

Diversified Agricultural Systems Area Program Research and Outreach

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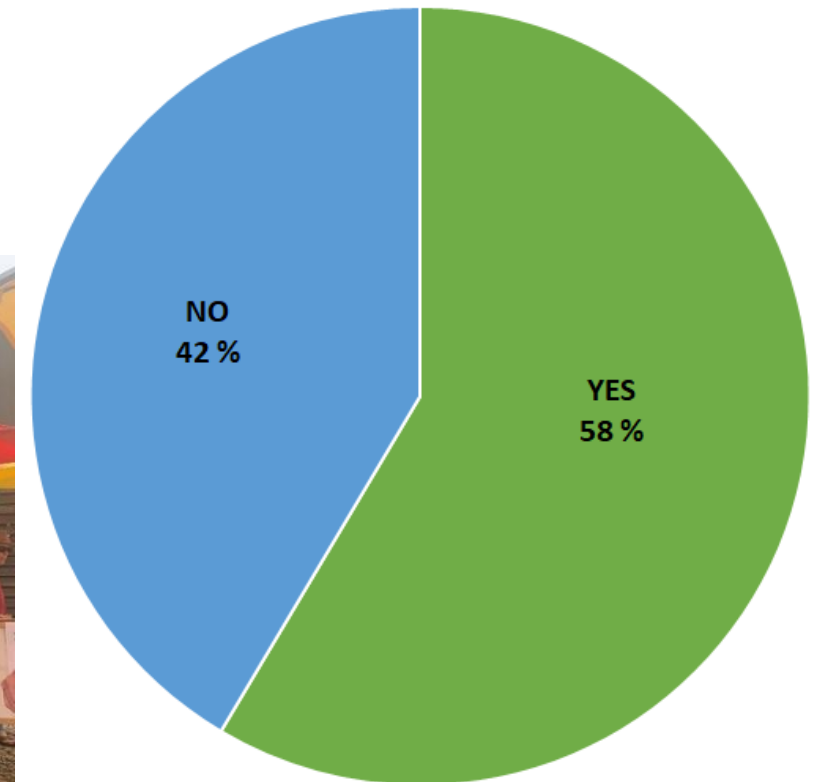
Diversified Agricultural Systems Advisor

- Replaced CE Advisors
 - **Rachel B Elkins**
 - (Pomology Farm Advisor)
- I cover two counties:
 1. Lake
 2. Mendocino



Needs Assessment Results

Received advice from- UCCE



Diversified Agricultural Systems Area Program Research

Integrated Weed Management (IWM)

Use of Organic Herbicides in Perennial Crops:

Application programs of organic herbicides for long-lasting weed control in organic orchards and as a potential alternative to glyphosate in conventional orchards.

Consider Adding PRE-emergent Herbicides in Late Spring Spray Programs:

Effectiveness of glyphosate and glufosinate sprayed side by side and evaluation of the advantages and disadvantages of (PRE and POST) herbicide programs with different modes of action to improve weed management in pear orchards.

Low-input Strategy:

Ongoing field research trials are being conducted to assess the walnut leaf biomass mulch thickness required for weed suppression throughout the growing season and to evaluate soil moisture and temperature at different walnut mulch depths.



Diversified Agricultural Systems Area Program Research

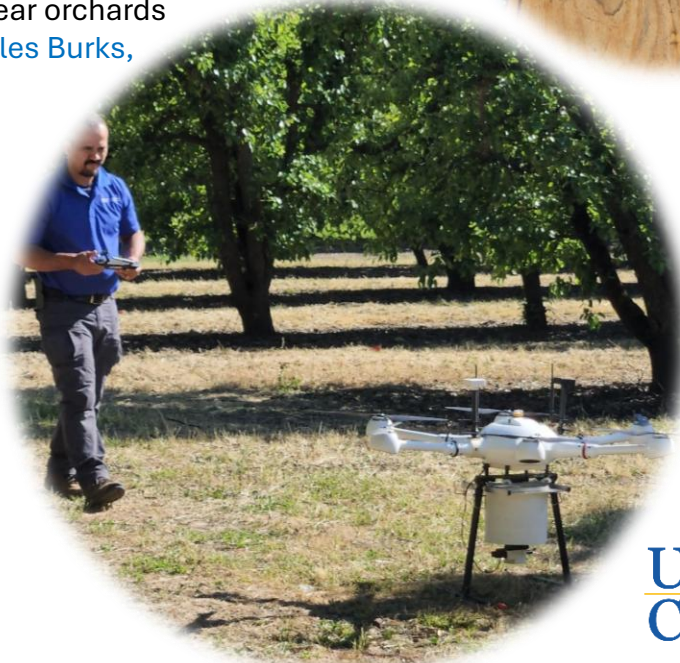
Emerging Technologies

Hyper-precise Spray Technology:

Compare weed control effectiveness using hyper-precise pinpoint spray technologies and traditional broadcast application systems.

Sterile Insect Technique (SIT):

Assessing compatibility of mating disruption and sterile insect technique for codling moth (*Lepidoptera: Tortricidae*) in California pear orchards
(Research collaboration with Cindy Kron, UCCE and Charles Burks, USDA).



Diversified Agricultural Systems Area Program Research

Integrated Pest Management (IPM)

Control of Branch Dieback Disease Fungi in California Pear Orchards:

The knowledge of the presence of fungicide resistance in the orchard and the identity of the causal agents of branch canker and dieback will help pear growers to make a better decision for the best management practices controlling these important diseases ([Research collaboration with Eskalen Lab - UC ANR](#)).



Flatheaded Borer Damage in Pear Fruit:

In 2023, an unknown flatheaded borer species was found feeding on pear fruit in Lake County. In collaboration with Tennessee State University, have taken all necessary steps to correctly identify this species. The results from molecular analysis and taxonomic identification confirmed this species as the Pacific flatheaded borer (*Chrysobothris mali*) ([Research collaboration with Cindy Kron, UCCE](#)).



Diversified Agricultural Systems Area Program Research

Water Conservation

Plant-based Irrigation Management in Walnuts:

The use of an automated device (microtensiometer) to continuously monitor stem water potential (SWP) in walnuts ([Research collaboration with Kenneth Shackel, UC Davis](#)).



Diversified Agricultural Systems Area Program Research

Rootstocks and Variety Selection

Rootstocks for European Pears:

The overall objectives of the project are to evaluate potential precocious, size-controlling rootstocks for varying locations, vigor, growth habit, productivity, compatibility with major varieties, susceptibility to diseases and pests, propensity to sucker, etc.



Agave Selection:

For 2025-2027 we will starting a research collaboration to explore Agave variety selection and production in in Lake County ([Research collaboration with Paula Guzmán-Delgado, UC Davis](#)).



- Establish collaborations with external organizations and industry partners.



**Thank You Jesus Christ
for Everything.**



Thank you!

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Diversified Agriculture Advisor

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