**: A new publication entitled Cattle Care Standards for management and Recommendations for Meeting California Legal Requirements, written by Advisor Nyles is in print.

Advisor Petersen and colleagues have also been testing/researching a product for 3 years on its effectiveness to control horn flies while being more environmentally friendly than insecticides that are commonly used.

A three college collaborative (University of California, Cal State University Pomona, and Western University) research effort targets combating Mastitis which continues to be a frequent and costly disease in dairy cattle.



James A. Bethke, Nurseries and Floriculture Advisor

## James Bethke projects in Riverside include:

Training clientele in pesticide use; and teaching our Master Gardener classes.

Revived what used to be an Entomology Conference; held it in Temecula. He linked the clientele with the applied agricultural research conducted in the Department of Entomology at the University of California, Riverside.

Developed an on-line training module, reaching to the Spanish speaking clientele and educating them on how to grow citrus efficiently in protected structures, which is very different from growing them in a nursery setting.

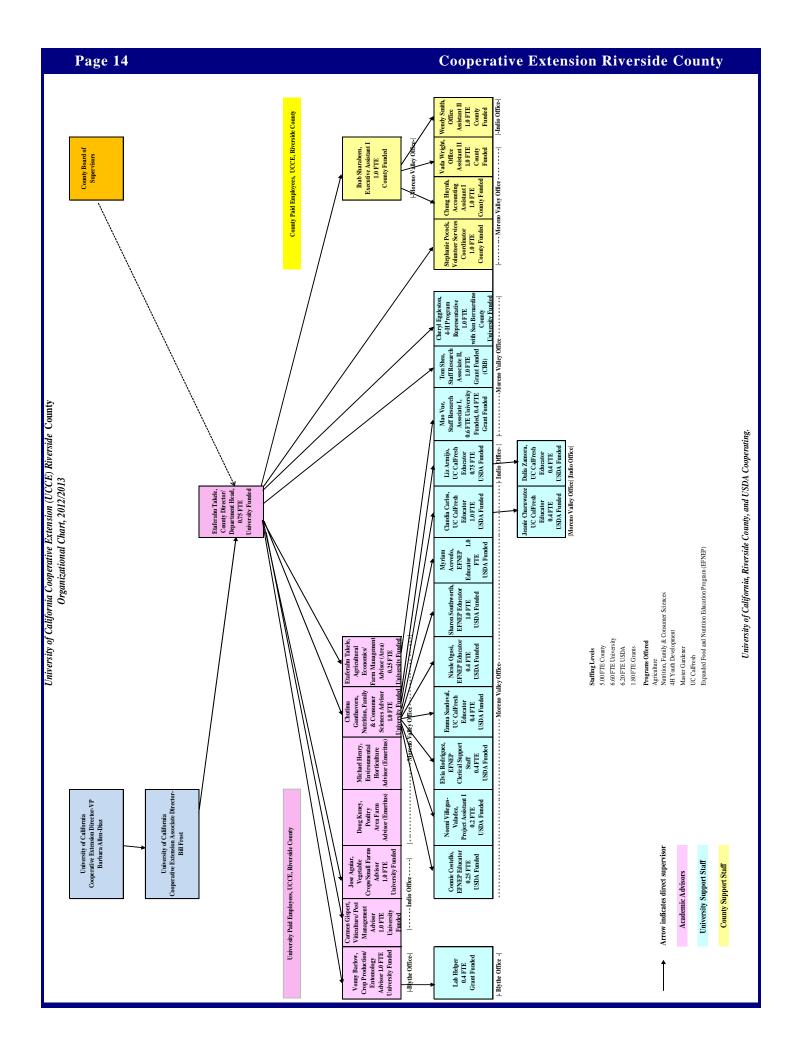
He is also looking at the prospects of organic control of the Asian Citrus Psyllid and glassy-winged sharpshooter.



Darren L. Haver, Water Resources/ Water Quality Advisor/ South Coast Research & Extension Center

Water Resources: Serves as a member of the San Jacinto Watershed Ag. Waiver Advisory Group; providing technical support to the Santa Ana Regional Water Quality Control Board (RWQCB). His expertise is in the area of Total Maximum Daily Loads (TMDL).

Darren is also a Director for South Coast Research and Extension Center overlooking the research resources and projects that address the needs of southern California agricultural and natural resources issues.



## **Cooperative Extension Staff List by Program Area**

Offices	Telephone No.	E-Mail Addresses
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Nutrition, Family & Consumer Sciences		
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<sup>&</sup>lt;sup>a</sup> EFNEP—Expanded Food & Nutrition Education Program.

## **Cooperative Extension Staff List by Program Area**

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#### **Cooperative Extension Riverside County**



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Vonny Barlow, Crop Prod. & Entom. Farm Advisor



Chutima Ganthavorn, NFCS Advisor



Douglas R. Kuney, Poultry Area Farm Advisor (Emeritus)



Mike Henry, Environ. Horticulture Advisor (Emeritus)



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Tom Shea, SRA II Subtropical Horticulture



Mao Vue, SRA I Ag. Econ./Farm Mgt.



Liz Armijo, Program Rep. II UC CalFresh



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#### CROSS COUNTY FARM AND NATURAL RESOURCES ADVISORS WITH PROGRAMS IN RIVERSIDE



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Nyles Peterson, Dairy, San Bernardino County



James A. Bethke, Nurseries and Floriculture, San Diego County



Carl E. Bell, Invasive Pests, Regional Advisor



Darren L. Haver, Water Resources/ Water Quality, Orange County

### **County Paid Support Staff**



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#### **Cooperative Extension County of Riverside**



Ensuring Agricultural Viability and Sustainability





Promoting Healthy Living and Financial Management of our Residents



Youth Skill and Leadership Development-4H



Improving our Environment through Gardening and Landscaping

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