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 $310 million to more than 7,433 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 in Utah

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

$5,448,896 in total funding

74 grant projects

(since 1988)

For more information on this project, see sare.org/projects, and search for project number SW13-034.

Utah Project Highlight: Better Onions, Fewer Inputs

Onions are a high-value crop, but high fertilizer rates and aggressive use of pesticides to suppress weeds, diseases and insects threaten the sustainability of onion production. In Utah, growers and researchers are working to show how changes in management practices can allow farmers to maintain profitable yields while lowering their use of inputs.

In 2013 a SARE-funded team led by Utah State University’s Diane Alston studied the effect of certain changes on onion yields, in particular fertilization rates and crop rotations. They were following the lead of a small group of onion producers in the state who were finding they could reduce their use of pesticides by lowering their use of fertilizers and still achieve good yields.

The team pursued multiple objectives and developed a body of information that is helping Utah’s producers adopt more sustainable practices. They surveyed nearly 60 farms to better understand production system predictors of pests and yield; conducted field experiments that showed reducing fertilizer rates could reduce pest densities; and created an interactive production modeling tool.

In an assessment of producers conducted near the end of the project, 67 percent said the information they learned would help them diversify their operation, and 80 percent felt it would help them reduce their use of off-farm inputs.

For more information on this project, see sare.org/projects, and search for project number SW13-034.
SARE Grants in Utah

Total awards: 74 grants
19 Farmer/Rancher
7 Graduate Student
6 On Farm Research/Partnership
9 Professional Development Program
32 Research and Education
1 Research to Grass Roots

Total funding: $5,448,896

$115,837 Farmer/Rancher
$158,111 Graduate Student
$279,590 On Farm Research/Partnership
$564,531 Professional Development Program
$4,269,668 Research and Education
$61,160 Research to Grass Roots

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/utah

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/utah to learn more.

Marion Murray
Utah State University
(435) 797-0776
marion.murray@usu.edu

SARE is funded by the USDA’s National Institute of Food and Agriculture (NIFA).

For detailed information on SARE projects, go to www.SARE.org

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.
Utah has been awarded $5,448,896 grants to support 73 projects, including but not limited to, 31 research and/or education projects, 9 professional development projects and 19 producer-led projects. Utah 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>
| SW19-909  | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | $349,977 | Matt Yost  
Utah State University  
Niel Allen  
Utah State University  
Dr. Earl Creech  
Utah State University  
Neil Hansen  
Brigham Young University  
Matthew Heaton  
Brigham Young University  
Dr. Bryan Hopkins  
BYU  
Ross Spackman  
Brigham Young University-Idaho |
| SW19-905  | Can we manage public rangelands for producers and the environment?: Using grazing-duration to balance livelihoods, clean water, sage-grouse habitat, and sustainable forage | $349,979 | Dr. Kris Hulvey  
Working Lands Conservation  
Taylor Payne  
Utah Department of Agriculture’s Grazing Improvement Program |
| SW18-058  | Establishing a protocol for receiving cattle that are at-risk of having a mineral deficiency | $206,209 | Dr. Kara Thornton  
Utah State University |
| SW17-046  | Grass-birdsfoot trefoil mixtures to improve the economic and environmental sustainability of pasture-based organic dairies in the western U.S. | $214,123 | Dr. Blair Waldron  
USDA-ARS |
| SW17-077  | Best Management Practices for Regionally-Distinct Populations of the Blue Orchard Bee | $246,910 | Theresa Pitts-Singer  
USDA Agricultural Research Service |
| SW15-003  | Training cattle to graze medusahead and avoid velvet lupine: A new tool to sustain the economic viability of livestock operations in the Western US | $249,909 | Dr. Juan Villalba  
Utah State University |
| SW15-029  | Improving Tart Cherry Sustainability | $230,154 | Dr. Brent Black  
Utah State University |
| SW14-015  | Integrated Byproduct Streams for Enhanced Viability of Combined Dairy Farm and Milk Processing Operations | $295,688 | Dr. Donald McMahon  
Western Dairy Center, Utah State University |
| SW13-034  | Onion Systems Management Strategies for Crop Nutrition, Weeds, Thrips, and Iris Yellow Spot Virus | $169,299 | Dr. Diane Alston  
Utah State University |
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>Principal Investigator</th>
</tr>
</thead>
</table>
| SW10-088     | Grass-Legume pastures to increase economic and environmental sustainability of livestock production | $209,907 | Dr. Blair Waldron  
USDA-ARS |
| SW08-076     | Cultural Management of Onion Thrips and Iris yellow Spot Virus               | $133,441 | Dr. Jennifer Reeve  
Utah State University |
| SW07-014     | Sustainable Vegetable Production: Screening Cover Crops for Water Use Efficiency | $118,411 | Dr. Daniel Drost  
Utah State University |
| SW07-035     | High Value Crop Rotations for Utah High Tunnels                             | $144,495 | Brent Black  
PSC Department, Utah State University  
Dr. Brent Black  
Utah State University |
| SW04-060     | Perennial Forage Kochia for Improved Sustainability of Grass-Dominated Ecosystems | $149,503 | Dale Zobel  
ADVS Dept., Utah State University |
| SW02-013     | Sustainable Water Management for Irrigated Asparagus                        | $23,014  | Dr. Daniel Drost  
Utah State University |
| SW01-023     | Biofumigants in Commercial Onion Production to Enhance Soil Nutrient Availability, Soil Quality, and Control of Weed, Nematode, and Disease Pests | $134,317 | Brad Geary  
Brigham Young University |
| SW01-034     | Assessment of Value Added Milk from Pasture-based Dairies                   | $78,000  | Tilak Dhiman  
Utah State University |
| SW01-001     | Value Added Opportunities from the Manufacture and Feeding of Silages Produced from Liquid Cheese Whey and Other By-products to Growing and Finishing Cattle and Beef Cows | $59,777  | Dale Zobel  
ADVS Dept., Utah State University |
| SW01-020     | Production of Drought-adapted Intermountain Native Plants Through Low-cost, In-containers for Emerging Western Markets | $71,686  | Roger Kjelgren  
Utah State University |
| SW00-040     | In-house composting in high-rise, caged layer facilities                    | $60,975  | Richard Koenig  
Utah State University |
| SW00-063     | Impact Assessment of Western Region SARE Projects                           | $38,500  | Dr. Rhonda Miller  
WSARE |
| SW99-024     | The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-farm Nitrogen Efficiency of Dairy Farms: Subcontract 1 | $19,184  | Allen Young  
Utah State University |
| SW99-024A    | The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms. | $89,571  | Allen Young  
Utah State University |
| SW99-024B    | The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms | $19,184  | Richard Kohn |
| SW98-058     | Reducing Chemical Inputs in Arid-Climates Through Sustainable Orchard Management | $261,044 | Schuyler Seeley  
Utah State University |

A Livestock Production System Less Reliant on the Use of Publicly Owned Lands

Public-Land Grazing Permittees Under Pressure: Sustainability of Coping Strategies on Private Land

Four Corners Navajo Nation Sustainable Agriculture Demonstration Project

Navajo Nation Whole Farm/Ranch Sustainable Systems Demonstration Project

Conference on the Science of Sustainable Agricultural Systems

Using the Wyoming Ranch Tools site to evaluate selected Western SARE research projects to assess economic sustainability for individual producers

Enhancing Enterprise Diversification Assessment for Native American Farmers to Enhance Economic Sustainability

Sustaining the Future of Navajo Rangelands via Mobile Learning Tools to Promote Enhanced Vegetation Management

Building Business Management Capacity for American Indian Agricultural Businesses

Economic Evaluation of Agricultural Diversification through Agritourism for the Intermountain West

Economic Evaluation of Alternative (low-water use) Crops for the Great Basin

Entrepreneurial Sustainable Agriculture: Alternatives for Processing, Packing, Labeling and Marketing in Internet/Retail Environments

RESEARCH TO GRASS ROOTS GRANTS

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS
**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>FW19-343</td>
<td>Can barley fodder be fed in place of grass hay to dairy goats and dairy sheep and what effect will it have on milk production and composition.</td>
<td>$19,407</td>
<td>Anita Wilson, Milky Hollow Creamery</td>
</tr>
<tr>
<td>FW07-315</td>
<td>Bramble Variety Trials in Utah to Reduce Disease, Increase Production and Enhance Profitability</td>
<td>$23,250</td>
<td>Rick Heflebower, Utah State University</td>
</tr>
<tr>
<td>FW06-012</td>
<td>Interseeding Forage Kochia in Established CRP Land for Enhanced Livestock and Wildlife Utilization</td>
<td>$7,621</td>
<td>Ron Harper</td>
</tr>
<tr>
<td>FW06-027</td>
<td>Commercial Artichokes in the Intermountain West</td>
<td>$5,180</td>
<td>James Haggarty, Sun River Farms</td>
</tr>
<tr>
<td>FW06-327</td>
<td>Integrating Annual Crop Residues, Perennial Pastures, and Livestock Management to Extend the Grazing Season and Minimize Losses of Soil Nitrogen</td>
<td>$10,000</td>
<td>Thomas Griggs, Utah State University</td>
</tr>
<tr>
<td>FW05-022</td>
<td>Increasing the Profitability of Raspberries by Extending the Growing Season</td>
<td>$2,310</td>
<td>Clark Willis</td>
</tr>
<tr>
<td>FW04-314</td>
<td>Organic Dairy Transition in Northern Utah</td>
<td>$7,500</td>
<td>Clark Israelsen, Utah State University Cooperative Extension</td>
</tr>
<tr>
<td>FW04-014</td>
<td>Goats as a Weed Control Alternative in Small Acreage Ranchettes</td>
<td>$3,382</td>
<td>Kyle Christensen</td>
</tr>
<tr>
<td>FW04-037</td>
<td>Tomato Disease Prevention and Production Enhancement</td>
<td>$2,095</td>
<td>Aviva Maller-O’Niel, Rick Heflebower, Utah State University</td>
</tr>
<tr>
<td>FW03-201</td>
<td>Winter Cover Crop Experiment</td>
<td>$1,120</td>
<td>Aviva Maller-O’Niel</td>
</tr>
<tr>
<td>FW03-306</td>
<td>Season Extension Experiment</td>
<td>$1,250</td>
<td>Rick Heflebower, Utah State University</td>
</tr>
<tr>
<td>FW00-019</td>
<td>Medusahead Control and Revegetation in Southern Cache County, UT</td>
<td>$6,414</td>
<td>Guy Pulsipher</td>
</tr>
<tr>
<td>FW00-054</td>
<td>Southern Utah Forest Products Association Cooperative Marketing Act</td>
<td>$4,835</td>
<td>Brian Cottam</td>
</tr>
<tr>
<td>FW00-317</td>
<td>The Original Cache Junction Families Popped Wheat</td>
<td>$2,801</td>
<td>Wes Roundy</td>
</tr>
<tr>
<td>FW99-080</td>
<td>Composting Poultry Waste Inside High Rise Layer Houses</td>
<td>$4,992</td>
<td>Mike Shepherd</td>
</tr>
</tbody>
</table>
## GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GW20-215  | Identification of effective cover crop varieties and integrated management practices for weedy and invasive plant suppression in the Western US                                                                               | $25,000      | Steve Young  
Utah State University  
Danielle Thiemann  
Utah State University  
Danielle Thiemann  
Utah State University |
| GW18-106  | Brown Marmorated Stink Bug in Utah’s Intermountain West                                                                                                                                                       | $24,999      | Dr. Diane Alston  
Utah State University  
Mark Holthouse  
Utah State University |
| GW18-156  | Utilizing Tannin-Containing Forages and Holos Software for Sustainable Beef Production in the Intermountain West                                                                                             | $20,204      | Dr. Jennifer Reeve  
Utah State University  
Kathryn Slebodnik  
Utah State University |
| GW17-060  | Navajo Spinach (Cleome Serrulata): Improving Seed Germination from Wild Populations Gathered across Native Lands of the Four Corners                                                                                  | $24,969      | Dr. Daniel Drost  
Utah State University  
Reagan Wytsalucy  
Utah State University |
| GW15-046  | Improved simple on-site soil quality testing for soils in the Intermountain West                                                                                                                             | $24,844      | Dr. Jennifer Reeve  
Utah State University  
Esther Thomsen  
USU |
| GW13-006  | Determination of gas emissions from manure sources in animal feeding operations                                                                                                                            | $25,000      | Scott B. Jones  
Utah State University  
Dr. Rhonda Miller  
WSARE  
Pakorn Sutitarnnontr  
Biological Engineering Department, Utah State University |
| GW12-030  | Contributions to pest suppression through predator phenology and functional diversity                                                                                                                      | $13,095      | Dr. Ricardo Ramirez  
Utah State University  
Erica Stephens  
Utah State University |

## 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>
| OW19-343  | Management strategies for Tomato spotted wilt virus and curtoviruses in Utah                               | $31,149      | Claudia Nischwitz  
Utah State University  
Dr. Diane Alston  
Utah State University  
Richard Heflebower  
Utah State University Extension - Washington County |
| OW19-346   | Promoting crop diversification and soil health for cut flower production | $49,999 | Dr. Melanie Stock  
Utah State University  
Dr. Brent Black  
Utah State University  
Dr. Daniel Drost  
Utah State University  
Dr. Larry Rupp  
Utah State University |
|-----------|--------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------|
| OW18-007  | Supporting Natural Enemies of the Cabbage Aphid with Hedgerow Plantings | $48,554 | Laura Horn  
Wild Bee Project |
| OW14-036  | Biochar Amendment to Enhance Tomato and Melon Productivity and Protect Against Phytophthora Root Rot Disease | $49,990 | Marion Murray  
Utah State University |
| OW13-005  | Rangeland Restoration on the Channel Scablands of Eastern Washington | $49,931 | Dr. Kip Panter  
USDA-ARS-PPRL |
| OW12-020  | Feedlot performance, feed efficiency, and profitability of cattle fed either a complete mixed ration or allowed to voluntarily select their diet. | $49,967 | Beth Burritt  
Utah State University |

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

$5,448,896

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).