Since 1988, the Sustainable Agriculture Research & Education (SARE) program has been the go-to USDA grants and outreach program for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded over $353 million to more than 8,041 initiatives.

**SARE is grassroots with far-reaching impact**

Four regional councils of expert practitioners set priorities and make grants in every state and island protectorate.

**SARE communicates results**

SARE shares project results by requiring grantees to conduct outreach and grower engagement, and by maintaining an online library of practical publications, grantee-produced information products and other educational materials.

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**SARE: Advancing the Frontier of Sustainable Agriculture in...**

**California**

Project Highlight: *Nitrogen-Management Tools Position Limited-Resource Farmers for Success*

Managing nitrogen (N) effectively helps farmers raise a high-quality crop, avoid wasting dollars and protect water quality. Yet in the highly productive Salinas Valley of Monterey County, many farmers who use organic practices lack complete information on effective N management. This is particularly true of beginning farmers and those who have a language barrier or otherwise have limited access to support services. Organic agriculture is booming in Monterey County: organic sales volume was $151 million in 2012. Ensuring that all organic growers have the best opportunity to succeed in a lucrative market was the motivation behind the Agriculture and Land-Based Training Association’s (ALBA) SARE grant.

ALBA collaborated with experienced farmers and Extension specialists to hold workshops on organic N management and on-farm research principles. It also provided in-depth, bilingual training and support to nine beginning farmers participating in its incubator program. ALBA’s grant allowed 500 growers and educators to benefit from workshops and publications focused on N management, and 91 percent of surveyed farmers reported adopting at least one new practice. By improving their knowledge on the subject and integrating new practices, the growers have positioned themselves for success.

For more information on this project, see sare.org/projects, and search for project number OW13-062.

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**SARE in California**

[Link to SARE website for California projects]

$14,838,190
in total funding

232 grant projects
(since 1988)

For a complete list of grant projects state by state, go to www.sare.org/state-summaries
SARE Grants in California

Total awards: 232 grants
- 66 Research and Education
- 42 Professional Development Program
- 73 Farmer/Rancher
- 34 Graduate Student
- 14 On Farm Research/Partnership
- 3 Research to Grass Roots

Total funding: $14,838,190
- $9,303,778 Research and Education
- $2,880,403 Professional Development Program
- $1,063,079 Farmer/Rancher
- $712,565 Graduate Student
- $708,951 On Farm Research/Partnership
- $169,413 Research to Grass Roots

Find a complete list of projects on page 3.

SARE's Impact

53 percent of producers report using a new production technique after reading a SARE publication.

79 percent of producers said they improved soil quality through their SARE project.

64 percent of producers said their SARE project helped them achieve higher sales.

Learn about local impacts at: western.sare.org/sare-in-your-state/california

Contact Your SARE State Coordinator

SARE sustainable ag coordinators run state-level educational programs for Extension and other ag professionals, and many help grant applicants and recipients with planning and outreach. Visit western.sare.org/state-pages/california to learn more.

Sonja Brodt
University of California Sustainable Agriculture Research & Education Program
(530) 754-8547
sbbrodt@ucdavis.edu

Jeffery Stackhouse
UCCE Livestock Advisor
(707) 445-7351
jwstackhouse@ucanr.edu

For detailed information on SARE projects, go to www.SARE.org

SARE is funded by the USDA’s National Institute of Food and Agriculture (NIFA).

This report includes summaries of competitive grant programs only. Some competitive grant programs that are no longer offered may be included or excluded from the totals in this report depending on the grant program and SARE region.
California has been awarded $14,838,190 grants to support 224 projects, including but not limited to, 58 research and/or education projects, 42 professional development projects and 73 producer-led projects. California has also received additional SARE support through multi-state projects.

### RESEARCH AND EDUCATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| SW22-931   | Quantifying the Indirect Costs of Gray Wolf – Cattle Interactions              | $296,080     | Tina Saitone  
  University of California, Davis  
  Dr.Kenneth Tate  
  University of California Davis |
| SW22-932   | Effects of colostrum storage and housing style on health and welfare of pre-weaning calves in conventional and organic dairy farms | $339,038     | Dr.Jose Peralta, DVM PhD  
  College of Veterinary Medicine, Western University of Health Sciences  
  Betsy Karle  
  University of California, Agriculture and Natural Resources  
  Dr.Manel Lopez-Bejar, DVM PhD  
  College of Veterinary Medicine, Western University of Health Sci  
  Dr.Brian Oakley, PhD  
  College of Veterinary Medicine, Western University of Health Sci  
  Dr.James Reynolds, DVM  
  College of Veterinary Medicine, Western University of Health Sci |
| SW22-933   | Integrated field and satellite based decision support system for climate-resilient and sustainable ranches and rangelands across California | $348,561     | Yufang Jin  
  University of California, Davis  
  Royce Larsen  
  University of California, ANR  
  Leslie Roche  
  UC Davis  
  Matthew Shapero  
  University of California Davis, ANR  
  Steven Steven Ostoja  
  USDA, Agricultural Research Service |
| SW20-912   | Use of Almond Hull and Shell as Organic Matter Amendments in Advanced Orchard Management | $349,807     | Dr.Sat Darshan Khalsa  
  University of California Davis  
  Dr.Patrick Brown  
  University of California Davis  
  Dr.Amelie Gaudin  
  University of California, Davis |
| SW20-913   | Effective Management of Thousand Cankers Disease of Walnut through Disruption of Insect Vector Behavior | $349,770     | Dr.Richard Bostock  
  University of California  
  Dr.Daniel Kluepfel  
  USDA - ARS, Crops Pathology and Genetics Research Unit  
  Dr.Steven Seybold  
  USDA Forest Service |
| SW20-919   | Biointensive no-till farming in California: farmer-driven research and education on soil health, water efficiency and economic resiliency | $251,036     | Dr.Timothy Bowles  
  University of California Berkeley  
  Amanda Hodson  
  University of California, Davis  
  Sara Tiffany  
  Community Alliance with Family Farmers |
<table>
<thead>
<tr>
<th>Grant ID</th>
<th>Project Title</th>
<th>Funding</th>
<th>PI/Institution</th>
</tr>
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<tbody>
<tr>
<td>SW19-902</td>
<td>Potential Economic and Nitrogen Benefits of Fababean as a Double Purpose Cash and Cover Crop in Northern California</td>
<td>$348,772</td>
<td>Dr. Hossein Zakeri, California State University- Chico</td>
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<tr>
<td>SW19-908</td>
<td>Quantifying the effects of rangeland conversion on ecosystem functions: Linking land use systems to enhance farm profitability</td>
<td>$349,327</td>
<td>Fadzayi Elizabeth Mashiri, University of California</td>
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<td>SW18-063</td>
<td>Quantifying the frequency and effects of secondary exposure to rodenticides in barn owls</td>
<td>$249,546</td>
<td>Dr. Joshua Hull, UC Davis</td>
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<tr>
<td>SW17-060</td>
<td>UAS (Unmanned Aerial System)-guided releases of predatory mites for management of spider mites in strawberry</td>
<td>$249,878</td>
<td>Dr. Elvira de Lange, University of California Davis</td>
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<tr>
<td>SW14-011</td>
<td>Farming for Native Bees</td>
<td>$247,649</td>
<td>Dr. Gordon Frankie, UC Berkeley</td>
</tr>
<tr>
<td>SW12-110</td>
<td>The interaction of rangeland management and environmental conditions in regulating forage quality &amp; quantity and other ecosystem services</td>
<td>$265,414</td>
<td>Valerie Eviner, UC Davis</td>
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<tr>
<td>SW11-116</td>
<td>Integrated rotation systems for soil borne disease, weed and fertility management in strawberry/vegetable production</td>
<td>$218,424</td>
<td>Joji Muramoto, University of California, Santa Cruz</td>
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<tr>
<td>SW10-013</td>
<td>Control of Bacterial Wilt Disease of Ginger through an Integrated Pest Management Program</td>
<td>$289,245</td>
<td>Dr. Susan Miyasaka, University of Hawaii</td>
</tr>
<tr>
<td>SW10-801</td>
<td>A San Joaquin Valley Quilt: Stitching Together a Region’s Prosperity, Nutrition and Sustainability</td>
<td>$14,935</td>
<td>Daniel O'Connell, Sequoia Riverlands Trust</td>
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<td>SW10-803</td>
<td>Sierra CRAFT</td>
<td>$30,653</td>
<td>Bill Bennett, High Sierra RC&amp;D Council, Inc.</td>
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<tr>
<td>SW10-810</td>
<td>Developing regional distribution networks to enhance farmer prosperity: Retail value chains</td>
<td>$24,906</td>
<td>Dr. Gail Feenstra, UC SAREP/ASI</td>
</tr>
<tr>
<td>SW08-060</td>
<td>Triple-cropping Dairy Forage Production Systems Through Conservation Tillage in California’s San Joaquin Valley</td>
<td>$118,100</td>
<td>Dr. Jeff Mitchell, University of California, Davis</td>
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<tr>
<td>SW07-022</td>
<td>Using Nectar Cover Cropping in Vineyards for Sustainable Pest Management</td>
<td>$178,300</td>
<td>Mark Hoddle, University of California, Dr. Nic Irvin, University of California</td>
</tr>
<tr>
<td>SW06-033</td>
<td>Toward a Broader Vision of Sustainability: Social Equity in Sustainable Agriculture</td>
<td>$10,000</td>
<td>Ron Strochlic, California Institute for Rural Studies</td>
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<tr>
<td>SW06-038</td>
<td>Grazing Strategies to Control Medusahead in California</td>
<td>$138,539</td>
<td>Dr. Emilio Laca, UC Davis</td>
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<tr>
<td>SW06-091</td>
<td>Alternaria Control Using Biocontrol Yeast in Organic Pistachio Production Systems</td>
<td>$110,286</td>
<td>Dr. Dan Parfitt, UC Davis</td>
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<tr>
<td>SW05-078</td>
<td>Smart Energy Management in Agriculture</td>
<td>$68,208</td>
<td>Karyn Wolf Lynn, Ecological Farming Association</td>
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<tr>
<td>Project Code</td>
<td>Title</td>
<td>Budget</td>
<td>Principal Investigator</td>
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<tr>
<td>SW04-058</td>
<td>Fresh, From Our Family to Yours: Direct Marketing Education for Producers</td>
<td>$98,395</td>
<td>Molly Johnson</td>
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<td>SW04-121</td>
<td>Farmland Tenure: A Tool Kit</td>
<td>$103,130</td>
<td>Steve Schwartz</td>
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<td>SW04-127</td>
<td>Educational Workshops on Organic Dairy Management</td>
<td>$39,377</td>
<td>Ken Andersen</td>
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<td>SW03-037</td>
<td>Confirmation of Riparian Friendly Grazing Project Results and Development of Achievable, Site Specific Reference Conditions for Grazed Riparian Areas</td>
<td>$93,184</td>
<td>Dr. Kenneth Tate</td>
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<tr>
<td>SW02-008</td>
<td>Evaluation of the Effects of Vineyard Floor Management Practices on Soil Microbiology</td>
<td>$27,496</td>
<td>Richard Smith</td>
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<tr>
<td>SW02-020</td>
<td>Management of Vine Mealybugs in California’s San Joaquin Valley Through the Integration of Chemical and Biological Controls</td>
<td>$117,286</td>
<td>Kent Daane</td>
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<tr>
<td>SW02-034</td>
<td>Development and Dissemination of a Cowpea Cultivar for Cover Crops</td>
<td>$43,686</td>
<td>Dr. Milt McGiffen, Jr.</td>
</tr>
<tr>
<td>SW02-035</td>
<td>Control of Western Tarnished Plant Bug (WTPB) Lygus hesperus Knight in Organic Strawberry Production Systems Using Trap Crops and Tractor-mounted Vacuums</td>
<td>$31,280</td>
<td>Dr. Sean Swezey</td>
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<tr>
<td>SW01-044</td>
<td>Riparian Friendly Grazing Project</td>
<td>$24,714</td>
<td>Dr. Kenneth Tate</td>
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<tr>
<td>SW01-057</td>
<td>Transition to Organic Vegetable Production by Large-Scale Conventional Farmers</td>
<td>$123,399</td>
<td>Louise Jackson</td>
</tr>
<tr>
<td>SW99-008</td>
<td>The Transition from Conventional to Low-Input or Organic Farming Systems: Soil Biology, Soil Chemistry, Soil Physics, Energy Utilization, Economics, and Risk</td>
<td>$153,962</td>
<td>Steven Temple</td>
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<tr>
<td>SW99-009</td>
<td>Rotations with Broccoli – A Sustainable Alternative to Soil Chemical Fumigants</td>
<td>$145,750</td>
<td>Krishna Subbarao</td>
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<tr>
<td>SW98-044</td>
<td>Cropping Systems for Intensive Desert Vegetable Production</td>
<td>$130,672</td>
<td>Charles Sanchez</td>
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<tr>
<td>SW97-021</td>
<td>Reducing Insecticide Use on Celery Through Low Input Pest Management Strategies</td>
<td>$100,000</td>
<td>John T. Trumble</td>
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<tr>
<td>SW97-045</td>
<td>Decomposition and Nutrient Release Dynamics of Cover Crop Materials</td>
<td>$41,064</td>
<td>Dr. Jeff Mitchell</td>
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<tr>
<td>SW97-049</td>
<td>Development and Implementation of Trap Cropping Strategies for Control of Hemipteran Pests in Pistachio Orchards</td>
<td>$79,858</td>
<td>Kent Daane</td>
</tr>
</tbody>
</table>
The Transition from Conventional to Low-input or Organic Farming Systems: Soil Biology, Soil Chemistry, Soil Physics, Energy Utilization, Economics and Risk

Tillage Practices for Improving Nitrogen Cycling and Soil Quality

Controlled Grazing on Foothill Rangelands

A Cover Crop System for Sustainable Grape Production in California – Beyond the Transition Phase

Development of a Farm-Wide System for Control of Many of the Principal Lepidopterous Pests of Grapes and Tree Fruits Based on Disruption of Premating Pheromone Communication Between Male and Female Moths

Managing Soil Biota in Low-Input and Organic Farming Systems to Enhance Soil Fertility

The Transition from Conventional to Low-input or Organic Farming Systems: Soil Biology, Soil Chemistry, Soil Physics, Energy Utilization, Economics and Risk

Western Region Community Supported Agriculture (CSA) Conference

Sierra County Alternative Agriculture Project

Farming in the 21st Century: A Documentary Photography Project

Prune Refuges and Cover Crops to Facilitate Low-Input Production of California’s Raisin, Table, and Wine Grapes

A Multidisciplinary Approach to Evaluate and Aid the Transition From Conventional to Low-Input Pest Management Systems in Stone Fruits

Assisting Resource-Poor, Small-Scale Farmers with Adoption of Low-Input Technologies through a Client Participation Program of Cooperative Research and Extension at the Rural Development Center Near Salinas, California

California Sustainable Agriculture Working Group

Application of Low-Volume Water Systems to the Cultural and Biological Control of Root Diseases
### RESEARCH TO GRASS ROOTS GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| WRGR22-007 | Extending compost-induced disease suppressive soils to small-scale Latinx farmers                                                                                                                         | $82,713      | Aysha Peterson  
Resource Conservation District of Monterey County  
Sonja Brodt  
UC SAREP  
Lucas Patzek  
Napa County Resource Conservation District |
| RGR20-006  | Building on Farmer Experience to Increase Cover Crops Adoption in Orchards and Vineyards                                                                                                                    | $74,594      | Dr.Sonja Brodt, Sonja Brodt  
UC SAREP  
Lucas Patzek  
Napa County Resource Conservation District |
| RGR20-010  | Potter Valley Tribe’s Native Mushroom Cultivation from Waste Byproduction Substrate for Food Sovereignty                                                                                              | $12,106      | Jade Swor  
Potter Valley Tribe  
Salvador Rosales, Sr.  
Potter Valley Tribe  
Salvador Rosales, Jr.  
Potter Valley Tribe  
Gregg Young  
Potter Valley Tribe |

### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
American Farmland Trust  
Beth Fraser  
American Farmland Trust  
Stacy Shutts  
American Farmland Trust |
| WPDP22-022 | Advancing Knowledge of Soil Health Assessment and Management Through California’s North Coast Soil Hub                                                                                                     | $78,167      | Emilie Winfield  
Marin Resource Conservation District  
Keith Abeles  
Sonoma Resource Conservation District  
William Hart  
Gold Ridge Resource Conservation District  
Erica Lundquist  
USDA-NRCS Ukiah Field Office  
Sanjai Parikh  
University of California Davis  
Lucas Patzek  
Napa County Resource Conservation District  
Dr.Kerri Steenwerth  
USDA/University of California Davis |
| WPDP22-023 | Closing the Regenerative Agriculture Economy Loop on Small Farms: A Training program for Agricultural Professionals and Curriculum for Small Farmers                                                              | $99,807      | David Blume  
Whiskey Hill Farm/Blume Distillation  
Tom Harvey  
Whiskey Hill Farm  
Dr.Ronnie Lipschutz  
Sustainable Systems Research Foundation |
WPDP22-003 Scaling Regenerative Agriculture in California through NRCS and RCD Conservation Planner Training $99,917
Adria Arko
San Mateo Resource Conservation District
Jim Howard
USDA Natural Resources Conservation Service
Kevin Watt
TomKat Ranch Educational Foundation / Left Coast Grass-Fed

WPDP21-005 Farming Through Wildfire Season: Preparation, Resilience & Recovery $74,108
Evan Wiig
Community Alliance with Family Farmers
Natalia Pinzón Jiménez
Rhizobia, LLC

WPDP21-022 Empowering Agricultural Professionals to Support Beneficial Birds and Discourage Pest Birds $93,851
Jo Ann Baumgartner
Wild Farm Alliance
Shelly Connor
Wild Farm Alliance

WPDP21-009 Building Capacity to Reduce Human-Wildlife Conflict $79,037
Tracy Schohr
UC Cooperative Extension
Laura Snell
UC Cooperative Extension

PDP20-009 Filling the Gap - Exposing Agricultural Professionals to New and Innovative Small-Farm Tools $74,982
Rex Dufour
National Center for Appropriate Technology (NCAT)

WPDP19-25 Business of Farming (BoF) - Train the Trainer Program $74,984
Carolina Martinez
California Association for Micro Enterprise Opportunity
Carla Holland
San Diego Small Business Development Center

WPDP19-12 From Classroom to the Field: Soil Health Bottom Line: Expanding Adoption of Healthy Soils Practices by Quantifying the Economic and Environmental Benefits to Growers $75,000
Kara Heckert
American Farmland Trust
Anelkis Royce
Anelkis Royce
American Farmland Trust

EW18-024 Organic Soil Health Education Resources for Agricultural Professionals in the Western Region $74,138
Brise Tencer
Organic Farming Research Foundation

EW17-012 Growing California Agritourism Communities $73,010
Dr. Gail Feenstra
UC SAREP/ASI

EW17-014 Building Knowledge of Cover Cropping Techniques for Increased Adoption Rates $52,172
Trina Walley
East Stanislaus Resource Conservation District

EW16-018 Facilitating Food Safety for Small, Sustainable Farms $55,000
nathan harkleroad
ALBA
Kaley Grimland
ALBA

EW16-015 Harmonizing Organic Standards and Food Safety Metrics $74,970
Dave Runsten
Community Alliance with Family Farmers

EW16-026 Assessment of Soil Biology and Plant Available Nitrogen for Soil Health and Water Quality $49,690
Hunter Francis
CAFES Center for Sustainability

EW14-036 Supporting Farmer Training Programs in the Western States through Professional Development and Collaboration $29,977
nathan harkleroad
ALBA

EW13-008 High Residue Farming in the Irrigated Far West $26,400
Andrew McGuire
Washington State University Extension
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Title</th>
<th>Budget</th>
<th>Principal Investigator(s)</th>
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<tr>
<td>EW13-022</td>
<td>Development and training of a national spray application work group</td>
<td>$57,862</td>
<td>Gwen-Alyn Hoheisel, Washington State University</td>
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<tr>
<td>EW13-025</td>
<td>Building Tools and Technical Capacity to Improve Irrigation and Nutrient Management on California’s Central Coast</td>
<td>$39,564</td>
<td>Pamela Krone-Davis, Monterey Bay Sanctuary Foundation</td>
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<tr>
<td>EW13-027</td>
<td>Application of Lessons Learned from NRCS Rangeland CEAP: A site-specific, Low Cost System for Medusahead Control</td>
<td>$68,469</td>
<td>Jeremy James, University of California</td>
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<tr>
<td>EW12-017</td>
<td>Training Manuals and Professional Development Activities for Teaching Organic Farming and Marketing</td>
<td>$98,782</td>
<td>Dr. Daniel Press, University of California Santa Cruz, Ann Lindsey, University of California Santa Cruz</td>
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<tr>
<td>EW12-033</td>
<td>FARMING STRATEGIES FOR COPING WITH CLIMATE CHANGE</td>
<td>$19,000</td>
<td>Renata Brillinger, California Climate &amp; Agriculture Network</td>
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<tr>
<td>EW11-029</td>
<td>Cal Poly Professional Development Compost Training and Establishment of the Cal Poly Compost Project</td>
<td>$57,582</td>
<td>Hunter Francis, CAFES Center for Sustainability</td>
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<tr>
<td>EW10-004</td>
<td>Capacity Building Workshops: Developing Regional Agritourism Networks for Agricultural Sustainability and Education</td>
<td>$59,558</td>
<td>Penny Leff, UC Sustainable Agriculture Research and Education Program (UC SAREP)</td>
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<tr>
<td>EW10-005</td>
<td>Understanding the Climate Benefits of Sustainable Agriculture</td>
<td>$11,905</td>
<td>Jeanne Merrill, CA Climate &amp; Agriculture Network (CalCAN), Renata Brillinger, California Climate &amp; Agriculture Network</td>
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<tr>
<td>EW09-004</td>
<td>Ecology and Management of Grazing, An Online Course</td>
<td>$84,826</td>
<td>Melvin George, University of California</td>
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<tr>
<td>EW04-012</td>
<td>Adding Value to Grassfed Beef Niche Marketing Efforts</td>
<td>$60,000</td>
<td>Cynthia Daley, California State University, Chico</td>
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<tr>
<td>EW03-004</td>
<td>Field Course for Agricultural Professionals on the Common Goals and Strategies of USDA’s National organic Standards and Resource Conservation Programs</td>
<td>$60,000</td>
<td>Rex Dufour, National Center for Appropriate Technology (NCAT)</td>
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<tr>
<td>EW03-007</td>
<td>Extending Hedgerow Systems in California Agriculture</td>
<td>$60,000</td>
<td>Mark Cady, Community Alliance with Family Farmers</td>
</tr>
<tr>
<td>EW02-005</td>
<td>Organic Farming Principles, Practices, and Materials: Resources for Western Region Extension and USDA Professionals</td>
<td>$101,907</td>
<td>Dr. Sean Swezey, Center for Agroecology and Sustainable Food System, David Chaney, SAREP</td>
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<tr>
<td>EW01-010</td>
<td>Training and Education Outreach to NRCS and University of California CES staff to Convey Animal Nutrition</td>
<td>$81,950</td>
<td>Thomas Wehri, CA Association Resource Conservation Districts</td>
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<tr>
<td>EW01-013</td>
<td>Promotion of Intergenerational Farm Transfers for Agricultural Sustainability and Farmland Production</td>
<td>$56,000</td>
<td>Steve Schwartz, California FarmLink</td>
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<tr>
<td>EW00-012</td>
<td>Sharing Resources to Help Connect Farmers to Direct Marketing Niches</td>
<td>$96,578</td>
<td>David Chaney, SAREP</td>
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</table>
EW98-001  Broadening the Audience: Providing Sustainable Agriculture Education for Pest Control Advisers and Agricultural Consultants in California and Oregon  $80,100  David Chaney  SAREP

EW97-002  Sustainable Range & Pasture Livestock & Dairy Production Training For Resource Professionals  $29,000  Roger Ingram  University of California Cooperative Extension

EW96-005  Multidisciplinary On-Site Training in Sustainable Agriculture Education  $97,432  Steven Temple  University of California

EW96-009  Sustainable Agriculture Curriculum Development Project for Extension Professionals in California’s San Joaquin Valley and Central Coast Regions  $98,773  David Chaney  SAREP

EW96-010  Sustainable Arid Land Grazing Systems: Training for Managers of Public Land and Reserves  $29,000  William Olkowski  Bio-Integral Resource Center (South)

EW96-011  Professional Training in Biologically Integrated Orchard Systems  $155,940  Jill Klein  Com. Alliance w/ Family Farmers/BIOS Training Prop. for SARE

EW95-015  A Consortium-Based Sustainable Agriculture Training Program (SATP) Curriculum Plan  $20,000  Dr. Sean Swezey  Center for Agroecology and Sustainable Food System

EW94-003  Multidisciplinary On-Site Training in Sustainable Agriculture Education  $71,000  Steven Temple  University of California

FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| FW22-408  | Improving cost-effective testing and actionable understanding of holistic soil and plant nutrition for agroecological farmers | $24,834  | jibril kyser  
deep medicine circle |
| FW22-402  | Testing new perennial intermediate wheatgrass for sustainable agriculture in California | $25,000  | Charlie Long Chen  
Meristem LLC |
| FW22-388  | Implementing Whole Farm Cycling of Nutrients and Carbon with Orchard Waste in Walnut & Cherry Production in Central Valley CA | $24,961  | Franz Eilers  
John Eilers Farms |
| FW22-392  | Assessing the economic and social viability of transitioning to Winter CSA production as an adaptation strategy to climate change impacts | $24,950  | Caitlin Hachmyer  
Red H Farm |
| FW22-395  | Analyzing Crop Profitability And Financial Metrics On Flower Farms | $27,462  | Lennie Larkin  
B-Side Farm |
| FW22-401  | Rehydrating Toro Creek with Sustainable Agriculture: Traceland Farm Demonstration Project | $24,997  | Jesse Trace  
Traceland |
| FW21-376  | Evaluating Different Value-added Grains for Lassen County | $25,000  | Thomas Traphagan  
Sunset Ranch |
| FW21-377  | The effects of biochar soil amendments on industrial hemp yields | $25,000  | Tony De Veyra  
Fifth World Llc |
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<td>FW21-379</td>
<td>Increasing food yields from urban and peri-urban farms through deployment of small-scale agricultural technologies</td>
<td>$25,000</td>
<td>David Blume</td>
<td>Whiskey Hill Farm/Blume Distillation</td>
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<td>FW21-385</td>
<td>Increased Profitability for Small Farms in Silicon Valley Through Year-Round Production of Baby Greens</td>
<td>$23,204</td>
<td>Sam Thorp</td>
<td>Spade and Plow Organics LLC</td>
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<td>FW21-386</td>
<td>Improving Soil Health with biochar and compost application in North Coast Vineyards</td>
<td>$24,583</td>
<td>Dr. Michael Sipiora</td>
<td>Treasury Wine Estates</td>
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<td>FW21-387</td>
<td>Using Flavonoid and Polyphenol Testing of Honey to Improve Consumer Education</td>
<td>$25,000</td>
<td>Alisha Taff</td>
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<td>FW20-364</td>
<td>Adding value to grassfed cattle operations by restoring rangeland health with targeted grazing on California's Central Coast</td>
<td>$19,673</td>
<td>Elizabeth Reikowski</td>
<td>Willow Creek Land and Cattle, LLC</td>
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<td>FW20-365</td>
<td>Mitigating on-farm toxins using fungi: a case study on two farms.</td>
<td>$19,881</td>
<td>Christopher Tchudi</td>
<td>TurkeyTail Farm</td>
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<td>FW19-346</td>
<td>Grazing of annual brassicas to extend grazing season in summer-dry pastures in Northern California</td>
<td>$19,109</td>
<td>Cody Wood</td>
<td>Willamette Valley Lamb</td>
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<td>FW19-355</td>
<td>Drill-seeding blue oak acorns: a new method for restoration in California’s rangelands.</td>
<td>$19,920</td>
<td>Alex Palmerlee</td>
<td>Far View Ranch Inc.</td>
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<td>FW18-027</td>
<td>Farm-to-Glass: Performance Testing Different Varieties of Malting Barley</td>
<td>$19,908</td>
<td>Bob Adams</td>
<td>Bob Adams</td>
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<td>FW18-042</td>
<td>Converting tree nut byproducts into gourmet mushrooms and mulches</td>
<td>$19,952</td>
<td>Charlie Long Chen</td>
<td>Nature Prize LLC</td>
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<td>FW18-044</td>
<td>Examining the practical on-ranch application and benefits of low-stress herding and stockmanship techniques</td>
<td>$19,980</td>
<td>Michael Williams</td>
<td>Diamond W Cattle Company</td>
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<td>FW17-054</td>
<td>Honeybee Regeneration Project</td>
<td>$19,851</td>
<td>Aidan Wing</td>
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<td>FW16-033</td>
<td>Sorrel Pesto: The Positive Implications of Sorrel as a Substitute for Basil in Pesto Production</td>
<td>$19,710</td>
<td>David Ceaser</td>
<td>Green Skies Vertical Farm</td>
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<td>FW16-034</td>
<td>Sustainable Irrigation Demonstration Project: Demonstrating Irrigation Efficiency in California Winegrapes through Advanced Practices and Technologies</td>
<td>$19,180</td>
<td>Jason Melvin</td>
<td>Zabala Vineyards</td>
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<td>FW16-036</td>
<td>Improving Water Use Efficiency in Conventional and Organic Almonds through Data Driven Irrigation</td>
<td>$19,878</td>
<td>Pat Ricchiuti</td>
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<td>FW15-029</td>
<td>High Desert High Tunnels</td>
<td>$5,183</td>
<td>Laurie Wayne</td>
<td>Locavore Farms</td>
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<td>FW14-024</td>
<td>Vines And Ovines: Benefits of Target Grazing to Sheep and Vineyard Industries</td>
<td>$14,991</td>
<td>Jaime Irwin</td>
<td>Kaos Sheep Outfit</td>
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Use of Wood Ash as Soil Amendment on Annual Rangelands
- Mel Thompson
- Sierra Farms
- Glenn Nader
- University of California Cooperative Extension

Woolgathering on the Farm
- Sophie Sheppard
- Woolgathering

Creating and Marketing Value-Added Orchard Products
- Nicholas Salle
- Salle Orchards
- Billie Jean Salle
- Salle Orchards

Sierra Nevada Small Farm Progress Days
- Dan Macon

Restoring Plant Diversity and Soil Health in Napa and Sonoma Vineyards: scaling up an agroecologically based pest management strategy
- Houston Wilson
- UC Berkeley -- ESPM
- Miguel Altieri
- University of California, Berkeley

Effects of Aleutian Geese on Humboldt County Pastures
- Alan Bower
- University of California Davis

Vines and Ovines: Using Trained Sheep for Vineyard Floor Grazing
- Morgan Doran
- University of California

Placer Ag Futures Project
- Bill Bennett
- High Sierra RC&D Council, Inc.
- Kay Joy Barge
- High Sierra Resource

Farm Direct Distribution
- Brigitte Moran
- Marin Farmers Market Association

Building on Organic Knowledge: On-Farm Transfer of a Trap Cropping Method to Control Lygus Bug in Conventional Strawberry Production
- Dr. Sean Swezey
- Center for Agroecology and Sustainable Food System

Management Challenges for Dairy Goat Sustainability
- Deborah Giraud
- University of California

Using Molasses as an Attractant for Concentrating Grazing on Medusahead
- Morgan Doran
- University of California

Conservation Tillage Forage Production in California’s San Joaquin Valley
- Dr. Jeff Mitchell
- University of California, Davis

Goats in the Chaparral
- Bill Burrows

Sustaining an Agricultural Region: Capay Valley Grown
- Judith Redmond
- Full Belly Farm

Evaluation of abalone effluent for reclamation
- Douglas Bush
- The Cultured Abalone

A pilot project for zero discharge farming
- Alan Haight
- Riverhill Farm
FW04-028 Organic Vineyard/Orchard Weed and Grass Management Using Miniature Sheep $7,472 Deborah Walton Canvas Ranch

FW04-111 Marketing Locally Grown $10,000 Mary Ann Vasconcellos

FW03-007 Integrated Pest Management and Sustainable Grape Production in Sonoma County $13,000 Nick Frey Sonoma County Grape Growers Assn.

FW03-009 Unconventional Conversion: Cultivating Sustainability in Citrus and Avocado Orchards $7,500 Zachary Griffin

FW03-010 Increasing Adoption of Sustainable Practices in Central Coast Vineyards $13,000 Kris Beal Vineyard Team

FW03-013 Can Llamas Be an Effective Tool for Predator Control? $6,500 Jill Hackett Howe Creek Ranch

FW03-015 Pastured Pork: Economics of Intensive Grazing in the Western United States $6,550 John Currey CR Pigs

FW03-105 Bay Area Agricultural Cooperative $13,000 John Lagier Lagier Ranches

FW03-107 Marin Organics Cooperative Marketing Program $13,500 Warren Weber Star Route Farms

FW03-318 Conservation of Groundwater Resources in the Mojave High Desert Region through Producer Education of Irrigation Management $6,285 Grant Poole University of California Cooperative Extension

FW02-211 Marin Organic’s Cooperative Marketing Outreach $9,191 Warren Weber Star Route Farms

FW02-213 Establishing a Market for Sustainable Agricultural Products in Sierra Nevada Foothill Counties $12,900 Ed Rich

FW01-089 Symphylans: A growing menace. A look into its detection, damage, and control in a small-scale Biointensive Community Supported Agriculture Project. $6,270 Michelle Vesser Small Farm / Specialty Crops

FW00-005 Production of Strawberry Plants using Sterile Soil Amendments $5,000 Allen Albaugh

FW00-008 Tracking Costs and Returns in a Transition to Grass-Based Dairying $1,139 Dean Martin

FW00-010 Soil Solarization for Weed and Disease Control in Specialty Crops $4,975 Mike Smith

FW00-021 Water Use of Wine Grapes in the Granitic Soils of the Fair Play Wine Region in the Sierra Foothills $10,000 Brian Fitzpatrick
## GRADUATE STUDENT GRANTS

<table>
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<tr>
<th>Project #</th>
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| GW21-224   | Hopes of dry land: Managing soils to improve fruit yield and quality in dry farm tomatoes | $25,243      | Dr.Timothy Bowles  
University of California Berkeley  
Yvonne Socolar  
UC Berkeley |
| GW21-227   | What is a Healthy Soil for Wine Grape Production? Assessing Soil Health Across California Vineyards | $30,000      | Dr.Cristina Lazcano  
University of California Davis  
Dr.Mallika Nocco  
University of California, Davis  
Dr.Kerri Steenwerth  
USDA/University of California Davis  
Noelymar Gonzalez-Maldonado  
University of California Davis |
GW20-203 Grazing for change: Connecting soil health and ranch viability using adaptive multi-paddock grazing $24,867 Dr. Timothy Bowles University of California Berkeley Lynn Huntsinger, PhD University of California, Berkeley Paige Stanley University of California, Berkeley

GW20-207 Cover crops to enhance control of leaf-footed bug, Leptoglossus zonatus, in California tree nut crops $24,796 Dr. Houston Wilson University of California, Riverside Dr. Kent Daane University of California, Berkeley Rob Straser University of California, Riverside

GW20-216 Network analysis of organic seed systems: a systems-level analysis for resilience $24,997 Mark Lubell University of California, Davis Liza Wood University of California, Davis Jared Zystro Organic Seed Alliance Liza Wood University of California, Davis

GW19-191 Systems approaches to co-manage disease, water and soil health for sustainable processing tomato production in the Western region $25,000 Dr. Cassandra Swett UC Davis Justine Beaulieu UC Davis

GW19-193 Conventional vs. regenerative almond orchards, with regards to invertebrate biomass and biodiversity, soil health, food safety, and profitability $25,000 Dr. Jonathan Lundgren, PhD Ecdysis Foundation Dr. Patty Oikawa California State University East Bay Dr. Erica Wildy California State University East Bay Thomas Fenster University of California, Davis

GW19-194 Sustainable orchard intensification: Cover crops and management intensity $24,944 Bradley Hanson University of California, Davis Steven Haring University of California, Davis

GW19-200 Natural pest control in a working agricultural landscape: Investigating the impact of rodent control on beneficial hawks and owls $24,997 Dr. Joshua Hull UC Davis Dr. Sara Kross Columbia University Breanna Martinico UC Davis

GW18-062 Development of New Selection Tools and Crop Varieties for Sustainable Agriculture $24,443 Paul Gepts University of California - Davis Travis Parker University of California - Davis

GW18-020 New Ranchers, New Needs: Why are first-generation ranchers deciding against traditional climate adaptation strategies? $24,982 Leslie Roche UC Davis Katherine Munden-Dixon University of California - Davis

GW18-041 Insect Discovery and Breeding as Tools for Sustainable Solutions to Organic Waste Management $24,942 Dr. Christian Nansen University of California, Davis Trevor Fowles University of California - Davis

GW18-142 Cover Crop Systems for Almond Orchards: Exploring Benefits and Tradeoffs to Inform Management $24,852 William Horwath University of California, Davis Cynthia Creze University of California, Davis

GW18-126 Increasing the sustainability of dairy cattle by providing genetic tools to reduce lameness, improving welfare and production $23,623 Dr. Anita Oberbauer University of California, Davis Ellen Lai University of California, Davis
<table>
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<td>GW17-032</td>
<td>Management of Fusarium Wilt of Strawberry through Crop Rotation</td>
<td>$24,999</td>
<td>Dr. Thomas Gordon&lt;br&gt;UC Davis Dept. Plant Pathology&lt;br&gt;Peter Henry&lt;br&gt;University of California at Davis</td>
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<td>GW16-044</td>
<td>A Collaborative Approach to Integrated Pest Management of Tadpole Shrimp in California Rice Fields.</td>
<td>$24,928</td>
<td>Larry Godfrey&lt;br&gt;University of California, Davis&lt;br&gt;Joanna Bloese&lt;br&gt;University of California, Davis</td>
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<td>GW13-011</td>
<td>Compost-Induced Disease Suppressive Soils for Control of Verticillium Wilt of Strawberry</td>
<td>$24,992</td>
<td>Tom Gordon&lt;br&gt;UC Davis&lt;br&gt;Margaret Lloyd&lt;br&gt;UC Davis</td>
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<td>GW13-018</td>
<td>Best management practices that promote sustainable crop pollination: the role of crop rotations and tillage depth</td>
<td>$24,954</td>
<td>Neal Williams&lt;br&gt;University of California, Davis&lt;br&gt;Katharina Ullmann&lt;br&gt;University of California, Davis</td>
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<td>GW12-024</td>
<td>Ecosystem Services in Hedgerow Restorations: Pollination Function and Nesting Habitat</td>
<td>$17,882</td>
<td>Dr. Claire Kremen&lt;br&gt;University of California, Berkeley&lt;br&gt;Hillary Sardinas&lt;br&gt;UC Berkeley</td>
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<td>GW11-001</td>
<td>Pastured Poultry/Crop Systems and Their Effect on Food Safety, Farm Economy, and Soil Quality</td>
<td>$24,807</td>
<td>Dr. Kathleen Hilimire&lt;br&gt;University of California, Santa Cruz&lt;br&gt;Stephen R. Gliessman&lt;br&gt;University of California</td>
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<td>GW11-012</td>
<td>Facilitating Integrated Weed Management in California Rice: Predicting E. spp. and C. difformis emergence across heterogeneous growing environments</td>
<td>$17,120</td>
<td>Dr. Chris van Kessel&lt;br&gt;University of California, Davis&lt;br&gt;Dr. Mark Lundy&lt;br&gt;University of California Cooperative Extension</td>
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<td>GW10-010</td>
<td>Irrigation Alternatives for Sustainable Water Use of Processing Tomatoes</td>
<td>$25,000</td>
<td>Louise Jackson&lt;br&gt;UC Davis&lt;br&gt;Felipe Barrios Masias&lt;br&gt;Board of Regents, NSHE, obo University of Nevada, Reno</td>
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<td>GW09-018</td>
<td>Promoting Native Bumblebees in Agricultural systems for conservation and ecosystem service</td>
<td>$20,074</td>
<td>Dr. Claire Kremen&lt;br&gt;University of California, Berkeley&lt;br&gt;Dr. Alexandra Harmon-Threatt&lt;br&gt;University of Illinois, Urbana-Champaign</td>
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<td>GW08-015</td>
<td>Screening for non-host rotation crops of Colletotrichum acutatum for strawberry nurseries in California</td>
<td>$19,535</td>
<td>W. Douglas Gubler&lt;br&gt;University of California, Davis&lt;br&gt;Joseph Jertberg&lt;br&gt;UC Davis Plant Pathology Department</td>
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<td>GW08-018</td>
<td>Solarization and steam heat combined to control weeds in strawberry</td>
<td>$19,974</td>
<td>Steve Fennimore&lt;br&gt;University of California, Davis&lt;br&gt;Celeste Gilbert&lt;br&gt;University of California, Davis</td>
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<td>GW07-003</td>
<td>Sustainable Landscapes: Investigating the Landscape Scale Effects of Riparian Habitat on Natural Pest Control</td>
<td>$17,950</td>
<td>Suzanne Langridge&lt;br&gt;University of California</td>
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<td>GW07-006</td>
<td>Risk, Rate, and Impact of Medusahead Invasion of California Savannas</td>
<td>$19,971</td>
<td>Dr. Emilio Laca&lt;br&gt;UC Davis&lt;br&gt;Cory Cherr&lt;br&gt;University of California, Davis</td>
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<td>GW07-012</td>
<td>Managing Soil Food Webs for Enriched and Suppressive Soils: Effects of Cover Crop Diversity and Quality</td>
<td>$19,235</td>
<td>Tianna Dupont&lt;br&gt;University of California at Davis</td>
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<td>GW06-004</td>
<td>Linking C and N Cycling to Microbial Community Function in Cover Crop Systems</td>
<td>$9,995</td>
<td>Angela Yin Yee Kong&lt;br&gt;University of California, Davis</td>
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GW06-007  Pest Control Services from Natural Habitat  $9,650  Rebecca Chaplin  University of California, Berkeley

GW06-016  Investigating the Effect of Hedgerows to Enhance Natural Biological Control  $10,000  Tara Pisani Gareau  University of California, Santa Cruz

GW06-017  Understanding N Fixation by Legume Cover Crops in Organic Vegetable Systems  $10,000  Carol Shennan  University of California, Santa Cruz Katie Monsen  University of California Santa Cruz

GW06-029  Sheep Grazing as a Tool for Vernal Pool Stewardship  $8,813  J. Hall Cushman  Sonoma State University Joan Schwan  Sonoma State University

GW06-030  Developing a Management Plan for Reducing Thrips-induced Damage on Timothy Hay  $10,000  Larry Godfrey  University of California, Davis Daniel Marcum  University of California Domic Reisig  University of California, Davis

ON FARM RESEARCH/PARTNERSHIP GRANTS

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<td>OW22-373</td>
<td>Targeted Grazing for Fuel Load Reduction</td>
<td>$74,811</td>
<td>Dr.Stephanie Larson  University of California Cooperative Extension</td>
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<td>OW20-360</td>
<td>Solarization and Biosolarization: Harnessing the Sun and Organic Matter to Control Weeds</td>
<td>$49,956</td>
<td>Martin Guerena  National Center for Appropriate Technology</td>
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<td>OW19-339</td>
<td>Collaboration to demonstrate the potential use and value of electronic identification and DNA testing in the sheep industry</td>
<td>$50,000</td>
<td>Julie Finzel  The Regents of the University of California, Agriculture and Natural Resources Dr.Alison Van Eenennaam  UCANR</td>
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<td>OW19-345</td>
<td>Effects of Occultation on Weed Pressure, Labor Costs, Product Quality, and Yield in Sustainable Vegetable Production in Northern California</td>
<td>$49,994</td>
<td>Dave Runsten  Community Alliance with Family Farmers Kali Feiereisel  Community Alliance With Family Farmers</td>
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<td>OW19-349</td>
<td>Amador Rangeland Soil Health Research and Education Project</td>
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<td>Amanda Watson  Amador Resource Conservation District</td>
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<td>OW19-351</td>
<td>A Collaborative Beneficial Insect and Pheromone Mating Disruption Demonstration Project</td>
<td>$50,000</td>
<td>Dr.Stephanie Bolton  Lodi Winegrape Commission</td>
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<td>OW18-013</td>
<td>Early Weaning of Beef Calves: A Drought Management Strategy on Annual Rangelands</td>
<td>$41,184</td>
<td>Dan Macon  University of California Cooperative Extension</td>
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<td>OW17-043</td>
<td>Beginning-farmer Research and Instruction on Growing in High Tunnels</td>
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<td>OW17-054</td>
<td>Advancing sustainable nitrogen management in strawberries through participatory research and education</td>
<td>$49,937</td>
<td>Sacha Lozano  Resource Conservation District of Santa Cruz County</td>
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<td>OW16-013</td>
<td>Irrigated Pastureland Enhancement Program</td>
<td>$49,774</td>
<td>Leslie Roche  UC Davis Dan Macon  UC Cooperative Extension</td>
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OW14-032  Selecting and Managing Vineyard Cover Crops to Reduce Consumption of Net Basin Water $49,467  Fritz Westover, Vineyard Team Kris Beal, Vineyard Team

OW13-062  Empowering Socially-Disadvantaged Farmers to Investigate Nitrogen Management in High-Value Vegetable Crops $45,527  Nathan Harkleroad, ALBA

OW12-008  Water Management in Sonoma County Grape Production $49,200  Karen Thomas, Sonoma County Winegrape Commission

OW11-318  Pomo Tribal Supported Agriculture Program $49,963  Rachel Whetstone, Hopland Band of Pomo Indians Terri McCartney, Coordinator

Total funding from the USDA SARE program to California $14,838,190

For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu.

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