

## 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 \$361 million to more than 8,182 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](http://www.sare.org)

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

# Arkansas

### Project Highlight: *Maximizing Cover Crop Use in High Tunnels*

Cover crops are becoming a vital tool in soil management, yet vegetable growers who use high tunnels may decline to plant them inside structures due to a variety of factors. In the warm indoor environment, cover crops could potentially provide habitat for overwintering pests. Economically, the benefits may not seem clear since there are fewer off-season periods for a cover crop to fill and growers in such a capital-intensive system may not want to use valuable ground for a crop that has no immediate return.

Funded by a SARE grant, University of Arkansas graduate student Luke Freeman sought to determine the optimum timing for planting cover crops in Southern high tunnels to minimize the negatives and maximize the benefits. Cover crops can be beneficial in high tunnels for reducing nitrogen fertilizer use and improving soil quality. Since local growers stated that mid-November through mid-February was the least productive season, Freeman researched four winter cover crops, followed by summer tomatoes and fall broccoli, during that time period.

He found that winter peas contributed a greater amount of biomass nitrogen than all other treatments. This led to a 48 percent increase in mean tomato yield compared to the control. Sharing these results gives Southern high tunnel vegetable growers a better understanding of the benefits of cover crops.

For more information on this project, see [sare.org/projects](http://sare.org/projects), and search for project number [GS14-136](#).

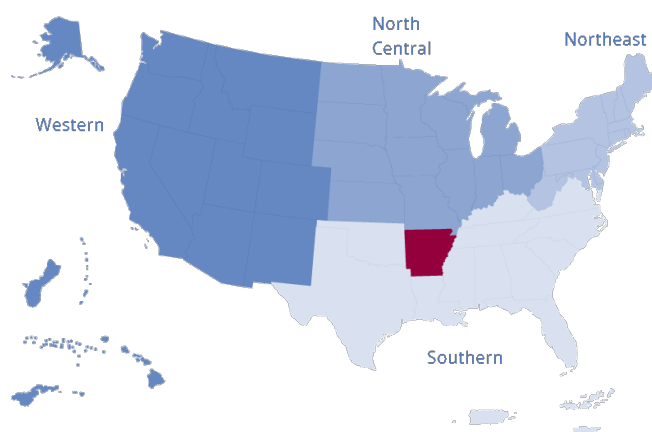
## SARE in Arkansas

[southern.sare.org/sare-in-your-state/arkansas](http://southern.sare.org/sare-in-your-state/arkansas)

**\$7,406,116**  
in total funding

**102 grant projects**  
(since 1988)

For a complete list of grant projects state by state, go to [www.sare.org/state-summaries](http://www.sare.org/state-summaries)



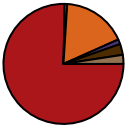
# SARE Grants in Arkansas

Total awards: 102 grants



38 Research and Education  
5 Sustainable Community Innovation  
18 Professional Development Program  
9 Farmer/Rancher  
20 Graduate Student  
12 On Farm Research/Partnership

Total funding: \$7,406,116



\$5,578,880 Research and Education  
\$49,829 Sustainable Community Innovation  
\$1,283,398 Professional Development Program  
\$96,767 Farmer/Rancher  
\$217,784 Graduate Student  
\$179,458 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:

[southern.sare.org/sare-in-your-state/arkansas](http://southern.sare.org/sare-in-your-state/arkansas)

## 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 [southern.sare.org/state-pages/arkansas](http://southern.sare.org/state-pages/arkansas) to learn more.

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For detailed information on SARE projects, go to [www.SARE.org](http://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 ARKANSAS

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

Arkansas has been awarded \$7,406,116 grants to support 99 projects, including but not limited to, 35 research and/or education projects, 18 professional development projects and 9 producer-led projects. Arkansas has also received additional SARE support through multi-state projects.

## RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
LS22-363	Grazing with the Fun Guy (Fungi) - Small Ruminant Worm Control	\$371,000	Dr. Joan Burke USDA, Agricultural Research Service Thomas Terrill Fort Valley State University Dr. Adriano Vatta Louisiana State University Dr. Niki Whitley Fort Valley State University
LS21-349	Regenerative Land and Livestock Management for Women	\$49,972	Linda Coffey National Center for Appropriate Technology (NCAT) Margo Hale NCAT
LS19-316	Forage Establishment and Management in Arkansas' Silvopasture for Small Beef Producers	\$255,302	Dr. Dirk Philipp University of Arkansas
LS19-317	Innovative Nutrient Management Options for Sustainable Pasture Land Intensification	\$296,352	Michael Popp University of Arkansas
LS18-292	Taking Your Farm to the Next Level: Business and financial planning for sustainable farms and ranches	\$47,000	Margo Hale NCAT
LS18-295	Increasing Farm Profitability Through Whole Farm Record-Keeping and Analysis	\$43,000	Elizabeth Young Southern SAWG
LS17-282	High Tunnel Grape Production Systems: A Novel Sustainable Approach to Growing Grapes	\$266,986	Renee Threlfall University of Arkansas Dr. M. Elena Garcia University of Arkansas Division of Agriculture
LS16-274	The Impact of Mineral Particle Film on Blackberry Diseases and Insects, and Primocane Fruit Quality and Yield	\$174,290	Sherri Sanders University of Arkansas CES
LS16-276	Validating Sustainability/Resilience and Quality of Life Indices to Identify Farm- and Community-Level Needs and Research and Education Opportunities	\$203,560	Dr. James Worstell Delta Land & Community
LS13-259	Participatory assessment of progress, barriers and opportunities for sustainability in Southern agricultural systems	\$100,000	Dr. James Worstell Delta Land & Community
LS12-250	Extending the Market Season with High Tunnel Technology for Organic Fruit Production	\$214,948	Dr. Curt Rom University of Arkansas

LS10-226	Integrating Free Range Poultry with Ruminant and Agroforestry Production in a Systems Approach	\$210,000	Dr. Anne Fanatico Appalachian State University
LS08-204	Sustainable control of gastrointestinal nematodes in organic and grass-fed small ruminant production systems	\$230,000	Dr. Joan Burke USDA, Agricultural Research Service
LS05-176	Best management practices for organic orchard nutrition	\$200,000	Dr. Curt Rom University of Arkansas
LS04-160	Using Parasitoids in an Integrated Pest Management Approach to Control Flies on Dairy Farms	\$288,000	Kelly Loftin University of Arkansas CES
LS04-166	Increasing the effectiveness of assisting farmers with sustainable on-farm enterprise	\$15,860	Keith Richards Southern SAWG
LS04-167	The Southern Region Organic Fruit Production Initiative: Identifying Barriers, Needed Research, Markets, and Opportunities	\$15,555	Dr. Curt Rom University of Arkansas
LS03-145	Technical and Economic Analysis of the Potential for Conversion of Poultry and Swine Production Facilities to Greenhouses and Mushroom Houses	\$17,448	Michael Evans University of Arkansas
LS02-133	Rotational Grazing on Land Receiving Manure Applications; Impacts of Land Management Practices on Soil and Water Quality	\$195,972	Jeff Birkby National Center for Appropriate Technology (NCAT)
LS01-130	Building from excellent agents to effective organizers of collaborative, sustainable rural enterprise	\$19,990	Dr. James Worstell Delta Land & Community
LS00-113	Whole Farm Planning for Grass-fed Beef	\$214,069	Ann Wells National Center for Appropriate Technology
LS98-095	Intergenerational Education for Sustainable Agriculture	\$176,240	Savanah Williams Southern Sustainable Agriculture Working Group Keith Richards Southern SAWG
LS98-096	Integrating Farmer-driven, Value-added Enterprises Into Sustainable Agricultural Systems	\$120,590	Keith Richards Southern SAWG
LS96-076	Integration of Pastured Poultry Production Into the Farming Systems of Limited Resource Farmers	\$149,624	Skip Polson Heifer Project International
LS95-067	The Development of Pasture-Based Swine Production Systems for Limited Resource Farms in the Mississippi Delta	\$274,412	Bryant Stephens AK Land & Farm Development Corp.
LS94-061	Integrating Sustainable Forestry into Whole Farm Management of Minority and Limited Resource Landowners in Two Regions of Arkansas	\$246,710	Erin Hughes Winrock International
LS92-049	Organic Soil Amendments of Agricultural By-Products for Vegetable Production Systems in the Mississippi Delta Region	\$140,000	Tina Gray Teague Arkansas State University, Agricultural Research

LS91-038	Developing and Extending Minimum Input Strategies for Weed Control in Agronomic and Horticultural Crops	\$100,000	Ford L. Baldwin University of Arkansas, Cooperative Extension
LS91-039	Use of Poultry Litter as a Soil Amendment in Southern Row Crop Agriculture: A Feasibility Study Based on Agronomic, Environmental, and Economic Factors (AS93-10)	\$300,000	David M. Miller University of Arkansas, Agronomy
LS91-040	Utilization of Winter Legume Cover Crops for Pest and Fertility Management in Cotton	\$304,000	Craig S. Rothrock University of Arkansas, Plant Pathology
LS90-023	A Mid-South Conference on LISA-Related Agroforestry Practices and Policies	\$18,000	D. Henderson Winrock International Institute for Agricultural Development
LS89-019	Development of a Plan for Implementing a Low-input Sustainable Forage Production System in the Oklahoma-Arkansas Ozark Highland Region and Similar Land Areas	\$15,000	Douglas Butts Soil Conservation Service
LS88-004	Planning Grant: Development of a Farmer/Extension/Research Network and Farming Systems Data Base for Low-Input Agriculture	\$15,000	Ted Jones University of Arkansas
LS88-011	Developing and Extending Minimum Input Strategies for Weed Control in Agronomic and Horticultural Crops	\$190,000	Ford L. Baldwin University of Arkansas, Cooperative Extension
LS88-011.2	Developing and Extending Minimum Input Strategies for Weed Control in Agronomic and Horticultural Crops	\$100,000	Ford L. Baldwin University of Arkansas, Cooperative Extension

#### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE Support	Project Leaders
SPDP22-08	Sustainable Practices for Strawberry Production: Field Demonstration and Virtual Training Program for the Southeast	\$71,481	Dr.Amanda McWhirt University of Arkansas Cooperative Extension Troyce Barnett NRCS- Natural Resources Conservation Specialist Dr.Aaron Cato University of Arkansas Dr.Alejandro Rojas University Of Arkansas Division Of Agriculture
ES20-154	Demystifying Regenerative Grazing and Soil Health	\$79,866	Nina Prater NCAT
ES20-155	Utilizing Insect and Irrigation Monitoring to Enhance Sustainable Vegetable Production: Extension Educator Training for Arkansas	\$69,328	Dr.Aaron Cato University of Arkansas System Division of Agriculture
ES17-135	Integrating Cover Crops into Vegetable Production: Extension educator training for Arkansas	\$72,493	Dr.Amanda McWhirt University of Arkansas Cooperative Extension
ES13-116	Increasing the Professional Technical Support for Local, Sustainable Food Distribution Systems in the Southern Region	\$79,776	Keith Richards Southern SAWG
ES13-118	Training and Tools for Assisting Small and Mid-Scale Producers of Horticulture Crops with Business Decisions	\$79,857	Steve Muntz Southern SAWG

ES08-089	Toolbox for Small Ruminant Educators: Building on the Small Ruminant Resource Manual	\$61,523	Linda Coffey National Center for Appropriate Technology (NCAT)
ES08-091	Organic Dairy Training Conferences and Educational Materials for Professionals	\$97,456	Dr. Wayne Kellogg University of Arkansas
ES07-088	Building Organic Agriculture Extension Training Capacity in the Southeast	\$195,000	Heather Friedrich University of Arkansas Dr. M. Elena Garcia University of Arkansas Division of Agriculture
ES04-076	Putting it all together: using livestock to manage natural resources	\$80,187	Teresa Mauerer NCAT
ES02-060	Enhancing Educator Knowledge of Sheep and Goat Production	\$49,998	Linda Coffey National Center for Appropriate Technology (NCAT)
ES00-051	Preparing Traditional Providers for Delivery of Sustainable Agriculture Information	\$8,976	Rex Dufour National Center for Appropriate Technology (NCAT)
ES99-044	Development of a Dairy Farm Sustainability Checksheet and Establishment of Distance Education Program for Training CES and NRCS Personnel to Work with Dairy Farmers	\$54,621	Ann Wells National Center for Appropriate Technology
ES98-038	Motivating Teams for Enterprise Facilitation	\$96,000	Dr. James Worstell Delta Land & Community
ES97-019	Nuisances in the Community: Training on the Issues and the Methods of Mediation	\$56,000	Jim Horne Kerr Center for Sustainable Agriculture Janie Simms Hipp National Center for Ag Law Research & Info, University of Arkansas
ES97-031	Development of Sustainability Checksheet, Manual and Workshops to Train Educators Planning Beef Programs	\$69,936	Ron Morrow NCAT/ATTRA
ES97-034	Multi-state Value-Added Team Building in the Northern Mississippi River Delta Region	\$20,000	Dr. James Worstell Delta Land & Community
LST96-013	Sustainable Agriculture Marketing through Collaborative Policy Development	\$40,900	Dr. James Worstell Delta Land & Community

#### FARMER/RANCHER GRANTS

Project #	Project Title	SARE Support	Project Leaders
FS19-320	Implementation of Biointensive Organic Production Principles in Agroforestry Systems: An examination of efficacious cultivated berry and vegetable production in temperate forests through alley cropping and companion planting	\$8,695	Krissy Waters Sunchild Flourish Co., LLC
FS06-207	Networking Sheep and Goat Producers: Strength in Numbers	\$10,000	Janice Neighbor
FS04-178	Farmers Working with Farmers to Establish Managed Grazing Systems	\$14,740	Frank Bostwick Grassroots Grazing Group

FS03-165	Economics of Plant Spacing on Tomato Yield and Quality	\$7,378	Paul E. Cooper 100 East First
FS02-160	Small Dairy Business Plan for On-Farm Mini-Processing Facility	\$9,980	Sam Ward
FS01-143	Biological Fly Control on Arkansas Dairies Utilizing Parasitoids	\$15,000	Floyd Wiedower Arkansas Dairy Cooperative Association
FS00-123	Cooperative Marketing of Organic Produce and Animal Products Direct to Consumers	\$15,000	Margaret Carey Organic Growers Assoc.
FS95-032	Native Pecan Orchard Management Using Best Management Practices	\$5,986	Bill Wilson
FS94-015	Farmer-to-Farmer Transfer of Knowledge About Rotational Grazing	\$9,988	Luane Schroeder

#### GRADUATE STUDENT GRANTS

Project #	Project Title	SARE Support	Project Leaders
GS21-250	Utility of Native Floral Plantings Between Tree Rows for Conservation and Management of Wild Bees and Other Beneficial Insects in Tree Fruit Orchards	\$14,817	Dr.Neelendra Joshi University of Arkansas Lilia Beattie University of Arkansas System Division of Agriculture
GS19-207	The Impacts of Native Plant Diversity on Native Bee Development and Soil Health	\$13,101	Dr.Neelendra Joshi University of Arkansas Olivia Kline University of Arkansas, Department of Entomology
GS19-208	Evaluation of Different Ensiling Methods and the Effect on Feeding Value of the Residual Material from Edamame Soybean Processing	\$16,500	Dr.Beth Kegley University of Arkansas Division of Agriculture Ellen Herring University of Arkansas
GS19-218	Educational Resources to Develop Value-added Products from Farmers Market Surplus	\$14,475	Renee Threlfall University of Arkansas Morgan Gramlich University of Arkansas
GS18-189	Exploring Cover Crops in an Integrated Approach to Reduce Disease Pressure and Increase Beneficial Insects in Watermelon Production	\$13,664	Dr.Jackie Lee University of Arkansas Cooperative Extension Service Paige Hickman University of Arkansas
GS18-186	Development of Native Pollinator Habitat within Livestock Pasture	\$11,324	Dr.Neelendra Joshi University of Arkansas Dr.Roshani Sharma Acharya University of Arkansas
GS16-154	Kairomone-Based Control of Sesiid Borers in Peach Orchards	\$2,066	Dr.William Baltosser University of Arkansas at Little Rock Matthew Hetherington University of Arkansas at Little Rock
GS15-143	Pollinator Communities On Native Emergent Wetlands, Managed Emergent Wetlands, and Adjacent Croplands in the Lower Mississippi Alluvial Valley of Arkansas	\$11,000	Ashley Dowling University of Arkansas Phillip Stephenson University of Arkansas
GS14-136	Sustainable management of high tunnel organic vegetable production with short-season winter cover crops	\$10,951	Dr.Curt Rom University of Arkansas Luke Freeman University of Arkansas

GS13-122	Improving lamb performance with sericea lespedeza and molybdenum	\$10,007	Dr.Charles Rosenkrans University of Arkansa Dr.Mohan Acharya Lincoln University
GS13-123	Ground cover and organic nutrient management practices altering the denitrifier community in an organic apple orchard soil	\$11,000	Dr.Mary Savin University of Arkansas Jade Ford University of Arkansas
GS11-106	Evaluation of the Utility of Adding Artificial Bumble Bee Nesting Sites to Increase Pollination Services in a Small Farm Environment	\$9,000	Allen Szalanski University of Arkansas Amber Tripodi University of Arkansas
GS09-084	Microbial changes associated with use of brassica cover crops in a strawberry production system	\$9,971	Craig S. Rothrock University of Arkansas, Plant Pathology Dr.Terry Kirkpatrick University of Arkansas Mandy Cox University of Arkansas
GS07-061	Importance of Brassica soil amendments for managing soilborne disease in ornamentals and vegetables	\$9,944	Craig S. Rothrock University of Arkansas, Plant Pathology Kimberly Cochran University of Arkansas
GS05-048	The Effects of Different Organic Apple Production Systems on Seasonal Variation of Soil Properties and Foliar Nutrient Concentration	\$10,000	Dr.Curt Rom University of Arkansas
GS04-033	Impact of Potential Organic Pesticides and Potential Fruit Crop Load Regulators on Photosynthesis and Growth of Apple	\$10,000	Dr.Curt Rom University of Arkansas Jason D. McAfee University of Arkansas
GS03-026	Compatibility of Plant Defense Elicitors with Aphid- and Nematode-Resistant Tomato Varieties in Integrated Pest Management	\$10,034	William Cooper University of Arkansas Department of Entomology
GS03-029	Performance and Quality of Pasture-raised Poultry: Label Rouge - Type	\$9,940	Dr.Anne Fanatico Appalachian State University
GS03-030	Evaluation of Microbial Ecology in Pasture Ecosystems with Long-term Poultry Litter Additions	\$9,990	Dr.Mary Savin University of Arkansas Peter J. Tomlinson University of Arkansas - Fayetteville
GS01-010	Enhancing the Sustainability of Tall Fescue Forage Systems for Beef Cattle Production with Non-Toxic Endophyte Technology	\$10,000	Jane Parish Univ. of Arkansas Cooperative Extension Service

#### ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
OS19-124	The Impact of Estimated Breeding Values on Parasite Resistance and Reduced Parasitism in Sheep	\$15,000	Dr.Joan Burke USDA, Agricultural Research Service
OS18-116	Cover Crop Effect on Nematode Activity in the Soil	\$15,000	Matthew Davis University of Arkansas Jackson County Extension Service
OS13-073	Investigation of Potential Biological Control Agents for Internal Parasite Control in Goats	\$14,930	Dr.Yong Park University of Arkansas Pine Bluff
OS13-077	Establishment of native pollinator habitat in organic and conventional small ruminant pastures	\$15,000	Dr.Joan Burke USDA, Agricultural Research Service



OS12-064	An alternative organic strawberry production system grown vertically in high tunnels	\$15,000	Dr.M. Elena Garcia University of Arkansas Division of Agriculture
OS09-045	Identifying ewes resistant to gastrointestinal parasitic worms during gestation and lactation	\$14,866	Dr.Joan Burke USDA, Agricultural Research Service
OS08-044	The Use of Controlled Grazing, Chicory Pasture and Herbal Treatments to Prevent Parasitism in Sheep and Goats, Phase II	\$14,941	Dr.Ann Wells Heifer Ranch
OS07-036	Sensory Evaluation of Alternative Turkey Genotypes	\$14,962	Dr.Ann Fanatico Appalachian State University
OS07-039	The Use of Controlled Grazing and two Herbal Treatments to Prevent Parasitism in Sheep and Goats	\$14,967	Dr.Ann Wells Heifer Ranch
OS06-028	An alternative planting strategy for establishing clover in pastures	\$14,992	John Jennings University of Arkansas
OS05-024	Sustainable Grazing Systems for Arkansas: Native warm season grass establishment and control of cool season annual weeds	\$14,800	Ron Morrow USDA-NRCS
OS03-016	Use of Parasitoids and Passive Traps as Alternative Methods of Fly Control on Dairy Farms in Arkansas	\$15,000	Jodie A. Pennington University of Arkansas CES

#### SUSTAINABLE COMMUNITY INNOVATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
CS12-089	Next Steps: Creating a Sustainable Farm to School Program	\$10,000	Dana Smith Fayetteville Public Schools
CS11-085	Building a Model Farm to School Program using Community Partnerships	\$10,000	Dr.Curt Rom University of Arkansas
CS07-057	Integrating Nature into Agri-tourism	\$9,950	Kathy Radomski Phillips Community College UA
CS05-035	Assessing and Meeting the Growing Needs of Arkansas' Women in Agriculture	\$9,901	Dr.Jennie Popp University of Arkansas
CS03-014	Northwest Arkansas Local Food Initiative: Promoting All-Ozark Meals	\$9,978	Julia Sampson ATTRA

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**Total funding from the USDA SARE program to  
Arkansas  
\$7,406,116**

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For further information on projects, contact 770-412-4787 or [ssare@uga.edu](mailto:ssare@uga.edu). Sustainable Agriculture Research and Education (SARE) is funded by USDA's National Institute of Food and Agriculture (NIFA).