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 $333 million to more than 7,794 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

$6,577,355 in total funding
115 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: 115 grants
- 28 Research and Education
- 18 Professional Development Program
- 50 Farmer/Rancher
- 8 Graduate Student
- 11 On Farm Research/Partnership

Total funding: $6,577,355
- $3,783,714 Research and Education
- $1,312,047 Professional Development Program
- $750,568 Farmer/Rancher
- $193,938 Graduate Student
- $537,088 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 $6,577,355 grants to support 114 projects, including but not limited to, 27 research and/or education projects, 18 professional development projects and 50 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>
| 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 |
Voluntary Long-Term Protection of Agricultural Land in Hawaii
Sw09-102
$82,814
Dr. Christopher Lepczyk
University of Hawaii at Manoa

Sustaining Molokai Native Hawaiian Family Farms
Sw09-502
$47,420
Alton Arakaki
UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service
Glenn Teves
UH CTAHR Cooperative Extension Service

Sunn hemp and its allelopathic compounds for vegetable production in Hawaii and beyond
Sw08-037
$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

Enhancing Phytonutrient Content, Yield and Quality of Vegetables with Compost Tea in the Tropics
Sw07-073
$162,500
Dr. Theodore Radovich
University of Hawaii, Manoa

Innovative SARE Coordinator Program: Virtual Field Days to Improve Farmer-Researcher-Extension Linkages
Sw07-501
$25,000
Jonathan Deeniki
University of Hawaii at Manoa

Improving and extending the superhero status of the sunn hemp to other growers in need of help
Sw07-604
$10,000
Dr. Cerruti R. R. Hooks
University of Maryland
Dr. Koon-Hui Wang
University of Hawaii

Management of Banana Bunchy Top in Hawaii
Sw04-064
$90,458
Dr. Cerruti R. R. Hooks
University of Maryland

Cropping Systems to Control Tropical Soil-Borne Pests in Dryland-Grown Taro
Sw03-003
$257,827
Dr. Susan Miyasaka
University of Hawaii

Neem and Papaya Fruit Extracts and Ferric Phosphate for Control of Golden Apple Snail in Wetland Taro: Efficacy Testing
Sw03-010
$31,831
Lance Santo
Hawaii Agriculture Research Center
Mel Jackson
Hawaii Agriculture Research Center

Development of a Sustainable Polyculture and Marketing System for Exotic Tropical Fruits
Sw03-055
$156,800
Richard Bowen
Department of Nat Res and Envir Mngt

Nature Farming at Wheeler Elementary
Sw01-066
$13,460
Joe Lee
Wheeler Elementary School

Survival of Taro: Agronomic and Pathological Research For Sustainable Production
Sw99-005
$146,700
Janice Uchida
Dept. of Plant Pathology, University of Hawaii

Adaptation of a Natural Farming System to Vegetable Farm Production in Hawaii.
Sw99-022
$85,134
Clyde Fukuyama
HARC

Management of Soil-borne Plant Parasitic Nematodes for Sustainable Production of Field Grown Tomatoes and Cucumbers by Cover Cropping
Sw97-001
$21,900
John McHugh
Walikele Farms

Evaluation of a Perennial Vegetable, Asparagus, as a New Commercial Crop for Hawaiian Farmers
Sw96-003
$49,595
Susan Schenck
Hawaiian Agriculture Research Center
### Professional Development Program Grants

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<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, 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</td>
</tr>
<tr>
<td>WPDP19-24</td>
<td>Co-Managing Food Safety and Land Stewardship on Hawaii Farms</td>
<td>$74,715</td>
<td>Dave Elliott, Oahu RC&amp;D; Hannah Hubanks, Oahu RC&amp;D; Jean Brokish, Oahu Resource Conservation and Development Council</td>
</tr>
<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, University of Hawaii</td>
</tr>
<tr>
<td>EW17-004</td>
<td>Breadfruit Agroforestry for Pacific Island Revitalization</td>
<td>$73,689</td>
<td>Craig Elevitch, Permanent Agriculture Resources</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, Permanent Agriculture Resources</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, 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, 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, University of Hawaii at Manoa; Dr. Brent Sipes, University of Hawaii</td>
</tr>
<tr>
<td>EW07-004</td>
<td>New Crops for Pacific Island Agroforestry</td>
<td>$80,000</td>
<td>Craig Elevitch, Permanent Agriculture Resources; 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, Permanent Agriculture Resources</td>
</tr>
<tr>
<td>EW03-002</td>
<td>New Farmers: Choosing the Road Less Traveled</td>
<td>$90,000</td>
<td>Samir El-Swaify, University of Hawaii MANOA</td>
</tr>
</tbody>
</table>
EW02-001  Species Profiles for Pacific Island Agroforestry  $94,971  Craig Elevitch
            Permanent Agriculture Resources

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

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Umi Martin</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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kawanui Farm</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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Island Harvest Inc.</td>
</tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kauai Organic Agroecosystems (KOA)</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Center for Getting Things Started</td>
</tr>
<tr>
<td>FW20-370</td>
<td>Establishing “Bush Tucker” in Hawaii</td>
<td>$22,870</td>
<td>Ken Love</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hawaii Tropical Fruit Growers</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ohana Coffee Farm &amp; Assi Piggery</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Double D Farm and Ranch L.L.C.</td>
</tr>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ninole Cacao LLC</td>
</tr>
<tr>
<td>Project ID</td>
<td>Project Title</td>
<td>Funding</td>
<td>Principal Investigator(s)</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------------------------------------------------------------</td>
</tr>
<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 (Mauka Vista Farms LLC)</td>
</tr>
<tr>
<td>FW18-052</td>
<td>A Living Mulch Income Enhancer</td>
<td>$19,092</td>
<td>Kevin Chan (Kevin Chan)</td>
</tr>
<tr>
<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 (Graze and Sprout Farm)</td>
</tr>
<tr>
<td>FW17-034</td>
<td>The Mango Loa Project</td>
<td>$19,878</td>
<td>Umi Martin (Umi Martin)</td>
</tr>
<tr>
<td>FW16-003</td>
<td>Establishing Profitable Durian Crops in Hawaii</td>
<td>$28,192</td>
<td>Ken Love (Hawaii Tropical Fruit Growers)</td>
</tr>
<tr>
<td>FW16-023</td>
<td>Malama Kou Kino</td>
<td>$20,000</td>
<td>Melanie Holt (Real Farm)</td>
</tr>
<tr>
<td>FW15-035</td>
<td>Producing Triploid Oysters</td>
<td>$24,992</td>
<td>David Nisbet (Goosepoint Oyster Co.)</td>
</tr>
<tr>
<td>FW12-034</td>
<td>Grapes for tropical Hawaii</td>
<td>$17,370</td>
<td>Ken Love (Hawaii Tropical Fruit Growers)</td>
</tr>
<tr>
<td>FW10-011</td>
<td>Organic Varroa Management &amp; Beekeeper Education in Hawaii</td>
<td>$15,000</td>
<td>Richard Spiegel (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 (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 (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 (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 (Alton Arakaki)</td>
</tr>
<tr>
<td>FW09-012</td>
<td>Project Fresh: Mountain View Community Gardens</td>
<td>$30,000</td>
<td>Neena Roumell (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 (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 (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 (University of Hawaii at Manoa)</td>
</tr>
</tbody>
</table>
FW09-311 Diversifying Hawai‘i 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

FW02-040 Increasing Sustainable Agricultural Production in High Polynesian Islands $7,500 Ivona Ballard Whutnutsamoa

FW01-021 Increasing the value of products from small family farms by enriching the culinary experience of the local consumers $4,000 Glenn Shinsato Univ of HI

FW00-077 Rejuvenation of a 60 Year Old Lychee Orchard by Pruning and Fertilizer Applications to Maximize Production $4,000 Elisabeth Ladoux

FW00-335 An On-Farm Educational Approach to Directly Marketing “the Other White Meat” $9,900 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
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW98-004</td>
<td>The Conversion of Agricultural Waste into Plant and Fish Food</td>
<td>$3,400</td>
<td>Robert Gann</td>
</tr>
<tr>
<td>FW98-062</td>
<td>Free Range Pork Production</td>
<td>$5,390</td>
<td>Samuel Okami</td>
</tr>
<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>
</tr>
<tr>
<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>
</tr>
<tr>
<td>FW98-075</td>
<td>Sustainable Alternatives To Herbicide for Weed Control: Using Cover Crops To Combat Paninic repens and Panicum maximum In Lowland, Eastern Hawaii</td>
<td>$3,500</td>
<td>Paul Acciavatti, Wailea Spring Farm</td>
</tr>
<tr>
<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 Biloow</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>
<tr>
<td>GW20-211</td>
<td>A key to sustainable Hawaiian agricultural production resides with the endemic sandalwood species</td>
<td>$24,997</td>
<td>Dr. Travis Idol, University of Hawaii, Emily Thyroff, University of Hawai<code>i Mānoa, Emily Thyroff, University of Hawai</code>i</td>
</tr>
<tr>
<td>GW20-212</td>
<td>Evaluate sorghum and sorghum-sudangrass hybrids as soil builders and microbial enhancer crops in the tropic.</td>
<td>$25,000</td>
<td>Dr. Koon-Hui Wang, University of Hawaii, Dr. Amjad Ahmad, University of Hawai<code>i at Manoa, Roshan Paudel, University of Hawai</code>i, Joshua Silva, University of Hawai<code>i at Manoa, College of Tropical Agriculture, Philip Waisen, University of Hawai</code>i, Roshan Paudel, University of Hawai`i</td>
</tr>
<tr>
<td>GW19-201</td>
<td>A Hawai`i Soil Health Index to Guide Farmer Adoption of Sustainable Management Practices</td>
<td>$23,036</td>
<td>Jamie (Jayme) Barton, M.A. Hawaii Agriculture Research Center, Dr. Susan Crow, University of Hawaii Manoa, Jonathan Deeniki, University of Hawai<code>i at Manoa, Elaine Vizka, University of Hawai</code>i at Manoa</td>
</tr>
<tr>
<td>GW18-026</td>
<td>Cover Crop &quot;5-in-1 Approach&quot; for Nematode Management Using Mustard and Oil Radish</td>
<td>$24,998</td>
<td>Dr. Koon-Hui Wang, University of Hawaii, Philip Waisen, University of Hawai`i</td>
</tr>
<tr>
<td>GW18-014</td>
<td>Conditioning Sheep to Avoid Koa Foilage: An opportunity for productive silvopastures in Hawaii.</td>
<td>$24,920</td>
<td>Rebecca Ryals, University of Hawai<code>i - Manoa, Nicholas Krueger, University of Hawai</code>i - Manoa</td>
</tr>
</tbody>
</table>
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>
</table>
| 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  
Coffea 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**
For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu.
Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).