What is SARE?

Since 1988, the Sustainable Agriculture Research & Education (SARE) program has been the go-to USDA grants and outreach program for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded over $404 million to more than 8,776 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...

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 in Utah

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

$8,416,327 in total funding

99 grant projects

(since 1988)

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

Grants awarded 2019–2024

Total awards: **28 grants**

- 6 Farmer/Rancher
- 8 Research and Education
- 5 Professional Development Program
- 3 On Farm Research/Partnership
- 6 Graduate Student

Total funding: **$3,628,412**

- $124,518 Farmer/Rancher
- $2,727,725 Research and Education
- $445,058 Professional Development Program
- $156,148 On Farm Research/Partnership
- $174,963 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:

- **6,818 farmers participated in a SARE-funded project**

- **1,538 farmers reported a change in knowledge, awareness, skills or attitude**

- **142 farmers changed a practice**

Find a complete list of projects on page 3.

Learn about local impacts at: western.sare.org/sare-in-your-state/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-profiles/utah/ to learn more.

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

Justen Smith
Utah State University
(435) 919-1331
justen.smith@usu.edu

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.
Utah has been awarded $8,032,987 grants to support 92 projects, including but not limited to, 37 research and/or education projects, 12 professional development projects and 24 producer-led projects. Utah has also received additional SARE support through multi-state projects.

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW23-950</td>
<td>Impact of including sprouted grains in the ration of beef cattle relative to animal performance, quality and nutritive value of meat, and economic via</td>
<td>$349,974</td>
<td>Dr. Kara Thornton&lt;br&gt;Utah State University&lt;br&gt;Brady Blackett&lt;br&gt;Blackett Cattle Company&lt;br&gt;Kelly Crozier&lt;br&gt;Raise'm Right Ranch&lt;br&gt;Dr. Matthew Garcia&lt;br&gt;Utah State University&lt;br&gt;Dr. Korry Hintze, PhD&lt;br&gt;Utah State University&lt;br&gt;Dr. Clay Isom&lt;br&gt;Utah State University, Dept. of Animal, Dairy, and Veterinary Science&lt;br&gt;Dr. Ryan Larsen&lt;br&gt;Utah State University&lt;br&gt;Dr. Stephan van Vliet&lt;br&gt;Utah State University</td>
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<td>SW23-948</td>
<td>Can soil carbon help fund rangeland management?</td>
<td>$349,795</td>
<td>Megan Nasto&lt;br&gt;Working Lands Conservation/Multiplier</td>
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<tr>
<td>SW22-942</td>
<td>Using grazing-duration to balance: livelihoods, clean water, sage-grouse habitat, and sustainable forage in semi-arid rangelands</td>
<td>$328,329</td>
<td>Dr. Kris Hulvey&lt;br&gt;Working Lands Conservation&lt;br&gt;Taylor Payne&lt;br&gt;Utah Department of Agriculture's Grazing Improvement Program</td>
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<tr>
<td>SW22-941</td>
<td>Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture: Phase II</td>
<td>$350,000</td>
<td>Matt Yost&lt;br&gt;Utah State University&lt;br&gt;Dr. Earl Creech&lt;br&gt;Utah State University&lt;br&gt;Neil Hansen&lt;br&gt;Brigham Young University&lt;br&gt;Dr. Bryan Hopkins&lt;br&gt;BYU</td>
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</table>
**SW21-923**  Developing sustainable strategies for nutrient and pest management on small-acreage strawberry farms  
$349,736  
Dr. Jennifer Reeve  
Utah State University  
Dr. Brent Black  
Utah State University  
Dr. Kynda Curtis  
Utah State University  
Dr. Robert Schaeffer  
Utah State University

**SW21-927**  Dry Matter Intake and Feed Efficiency of Four Dairy Breeds in a Pasture-Based Heifer Development Program  
$299,935  
Dr. Blair Waldron  
USDA-ARS  
Dr. Earl Creech  
Utah State University  
Dr. Clay Isom  
Utah State University, Dept. of Animal, Dairy, and Veterinary Sciences  
Dr. Ryan Larsen  
Utah State University, Dept. of Applied Economics  
Dr. Rhonda Miller  
WSARE  
Dr. Kerry Rood, MPH, DVM  
Utah State University, Dept. of Animal, Dairy, and Veterinary Sciences

**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

**SW17-077**  Best Management Practices for Regionally-Distinct Populations of the Blue Orchard Bee  
$246,910  
Theresa Pitts-Singer  
USDA Agricultural Research Service
<table>
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<tr>
<th>Project Code</th>
<th>Description</th>
<th>Amount</th>
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<th>Institution</th>
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<tbody>
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<td>SW17-046</td>
<td>Grass-birdsfoot trefoil mixtures to improve the economic and environmental</td>
<td>$214,123</td>
<td>Dr. Blair Waldron</td>
<td>USDA-ARS</td>
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<td>sustainability of pasture-based organic dairies in the western U.S.</td>
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<td>SW15-029</td>
<td>Improving Tart Cherry Sustainability</td>
<td>$230,154</td>
<td>Dr. Brent Black</td>
<td>Utah State University</td>
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<td>SW15-003</td>
<td>Training cattle to graze medusahead and avoid velvet lupine: A new tool to</td>
<td>$249,909</td>
<td>Dr. Juan Villalba</td>
<td>Utah State University</td>
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<td>sustain the economic viability of livestock operations in the Western US</td>
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<td>SW14-015</td>
<td>Integrated Byproduct Streams for Enhanced Viability of Combined Dairy Farm</td>
<td>$295,688</td>
<td>Dr. Donald McMahon</td>
<td>Western Dairy Center, Utah State</td>
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<td></td>
<td>and Milk Processing Operations</td>
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<td>University</td>
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<tr>
<td>SW13-034</td>
<td>Onion Systems Management Strategies for Crop Nutrition, Weeds, Thrips, and</td>
<td>$169,299</td>
<td>Dr. Diane Alston</td>
<td>Utah State University</td>
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<td></td>
<td>Iris Yellow Spot Virus</td>
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<td>SW10-088</td>
<td>Grass-Legume pastures to increase economic and environmental sustainability</td>
<td>$209,907</td>
<td>Dr. Blair Waldron</td>
<td>USDA-ARS</td>
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<td>of livestock production</td>
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<td>SW08-076</td>
<td>Cultural Management of Onion Thrips and Iris yellow Spot Virus</td>
<td>$133,441</td>
<td>Dr. Jennifer Reeve</td>
<td>Utah State University</td>
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<td>SW07-035</td>
<td>High Value Crop Rotations for Utah High Tunnels</td>
<td>$144,495</td>
<td>Brent Black</td>
<td>PSC Department, Utah State University</td>
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<td>Dr. Brent Black</td>
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<td>SW07-014</td>
<td>Sustainable Vegetable Production: Screening Cover Crops for Water Use</td>
<td>$118,411</td>
<td>Dr. Daniel Drost</td>
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<td>SW04-060</td>
<td>Perennial Forage Kochia for Improved Sustainability of Grass-Dominated</td>
<td>$149,503</td>
<td>Dale Zobel</td>
<td>ADVS Dept., Utah State University</td>
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<td>SW02-013</td>
<td>Sustainable Water Management for Irrigated Asparagus</td>
<td>$23,014</td>
<td>Dr. Daniel Drost</td>
<td>Utah State University</td>
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<td>SW01-034</td>
<td>Assessment of Value Added Milk from Pasture-based Dairies</td>
<td>$78,000</td>
<td>Tilak Dhiman</td>
<td>Utah State University</td>
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<tr>
<td>Project Code</td>
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<td>Investigator</td>
<td>Institution</td>
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<tr>
<td>SW01-023</td>
<td>Biofumigants in Commercial Onion Production to Enhance Soil Nutrient Availability, Soil Quality, and Control of Weed, Nematode, and Disease Pests</td>
<td>$134,317</td>
<td>Brad Geary</td>
<td>Brigham Young University</td>
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<tr>
<td>SW01-020</td>
<td>Production of Drought-adapted Intermountain Native Plants Through Low-cost, In-containers for Emerging Western Markets</td>
<td>$71,686</td>
<td>Roger Kjelgren</td>
<td>Utah State University</td>
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<td>SW01-001</td>
<td>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</td>
<td>$59,777</td>
<td>Dale Zobel</td>
<td>ADVS Dept., Utah State University</td>
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<td>SW00-040</td>
<td>In-house composting in high-rise, caged layer facilities</td>
<td>$60,975</td>
<td>Richard Koenig</td>
<td>Utah State University</td>
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<td>SW00-063</td>
<td>Impact Assessment of Western Region SARE Projects</td>
<td>$38,500</td>
<td>Dr.Rhonda Miller</td>
<td>WSARE</td>
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<td>SW99-024</td>
<td>The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-farm Nitrogen Efficiency of Dairy Farms: Subcontract 1</td>
<td>$19,184</td>
<td>Allen Young</td>
<td>Utah State University</td>
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<td>SW99-024A</td>
<td>The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms.</td>
<td>$89,571</td>
<td>Allen Young</td>
<td>Utah State University</td>
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<tr>
<td>SW99-024B</td>
<td>The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms</td>
<td>$19,184</td>
<td>Richard Kohn</td>
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<td>SW98-058</td>
<td>Reducing Chemical Inputs in Arid-Climates Through Sustainable Orchard Management</td>
<td>$261,044</td>
<td>Schuyler Seeley</td>
<td>Utah State University</td>
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<tr>
<td>SW96-032</td>
<td>Identification of Management Practices and Cultivars for Organic Hard-Winter Wheat Production</td>
<td>$93,911</td>
<td>David Hole</td>
<td>Utah State University</td>
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<td>SW95-015</td>
<td>Public-Land Grazing Permittees Under Pressure: Sustainability of Coping Strategies on Private Land</td>
<td>$63,000</td>
<td>D. Layne Coppock</td>
<td>Utah State University</td>
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</table>
### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| WPDP23-008    | Expanding cut flower production education supports agricultural professionals and small farms | $99,979      | Dr. Melanie Stock  
Utah State University  
Dr. Kynda Curtis  
Utah State University  
Claudia Nischwitz  
Utah State University  
Nick Volesky  
Utah State University |
| WPDP22-002    | Training Agriculture Educators in Utah using the Wyoming Ranch Tools site and Western SARE research projects. | $83,892      | Bridger Feuz  
Master Stockman Consulting  
Hudson Hill  
Master Stockman Consulting LLC. |
| WPDP22-014    | Educating and training community leaders to implement water recycling approach in Utah’s landscapes and nursery industry | $93,568      | Dr. Shital Poudyal  
Utah State University  
Dr. Kelly Kopp  
Utah State University and CWEL  
Katie Wagner  
Utah State University Extension  
Josh Zimmerman  
Utah Department of Natural Resources |
| WPDP21-012    | Assisting Extension professionals in assessing profitable and sustainable agricultural enterprises with producer clientele | $99,969      | Dr. Kynda Curtis  
Utah State University  
Dr. Ryan Larsen  
Utah State University, Dept. of Applied Economics  
Dr. Anastasia Thayer  
Utah State University  
Ruby Ward  
Utah State University |
| WPDP19-14     | Enhancing Enterprise Diversification Assessment for Native American Farmers to Enhance Economic Sustainability | $67,650      | Ruby Ward  
Utah State University  
Vicki Hebb  
Trent Teegerstrom  
University of Arizona |
EW15-023  Sustaining the Future of Navajo Rangelands via Mobile Learning Tools to Promote Enhanced Vegetation Management  $62,260  Dr. Gerald Hawkes  New Mexico State University

EW14-017  Building Business Management Capacity for American Indian Agricultural Businesses  $75,000  Ruby Ward  Utah State University

EW13-005  Economic Evaluation of Agricultural Diversification through Agritourism for the Intermountain West  $74,492  Dr. Kynda Curtis  Utah State University

EW09-007  Economic Evaluation of Alternative (low-water use) Crops for the Great Basin  $99,724  Carol Bishop  University of Nevada Cooperative Extension  Dr. Kynda Curtis  Utah State University

EW06-018  Disseminating Research-based Information to Improve Great Basin Rangelands  $21,605  Summer Olsen  Utah State University  Mark Brunson  Utah State University

EW06-005  Entrepreneurial Sustainable Agriculture: Alternatives for Processing, Packing, Labeling and Marketing in Internet/Retail Environments  $58,755  John C. Allen, PhD  Western Rural Development Center

EW04-010  Communication of Range Demonstration Project Results  $15,045  Ken Mills  Utah Association of Conservation Districts

FARMER/RANCHER GRANTS

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<th>Project #</th>
<th>Project Title</th>
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<th>Project Leaders</th>
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<tbody>
<tr>
<td>FW24-019</td>
<td>Effects of Breeding Ewe Lambs on Reproductive Performance Longevity.</td>
<td>$24,562</td>
<td>Gene Peckham  Peckham Livestock</td>
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<tr>
<td>FW23-429</td>
<td>Study of hydroponics in cut flower production to increase water conservation and crop quality</td>
<td>$25,000</td>
<td>Anna Zack  Zack Family Farms</td>
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<td>FW23-420</td>
<td>Reduction Of Water Use On Peony Crops By Using Shade Cloth.</td>
<td>$9,067</td>
<td>Britin Van Brocklin  Cherry petals flower farm</td>
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<tr>
<td>FW22-400</td>
<td>Economic and Yield Potential of Hemp Waste Material in Specialty Mushroom Substrate</td>
<td>$24,282</td>
<td>Natasha Quinones-Rodriguez  Intentional Growth</td>
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<tr>
<td>FW22-394</td>
<td>The Economics of Early Weaning and Early Breeding of Range Ewe Lambs</td>
<td>$22,200</td>
<td>Gene Peckham  Peckham Livestock</td>
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<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Budget</td>
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<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>
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<td>FW07-315</td>
<td>Bramble Variety Trials in Utah to Reduce Disease, Increase Production and Enhance Profitability</td>
<td>$23,250</td>
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<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>
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<td>FW06-027</td>
<td>Commercial Artichokes in the Intermountain West</td>
<td>$5,180</td>
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<td>FW06-012</td>
<td>Interseeding Forage Kochia in Established CRP Land for Enhanced Livestock and Wildlife Utilization</td>
<td>$7,621</td>
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<td>FW05-022</td>
<td>Increasing the Profitability of Raspberries by Extending the Growing Season</td>
<td>$2,310</td>
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<td>FW04-014</td>
<td>Goats as a Weed Control Alternative in Small Acreage Ranchettes</td>
<td>$3,382</td>
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<td>FW04-037</td>
<td>Tomato Disease Prevention and Production Enhancement</td>
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<td>FW04-314</td>
<td>Organic Dairy Transition in Northern Utah</td>
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<td>FW03-201</td>
<td>Winter Cover Crop Experiment</td>
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<td>FW03-306</td>
<td>Season Extension Experiment</td>
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<td>FW00-054</td>
<td>Southern Utah Forest Products Association Cooperative Marketing Act</td>
<td>$4,835</td>
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<td>FW00-019</td>
<td>Medusahead Control and Revegetation in Southern Cache County, UT</td>
<td>$6,414</td>
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<td>Project #</td>
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<td>GW24-010</td>
<td>The effect of finishing strategy and &quot;terroir&quot; on the phytochemical richness of bison meat in Western rangelands</td>
<td>$29,968</td>
<td>Dr.Stephan van Vliet Utah State University</td>
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<td>Joseph Vinod Varre Utah State University</td>
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<td>GW24-008</td>
<td>Developing 4 Mason Bee Species for Pollination of Berry Crops</td>
<td>$30,000</td>
<td>Dr.Kelsey Graham USDA ARS</td>
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<td>Miranda Jones Utah State University</td>
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<td>GW22-230</td>
<td>Evaluating the Effectiveness of Range Riding at Reducing Conflicts Between Livestock and Native Carnivores Across the American West</td>
<td>$30,000</td>
<td>Dr.Julie Young Utah State University</td>
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<td>Rae Nickerson Utah State University</td>
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<td>GW22-244</td>
<td>Evaluating the Impact of Wheat Straw Amendments on Dryland Organic Wheat Systems</td>
<td>$29,995</td>
<td>Dr.Astrid Jacobson USU</td>
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<td>Dr.Jennifer Reeve Utah State University</td>
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<td>Preston Christensen Utah State University</td>
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GW21-221  Enhancement of Samurai Wasp [Trissolcus japonicus (Ashmead)] for Biocontrol of Invasive Brown Marmorated Stink Bug [Halyomorpha halys (Stål)] in Utah  $30,000  Dr.Diane Alston  Utah State University  Curtis Rowley  Cherry Hill Farms  Dr.Lori Spears  Utah State University  Kate Richardson  Utah State University

GW20-215  Identification of effective cover crop varieties and integrated management practices for weedy and invasive plant suppression in the Western US  $25,000  Dr.Corey Ransom  Utah State University  Danielle Thiemann  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 Slobodnik  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

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 Wytalsalucy  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 Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>Principal Investigators</th>
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</thead>
</table>
| OW24-004     | Developing New Osmia Species for Commercial Management and Pollination Diversification | $75,000 | Dr. Kelsey Graham  
Kimball Clark  
Nativebees.com  
Scott Pohlschneider  
Stahlbush Island Farm  
Mervin Weeks  
Weeks Berries of Paradise |
| OW19-343     | Management strategies for Tomato spotted wilt virus and curtoviruses in Utah  | $31,149 | Claudia Nischwitz  
Utah State University  
Dr. Diane Alston  
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  
Dr. Daniel Drost  
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**

$8,032,987

For further information on projects, contact Western SARE at (406) 994-4785 or wsare@montana.edu.
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