

Healthy Californians

UC | University of California
CE | Agriculture and Natural Resources | Cooperative Extension



Farm and Home Advisors
Practical - Trusted - Connected

From the County Director:

Our commitment is to lead the way with innovative research-based answers, to develop outreach with new methods and to reach new clientele. Advisors and their staff, housed in the County of Kern Farm and Home Advisors Department, are a Practical, Connected and Trusted resource for science-based information.

While health restrictions this year have altered the way we deliver information, the importance of delivering practical, effective solutions to real-world problems has become more evident.

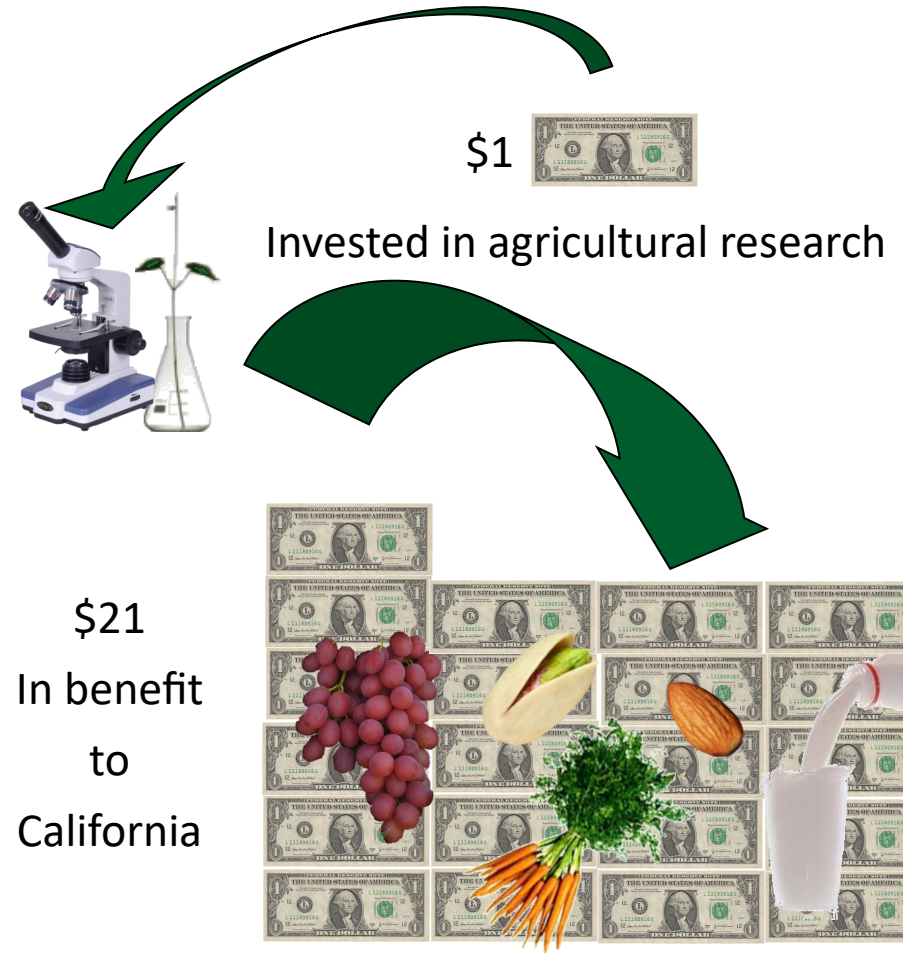


This booklet is a snapshot of the extensive work performed by UC Cooperative Extension in Kern County. Our research and education programs develop and promote

- Healthy Food Systems,*
- Healthy Environments,*
- Healthy Communities and*
- Healthy Californians.*

These ideas do not stand alone. They are woven together into the framework of our mission and outreach as we work to support the communities of Kern County.

Dr. Brian Marsh



2019 Kern County

Farm Revenue

\$7.62 Billion



Sources: Investing in California;
2019 Kern County Agricultural
Crop Report

Promoting economic prosperity in California

Rootstock Trial

Choice of the almond rootstock is an important decision to be made before planting a new orchard. It helps to achieve the best potential and yield.

Almond rootstock trial for Kern County conditions.
Testing newly developed rootstocks.



Why it matters:

Rootstock choice should be site specific.

- ◆ Resistant or tolerant against soil pests and diseases
- ◆ To mitigate soil issues; salinity and heavy textured soils
- ◆ To control tree size and yield efficiency

21st Century Sheep

Electronic identification and genetic testing to improve genetic selection to accelerate change in economically important traits such as twin births and disease resistance.



3800 sheep tagged, genetically tested and traced from as early as 2-months old.

Sheep are a popular small business enterprise for club lambs, meat production, and targeted grazing services.

Why it matters:

- ◆ Management support for producers of 85,000 sheep and lambs in Kern County





Safeguarding abundant and healthy food for all Californians

Asian Citrus Psyllid transmits a serious citrus disease called Huanglongbing or Citrus Greening

This disease has killed hundreds of thousands of citrus trees in other areas of the world. To keep the disease out, Kern County has been monitoring for this small insect.

Monitoring includes:

- ◆ Visual inspection of citrus trees
- ◆ Yellow sticky traps in citrus groves and in backyard trees
- ◆ If psyllids are found, infested trees are treated
- ◆ Central Valley quarantine, plant materials known to host the Asian Citrus Psyllid and Huanglongbing are prevented from entering



Partners:
US Department of Agriculture
State of California
Local County Governments
University of California
Citrus Industry

Why it matters:

- ◆ San Joaquin Valley remains free of disease
- ◆ Commercial and backyard citrus trees remain productive
- ◆ Reduced pesticide usage

Glassy-winged sharpshooter and Pierce's Disease



Kern County Farm Advisors provide monitoring and education programs that help grape growers prevent epidemics of Pierce's disease, a vine-killing bacterium that is transmitted from vine to vine by the glassy-winged sharpshooter. Options for organic production are being evaluated.



- ◆ 20 years of monitoring in the General Beale Pilot project
- ◆ 120,000 vines evaluated
- ◆ Lowest number of infected vines observed

Why it matters:

- ◆ Protects 1.4 billion dollars of grape production
- ◆ Backyard grape vines are also vulnerable

Improving California's Health Through Nutrition Education

UC CalFresh helps families and individuals manage their resources more wisely and stretch food dollars by teaching goal setting, planning and shopping skills, and thereby improving their ability to purchase healthy food.

Serving the Community—Education Programs

Eating Smart: Being Active classes teach participants:

- ◆ physical activity
- ◆ healthy lifestyle choices
- ◆ food resource management
- ◆ food preparation
- ◆ food safety

Organizational and Environmental Changes

- ◆ Implementing parent walking clubs at schools
- ◆ Support for playground stencil projects at early childcare centers



4000+ Kern County residents served

Participant comment:

“Ever since I started the nutrition class, it has taught me how to read the nutrition facts label when I go to the store, also how to choose the right oil, meat and dairy,” the student said. “My family and I do a lot more physical activity at home and we eat healthier.”

Good nutrition and physical activity habits are best when they start at a young age.

Coordinated Approach To Child Health Early Care Education provides children the opportunity to develop motor and manipulative skills through games and activities. Children have the opportunity to be more physically active during school sessions.



Impacting Lives

- ◆ 75% of participants showed improved food management practices.
- ◆ 62% of participants reported having enough money to purchase food.
- ◆ 85% of participants improved physical activity behaviors.

Highlighted Partners:
 Mexican American Opportunity Foundation
 Farmworker Institute of Education and Leadership Development
 Las Mariposas Head Start

Why it matters:

- ◆ Life-long habits of good nutrition and exercise improve a person's health, productivity and reduce medical costs.

Fungal Diseases

Fungal diseases affect multiple crops including potato, tomato, onion, and garlic, both in the field and post-harvest.



Research is underway to:

- ◆ Evaluate varieties for resistance
- ◆ Determine the most effective timing of pesticide applications
- ◆ Evaluate pesticide effectiveness



Why it matters:

- ◆ Less crop loss
- ◆ Improved food safety
- ◆ Fewer pesticide applications

Landscapes and Gardens



Twenty-eight virtual presentations on gardens in California and around the world.

Principles of landscape design were discussed with examples from some of the most prestigious and colorful gardens.

Fertilization for roses

Research is being conducted on fertility needs for outdoor roses.



Why it matters:

- ◆ Knowledge promotes more efficient and effective practices
- ◆ Flowering plants beautify landscapes
- ◆ Proper fertilization improves plant growth without environmental degradation
- ◆ Good irrigation management promotes water conservation

Developing a qualified workforce for California



4-H Youth Development

4-H is a nationwide youth development organization administered through land-grant universities that promotes:

- Leadership
- Citizenship
- Life skills.

4-H empowers young people to reach their full potential.

4-H enables youth to emerge as leaders by learning through hands-on, research-based projects with adult mentors, in order to give back to their local communities.



4-H Avian Embryology

74 Teachers &
790 youth participated
from Arvin, McFarland and Weedpatch schools

Students and teachers learned more about animal science literacy and food production.



Why it matters:

- ◆ Multiple teachers reported that youth with behavioral issues demonstrated empathy for others and improved social skills.

My Head My Heart My Hands My Health
To clearer thinking To greater loyalty To larger service

Promoting Positive Youth Development— Outreach Programs

Regular programming was interrupted by state-wide health restrictions. Many of the face-to-face events that take place were cancelled, including leadership conferences.

We were able to implement new ways of online programming. Annual activities such as Presentation Day, Fashion Revue, and

Home Economics Field Day were all done in an online format. The youth were able to present and be judged for their



Juntos College Preparation

- Dedicated to increasing Latinx participation in preparing for and entering college
- How to successfully navigate through the admissions process
- Programming involves the entire family
- 293 students from 5 high schools

Protecting California's natural resources

Insect Control Through Mating Disruption



Insect pheromones can now be mass-produced in laboratories and applied to fields to interfere with males' ability to find females, such as vine mealybug in grapes and navel orange worm in almonds and pistachios. Without mating, these insects cannot produce offspring, resulting in significant pest control without the use of traditional pesticides.



Why it matters:

- ◆ Fewer pesticide applications
- ◆ Improved insect control
- ◆ Better nut quality

Free-Air Carbon Enrichment (FACE)

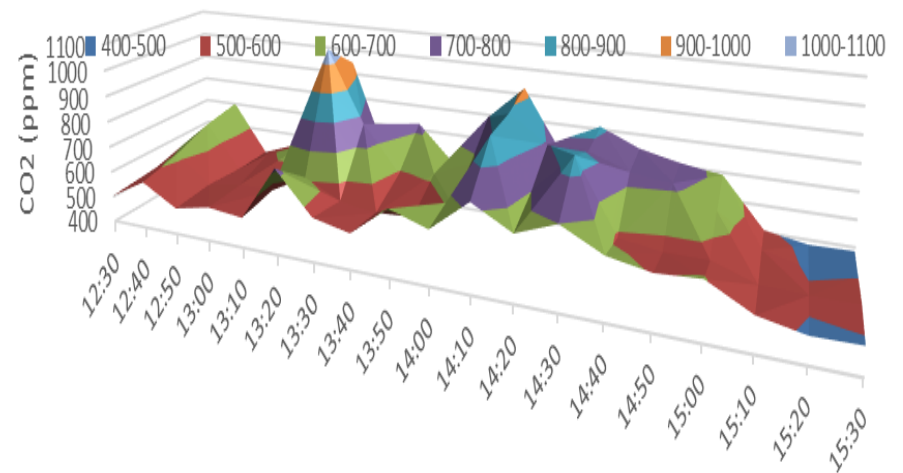
The potential to increase agricultural production and reduce heat-trapping CO₂ in the atmosphere

Objectives

- ◆ Atmospheric CO₂ level ≈ 420 ppm
- ◆ Enrich CO₂ level to 800-1000 ppm
- ◆ Successfully used in greenhouses
- ◆ Redirect refinery exhaust stack gas into an almond orchard

Potential Benefits

- ◆ Up to 50% yield increase
- ◆ Up to 15% less water used
- ◆ Up to 70% more carbon sequestered



Elevated CO₂ concentrations surrounding an almond tree during an enrichment period before returning to ambient levels.



UCCE Kern County Advisors

Hawau Bojuwon, M.S.; Nutrition, Family, & Consumer Science

John Borba, M.S.; 4-H Youth Development

Julie Finzel, M.S.; Livestock & Natural Resources

David Haviland, M.S.; Entomology

Craig Kallsen, M.S.; Citrus & Pistachio

John Karlik, Ph.D.; Environmental Horticulture & Science

Brian Marsh, Ph.D.; County Director & Agronomy

Jaspreet Sidhu, Ph.D.; Vegetable Crops

Mohammad Yaghmour, Ph.D.; Orchard Systems

Emeritus Advisors

Don Luvisi, M.S.; Viticulture

Margaret Johns, M.S., R.D.; Family, Home & Consumer Science

Joe Nunez, M.S.; Vegetable Crops & Plant Pathology

Blake Sanden, M.S.; Irrigation & Soils



University of California
Agriculture and Natural Resources

Cooperative Extension

ucanr.edu

cekern.ucanr.edu

661-868-6200