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 $333 million to more than 7,802 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.

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, and search for project number GS14-136.

SARE in Arkansas

southern.sare.org/sare-in-your-state/arkansas

$6,963,635 in total funding

100 grant projects

(since 1988)

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

Total awards: **100 grants**
- 37 Research and Education
- 5 Sustainable Community Innovation
- 17 Professional Development Program
- 9 Farmer/Rancher
- 20 Graduate Student
- 12 On Farm Research/Partnership

Total funding: **$6,963,635**
- **$5,207,880** Research and Education
- **$49,829** Sustainable Community Innovation
- **$1,211,917** 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](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](southern.sare.org/state-pages/arkansas) to learn more.

Henry English  
University of Arkansas at Pine Bluff  
(807) 575-7246  
englishh@uapb.edu  

Amanda McWhirt  
University of Arkansas  
(501) 671-2229  
amcwhirt@uaex.edu  

For detailed information on SARE projects, go to [www.SARE.org](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 $6,963,635 grants to support 97 projects, including but not limited to, 34 research and/or education projects, 17 professional development projects and 9 producer-led projects. Arkansas 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>
<tbody>
<tr>
<td>LS21-349</td>
<td>Regenerative Land and Livestock Management for Women</td>
<td>$49,972</td>
<td>Linda Coffey&lt;br&gt;National Center for Appropriate Technology (NCAT)&lt;br&gt;Margo Hale&lt;br&gt;NCAT</td>
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<tr>
<td>LS19-316</td>
<td>Forage Establishment and Management in Arkansas’ Silvopasture for Small Beef Producers</td>
<td>$255,302</td>
<td>Dr. Dirk Philipp&lt;br&gt;University of Arkansas</td>
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<tr>
<td>LS19-317</td>
<td>Innovative Nutrient Management Options for Sustainable Pasture Land Intensification</td>
<td>$296,352</td>
<td>Michael Popp&lt;br&gt;University of Arkansas</td>
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<tr>
<td>LS18-292</td>
<td>Taking Your Farm to the Next Level: Business and financial planning for sustainable farms and ranches</td>
<td>$47,000</td>
<td>Margo Hale&lt;br&gt;NCAT</td>
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<tr>
<td>LS18-295</td>
<td>Increasing Farm Profitability Through Whole Farm Record-Keeping and Analysis</td>
<td>$43,000</td>
<td>Elizabeth Young&lt;br&gt;Southern SAWG</td>
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<tr>
<td>LS17-282</td>
<td>High Tunnel Grape Production Systems: A Novel Sustainable Approach to Growing Grapes</td>
<td>$266,986</td>
<td>Renee Threlfall&lt;br&gt;University of Arkansas&lt;br&gt;Dr. M. Elena Garcia&lt;br&gt;University of Arkansas Division of Agriculture</td>
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<tr>
<td>LS16-274</td>
<td>The Impact of Mineral Particle Film on Blackberry Diseases and Insects, and Primocane Fruit Quality and Yield</td>
<td>$174,290</td>
<td>Sherri Sanders&lt;br&gt;University of Arkansas CES</td>
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<tr>
<td>LS16-276</td>
<td>Validating Sustainability/Resilience and Quality of Life Indices to Identify Farm- and Community-Level Needs and Research and Education Opportunities</td>
<td>$203,560</td>
<td>Dr. James Worstell&lt;br&gt;Delta Land &amp; Community</td>
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<tr>
<td>LS13-259</td>
<td>Participatory assessment of progress, barriers and opportunities for sustainability in Southern agricultural systems</td>
<td>$100,000</td>
<td>Dr. James Worstell&lt;br&gt;Delta Land &amp; Community</td>
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<tr>
<td>LS12-250</td>
<td>Extending the Market Season with High Tunnel Technology for Organic Fruit Production</td>
<td>$214,948</td>
<td>Dr. Curt Rom&lt;br&gt;University of Arkansas</td>
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<tr>
<td>LS10-226</td>
<td>Integrating Free Range Poultry with Ruminant and Agroforestry Production in a Systems Approach</td>
<td>$210,000</td>
<td>Dr. Anne Fanatico&lt;br&gt;Appalachian State University</td>
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<tr>
<td>LS08-204</td>
<td>Sustainable control of gastrointestinal nematodes in organic and grass-fed small ruminant production systems</td>
<td>$230,000</td>
<td>Dr. Joan Burke&lt;br&gt;USDA, Agricultural Research Service</td>
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<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Funding Amount</td>
<td>Principal Investigator</td>
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<tr>
<td>LS05-176</td>
<td>Best management practices for organic orchard nutrition</td>
<td>$200,000</td>
<td>Dr. Curt Rom</td>
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<td>LS04-160</td>
<td>Using Parasitoids in an Integrated Pest Management Approach to Control Flies on Dairy Farms</td>
<td>$288,000</td>
<td>Kelly Loftin</td>
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<tr>
<td>LS04-166</td>
<td>Increasing the effectiveness of assisting farmers with sustainable on-farm enterprise</td>
<td>$15,860</td>
<td>Keith Richards</td>
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<tr>
<td>LS04-167</td>
<td>The Southern Region Organic Fruit Production Initiative: Identifying Barriers, Needed Research, Markets, and Opportunities</td>
<td>$15,555</td>
<td>Dr. Curt Rom</td>
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<tr>
<td>LS03-145</td>
<td>Technical and Economic Analysis of the Potential for Conversion of Poultry and Swine Production Facilities to Greenhouses and Mushroom Houses</td>
<td>$17,448</td>
<td>Michael Evans</td>
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<tr>
<td>LS02-133</td>
<td>Rotational Grazing on Land Receiving Manure Applications; Impacts of Land Management Practices on Soil and Water Quality</td>
<td>$195,972</td>
<td>Jeff Birkby</td>
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<tr>
<td>LS01-130</td>
<td>Building from excellent agents to effective organizers of collaborative, sustainable rural enterprise</td>
<td>$19,990</td>
<td>Dr. James Worstell</td>
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<tr>
<td>LS00-113</td>
<td>Whole Farm Planning for Grass-fed Beef</td>
<td>$214,069</td>
<td>Ann Wells</td>
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<tr>
<td>LS98-095</td>
<td>Intergenerational Education for Sustainable Agriculture</td>
<td>$176,240</td>
<td>Savanah Williams</td>
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<tr>
<td>LS98-096</td>
<td>Integrating Farmer-driven, Value-added Enterprises Into Sustainable Agricultural Systems</td>
<td>$120,590</td>
<td>Keith Richards</td>
</tr>
<tr>
<td>LS96-076</td>
<td>Integration of Pastured Poultry Production Into the Farming Systems of Limited Resource Farmers</td>
<td>$149,624</td>
<td>Skip Polson</td>
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<tr>
<td>LS95-067</td>
<td>The Development of Pasture-Based Swine Production Systems for Limited Resource Farms in the Mississippi Delta</td>
<td>$274,412</td>
<td>Bryant Stephens</td>
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<tr>
<td>LS94-061</td>
<td>Integrating Sustainable Forestry into Whole Farm Management of Minority and Limited Resource Landowners in Two Regions of Arkansas</td>
<td>$246,710</td>
<td>Erin Hughes</td>
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<tr>
<td>LS92-049</td>
<td>Organic Soil Amendments of Agricultural By-Products for Vegetable Production Systems in the Mississippi Delta Region</td>
<td>$140,000</td>
<td>Tina Gray Teague</td>
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<tr>
<td>LS91-038</td>
<td>Developing and Extending Minimum Input Strategies for Weed Control in Agronomic and Horticultural Crops</td>
<td>$100,000</td>
<td>Ford L. Baldwin</td>
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<tr>
<td>LS91-039</td>
<td>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)</td>
<td>$300,000</td>
<td>David M. Miller</td>
</tr>
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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>
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</thead>
<tbody>
<tr>
<td>ES20-154</td>
<td>Demystifying Regenerative Grazing and Soil Health</td>
<td>$79,866</td>
<td>Nina Prater</td>
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<tr>
<td>ES20-155</td>
<td>Utilizing Insect and Irrigation Monitoring to Enhance Sustainable Vegetable Production: Extension Educator Training for Arkansas</td>
<td>$69,328</td>
<td>Dr. Aaron Cato</td>
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<td>University of Arkansas System Division of Agriculture</td>
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<tr>
<td>ES17-135</td>
<td>Integrating Cover Crops into Vegetable Production: Extension educator training for Arkansas</td>
<td>$72,493</td>
<td>Dr. Amanda McWhirt</td>
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<td>University of Arkansas Cooperative Extension</td>
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<tr>
<td>ES13-116</td>
<td>Increasing the Professional Technical Support for Local, Sustainable Food Distribution Systems in the Southern Region</td>
<td>$79,776</td>
<td>Keith Richards</td>
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<td>Southern SAWG</td>
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<tr>
<td>ES08-089</td>
<td>Toolbox for Small Ruminant Educators: Building on the Small Ruminant Resource Manual</td>
<td>$61,523</td>
<td>Linda Coffey</td>
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<tr>
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<td>National Center for Appropriate Technology (NCAT)</td>
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<tr>
<td>ES08-091</td>
<td>Organic Dairy Training Conferences and Educational Materials for Professionals</td>
<td>$97,456</td>
<td>Dr. Wayne Kellogg</td>
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<td>University of Arkansas</td>
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<tr>
<td>ES07-088</td>
<td>Building Organic Agriculture Extension Training Capacity in the Southeast</td>
<td>$195,000</td>
<td>Heather Friedrich</td>
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<td>University of Arkansas</td>
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<tr>
<td>ES04-076</td>
<td>Putting it all together: using livestock to manage natural resources</td>
<td>$80,187</td>
<td>Teresa Mauerer</td>
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<tr>
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<tr>
<td>ES02-060</td>
<td>Enhancing Educator Knowledge of Sheep and Goat Production</td>
<td>$49,998</td>
<td>Linda Coffey</td>
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<tr>
<td></td>
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<td>National Center for Appropriate Technology (NCAT)</td>
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</tbody>
</table>
Preparing Traditional Providers for Delivery of Sustainable Agriculture Information

$8,976

Rex Dufour
National Center for Appropriate Technology (NCAT)

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

Motivating Teams for Enterprise Facilitation

$96,000

Dr. James Worstell
Delta Land & Community

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

Development of Sustainability Checksheet, Manual and Workshops to Train Educators Planning Beef Programs

$69,936

Ron Morrow
NCAT/ATTRA

Multi-state Value-Added Team Building in the Northern Mississippi River Delta Region

$20,000

Dr. James Worstell
Delta Land & Community

Sustainable Agriculture Marketing through Collaborative Policy Development

$40,000

Dr. James Worstell
Delta Land & Community

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**FARMER/RANCHER GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| 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 |
### GRADUATE STUDENT GRANTS

<table>
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<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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</thead>
</table>
| 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  
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 Arkansas  
Dr. Mohan Acharya  
University of Arkansas |
| 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 |
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| 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 |
| 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 |
Total funding from the USDA SARE program to Arkansas
$6,963,635

For further information on projects, contact Candace Pollock, Southern SARE public relations coordinator, at (770) 412-4786 or cpollock@uga.edu.
Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).