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 $404 million to more than 8,774 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.

www.sare.org

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

Hawaii

Project Highlight: Pest Reduction on Agricultural Lands due to Hawaiian Short-eared Owls

If you can encourage a threatened native species, help control non-native pests, benefit the state’s farmers, and preserve a culturally important icon, you’ve hit an ecological grand slam. That’s exactly what the University of Hawaii’s Melissa Price is trying to do with the islands’ pueo owls. The native pueo have an important place in the island’s spiritual life and are listed as threatened on Oahu. Exact numbers are hard to come by. Getting a better idea of the population and distribution of pueo was one of the objectives of Price’s project. In fact, the owls are so hard to count, some people told Price her team would be lucky to find any pueo at all. However, based on sightings and surveys, Price has documented the birds nest in wetlands, at higher elevations, and in native forests under ferns.

Hawaii also has barn owls, which were introduced to the island ecosystem in the 1950s, but barn owls prey on both native and non-native species. Price’s research documented the seasonal use of agricultural lands by pueo and developed recommendations for producers on how to conserve or create pueo habitat to get their pest-management benefits. Due to increased knowledge about pueo, producers are now helping to achieve a “win-win-win” for the native Pueo, for Hawai’i conservation, and for economic benefits to agriculture.

For more information on these projects, see sare.org/projects, and search for project number OW18-017.

SARE in Hawaii

western.sare.org/state-profiles/hawaii/

$3,586,367 in total funding

39 grant project

(since 1988)

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

Grants awarded 2019–2024

Total awards: **39 grants**
- 15 Farmer/Rancher
- 8 Research and Education
- 4 Professional Development Program
- 4 On Farm Research/Partnership
- 8 Graduate Student

Total funding: **$3,586,367**
- $329,002 Farmer/Rancher
- $2,446,812 Research and Education
- $339,578 Professional Development Program
- $249,073 On Farm Research/Partnership
- $221,902 Graduate Student

Find a complete list of projects on page 3.

Farmer and rancher impacts 2019–2024

SARE grantees have reported the following impacts from their projects:

- **4,783 farmers participated in a SARE-funded project**
- **1,167 farmers reported a change in knowledge, awareness, skills or attitude**
- **191 farmers changed a practice**

Find a complete list of projects on page 3.

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-profiles/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](http://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 $9,234,590 grants to support 134 projects, including but not limited to, 33 research and/or education projects, 20 professional development projects and 55 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>
| SW24-003  | Improving the sustainability of avocado lace bug (Pseudocysta perceae) management through economic threshold analysis | $348,022     | Dr. Angelita Acebes-Doria  
DKI US Pacific Basin Agricultural Research Center, USDA Agricultural Research Service |
| SW24-008  | Breadfruit Agroforestry - Overcoming Barriers to Adoption                      | $313,337     | Dr. Noa Lincoln 
University of Hawaii at Manoa  
Sharon Wages  
University of Hawaii |
| SW24-010  | Developing a Pesticide Resistance Management regime utilizing soluble silicon fertilizer | $348,523     | Dr. Joanna Bloese  
University of Hawaii  
Dr. Teresita Amore  
University of Hawaii at Manoa  
Russell Galanti  
University of Hawaii at Manoa  
Dr. Lisa Keith  
USDA ARS  
Hannah Lutgen  
University of Hawaii at Manoa  
Dr. Stuart Nakamoto  
U. of Hawaii Manoa, Human Nutrition, Food, and Animal Sciences  
Dr. Alberto Ricordi  
University of Hawaii at Manoa  
Dr. Jon Suzuki  
USDA ARS |
| SW23-955  | Seedless Leucaena hybrids for sustainable silvopasture systems                | $348,722     | Dr. Travis Idol  
University of Hawaii  
Dr. Dulal Borthakur  
University of Hawaii at Manoa  
Dr. Rajesh Jha  
University of Hawaii at Manoa  
Melelani Oshiro  
University of Hawaii at Manoa  
Shannon Sand  
University of Hawaii at Manoa |
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

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

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

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
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

Assessing and Sharing Breadfruit Management Practices

$220,811

Dr. Noa Lincoln
University of Hawaii at Manoa

Improving Nitrogen Synchronization of Local Fertilizers, Soil Fertility, and Crop Quality with Biochar Application

$259,816

Dr. Nguyen Hue
University of Hawaii at Manoa

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
<table>
<thead>
<tr>
<th>Project ID</th>
<th>Title</th>
<th>Funding</th>
<th>Principal Investigator</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW14-026</td>
<td>High nutrient solution fertilizers derived from local organic inputs for field and greenhouse application in the tropics</td>
<td>$170,466</td>
<td>Dr. Amjad Ahmad</td>
<td>University of Hawaii at Manoa</td>
</tr>
<tr>
<td>SW12-040</td>
<td>Low-input integrated management of tomato viruses in Hawaii</td>
<td>$297,296</td>
<td>Dr. Mark Wright</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td>SW12-114</td>
<td>Secondary Effects of Behavior-based Pasture Management</td>
<td>$37,125</td>
<td>Matthew Stevenson</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td>SW11-052</td>
<td>Developing sustainable pest management strategies against major pests of papaya in Hawaii</td>
<td>$148,174</td>
<td>Dr. Leyla Kaufman</td>
<td>University of Hawaii at Manoa</td>
</tr>
<tr>
<td>SW11-055</td>
<td>Reducing Pacific Island Growers’ Reliance on Off-island Fertilizer Sources Through Improved Awareness and Efficient Use of Local</td>
<td>$284,070</td>
<td>Dr. Theodore Radovich</td>
<td>University of Hawaii, Manoa</td>
</tr>
<tr>
<td>SW09-102</td>
<td>Voluntary Long-Term Protection of Agricultural Land in Hawaii</td>
<td>$82,814</td>
<td>Dr. Christopher Lepczyk</td>
<td>University of Hawaii at Manoa</td>
</tr>
<tr>
<td>SW09-502</td>
<td>Sustaining Molokai Native Hawaiian Family Farms</td>
<td>$47,420</td>
<td>Alton Arakaki</td>
<td>UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Glenn Teves</td>
<td>UH CTAHR Cooperative Extension Service</td>
</tr>
<tr>
<td>SW08-037</td>
<td>Sunn hemp and its allelopathic compounds for vegetable production in Hawaii and beyond</td>
<td>$156,105</td>
<td>Dr. Inga Zasada</td>
<td>USDA-ARS Horticultural Crops Research Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dr. Koon-Hui Wang</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dr. Cerruti R. R. Hooks</td>
<td>University of Maryland</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dr. Ming Li Wang</td>
<td>USDA-ARS, PGRCU</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jari Sugano</td>
<td>University of Hawaii, TPSS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dr. Mark Wright</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td>SW07-073</td>
<td>Enhancing Phytonutrient Content, Yield and Quality of Vegetables with Compost Tea in the Tropics</td>
<td>$162,500</td>
<td>Dr. Theodore Radovich</td>
<td>University of Hawaii, Manoa</td>
</tr>
</tbody>
</table>
| SW07-501 | Innovative SARE Coordinator Program: Virtual Field Days to Improve Farmer-Researcher-Extension Linkages | $25,000 | Jonathan Deenik  
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 |
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| LW89-011     | A Comparative Study of Low Input and High Input Taro Production in American Pacific with Special Reference to Pest Control | $258,430     | Agnes Vargo  
American Samoa Community College |
| WPDP24-031   | Building Bridges Across the Pacific: Harnessing Island and Remote Area Regional Food Business Centers to Promote Sustainable Agricultural Extension | $99,880      | Lucas McKinnon  
Hawaii Good Food Alliance  
Michelle Crisostomo  
Guahan Sustainable Culture  
Sharon Hurd  
Hawaii Department of Agriculture  
Robbi Mixon  
Alaska Food Policy Council  
Amanda Shaw  
HI Agriculture TA Hui; Oahu Ag and Conservation Ass.  
Jensen Uyeda  
University of Hawaii |
| WPDP23-012   | Training Market Systems Facilitators to Improve the Economic Viability of Hawaiʻi’s Small Farms | $89,983      | Dennis Flemming  
Hamakua Institute  
Adhann Iwashita  
Hamakua Institute  
Andrea Kuch  
Hamakua Institute  
Melissa Nagatsuka  
Hamakua Institute |
| 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 |
<table>
<thead>
<tr>
<th>ID</th>
<th>Project Title</th>
<th>Amount</th>
<th>Principal Investigator</th>
<th>Co-Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW17-004</td>
<td>Breadfruit Agroforestry for Pacific Island Revitalization</td>
<td>$73,689</td>
<td>Craig Elevitch</td>
<td></td>
</tr>
<tr>
<td>EW16-008</td>
<td>Agroforestry Design for Sustainable Production Systems in the U.S.-Affiliated Pacific Islands</td>
<td>$73,970</td>
<td>Craig Elevitch</td>
<td></td>
</tr>
<tr>
<td>EW13-010</td>
<td>Pollinator Use and Management: Training in Sustainable Practices for Ag Professionals</td>
<td>$65,386</td>
<td>Dr.Ethel Villalobos</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td>EW11-014</td>
<td>Hawai'i Community-Based Food Security</td>
<td>$58,520</td>
<td>Craig Elevitch</td>
<td>Hawaii Homegrown Food Network</td>
</tr>
<tr>
<td>EW08-013</td>
<td>Promoting Adaptive Management With 'Tropic Sun' sunn hemp (Crotolaria juncea) in Hawaii for Ecological Strategies in Weed Control, Nematode Suppression and Nutrient Management</td>
<td>$53,768</td>
<td>Dr.James Leary</td>
<td>University of Hawaii at Manoa</td>
</tr>
<tr>
<td>EW07-004</td>
<td>New Crops for Pacific Island Agroforestry</td>
<td>$80,000</td>
<td>Craig Elevitch</td>
<td>Hawaii Homegrown Food Network</td>
</tr>
<tr>
<td>EW05-009</td>
<td>Pacific Island Agroforestry Workshops and Field Visits</td>
<td>$59,777</td>
<td>Craig Elevitch</td>
<td></td>
</tr>
<tr>
<td>EW03-002</td>
<td>New Farmers: Choosing the Road Less Traveled</td>
<td>$90,000</td>
<td>Samir El-Swaify</td>
<td>University of Hawaii MANOA</td>
</tr>
<tr>
<td>EW02-001</td>
<td>Species Profiles for Pacific Island Agroforestry</td>
<td>$94,971</td>
<td>Craig Elevitch</td>
<td></td>
</tr>
<tr>
<td>EW00-026</td>
<td>Sustainable Pest Control for the Tropics</td>
<td>$78,090</td>
<td>Richard Bowen</td>
<td>Department of Nat Res and Envir Mgmt</td>
</tr>
<tr>
<td>EW98-004</td>
<td>Agroforestry Handbooks for Pacific Islands</td>
<td>$57,885</td>
<td>Craig Elevitch</td>
<td></td>
</tr>
<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>
<td>Department of Nat Res and Envir Mgmt</td>
</tr>
<tr>
<td>EW97-003</td>
<td>Tools for Sustainability: Sustainable Agriculture Video Training Tapes for the Pacific Islands Region</td>
<td>$64,295</td>
<td>John Craven</td>
<td>Common Heritage</td>
</tr>
<tr>
<td>Project #</td>
<td>Project Title</td>
<td>SARE Support</td>
<td>Project Leaders</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td>FW24-007</td>
<td>Pono ACRES: Establishing a Functional Forest Demonstration Site Using the Hybrid Ecosystem Model</td>
<td>$24,950</td>
<td>Shari Tresky, Wailea Spring Farm</td>
<td></td>
</tr>
<tr>
<td>FW24-012</td>
<td>Piloting an Integrated, decoupled aquaponics system for sustainable feed production.</td>
<td>$23,814</td>
<td>Elko Evans, Honest Greens</td>
<td></td>
</tr>
<tr>
<td>FW24-014</td>
<td>Improving Sustainable Coconut Production in Hawaii through Producer-Driven Tissue Culture Propagation and Threat Education</td>
<td>$24,949</td>
<td>Halina Smolak, New Eden Farms</td>
<td></td>
</tr>
<tr>
<td>FW24-020</td>
<td>Evaluation of Pasture Forages to Improve Drought Tolerance in Combination with Biodynamic Agricultural Methods</td>
<td>$24,814</td>
<td>Marie Mauger, Spirit of the Earth</td>
<td></td>
</tr>
<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, Bird and Bee Hawaii</td>
<td></td>
</tr>
<tr>
<td>FW21-375</td>
<td>The Mango Loa Project phase two: Improving Hawaii’s mango industry by incorporating high density orchard management systems</td>
<td>$16,533</td>
<td>Umi Martin, Umi Martin</td>
<td></td>
</tr>
<tr>
<td>FW21-378</td>
<td>Growing Table Grape Varieties for Subtropical Hawaii Using Organic Practices</td>
<td>$25,000</td>
<td>Gerry Herbert, Kawanui Farm</td>
<td></td>
</tr>
<tr>
<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, Island Harvest Inc.</td>
<td></td>
</tr>
<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Funding</td>
<td>Investigator/Contact details</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| FW20-366     | Integration of Multifunctional Dairy Water Buffalo (Bubalus bubalis) into a Whole Farm System in Hawaii: economic, ecological and social benefits. | $19,178 | Donald Heacock  
Kauai Organic Agroecosystems (KOA)                                                      |
| FW20-368     | Mamaki – Fertilization and branch bending trials for continuous leaf flush and soil fertility                                             | $20,000 | Dr. Ming Wei Koh  
Center for Getting Things Started                                                  |
| FW20-370     | Establishing "Bush Tucker" in Hawaii                                                                                                        | $22,870 | Ken Love  
Hawaii Tropical Fruit Growers                                                     |
| FW19-339     | Demonstrating Viability of Cooperative Swine Aggregator Using Inoculated Deep Litter System                                                 | $25,000 | Atto Assi  
Ohana Coffee Farm & Assi Piggery                                                   |
| FW19-344     | Different Poultry Housing Options for Chickens to Determine Fastest Growth Rate                                                             | $13,700 | Nicole Correa  
Double D Farm and Ranch L.L.C.                                                 |
| FW19-349     | Performance of novel clonal cacao accessions in Hawaii under sustainable farming conditions                                                  | $20,000 | Dr. Pierre Broun  
Ninole Cacao LLC                                                           |
| FW19-350     | Comparing Bird Deterrent Strategies to Increase Sustainability and Production of Fruit Crops in Hawaii                                        | $18,620 | Paul De Filippi  
Mauka Vista Farms LLC                                      |
| FW18-052     | A Living Mulch Income Enhancer                                                                                                               | $19,092 | Kevin Chan  
Kevin Chan                                                     |
| FW18-034     | Can Intensive Rotational Grazing in combination with Indigenous Microorganism Application improve soil condition (i.e., soil carbon, minerals, and microbial life)? | $19,953 | Kyle Fisher  
Graze and Sprout Farm                                               |
| FW17-034     | The Mango Loa Project                                                                                                                        | $19,878 | Umi Martin  
Umi Martin                                                   |
| FW16-003     | Establishing Profitable Durian Crops in Hawaii                                                                                              | $28,192 | Ken Love  
Hawaii Tropical Fruit Growers                               |
| FW16-023     | Malama Kou Kino                                                                                                                              | $20,000 | Melanie Holt  
Real Farm                                                   |
<table>
<thead>
<tr>
<th>Grant Number</th>
<th>Project Title</th>
<th>Amount</th>
<th>Principal investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW15-035</td>
<td>Producing Triploid Oysters</td>
<td>$24,992</td>
<td>David Nisbet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Goosepoint Oyster Co.</td>
</tr>
<tr>
<td>FW12-034</td>
<td>Grapes for tropical Hawaii</td>
<td>$17,370</td>
<td>Ken Love</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hawaii Tropical Fruit Growers</td>
</tr>
<tr>
<td>FW10-011</td>
<td>Organic Varroa Management - Beekeeper Education in Hawaii</td>
<td>$15,000</td>
<td>Richard Spiegel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Volcano Island Honey Co.</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Honeybee Education Program</td>
</tr>
<tr>
<td>FW10-056</td>
<td>Use of Cover Crops with Medicinal Herbs in North Hawaii</td>
<td>$20,117</td>
<td>Dr.Katherine Pomeroy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kohala Medicinal Herb Farm</td>
</tr>
<tr>
<td>FW09-002</td>
<td>No Chill Stone Fruit for Hawaii</td>
<td>$9,528</td>
<td>Ken Love</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hawaii Tropical Fruit Growers</td>
</tr>
<tr>
<td>FW09-004</td>
<td>Integrating Existing Crop and Livestock Enterprises on a Native Hawaiian Homestead Farm</td>
<td>$12,580</td>
<td>Conrad Aquino</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alton Arakaki</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service</td>
</tr>
<tr>
<td>FW09-012</td>
<td>Project Fresh: Mountain View Community Gardens</td>
<td>$30,000</td>
<td>Neena Roumell</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eden Earthworks</td>
</tr>
<tr>
<td>FW09-025</td>
<td>Maximizing the Utilization of Bamboo in the Hawaiian Islands</td>
<td>$14,460</td>
<td>Rich von Wellsheim</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Whispering Winds Bamboo</td>
</tr>
<tr>
<td>FW09-027</td>
<td>Evaluating New Windbreaks and Cover Crops for Tropical Fruit Crops</td>
<td>$12,206</td>
<td>Jane Teves</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Puakala Farms</td>
</tr>
<tr>
<td>FW09-308</td>
<td>Quantifying Secondary Compounds in Common Pasture Vegetation for Behavior Based Grazing Management in Hawaii</td>
<td>$41,760</td>
<td>Dr.Mark Thorne</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>University of Hawaii at Manoa</td>
</tr>
<tr>
<td>FW09-311</td>
<td>Diversifying Hawai‘i Aquaculture with Clam and Oyster Culture</td>
<td>$50,000</td>
<td>Dr.Maria Haws</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pacific Aquaculture and Coastal Resources Center</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maria Haws</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pacific Aquaculture &amp; Coastal Resources Center</td>
</tr>
</tbody>
</table>
Healthy Foundation, Healthy Bees, Making Organic Wax Foundation for Beekeepers

Choosing the Best Figs for Hawaii

A Superhero without a Cape: Using the Cover Crop Sunn Hemp to Feed the Soil, Suppress Nematodes and Smother Weeds

Conversion of Fish Processing Waste to Fish/Animal Feed, Chum and Fertilizer

Recovery of Tropical Pasture Systems

DDT Removal Using Biodynamic Agricultural Methods

Field Management/Mulch Project

Grow Your Own Sustainable Barn

Increasing Marketable Production of Exotic Tropical Fruit with Protective Covering

Increasing Sustainable Agricultural Production in High Polynesian Islands

Increasing the value of products from small family farms by enriching the culinary experience of the local consumers

Rejuvenation of a 60 Year Old Lychee Orchard by Pruning and Fertilizer Applications to Maximize Production

An On-Farm Educational Approach to Directly Marketing "the Other White Meat"

$13,999

$25,000

$7,716

$6,695

$6,875

$6,932

$5,232

$7,396

$12,850

$7,500

$4,000

$4,000

$9,900

Richard Spiegel
Volcano Island Honey Co.

Ken Love
Hawaii Tropical Fruit Growers

Hooks Cerruti
University of Hawaii

Takumi Shirakawa
Shirakawa Farm

Dwayne Cypriano

Marie Mauger
Spirit of the Earth Farm

Fernand Severi

Robert Layer

Ken Love
Hawaii Tropical Fruit Growers

Ivona Ballard
Whutnutsamoa

Glenn Shinsato
Univ of HI

Elisabeth Ladoux

Daphne McKeehan
FW99-056 Hot Water Immersion Unit for Disinfestation of Hawaii-Grown Lychee and Longan $5,000 Michael Strong

FW99-059 Flower Induction of Rambutan $2,100 Liloa Willard

FW99-066 Lone Palm Sprouts Water Recapture and Recycle System $5,000 Davide Rotstein

FW98-004 The Conversion of Agricultural Waste into Plant and Fish Food $3,400 Robert Gann

FW98-062 Free Range Pork Production $5,390 Samuel Okami

FW98-063 Total Utilization of Swine Waste for Crop and Hog Productivity $4,985 Rondald McKeehan

FW98-075 High Quality Perennial Forage Peanut (Arachis pintal) Pastures for Sustainable Cattle Production in Hawaii $5,000 Zach Gibson

FW97-004 Sustainable Alternatives To Herbicide for Weed Control: Using Cover Crops To Combat Panicum repens and Panicum maximum In Lowland, Eastern Hawaii $3,500 Paul Acciavatti Wailea Spring Farm

FW97-017 Growing Ring-Spot Virus-Free Papayas Using Anti-transpirants and Other Sustainable Techniques $4,000 Jon Bilo

FW96-049 Sustainable Greenhouse Tomato Production: Evaluating Alternatives to Pesticide Use for Controlling Tomato Pinworm Larvae in Hawaii $3,520 Shari Tresky Wailea Spring Farm

**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>GW24-006</td>
<td>Integrating the Farmer into Pest Management Innovation for Sweetpotatoes.</td>
<td>$30,000</td>
<td>Dr.Koon-Hui Wang University of Hawaii Dr.Thao Le University of Hawaii Benjamin Wiseman University of Hawaii at Manoa</td>
</tr>
<tr>
<td>Project Code</td>
<td>Title</td>
<td>Budget</td>
<td>Principal Investigator(s)</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| GW24-007     | Improving Sustainable Hawaiian Sandalwood Silviculture and Endemic Species Conservation with Mixed Stand Management | $30,000 | Dr.Travis Idol  
James Friday  
James Friday  
Pandu Wirabuana  
Pandu Wirabuana  
University of Hawai'i at Manoa  
University of Hawai'i at Manoa  
University of Hawai'i at Manoa |
| GW22-233     | Examining the biofumigation and innate potential of ground papaya seeds to induce host plant resistance against soil-borne pathogens in Hawaii | $29,348 | Dr.Koon-Hui Wang  
Lauren Braley  
University of Hawaii  
University of Hawai'i at Manoa |
| GW22-234     | The evolution and importance of Natural Varroa Resistance in Hawaii's Honeybees          | $30,000 | Dr.Ethel Villalobos  
Stephen Martin  
Kevin Sander  
University of Hawaii  
University of Hawaii at Manoa |
| GW22-242     | Designing a Regenerative Systems Approach for Sustainable Turmeric Production            | $29,521 | Dr.Theodore Radovich  
Alina Iliadis  
University of Hawaii, Manoa  
University of Hawaii, Manoa |
| GW20-211     | A key to sustainable Hawaiian agricultural production resides with the endemic sandalwood species | $24,997 | Dr.Travis Idol  
Emily Thyroff  
University of Hawai'i at Manoa  
University of Hawai'i at Manoa  
University of Hawai'i at Manoa |
| GW20-212     | Evaluate sorghum and sorghum-sudangrass hybrids as soil builders and microbial enhancer crops in the tropic. | $25,000 | Dr.Koon-Hui Wang  
Dr.Amjad Ahmad  
Roshan Paudel  
University of Hawaii  
University of Hawaii  
University of Hawaii  
University of Hawaii at Manoa |
| GW19-201     | A Hawai’i Soil Health Index to Guide Farmer Adoption of Sustainable Management Practices | $23,036 | Jamie (Jayme) Barton, M.A.  
Dr.Susan Crow  
Jonathan Deenik  
Elaine Vizka  
University of Hawaii  
University of Hawaii  
University of Hawaii  
University of Hawaii at Manoa  
University of Hawaii at Manoa  
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.Phillip Waisen University of California Agriculture and Natural Resources Division

GW18-014  Conditioning Sheep to Avoid Koa Foilage: An opportunity for productive silvopastures in Hawaii. $24,920 Rebecca Ryals University of Hawaii - Manoa Nicholas Krueger University of Hawaii - Manoa

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

ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>OW23-378</td>
<td>Estimating the Application Rate of Locally Produced Liquid Organic Fertilizer to Meet Crop N Requirement</td>
<td>$74,547</td>
<td>Dr.Amjad Ahmad University of Hawaii at Manoa Joshua Silva University of Hawaii, College of Tropical Agriculture and Jensen Uyeda University of Hawaii</td>
</tr>
<tr>
<td>OW22-374</td>
<td>Mitigation of Breadfruit Orchard Establishment Challenges in Hawai'i: Assessing Best Practices to Address Weed Management and Ungulate Control</td>
<td>$74,998</td>
<td>Dana Shapiro Hawaii Ulu Cooperative Kyle Jackson Hawaii 'Ulu Cooperative</td>
</tr>
<tr>
<td>OW20-354</td>
<td>Healthy Soils Hawai'i: Building Better Soil on Agricultural Lands through Soil Health Planning</td>
<td>$49,557</td>
<td>Dave Elliott Oahu RC&amp;D Hannah Hubanks Oahu RC&amp;D</td>
</tr>
<tr>
<td>OW19-344</td>
<td>Breadfruit Disease Identification and Varietal Resistance in Hawai'i</td>
<td>$49,971</td>
<td>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</td>
</tr>
<tr>
<td>Project Number</td>
<td>Project Title</td>
<td>Funding Amount</td>
<td>Principal Investigator</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>OW18-017</td>
<td>Pest reduction on agricultural lands due to Hawaiian short-eared owls</td>
<td>$49,755</td>
<td>Dr. Melissa Price</td>
</tr>
<tr>
<td>OW17-037</td>
<td>Successful Cacao Establishment through Improved Soil Management</td>
<td>$49,789</td>
<td>Dave Elliott</td>
</tr>
<tr>
<td>OW16-022</td>
<td>Cover Crop Cocktails: Evaluating Costs and Benefits of Mixed-Species Plantings</td>
<td>$41,606</td>
<td>Dave Elliott</td>
</tr>
<tr>
<td>OW15-019</td>
<td>Sustainable Pest Management Approaches for High Tunnel Screenhouse Production in the Tropics</td>
<td>$49,989</td>
<td>Dr. Koon-Hui Wang</td>
</tr>
<tr>
<td>OW13-034</td>
<td>Enhancing the sustainability of grass-fed beef production in Hawaii via carcass and meat quality improvement</td>
<td>$49,948</td>
<td>Dr. Yong soo Kim</td>
</tr>
<tr>
<td>OW12-041</td>
<td>Effectiveness of Beauveria bassiana on coffee berry borer in different agroclimatic zones</td>
<td>$49,403</td>
<td>Dr. Elsie Burbano Greco</td>
</tr>
<tr>
<td>OW11-308</td>
<td>Control of coffee berry borer and increase of coffee yields using Surround WP (kaolin)</td>
<td>$47,648</td>
<td>Dr. Shawn Steiman</td>
</tr>
<tr>
<td>OW11-309</td>
<td>Training Livestock to Eat Weeds in the Tropical Pacific and Evaluating the Effects on Meat Quality for Stronger Ranch Profits</td>
<td>$49,610</td>
<td>Matthew Stevenson</td>
</tr>
<tr>
<td>OW11-310</td>
<td>Master Farmer Workshop Series</td>
<td>$49,812</td>
<td>Dave Elliott</td>
</tr>
</tbody>
</table>

**Total funding from the USDA SARE program to Hawaii**

**$9,234,590**

For further information on projects, contact Western SARE at (406) 994-4785 or wsare@montana.edu. Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).