

Healthy Communities Healthy Food Systems Healthy Environments

# Healthy Californians

UC  
CE

University of California

Agriculture and Natural Resources | Cooperative Extension

## 2021 ANNUAL REPORT



Farm and Home Advisors

Practical - Trusted - Connected

# Serving Kern County

Since 1914

From the County Director:

Our commitment is to lead the way with innovative research-based answers, reach out with new methods and reach new clientele. Advisors, 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 have increased reliance on distance learning, the importance of delivering practical, effective solutions to real-world problems has become more evident.

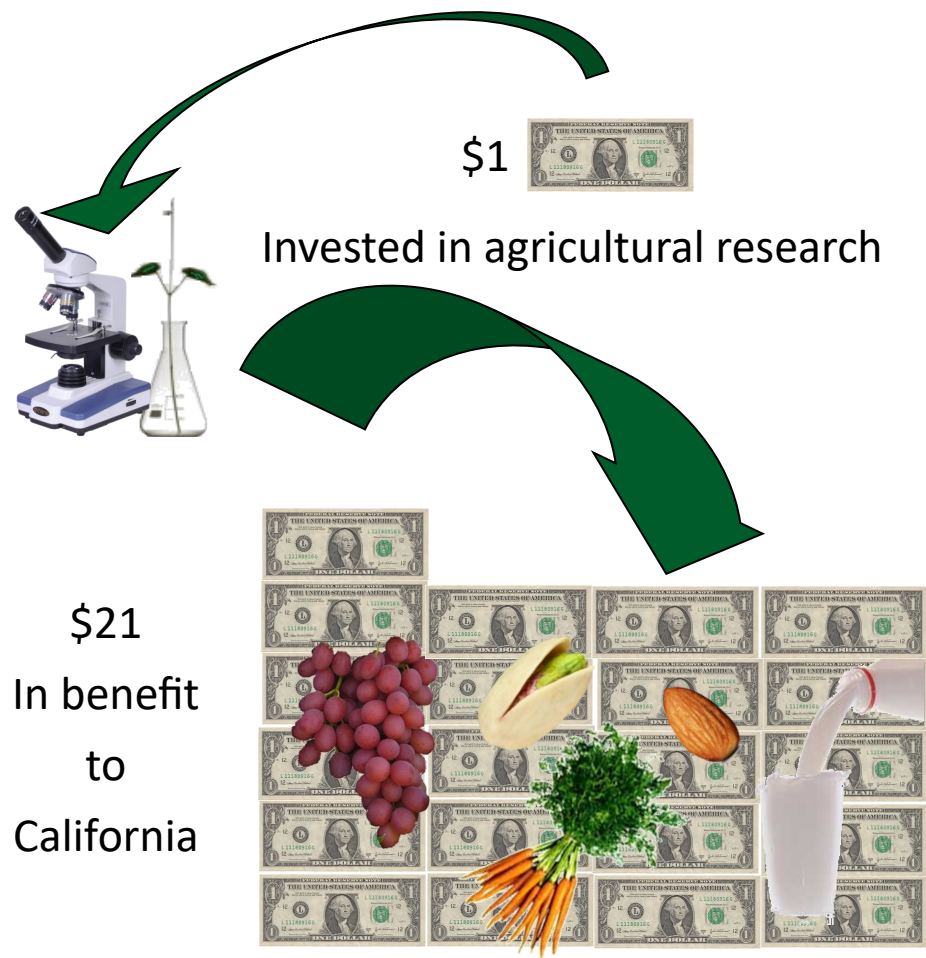
This booklet is a snapshot of the extensive work performed by UC Cooperative Extension in Kern County. Our research and education programs develop and promote

*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

# Growing the economy



2020 Kern County

Farm Revenue

\$7.67 Billion



Sources: Investing in California;  
 2020 Kern County Agricultural  
 Crop Report



# Promoting economic prosperity in California

## Cherry Tree Pruning and Disease Transmission

Cherry growers shred and incorporate pruned branches into the topsoil. Some of that material can be affected by canker disease and carry disease spores that cause tree decline. Documenting when spores are released in the air using spore traps will help growers decide when to prune trees to reduce pruning wounds open to spore infection.



### *Why it matters:*

Proper timing of pruning operations will reduce disease incidence and severity, thus extend tree life.



Partners: Kern County Ag Commissioner, Kern County Sheriff's Office, Kern County Fire Department, Kern County Animal Control, and California Highway Patrol

## Livestock Pass Program

Identifying commercial livestock producers who have a valid need to gain access behind road-blocks during a disaster such as a fire to care for or evacuate livestock.

## Improved Sheep Genetics

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



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

### *Why it matters:*

Management support for:

- ◆ Producers of 301,000 head of cattle and calves
- ◆ Producers of 85,000 sheep and lambs in Kern County
- ◆ Total value \$262 million

# Safeguarding abundant and healthy food for all Californians

Pistachio production has become an increasingly significant economic driver.

- ◆ Over 153,000 acres
- ◆ Salt and drought tolerant — an economically viable choice on land where other crops can not be grown
- ◆ ‘Golden Hills’

Bred and selected in  
Kern County

The most widely  
planted variety over  
the past five years



Pistachio breeding continues in Kern County. Long-term trials are being evaluated to identify novel varieties.

## *Why it matters:*

- ◆ Fewer winter chilling hours required in response to climate change
- ◆ Natural resistance to navel orangeworm to reduce pesticide usage
- ◆ Earlier maturing for more genetic diversity
- ◆ Improved yield resulting in greater economic stability

## 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 1.45 billion dollars of grape production
- ◆ Backyard grapevines are also vulnerable



# Promoting healthy people and communities



## Improving California's Health Through Nutrition Education

CalFresh Healthy Living and the Expanded Food and Nutrition Education Program help families and individuals manage their resources more wisely and stretch food dollars by teaching goal setting, planning and shopping skills, thereby improving their ability to purchase healthy food.

### Serving the Community—Education Programs

#### Organizational and Environmental Changes

- ◆ Nutrition Educators provided direct education sessions virtually thru ZOOM for community partners.
- ◆ UCCE Kern staff increased social media activity using Facebook. Resources shared to 207 followers include: physical activity, nutrition recipes, food safety and other community events and resources. <https://www.facebook.com/UCCEKernCounty>



#### Participant comment:

"I learned how to eat healthier and save money when grocery shopping."

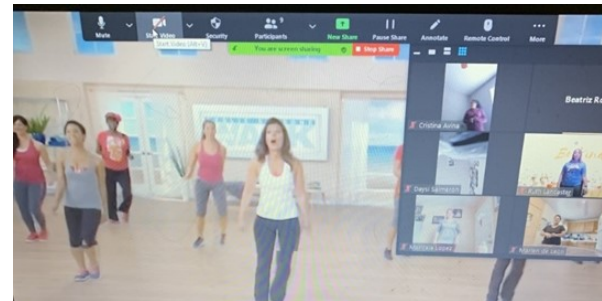
Good nutrition and physical activity habits are best when they start at a young age.

#### Coordinated Approach To Child Health (CATCH)

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.



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 and productivity and reduce medical costs.

### Impacting Lives

- 86% showed improvement in at least one Food Resource Management behavior.
- 79% reported improvement in reading the nutrition label.
- 72% of participants increased their physical activity.
- 81% of participants improved one or more food safety practices.

# Protecting California's natural resources

## Finding Safer Methods of Pest control



Ants – Investigating methods to apply liquid ant baits in a solid matrix (polyacrylamide gels) that can help control sugar-feeding species of ants that disrupt biological control in grape vineyards and citrus orchards.

Gill's mealybug — Evaluating alternative programs that enhance biological control. The use of drones is an efficient, cost-effective way to release large numbers of lacewing larvae (a predator of mealybugs) into orchards.



### Why it matters:

- ◆ Fewer pesticide applications
- ◆ Improved insect control
- ◆ More sustainable crop production

## Free-Air Carbon Enrichment (FACE)

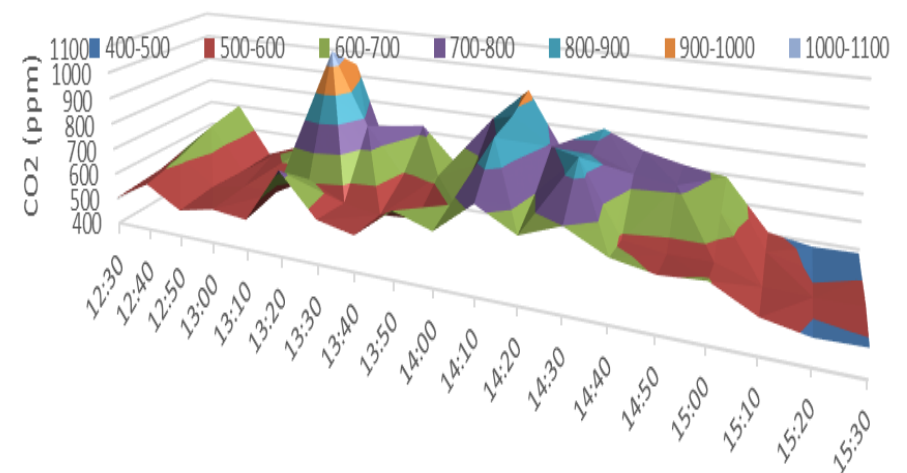
*The potential to increase agricultural production and reduce heat-trapping CO<sub>2</sub> in the atmosphere*

### Objectives

- ◆ Atmospheric CO<sub>2</sub> level ≈ 420 ppm
- ◆ Enrich CO<sub>2</sub> 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 CO<sub>2</sub> concentrations surrounding an almond tree during an enrichment period before returning to ambient levels.



## Plant Disease Management

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
- ◆ Evaluate non-chemical alternatives
- ◆ Determine the most effective timing of applications



Root knot nematodes are a serious threat to vegetable crop production.

Research focuses on finding viable, safe and economical alternatives to manage nematodes in carrots, tomatoes and melons.

### *Why it matters:*

- ◆ Less crop loss
- ◆ Improved food safety
- ◆ Fewer pesticide applications
- ◆ Promote safer, environmentally friendly practices

## Landscapes and Gardens



Fifty-two 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.



### Cooking Academy



- ◆ Instructs youth in the preparation of nutritious meals
- ◆ Provides information on healthy living
- ◆ Teens are recruited, trained, and teach the class material to elementary aged students.

In cooperation with Youth Connections and Richland School.

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

### Promoting Positive Youth Development— Outreach Programs

On-line events: Presentation Day, Home Economics Field Day, and Fashion Revue. Youth were able to give presentations, be evaluated for their work and receive awards.



### Juntos College Preparation

- Dedicated to increasing Latino participation in preparing for and entering college
- How to successfully navigate through the admissions process
- Programming involves the entire family
- 117 students from 6 high schools

### Why it matters:

- ◆ Thousands of youth over the past 100 years have learned leadership, citizenship, and life skills by participating in 4-H programs.





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