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 $389 million to more than 8,542 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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**What is SARE?**

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

**Hawaii**

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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](http://sare.org/projects), and search for project number OW18-017.

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**SARE in Hawaii**

[western.sare.org/sare-in-your-state/hawaii](http://western.sare.org/sare-in-your-state/hawaii)

$7,966,301 in total funding

125 grant projects

(since 1988)

For a complete list of grant projects state by state, go to [www.sare.org/state-summaries](http://www.sare.org/state-summaries)

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www.sare.org
SARE in Hawaii

Grants awarded
2019–2024

Total awards: 29 grants
11 Farmer/Rancher
  5 Research and Education
  3 Professional Development Program
  4 On Farm Research/Partnership
  6 Graduate Student

Total funding: $2,318,078
$230,475 Farmer/Rancher
$1,436,930 Research and Education
$239,698 Professional Development Program
$249,073 On Farm Research/Partnership
$161,902 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:

4,596 farmers participated in a SARE-funded project
1,158 farmers reported a change in knowledge, awareness, skills or attitude
186 farmers changed a practice

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 $7,966,301 grants to support 124 projects, including but not limited to, 30 research and/or education projects, 19 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>
| 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 |
| 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 |
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Title</th>
<th>Amount</th>
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<th>Affiliation</th>
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<tr>
<td>SW20-911</td>
<td>Instant biofumigation using natural products from papaya seed waste for sustainable management of soil-borne plant pathogens</td>
<td>$349,995</td>
<td>Dr. Wei Wen Su</td>
<td>University of Hawaii at Manoa, College of Tropical Ag &amp; Human Resources (CTAHR)</td>
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<tr>
<td></td>
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<td></td>
<td>Dr. Stuart Nakamoto</td>
<td>U. of Hawaii Manoa, Human Nutrition, Food, and Animal Sciences</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Dr. Koon-Hui Wang</td>
<td>University of Hawaii</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Dr. Tao Yan</td>
<td>Dept. of Civil &amp; Environ. Engineering, University of Hawaii at M</td>
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<tr>
<td>SW17-050</td>
<td>Assessing and Sharing Breadfruit Management Practices</td>
<td>$220,811</td>
<td>Dr. Noa Lincoln</td>
<td>University of Hawaii at Manoa</td>
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<tr>
<td>SW16-021</td>
<td>Improving Nitrogen Synchronization of Local Fertilizers, Soil Fertility, and Crop Quality with Biochar Application</td>
<td>$259,816</td>
<td>Dr. Nguyen Hue</td>
<td>University of Hawaii at Manoa</td>
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<tr>
<td>SW16-023</td>
<td>Development of Individual Free-Choice Mineral Supplementation Program for Sustainable Grazing Management of Hawaii’s Rangelands</td>
<td>$332,601</td>
<td>Dr. Mark Thorne</td>
<td>University of Hawaii at Manoa</td>
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<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>
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<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>
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<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>
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<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>
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<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>
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<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>
</tbody>
</table>
**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 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
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tr>
<td>SW99-005</td>
<td>Survival of Taro: Agronomic and Pathological Research For Sustainable Production</td>
<td>$146,700</td>
<td>Janice Uchida&lt;br&gt;Dept. of Plant Pathology, University of Hawaii</td>
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<tr>
<td>SW99-022</td>
<td>Adaptation of a Natural Farming System to Vegetable Farm Production in Hawaii.</td>
<td>$85,134</td>
<td>Clyde Fukuyama&lt;br&gt;HARC</td>
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<td>SW97-001</td>
<td>Management of Soil-borne Plant Parasitic Nematodes for Sustainable Production of Field Grown Tomatoes and Cucumbers by Cover Cropping</td>
<td>$21,900</td>
<td>John McHugh&lt;br&gt;Waiekele Farms</td>
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<tr>
<td>SW96-003</td>
<td>Evaluation of a Perennial Vegetable, Asparagus, as a New Commercial Crop for Hawaiian Farmers</td>
<td>$49,595</td>
<td>Susan Schenck&lt;br&gt;Hawaiian Agriculture Research Center</td>
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<tr>
<td>LWE92-002</td>
<td>Integrated Hog Farming and Market Gardening for Small Farmers in Tropical Areas of the Western Region</td>
<td>$36,000</td>
<td>Kent Fleming&lt;br&gt;University of Hawaii at Manoa</td>
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<tr>
<td>LW89-011</td>
<td>A Comparative Study of Low Input and High Input Taro Production in American Pacific with Special Reference to Pest Control</td>
<td>$258,430</td>
<td>Agnes Vargo&lt;br&gt;American Samoa Community College</td>
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**PROFESSIONAL DEVELOPMENT PROGRAM GRANTS**

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<tr>
<th>Project #</th>
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<tr>
<td>WPDP23-012</td>
<td>Training Market Systems Facilitators to Improve the Economic Viability of Hawai’i’s Small Farms</td>
<td>$89,983</td>
<td>Dennis Flemming&lt;br&gt;Hamakua Institute&lt;br&gt;Adhann Iwashita&lt;br&gt;Hamakua Institute&lt;br&gt;Andrea Kuch&lt;br&gt;Hamakua Institute&lt;br&gt;Melissa Nagatsuka&lt;br&gt;Hamakua Institute</td>
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<tr>
<td>WPDP19-21</td>
<td>Building Competencies in Hawaii’s Agricultural Professionals and Stakeholders in Under Represented Agricultural Communities Through Collaborative Partnerships. State of Hawaii.</td>
<td>$75,000</td>
<td>Joshua Silva&lt;br&gt;University of Hawaii at Manoa, College of Tropical Agriculture and Jari Sugano&lt;br&gt;University of Hawaii, TPSS&lt;br&gt;Michelle Gorham&lt;br&gt;West Oahu Soil and Water Conservation District&lt;br&gt;Dr. Koon-Hui Wang&lt;br&gt;University of Hawaii</td>
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<td>WPDP19-24</td>
<td>Co-Managing Food Safety and Land Stewardship on Hawaii Farms</td>
<td>$74,715</td>
<td>Dave Elliott&lt;br&gt;Hannah Hubanks&lt;br&gt;Jean Brokish&lt;br&gt;Oahu Resource Conservation and Development Council</td>
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<tr>
<td>EW18-023</td>
<td>Capacity building for Cooperative Extension in Micronesia to reduce Pacific Island food system vulnerability to climate variability</td>
<td>$74,858</td>
<td>Clay Trauernicht&lt;br&gt;University of Hawaii</td>
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<tr>
<td>EW17-004</td>
<td>Breadfruit Agroforestry for Pacific Island Revitalization</td>
<td>$73,689</td>
<td>Craig Elevitch&lt;br&gt;Permanent Agriculture Resources</td>
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<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&lt;br&gt;Permanent Agriculture Resources</td>
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<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&lt;br&gt;University of Hawaii</td>
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<tr>
<td>EW11-014</td>
<td>Hawaii Community-Based Food Security</td>
<td>$58,520</td>
<td>Craig Elevitch&lt;br&gt;Hawaii Homegrown Food Network</td>
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<tr>
<td>EW08-013</td>
<td>Promoting Adaptive Management With 'Tropic Sun' sunn hemp (Crotalaria juncea) in Hawaii for Ecological Strategies in Weed Control, Nematode Suppression and Nutrient Management</td>
<td>$53,768</td>
<td>Dr.james leary&lt;br&gt;University of Hawaii at Manoa&lt;br&gt;Dr.Brent Sipes&lt;br&gt;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>
<td>Craig Elevitch&lt;br&gt;Permanent Agriculture Resources&lt;br&gt;Hawaii Homegrown Food Network</td>
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<td>EW05-009</td>
<td>Pacific Island Agroforestry Workshops and Field Visits</td>
<td>$59,777</td>
<td>Craig Elevitch&lt;br&gt;Permanent Agriculture Resources</td>
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<td>EW03-002</td>
<td>New Farmers: Choosing the Road Less Traveled</td>
<td>$90,000</td>
<td>Samir El-Swaify&lt;br&gt;University of Hawaii 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&lt;br&gt;Permanent Agriculture Resources</td>
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</table>
EW00-026  Sustainable Pest Control for the Tropics  $78,090  Richard Bowen  
Department of Nat Res and Envir Mngt

EW98-004  Agroforestry Handbooks for Pacific Islands  $57,885  Craig Elevitch  
Permanent Agriculture Resources

EW98-012  Covering New Ground: Tropical Cover Crops for Improving Soil Quality  $84,500  Richard Bowen  
Department of Nat Res and Envir Mngt

EW97-003  Tools for Sustainability: Sustainable Agriculture Video Training Tapes for the Pacific Islands Region  $64,295  John Craven  
Common Heritage

EW96-014  Continuation - "Training Agents" in On-Farm Implementation of Sustainable Management Systems for Tropical Agriculture in Hawaii and the Pacific Region  $63,623  Po-Yung Lai  
University of Hawaii

EW94-014  Training "Agents" in On-Farm Implementation of Sustainable Management Systems for Tropical Agriculture in Hawaii and the Pacific Region  $89,000  Po-Yung Lai  
University of Hawaii

FARMER/RANCHER GRANTS

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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| FW22-409 | Improving Livelihoods of Farmers in Hawaii by Creating a Honey Marketing Model | $25,000      | Susan Collins  
Bird and Bee Hawaii |
| FW21-375 | The Mango Loa Project phase two: Improving Hawaii's mango industry by incorporating high density orchard management systems | $16,533      | Umi Martin  
Umi Martin |
| FW21-378 | Growing Table Grape Varieties for Subtropical Hawaii Using Organic Practices  | $25,000      | Gerry Herbert  
Kawanui Farm |
| FW21-381 | Evaluating the Potential of Cover Crops to Mitigate the Impact of Phytophthora in Macadamia Orchards  | $24,574      | Andrew Trump  
Island Harvest Inc. |
| 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

FW15-035  Producing Triploid Oysters $24,992  David Nisbet
Goosepoint Oyster Co.

FW12-034  Grapes for tropical Hawaii $17,370  Ken Love
Hawaii Tropical Fruit Growers
<table>
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<th>Investigator(s)</th>
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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 Honeybee Education Program</td>
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<td>FW10-056</td>
<td>Use of Cover Crops with Medicinal Herbs in North Hawaii</td>
<td>$20,117</td>
<td>Dr.Katherine Pomeroy Kohala Medicinal Herb Farm</td>
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<td>FW09-002</td>
<td>No Chill Stone Fruit for Hawaii</td>
<td>$9,528</td>
<td>Ken Love Hawaii Tropical Fruit Growers</td>
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<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 Alton Arakaki UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service</td>
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<td>FW09-012</td>
<td>Project Fresh: Mountain View Community Gardens</td>
<td>$30,000</td>
<td>Neena Roumell Eden Earthworks</td>
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<td>FW09-025</td>
<td>Maximizing the Utilization of Bamboo in the Hawaiian Islands</td>
<td>$14,460</td>
<td>Rich von Wellsheim Whispering Winds Bamboo</td>
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<td>FW09-027</td>
<td>Evaluating New Windbreaks and Cover Crops for Tropical Fruit Crops</td>
<td>$12,206</td>
<td>Jane Teves Puakala Farms</td>
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<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 University of Hawaii at Manoa</td>
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<tr>
<td>FW09-311</td>
<td>Diversifying Hawaii Aquaculture with Clam and Oyster Culture</td>
<td>$50,000</td>
<td>Dr.Maria Haws Pacific Aquaculture and Coastal Resources Center Maria Haws Pacific Aquaculture &amp; Coastal Resources Center</td>
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<td>FW08-049</td>
<td>Healthy Foundation, Healthy Bees, Making Organic Wax Foundation for Beekeepers</td>
<td>$13,999</td>
<td>Richard Spiegel Volcano Island Honey Co.</td>
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<td>FW07-034</td>
<td>Choosing the Best Figs for Hawaii</td>
<td>$25,000</td>
<td>Ken Love Hawaii Tropical Fruit Growers</td>
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<td>FW05-314</td>
<td>A Superhero without a Cape: Using the Cover Crop Sunn Hemp to Feed the Soil, Suppress Nematodes and Smother Weeds</td>
<td>$7,716</td>
<td>Hooks Cerruti</td>
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<tr>
<td>FW04-011</td>
<td>Conversion of Fish Processing Waste to Fish/Animal Feed, Chum and Fertilizer</td>
<td>$6,695</td>
<td>Takumi Shirakawa</td>
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<td>FW03-018</td>
<td>Recovery of Tropical Pasture Systems</td>
<td>$6,875</td>
<td>Dwayne Cypriano</td>
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<td>FW03-025</td>
<td>DDT Removal Using Biodynamic Agricultural Methods</td>
<td>$6,932</td>
<td>Marie Mauger</td>
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<td>FW03-205</td>
<td>Field Management/Mulch Project</td>
<td>$5,232</td>
<td>Fernand Severi</td>
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<td>FW03-206</td>
<td>Grow Your Own Sustainable Barn</td>
<td>$7,396</td>
<td>Robert Layer</td>
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<td>FW02-008</td>
<td>Increasing Marketable Production of Exotic Tropical Fruit with Protective Covering</td>
<td>$12,850</td>
<td>Ken Love</td>
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<tr>
<td>FW02-040</td>
<td>Increasing Sustainable Agricultural Production in High Polynesian Islands</td>
<td>$7,500</td>
<td>Ivona Ballard</td>
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<tr>
<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</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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<tr>
<td>FW00-335</td>
<td>An On-Farm Educational Approach to Directly Marketing &quot;the Other White Meat&quot;</td>
<td>$9,900</td>
<td>Daphne McKeehan</td>
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<td>FW99-056</td>
<td>Hot Water Immersion Unit for Disinfestation 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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</table>
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 Biloon

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>
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<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, Dr.Lauren Braley University of Hawaii, Manoa</td>
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<tr>
<td>GW22-234</td>
<td>The evolution and importance of Natural Varroa Resistance in Hawaii's Honeybees</td>
<td>$30,000</td>
<td>Dr.Ethel Villalobos University of Hawaii, Dr.Stephen Martin University of Salford, Dr.Kevin Sander University of Hawaii at Manoa</td>
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<td>GW22-242</td>
<td>Designing a Regenerative Systems Approach for Sustainable Turmeric Production</td>
<td>$29,521</td>
<td>Dr.Theodore Radovich University of Hawaii, Dr.Alina Iliadis University of Hawaii Manoa</td>
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<tr>
<td>Grant No.</td>
<td>Description</td>
<td>Amount</td>
<td>Principal Investigators</td>
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| 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 Deenik  
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 silvopastere 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 |
<table>
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<tr>
<th>Project #</th>
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<th>Project Leaders</th>
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</table>
| OW23-378  | Estimating the Application Rate of Locally Produced Liquid Organic Fertilizer to Meet Crop N Requirement | $74,547      | Dr. Amjad Ahmad  
University of Hawaii at Manoa  
Joshua Silva  
University of Hawaii at Manoa, College of Tropical Agriculture  
Jensen Uyeda  
University of Hawaii |
| OW22-374  | Mitigation of Breadfruit Orchard Establishment Challenges in Hawaiʻi: 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 |
<table>
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<tr>
<th>Project Code</th>
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<th>Funding</th>
<th>Investigator</th>
<th>Institution</th>
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<tbody>
<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>
<td>Coffea Consulting</td>
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<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>
<td>University of Hawaii</td>
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<tr>
<td>OW11-310</td>
<td>Master Farmer Workshop Series</td>
<td>$49,812</td>
<td>Dave Elliott</td>
<td>Oahu RC&amp;D</td>
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**Total funding from the USDA SARE program to Hawaii**

$7,966,301

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).