

Ecological Pest Management with Community Alliance with Family Farmers (CAFF)

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CAFF Programs

<https://caff.org/>

- **Farm to Market**

*Farm to School and Cafeteria
CSAs
Providing to Food Banks*

- **Policy and Action**

*Urban Agriculture
Water Policy*

- **Farmer Services**

*Food Safety
Organic Transition
Small Farm Tech Hub
Wildfire Resilience
Disaster Relief*

- **Ecological Farming**

*Healthy Soils
Integrated Crop and Livestock Systems
Climate Smart
Ecological Pest Management**

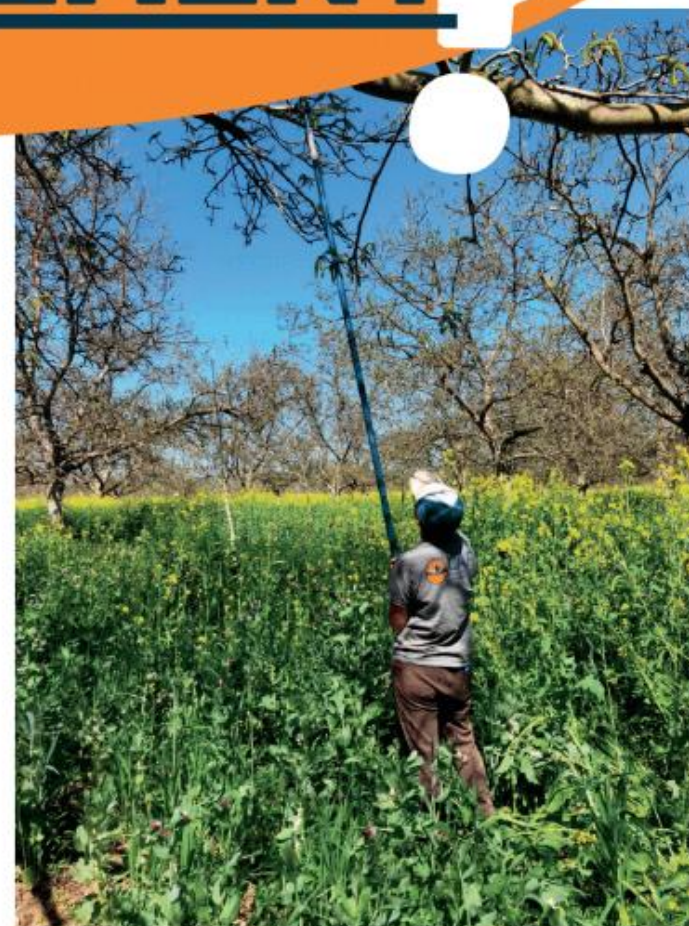




What is

ECOLOGICAL PEST MANAGEMENT

Ecological pest management focuses on whole system management approaches that are preventative rather than reactive. The foundation of these practices is understanding the life cycles and behaviors of pests and their interactions with the whole cropping system to provide an expansive toolbox for growers to tackle these pests. These approaches include monitoring pests and beneficial insects, promoting biodiversity, reducing detrimental impacts to biodiversity, and prioritizing alternative pest control methods that are selective, low-risk, and effective.



Agenda

1. Spider mite management project
2. Funding for ecological farming practices
3. Training for Pest Control Advisors and Scouts





**Biologically Integrated
Farming Systems (BIFS):**
Optimizing spider mite
management through
educational outreach and on-
farm research in walnuts and
grape production (Funded by
CDFA BIFS program; in
partnership with UCCE)



Field Days

Amigos No Deseados: El Manejo de Plagas en su Huerta, MAAHS farm, Reedley, CA, citrus

A Tiered Approach to IPM: Beneficial Birds & Gopher Trapping, Fairfield, CA, olives & vegetables

BIFS: Whole Orchard Recycling and On-Farm Composting, Linden, CA, walnuts & cherries



Managing spider mites and other vineyard pests

Pacific, Williamette, and twospotted spider mites

- Spider mites can lead to yellow spots, dead tissue, leaf burning, bronzing, webbing, and leaf drop, eventually reducing yield
- Spider mite pressure often increases with increasing heat and dusty conditions
- Many practices can be used to decrease spider mites



Photo credit: David Cappaert,
Bugwood.org

UGA5371008

Key ecological pest management solutions to managing spider mites



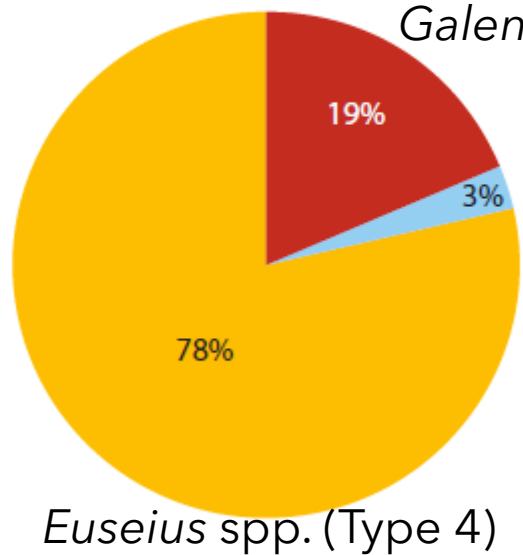
Photo Credit: California Road Dust Control

- Manage dust
- Plant health
 - *Pressure chamber*
 - Can maybe get from Calaveras Winegrape Alliance
- **Biological control**
- Assess pesticide applications
 - *Monitoring*
 - *Resistance management*
 - *Softer pesticides*
 - UC IPM
 - Koppert side effect database
 - Meta-analysis and review of pesticide non-target effects on phytoseiids, key biological control agents (Schmidt-Jeffris et al. 2021)

Natural enemies of spider mites in vineyards - Specialists

Predatory mites (Phytoseiidae)

Central Valley grape (107)



Galendromus occidentalis (Type 2)

Metaseiulus spp. (Type 3)



Photo Credit: Emilie Demard

Six spotted thrips



UC Statewide IPM Project
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Photo Credit: Jack Kelly Clark

Spider mite destroyers



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Neoseiulus californicus

Grafton-Cardwell et al. 2020

Natural enemies of spider mites in vineyards - Generalists

Lacewing

Minute pirate bugs



Photo Credit: Ho Jung Yoo

Big eyed bugs



Photo Credit: Blake Layton

Green lacewing



Photo Credit: Moet Takata

Brown lacewing



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Photo Credit: Jack Kelly Clark

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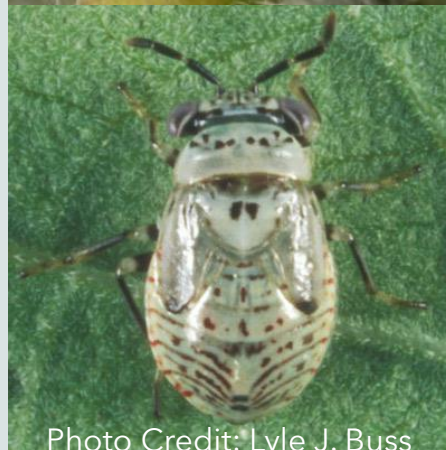


Photo Credit: Lyle J. Buss



Photo Credit: Jack Kelly Clark

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Treatments to enhance predators of spider mites

Release of *N. californicus*



Predalure (methyl salicylate)



Predator food spray

Soy flour
Brewers yeast
Sucrose





How to monitor for spider mite and predators

Visually assessing leaves

- Use hand lens
- If spider mites are on more than 50% of the leaves, treatment is considered depending on predator level (UC IPM)

Sticky cards

Identification of predatory and spider mites

In collaboration with Emilie Demard at University of Florida





Grant opportunities to fund Ecological Farming Practices

Healthy Soils Program (HSP) (CDFA): funds healthy soil practices

CAFF EF team often provides application assistance

Block grants currently open: Placer County RCD has a block grant for Calaveras Co.

Pollinator partnership Program (PHP) (CDFA): funds pollinator habitat plantings

CAFF collaboration with Pollinator Partnership (P2) and Wild Farm Alliance (WFA)

Many other organizations

BIFS Spider mite project (CDFA): funds efforts to manage spider mites (limited)

National Resource and Conservation Service (NRCS) (USDA): funds on-farm conservation practices

Environmental Quality Incentives Program (EQUIP)

Conservation Stewardship Program (CSP)

Regional Conservation Partnership Program (RCPP)

Other: CAFF EF team keeps track of relevant funding opportunities




Training for Pest Control Advisors (DPR)

In partnership with WFA, National Center for Appropriate Technology (NCAT), and Association of Applied IPM Ecologists (AAIE)

- Interviewing growers and PCAs on sustainable pest management (SPM) practices of interest
- Creating informational webinar series on practices of interest
- Host round table discussions and educational workshops with PCAs
- Scout internship program
- Create database or profiles on PCAs practicing different SPM practices

Which Sustainable Pest Management Practices are you interested to learn more about?
Please add a dot sticker to all that apply to you.

Beneficial Insects, Mites and Spiders	● ● ●
Beneficial Birds and Bats	●
Natural Enemy Habitat	●
Impact of Pesticides to Beneficials	● ●
Beneficial Microorganisms	● ● ●
Healthy Soils	●
Healthy Crop Plants	● ●
Cultural Control Methods	● ●
Insect and Mite Pest Management	● ●



Thank you!

CAFF EPM Team

Collaborating farmers

Partners organizations:

- UCCE
- WFA
- P2
- NCAT

Funders:

- CDFA BIFS
- CDFA Pollinator Partnership Program
- DPR Alliance Grant

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