What is SARE?

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 $359 million to more than 8,107 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, granteeproduced information products and other educational materials.

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

Hawaii

Project Highlight: Finding Success with Local Fertilizers

Because they rely on imported food, Hawaii and the other Pacific Islands face food insecurity issues. Pacific Island farmers also rely on expensive imported fertilizers with prices that continue to increase substantially. The issue is so important that participants in a 2008 Western SARE listening session in Hawaii ranked replacing imported fertilizers with local resources as the highest research, education and development priority. Local organic sources of nutrients have promise—including compost, tankage (rendered animal products), biochar and seaweeds—but more research is needed on their use.

Three SARE-funded projects on locally produced organic fertilizers are taking a step in that direction. One project evaluated quality, maturity, nitrogen-release pattern and crop growth for 10 composts through a series of lab, greenhouse and on-farm trials. It led to an increased demand for locally produced tankage and a reported increase in taro and sweet potato yields and quality when using invasive algae as a fertilizer.

The second project followed up on the promise of tankage but using it as a solution for fertigation. There was some benefit from using this recipe compared to imported liquid organic fertilizer. The third project is continuing the momentum by evaluating biochar combined with compost.

For more information on these projects, see sare.org/projects, and search for project numbers SW11-055, SW14-026 and SW16-021.

SARE in Hawaii

western.sare.org/sare-in-your-state/hawaii

$7,453,049 in total funding

122 grant projects

(since 1988)

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

Total awards: **122 grants**
- 30 Research and Education
- 18 Professional Development Program
- 51 Farmer/Rancher
- 11 Graduate Student
- 12 On Farm Research/Partnership

Total funding: **$7,453,049**
- **$4,470,541** Research and Education
- **$1,312,047** Professional Development Program
- **$775,568** Farmer/Rancher
- **$282,807** Graduate Student
- **$612,086** On Farm Research/Partnership

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/hawaii

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/hawaii to learn more.

Sharon Motomura Wages  
University of Hawaii  
(808) 969-8250  
smotomur@hawaii.edu

Jensen Uyeda  
University of Hawaii at Manoa  
(808) 384-7110  
juyeda@hawaii.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.
Hawaii has been awarded $7,453,049 grants to support 121 projects, including but not limited to, 29 research and/or education projects, 18 professional development projects and 51 producer-led projects. Hawaii 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>
| SW22-935   | Wildlife Impacts on Agroecosystems and Culture: Achieving Integrated Pest Management of Invasive Ungulates in Hawai'i | $349,979     | Dr. Melissa Price  
University of Hawaii  
Kyle Caires  
University of Hawaii  
Derek Risch  
University of Hawaii  
Stephanie Shwiff  
USDA National Wildlife Research Center, Dept of Economics  
John Steensma  
Steensma Dairy  
Dr. Mark Thorne  
University of Hawaii at Manoa |
| SW22-936   | Entomopathogenic Bombs - Sweet Potato Weevils Be Gone                          | $336,848     | Dr. Brent Sipes  
University of Hawaii  
Roshan Manandhar  
University of Hawai'i  
Dr. Koon-Hui Wang  
University of Hawaii |
| SW21-920   | Economic Evaluation of Beef Cattle Production Models and Marketing Alternatives in Hawaii | $51,386      | Dr. Mark Thorne  
University of Hawaii at Manoa  
Dr. Dillon Feuz  
Utah State University |
| SW20-911   | Instant biofumigation using natural products from papaya seed waste for sustainable management of soil-borne plant pathogens | $349,995     | Dr. Wei Wen Su  
University of Hawaii at Manoa, College of Tropical Ag & Human Resources (CTAHR)  
Dr. Stuart Nakamoto Nakamoto  
U. of Hawaii Manoa, Human Nutrition, Food, and Animal Sciences  
Dr. Koon-Hui Wang  
University of Hawaii  
Dr. Tao Yan  
Dept. of Civil & Environ. Engineering, University of Hawaii at M |
| SW17-050   | Assessing and Sharing Breadfruit Management Practices                          | $220,811     | Dr. Noa Lincoln  
University of Hawaii at Manoa |
| SW16-021   | Improving Nitrogen Synchronization of Local Fertilizers, Soil Fertility, and Crop Quality with Biochar Application | $259,816     | Dr. Nguyen Hue  
University of Hawaii at Manoa |
| SW16-023   | Development of Individual Free-Choice Mineral Supplementation Program for Sustainable Grazing Management of Hawaii’s Rangelands | $332,601     | Dr. Mark Thorne  
University of Hawaii at Manoa |
SW14-026 High nutrient solution fertilizers derived from local organic inputs for field and greenhouse application in the tropics $170,466 Dr. Amjad Ahmad University of Hawaii at Manoa

SW12-040 Low-input integrated management of tomato viruses in Hawaii $297,296 Dr. Mark Wright University of Hawaii

SW12-114 Secondary Effects of Behavior-based Pasture Management $37,125 Matthew Stevenson University of Hawaii

SW11-052 Developing sustainable pest management strategies against major pests of papaya in Hawaii $148,174 Dr. Leyla Kaufman University of Hawaii at Manoa

SW11-055 Reducing Pacific Island Growers’ Reliance on Off-island Fertilizer Sources Through Improved Awareness and Efficient Use of Local $284,070 Dr. Theodore Radovich University of Hawaii, Manoa

SW09-102 Voluntary Long-Term Protection of Agricultural Land in Hawaii $82,814 Dr. Christopher Lepczyk University of Hawaii at Manoa

SW09-502 Sustaining Molokai Native Hawaiian Family Farms $47,420 Alton Arakaki UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service
Glenn Teves UH CTAHR Cooperative Extension Service

SW08-037 Sunn hemp and its allelopathic compounds for vegetable production in Hawaii and beyond $156,105 Dr. Inga Zasada USDA-ARS Horticultural Crops Research Lab
Dr. Koon-Hui Wang University of Hawaii
Dr. Cerruti R. R. Hooks University of Maryland
Dr. Ming Li Wang USDA-ARS, PGRCU
Jari Sugano University of Hawaii, TPSS
Dr. Mark Wright University of Hawaii

SW07-073 Enhancing Phytonutrient Content, Yield and Quality of Vegetables with Compost Tea in the Tropics $162,500 Dr. Theodore Radovich University of Hawaii, Manoa

SW07-501 Innovative SARE Coordinator Program: Virtual Field Days to Improve Farmer-Researcher-Extension Linkages $25,000 Jonathan Deeniki University of Hawaii at Manoa

SW07-604 Improving and extending the superhero status of the sunn hemp to other growers in need of help $10,000 Dr. Cerruti R. R. Hooks University of Maryland
Dr. Koon-Hui Wang University of Hawaii

SW04-064 Management of Banana Bunchy Top in Hawaii $90,458 Dr. Cerruti R. R. Hooks University of Maryland

SW03-003 Cropping Systems to Control Tropical Soil-Borne Pests in Dryland-Grown Taro $257,827 Dr. Susan Miyasaka University of Hawaii

SW03-010 Neem and Papaya Fruit Extracts and Ferric Phosphate for Control of Golden Apple Snail in Wetland Taro: Efficacy Testing $31,831 Lance Santo Hawaii Agriculture Research Center
Mel Jackson Hawaii Agriculture Research Center
SW03-055  Development of a Sustainable Polyculture and Marketing System for Exotic Tropical Fruits  $156,800  Richard Bowen  Department of Nat Res and Envir Mngt

SW01-066  Nature Farming at Wheeler Elementary  $13,460  Joe Lee  Wheeler Elementary School

SW99-005  Survival of Taro: Agronomic and Pathological Research For Sustainable Production  $146,700  Janice Uchida  Dept. of Plant Pathology, University of Hawaii

SW99-022  Adaptation of a Natural Farming System to Vegetable Farm Production in Hawaii.  $85,134  Clyde Fukuyama  HARC

SW97-001  Management of Soil-borne Plant Parasitic Nematodes for Sustainable Production of Field Grown Tomatoes and Cucumbers by Cover Cropping  $21,900  John McHugh  Waikele Farms

SW96-003  Evaluation of a Perennial Vegetable, Asparagus, as a New Commercial Crop for Hawaiian Farmers  $49,595  Susan Schenck  Hawaiian Agriculture Research Center

LWE92-002  Integrated Hog Farming and Market Gardening for Small Farmers in Tropical Areas of the Western Region  $36,000  Kent Fleming  University of Hawaii at Manoa

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| WPDP19-21 | Building Competencies in Hawaii’s Agricultural Professionals and Stakeholders in Under Represented Agricultural Communities Through Collaborative Partnerships. State of Hawaii. | $75,000      | Joshua Silva  
                                  University of Hawaii at Manoa, College of Tropical Agriculture  
                                  Jari Sugano  
                                  University of Hawaii, TPSS  
                                  Michelle Gorham  
                                  West Oahu Soil and Water Conservation District  
                                  Dr.Koon-Hui Wang  
                                  University of Hawaii |
| WPDP19-24 | Co-Managing Food Safety and Land Stewardship on Hawaii Farms                                       | $74,715      | Dave Elliott  
                                  Oahu RC&D  
                                  Hannah Hubanks  
                                  Oahu RC&D  
                                  Jean Brokish  
                                  Oahu Resource Conservation and Development Council |
| EW18-023  | Capacity building for Cooperative Extension in Micronesia to reduce Pacific Island food system vulnerability to climate variability | $74,858      | Clay Trauernicht  
                                  University of Hawaii |
| EW17-004  | Breadfruit Agroforestry for Pacific Island Revitalization                                            | $73,689      | Craig Elevitch  
                                  Permanent Agriculture Resources |
| EW16-008  | Agroforestry Design for Sustainable Production Systems in the U.S.-Affiliated Pacific Islands        | $73,970      | Craig Elevitch  
                                  Permanent Agriculture Resources |
| EW13-010  | Pollinator Use and Management: Training in Sustainable Practices for Ag Professionals                | $65,386      | Dr.Ethel Villalobos  
                                  University of Hawaii |
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tbody>
<tr>
<td>EW11-014</td>
<td>Hawai‘i Community-Based Food Security</td>
<td>$58,520</td>
<td>Craig Elevitch</td>
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<td>Hawaii Homegrown Food Network</td>
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<td>EW08-013</td>
<td>Promoting Adaptive Management With “Tropic Sun” sunn hemp</td>
<td>$53,768</td>
<td>Dr. James Leary</td>
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<td></td>
<td>(Crotalaria juncea) in Hawaii for Ecological Strategies in Weed Control,</td>
<td></td>
<td>University of Hawaii at Manoa</td>
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<td></td>
<td>Nematode Suppression and Nutrient Management</td>
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<td>Dr. Brent Sipes</td>
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<td>University of Hawaii</td>
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<tr>
<td>EW07-004</td>
<td>New Crops for Pacific Island Agroforestry</td>
<td>$80,000</td>
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<td></td>
<td></td>
<td></td>
<td>Craig Elevitch</td>
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<td>Hawaii Homegrown Food Network</td>
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<tr>
<td>EW05-009</td>
<td>Pacific Island Agroforestry Workshops and Field Visits</td>
<td>$59,777</td>
<td>Craig Elevitch</td>
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<tr>
<td>EW03-002</td>
<td>New Farmers: Choosing the Road Less Traveled</td>
<td>$90,000</td>
<td>Samir El-Swaify</td>
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<td>University of Hawaii at Manoa</td>
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<tr>
<td>EW02-001</td>
<td>Species Profiles for Pacific Island Agroforestry</td>
<td>$94,971</td>
<td>Craig Elevitch</td>
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<td>EW00-026</td>
<td>Sustainable Pest Control for the Tropics</td>
<td>$78,090</td>
<td>Richard Bowen</td>
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<td>Department of Nat Res and Envir Mngt</td>
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<tr>
<td>EW98-004</td>
<td>Agroforestry Handbooks for Pacific Islands</td>
<td>$57,885</td>
<td>Craig Elevitch</td>
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<tr>
<td>EW98-012</td>
<td>Covering New Ground: Tropical Cover Crops for Improving Soil Quality</td>
<td>$84,500</td>
<td>Richard Bowen</td>
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<td>Department of Nat Res and Envir Mngt</td>
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<td>EW97-003</td>
<td>Tools for Sustainability: Sustainable Agriculture Video Training Tapes for</td>
<td>$64,295</td>
<td>John Craven</td>
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<td>the Pacific Islands Region</td>
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<td>Common Heritage</td>
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<tr>
<td>EW96-014</td>
<td>Continuation - “Training Agents” in On-Farm Implementation of Sustainable</td>
<td>$63,623</td>
<td>Po-Yung Lai</td>
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<td></td>
<td>Management Systems for Tropical Agriculture in Hawaii and the Pacific Region</td>
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<td>University of Hawaii</td>
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<tr>
<td>EW94-014</td>
<td>Training “Agents” in On-Farm Implementation of Sustainable Management Systems</td>
<td>$89,000</td>
<td>Po-Yung Lai</td>
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<td>for Tropical Agriculture in Hawaii and the Pacific Region</td>
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<td>University of Hawaii</td>
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### Farmer/Rancher Grants

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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tbody>
<tr>
<td>FW22-409</td>
<td>Improving Livelihoods of Farmers in Hawaii by Creating a Honey Marketing Model</td>
<td>$25,000</td>
<td>Susan Collins</td>
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<td>Bird and Bee Hawaii</td>
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<td>FW21-375</td>
<td>The Mango Loa Project phase two: Improving Hawaii’s mango industry by</td>
<td>$16,533</td>
<td>Umi Martin</td>
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<td></td>
<td>incorporating high density orchard management systems</td>
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<td>Umi Martin</td>
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<td>FW21-378</td>
<td>Growing Table Grape Varieties for Subtropical Hawaii Using Organic Practices</td>
<td>$25,000</td>
<td>Gerry Herbert</td>
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<td>Kawanui Farm</td>
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<td>Project Code</td>
<td>Project Title</td>
<td>Amount</td>
<td>Principal Investigator</td>
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<td>FW21-381</td>
<td>Evaluating the Potential of Cover Crops to Mitigate the Impact of Phytophthora in Macadamia Orchards</td>
<td>$24,574</td>
<td>Andrew Trump</td>
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<tr>
<td>FW20-366</td>
<td>Integration of Multifunctional Dairy Water Buffalo (Bubalus bubalis) into a Whole Farm System in Hawaii: economic, ecological and social benefits.</td>
<td>$19,178</td>
<td>Donald Heacock</td>
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<td>FW20-368</td>
<td>Mamaki – Fertilization and branch bending trials for continuous leaf flush and soil fertility</td>
<td>$20,000</td>
<td>Dr. Ming Wei Koh</td>
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<td>FW20-370</td>
<td>Establishing &quot;Bush Tucker&quot; in Hawaii</td>
<td>$22,870</td>
<td>Ken Love</td>
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<td>FW19-339</td>
<td>Demonstrating Viability of Cooperative Swine Aggregator Using Inoculated Deep Litter System</td>
<td>$25,000</td>
<td>Atto Assi</td>
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<td>FW19-344</td>
<td>Different Poultry Housing Options for Chickens to Determine Fastest Growth Rate</td>
<td>$13,700</td>
<td>Nicole Correa</td>
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<tr>
<td>FW19-349</td>
<td>Performance of novel clonal cacao accessions in Hawaii under sustainable farming conditions</td>
<td>$20,000</td>
<td>Dr. Pierre Broun</td>
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<tr>
<td>FW19-350</td>
<td>Comparing Bird Deterrent Strategies to Increase Sustainability and Production of Fruit Crops in Hawaii</td>
<td>$18,620</td>
<td>Paul De Filippi</td>
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<td>FW18-052</td>
<td>A Living Mulch Income Enhancer</td>
<td>$19,092</td>
<td>Kevin Chan</td>
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<td>FW18-034</td>
<td>Can Intensive Rotational Grazing in combination with Indigenous Microorganism Application improve soil condition (i.e., soil carbon, minerals, and microbial life)?</td>
<td>$19,953</td>
<td>Kyle Fisher</td>
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<td>FW17-034</td>
<td>The Mango Loa Project</td>
<td>$19,878</td>
<td>Umi Martin</td>
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<td>FW16-003</td>
<td>Establishing Profitable Durian Crops in Hawaii</td>
<td>$28,192</td>
<td>Ken Love</td>
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<td>FW16-023</td>
<td>Malama Kou Kino</td>
<td>$20,000</td>
<td>Melanie Holt</td>
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<tr>
<td>FW15-035</td>
<td>Producing Triploid Oysters</td>
<td>$24,992</td>
<td>David Nisbet</td>
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<tr>
<td>FW12-034</td>
<td>Grapes for tropical Hawaii</td>
<td>$17,370</td>
<td>Ken Love</td>
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<td>FW10-040</td>
<td>Relocating swarms for pollination: How feral bees can be integrated into sustainable farming strategies</td>
<td>$29,975</td>
<td>Jennifer Bach</td>
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</table>
FW10-056  Use of Cover Crops with Medicinal Herbs in North Hawaii  $20,117  Dr. Katherine Pomeroy  
Kohala Medicinal Herb Farm

FW09-002  No Chill Stone Fruit for Hawaii  $9,528  Ken Love  
Hawaii Tropical Fruit Growers

FW09-004  Integrating Existing Crop and Livestock Enterprises on a Native Hawaiian Homestead Farm  $12,580  Conrad Aquino  
Alton Arakaki  
UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service

FW09-012  Project Fresh: Mountain View Community Gardens  $30,000  Neena Roumell  
Eden Earthworks

FW09-025  Maximizing the Utilization of Bamboo in the Hawaiian Islands  $14,460  Rich von Wellsheim  
Whispering Winds Bamboo

FW09-027  Evaluating New Windbreaks and Cover Crops for Tropical Fruit Crops  $12,206  Jane Teves  
Puakala Farms  
Jane Teves  
Puakala Farms

FW09-308  Quantifying Secondary Compounds in Common Pasture Vegetation for Behavior Based Grazing Management in Hawaii  $41,760  Dr. Mark Thorne  
University of Hawaii at Manoa

FW09-311  Diversifying Hawaii’s Aquaculture with Clam and Oyster Culture  $50,000  Dr. Maria Haws  
Pacific Aquaculture and Coastal Resources Center  
Maria Haws  
Pacific Aquaculture & Coastal Resources Center

FW08-049  Healthy Foundation, Healthy Bees, Making Organic Wax Foundation for Beekeepers  $13,999  Richard Spiegel  
Volcano Island Honey Co.

FW07-034  Choosing the Best Figs for Hawaii  $25,000  Ken Love  
Hawaii Tropical Fruit Growers

FW05-314  A Superhero without a Cape: Using the Cover Crop Sunn Hemp to Feed the Soil, Suppress Nematodes and Smother Weeds  $7,716  Hooks Cerruti  
University of Hawaii

FW04-011  Conversion of Fish Processing Waste to Fish/Animal Feed, Chum and Fertilizer  $6,695  Takumi Shirakawa  
Shirakawa Farm

FW03-018  Recovery of Tropical Pasture Systems  $6,875  Dwayne Cypriano

FW03-025  DDT Removal Using Biodynamic Agricultural Methods  $6,932  Marie Mauger  
Spirit of the Earth Farm

FW03-205  Field Management/Mulch Project  $5,232  Fernand Severi

FW03-206  Grow Your Own Sustainable Barn  $7,396  Robert Layer

FW02-008  Increasing Marketable Production of Exotic Tropical Fruit with Protective Covering  $12,850  Ken Love  
Hawaii Tropical Fruit Growers
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<th>Project #</th>
<th>Project Title</th>
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<tbody>
<tr>
<td>FW02-040</td>
<td>Increasing Sustainable Agricultural Production in High Polynesian Islands</td>
<td>$7,500</td>
<td>Ivona Ballard Whutnutsamoa</td>
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<td>FW01-021</td>
<td>Increasing the value of products from small family farms by enriching the culinary experience of the local consumers</td>
<td>$4,000</td>
<td>Glenn Shinsato Univ of HI</td>
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<td>FW00-077</td>
<td>Rejuvenation of a 60 Year Old Lychee Orchard by Pruning and Fertilizer Applications to Maximize Production</td>
<td>$4,000</td>
<td>Elisabeth Ladoux</td>
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<td>FW00-335</td>
<td>An On-Farm Educational Approach to Directly Marketing “the Other White Meat”</td>
<td>$9,900</td>
<td>Daphne McKeehan</td>
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<td>FW99-056</td>
<td>Hot Water Immersion Unit for Disinestation of Hawaii-Grown Lychee and Longan</td>
<td>$5,000</td>
<td>Michael Strong</td>
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<td>FW99-059</td>
<td>Flower Induction of Rambutan</td>
<td>$2,100</td>
<td>Liloa Willard</td>
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<td>FW99-066</td>
<td>Lone Palm Sprouts Water Recapture and Recycle System</td>
<td>$5,000</td>
<td>Davide Rotstein</td>
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<td>FW98-004</td>
<td>The Conversion of Agricultural Waste into Plant and Fish Food</td>
<td>$3,400</td>
<td>Robert Gann</td>
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<td>FW98-062</td>
<td>Free Range Pork Production</td>
<td>$5,390</td>
<td>Samuel Okami</td>
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<tr>
<td>FW98-063</td>
<td>Total Utilization of Swine Waste for Crop and Hog Productivity</td>
<td>$4,985</td>
<td>Rondald McKeehan</td>
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<td>FW98-075</td>
<td>High Quality Perennial Forage Peanut (Arachis pintal) Pastures for Sustainable Cattle Production in Hawaii</td>
<td>$5,000</td>
<td>Zach Gibson</td>
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<td>FW97-004</td>
<td>Sustainable Alternatives To Herbicide for Weed Control: Using Cover Crops To Combat Panicum repens and Panicum maximum In Lowland, Eastern Hawaii</td>
<td>$3,500</td>
<td>Paul Acciavatti Wailea Spring Farm</td>
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<td>FW97-017</td>
<td>Growing Ring-Spot Virus-Free Papayas Using Anti-transpirants and Other Sustainable Techniques</td>
<td>$4,000</td>
<td>Jon Biloon</td>
</tr>
<tr>
<td>FW96-049</td>
<td>Sustainable Greenhouse Tomato Production: Evaluating Alternatives to Pesticide Use for Controlling Tomato Pinworm Larvae in Hawaii</td>
<td>$3,520</td>
<td>Shari Tresky Mariah Farm</td>
</tr>
</tbody>
</table>

**GRADUATE STUDENT GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>GW22-233</td>
<td>Examining the biofumigation and innate potential of ground papaya seeds to induce host plant resistance against soil-borne pathogens in Hawaii</td>
<td>$29,348</td>
<td>Dr.Koon-Hui Wang University of Hawaii, Lauren Braley University of Hawaii, Manoa</td>
</tr>
<tr>
<td>Project #</td>
<td>Project Title</td>
<td>SARE Support</td>
<td>Project Leaders</td>
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</tbody>
</table>
| GW22-234 | The evolution and importance of Natural Varroa Resistance in Hawaii's Honeybees | $30,000      | Dr.Ethel Villalobos  
Stephen Martin  
University of Hawaii  
Stephen Martin  
University of Salford  
Kevin Sander  
University of Hawaii at Manoa |
| GW22-242 | Designing a Regenerative Systems Approach for Sustainable Turmeric Production | $29,521      | Dr.Theodore Radovich  
University of Hawaii, Manoa  
Alina Iliadis  
University of Hawaii Manoa |
| GW20-211 | A key to sustainable Hawaiian agricultural production resides with the endemic sandalwood species | $24,997      | Dr.Travis Idol  
University of Hawaii  
Emily Thyroff  
University of Hawai'i Mānoa  
Emily Thyroff  
University of Hawai'i |
| GW20-212 | Evaluate sorghum and sorghum-sudangrass hybrids as soil builders and microbial enhancer crops in the tropic. | $25,000      | Dr.Koon-Hui Wang  
University of Hawaii  
Dr.Amjad Ahmad  
University of Hawaii at Manoa  
Roshan Paudel  
University of Hawaii  
Joshua Silva  
University of Hawaii at Manoa, College of Tropical Agriculture  
Dr.Philip Waisen  
University of California Agriculture and Natural Resources Division  
Roshan Paudel  
University of Hawaii |
| GW19-201 | A Hawai'i Soil Health Index to Guide Farmer Adoption of Sustainable Management Practices | $23,036      | Jamie (Jayme) Barton, M.A.  
Hawaii Agriculture Research Center  
Dr.Susan Crow  
University of Hawaii Manoa  
Jonathan Deeniki  
University of Hawaii at Manoa  
Elaine Vizka  
University of Hawaii at Manoa |
| GW18-026 | Cover Crop "5-in-1 Approach" for Nematode Management Using Mustard and Oil Radish | $24,998      | Dr.Koon-Hui Wang  
University of Hawaii  
Dr.Philip Waisen  
University of California Agriculture and Natural Resources Division |
| GW18-014 | Conditioning Sheep to Avoid Koa Foilage: An opportunity for productive silvopasteres in Hawaii. | $24,920      | Rebecca Ryals  
University of Hawaii - Manoa  
Nicholas Krueger  
University of Hawaii |
| GW18-104 | Conservation Biological Control of Coffee Berry Borer by Applying Nitrogen Fixing Tree Mulch to Enhance Indigenous Entomopathogenic Nematodes | $24,948      | Dr.Brent Sipes  
University of Hawaii  
Dr.Brent Sipes  
University of Hawaii |
| GW18-187 | Quantifying the Environmental Impact of Doubling Hawaii's Local Food Supply | $21,119      | Dr.Kimberly Carlson  
University of Hawaii  
Tanya Torres  
University of Hawaii |
| GW14-007 | Evaluating the Potential of Oyster Mushroom Compost Waste for Plant-Parasitic Nematode Management | $24,920      | Dr.Koon-Hui Wang  
University of Hawaii  
Shelby Ching  
University of Hawaii at Manoa |
OW22-374  Mitigation of Breadfruit Orchard Establishment Challenges in Hawai‘i: Assessing Best Practices to Address Weed Management and Ungulate Control  $74,998  Dana Shapiro  Hawaii Ulu Cooperative  Kyle Jackson  Hawai‘i ‘Ulu Cooperative

OW20-354  Healthy Soils Hawai‘i: Building Better Soil on Agricultural Lands through Soil Health Planning  $49,557  Dave Elliott  Oahu RC&D  Hannah Hubanks  Oahu RC&D

OW19-344  Breadfruit Disease Identification and Varietal Resistance in Hawai‘i  $49,971  Dr.Noa Lincoln  University of Hawaii at Manoa  Eli Isele  University of Hawaii  Dana Shapiro  Hawaii Ulu Producers Cooperative  Janice Uchida  Dept. of Plant Pathology, University of Hawaii

OW18-017  Pest reduction on agricultural lands due to Hawaiian short-eared owls  $49,755  Dr.Melissa Price  University of Hawaii

OW17-037  Successful Cacao Establishment through Improved Soil Management  $49,789  Dave Elliott  Oahu RC&D

OW16-022  Cover Crop Cocktails: Evaluating Costs and Benefits of Mixed-Species Plantings  $41,606  Dave Elliott  Oahu RC&D

OW15-019  Sustainable Pest Management Approaches for High Tunnel Screenhouse Production in the Tropics  $49,989  Dr.Koon-Hui Wang  University of Hawaii

OW13-034  Enhancing the sustainability of grass-fed beef production in Hawaii via carcass and meat quality improvement  $49,948  Dr.Yong soo Kim  University of Hawaii

OW12-041  Effectiveness of Beauveria bassiana on coffee berry borer in different agroclimatic zones  $49,403  Dr.Elsie Burbano Greco  University of Hawaii at Manoa

OW11-308  Control of coffee berry borer and increase of coffee yields using Surround WP (kaolin)  $47,648  Dr.Shawn Steiman  Coffee Consulting

OW11-309  Training Livestock to Eat Weeds in the Tropical Pacific and Evaluating the Effects on Meat Quality for Stronger Ranch Profits  $49,610  Matthew Stevenson  University of Hawaii

OW11-310  Master Farmer Workshop Series  $49,812  Dave Elliott  Oahu RC&D

Total funding from the USDA SARE program to Hawaii  $7,453,049

For further information on projects, contact Western SARE at (406) 994-4789 or wsare@montana.edu.
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