

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 \$389 million to more than 8,542 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... North Carolina

Project Highlight: *Local Food Systems as a Means of Positive Change*

For 10 years, the Appalachian Sustainable Agriculture Project (ASAP) worked to evaluate the impacts of local food systems on farm profitability and viability, production practices, distribution networks and the health of local communities. Their belief is that when the distance between consumer and producer decreases, transparency increases and drives changes in the way food is produced. Their decades-long work, however, led to unanswered questions, such as how are consumer values and behaviors impacting the characteristics of the local food system? What are the unintended consequences of localizing food production and consumption?

To find answers, ASAP has received three SARE grants since 2011 to examine the impacts of food system localization on local economies, farm profitability, production practices and health. In their first project they analyzed data and developed a working theoretical framework to understand how and why local food systems can be a means of creating positive food system change. Their two additional projects are 1) studying the impact of farmers' market experiences on participants and their role in building a base of local food and farm supporters, and 2) quantifying the larger economic impact of farmers' markets and looking more closely at their relationship to larger local food system dynamics.

For more information on these projects, see sare.org/projects, and search for project numbers [LS11-239](#), [LS14-260](#) and [LS17-285](#).

SARE in North Carolina

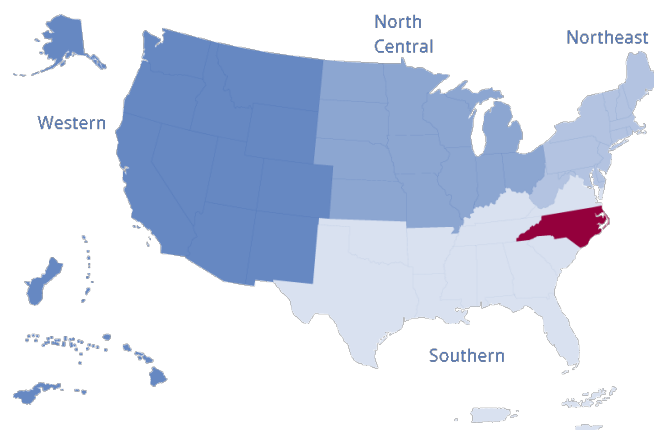
southern.sare.org/sare-in-your-state/north-carolina

\$15,456,158
in total funding

242 grant projects

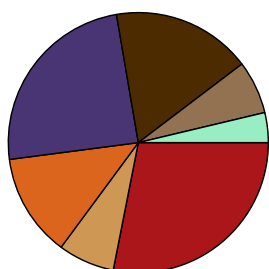
(since 1988)

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



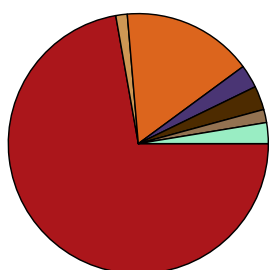
SARE Grants in North Carolina

Total awards: 242 grants



68 Research and Education
 17 Sustainable Community Innovation
 31 Professional Development Program
 59 Farmer/Rancher
 42 Graduate Student
 16 On Farm Research/Partnership
 9 Education Only

Total funding: \$15,456,158



\$11,162,131 Research and Education
 \$220,117 Sustainable Community Innovation
 \$2,513,757 Professional Development Program
 \$446,968 Farmer/Rancher
 \$459,039 Graduate Student
 \$252,532 On Farm Research/Partnership
 \$401,614 Education Only

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/north-carolina

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/north-carolina to learn more.

Biswanath Dari
 North Carolina A&T University
 (336) 285-4688
bdari@ncat.edu

Chris Reberg-Horton
 North Carolina State University
 (919) 515-7597
chris_reberg-horton@ncsu.edu



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 NORTH CAROLINA

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

North Carolina has been awarded \$15,456,158 grants to support 237 projects, including but not limited to, 63 research and/or education projects, 31 professional development projects and 59 producer-led projects. North Carolina has also received additional SARE support through multi-state projects.

RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
LS23-382	Connections in Direct Markets: Assessing the feedback loop between consumer values and farmer's marketing strategies	\$383,000	Amy Marion Appalachian Sustainable Agriculture Project (ASAP) Sarah Hart Appalachian Sustainable Agriculture Project (ASAP) Molly Nicholie Appalachian Sustainable Agriculture Project (ASAP) Mallory Phillips Appalachian Sustainable Agriculture Project (ASAP) David Smiley Appalachian Sustainable Agriculture Project (ASAP)
LS22-365	Regional Evaluation of Cucumber High Tunnel Trellising Systems	\$156,729	Marcus Williams Carolina Farm Stewardship Association Karen McSwain Carolina Farm Stewardship Association
LS21-356	Securing Land Tenure Rights for Heirs Property Owners	\$399,965	Savi Horne Land Loss Prevention Project Billy Lawton Center Hill Farms Lorette Picciano Rural Coalition Dr. Robert Zabawa Tuskegee University, College of Agriculture, Environment and Nut
LS21-357	Southern Pasture-Raised Beef: From Farm to Table to Us	\$380,203	Dr. James Bain Duke University School of Medicine Dr. Alan Franzluebbbers North Carolina State University Dr. Matt Poore North Carolina State University Dr. Stephan van Vliet Utah State University
LS20-333	Development of a Sustainable Cropping System for Industrial Hemp Production by Limited Resource Farmers	\$229,933	Dr. Beatrice Dingha North Carolina A&T State University Dr. Arnab Bhowmik North Carolina A&T State University Louis Jackai N. Carolina Agricultural and Technical State University

LS20-336	Navigating Financial and Mental Health Crises	\$299,959	Michelle Osborne RAFI-USA Scott Marlow RAFI-USA Savi Horne Land Loss Prevention Project Robert Maggiani NCAT
LS19-310	Cool-season Annual Grass, Grass-Forb, and Grass-Legume Forage Systems for Southeastern Beef Cattle Production	\$270,708	Deidre Harmon NC State University
LS19-311	Application of the Banker Trap Plant (BTraP) Concept of Trap Cropping for the Management of the Harlequin Bug, a Pest of Brassicaceae: A new paradigm in small farm IPM	\$257,987	Louis Jackai N. Carolina Agricultural and Technical State University
LS18-303	CEFS Long-term Systems Research: Providing the Building Blocks for Resilient Food Production Systems Phase III	\$100,000	Dr.Chris Reberg-Horton North Carolina State University
LS17-279	Enhancing System Sustainability by Mitigating the Impact of Three Major Constraints to Efficient Cowpea Production and Use: Pests, Pollination and Nodulation	\$210,000	Dr.Beatrice Dingha North Carolina A&T State University
LS17-280	A Supply Chain Approach to Finding Win-win Sustainable Solutions for Edible But Unharvested Produce	\$219,971	Rebecca Dunning North Carolina State University Horticulture
LS17-284	Biological Control of Two-spotted Spider Mite on Vegetables	\$200,000	James Walgenbach NCSU
LS17-285	Growing Local - Phase III	\$300,000	Charlie Jackson Appalachian Sustainable Agriculture Project
LS15-267	CEFS Long-Term Systems Research: Providing the Building Blocks for Resilient Food Production Systems	\$300,000	Dr.Chris Reberg-Horton North Carolina State University
LS14-260	Growing Local - Phase II	\$299,943	Charlie Jackson Appalachian Sustainable Agriculture Project
LS12-247	CEFS Long-Term Systems Research: Providing the Building Blocks for Resilient Food Production Systems	\$300,000	Dr.Chris Reberg-Horton North Carolina State University
LS12-248	Quantifying the Multiplier Effect: What Sustainable Local Food Systems can Mean to Local Communities	\$211,000	Drew Marticorena NCSU
LS11-239	Growing Local - Phase I	\$296,645	Charlie Jackson Appalachian Sustainable Agriculture Project
LS11-246	Saving Endangered Hog Breeds	\$151,215	Dr.Alison Martin The Livestock Conservancy
LS10-227	Lighting up the black box: Improving legume performance on organic farms by optimizing microbially-mediated plant and soil nitrogen cycling processes.	\$192,000	Dr.Julie Grossman University of Minnesota

LS09-224	Research and educational support for organic dairy farming in the South	\$250,000	Dr.Steven Washburn North Carolina State University
LS08-203	Exploiting the organic peanut market: refining production systems for the Southeast	\$175,000	Mark Boudreau Hebert Green Agroecology, Inc. Dr.Mark Boudreau Hebert Green Agroecology
LS08-210	Reduced tillage in organic systems: a soil and water quality imperative	\$190,000	Dr.J. Paul Mueller North Carolina State University
LS08-211	A multi-disciplinary approach to improve the environmental performance of niche pork production systems and marketability of Heritage swine breeds	\$175,000	Sang Hyon Oh North Carolina A&T State University
LS07-197	Appalachian grown:Farm to School Project	\$170,000	Emily Jackson Appalachian Sustainable Agriculture Project
LS07-200	Selecting cover crops for diverse functions: an integrated soil management approach for organic strawberry production in North Carolina	\$200,000	Dr.Michelle Schroeder-Moreno North Carolina State University
LS06-193	Grafting Rootstocks onto Heirloom and Locally Adapted Tomato Selections to Confer Resistance to Root-knot Nematodes and other Soil Borne Diseases and to Increase Nutrient Uptake Efficiency in an Intensive Farming System for Market Gardeners	\$193,000	Mary Peet North Carolina State University
LS05-169	Exploiting the Organic Peanut Market: Design of Production Systems for the Southeast	\$159,000	Mark Boudreau Hebert Green Agroecology, Inc.
LS05-173	Microarray Analysis and functional assays to assess microbial ecology and disease suppression in soils under organic or sustainable management	\$250,000	Dr.Frank Louws NC State University
LS05-178	Sustainability indicators as management tools to guide farmers, scientists, policy makers and the general public	\$250,000	Jon Brandt North Carolina State University
LS04-158	N2-fixation and weed competition: breaking the connection between crops and weeds	\$248,000	Michael Burton NCSU -- Crop Science Department
LS04-161	Evaluation of Beneficial Insect Habitat for Organic Farms	\$72,539	David Orr North Carolina State University
LS04-165	Renewing the Agriculture of the Middle: A Planning grant request to develop a Southern Strategy	\$15,500	Edna Rodriguez Rural Advancement Foundation International - USA
LS03-146	Appalachian Grown: Toward Regional Community-based Food Systems	\$154,030	Charlie Jackson Appalachian Sustainable Agriculture Project
LS03-154	Examining pasture-based dairy systems to optimize profitability environmental impact, animal health and milk quality	\$226,903	Dr.Steven Washburn North Carolina State University

LS02-132	Cover Cropping and Residue Management for Weed Suppression, Soil Fertility and Organic Crop Production	\$99,117	Keith Baldwin NC A&T State University
LS02-134	The Importance of Genetics: Biological fitness and productivity in range-based systems comparing standard turkey varieties and industrial stocks	\$182,386	Marjorie Bender American Livestock Breeds Conservancy
LS01-120	Long-Term, Large-Scale Systems Research Directed Toward Agricultural Sustainability	\$230,000	Dr.J. Paul Mueller North Carolina State University
LS01-122	The Importance of Genetics: Assessing the Immunological Health of Standard Turkey Varieties vs. Industrial Turkey Stocks and Its Implications for Sustainable Turkey Production Systems	\$18,052	Donald Bixby American Livestock Breeds Conservancy
LS01-126	Sustaining Ecological and Economic Diversity Among Limited Resource Landholders by Expanding Opportunities for Management of Productive Woodlands	\$180,431	Sarah Warren North Carolina State University
LS01-128	Influence of microbial species and functional diversity in soils on pathogen dispersal and ecosystem processes in organic and conventional agroecosystems	\$167,842	Jean Ristaino North Carolina State University
LS00-109	Increasing Growers' Quality of life through Direct Marketing: The Role of Farmers' Markets and Consumer Supported Agriculture	\$45,000	Susan Andreatta University of North Carolina at Greensboro William Wicklife, II North Carolina State Cooperative Extension
LS00-110	The Impact of Agricultural Systems on Soil Quality and Sustainability	\$191,263	Mary Barbercheck North Carolina State University
LS99-106	Integrated Crop and Sylvan Systems with Swine: A State and National Initiative	\$156,262	Charles Talbott NCA&T University
LS98-091	Development of Decision Support Systems for Improvement of Silvicultural Practices on Farm-Based Non-Industrial Private Forests	\$26,204	Fredrick Cubbage Forestry Department, North Carolina State University
LS98-094	A Model for Long-Term, Large-Scale Systems Research Directed Toward Agricultural Sustainability	\$256,604	Dr.J. Paul Mueller North Carolina State University
LS97-085	Impacts on Agricultural Sustainability from Structural Change in Peanut, Poultry, Swine and Tobacco Production Systems	\$174,858	Hal Hamilton Center for Sustainable Systems
LS97-086	Equal Access to Agriculture Programs and Opportunities	\$151,290	David Harris Land Loss Prevention Project
LS96-077	Development of Sustainable Cropping Systems for Seedless Watermelon and Fall Lettuce in Rotation with Green Manures	\$182,751	M. R. Reddy NCA & T State University, Natural Resources and Environmental Design
LS95-060.1	Animal Waste, Winter Cover Crops, and Biological Antagonists for Sustained Management of Columbia Lance and Other Associated Nematodes on Cotton	\$96,691	Kenneth R. Barker North Carolina State University

LS95-065	Wildlife Enhancement and Education as a Catalyst in the Widespread Implementation of Sustainable Agriculture Practices (Also listed as AS95-18)	\$98,205	Pete Bromley North Carolina State University
LS94-059	Assessing the Impact of Beneficial Insect Populations on Organic Farms (AS94-013)	\$17,735	George Kennedy North Carolina State University
LS94-060	Animal Waste, Winter Cover Crops, and Biological Antagonists for Sustained Management of Nematodes on Cotton	\$46,721	Kenneth R. Barker North Carolina State University
LS94-063	Regional Center for Sustainable Dairy Farming	\$180,497	Dr. Steven Washburn North Carolina State University
LS92-045	Organic Nitrogen Sources for Sweetpotatoes: Production Potential and Economic Feasibility	\$105,000	Wanda W. Collins North Carolina State University, Horticultural Science
LS91-032	Economically Viable Production of Vegetables in The Southern Region Using Low-input and Sustainable Techniques: A Data Base	\$37,000	Mary Peet North Carolina State University
LS91-035	Improved Nitrogen Use-Efficiency in Cover Crop Based Production Systems	\$179,992	Michael G. Wagger North Carolina State University
LS90-026	Swine Waste — Low-cost Alternative to Commercial Fertilizer for Production of Forage for Grazing Cattle	\$50,000	Dr. J. Paul Mueller North Carolina State University
LS89-014	On-Farm Demonstrations and Research of Low-input Sustainable Farming	\$100,000	William W. Dow Carolina Farm Stewardship Association
LS89-018	Composting Poultry Litter — Economics and Market Potential of a Renewable Resource	\$15,000	L. M. Safley North Carolina State University
LS88-005	Planning Funds for a Proposal on Extending the Issue of Sustainable Agriculture to Small Farms in North Carolina, Tennessee and Virginia	\$15,000	M. Ray McKinnie North Carolina A & T State University
LS88-006	Planning Grant: On-farm Demonstration of Low-input Farming	\$15,000	William W. Dow Carolina Farm Stewardship Association
LS88-009	A Comparison of Cropping Systems Managed Conventionally or with Reduced Chemical Input	\$255,000	Larry King North Carolina State University

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE Support	Project Leaders
SPDP23-019	Messages for Messengers: Growing Conservation Leaders in North Carolina	\$89,314	Jessica Espenshade National Wildlife Federation Bryan Evans NC Association of Soil and Water Conservation Districts
SPDP22-12	Grant-writing training for extension agents and service providers to support underserved farmers	\$79,996	Kathleen Liang North Carolina A&T State University Dr. Kenrett Jefferson-Moore NC A&T State University Robyn Stout NC 10% Campaign

SPDP22-13	Land Summit Professional Development	\$59,195	Dr.Robert Branan, JD North Carolina State University at Raleigh Hannah Dankbar North Carolina State University Chad Poole, PhD, M.S., B.S., P.E. Department of Biological and Agricultural Engineering (NCSU)
ES19-146	Effectively Using Permanent and Temporary Electric Fence Technology: Adviser training to support producers implementing adaptive grazing management	\$79,954	Dr.Matt Poore North Carolina State University
ES18-140	Training Innovative and Impactful Trainers to Provide Beginning Farmer Support in the Southern Appalachians	\$43,450	Cameron Farlow Organic Growers School
ES17-134	Moving Regional Food Systems Toward Sustainability: An adaptive and interactive online course in local food system development for NC, SC, and VA Extension agents and other service providers	\$79,985	Dr.J. Dara Bloom NC State University
SC14-001	Institutionalizing Cover Crop Research and Education in the Southeast	\$129,712	Dr.Chris Reberg-Horton North Carolina State University
ES14-124	Strengthening University Local Food Systems: Train the Trainer Approach through Extension, Student, and Food Service Collaboration	\$78,547	Kathleen Liang North Carolina A&T State University
ES13-115	Building Local Food Systems: Training the Trainers, Peer Collaboration, and Materials Development	\$64,113	S. Gary Bullen N.C. State University
ES13-119	Moving the NC Local Food System Toward Sustainability: A Comprehensive Graduate course in Local Food Systems for Cooperative Extension Agents, Specialists, and other Educators	\$79,063	Joanna Massey Lelekacs NC State Extension / CEFS
ES10-103	Building Capacity: Farm to School	\$78,303	Emily Jackson Appalachian Sustainable Agriculture Project
ES10-104	Back to Basics: Training the Trainers at the Eastern Apicultural Society Conference	\$22,313	Dr.David Tarpy North Carolina State University
ES10-105	Multiple Livestock Species Integrated Parasite Management Train-the-Trainer Programs with On-Farm, Computer-based and Traditional Training Sessions	\$86,105	Dr.Niki Whitley NC A&T SU Cooperative Extension Program
ES09-095	Training the Trainers in Community-based Food Systems: a project-oriented case study team approach	\$99,266	Dr.Nancy Creamer North Carolina State University
ES08-090	An agent Training Program in Safe Food Handling & Legal Liability	\$77,344	Diane Ducharme NCSU
ES08-092	Energy Training for Agricultural Professionals in the Southern SARE Region	\$97,684	Mike Morris National Center for Appropriate Technology Steve Moore Center for Environmental Farming Systems

ES08-093	Agritourism Training for Agriculture Professionals	\$82,986	Kent Wolfe CAED
ES06-083	Pasture Pork 101: Comprehensive Agent Training in Pasture-based Hog production	\$62,500	Todd See North Carolina State University
ES05-078	Sustainable Production Systems for Range-Reared Standard Turkeys	\$109,444	Marjorie Bender American Livestock Breeds Conservacy
ES05-079	Direct Market Training for Agricultural Professionals	\$96,757	S. Gary Bullen N.C. State University
ES03-065	Building Sustainable Soil Systems	\$119,848	Wilfred Cromartie SARE
ES03-066	Producer Managed Efforts in Marketing of Livestock & Livestock Products	\$89,400	John O'Sullivan Cooperative Extension Program
ES01-058	Sustaining Agriculture through Community Partnerships	\$49,884	Robin Kohanowich Central Carolina Community College
ES00-047	Training in Alternative Research Strategies for Sustainable Farming Systems	\$101,800	Noah Ranells NCSU (former staff) Phil Rzewnicki NCSU Keith Baldwin NC A&T State University
ES99-043	Multimedia Training Resources on Sustainable Greenhouse Vegetable Production	\$39,887	Mary Peet North Carolina State University
ES98-039	Multi Disciplinary Training on Pasture-Based Dairy Systems - A Sustainable Alternative for the Region	\$53,429	Dr. Steven Washburn North Carolina State University
ES98-040	Grazing Management Training to Enhance the Sustainability of Pasture-Based Beef Production Systems	\$31,745	Jim Green North Carolina State University, Crop Science Dept.
ES98-042	Training in Agriculture Program (TAP)	\$17,890	Dorothy Barker Operation Spring Plant, Inc.
ES97-014	Southern Region Sustainable Ag Training Consortium	\$116,723	Roger G. Crickenberger North Carolina State University
ES97-025	Building Capacity in Sustainable Agriculture: A Comprehensive Training Program in Organic Farming Systems	\$97,500	Dr. Nancy Creamer North Carolina State University
LST94-001	Southern Region Sustainable Agriculture Training Consortium (LST96-8)	\$199,620	Roger G. Crickenberger North Carolina State University

FARMER/RANCHER GRANTS

Project #	Project Title	SARE Support	Project Leaders
FS23-355	Characterizing Chestnut 'Cure' as a Function of Time, Temp & RH, Based on Nut Size, Color and Shape	\$15,000	Dr. Ron Fritz Mountain Grown Chest

FS23-356	Ecofriendly Management of Silvopastures for Pigs	\$14,974	Marylee Reaume Farmasea LLC
FS23-358	Researching Species of Plants Best Effective for Lay Hedges/Living Fencing in the US Southeast, and Their Efficacy to Increase Sustainability	\$14,925	Alexander Buigas Flute Song Farm llc
FS21-337	Establishing and Grazing Native Warm Season Grass: How Average Daily Gain and Internal Parasite Burden are Affected in Weaned Lambs	\$2,723	Lee Holcomb LeeDer Farm
FS19-313	Bee Pollen Identification for Increased Sustainability	\$9,938	Ryan Higgs Blue Ridge Apiaries
FS18-305	Growing Upland Rice for the Local Food Market	\$9,773	Gregory Chatham
FS18-307	Weed Control Among Brambles: Biodegradable paper barrier or plastic barrier?	\$3,050	Danielle Crocker
FS13-264	Pastured Rabbit Integrated Farming Project	\$2,000	Michelle Bernard Spellcast Farm
FS13-265	Sustainable Forages as an Alternative to Supplemental Feeding	\$9,798	Ryan Higgs Blue Ridge Apiaries
FS13-268	Closed Loop Mushroom Production on 100% Waste Substrate	\$7,623	joseph allowos Asheville Fungi
FS13-274	Comparing Season Extension Mechanisms on Winter Green Production in the Southern Appalachian Mountains	\$3,737	Paul Littman Ivy Creek Family Farm
FS12-260	Encouraging Expanded Organic Sweet Potato Production in North Carolina	\$15,000	John Kimber NC SweetPotato Commission Foundation
FS11-252	Impact of Supplemental Feed Type on Winter Survival of Honey Bee Colonies	\$9,957	Barry Harris, Jr. Silver Spoon Apiaries, Inc
FS10-244	Sustainable Honeybee Strains for Western North Carolina	\$9,959	Ryan Higgs Blue Ridge Apiaries
FS09-232	Natural Controls for Honey Bee Pests	\$10,000	Scott Barlow
FS09-237	Growing Organic Hops for the Local Market	\$8,268	Rita Pelczar Blue Ridge Hops
FS09-239	Wasabi Production	\$8,649	Deidra Smith Amy Sue Blum SARE Southern Region
FS09-240	Early growing season strategy	\$3,482	Hollis Wild Appalachian Trees

FS08-230	Building Capacity for Pastured Poultry Production in Western North Carolina	\$7,755	Casey McKissick
FS07-216	Season Extension for Winter CSA and Restaurant Sales	\$5,829	Annie Louise Perkinson
FS07-220	Meeting the Needs of Microbreweries with Fresh Hops Production	\$9,762	Linda Sakiewicz
FS06-197	Increasing Economic Viability and Promoting Sustainable Agriculture through Agritourism	\$7,485	Amy Ager Hickory Nut Gap Farm - Spring House Meats
FS06-199	Capillary Irrigation for Container Nurseries: a practical alternative to overhead irrigation?	\$9,867	Ellen J. Colodney Coastal Plain Conservation Nursery, Inc
FS06-206	A Diversifying and Marketing Strategy for Sustaining Small Farm Agriculture	\$9,976	Nancy C. Moretz
FS06-211	Value from byproducts of the Southern Wine Grape Industry	\$9,925	Ben Webb Sandy Cross Vineyard
FS04-185	Farmstead Cheese (Queso Blanco) for the Latino Food Market	\$4,361	Tom Shore
FS03-163	Managing Beneficial Insects and Using Pest Trap Crops in Organic Broccoli	\$9,950	Charles A. Church Watauga River Farms
FS03-164	Test Growing & Marketing Specialty Woody Cutflowers	\$8,555	Susan Wright Cochran Shady Grove Gardens & Nursery
FS03-167	Mountain Tailgate Market Association Marketing Initiative	\$14,280	Charlie Jackson Mountain Tailgate Market Association
FS03-170	Short- and Long-term Crop Replacement Project	\$9,787	Phillis Kenlaw 104 Best Drive
FS03-171	Dairy Goat Woodland Grazing Project	\$9,900	Brit Pfann 144 Celebrity Dairy Way
FS03-175	Greenhouse Grown Fraser Fir Tree Seedlings	\$7,401	Justin Wells Sugar Grove Botanical Farm, Inc.
FS02-146	Farmscaping Organic Broccoli to Increase Beneficial Insect Numbers	\$9,855	Charles A. Church Watauga River Farms
FS02-152	Biodiverse-Organic Christmas Tree Production	\$9,333	Mark Lackey
FS01-132	Ginseng Production Utilizing Natural Fungicides	\$9,986	Robert Eidus Eagle Feather Farm
FS00-114	Creating a Tailgate Farmers Market	\$4,380	Annie Louise Perkinson

FS00-128	Direct Marketing Opportunities to Improve Economic Outlook	\$9,050	Andy Youngblood
FS99-085	Effects of Cover Crops on Weed and Insect Management in Blackberries	\$9,935	Sam Bellamy Indigo Farm
FS99-091	Ratite Marketing Education Program	\$7,250	Tina Hurdt
FS99-096	Use of Low Value Hardwoods for Shiitake Mushroom Production	\$1,929	Walker H. Rayburn, Jr.
FS99-097	Oriental Persimmons and Pawpaws: Two Sustainable Crops for the South	\$6,534	Lesley Sanderson
FS99-105	Low Cost Compost Screening	\$2,975	Carl Weston
FS98-068	Late Blight Suppression in Tomatoes Using Competing Fungi on Leaf Surfaces	\$5,800	Tom Elmore Thatchmore Farm
FS98-071	Workshop on Parasite Control Through On-Farm Fecal Studies	\$6,545	Susan Gladin
FS98-076	Development of Low Input Sustainable Practices for Rose Production	\$2,690	Jacqueline Jones
FS98-078	High-Fructose Corn Syrup as a Replacement for Mepiquat to Reduce Vegetative Growth in Cotton	\$2,224	Hubert Morris
FS98-083	Organic Specialty Lettuce Production in Tobacco Greenhouses	\$7,455	John Vollmer
FS97-048	Evaluation of Mycorrhizal Inoculation on Growth and Quality of Three Eastern North Carolina Christmas Tree Species	\$650	Daniel Dorsey
FS97-051	Effect of Different Application Rates of Swine Lagoon Effluent on Corn and Wheat	\$2,317	John Hart
FS97-054	Forest Site Preparation with Swine	\$5,088	Thomas Livingston
FS96-035	Aquaculture Conversion Model Emphasizing Poultry and Hog Facilities Re-Use and Recycled On-Farm Resources	\$6,000	Benny Bunting
FS96-037	Identification of Cover Crops to Enhance the Habitat of Specific Beneficial Insects in Sustainable Production Systems	\$8,452	Kenny Haines Misty Morning Farm
FS96-038	Multiple On-Farm Use of Aquatic Plants and Animals	\$9,575	Harvey Harman Sustenance Farm
FS96-044	Alternatives to Chemicals in the Peanut Cotton Rotation	\$9,366	Hubert Morris

FS95-027	Demonstration of High Value, Small Scale Sustainable Vegetable and Fruit Production Methods	\$9,612	Larry and Judy McPherson
FS95-034	Hydroponic Vegetable Production in Conjunction with a Trout Farming Operation	\$9,975	Carl Zietlow Best Trout and Organic Farm
FS94-007	Perennial Warm Season Grasses as Summer Pasture	\$733	Norman and Karen Jordan
FS94-008	Meat Goats for Weed Control and Alternative Income on Cattle Operations	\$2,020	Tony Kern KC Ranch
FS94-013	Plant Shelters to Extend the Growing Season for Herbs	\$3,550	Richard Morgan Harmony Herb Farm

GRADUATE STUDENT GRANTS

Project #	Project Title	SARE Support	Project Leaders
GS21-242	Equity and Environment in Scaled-Up Sustainable Food Systems Development	\$15,109	Nichola Lowe University of North Carolina at Chapel Hill Sophie Kelmenson University of North Carolina at Chapel Hill
GS21-252	Improving Nutsedge and Grass Control in Organic Production Systems Using Sequential Mowing and Organic Herbicide Application	\$15,654	Dr.Katherine Jennings NCSU Stephen Ippolito North Carolina State University
GS21-253	Combining Roller Crimpers and Electrical Methods for Termination of Cover Crops in Herbicide-free Reduced-tillage Vegetable Crop Production Systems	\$16,326	Dr.Katherine Jennings NCSU Colton Blankenship North Carolina State University
GS20-230	Investigating Social Networks for Cooperative Management Potential in Agriculture	\$8,984	Dr.Jason Delborne North Carolina State University Dalton George North Carolina State University
GS19-205	Optimizing Electrical and Mechanical Palmer Amaranth Control and Reducing Seed Production and Viability	\$16,498	Dr.Katherine Jennings NCSU Levi Moore North Carolina State University
GS19-215	Quantifying the Disease Ecology and Network Connectedness Across Pollinator Communities as a Result of Planted Pollinator Plots	\$16,500	Dr.David Tarpy North Carolina State University Hannah Levenson North Carolina State University
GS19-212	Rye With or Without Purple Top Turnips for Stocker Calf Grazing Over the Winter Following Corn Harvest as Part of a Southeastern U.S. Integrated Crop-Livestock System	\$11,757	Carrie Pickworth NC State University Jordan Cox-O'Neill North Carolina State University
GS18-185	Evaluation of Reduced and Strip-tillage Cover Crop Sweet Potato Production Systems on Soil Health, Sweet Potato Growth, and Weed Management Programs	\$16,499	Dr.Katherine Jennings NCSU Dr.Stephen Smith NCSU
GS16-156	Integrating Pest & Pollinator Management in Southern Berry Production	\$10,921	Dr.Hannah Burrack North Carolina State University Jeremy Slone NCSU

GS15-140	Farm-to-Childcare in North Carolina; A Holistic Case Study	\$10,636	Dr.J. Dara Bloom NC State University Jacob Rutz NCSU
GS15-142	Food Waste: Quantifying on-farm vegetable losses	\$10,206	Dr.Nancy Creamer North Carolina State University Lisa Johnson North Carolina State University
GS14-132	Production of a conditional sterile-male strain for the control of spotted-wing drosophila	\$10,890	Fu-Chyun Chu North Carolina state university
GS14-135	Identifying regionally adapted winter pea and faba bean genotypes that maximize grain and cover cropping potential	\$10,957	Dr.Chris Reberg-Horton North Carolina State University Rachel Atwell North Carolina State University
GS13-121	Identifying barriers to sustainable food production by low resource producers and purchase by low income consumers in Washington and Beaufort Counties, North Carolina	\$7,614	Dr.Chantal Reid Duke University, Dept of Biology Kimberly Hill Duke University
GS12-112	Contributions of legume cover crop root systems to soil carbon pools in organic systems using different termination strategies	\$10,997	Julie Grossman NCSU Arun Jani North Carolina State University
GS12-115	Breeding Wheat for Increased Weed-Suppressive Ability against Italian Ryegrass	\$10,952	Dr.Chris Reberg-Horton North Carolina State University Margaret Worthington NCSU
GS11-099	Plant mediated effects on parasitoid efficacy in a banker plant system	\$9,930	Dr.Steven Frank North Carolina State University Travis McClure NCSU Sara Prado NCSU
GS11-102	Verticillium Wilt Management: Elucidating Mechanisms of Resistance and Integration of Sustainable Alternatives in Tomato Production Systems	\$9,970	Dr.Frank Louws NC State University Meagan Iott North Carolina State University
GS11-104	Potential for Conservation Biological Control of Stink bugs in North Carolina	\$9,735	David Orr North Carolina State University Dr.Sriyanka Lahiri University of Florida
GS10-088	Predictors of short-term nitrogen availability in organic farming systems that utilize warm season cover crops	\$10,000	Dr.Nancy Creamer North Carolina State University Suzanne O'Connell North Carolina State University
GS10-089	The Black Pearl Pepper Banker Plant for Biological Control of Thrips in Commercial Greenhouses	\$9,959	Dr.Steven Frank North Carolina State University Sarah Wong North Carolina State University
GS10-091	Managing field borders for weed seed predators	\$9,856	Dr.Chris Reberg-Horton North Carolina State University Aaron Fox North Carolina State University
GS10-094	Evaluation of Herbal Remedies as Alternatives to Antibiotic Therapy in Dairy Cattle	\$9,990	Dr.Steven Washburn North Carolina State University Dr. Kevin Anderson North Carolina State University Keena Mullen North Carolina State University

GS09-078	Evaluating vermicompost mediated host plant resistance as a sustainable alternative to manage agricultural insect pests	\$9,810	Yasmin Cardoza North Carolina State University Amos Little North Carolina State University
GS08-067	Southeastern North Carolina Food Systems Project	\$10,000	Leslie Hossfeld University of North Carolina Wilmington Raven Bruno UNCW
GS08-068	Elucidating the role of cellulases involved in biological control of Phytophthora root rot	\$9,931	George Place North Carolina State University Kelly Ivors North Carolina State University Brantlee Spakes Richter North Carolina State University
GS08-073	Traits of Interest for Improving Weed Suppressive Ability in Soybean During the Critical Period for Weed Competition	\$9,972	Dr.Chris Reberg-Horton North Carolina State University Kelly Ivors North Carolina State University George Place North Carolina State University
GS08-076	Chemistry and Biodegradability of Dissolved Soil Organic Matter in Diverse Farming Systems	\$9,850	Dr.Wei Shi North Carolina State University Lei Tian North Carolina State University
GS07-058	Cover crop mulches for no-till organic onion production	\$10,000	Dr.Nancy Creamer North Carolina State University Emily Vollmer North Carolina State University Dept. Hort. Sci.
GS07-060	Potential of grafting to improve nutrient management of heirloom tomatoes on organic farms	\$10,000	Mary Peet North Carolina State University Dr.Frank Louws NC State University Suzanne O'Connell North Carolina State University
GS07-062	Omega-3 Purlane Eggs	\$10,000	Thomas Rufty NCSU Crop Science Department Laura Vance NCSU Crop Science Department
GS06-051	Effects of management practices and plant growth regulators on the allelopathic potential of rye (Secale cereale)	\$9,780	James Burton North Carolina State University David Danehower North Carolina State University Christine Sickler North Carolina State University
GS06-052	Testing Technologies for Affordable Bioshelters	\$9,914	Mary Hoepfl Appalachian State University Yonatan Strauch Appalachian State University
GS06-055	Why do farmers adopt conservation practices? Do green payments help? A case study of the Lower Roanoke, North Carolina	\$9,999	Lynn Maguire Duke University Nicholas School of the Environment Lucy Henry Duke University Nicholas School of the Environment
GS05-046	Inducing Disease Resistance and Increased Production in Organic Heirloom Tomato Production Through Grafting	\$10,000	Dr.Frank Louws NC State University Cary Rivard North Carolina State University
GS04-032	Optimizing substrates, composts, and fertilizer additions for organic transplant production	\$10,000	Mary Peet North Carolina State University Elizabeth Larrea North Carolina State University

GS04-035	Effects of Tillage, Rotation, and Organic Inputs on Soil Ecological Properties in Vegetable Crop Production Systems	\$9,998	Greg Hoyt Dept. of Soil Science, NCSU Laura Overstreet North Carolina State University
GS03-027	Natural Vegetation and its Influence on Weed Populations in Neighboring Fields	\$9,932	Dr.J. Paul Mueller North Carolina State University Susan T. Jelinek North Carolina State University
GS03-028	Evaluation of Beneficial Insect Habitat for Organic Farms	\$10,000	David Orr North Carolina State University Lisa Forehand North Carolina State University
GS01-008	Breeding a better cover crop: a screen of rye germplasm for weed suppression	\$9,986	Dr.Nancy Creamer North Carolina State University Dr.Chris Reberg-Horton North Carolina State University
GS00-004	Interactions between predators and insect-parasitic nematodes in soil	\$10,000	Mary Barbercheck North Carolina State University C. Marie Greenwood North Carolina State University
GS00-006	Evaluation of Cover Crops and Conservation Tillage for Conventional and Organic Sweetpotato (<i>Ipomoea batatas</i>) Production in North Carolina	\$9,927	Dr.Nancy Creamer North Carolina State University Danielle Treadwell North Carolina State University

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
OS23-169	Exploring Local Carbon Sources and Cover Crops Used for Anaerobic Soil Disinfestation for Management of Soilborne Pathogens of Tomatoes in NC, USA	\$30,000	Dr.Frank Louws NC State University
OS22-159	Researching Colocasia esculenta (aka Taro) in the Southeast as a Sustainable and Alternate Crop	\$20,000	Chris Smith The Utopian Seed Project
OS21-141	On-farm Trials to Evaluate New Tomato Breeding Lines with Verticillium Wilt Race 2 Tolerance	\$20,000	Reza Shekasteband NC State University
OS21-145	Southern Pea (<i>Vigna unguiculata</i>) Production Under Conservation Tillage Systems in North Carolina	\$18,730	Dr.Jason Davis University of Mount Olive
OS19-129	Evaluating Scale-appropriate Technology for Organic No-till Vegetable Production	\$14,904	Karen McSwain Carolina Farm Stewardship Association
OS19-125	Regenerative Grazing to Mitigate Climate Change	\$14,787	Saskia Cornes Duke University
OS18-123	Demonstration of Root Zone Heating Supported by the Developed Biomass Greenhouse Heating System	\$14,883	Dr.Ok-Youn Yu Appalachian State University
OS17-105	Evaluating On-Farm Use of Multi-Species Cover Crops	\$15,000	Michelle Lovejoy NC Foundation for Soil and Water Conservation
OS10-052	Optimizing biological control of greenhouse pests with banker plant systems	\$14,959	Steven Frank NCSU

OS10-055	Increasing on-farm sustainability through agritourism research: An examination of agritourism visitors, farms, and marketing strategies	\$15,000	Dr.Samantha Rich North Carolina State University
OS09-046	Grafting Heirloom Tomatoes on Disease Resistant Rootstock in Western North Carolina	\$4,960	Susan Colucci NC Cooperative Extension
OS09-050	Development and Implementation of On-Farm Biological Soil Disinfestation to Manage Soilborne Diseases In Organic Strawberry Production Systems	\$15,000	Dr.Frank Louws NC State University
OS08-042	New Tools to Make Organic No-till Soybeans and Corn a Reality	\$14,917	Dr.Chris Reberg-Horton North Carolina State University
OS07-038	On-Farm Biofuel Production from Sweet Sorghum Juice	\$14,898	Matthew Veal North Carolina State University
OS06-032	Opportunities for pasture-raised Jersey beef in the Southeast	\$14,952	Dr.Steven Washburn North Carolina State University
OS05-025	Salmonella Contamination and Antibiotic Resistance on Pastured Poultry and Conventional Poultry Farms	\$9,542	Cedarose Siemon Independent Research Scientist

SUSTAINABLE COMMUNITY INNOVATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
CS15-092	How Local Food System Development Affects the Sustainability of Agriculture: The Impact of Farmer-Consumer Interactions on Production Practices	\$34,830	Charlie Jackson Appalachian Sustainable Agriculture Project
CS12-088	Community Farm & Food Project Phase II - Initiation	\$9,996	Allison Kiehl Southern Appalachian Highlands Conservancy
CS11-086	Community Farm and Food Project Phase I - Assessing Needs and Building Partnerships	\$10,000	Allison Kiehl Southern Appalachian Highlands Conservancy
CS10-079	PolkFresh TradePost Project: A Strategy to Implement Polk County's 20/20 Vision plan for Sustainable Community Development	\$10,000	Carol Lynn Jackson PolkFresh TradePost Project
CS10-082	Farming and Agricultural Recommendations for Mount Pleasant (F.A.R.M.)	\$10,000	Stacy Piehl Town of Mount Pleasant Michael Robertson Town of Mount Pleasant
CS09-070	Stecoah Kitchen Entrepreneurship & Agri-tourism Project	\$10,000	Beth Fields Stecoah Valley Arts, Crafts & Educational Center, Inc.
CS08-063	SNAP! A Sustainable Network at Polk From Farm to Fork and back to Farm again	\$10,000	Mary Lyth
CS07-055	Stecoah Kitchen Entrepreneurship & Agri-Tourism Project	\$10,000	Beth Fields Stecoah Valley Arts, Crafts and Educational Center Beth Fields Stecoah Valley Arts, Crafts & Educational Center, Inc.

CS06-045	Establishing community and business partnerships to build a market identity for local seafood	\$9,950	Jennifer Ulz Carteret Community College
CS06-050	Getting your small farm products to market / a three county program to solve product logistics: marketing/sales, product development, packages and labeling, transportation	\$40,000	David Kendall North Carolina Cooperative Extension
CS05-033	Women Farmers Building a Healthy Community and Economy in the High Country	\$9,900	Chelly Richards Blue Ridge Women in Agriculture (BRWIA)
CS04-021	A Strategy for Sustaining Henderson County Agricultural Communities	\$8,500	Lori Sand Henderson County Planning Department
CS04-027	Agricultural Community Support Across Boundaries	\$10,000	Tom Elmore Land-of-Sky Regional Council
CS04-030	Healthy Livestock Agriculture & Healthy People: Connecting Local Pasture-Raised Food and Consumers in Central North Carolina	\$10,000	Sally Norton Program on Integrative Medicine
CS03-009	Strengthening Rural Communities Through Direct Marketing	\$9,941	Gerry Alfano Park and Recreation-Greensboro Farmers Curb Market Susan Andreatta University of North Carolina at Greensboro
CS03-018	New River Sustainable Agriculture Marketing Plan	\$10,000	Hollis Wild Appalachian Trees
CS02-005	SE North Carolina Agri-Tourism Corridor Development	\$7,000	Mikki Sager The Conservation Fund

EDUCATION ONLY GRANTS

Project #	Project Title	SARE Support	Project Leaders
EDS23-056	Ergonomics and Assistive Technology Program for Farmworkers in North Carolina	\$22,000	Dr. Crystal Cook Marshall NC AgrAbility
EDS22-32	North Carolina Small Ruminant Improvement Program	\$49,996	Andrew Weaver North Carolina State University Dr. Emily Cope North Carolina State University Johnny Rogers North Carolina State University
EDS22-40	Advancing Conservation through Educating and Empowering Women Farmers and Landowners in the Southeast	\$49,998	Gabrielle Roesch-McNally American Farmland Trust Lillian Alexander Black Family Land Trust, Inc.

EDS21-26	Farmer Direct Sales During and After COVID-19	\$49,950	Molly Nicholie Appalachian Sustainable Agriculture Project (ASAP) Duane Adams The AB-Tech Western Regional Small Business Center Amy Marion Appalachian Sustainable Agriculture Project (ASAP) Craig Mauney NC State Extension: Mountain Horticulture Crops Research and Ext David Smiley Appalachian Sustainable Agriculture Project (ASAP) Madeleine O'Toole ASAP
EDS21-30	Saving Seed for Resilient Local Systems: An online, video based course on saving seed from the Utopian Seed Project	\$49,775	Chris Smith The Utopian Seed Project
EDS20-14	Small Ruminant Producers Program: A pilot program for small ruminant producers and county agents	\$31,895	Kingsley Ekwemalor NC A&T Dr. Andrea Gentry-Apple North Carolina Agricultural and Technical State University Johnny Rogers North Carolina State University
EDS20-16	Building Resilient and Successful Farm Businesses in the Southern Appalachians	\$50,000	Cameron Farlow Organic Growers School
EDS20-19	Promoting Southeastern Agriculture Resilience with Carbon Farm Planning	\$50,000	Amanda Egdorf-Sand NC Foundation for Soil and Water Conservation Pelayo Alvarez Carbon Cycle Institute Anne Coates Thomas Jefferson Soil and Water Conservation District Bryan Evans NC Association of Soil and Water Conservation Districts Cameron Farlow Organic Growers School Laura Lengnick Cultivating Resilience LLC Nathan Lowder USDA Natural Resources Conservation Service Soil Health Division
EDS18-05	Promoting Adoption of Cover Crops in Southeastern Farming Systems	\$48,000	Michelle Lovejoy NC Foundation for Soil and Water Conservation

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