



# *UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION COUNTY OF RIVERSIDE*



*Photo taken by Tom Shea as he looks toward Mt. San Jacinto from our mandarin variety trial at the Coachella Valley Agricultural Research Station in Oasis, CA, October 2004.*

*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*

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Special points of interest:

- Overview of Cooperative Extension
• Programs in Riverside County
• Highlights of Services

Inside this issue:

4-H Youth Development 6
Nutrition, Family and Consumer Science 8
Vegetable Crops—Coachella Valley 10
Field & Vegetable Crops—Palo Verde Valley 11
Viticulture 12
Agricultural Economics 13
Subtropical Horticulture 14
Poultry 15
Environmental Horticulture 16
Master Gardener 17
Water Improvement Project / Southeast Asian Farm Project 18

Highlights of Cooperative Extension 2003-2004

Cooperative Extension's goal is to solve problems and resolve issues for the citizens of Riverside County. Some of the issues that we directed our efforts to in the past year include:

- Nutrition Family Consumer Sciences program is leading a community coalition to help reverse the increasing trend in childhood obesity and diabetes.
• Potential new plant growth enhancer is being tested on cotton. Product increases economic yields by \$50-\$120/acre.
• Collaborative effort successfully reduced populations of glassy-winged sharpshooter in two local grape growing regions.
• Enterprise Profitability program helps decision makers (local growers, bankers and government agencies) choose crops that will be more profitable.
• Citrus leafminer, a new pest, was discovered in Riverside County. Trials are be-

ing conducted to determine the best methods to help control it.

- A new bio-security education plan was developed to help reduce the spread of contagious diseases in egg production facilities.
• A more cost-effective disposal procedure was developed and implemented, reducing the potential spread of Exotic Newcastle disease from birds buried in landfills.
• Turfgrass research provides data on grass species that utilizes 50% less water and fertilizer.
• Riverside County West Nile Virus Hotline, established in the fall 2004 by our Master Gardeners, received nearly 8,000 calls, representing 16% of the calls statewide. Residents expressed relief because of the help they received.
• Donations to fire victims: 4-H received donations that filled a two car garage front to back and floor to ceiling.

Cooperative Extension: Serving the People of Riverside County

The mission of the University of California Cooperative Extension in Riverside County is to serve the people of Riverside County by providing science-based research, education and public service to help them solve problems in agriculture, natural resources (including environmental quality), food and nutrition, food safety and human community development.

The areas of staff expertise in agriculture include: agronomy, vegetable crop pro-

duction, integrated pest management, entomology, field crop production, viticulture, plant pathology, subtropical crop production, agricultural economics, poultry, animal sciences, and environmental resources. We also have expertise in human resources including 4-H youth development, nutrition and consumer sciences, family well-being, urban environmental enhancement and community development.

## Volunteers Essential to Our Success

Adult volunteers are critical to the success of the Master Gardener and 4-H Youth Development (4-H YD) programs. While University staff sets the program's educational goals and standards, it is the volunteers who actually deliver the program at the county level. In 4-H Youth Development, the adult volunteers implement the programs, provide logistical support for meetings and events, and help guide youth in becoming better citizens through development of life-skills.

The success of these programs is directly dependent on the quality of recruitment, selection, appointment, and training of

the adult volunteers. All volunteers have background clearances or they are not allowed to participate in our programs.

The primary purpose of this process is to provide volunteers with skills and knowledge so they can in turn provide quality educational experiences for both youth and adults. It also insures that youth and adults have a safe learning environment.

Volunteers are agents of the University of California. Both the 4-H YD program and Master Gardener program have developed conduct requirements for all members/volunteers to make their involvement a positive, satisfying experience.

*“...to make  
life better for  
Californians  
in all walks of  
life...”*

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## History of Cooperative Extension in Riverside County

In 1891, the University of California Board of Regents instituted short courses and used demonstration trainings to extend the University's teaching over the entire state. In 1897 the Department of Extension in Agriculture was created that later became the Division of Agricultural Extension in 1913.

On May 8, 1914 Congress passed the Smith-Lever Act, providing federal funds to the USDA's Extension Service for cooperative work with Land-Grant universities and colleges.

In 1915, the California state legislature authorized the UC Regents to conduct the Agricultural Extension program. This empowered county boards of supervisors to appropriate and use county funds to support Extension work in agriculture, in cooperation with the USDA.

This three-way cooperative arrangement was created to bring agricultural education and research to the public.

In 1917, a cooperative relationship was formed between the University of California and the Riverside County Board of Supervisors. In 2001, the Memorandum of Understanding was revised further formalizing this relationship.

Cooperative Extension (CE) tailors its programs to meet local needs. CE's many teaching tools include meetings, conferences, workshops, demonstrations, field days, video programs, newsletters, manuals and personal consultations.

In Riverside County and throughout the state, thousands of volunteers extend CE's outreach, assisting with 4-H youth development programs along with Master Gardeners.

## Cooperative Extension’s Role in Riverside County

The delivery of Cooperative Extension programs including 4-H is a partnership between federal, state, and county governments. The Smith-Lever Act of 1914, as amended, provides guidelines and specific functions for extension programs.

The Vice President (Reg Gomes) of the Division of Agriculture and Natural Resources (ANR) is the Director of Cooperative Extension and is responsible for all programs within Cooperative Extension.

Cooperative Extension exists in almost every county in the United States and always involves a partnership between the USDA, the state’s Land Grant University, and the county or local government.

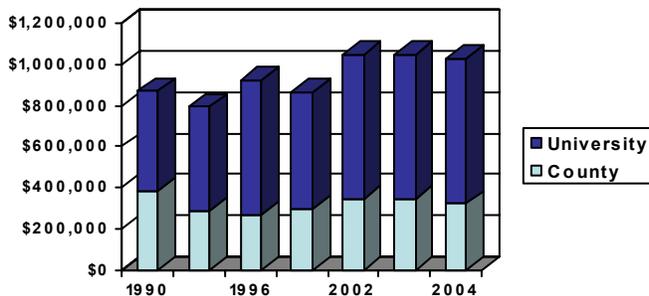
The University provides academic and program support staff. The USDA provides program sup-

port dollars for Expanded Food & Nutrition Education Program (EFNEP) and Food Stamp Nutrition Education Program (FSNEP). The County of Riverside provides clerical and other support personnel, office space, program supplies, staff travel, and other administrative support.

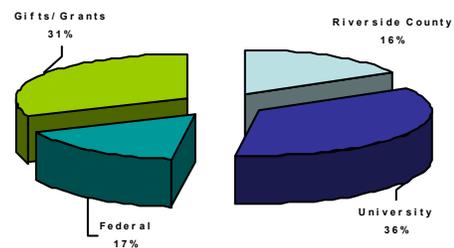
The Director of Cooperative Extension for Riverside County, Peggy Mauk, is the liaison between the University of California and the County Board of Supervisors. She is responsible for ensuring that the Cooperative Extension programs conform to: University policy; federal, state, and local laws; safety and health regulations; affirmative action guidelines; and the mission core values and educational objectives of the 4-H Youth Development Program.

## Funding Breakdown for Fiscal Year 2003—2004

Cooperative Extension is indeed a cooperative organization, relying upon funding by both the County of Riverside and the University of California to function and exist. The accompanying graphs depict funding during the past decade, and 2004 funding sources and levels. Funding in 2004 reflects financial situations and reduced budgets of both the University of California as well as the County of Riverside.



*Financial contribution from County of Riverside and the University of California, Fiscal Year*



**Total Budget \$1,963,902**

Volunteer contributions (4-H and Master Gardeners) are not factored into the total budget. Volunteers are estimated to contribute \$1,696,000 (over 67,000 hours) of service for Cooperative Extension, annually.

## Nutrition, Family & Consumer Sciences



Chutima  
Ganthavorn,  
Nutrition, Family  
and Consumer  
Sciences Advisor

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

EFNEP is a nutrition outreach program funded through USDA-CSREES Smith-Lever 3(d) funds. In Riverside County, EFNEP's mission is to deliver nutrition education to low-income parents with young children and disadvantaged youth through a number of local agencies, schools and community groups. During FY 2002-2003 Riverside County EFNEP helped 818 low income families and 2159 youth improve their nutrition, physical activity and health.



*Teaching Fast Food Nutrition Facts to Head Start parents.*

### **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 six program assistants.



*Helping consumers make healthy food choices in the community of Mead Valley.*

### **FSNEP — Food Stamp Nutrition Education Program**

FSNEP is a program funded by USDA-FNS Food Stamp Program. In Riverside County, FSNEP's mission is to promote self-sufficiency among food stamp recipients and food stamp eligible families by teaching financial literacy and helping families learn to make nutritious meals on a limited budget. During FY 2002-2003 Riverside County FSNEP helped 190 adults and 2723 youth improve their knowledge in money management and nutrition.

## Nutrition, Family & Consumer Sciences

*The Centers for Disease Control and Prevention (CDC) calls diabetes and obesity the 'twin epidemics'*

### **Children and Weight Coalition**

In June 2002 NFCS Program initiated a community coalition to address the increasing trend in childhood obesity. The coalition now known as Corona-Norco Children and Weight Coalition brings together various community partners including Corona-Norco Unified School District (Nursing and Nutrition Services), Department of Public Health Nutrition Services, Riverside County Office of Education Children and Family Services and Head Start, to discuss issues and plan strategies related to children's unhealthy eating habits and lack of physical activity. Last year, the coalition conducted a nutrition and health survey of Head Start parents.



*Dr. Lucia Kaiser from UC Davis, presenting Children and Type II Diabetes Workshop.*

### **Diabetes Awareness**

From 1991 to 2001, a recent CDC study found a 61 percent increase in diagnosed diabetes (including gestational) in Americans and a 74 percent increase in obesity, reflecting the strong correlation between obesity and the development of diabetes (*Source: CDC 2004*). The NFCS Program is helping to promote diabetes awareness in Riverside County by giving presentations to vision impaired individuals at Blindness Support Services and seniors at Corona Senior, and organizing a Children and Type II Diabetes workshop for school nurses and dietitians. This program was presented by a community nutrition specialist from UC Davis.

### **Make It Safe, Serve It Safe**

The NFCS Program continues to provide food safety information to Riverside County residents. Two food safety training workshops "Make It Safe, Serve It Safe" for 4-H volunteers, event coordinators and health professionals were conducted in collaboration with Community Action Partnership and The Mission Trail Library.



## 4-H Youth Development Program



Jeanne Lothridge,  
4-H Program Representative.

### Program Overview

The objective of the 4-H Youth Development program is to help youth become responsible, self-directed, and productive members of the global society. The goal is to improve the well being of youth, their families, and their communities.

There are 264 adult volunteers of the University of California 4-H Youth Development Program and 762 youth members in Riverside County.

There were two presentation days held this year with over 100 members participating. There were 20 members who received gold medals for their efforts, who are now eligible to compete at the Sectional Field Day in Walnut, California in May. Sara Cunningham from Nuview

Ranchers 4-H Club, in Nuevo received a blue seal for her demonstration in Foods and Nutrition. Shawna Kness (Colorado River 4-H Club in Blythe) received a green seal for her demonstration in the Horse project. Joshua Thome from Palo Verde Valley Saddle Stompers in Blythe received a blue seal with his demonstration in the Poultry project.

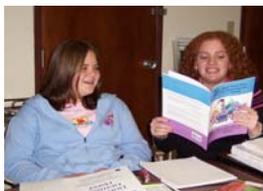
Our County Fashion Revue was held in the last part of March and the three gold medalists from this event were Lauren Shepherd, Natasha Krause, and Lindsay Shepherd. They continued on to sectional competition, where Lauren Shepherd became a gold medalist in the Intermediate Traditional Competition.

### SERVICE LEARNING PROJECT: Let's Read to a Healthy Start



Our 2003-2004 California Focus and Washington Focus travel study members have just completed their Plan of Action community service learning project. The team members were Lauren DiLeva from Nuevo (Pure Country 4-H), Kirby Garcia from Woodcrest and Kelly Johnston from Pedley (Jurupa Epics 4-H Club), Natasha Krause from Woodcrest (Mystic Areas 4-H Club) and Jeanette Lothridge from Glen Avon (Glen Avon 4-H Club). They started in January developing activities from the Food and Nutrition curriculum *Reading Up the Food Guide Pyramid*. In April, May, and June they divided up into smaller teams and went out to Romoland Elementary School, Harvest Valley Elementary School, Free-mont Elementary School and Mead Val-

ley Community Center, and spent 3 to 6 weeks, one to two hours a week, teaching the after school program students about nutrition and doing the activities from the *Reading Up the Food Guide Pyramid* curriculum. This program was developed for students in grade K-3 by Cooperative Extension. The lessons focus on the importance of healthy eating and exercise, and feature children's storybooks with related themes. Some examples of the books used are, *The Ugly Vegetables* by Grace Lin, *Breads, Breads, Breads* by Ann Morris, *The Edible Pyramid* by Loreen Leedy, *Oliver's Fruit Salads* by Vivian French, *Green Eggs and Ham* by Dr. Seuss, *The Very Hungry Caterpillar* by Eric Carle and *Let's Exercise* by Alice McGinty.





## Youth Citizenship Program

The 4-H Citizenship project introduces youth to both community service and to state and national government. The objectives are not only to introduce youth to government, history, and cultures, but also to help them get involved in community service opportunities.

This program is comprised of youth in the California Focus Citizenship Program and the Washington Focus Citizenship Program. Both programs last two years and involve an in-depth study of the state and national governments, respectively. The second year involves the youth putting their plan of action into effect. Participants travel to the centers of government, meet government officials, and learn the legislative process. Additionally, participants study history and culture while im-

proving their leadership and communication skills by developing a deep appreciation for citizenship involvement.

This year Riverside County 4-H Members who were chosen to participate in the California Focus Program are Julian Krause from Woodcrest (Mystic Acres 4-H Club), Brian Myers, Jana Bouris, Ashley Rood, all from Menifee (Perris Panthers 4-H Club), Kandice Pierce, Jessica Pierce of Mira Loma and Rachel Vromans of Norco (Alvord Aggies 4-H Club) along with their advisor Vicki Smith. They traveled in June 2004 to Sacramento and spent one week with 400 other 4-H youth members to learn about our state's government. They met with their legislators, saw history in the making, and were able to visit the sights of the capital.

### Mission

*“The University of California 4-H Youth Development Program engages youth in reaching their fullest potential while advancing the field of youth development.”*

### 4-H Project Helps Buy Police Dog

Desert Sandblaster 4-H Club sold produce that was donated by Valley Pride and other local growers to raise funds to purchase a police dog for the Indio Police Department. Members of the Desert Sandblasters 4-H Club who spent their Saturday's selling the produce were Catherine Aguilar, Jacob Lauritzen, Katherine Kaschow, Elizabeth Aguilar and Amy Murashima, club president, along with volunteer leaders Vicky Murashima, Will Wade, Larry Lauritzen, Nancy Lauritzen and Janell Percy. They presented their donation to the Indio Police Canine Unit at the Indio City Council Meeting on September 15, 2004.

### State Ambassador Program

Kirby Garcia from Woodcrest (Jurupa Epics 4-H Club) has been chosen to serve as a State Ambassador representing California. This is one of the highest honors for a 4-H member and reflects Kirby's leadership skills and accomplishments in 4-H. Kirby will be traveling throughout California sharing her knowledge and experiences with other 4-H clubs and communities. She will also plan and conduct leadership training and serve as a model for other 4-H youth members.

## Vegetable Crops/Small Farms – Coachella Valley



**Jose Aguiar**  
Vegetable Crops  
and Small Farms in  
the Coachella Valley

### Program Overview

The vegetable crops/small farm program addresses those critical needs and issues that affect vegetable crop producers in the Coachella Valley. The program assists large and small-scale growers as well as Pest Control Advisors. Jose helps growers solve problems, and also works as a team with other Advisors and Specialists in addressing vegetable problems. The educational program consists of a series of seminars titled “Coachella Valley Farmers Educational Meetings”. The goal of these seminars is to identify specific problems and present research based information. Speakers include UCCE Farm Advisors and Specialists as well as USDA-NRCS research scientists.

### Overall Goal

Jose is responsible for establishing a research and extension program to maintain and promote the viability of the area farms. This includes a sustainable approach and the efficient management of irrigation, soil and crop fertility, and integrated pest management. The Farm Advisor is the link between the University of California and the local grower community. As a result of this connection, local problems can be addressed.

*Studies  
show new  
hope for  
controlling  
purple  
nutsedge*



### Lettuce Herbicide Trials

There were over 2000 acres planted to various lettuce types in 2002 in the Coachella Valley. A serious early season pest for lettuce is purple nutsedge. In conjunction with Steve Fennimore, UC Weed Specialist, various materials were tested for purple nutsedge and winter weed efficacy. The results were very positive and the trials will be expanded in 2004.



The above photo shows a Bell pepper field infested with *root knot nematodes*, a parasite found in the Coachella Valley. The plants with light colored tops are the affected plants.

### Coachella Valley Farmers Educational Seminars

In 2003, seven Coachella Valley Farmers Educational Seminars were held. Our seminars are co-sponsored by the Coachella Valley Resource Conservation District, USDA-NRCS and the Coachella Valley Mosquito and Vector Control District. Five of these meetings qualified for continuing education credit. Our meetings are held at the USDA Service Center in Indio. Our attendance varies but averages about 245 growers per year. One of our meetings is the Annual Soil Health Symposium. For this meeting we draw from some of the top USDA research Scientists as well as UC Specialists.

## **Field and Vegetable Crops — Palo Verde Valley**

### **Program Overview**



Michael Rethwisch,  
Field and Vegetable  
Crops Advisor

The goal of this program is to provide data and information, including that derived from local problem solving research. This data helps producers and Pest Control Advisors make the best possible decisions, and thereby increase agricultural production effectiveness, maximize potential profits, and mitigate long term risks. Agricultural and Natural Resources activities in the Palo Verde Valley during the year have in-

cluded a number of field research projects, primarily in the areas of alfalfa insects and mites, and plant growth regulators. In addition, we have had several educational meetings and provide information delivery via newsletters and mailings. Large scale research projects have primarily centered on various production aspects of current local crops while small plot research evaluated potential new products and crops.

### **Research Successes and Impacts**

#### ***Spider Mite Management in Alfalfa***

Field research has begun to quantify the economic losses due to spider mites, with losses of up to 0.2 tons/acre in a single cutting documented. As a result of this trial, pest control advisors have implemented alternative strategies to control spider mites with some initial success. Quality loss was not found from spider mite feeding when a 30 day cutting cycle is utilized. Field trials have found only two pesticides or combinations of pesticides that are currently registered and somewhat effective.

#### ***Insecticide Evaluations in Alfalfa***

Insecticide efficacy studies are conducted in alfalfa to generate comparative results for various insecticides. Test results that compared wettable powder and liquid forms of several pyrethroid insecticides were surprising, as liquid forms resulted in a 0.1 ton/acre yield loss when compared with their wettable powder formulations. Testing also determined that higher rates of certain insecticides also lowered yields slightly, which is thought to be due to a greater reduction of beneficial insects.

***“Growth  
Regulator  
for cotton  
provides  
economic  
returns  
greater than  
\$50/acre...”***

#### ***Plant Growth Enhancers for Cotton***

Evaluation of AuxiGro, not yet available for growers, has resulted in consistent increases in fiber strength and sometimes increased boll retention rates. Usage of this product has pro-

vided economic returns greater than \$50/acre (sometimes >120/acre) in both years tested. It is hoped that local research will result in this product being registered for usage on cotton in California.

### **Educational Activities:**

- The **Palo Verde Valley Update** (newsletter containing Cooperative Extension agriculture information) is widely used and requested beyond the Palo Verde Valley, with a mailing list of almost 300. The most recent issue was 34 pages in length and included information about spider mite control, West Nile virus and mosquito control, as well as the status of new pests and information about potential pests to be wary of.
- Progressive Farmers’ meetings are organized about six times each year.

## Viticulture and Pest Management



Carmen Gispert, Viticulture and Pest Management Farm Advisor

### **Program Overview**

The viticulture program addresses critical needs and issues that affect wine grape and table grape production in Riverside, San Bernardino and San



Diego counties. The educational program consists of a series of seminars and workshops to train vineyard managers and field workers to identify a specific problem. The viticulture program is currently oriented to evaluate table grape selections, and pest and disease management on grapevines, particularly Pierce's disease and vine mealybug.

### **Overall Program Goal**

To establish a program to maintain vineyards with a more sustainable approach that includes an efficient management of water and vineyard floor, and the reduction of chemical use to control pests and pathogens.

### **Pierce's Disease**

A collaborative effort among the University of California and the California Department of Food and Agriculture has successfully reduced the population levels of the glassy-winged sharpshooter, the vector of Pierce's disease in the Coachella and Temecula Valleys, two important grape growing regions in southern California.

*“A collaborative effort has successfully reduced the population levels of the glassy-winged sharpshooter.”*



### **Vine Mealybug**



The use of a pheromone and selective insecticides are being tested as part of an integrated pest management program to reduce the damage of the vine mealybug in the Coachella Valley.

## Agricultural Economics/Farm Management



Etaferahu (Eta)  
Takele

Area Advisor, Agricultural Economics/Farm Management

*What is the expected cost of producing crops in Riverside County? Click on our websites and find out.*

*UCCE Risk Management Education attracted collaboration with Cal State University, San Bernardino*

### 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, risk and financial management. An area advisor responsible for the southern California region covers this program for Riverside County.

### Enterprise Profitability

This program reaches over 25,000 clients nationally and internationally with the dissemination of publications. There are twelve studies available for Riverside County that can be downloaded from the following websites:

<http://coststudies.ucdavis.edu>

<http://www.vric.ucdavis.edu>

<http://anrcatalog.ucdavis.edu>

<http://www.sfc.ucdavis.edu>

These studies provide the basis for growers and investors to evaluate the increasing challenges affecting agriculture such as urban expansion and the resulting increase of water and land values, so that their ability to choose production sites and systems that are profitable would increase. In addition, having locally developed industry baseline economic and profitability indicators will allow local farmers, bankers, and government agencies to assess and compare the relative efficiency and profitability of agricultural operations in Riverside County.

### Risk Management Education

Risk management education initiated through USDA funding has achieved success beyond the original scope of the project. Seminars covered topics such as production, economics and marketing risks, labor, land use planning and regulations, agricultural standards and certification, and the impact of exotic pests and quarantines. The total of 260 grower participants plus educators, lenders and agricultural business owners and managers, far exceeded our expectations. We were able to reach out to a diverse audience, including about 20% female, 5% Hispanic, and some Native Americans. Participants expressed an increased awareness of risk factors and management methods.

This program showcased how grant funds can be leveraged to bring in other funds and resources. Several agencies stepped forward to sponsor additional seminars.

The success of our program brought additional funding from USDA RMA outreach programs in partnership with Cal State University, San Bernardino which allowed continuum to our educational programs to minority and small scale growers through the Small Farm Initiative.



*Coachella Valley grower (left) discusses his date palms production and marketing with UCCE farm advisors Eta Takele (middle) and Jose Aguiar.*

## **Subtropical Horticulture**



Peggy Mauk, Director of Cooperative Extension and Subtropical Horticulture Advisor

Subtropical Horticulture program addresses research and educational needs for commercial citrus, avocado and date producers and allied agri-businesses. Peggy's expertise and background are in disease and pest management. She has on staff Tom Shea, who has exper-

tise in production of a wide range of subtropical crops such as mango, lychee, longan, guava, papaya, cherimoya, starfruit and specialty citrus, such as, seedless mandarins. Together they solve problems for growers and potential growers of subtropical crops.

### **Citrus Leafminer, a New Pest to Riverside County**

In the fall of 2002, a new pest of citrus, the Citrus Leafminer, was discovered in Riverside County. The California Citrus Nurseryman's Association solicited Peggy Mauk to initiate trials to determine effective methods for controlling this insect. Since the fall of 2002, the pest has spread through much of the Coachella Valley. Although it has not been found in Western Riverside County, it has been found in Escondido, San Diego County. The pest is a strong flyer and does not require human activities to spread. It is anticipated that the pest will be distributed throughout California Citrus fields in the next 3 to 5

years. We have found that there are a number of products that help to reduce citrus leafminer but not eliminate it. We are testing other chemicals that are anticipated to be registered for use in nurseries. These alternatives will help nurseries better control this pest.



### ***Research***

*testing new*

*mandarin*

*varieties may*

*help to*

*recapture the*

*early season*

*market*

### **Mandarin Variety Trial for the Coachella Valley**

New mandarin (tangerine) varieties suitable for the California desert climate are needed to meet changes in the domestic and global market and to help recapture the early season (October-November) market that generally yield premium prices. The major objectives of our project are to provide the industry with information on the tree growth, fruit quality characteristics and timing of maturity for market acceptability of mandarin varieties in the Coachella Valley. Although the initial goal was to find a variety that matures early in the season, information on mid- and late season maturing varieties will be useful, as the market needs change. We have found that Shasta Gold™ mandarin hybrid, Tahoe Gold™ mandarin hybrid, Yosemite Gold™ mandarin hybrid, Gold

Nugget and W. Murcott Afourer show promise. Although seedlessness is not a requirement for market acceptability, 5 of the 6 varieties that show promise are seedless. W. Murcott Afourer is a seeded variety but can be seedless if grown in isolation of other mandarins or oranges. In 2004-05 we will begin packinghouse tests to determine market suitability.



## Poultry Sciences

### Exotic Newcastle Disease Eradication



Douglas R. Kuney,  
Area Poultry Advisor

*“Commercial garbage was used to cover diseased chickens, saving time and resources”*

In October, 2002 a devastating foreign animal disease, Exotic Newcastle disease, was discovered in several small flocks of chickens in Southern California. By December, the disease had spread to large commercial flocks of egg laying chickens. In order to eradicate the disease, over 3.5 million chickens had to be euthanized. Sending the dead birds to landfills was the safest and most feasible option for disposal, however, carcasses had to be covered with several feet of compacted soil. Because of the lack of soil availability, the landfills could not accommodate the disposal of that many carcasses. Some other method of burial had to be developed.

Doug Kuney worked with the Riverside County Waste Management Department and the private company operating the El Sobrante landfill to develop a biosecure and rapid method of covering the carcasses with 12 feet of trash that could be compacted to form a 3 foot cover. Each delivery of carcasses could be completely covered within 10

minutes with an impervious layer of compacted trash that would prevent access of sea gulls and other scavengers that could spread the disease in the area.

A video tape of the disposal procedure was developed and presented to the CDFA and the USDA for their approval. They received approval and within days the landfills began receiving carcasses. The video was used as a guide to train other landfill operators throughout Southern California. Since the outbreak of this disease in Southern California, the video has been widely distributed throughout the U.S.



### Biosecurity Education in Egg Processing Plants

During the outbreak of H6N2 Avian Influenza (AI) in 2000, 2001 and 2002, we believed that egg processing plants played an important role in the distribution of the virus between companies.

Three member teams, consisting of a processing plant, egg production and veterinary medicine expert, visited and evaluated the level of bio-security in all but 3 egg processing and breaking plants in the state (including every processing plant in Riverside County). A written report of the walk-thru findings and recommendations for improvement were given to plant management. These reports were later used by the USDA as bio-security guidelines during the exotic Newcastle disease (END) federal quarantine.

A follow-up telephone questionnaire was administered in October, 2003 to 50% of

the processing plants in the state to measure changes in bio-security practices. We also measured what practices will be continued into the future.

It is clear that weaknesses in bio-security in processing plants played a role in the spread of AI within the industry. If bio-security improvements had not been made during AI, the END epidemic would have been much worse and would probably have spread to northern California. The USDA would not allow processing plants to operate unless certain bio-security practices were implemented. Implementation of these practices prevented the disruption of the egg supply to southern California. The results of the follow-up survey of the industry indicated that over 90 percent of those surveyed intended to continue implementing the bio-security practices employed during the END outbreak.

## Environmental Horticultural Program



Mike Henry  
Environmental Horticulture Advisor,  
and Coordinator of  
Master Gardener  
Program.

***“Many of these grasses use as much as 50% less water and half the nitrogen ...”***

### **PROGRAM OVERVIEW**

The Environmental Horticulture Advisor conducts applied research and continuing education for the turf, landscape, and nursery industries (landscape maintenance contractors, professional gardeners, park managers, sod growers and nurserymen).

### **Plant Water Use Research**

Landscape irrigation in Southern California ranks second only to residential indoor water use. Turfgrasses that use less water are needed. Mike Henry has an extensive program evaluating new turfgrass varieties for water use efficiency and reduced fertilizer demand.

1) Low in-put Turfgrasses for Southern California — six species are being evaluated for minimal maintenance and low use of water and nitrogen fertilizer. Many of these grasses use as much as 50% less water and half the nitrogen of the most popular turfgrass in Southern California.

2) UC Landscape Workgroup Plant Water Use Study — factual measurements of water use by the most widely used shrub and perennial ornamentals in

### **Publications:**

I co-authored a new University of California publication, *Abiotic Disorders of Landscape Plants: A diagnostic Guide*, released last year. It is the first reference for California that focuses on plant problems that are caused by things other than insects, diseases or other parasitic organisms. Research has shown that a large number of pesticide applications

Applied Research focused on water conservation in the landscape by introducing low water-using grasses that also need less nitrogen fertilizer. This conserves water and reduces the chance of contamination of surface and ground water supplies.

California will allow planners, water agencies, landscape architects, and landscape managers to precisely apply water, avoid waste and reduce runoff of contaminants into streams, rivers, lakes, and the ocean.

### **Weed Research**

Coachella Valley — Selective Control of Annual Bluegrass in Overseed Ryegrasses: The new herbicide “Velocity” is seeking registration in California. Our work will contribute to the decision by determining the effectiveness/usefulness, best application rates and timing, toxicity to the target weed, and phytotoxicity to Perennial Ryegrass and Bermudagrass. If it selectively controls this major winter weed in turfgrasses it will greatly improve the playability of golf course fairways and reduce the use of other herbicides that are less effective.

in the landscape are put on mistakenly to control these problems. With this guide, we hope to reduce the misuse of pesticides and help professionals correctly diagnose and treat abiotic problems, which account for up to 75% of all plant problems seen in our offices around the State.

## Master Gardener Program



*Tom Shea, Staff Research Associate, teaching a Master Gardener class.*

***Annually, Master Gardeners provide over 6,000 hours of educational outreach to the general public in Riverside County.***

The Master Gardener volunteer program provides gardening and horticulture information to the residents of Riverside County through trained volunteers who disseminate University research-based information to the public. The volunteers provide over 6,000 hours of educational support per year on topics ranging from planning a school garden to safely controlling insects in vegetable gardens.

Additional volunteers are trained every two years, receiving nearly 50 hours of education to prepare them to deliver sound information based on applied research and other scientific facts to the citizens of Riverside County. This year, 38 new Master Gardeners completed the training process, joining the 121

### **School Gardening Program**

Working with local schools, Master Gardener Volunteers provide expertise and advice to teachers, parents, and school children on planning, planting, and growing educational gardens. This year, our volunteers helped six schools and 22 teachers develop successful gardens. Some additional highlights of the program include:

- School Garden Tool Kit – free information on resources for teachers to start and manage a successful educational garden.
- TWIGS - curriculum combines gardening lessons and nutrition education for students and parents.
- Junior Master Gardener program interests youth in science through gardening.

active volunteers in the UC Cooperative Extension Riverside County Master Gardener program.

Master Gardeners work with other educational and community improvement programs, often providing leadership for:

- Victoria Avenue For Ever
- Riverside County Master Composter Program
- Keep Riverside Clean and Beautiful



*Proper planting technique demonstration*



*Students planting for the school garden program in Moreno Valley.*

### **Volunteer Spotlight**

Since 1986, a single Master Gardener Volunteer, **Ottillia ‘Toots’ Bier**, has written a weekly newspaper column for the Riverside Press Enterprise. Her gardening advice has reached an estimated **176 million readers** in the past eighteen years!

## **Lake Elsinore/Canyon Lake Water Improvement Project**

The Regional Water Quality Control Board's (RWQCB) Strategic Plan established watershed management as a key component for water resources protection. The most effective ways to prevent water quality degradation is through Best Management Practices (BMPs). A newly funded project, *Best Management Practices to Reduce Nutrient Loads from Cropland*, will focus on identifying and implementing BMPs to reduce the nitrogen (N) and phosphorus (P) loads to Canyon Lake and Lake Elsinore.

The Project Outline includes development of a work plan, the design and evaluation of buffering

zones in dryland wheat fields, evaluate of methods of animal manure application to reduce phosphorus and nitrogen runoff, development of BMPs for: citrus, turf-grass management for golf courses, and vegetable and dryland crops. The project will also include detailed analysis of the recommendations to ensure the economic feasibility of the BMPs identified from this project, outreach education to growers on implementation of BMPs, annual nutrient reduction analysis, and preparation of draft and final reports of the data.

Total funding for this project is \$400,000.

## **UC Cooperative Extension Advisors Helping Southeast Asian Farmers**

Riverside County Cooperative Extension academic advisors offered their expertise to help the Southeast Asian People's Farm Project (SEAPFP). The project was initiated in 2001 by Riverside County Community Action Partnership to help Southeast Asian refugee families develop a 1½-acre parcel of land in Mead Valley into a model vegetable farm. The project gives an opportunity to these refugee farmers to start farming again. The farm is a way to bring these families together to promote a sense of community and improve their income, diet and lifestyle.



*Harvest festival for the Southeast Asian Farm Project*



*The 1½-acre parcel of farmland gives Asian refugee families the opportunity to farm again.*

UC Cooperative Extension Advisors have provided assistance by advising farmers about pests, pest management, pesticide handling, and farm safety. The Nutrition, Family and Consumer Sciences Advisor has developed a cross-cultural recipe book "Healthy Eating with Southeast Asian Cooking" to help people in the surrounding community learn to incorporate Asian vegetables into their diet. The recipe book is a collection of home cooking recipes from members and friends of SEAPFP.

**Dedicated to serving the people of Riverside County**



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Visit us at  
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