

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, grantee-produced information products and other educational materials.



www.sare.org

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

Colorado

Project Highlight: *Dryland Cropping Intensification Shows Benefits*

In the Great Plains region of Colorado, a scarce supply of water is the chief limiting factor in dryland cropping yields. This concern over limited water availability prompts many farmers in the area to adopt a winter wheat-fallow rotation, yet this approach worsens soil productivity over the long term.

Intensifying production and using no-till could actually improve yields and profitability by building up soil health and improving moisture retention. Using a SARE grant, Colorado State University graduate student Steven Rosenzweig set out to both quantify the benefits of reducing fallow frequency and understand the barriers to adoption. He compared different dryland rotation intensities and found that reducing fallow improved soil health, which ultimately allowed farmers to improve grain production with a similar amount of fertilizer.

He also conducted in-depth interviews with 30 farmers, and identified risk, profitability and crop insurance policy as top perceived barriers to reducing fallow frequency. He also identified strategies for helping farmers overcome the barriers, such as changing the way agronomic researchers approach their work to be more inclusive of long-term viewpoints and profitability. The identified benefits, barriers and strategies for change were widely disseminated, including a website, blog and an upcoming film.

For more information on this project, see sare.org/projects, and search for project number [GW16-020](http://sare.org/projects).

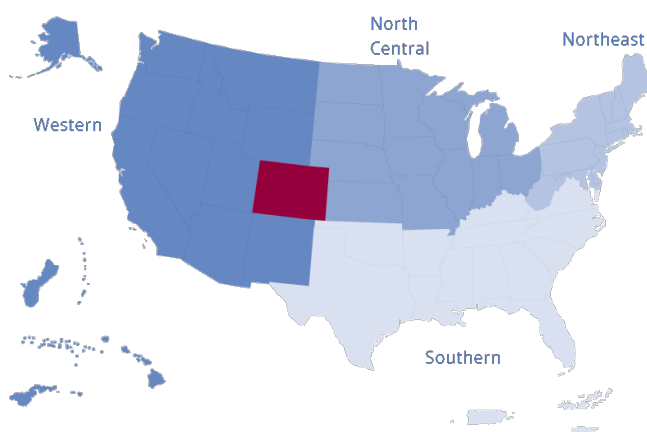
SARE in Colorado

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

\$4,975,358
in total funding

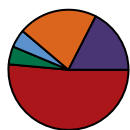
103 grant projects
(since 1988)

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



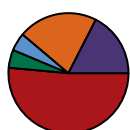
SARE Grants in Colorado

Total awards: 103 grants



53 Farmer/Rancher
5 Graduate Student
5 On Farm
Research/Partnership
22 Professional Development Program
18 Research and Education

Total funding: \$4,975,358



\$520,995 Farmer/Rancher
\$123,992 Graduate Student
\$236,989 On Farm
Research/Partnership
\$1,326,286 Professional Development Program
\$2,767,096 Research and Education

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/colorado

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/colorado to learn more.

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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.



AGRICULTURE PROJECTS FUNDED IN COLORADO

by USDA's
Sustainable Agriculture Research and Education (SARE) Program

Colorado has been awarded \$4,975,358 grants to support 103 projects, including but not limited to, 18 research and/or education projects, 22 professional development projects and 53 producer-led projects. Colorado has also received additional SARE support through multi-state projects.

RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
SW20-910	Developing sustainable peach orchard soil microbiome management practices to control replant disease syndrome	\$350,000	Dr.Ioannis Minas Colorado State University Dr.Jorge Vivanco Colorado State University
SW18-500	Examining Cover Crops for Soil Health Restoration in Dryland Cropping Systems in SW Colorado and SE Utah	\$249,974	Dr.Steven Fonte Colorado State University
SW15-008	The Feasibility of Cover Crops in Dryland Cropping Systems in SW Colorado and SE Utah	\$249,269	Dr.Abdelfettah Berrada Colorado State University-Southwestern Colorado Research Center
SW14-023	On-farm Cyanobacterial Bio-fertilizer Production to Reduce the Carbon Footprint of Organic Fruit and Vegetable Production	\$293,599	Dr.Jessica Davis Colorado State University
LNC14-356	The Bison Advantage Outreach and Education Program	\$103,675	Jim Matheson National Bison Association
SW09-401	Farm to Fork: Connecting Our Youth with Sustainable Agriculture	\$48,988	Dennis Lamm Colorado State University Tisha Casida That's Natural!
SW09-053	Harnessing the Sun for On-farm Fertilizer Production	\$159,023	Dr.Jessica Davis Colorado State University
SW08-033	Integrating Perennial Living Mulches into Irrigated Cropping Systems	\$146,684	Joe Brummer Colorado State University
SW06-028	Site-specific Manure Management for Improving Soil Quality	\$131,332	Dr.Raj Khosla Colorado State University
SW05-085	Supply and Market Analysis for Organic Producers in the Four Corners States	\$144,511	Dennis Lamm Colorado State University
SW04-087	Native Seed Production for Crop Diversification	\$171,121	Dr.Ron Godin Colorado State University - Rogers Mesa Res. Ctr.
SW02-002	Extending Irrigated Alfalfa Stand Life and Long-Term Profitability by Alteration of Late-Season Harvest Schedules	\$61,270	Robert Hammon Tri River Cooperative Extension

SW02-051	A Range Management Curriculum and Participatory Planning Project for the Tohono O'odham Nation	\$99,263	Maria Fernandez-Gimenez Colorado State University
SW00-018	Utilization of Compost Made from Agricultural and Forestry Wastes for Improving the Economic and Ecological Sustainability of Agronomic Crop Production on Low Organic Matter Soils in the San Luis Valley of Colorado	\$137,916	Richard Zink Colorado State University
SW99-056	Developing Sustainable Dryland Cropping Systems in SW Colorado and SE Utah Using Conservation Tillage and Crop Diversification	\$142,380	Dr.Abdelfettah Berrada Colorado State University-Southwestern Colorado Research Center
SW96-007	Reducing Environmental Contamination from Feedlot Manure in the South Platte River Basin through Agronomic, Economic, and Social Analysis and Education	\$206,000	Dr.Jessica Davis Colorado State University
AW95-205	Effectiveness of Beauveria Bassiana as a Microbial Control Agent for Coleopteran and Homopteran Pests of Irrigated Alfalfa	\$36,091	Frank Peairs Colorado State University
LW88-005	Compiling a Database of Sustainable Producers for the Southern Rockies Region	\$36,000	Rita Robinson Sustainable Mountain Agricultural Alliance (SMALL)

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE Support	Project Leaders
EW20-038	Colorado Sustainable Agricultural Professional Development Program	\$90,000	Dr.Steven Newman Colorado State University William Nobles Colorado State University
EW18-005	Seed Saving Farmer Training	\$45,350	Lee-Ann Hill Rocky Mountain Seed Alliance
EW14-024	Colorado Resource Monitoring Initiative-Professionals Training	\$23,000	Erin Karney Colorado Cattlemen's Association
EW12-009	Integrating Birds in Range Management across the Sagebrush Steppe	\$60,000	Laura Quattrini Rocky Mountain Bird Observatory (dba Bird Conservancy of the Rockies)
EW09-013	In-service Training and Decision-Making Tools for Optimizing Livestock Mortality Management	\$97,848	Dr.Jessica Davis Colorado State University
EW09-014	Curricula and Instructional Modules for Sustainable Small-Scale Greenhouse Production	\$60,000	Dr.Steven Newman Colorado State University
EW08-016	Professional Training for Developing a Hands-On Organic Weed Management Learning Center for Commercial Market Gardens in Local Communities	\$89,492	Beth LaShell Fort Lewis College
EW07-008	Enterprise, Environmental and Community Development to Promote Agricultural and Heritage Tourism	\$59,973	Martha Sullins Colorado State University Dawn Thilmany Colorado State University Andrew Seidl Colorado State University

EW06-019	Using Videos as a Teaching Tool: Improving Profits and Rangelands Through Application of Behavioral Principles	\$80,000	Beth Burritt Utah State University
EW05-015	Manure Management: An essential component of 4-H livestock projects	\$59,927	Dr. Jessica Davis Colorado State University
EW04-016	BEHAVE Facilitator's Network	\$99,702	Kathy Voth Utah State University
EW03-011	Education, Training and Outreach on Risk Education	\$99,600	Doug Hoag CSU
EW02-004	Niche Beef Production and Marketing in Colorado	\$59,470	Martha Sullins American Farmland Trust Julia Freedgood American Farmland Trust Dawn Thilmany Colorado State University Tom Field Colorado State University
EW02-009	Integrating Bird Conservation into Range Management	\$81,937	Tammy VerCauteren Rocky Mountain Bird Observatory
EW02-017	Establishing Dialogue Between Alternative Agricultural Producers and the Land-Grant University in Colorado	\$56,000	Dr. Jessica Davis Colorado State University
EW01-021	Exploration of the Ethical Basis for Agricultural Sustainability	\$26,772	Robert Zimdahl Weed Research Lab, Colorado State University
EW01-022	Coached Land Planning and Care	\$81,000	Scott Cotton Colorado State University Cooperative Education
EW99-006	Workshops on Land Use and Land Protection Policy	\$66,195	Jeff Jones American Farmland Trust
EW97-005	In-Depth Training and Work Experience on a Community Supported Agriculture (C.S.A.) Farm	\$4,400	Steve Carcaterra Colorado State University Cooperative Extension
EW96-002	Improving Manure Management to Protect Water Quality in the Southwestern U. S.	\$60,000	Dr. Jessica Davis Colorado State University
EW95-018	Video Introduction to Sustainable Agriculture for Eight Western States	\$20,000	Joe Hiller University of Wyoming, Cooperative Extension Service
EW94-009	Permaculture Systems Pamphlet	\$5,620	Jerome Osentowski Central Rocky Mountain Permaculture Institute

FARMER/RANCHER GRANTS

Project #	Project Title	SARE Support	Project Leaders
FW20-371	The Application of using High-Fungal Compost to Renovate Mountain Meadow Pastures	\$20,000	Steve Oswald Oswald Cattle Co
FW19-341	The Citizen Science Soil Health Project	\$24,800	Elizabeth Black Your Neighborhood Christmas Tree Farm

FW19-354	Evaluating Forage Production and Ranching in Response to Regenerative Rotational Grazing on Dryland Pastures in Southwest Colorado.	\$25,000	Chuck McAfee Charles M.McAfee & CO. LLLP
FW18-053	Managing Canada Thistle for Soil Health and Greater Farm Profitability through Crimped Cover Crop and Strip Tillage on Annual Brassicas and Cucurbits	\$8,978	Michael Nolan Mountain Roots Produce LLC
FW15-046	Feasibility of Summer (floricane) Brambles in Colorado	\$14,571	Amy Kafka Garden Sweet
FW15-057	Supplemental Heating of High Tunnels by Energy-Producing Compost Piles	\$15,000	Dr.Amy Yackel Adams Sunspot Urban Farm
FW14-027	Colorado Queen Honey Bee Testing Project for Increased Sustainability	\$24,922	Kristine Holthaus Colorado Queen Honey Bee Testing Project for Increased Sustainability
FW13-128	Improved Honeybee Health through Foundation Modification	\$25,000	Audrey Sue McWilliams Sue McWilliams
FW12-076	Development of a Digitally Integrated, Low-cost Farm-to-Consumer Product Tracking System for Small Scale Farmers and Grower Networks	\$24,965	Brett KenCairn Circle Fresh Farms
FW11-010	Alternative crops to diversify the traditional winter wheat/fallow cropping system in Northwest Colorado	\$29,821	Mike Williams none Mike Williams
FW10-059	Expanding Small Ruminant Dairy Production	\$14,500	Suzanne Quintana Quintana Farms Neville McNaughton Cheezsorcer
FW10-070	Effects of Sustainable Soil Amendments on Nutrient Availability in High Alkaline pH Soil in Field Production of Trees in Northeastern Colorado	\$14,379	Dr.Brooke Edmunds CSU Extension David Rickman Boxelder Creek Nurseries
FW09-030	Alternative Fertilizer for Meadow Grass Hay	\$10,775	Nancy Roberts Arrowpoint Cattle Co., LLC
FW07-024	Different Goat Breed Crosses to Find the Best Tasting Meat	\$12,623	Holly Napier Napier Family Farms
FW07-031	Raising Livestock and Crops Simultaneously in Unheated Greenhouses	\$12,089	John Socolofsky Antelope Creek Ranch
FW07-319	Season Extension and Crop Area Multiplication with a Moveable Hoophouse in an Organic System	\$11,230	Dr.Edward Page CSU Extension
FW06-314	Business Plan for Producers to Create Value-added Crop-based Products	\$20,000	Ravi Malhotra ICAST Intl Ctr for Appropriate & Sustainable Tech
FW06-028	Integrated Control of Weeds and Verticillium in Strawberry Nurseries	\$10,000	Brian Coleman Ruby Mountain Nursery

FW05-009	Non-chemical Control of Nematodes in Potatoes	\$9,922	Monty Smith Three S Ranch
FW05-309	Management Practices for Drip Irrigation in Baca County, Colorado	\$9,353	James Valliant Colorado State University
FW04-112	Common Standards and Labeling	\$13,500	Dan Hobbs Tres Rios Agricultural Cooperative Inc.
FW04-318	Using Irrigated Forage Pastures to Enhance Livestock Production Sustainability	\$13,555	Bruce Bosley Colorado State University Gene Schmitz Colorado State University
FW03-016	Production of Medicinal Herbs as an Integral Part of On-farm Cheese Production and the Use of Medicinals for Immuno-stimulation and Enhanced Milk Production	\$5,455	Denise Bohemier El Rancho del Cielo
FW03-109	Edamame Bean Production and Marketing	\$5,000	Phil Knob
FW03-111	Market Development for an Edible Bean Food Business	\$5,000	Shane Atchley
FW02-003	Agricultural Systems Economics for Hay production	\$1,030	Wilbur Miller
FW02-006	SE Colorado Range Plant Quality Database and Supplement Formulation Program	\$13,488	John Doherty
FW02-007	Propagation of Colorado Native Plants	\$7,500	Ann Grant
FW02-014	Study to Determine if Nepeta Cataria (Catnip) Can Be Commercially Grown in Montrose, CO	\$5,000	Susan Bony
FW02-021	Design and Building of a Facility for the production of Goat and Sheep milk Cheeses on the farmstead in rural SW Colorado	\$7,460	Denise Bohemier El Rancho del Cielo
FW02-025	Colorado Organic Honey Production	\$6,000	Cesar Flores
FW01-009	Tillage and Irrigation Assessment Effecting Soil Salinity along South Platte River	\$6,400	Randy Honstein Natural Resources Conservation District
FW01-010	Pastured Poultry as an Alternative and Enhancement to a Traditional Livestock Agricultural System	\$6,500	Tony Daranyi Colorado State University
FW00-028	Building a Community-based Direct Marketing Model for Diverse Ranch Enterprises	\$5,000	Jeremy Gingerich
FW00-032	Organic Soil Amendment Release Rates for Fertility in Apples	\$6,750	Steve Ela

FW00-038	Native Plants Nursery	\$5,000	John Squire
FW00-074	Colorado Quality Lamb: Enhancing the Economic Viability of Local Producers Through Direct Marketing to Food Service Establishments	\$5,000	David Myers
FW00-240	Carbondale Community Garden Cooperative	\$8,311	Wendy Anderson
FW00-277	Custer County Ag-Products Internet Marketing Project	\$2,160	Sara Hebbert
FW00-302	Alternative Crop Marketing Based on a Pre-existing Urban-Rural Spiritual and Social Relationship	\$3,400	Paul Mailander
FW00-012	Residue Management in Furrow Irrigated Reduced Tillage Systems	\$4,650	Randy Hines
FW00-329	Paradox Valley Heirloom Foods and Native Seed Grow-Out	\$9,997	Martha Ames Burgess
FW99-011	Hydraulic Windmill Pump	\$2,733	Lonnie Jackson
FW99-065	Sustainable Sheep Dairy Project	\$3,550	Steve and Carolyn Keller
FW98-020	Testing Alternative Crop Rotations for Traditional Small Grain/Fallow System	\$3,000	James Faughnan
FW98-024	Integrated Weed Management of Musk Thistle with Emphasis on Biological Control	\$2,938	Larry Matschke
FW98-025	Annual Forage Production for an Intensive Winter Grazing System	\$2,665	John Haws
FW98-065	Cultures and La Manga Cattlemen's Association Range Analysis and Improvement Project	\$8,700	Dennis Moeller
FW97-032	Perennial Grass Establishment in Existing Alfalfa	\$1,825	Douglas B. Wiley
FW97-045	Pasture Fryer Chickens	\$2,500	Pete Mattics
FW97-003	Converting Pasture Land to Specialty Crop Production as an Alternative Farm Enterprise	\$2,500	Trent J. Taylor
FW96-005	Habitat Management as a Transitional Tool to an Insecticide-Free Pest Management Program in Apples	\$1,500	Bob White
FW95-047	Evaluation of Alternative Crops in Dryland Multi-Crop Rotations on Farms in the Northeastern Colorado Region	\$5,000	Joe Kinnie Colorado Conservation Tillage Association

GRADUATE STUDENT GRANTS

Project #	Project Title	SARE Support	Project Leaders
GW20-214	Cattle as Partners in Conservation: Ecological, Economic, and Social Outcomes of Public-Private Partnerships on Colorado Landscapes	\$24,727	Stacy Lynn Colorado State University Anna Clare Monlezun Colorado State University
GW19-202	Climate mitigation through soil carbon sequestration: increasing soil resilience and plant productivity on rangelands through compost application	\$24,766	Dr. Jennie DeMarco Western Colorado University Amy Honan Western Colorado University Alexia Cooper Western State Colorado University (doing business as Western Colorado University)
GW16-020	Dryland cropping system intensification in the West-Central Great Plains: Impacts and barriers to adoption	\$25,009	Meagan Schipanski Colorado State University Steven Rosenzweig Colorado State University
GW14-028	Information flows along the beef supply chain: Information exchange as a strategy for mitigating increased costs and maximizing producer profits.	\$25,000	Dr. Jennifer Bair Sociology, CU Boulder Sarah Lake University of Colorado-Boulder
GW11-019	Impacts of Reduced Nitrogen Application During Late Growing Season on Potato Tuber Quality and Profitability	\$24,490	Dr. Sastry Jayanty Department of Horticulture and LA Henry Castleberry Colorado State University

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
OW20-358	Compost for Carbon Sequestration on Irrigated Pasture	\$49,746	Retta Bruegger Colorado State University Extension Dr. Megan Machmuller Colorado State University Seth Urbanowitz Colorado State University Extension
OW20-357	Microbial Ecology of Vermicompost and Vermi-teas	\$49,100	Dr. Zackary Jones Rocky Mountain Soil Stewardship Kathy Doesken Rocky Mountain Soil Stewardship
OW10-309	Reducing Nitrogen Fertilizer Inputs to Irrigated Pastures and Hayfields by Interseeding Legumes	\$49,849	Joe Brummer Colorado State University
OW10-321	Using Cattle to Rehabilitate Rangeland Vegetation and Improve Ecosystem Function (3 yr project)	\$49,936	Kathy Voth Livestock for Landscapes
OW10-325	Organic Winter Production Scheduling in Unheated High Tunnels.	\$38,358	Frank Stonaker Colorado State University

**Total funding from the USDA SARE program to
Colorado
\$4,975,358**



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).