



AGRICULTURE PROJECTS FUNDED IN MONTANA

by USDA's
Sustainable Agriculture Research and Education (SARE) Program
1988-2019

Montana has been awarded \$7,667,388 grants to support 120 projects, including but not limited to, 41 research and/or education projects, 20 professional development projects and 33 producer-led projects. Montana has also received additional SARE support through multi-state projects.

RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE support	Project Leaders
SW19-907	Snowbanks to Grassbanks	\$349,709.98	Dr.Bok Sowell MSU- Animal & Range Sciences Dr.Andrea Litt Department of Ecology, Montana State University Barry McCoy McCoy Cattle Megan Van Emon Montana State University
SW17-016	Soil acidity management of long-term no-till fields in Montana to prevent crop failure	\$264,016	Dr.Richard Engel Montana State University
SW17-080	The Impacts of Integrating Livestock into Cropping Systems on Soil Health and Crop Production	\$249,502	Devon Ragen Montana State University
SW16-051	Research and Demonstration of Minimum Tillage and Optimum Water Management in Sugarbeet Production in Eastern Montana	\$247,410	Dr.Chengci Chen Montana State University
SW15-028	Examining, Optimizing, and Building Capacity for Montana's Local Beef to School Supply Chain	\$220,021	Dr.Carmen Byker Shanks Montana State University
SW14-014	Sustainable Cropping Systems for Dual-Purpose Biennial Canola	\$256,397	Dr.Darrin Boss Montana State University Dr.Steve Fransen Washington State University
SW13-043	Evaluating Native Perennial Flower Strips for Enhancing Native Bees and Pollination Services on Farmlands	\$170,951	Laura Burkle Montana State University
SW13-056	Landscape Collaborative Grazing and Greater Sage Grouse Survival	\$339,552	Dr.Bok Sowell MSU- Animal & Range Sciences
SW12-108	Low Glycemic Potatoes, a value-added crop for Montana	\$154,000	Dr.David Sands Montana State Univ
SW11-086	Degree Day Modeling and Economic Considerations of Insects and Weeds in	\$206,700	Dr.Hayes Goosey Montana State University

Sheep Grazed Alfalfa, Grain, and Range
Production Systems

<u>SW11-099</u>	Using cover crop mixtures to improve soil health in low rainfall areas of the northern plains	\$354,405	Dr.Perry Miller Montana State University
<u>SW10-050</u>	Enhancing Cropping System Sustainability by Minimizing Ammonia-N Losses from Biological and Chemical Inputs	\$190,009	Dr.Richard Engel Montana State University
<u>SW09-068</u>	Integrating Biological Control with Targeted Sheep Grazing to Suppress Spotted Knapweed	\$49,865	Rachel Frost Montana State University Jeff Mosley Montana State University
<u>SW09-601</u>	Infrastructure Support for Small Livestock Processing Facilities	\$46,796	Dr.Jane Boles Montana State University
<u>SW07-013</u>	Evaluation of Alfalfa Weevil (Coleoptera Curculionidae) Densities, Weed Abundance, and Regrowth Characteristics of Alfalfa Grazed by Sheep.	\$96,817	Dr.Hayes Goosey Montana State University
<u>SW07-603</u>	Developing a free on-line excel based enterprise budget decision support program to evaluate the incorporation of sheep into farm systems as an alternative to pesticide and mechanical methods of weed and insect control	\$10,000	Dr.Hayes Goosey Montana State University
<u>SW07-025</u>	Grower-based selection of varieties and systems for wheat stem sawfly control	\$125,000	Dr.Luther Talbert Montana State University
<u>SW07-028</u>	Is Sulfur Cinquefoil a Candidate for Control with Sheep and Goats?	\$54,250	Jeff Mosley Montana State University Rachel Frost Montana State University
<u>SW06-006</u>	Survey and Economic Analysis of Montana Farms Utilizing Integrated Livestock-Cereal Grain (Ley Farming) Systems	\$91,500	Dr.Chengci Chen Montana State University
<u>SW06-075</u>	Does Timing of Defoliation Affect Spotted Knapweed Seed Viability and Germination?	\$62,600	Tracy Brewer Park County Extension - Montana State University Dr.Tracy Mosley Montana State University Extension
<u>SW05-038</u>	Developing Distance Learning Based on Perceptions and Knowledge of Producers and Agricultural Professionals	\$98,819	Fabian Menalled Dept. of Land Resources and Environmental Sciences
<u>SW04-007</u>	Methane Recovery from Small Dairy Operations	\$123,834	Ron Carlstrom MSU Extension- Gallatin County
<u>SW03-056</u>	Ecologically Based Integrated Weed Management to Restore Plant Diversity	\$121,750	James Jacobs Montana State University
<u>SW03-063</u>	Factors Affecting Alfalfa Stand Longevity in Montana	\$139,397	Dennis Cash Montana State University

SW02-005	Increasing Crop Water Use Efficiency in Advanced No-Till Systems	\$22,980	Dr.Perry Miller Montana State University
SW01-048	Using Crop Diversity in No-till and Organic Systems to Reduce Inputs and Increase Profits and Sustainability in the Northern Plains	\$157,888	Bruce Maxwell MSU
SW00-015	An Alternative to Traditional Wheat Stubble Management Using Sheep to Control Pests and Improve Soil Nutrient Cycling	\$166,147	Patrick Hatfield Department of Animal and Range Sciences Sue Blodgett Montana State University, Dept. Entomology Dr.Hayes Goosey Montana State University Duane Griffith Montana State University, Ag Econ and Ext Dept
SW98-064	Selecting Cattle to Prevent Grazing Distribution Problems	\$115,598	Derek Bailey Montana State University
SW97-056	Comparison of Pest Management Interactions in Spring Wheat-Cover Crop and Spring Wheat-Fallow Cropping Systems	\$150,964	Andrew Lenssen Montana State University
SW96-019	Sustaining Agriculture and Community: Moving the Farm Improvement Club Program Beyond the Farm Gate	\$124,425	Jonda Crosby Alternative Energy Resources Organization
LW92-004	Sustainable Farming Quarterly	\$17,500	Nancy Matheson Alternative Energy Resources Organization (AERO)
LWD92-004	The Sustainable Farming Quarterly (SFQ) A Regional Newsletter	\$17,500	Al Kurki Alternative Energy Resources Organization (AERO)
LW91-023	Farm Improvement Club Network for Sustainable Agriculture	\$69,000	Nancy Matheson Alternative Energy Resources Organization (AERO)
LW91-024	Specifying and Analyzing Whole-Ranch Systems for Sustainable Range Livestock Production in Environmentally Sensitive Areas	\$290,000	Jack Riesselman Montana State University
LW91-025	Practical Education in Sustainable Production Systems	\$14,250	Wade Crouch Montana State University
LWD91-003	Regional Farm and Research Center Matching System-FARMS	\$3,000	J. Jacobsen Montana State University
LW89-012	Cereal-Legume Cropping Systems: Nine Case Studies in the Dryland, Small Grains-Fallow Area of the Inland Northwest and High Plains	\$17,764	Nancy Matheson Alternative Energy Resources Organization (AERO)
LW89-014	Low-Input Legume/Cereal Rotations for the Northern Great Plains/Intermountain	\$162,000	James Sims Montana State University

	Region		
LW89-016	Bio-Priming for the Control of Pythium Reemergence Damping-Off in Vegetable Crops	\$14,984	Nancy Callan Montana State University
LW89-019	Livestock Health and Nutrition Alternatives: A Western States Conference	\$5,000	Al Kurki Alternative Energy Resources Organization (AERO)
LW88-006	Soil-building Cropping Systems Conference-Legumes and Other Green Manures in Cropping Systems of The Northern Plains, Rockies and Intermountain Region	\$7,700	Robert Gillespie Alternative Energy Resources Organization (AERO)

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE support	Project Leaders
WPDP19-15	Sustainable Beef Cattle Production: Ranch to Ribeye	\$57,310	Megan Van Emon Montana State University Colleen Buck Montana State University Callie Cooley Montana State University Molly Hammond Montana State University Elin Kittelmann Montana State University Kari Lewis Montana State University
EW18-011	Pheromones as Tools for Monitoring the Insect Pests in the Northern Plains - Instructive Tools for Agricultural Professionals	\$73,510	Dr.Michael Ivie Montana State University-Bozeman
EW18-027	Building Internal Capacity for the Blackfeet Tribe Agricultural Resource Management Plan (ARMP)	\$52,155	Loren Bird Rattler Blackfeet Tribe
EW17-011	Integrated Parasite Management: Train the Trainer	\$74,189	David Scott National Center for Appropriate Technology
EW16-029	Best Management Practices (BMPs) for Mitigating Herbicide Resistance in the Northern Great Plains—Educational Tools for Agricultural Professionals	\$68,871	Dr.Prashant Jha Montana State University, Southern Agricultural Research Center, Huntley, MT
EW16-036	Catalyzing Increased Agricultural Sales through a Common Understanding of Montana's New Food Modernization Law	\$22,332	Jennifer Hill-Hart AERO
EW15-009	Conservation and Augmentative Biological Control in the Northern Plains – Providing Tools for Agriculture Professionals	\$68,182	Dr.Michael Ivie Montana State University-Bozeman
EW13-014	Enhancing the Exploring Energy Efficiency & Alternatives (E3A) Curriculum	\$42,277	Milton Geiger University of Wyoming Extension Dr.Glen Whipple University of Wyoming Extension
EW12-004	Tour of sustainable Small Grain Production in Eastern Washington	\$7,350	Dan Picard MSU Extension-Pondera County Jesse Fulbright

<u>EW12-006</u>	Montana State University Extension Range Management Institute	\$60,000	Montana State University Dr.Tracy Mosley Montana State University Extension
<u>EW11-012</u>	Wildlife Damage Control for Traditional and Organic Farmers	\$96,053	Dr.Jim Knight Extension Wildlife Specialist
<u>EW01-016</u>	Growing Our Own: Communities That Sustain Entrepreneurs	\$52,483	Richard Williams Montana State University Extension Service
<u>EW01-007</u>	Training Tour 2002-03-04	\$30,024	Jonda Crosby Alternative Energy Resources Organization
<u>EW99-008</u>	Developing a Sustainable and Organic Master Gardener Horticulture Production Manual	\$22,483	Helen Atthowe Missoula County Extension Service
<u>EW99-015</u>	Harvesting the Wealth: of AERO's Farm and Ranch Improvement Clubs	\$60,000	Jonda Crosby Alternative Energy Resources Organization
<u>EW97-007</u>	Sustainable Agriculture Youth Education: Professional Dev. for Youth Program Leaders and Educators	\$100,000	Jonda Crosby Alternative Energy Resources Organization
<u>EW95-003</u>	Agency Personnel Training in Riparian Monitoring and Management of Wildlife and Livestock in the Intermountain West	\$98,000	Dr.Jim Knight Extension Wildlife Specialist
<u>EW95-012</u>	Sustainable Agriculture Training Project A Model of Collaborative Learning	\$31,450	Nancy Matheson Alternative Energy Resources Organization (AERO)
<u>EW95-002</u>	Sustainable Noxious Weed Management on Northwestern Rangelands	\$43,800	Roger Sheley Montana State University
<u>EW94-006</u>	Sustainable Agriculture Training Project: A Model of Collaborative Learning	\$91,000	Nancy Matheson Alternative Energy Resources Organization (AERO)

FARMER/RANCHER GRANTS

Project #	Project Title	SARE support	Project Leaders
<u>FW19-340</u>	Improving Winter Greens Production and Storage for Cold Climate Farmers	\$19,990	Katelyn Madden
<u>FW15-039</u>	Making the Most of Fine Fleece: Environmental, Economic, and Social Costs and Benefits of Alternative Strategies for Marketing Sheep Wool	\$10,646	Linda Poole Prairie Shepherd
<u>FW11-024</u>	Organic Control of Perennial Weeds with Vinegar and Biologicals	\$20,790	Jess Alger Organic control of Perennial Weeds
<u>FW10-042</u>	Marketing J Bar L Ranch Grassfed Beef to Members of Conservation Organizations	\$13,000	Bryan Ulring J Bar L Ranches, LLC

FW09-305	Composting Recommendations and Marketing Evaluation for Livestock Operations in Cold Semi-Arid Environments	\$49,315	Thomas Bass Montana State University
FW08-016	Can Producers in Five Montana Counties Successfully Use No-Till Methods for Renovation of Irrigated and Dryland Pastures?	\$29,999	Ron Carlstrom MSU Extension- Gallatin County George Reich
FW08-023	Pasture-Raised Heritage Turkeys in a Dryland Farming System	\$6,413	Jacob Cowgill
FW08-034	High-Nutrition Drought-Tolerant Corn	\$30,000	Dave Christensen
FW08-317	Sustainable Food and Bioenergy Systems: Student Internships Development Plan	\$29,983	Dr. William Dyer Montana State University
FW06-025	Agroecosystem Approach to Managing Imported Cabbage Worm (<i>Peris rapae</i>)	\$6,356	Helen Atthowe Biodesign Farm
FW05-301	Protecting High Quality Rangelands in Garfield County from Invasive Weed Spread	\$20,000	Eric Miller Montana State University
FW05-305	Demonstration of Leafy Spurge Management Using Sheep Grazing in a Leafy Spurge Barrier Zone	\$9,960	Sharla Sackman Montana State University Extension Service
FW05-012	Forage Winter Wheat Production for Grazing or Hay Production in Eight Montana Counties	\$19,795	George Reich
FW04-018	Forage Winter Wheat Production for Jay or Grain in Gallatin County, Montana	\$5,370	George Reich
FW02-036	Sheep and Cattle Grazing Complementarity Project	\$5,055	Randall Tunby
FW01-032	Biological Weed Control: Education and Implementation	\$7,500	Noah Poritz
FW01-085	Biological and Mechanical Control of Perennial Weeds in North-Central Montana	\$6,387	Robert Quinn Montana State University
FW00-288	TEAM-Team Effort in Agricultural Marketing for the McAlpine Ranch	\$9,705	Clay McAlpine
FW00-314	Montana Arnica Web Page	\$870	Rod Daniel
FW00-017	Establishing a Sustainable Program for Recycling and Propagation of Quality Flower Bulbs in a Wholesale Flower Production Operation	\$2,197	Laura Smith

FW00-260	Test Marketing Campaign to Conduct In-Store Lamb Cooking and Recipe Demonstration for Montana Natural Lamb Cooperative in the Billings, Montana Market Area	\$9,300	Gayle Ott
FW00-282	Better Board of Trade.Com	\$8,054	David Oien
FW99-069	No-Till Wheat into Medic vs. Conventional Wheat	\$4,578	Jess Alger Organic control of Perennial Weeds
FW99-102	Range Monitoring in the Badlands Grazing District	\$10,000	Jack McCuin
FW98-035	Annual Forages for Dryland Rotations	\$1,540	Vern Pluhar
FW98-093	Cull Potato Composting	\$7,500	Steve McCullough
FW96-073	Evaluation of Grass Species for Improved Pasture Management	\$4,800	Robert Lee
FW96-083	Vegetative Changes through Alternative Water Sources	\$2,500	Dale Veseth
FW96-007	Green Manure/Covercrop Combination Experiment	\$1,923.15	Rod Daniel
FW96-008	Legume Grazing in Rotation with Small Grains	\$4,000	Jess Alger Organic control of Perennial Weeds
FW95-026	Carter-Fallon Forage Committee Range/Livestock Project	\$4,943	Randy Tunby Carter-Fallon Forage Committee
FW95-078	Managing a Living Mulch System in an Intensive Organic Vegetable Cropping Operation to Enhance Weed, Nutrient, and Pest Management	\$5,000	Helen Atthowe Biodesign Farm
FW95-093	Influencing Elk and Livestock Riparian Use	\$4,750	Allen Carter

GRADUATE STUDENT GRANTS

Project #	Project Title	SARE support	Project Leaders
GW19-198	Precision Agriculture Applied to Organic Systems	\$22,499.64	Royden Loewen Montana State University Bruce Maxwell MSU Bob Quinn Quinn Farm & Ranch
GW19-199	Effects of Habitat Heterogeneity on Crop	\$24,971.90	Hannah Duff

	Yield and Biodiversity		1992 Bruce Maxwell MSU Chuck Merja Bob Quinn Quinn Farm & Ranch
<u>GW19-190</u>	Nitrogen Fertilizer Management Based on Site-Specific Maximized Profit and Minimized Pollution	\$24,992	Paul Hegedus Montana State University Dr. Stephanie Ewing Montana State University Bruce Maxwell MSU Chuck Merja
<u>GW19-197</u>	Fostering resilient plant-soil interactions on working ranches in semi-arid steppe ecosystems of north-central and eastern Montana.	\$24,988.04	Joseph Capella Montana State University Dr. Craig Carr Montana State University Dr. Stephanie Ewing Montana State University Dr. Christine Gobrogge Montana State University Environmental Analytical Laboratory Seth Newton Bear Gulch Ranch Jay "Butch" Ortner Ortner Ranch Danny Pratt Natural Resources Conservation Services Tiffany Salveson Natural Resources Conservation Service Timothy Seipel
<u>GW18-179</u>	Predicting overwinter nitrate-N changes at the subfield scale in leaching-susceptible, agricultural soils	\$25,000	Dr. Clain Jones Montana State University Dr. Patrick Carr Central Agricultural Research Center Simon Fordyce Central Agricultural Research Center
<u>GW18-151</u>	Advancing Cover Crop Knowledge: Assessing the Role of Plant Diversity on Soil Change	\$25,000	Dr. Perry Miller Montana State University Kristen Dagati Montana State University
<u>GW18-050</u>	Montana Hardy Fruit Nutraceutical Quality	\$17,765	Mac Burgess Montana State University Durc Setzer Montana State University
<u>GW17-040</u>	Sustainability of dormant season grazing: Does protein supplementation impact beef cattle performance, soil organic matter, vegetation, and residual cover for wildlife?	\$24,970	Dr. Janice Bowman Montana State University Dr. Lance McNew Montana State University Samuel Wyffels Montana State University
<u>GW16-053</u>	Cover Crop Grazing: Optimal Seasonality for Soil and Livestock Benefit	\$25,000	Dr. Perry Miller Montana State University Robert Walker MSU LRES
<u>GW12-004</u>	Multiple Forms of Uncertainty as a Barrier to the Adoption of Sustainable Farming Practices	\$24,830	Patrick Lawrence Montana State University
<u>GW10-032</u>	Investigating the Legume Green Fallow	\$24,250	Dr. Perry Miller

	Alternative on North-Central Montana No-Till Operations		Montana State University Justin O'Dea Washington State University
GW09-012	Joint Management of Wheat Stem Sawfly, Fusarium Crown Rot, and Weeds: Assessing the Ecological Basis of a Total Systems Approach to Pest Management Strategies	\$21,964	Fabian Menalled Dept. of Land Resources and Environmental Sciences Ilai Keren Montana State University
GW06-026	Effects of Weed Communities in Conventional and Organic Agricultural Systems.	\$7,536	Bruce Maxwell MSU Fabian Menalled Dept. of Land Resources and Environmental Sciences Fred Pollnac Montana State University

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE support	Project Leaders
OW17-009	Soil Moisture Network and Tools - MT and WY collaborative	\$49,995	Lee Schmelzer Montana State University
OW17-026	Montana Food Economy Initiative	\$50,000	Jennifer Battles AERO
OW17-021	Evaluating Nitrates and Forage Quality in Fall Regrowth of Annual Cereal Forages	\$19,972	Dr.Tracy Mosley Montana State University Extension
OW15-026	Are Feedlot-based Performance Cattle Limiting Ecological Services for Rangeland Ecosystems in Northern Mixed-grass prairies?	\$49,961	Dr.Emily Meccage Montana State University
OW13-017	Reference strips and precision sensors for increased nitrogen use efficiency in wheat production	\$49,907	Dr.Olga Walsh Montana State University
OW13-144	Effects of Late-Season Water Lease on Forage Crops	\$24,950	Jodi Pauley Montana State University
OW12-044	Best Management Practices for Livestock Protection Dogs	\$49,998	Jeff Mosley Montana State University
OW11-326	Developing Community Based Oilseed Industry in Montana	\$49,830	Taylor Lyon Bio-Energy Center Dr.Nestor Soriano, Jr. Lead Research Scientist
FW04-313	Preserving Farms and Ranches	\$5,000	Robert "Rob" Johnson Montana State University

PDP STATE PROGRAM GRANTS

Project #	Project Title	SARE support	Project Leaders
WSP19-019	Montana WSARE PDP Grant Proposal 2020	\$28,686	Shelley Mills Montana State University Extension - Valley County
WSP18-010	2018-2020 Montana PDP project	\$28,636	Shelley Mills

Montana State University Extension -
Valley County

WSP17-010	2018 Montana State University PDP Project	\$37,999.63	Shelley Mills Montana State University Extension - Valley County
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ENHANCED STATE GRANTS GRANTS

Project #	Project Title	SARE support	Project Leaders
MW16-004	Extension and outreach supporting climate-resilient sustainable agriculture in Montana.	\$24,998	Fabian Menalled Dept. of Land Resources and Environmental Sciences

**Total funding from the USDA SARE program to
Montana
\$7,667,388**



For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu.

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