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 $332 million to more than 7,748 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.

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

$6,602,355 in total funding

116 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: **116 grants**
- 28 Research and Education
- 18 Professional Development Program
- 51 Farmer/Rancher
- 8 Graduate Student
- 11 On Farm Research/Partnership

Total funding: **$6,602,355**
- **$3,783,714**
  - Research and Education
- **$1,312,047**
  - Professional Development Program
- **$775,568**
  - 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.

Amjad Ahmad
University of Hawaii at Manoa
(808) 956-7985
alobady@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 $6,602,355 grants to support 115 projects, including but not limited to, 27 research and/or education projects, 18 professional development projects and 51 producer-led projects. Hawaii has also received additional SARE support through multi-state projects.

**RESEARCH AND EDUCATION GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| 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 |
| 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 |
<table>
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<tr>
<th>Project Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>Principal Investigators</th>
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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&lt;br&gt;University of Hawaii at Manoa</td>
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<td>SW09-502</td>
<td>Sustaining Molokai Native Hawaiian Family Farms</td>
<td>$47,420</td>
<td>Alton Arakaki&lt;br&gt;UH-College of Tropical Agriculture and Human Resources, Cooperative Extension Service&lt;br&gt;Glenn Teves&lt;br&gt;UH CTAHR Cooperative Extension Service</td>
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<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&lt;br&gt;USDA-ARS Horticultural Crops Research Lab&lt;br&gt;Dr. Koon-Hui Wang&lt;br&gt;University of Hawaii&lt;br&gt;Dr. Cerruti R. R. Hooks&lt;br&gt;University of Maryland&lt;br&gt;Dr. Ming Li Wang&lt;br&gt;USDA-ARS, PGRCU&lt;br&gt;Jari Sugano&lt;br&gt;University of Hawaii, TPSS&lt;br&gt;Dr. Mark Wright&lt;br&gt;University of Hawaii</td>
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<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&lt;br&gt;University of Hawaii, Manoa</td>
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<td>SW07-501</td>
<td>Innovative SARE Coordinator Program: Virtual Field Days to Improve Farmer-Researcher-Extension Linkages</td>
<td>$25,000</td>
<td>Jonathan Deeniki&lt;br&gt;University of Hawaii at Manoa</td>
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<td>SW07-604</td>
<td>Improving and extending the superhero status of the sunn hemp to other growers in need of help</td>
<td>$10,000</td>
<td>Dr. Cerruti R. R. Hooks&lt;br&gt;University of Maryland&lt;br&gt;Dr. Koon-Hui Wang&lt;br&gt;University of Hawaii</td>
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<td>SW04-064</td>
<td>Management of Banana Bunchy Top in Hawaii</td>
<td>$90,458</td>
<td>Dr. Cerruti R. R. Hooks&lt;br&gt;University of Maryland</td>
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<tr>
<td>SW03-003</td>
<td>Cropping Systems to Control Tropical Soil-Borne Pests in Dryland-Grown Taro</td>
<td>$257,827</td>
<td>Dr. Susan Miyasaka&lt;br&gt;University of Hawaii</td>
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<tr>
<td>SW03-010</td>
<td>Neem and Papaya Fruit Extracts and Ferric Phosphate for Control of Golden Apple Snail in Wetland Taro: Efficacy Testing</td>
<td>$31,831</td>
<td>Lance Santo&lt;br&gt;Hawaii Agriculture Research Center&lt;br&gt;Mel Jackson&lt;br&gt;Hawaii Agriculture Research Center</td>
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<tr>
<td>SW03-055</td>
<td>Development of a Sustainable Polyculture and Marketing System for Exotic Tropical Fruits</td>
<td>$156,800</td>
<td>Richard Bowen&lt;br&gt;Department of Nat Res and Envir Mngt</td>
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<td>SW01-066</td>
<td>Nature Farming at Wheeler Elementary</td>
<td>$13,460</td>
<td>Joe Lee&lt;br&gt;Wheeler Elementary School</td>
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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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<tr>
<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;Waikele 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>
</tr>
</tbody>
</table>

**Note:** The funding and principal investigator information may be updated or may vary depending on the source of the document.
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| WPDP19-21    | Building Competencies in Hawaii’s Agricultural Professionals and Stakeholders | $75,000      | Joshua Silva  
|              | in Under Represented Agricultural Communities Through Collaborative Partnerships. |              | University of Hawaii at Manoa, College of Tropical Agriculture  
|              | State of Hawaii                                                               |              | 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    | $74,858      | Clay Trauernicht  
|              | Island food system vulnerability to climate variability                       |              | University of Hawaii  
| EW17-004     | Breadfruit Agroforestry for Pacific Island Revitalization                      | $73,689      | Craig Elevitch  
|              |                                                                                |              | Permanent Agriculture Resources  
| EW16-008     | Agroforestry Design for Sustainable Production Systems in the U.S.-Affiliated   | $73,970      | Craig Elevitch  
|              | Pacific Islands                                                                |              | Permanent Agriculture Resources  
| EW13-010     | Pollinator Use and Management: Training in Sustainable Practices for Ag        | $65,386      | Dr. Ethel Villalobos  
|              | Professionals                                                                  |              | University of Hawaii  
| EW11-014     | Hawai’i Community-Based Food Security                                           | $58,520      | Craig Elevitch  
|              |                                                                                |              | Hawaii Homegrown Food Network  
| EW08-013     | Promoting Adaptive Management With ‘Tropic Sun’ sunn hemp (Crotolaria juncea)   | $53,768      | Dr. James Leary  
|              | in Hawaii for Ecological Strategies in Weed Control, Nematode Suppression and  |              | University of Hawaii at Manoa  
|              | Nutrient Management                                                            |              | Dr. Brent Sipes  
|              |                                                                                |              | University of Hawaii  
| EW07-004     | New Crops for Pacific Island Agroforestry                                      | $80,000      | Craig Elevitch  
|              |                                                                                |              | Permanent Agriculture Resources  
|              |                                                                                |              | Craig Elevitch  
|              |                                                                                |              | Hawaii Homegrown Food Network  
| EW05-009     | Pacific Island Agroforestry Workshops and Field Visits                         | $59,777      | Craig Elevitch  
|              |                                                                                |              | Permanent Agriculture Resources  
| EW03-002     | New Farmers: Choosing the Road Less Traveled                                   | $90,000      | Samir El-Swaify  
|              |                                                                                |              | University of Hawaii MANOA  
|
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

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<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<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>
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<td>FW21-378</td>
<td>Growing Table Grape Varieties for Subtropical Hawaii Using Organic Practices</td>
<td>$25,000</td>
<td>Gerry Herbert  Kawanui Farm</td>
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<td>FW21-381</td>
<td>Evaluating the Potential of Cover Crops to Mitigate the Impact of Phytophthora in Macadamia Orchards</td>
<td>$24,574</td>
<td>Andrew Trump Island Harvest Inc.</td>
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<td>FW21-384</td>
<td>Regenerating Hawaii’s Soils - A Battalion of Hawaii’s Indigenous Microbes – Optimization and timeline to microbially regenerate our degraded soil.</td>
<td>$25,000</td>
<td>Regina Enea  HAWAII AGRICULTURAL SOLUTIONS LLC</td>
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<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 Kauai Organic Agroecosystems (KOA)</td>
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<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 Mamaki Ola</td>
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<td>FW20-370</td>
<td>Establishing “Bush Tucker” in Hawaii</td>
<td>$22,870</td>
<td>Ken Love Hawaii Tropical Fruit Growers</td>
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<td>FW19-339</td>
<td>Demonstrating Viability of Cooperative Swine Aggregator Using Inoculated Deep Litter System</td>
<td>$25,000</td>
<td>Atto Assi Ohana Coffee Farm &amp; Assi Piggery</td>
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<td>Fundamentally Relevant</td>
<td>Description</td>
<td>Award Amount</td>
<td>Principal Investigators</td>
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<td>FW19-344</td>
<td>Different Poultry Housing Options for Chickens to Determine Fastest Growth Rate</td>
<td>$13,700</td>
<td>Nicole Correa</td>
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<td>Double D Farm and Ranch L.L.C.</td>
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<td>FW19-349</td>
<td>Performance of novel clonal cacao accessions in Hawaii under sustainable farming conditions</td>
<td>$20,000</td>
<td>Dr.Pierre Broun</td>
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<td>Ninole Cacao LLC</td>
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<td>FW19-350</td>
<td>Comparing Bird Deterrent Strategies to Increase Sustainability and Production of Fruit Crops in Hawaii</td>
<td>$18,620</td>
<td>Paul De Filippi</td>
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<td>Mauka Vista Farms LLC</td>
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<td>FW18-052</td>
<td>A Living Mulch Income Enhancer</td>
<td>$19,092</td>
<td>Kevin Chan</td>
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<td>Kevin Chan</td>
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<td>FW18-034</td>
<td>Can Intensive Rotational Grazing in combination with Indigenous Microorganism Application improve soil condition (i.e., soil carbon, minerals, and microbial life)?</td>
<td>$19,953</td>
<td>Kyle Fisher</td>
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<td>Graze and Sprout Farm</td>
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<td>FW17-034</td>
<td>The Mango Loa Project</td>
<td>$19,878</td>
<td>Umi Martin</td>
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<td>Umi Martin</td>
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<td>FW16-003</td>
<td>Establishing Profitable Durian Crops in Hawaii</td>
<td>$28,192</td>
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<td>FW16-023</td>
<td>Malama Kou Kino</td>
<td>$20,000</td>
<td>Melanie Holt</td>
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<td>FW15-035</td>
<td>Producing Triploid Oysters</td>
<td>$24,992</td>
<td>David Nisbet</td>
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<td>Goosepoint Oyster Co.</td>
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<td>FW12-034</td>
<td>Grapes for tropical Hawaii</td>
<td>$17,370</td>
<td>Ken Love</td>
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<td>Hawaii Tropical Fruit Growers</td>
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<td>FW10-011</td>
<td>Organic Varroa Management &amp; Beekeeper Education in Hawaii</td>
<td>$15,000</td>
<td>Richard Spiegel</td>
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<td>Volcano Island Honey Co.</td>
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<td>FW10-040</td>
<td>Relocating swarms for pollination: How feral bees can be integrated into sustainable farming strategies</td>
<td>$29,975</td>
<td>Jennifer Bach</td>
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<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>
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<td>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</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</td>
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<td>FW09-012</td>
<td>Project Fresh: Mountain View Community Gardens</td>
<td>$30,000</td>
<td>Neena Roumell</td>
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<td>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 Wellheim</td>
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<td>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&lt;br&gt;Puakala Farms&lt;br&gt;Jane Teves&lt;br&gt;Puakala Farms</td>
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<tr>
<td>FW09-308</td>
<td>Quantifying Secondary Compounds in Common Pasture Vegetation for Behavior Based Grazing Management in Hawai’i</td>
<td>$41,760</td>
<td>Dr. Mark Thorne&lt;br&gt;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&lt;br&gt;Pacific Aquaculture and Coastal Resources Center&lt;br&gt;Maria Haws&lt;br&gt;Pacific Aquaculture &amp; Coastal Resources Center</td>
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<tr>
<td>FW08-049</td>
<td>Healthy Foundation, Healthy Bees, Making Organic Wax Foundation for Beekeepers</td>
<td>$13,999</td>
<td>Richard Spiegel&lt;br&gt;Volcano Island Honey Co.</td>
</tr>
<tr>
<td>FW07-034</td>
<td>Choosing the Best Figs for Hawaii</td>
<td>$25,000</td>
<td>Ken Love&lt;br&gt;Hawaii Tropical Fruit Growers</td>
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<tr>
<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&lt;br&gt;University of Hawaii</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&lt;br&gt;Shirakawa Farm</td>
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<tr>
<td>FW03-018</td>
<td>Recovery of Tropical Pasture Systems</td>
<td>$6,875</td>
<td>Dwayne Cypriano</td>
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<tr>
<td>FW03-025</td>
<td>DDT Removal Using Biodynamic Agricultural Methods</td>
<td>$6,932</td>
<td>Marie Mauger&lt;br&gt;Spirit of the Earth Farm</td>
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<tr>
<td>FW03-205</td>
<td>Field Management/Mulch Project</td>
<td>$5,232</td>
<td>Fernand Severi</td>
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<tr>
<td>FW03-206</td>
<td>Grow Your Own Sustainable Barn</td>
<td>$7,396</td>
<td>Robert Layer</td>
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<tr>
<td>FW02-008</td>
<td>Increasing Marketable Production of Exotic Tropical Fruit with Protective Covering</td>
<td>$12,850</td>
<td>Ken Love&lt;br&gt;Hawaii Tropical Fruit Growers</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&lt;br&gt;Whutnusamoa</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&lt;br&gt;Univ of HI</td>
</tr>
<tr>
<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 “the Other White Meat”</td>
<td>$9,900</td>
<td>Daphne McKeehan</td>
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<tr>
<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>
</tr>
</tbody>
</table>
### Flower Induction of Rambutan
- **Project #:** FW99-059
- **Title:** Flower Induction of Rambutan
- **SARE Support:** $2,100
- **Project Leader:** Liloa Willard

### Lone Palm Sprouts Water Recapture and Recycle System
- **Project #:** FW99-066
- **Title:** Lone Palm Sprouts Water Recapture and Recycle System
- **SARE Support:** $5,000
- **Project Leader:** Davide Rotstein

### The Conversion of Agricultural Waste into Plant and Fish Food
- **Project #:** FW98-004
- **Title:** The Conversion of Agricultural Waste into Plant and Fish Food
- **SARE Support:** $3,400
- **Project Leader:** Robert Gann

### Free Range Pork Production
- **Project #:** FW98-062
- **Title:** Free Range Pork Production
- **SARE Support:** $5,390
- **Project Leader:** Samuel Okami

### Total Utilization of Swine Waste for Crop and Hog Productivity
- **Project #:** FW98-063
- **Title:** Total Utilization of Swine Waste for Crop and Hog Productivity
- **SARE Support:** $4,985
- **Project Leader:** Rondald McKeehan

### High Quality Perennial Forage Peanut (Arachis pintal) Pastures for Sustainable Cattle Production in Hawaii
- **Project #:** FW98-075
- **Title:** High Quality Perennial Forage Peanut (Arachis pintal) Pastures for Sustainable Cattle Production in Hawaii
- **SARE Support:** $5,000
- **Project Leader:** Zach Gibson

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

### Growing Ring-Spot Virus-Free Papayas Using Anti-transpirants and Other Sustainable Techniques
- **Project #:** FW97-017
- **Title:** Growing Ring-Spot Virus-Free Papayas Using Anti-transpirants and Other Sustainable Techniques
- **SARE Support:** $4,000
- **Project Leader:** Jon Biloon

### Sustainable Greenhouse Tomato Production: Evaluating Alternatives to Pesticide Use for Controlling Tomato Pinworm Larvae in Hawaii
- **Project #:** FW96-049
- **Title:** Sustainable Greenhouse Tomato Production: Evaluating Alternatives to Pesticide Use for Controlling Tomato Pinworm Larvae in Hawaii
- **SARE Support:** $3,520
- **Project Leader:** Shari Tresky

### 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>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 &lt;br&gt;University of Hawaii &lt;br&gt;Emily Thyroff &lt;br&gt;University of Hawai‘i Mānoa &lt;br&gt;Emily Thyroff &lt;br&gt;University of Hawai‘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 &lt;br&gt;University of Hawaii &lt;br&gt;Dr. Amjad Ahmad &lt;br&gt;University of Hawaii at Manoa &lt;br&gt;Roshan Paudel &lt;br&gt;University of Hawaii &lt;br&gt;Joshua Silva &lt;br&gt;University of Hawaii at Manoa, College of Tropical Agriculture &lt;br&gt;Philip Waisen &lt;br&gt;University of Hawaii &lt;br&gt;Roshan Paudel &lt;br&gt;University of Hawaii</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. &lt;br&gt;Hawaii Agriculture Research Center &lt;br&gt;Dr. Susan Crow &lt;br&gt;University of Hawaii Manoa &lt;br&gt;Jonathan Deeniki &lt;br&gt;University of Hawaii at Manoa &lt;br&gt;Elaine Vizka &lt;br&gt;University of Hawaii at Manoa</td>
</tr>
<tr>
<td>Project #</td>
<td>Project Title</td>
<td>SARE Support</td>
<td>Project Leaders</td>
</tr>
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</tbody>
</table>
| 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  
Philip Waisen  
University of Hawaii |
| 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>
</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 Hawaii
$6,602,355

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).