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Appalachia Identified as Most Diverse Foodshed in North America

DENTON, Texas – It's no secret that the Appalachia region is a center of floral and salamander diversity and is rich in indigenous culture and traditional folk music. Now, thanks to the work of a University of North Texas anthropologist, we have one more reason to cherish the heritage of the Southern mountains.

Based on a \$10,000 Southern SARE-funded study, Appalachia has been identified as the most diverse foodshed in North America, with nearly 1,500 documented folk and indigenous crop varieties of heirloom vegetables and fruits; apple cultivars alone make up nearly a third of the varieties identified. In addition, Appalachia folk crop varieties outnumber Ozark heirloom cultivars by an almost 2:1 ratio.

“The American Mountain South is home to some of the highest agrobiodiversity levels in Canada, the United States and northern Mexico,” said James Veteto, assistant professor and the project's principal investigator.

Veteto spent 14 months in the field, conducting oral history interviews and socioeconomics sur-

veys with growers and home gardeners throughout the Appalachia region.

“The growers mostly talked about why they grow certain heirloom varieties and their reasons are largely cultural in nature: they are following local recipes, upholding culinary traditions, and maintaining the family heritage.” In fact, many



heirloom foods are so embedded in family history that they carry family names.

“Growers of heirloom crops across the Mountain South emphasize cultural themes when expressing why they continue to maintain the seeds of their ancestors,” said Veteto, noting that beans, apples, tomatoes, and corn are the most prominent crops being saved

across the region. “Specific culinary uses, locally-defined tastes, food preservation technologies and their resulting foodways, and cultural heritage and memory are the most important reasons why heirloom cultivars are maintained. Utilitarian reasons – market value and high yields – are secondary.”

Veteto said that understanding why agrobiodiversity persists across the Appalachia region is important from a cultural standpoint (geneology

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Editor, Candace Pollock
PR Coordinator
cpollock@uga.edu
(770) 412-4786

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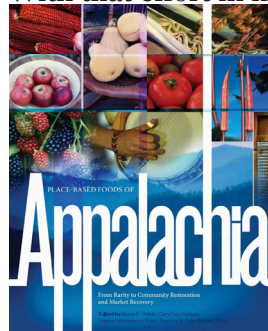
can be traced through seeds), a culinary standpoint, and an agroecology standpoint.

“We don’t know what we are doing when we substitute one variety for another,” said Veteto. “Narrowing the diversity of an agroecological system is dangerous.”

But as the younger generation loses interest and modernity pushes its way into the region, Veteto warns that the agrobiodiversity, and the culture that goes with it, will be lost.

“We need to have a social and environmental system that allows for traditional livelihoods to persist, and one of the most important pieces of that is seed preservation,” said Veteto.

With that effort in mind, Veteto, in collaboration with the Renewing America’s Food Traditions (RAFT) alliance, produced a publication to foster recognition of the Appalachia region and encourage the preservation of heirloom seed varieties.



The publication, “Place-Based Foods of Appalachia: From Rarity to Community Restoration and Market Recovery,” is a first-ever report of the status of 1,412 place-based heirloom foods in central and southern Appalachia. The publication lists varieties of fruits, nuts, berries, vegetables, and grains, and records whether they are extinct, endangered, threatened or common. In addition, the publication contains essays on various Appalachia heirloom foods and the folk and Eastern Cherokee cultures that are so deeply tied to them.

An electronic version of the publication is available at <http://www.southernsare.org/Project-Reports/SARE-Project-Products>.

“Mountain South seeds, gardens, and gardeners are indeed a milieu of memory and conservation that is living and vibrant—yet threatened—and are worthy of our support and respect as the groundwork for any conservation efforts in the region,” said Veteto.

Read more about the final report, “Seeds of Persistence: The Ethnoecology of Crop Agrobiodiversity Maintenance in the American Mountain South,” on the national SARE database referencing project number GS08-074.

Research and Education Projects

Final Reports

LS06-185 Organic High Tunnel and Conventional Field Vegetable Production Systems, Kentucky State Univ. \$170,000, Michael Bomford, Ph: 502-597-5752, mbomford@gmail.com

Biofumigation and solarization were tested as possible organic controls of white mold (*Sclerotinia sclerotiorum*), a soil-borne pathogen of cool-season vegetable crops commonly found in high tunnels. Biofumigation was also tested as a possible control of the warm season vegetable pathogen *Phytophthora capsici*. Pacific Gold mustard was identified as a potential biofumigant crop with a combination of high biomass production and glucosinolate concentration. Laboratory studies showed both pathogens to be susceptible to glucosinolates extracted from the mustard, but soil incorporation of field-grown biomass did not introduce sufficient glucosinolate to reduce disease pressure. Summer solarization in high tunnels destroyed white mold sclerotia.

LS06-187 Silicon Soil Amendments for Enhancing Disease Resistance While Improving Overall Crop Health for Cucurbits in Organic Farming Systems, Univ of Florida, \$180,000, Lawrence E. Datnoff, Ph:352-392-363, edatnoff@ifas.ufl.edu

The purpose of this project was to address plant diseases in organic farming systems by targeting soil health as the fundamental principle towards achieving a healthy cucumber crop. Although the amendment of soil with silicon at two organic field locations did not significantly reduce disease pressures of downy mildew, silicon amended to soil in multiple greenhouse experiments did significantly reduce anthracnose severity in the leaves. The results of this research indicate that Si may play a significant role in disease control of cucumber in a greenhouse setting where high pressure from multiple pathogens may be absent and arthropod pests and environmental factors can be better controlled.

LS06-192 Biorational Approaches for Management of Bacterial Wilt and Bacterial Spot on Tomato, Univ. of Florida, \$150,000, Jeffrey B. Jones, Ph:352-392-3631, jbjonesl@ufl.edu

Growers are becoming more aware that management of bacterial wilt and bacterial spot on tomatoes will require changes rather than continuing to rely primarily on conventional disease control measures, especially conventional pesticides such as copper bactericides for bacterial spot and methyl bromide/chloropicrin for bacterial wilt. Development of biorational approaches in the proposed project will significantly enhance soil and water quality and human health. The products and techniques developed in this proposal are environmentally-compatible and grower-friendly. In comparison to the intensive use of conventional chemical pesticides, use of the reduced risk tactics proposed

in this project will reduce threats to growers, reduce pollution to their land, food and water resources, and will enhance the quality of life for farmers and consumers.

LS07-197 Appalachian Grown: Farm to School Project, Appalachian Sustainable Agriculture Proj, NC, \$170,000, Emily Jackson, Ph: 828-236-1282, Emily@asap-connections.org

Research on the profitability of the Farm to School market in the region finds that while the costs of selling to schools is higher and the market size smaller, school markets are more profitable than other types of market outlets. Current demand is concentrated in a few products but strategies that include season extension and collaboration with Child Nutrition Directors on menus have the potential to increase the amount of local produce sourced. Research on the impact of Farm to School activities with students, parents, and teachers shows that Farm to School activities - farm fieldtrips and cooking with local, seasonal foods - increases awareness of local farms and increases interest in trying and eating local foods.

LS07-198 Transition Strategies For an Organic Peanut-Grain Cropping System, University of Georgia NESPAL, GA, \$220,000, Craig Kvien, Ph: 229-386-7274, ckvien@uga

The transitional period to get land certified plays a critical role in minimizing the impact of pests (especially weeds) on organic peanut production. This research demonstrated that transitioning through row crop production (pearl millet and cowpea) provided more adequate weed control than bahiagrass or a cultivated fallow rotation.

LS07-199 Integrating Plant Essential Oils and Kaolin for the Sustainable Management of Thrips and Tomato Spotted Wilt on Tomato, USDA-ARS, Center for Medical, Agri-cultural and Veterinary Entomology, FL, \$185,000, Stuart Reitz, Ph: 850-656-9870, sreitz@saa.ars.usda.gov

Field and laboratory comparisons determined that the use of kaolin and plant essential oils could be a viable management alternative for some producers to the use of conventional insecticides for the management of thrips-transmitted tomato spotted wilt virus. These materials were found to act as repellents and feeding deterrents to thrips, which help to account for reduced spread of tomato spotted wilt in the field. In replicated trials, tomato plots treated with kaolin and essential oils from lemongrass or tea tree produced yields equivalent to those treated with repeated applications of conventional insecticides.

LS07-200 Selecting Cover Crops for Organic Strawberry Production in North Carolina, North Carolina State University, \$200,000, Michelle Schroeder, 919-513-0085, michelle_schroeder@ncsu.edu

Research and Education Projects

Two separate studies were conducted to examine the effects of using summer cover crops as part of an integrated sustainable soil management approach for strawberry production in North Carolina that included a two-year field experiment and a one year on-farm trial. Sudan grass, Pearl millet and the Pearl millet/Soybean combination produced the highest aboveground biomass and the lowest weed biomass compared to the other treatments, although there were no significant differences among cover crop treatments for strawberry yields. A one-year on-farm study was additionally conducted on three separate farms to determine the effects of cover crop treatments on strawberry yields, weed biomass, and cover crop biomass, and to investigate the producer-perceived benefits and barriers to the adoption of cover crops in strawberry production. While cover crops reduced weed biomass at two of the farms, cover crops did not affect yields at one farm but reduced yields at another.

LS08-202 Crop-livestock Systems for Sustainable High Plains Agriculture, Texas Tech University, TX, \$200,000, Vivian Gore Allen, 806-742-1625, felician@ttu.edu

Beginning in 1997, SARE-funded long-term systems research began in the Texas High Plains to conserve water and other natural resources while assuring a level of economic profit to sustain individuals and communities of the region. Initial comparisons of 1) a cotton monoculture and 2) an integrated cotton-forage-stocker steer system demonstrated over 10 years that the integrated approach used about 25% less irrigation water, about 40% less nitrogen fertilizer, was similar in profitability, and increased soil organic carbon, soil microbial activity, reduced soil erosion, and had numerous other benefits compared with the cotton monoculture. In 2004, state funding was acquired to implement on-farm producer demonstrations of 30 different systems in two counties including over 4,500 acres. After 5 years, cotton monoculture systems have used more irrigation water than integrated crop/livestock systems. Net returns per system acre have been greater for the integrated systems than the cotton monocultures but reflect changing market prices. Grass seed production produced the most revenue per acre but used more water than other systems. Data from the research and demonstration projects show that systems can be designed to conserve water and energy while maintaining or increasing economic returns.

LS08-203 Exploiting the Organic Peanut Market: Refining Production Systems for the Southeast, Herbert Green Agroecology, Inc., NC, \$175,000, Mark Boudreau, 828-215-2093, markb26@uga.edu

A team of researchers and farmers in Georgia and the Carolinas conducted three years of controlled experiments and on-farm trials to develop a system for organic peanut production in the Southeast, focusing on stand establishment and weed control. Some organic seed treatments

may be effective at improving stands, but the key to success is proper timing of planting with dense seeding rates and readiness to replant. Frequent mechanical cultivation with a flex tine cultivator before is essential and hand weeding may still be required.

LS08-204 Sustainable Control of Gastro-Intestinal Nematodes in Organic and Grass-Fed Small Ruminant Production Systems, USDA, ARS, AR, \$230,000, Joan M. Burke, 479-675-3834, joan.burke@ars.usda.gov

Integration of non-chemical control of parasitic nematodes in organic small ruminants was developed. These included use of sericea lespedeza (SL), copper oxide wire particles (COWP), FAMACHA and selective deworming, and forage systems. SL supplementation or grazing both led to reduced parasite infection and need for deworming; coupled with COWP, no chemical deworming was necessary. Annual forages may not fit in well with organic principles if a prepared seed bed is necessary; however, increasing the protein in the pasture through the use of legumes reduced the need for deworming. Rotational compared with continuous grazing also reduced the need for deworming.

LS08-209 Producing, Processing and Marketing Forage-Finished Beef for Consumers in the Southeastern United States, Auburn University, AL, \$151,000, Chris Kerth, 334-844-1503, kerthcr@auburn.edu

The purpose of this project was to demonstrate advantages and disadvantages and therefore the feasibility of small cattle farmers to produce, harvest, process, market, and sell their cattle in local markets utilizing a forage-finished production system. Results indicate that cool-season forage mixtures containing oats were superior to rye plus ryegrass for supporting beef cattle production from winter grazing. Summer annuals supported satisfactory ADG of finishing cattle early in the summer grazing phase, but were unable to sustain satisfactory ADG for the remainder of the season because of rapidly advancing maturity. Processing treatment showed a significant effect on the ability of panelists to detect grassy off-flavors. Curing a product significantly decreased the capacity of panelists to detect grassy flavors. Additionally, aging a control roast for 28 d substantially increased the presence of grass flavors compared to 0 d roasts according to panelists.

Research and Education Projects

Continuing Projects

LS06-186 Increasing Use of Sustainable Plants in Production and Landscape Design, Univ. of Georgia, \$180,000, Kris Braman, Ph: 770-228-7236, kbraman@uga.edu

LS07-196 Improved Efficiency of Grazing Dairies Using Complementary Pasture Species and Irrigation Scheduling, University of Georgia Dept Crop & Soil Sciences, GA, \$210,000, Nicholas Hill, Ph: 706-542-0923, nhill@uga.edu

LS07-201 Pigeon Pea: A Multipurpose, Drought Resistant Forage, Grain and Vegetable Crop for Sustainable Southern Farms, Texas AES - TAMU Dallas, TX, \$200,000, John Sloan, 972-231-5362, j-sloan@tamu.edu

LS08-205 Selecting a Sunn Hemp Cover Crop Genotype for Weed Suppression and Seed Production, University of Florida, FL, \$170,000, Carlene A. Chase, 352-392-1928, cachase@ufl.edu

LS08-206 Sustainable Agriculture in Virginia and North Carolina: A multi-state assessment of the economic, social and political context, Virginia PI&SU, VA, \$160,000, Jonah Fogel, 804-527-4234, jfogel@vt.edu

LS08-207, Enhancing the Long-Term Sustainability and Profitability of Small, Limited Resource Farmers in the Black Belt South Through Marketing Research & Education, Tuskegee University, AL, \$122,000, Tasha M. Hargrove, 334-727-4524, tmhargrove@tuskegee.edu

LS08-208 Marketing of Locally Produced Sustainable Animal Fiber Products, Texas State Univ-San Marcos, TX, \$140,000, Gwendolyn Hustvedt, 512-245-4689, gh21@txstate.edu

LS08-210 Reduced Tillage in Organic Systems: A soil and water quality imperative, North Carolina State University, NC, \$190,000, J. Paul, Mueller, 919-515-5825, Paul_Mueller@ncsu.edu

LS08-211 Improving the Environmental Performance of Niche Pork Production Systems and Marketability of Heritage Swine Breeds, North Carolina A&T State Univ., NC, \$175,000, Sang H., Oh, 336-334-7672, soh@ncat.edu

LS08-212 Integrating Tropical Legumes with Condensed Tannins into Ruminant Grass-Based Diets

for Sustainable Production, University of Puerto Rico-Mayaguez, PR, \$100,000, Elide Valencia, 787-265-3851, elideval@uprm.edu

LS09-215 Developing Low-Cost Sustainable Sweetpotato Production Strategies to Facilitate Adoption in the Mid-South, Mississippi State University-MAFES, MS, \$18,5000, Ramon A. Arancibia, 662-489-4621, raa66@msstate.edu

LS09-216 Improving the Quality of Life for Southern Organic Farmers and Farm Workers, Florida Certified Organic Growers & Consumers, Inc. (FOG), FL, \$190,000, Leah Cohen, 352-377-6345, leah@foginfo.org

LS09-217 Improvement of the Safety of Food Handling Practices on Small Farms, Clemson University, SC, \$200,000, Paul Dawson, 864-656-1138, pdawson@clemson.edu

LS09-218 A Farmer-Researcher Collaborative Effort to Design No-Till Systems Appropriate for Small-Scale Organic Producers in Alabama and the Deep South, Auburn University, AL, \$250,000, Joseph Kloepper, 334-844-1950, kloepjw@auburn.edu

LS09-219 Development of Agroforest Systems for Bioenergy Crop Production and Ecosystem Services in the Lower Mississippi Alluvial Valley, University of Arkansas, AR, \$180,000, Hal O. Liechty, 870-460-1452, liechty@uamont.edu

LS09-220 Does Floral Farmscaping Really Improve Insect Biological Control in Vegetable Systems of the Coastal Plain?, UGA, \$165,000, John R. Ruberson, 229-386-7251, ruberson@uga.edu

LS09-221 Maximizing Profitability, Sustainability, and Carbon Sequestration of No-Till Forage Systems for Finishing Beef Cattle in the Gulf Coast Region, LSU AgCenter Iberia Research Station, LA, \$136,000, Guillermo Scaglia, 337-76-527, gscaglia@agcenter.lsu.edu

LS09-222 Fish Extracts for Integrated Disease, Insect and Fertility Management in Organic Blueberries, University of Georgia, \$119,000, Harold Scherm, 706-542-1258, scherm@uga.edu

LS09-223 Nutrient Optimization for Sustainable Goat Production Systems in the Southeastern U.S., Tuskegee University, AL, \$170,000, Sandra Solaiman, 334-727-8401, ssolaim@tuskegee.edu

LS09-224 Research and Educational Support for Organic Dairy Farming in the South, North Carolina

Research and Education Projects

State University, NC, \$250,000, Steven P. Washburn, 919-515-7726, Steve_Washburn@ncsu.edu

LS10-225 Evaluation of Crop Rotation for High Value Cool Season Horticultural Crop Production

University of Georgia, \$200,000, George Boyhan, 706-542-2471, gboyhan@uga.edu

LS10-226 Integrating Free-Range Poultry with Ruminant and Agroforestry Production in a System Approach, USDA ARS Poultry Production & Product Safety Research, AR, \$210,000, Annie Donoghue, 479-575-2413, annie.donoghue@ars.usda.gov

LS10-227 Lighting up the Black Box: Improving legume performance on organic farms by optimizing microbially-mediated plant and soil nitrogen cycling processes, NCSU, NC, \$192,000, Julie M. Grossman, 919-513-1041, Julie_grossman@ncsu.edu

LS10-228 Educating and Training Future Farmers, Researchers and Extension Personnel in Sustainable Agriculture, University of Florida, \$245,000, R.Koenig, 352-392-1811, rlkoenig@ufl.edu

LS10-229 Integrated Crop and Livestock Systems for Enhanced Soil Carbon Sequestration and Microbial Diversity in the Semiarid Texas High Plains, Texas Tech University, TX, \$160,000, Jennifer Moore Kucera, 806-742-0116, Jennifer.moore-kucera@ttu.edu.

LS10-230 Improving Fall Organic Vegetable Crops and Soils with Summer Cover Crops, LSU Agric Center, LA, \$245,000, Girish K. Panicker, 601-877-6598, panicker@alcorn.edu

LS10-231 Weed Management Alternatives for Organic Foccee Agroforestry Systems of Puerto Rico, Univ of Puerto Rico @ Utuado, PR, \$150,000, Mariangie Ramos, 787-675-1520, mariangie.ramos@upr.edu

LS10-232 Integrating Canola and Sunflower with Organic Grain Production and Southeastern United States, USDA-ARS, GA, \$245,000, Harry Schomberg, 706-769-5631, harry.schomberg@ars.usda.gov

LS10-233 Integrated Use of Grafting Technology to Improve Disease Resistance and Fruit Yield in Specialty Melon Production, University of Florida, FL, \$223,000, Xin Zhao, 352-392-1928, zxin@ufl.edu

Planning Grants

LS10-234 Enhancing the Economic Stability of Select Limited Resource Farms Through the Establishment of Micropropagated Pecan Orchards Integrated with Crops and Animals, Tuskegee University, AL, \$15,000, Leonard Githinji, 334-724-4955, Leonard.githinji@tuskegee.edu

LS10-235 Preparing Small Scale Limited Resource Vegetable Farmers for Organic Farming in North Florida, Florida A&M University, FL, \$15,000, Odemari Mbuya, 850-599-3428, odemari.mbuya@famuedu

Preliminary Grants

LS10-236 Traceability in Specialty Crop Production and Supply Chains: Distilling a research and extension agenda, Clemson University, SC, \$33,000, Kathryn Boys, 864-656-4345, kboys@clemson.edu

LS10-237 Understanding Small Landowners' Perspectives in Adoption of Goat-Agroforestry Land Management System, Alabama A&M University, AL, \$27,961, Buddi Gyawali, 256-372-5870, buddi.gyawali@aaamu.edu

Professional Development Projects

Final Reports

ES09-099 Developing Successful Organic Horticulture Farms: Practical training for agricultural professionals, S-SAWG, AL, \$62,915, Jean Mills, 205-333-8504, jean@ssawg.org

This project brought together three key elements: a well-tested farmer-led organic production training course, a practical science-based body of research and experience, and agriculture professionals seeking information about organic methods. The project, led by Southern Sustainable Agriculture Working Group (SSAWG), provided practical training and resources on organic horticultural crop and high tunnel production to enhance the capacity of Extension, NRCS, and FSA personnel to provide effective technical assistance to current and aspiring organic farmers and those exploring high tunnel production.

Continuing Projects

ES07-087 Kentucky Sheep and Goat Herder Curriculum-Phase 1, University of Kentucky, \$90,000, Ricky Yeargan, Phone: 859-323-9277, ricky.yeargan@uky.edu

ES07-088 Building Organic Agriculture Extension Training Capacity in the Southeast, University of Arkansas, \$195,000, Elena Garcia, 479-575-8619, megarcia@uark.edu

ESo8-089 Toolbox for Small Ruminant Educators: Building on the small ruminant resource manual, NCAT, AR, \$61,523, Linda Coffey, 479-442-9824, lindac@ncat.org

ESo8-090 An agent Training Program in Safe Food Handling & Legal Liability, North Carolina Cooperative Ext, NC, \$77,344, Diane Ducharme, 704-250-5402, Diane_Ducharme@ncsu.edu

ESo8-091, Organic Dairy Training Conferences and Educational Materials for Professionals, Univ of Arkansas CES, AR, \$97,456, Jodie Pennington, 501- 671-2190, jpennington@uaex.edu

ESo8-092 Energy Training for Agricultural Professionals in the Southern SARE Regions, National Center for Appropriate Technology (NCAT), NC, \$97,684, Mike Morris, 406-533-6652, mikem@ncat.org

ESo8-093 Agritourism Training for Agriculture Professionals, University of Georgia, GA, \$82,986, Kent Wolfe, 706-542-0752, kwolfe@uga.edu

ESo8-094 Experiential Education to Form an Extension Organic Production Team in Georgia, University of Georgia, GA, \$18,692, Julia Gaskin, 706-542-1886, jgaskin@enr.uga.edu

ESo9-095 Training the Trainers in Community-based Food Systems: A project-oriented case study team approach, North Carolina State University, Center for Environmental Farming Systems, NC, \$99,266, Nancy Creamer, 919-515-9447, Nancy_Creamer@ncsu.edu

ESo9-096 Training Educators and Agricultural Professionals on Sustainable, Pasture-Based Dairy Systems, University of Georgia, GA, \$89,321, Dennis Hancock, 706-654-21529, dhancock@uga.edu

Professional Development Projects

ES09-097 Moving Nursery Producers Toward Sustainable Production Practices, University of Florida / IFAS, N. Florida R&E Center, FL, \$76,237, Gary Knox, 850-875-7162, gwknox@ufl.edu

ES09-098 Strengthening the Goat Industry: A national conference, Florida A&M, FL, \$80,000, Angela McKenzie-Jakes, 850-875-8557, Angela.McKenzieJakes@famu.edu

ES09-099 Developing Successful Organic Horticulture Farms: Practical training for agricultural professionals, S-SAWG, AL, \$62,915, Jean Mills, 205-333-8504, jean@ssawg.org

ES09-100 Green Roof Technology as a Tool for Sustainable Cities: Food production, urban heat island effect and storm water run-off reduction, University of Puerto Rico-Mayaguez, PR, \$20,000, Sally Gonzalez, 787-833-9350, sgonzalez@uprm.edu

ES10-101 Developing a Training Program in Sustainable Vegetable Production for Agriculture Professionals in Kentucky and Tennessee, University of Kentucky, KY, \$59,532, Timothy Coolong, 859-257-3374, timcoolong@uky.edu

ES10-102 Organic Agriculture Hands-on Training and Educational Materials for Extension Professionals in the Southeast, Tuskegee University, AL, \$98,850, Leonard J.M. Githinji, 334-724-4955, Leonard.githinji@tuskegee.edu

ES10-103 Building Capacity: Farm to School, Appalachian Sustainable Agriculture Project, NC, \$78,303, Emily Jackson, 828-236-1282, Emily@asapconnections.org

ES10-104 Back to Basics: Training the trainers at the Eastern Apicultural Society Conference, NCSU, NC, \$22,313, David R. Tarpy, 919-515-1660, david_tarpy@ncsu.edu

ES10-105 Multiple Livestock Species Integrated Parasite Management Train-the-Trainer Programs with On-Farm, Computer-based and Traditional Training Sessions, North Carolina A&T State Univ. Cooperative Extension Program, NC, \$86,105, Niki Whitley, 336-334-7957, ncwhitle@ncat.edu

ES10-106 On-Farm Training in Organic Pest Management Practices for Small, Diversified Farms, Clemson University Sustainable Agriculture Program, SC, \$83,775, Geoffrey Zehnder, 864-656-6644, zehnder@clemson.edu

Producer Grant Projects

Final Reports

FS08-223 Promoting Sustainable Beekeeping Practices Through Local Production of Nucs and Local Queen Honeybees, The Backyard Farm, VA, \$14,736, Karla Eisen, 703-753-9023, PWSBeekeepers@gmail.com

The Prince William Regional Beekeepers Association (PWRBA) producer SARE project compared hives started from packaged bees to hives started from nucleus colonies (nucs) positively demonstrating higher survival for nuc started hives than package started hives, with survival differences more pronounced in the second year. Education and training resulted in adopting more sustainable beekeeping practices. The number of nucs made available to association members in lieu of packaged bees increased dramatically over the course of the project. Queen rearing was successfully initiated.

FS08-224 Organic Strawberry Production: Extending the season with low tunnels, AL, \$10,000, Jan Garrett, 334-725-9272, garr6904@bellsouth.net

The results of this project show that strawberries can be harvested early by planting on black plastic mulch. Growers can get berries to market 1-2 weeks earlier than if planted on bare ground using the matted row system. However, the matted row system produced many more berries than the black plastic mulch. Another advantage of the black plastic mulch system is less labor is required for weeding than with the matted row system. By having a combination of these two treatments, a grower can extend the season, produce more berries, and have a source of plants for future plantings. Low tunnels produced berries about 1 week earlier on black plastic mulch, but there was no advantage observed from using low tunnels in the matted row system. The low tunnels produced fewer berries than the treatments without them in both the black plastic mulch and in the matted row system.

FS08-229 Enhanced Genetic Selection of Dairy Sheep for the Southern US, VA, \$9,486, Marcia McDuffie, 434-277-9216, mjm7e@virginia.edu

Ewes from a cross using East Friesian (dairy) sheep and two "hair" breeds (St. Croix, Katahdin) were bred and tested for their ability to transmit traits associated with low-input dairy production in the heat and humidity of the southeastern United States. The result show that the sheep produced from this breeding scheme can provide commercially viable seasonal milk production and relative parasite resistance on a largely forage-based diet.

FS08-231 Financial Analysis of Growing No-Till Organic Field Corn and Wheat Using Cover Crops for Weed Suppression, VA, \$8,827, Joel Thomas Yowell, 540-923-4059, kdyowell@earthlink.net

Four combinations of cover crops were planted to test the efficacy of planting without herbicide and relying on rolled ground cover to prevent weed growth. Yield results for corn were negligible. Wanting to observe the full capability of the mulch to control weeds, cultivation was withheld, a critical decision that prevented viable yields; but, a decision easily reversed in future crops. It was observed that legumes provided the most favorable planting conditions, possibilities for cultivator intervention and nitrogen. Rye cover ranged from problematic to impossible. Wheat planted after field preparation with two gangs of narrow wave coulters, yielded adequately and provided a harvest window between maturity and late weed pressure. If not hamstrung by a strict no till mind set, planting into legume cover crops avoids the time and cost of spring field preparation and eliminates at least one cultivation.

FS09-233 Dual-Season Organic Asparagus Production, SC, \$9995, Mary Connor, 843-757-2363, mconnor@hargray.com

A study of the viability of dual season organic asparagus crops in the coastal region of South Carolina determined that this is a feasible operation. Although costs for organic production are high, demand for this crop is also high. The ability to manipulate fall harvesting by time and quantity is especially advantageous for specific local markets. This study showed that both spring and fall harvested organic asparagus are possible and that asparagus is a desirable crop for the coastal areas of South Carolina and Georgia.

FS09-234 "Sweet Petite" Value-Added Processing for Small Sized Shrimp, GA, \$9932, James Dubberly, 912-925-6433, lindawhiddon@bellsouth.net

We proposed to improve the economic viability of domestic shrimp harvesting by expanding the local market for value added products containing only domestically harvested, small sized shrimp. Two certification programs were utilized providing consumers important information about their purchasing decision. General marketing was accomplished through our affiliation with the Wild Georgia Shrimp program. Product packaging utilized the Georgia Grown logo along with our own brand, Sweet Savannah Shrimp, which is reserved for all natural shrimp products harvested and prepared by Dubberly's Seafood.

FS09-235 Water Catchment Systems for Mobile and Permanent Farm Structures, AL, \$9970, Santiago Lima, 256-694-7810, sanylima@yahoo.com

The use of mobile and permanent structures to capture water is a relatively inexpensive option that can significantly supplement water use on a farm. In general, the systems were inexpensive and stored a useful quan-

Producer Grant Projects

tity of water, especially in more remote locations around the farm.

FS09-237 Growing Organic Hops for the Local Market, NC, \$8268, Rita Pelczar, 301-602-0722, pelczar@aol.com

Although hops is not a common crop in WNC, there is a significant--and growing--market for locally grown hops that includes local and regional microbreweries and home brewers. After three seasons, we have not yet made a profit with our hops business; however, we are hopeful that this will change with the maturity of our planting as well as our growing understanding of the crop's requirements and how to satisfy them.

FS09-238 Development of a Novel Grazing System for Sustainability of a Cow-Calf Operation, VA, \$9500, Joe Shomo, 540-886-7247, brjones8@vt.edu

The purpose of this project was to investigate implementation of alternative forages to extend grazing options for a beef cattle operation and reduce the dependency on corn production to meet year round feed requirements. The results of the project were that Teff, while a high quality forage, was too expensive and climatically sensitive to be profitable for beef cattle grazing in the Shenandoah Valley of Virginia. The project was very worthwhile however and demonstrated that despite the high investment of time and resources to grow Teff there may be potential to grow it purely as a hay crop for profit.

FS09-240 Early Growing Season Strategy, NC, \$3482, Hollis Wild, 336-982-2377, hwild@skybest.com

The problem this project was designed to address was: how early warm season vegetables can be produced to extend the growing season on the front-end by using low energy input, a greenhouse and other season extension techniques to offer produce for higher-value specifically to the early season market. With this project we hoped to learn the best methods for protecting tender plants from cold and freezing without supplemental heating so we can offer this to our produce mix by late June.

FS10-249 Production and Marketing of European Melons in the Southeast, GA, \$5,390, Brennan Washington, 770-513-1563, brennan@phoenixgardens.net

While the production of American melons is an important agricultural undertaking, we feel that there exists the potential to develop a profitable specialty market in European melons. Although we did not get the results we were hoping for in this trial, we feel we did have several accomplishments. We did successfully grow out a large quantity of plants from seed to mature specimen. Our yield while not near projections were enough to do some sampling and outreach. And some of the fruit was of excellent quality in both taste and appearance.

Continuing Projects

FS09-239 Wasabi Production, NC, \$8649, Deidra Smith, 828-964-5851, edistotoo@yahoo.com

FS10-241 Sustainable Cultivation of Plant-Derived Indigo for Diversification and On-Farm Value-Added Dye Pigment Production, TN, \$9,871, Sarah Bellos, 615-306-3154, s.bellos@gmail.com

FS10-242 Late Summer Crop Development Project, MS, \$8,350, Rickey Cole, 601-316-1356, rcole1966@yahoo.com

FS10-243 Winter Production of Nucleus Honeybee Colonies, VA, \$9,944, John Fraser, 571-321-0792, jfraser@fraseronline.com

FS10-244 Sustainable Honeybee Strains for Western North Carolina, NC, \$9,959, Ryan Higgs, 828-754-7176, rhiggs@myway.com

FS10-245 Forage Chicory Use in Rotational Grazing of Sheep to Reduce Intestinal Worms, Reduce Grain Supplementation, And Maximize Growth, SC, \$9,078, Kathy Mccaskill, 803-432-9537, oldmccaskills-farm@gmail.com

FS10-246 Low-Cost Geothermal Greenhouse Heating System for Southern Climates, TX, \$9,999, Tanya Miller, 936-870-4099, MillicanProduce@gmail.com

FS10-247 Using Buckwheat to Attract Beneficial Insects for Crop Protection, SC, \$9,037, Daniel Parson, 404-452-4321, parsonproduce@me.com

FS10-248 Florida Meat Goat Study, FL, \$9,996, Rita Pruette, 850-447-1882, ritapruette@yahoo.com

FS10-250 Cultural Eradication of Johnsongrass for Family Farms and Small Scale Organic Producers, VA, \$9,862, Karen Waters, 434-977-3045, karen@cvilleqcc.org

FS11-251 Quality Calf Project, Pelican Farmer Association, LA, \$15,000, Edith Gross, 504-656-0634, egross20@bellsouth.net

FS11-252 Impact of Supplemental Feed Type on Winter Survival of Honey Bee Colonies, NC, \$9,957, Barry Harris, 910-352-7868, gldeagle@bellsouth.net

FS11-253 Demonstrating the Potential for Triticale and Annual Ryegrass as Both an Alternative Winter

Producer Grant Projects

Crop and a Soil Organic Matter-Building Practice,
Greenview Farms, Inc., GA, \$9,997, Jonny Harris, 912-294-
2470, greenviewfarms@windstream.net

**FS11-254 Hitting Seasonal Market Highs by Breeding
Meat Goats During the Summer Months,** OK, \$2,821,
James Jones, 5803996360, info@rockindoublejgoats.com

FS11-255 Cucumber Pollination with Bumblebees,
Rawl Farms, SC, \$8,530, David MacFawn, 803-957-8897,
dmacfawn@aol.com

**FS11-256 Comparing Native Grass Species to
Bahagrass as a Forage Hay Crop,** MS, \$9,982, Tulon
McKee, Jr., 662-423-8062, jrmckee@bellsouth.net

**FS11-257 Is Fish Waste Compost Worth the Mess and
Effort?,** Sweetgrass Garden Co-op Inc., SC, \$9,848, Dale
Snyder, 843-270-0889, dale.snyder@att.net

Graduate Student Projects

Final Reports

GS07-057 Optimizing Buckwheat Use as a Weed Suppressive Cover Crop for Sustainable Cropping Systems in Florida, University of Florida, FL, \$10,000, Carlene Chase, 352-392-1928, cachase@ufl.edu, Pei-wen Huang, agnespei@ufl.edu

Buckwheat is a promising cover crop for weed management in sustainable and organic cropping systems. Since the humid, subtropical climate in Florida is different considerably from the temperate areas of the country where buckwheat is typically grown, recommendations were needed for growing buckwheat cover crop to maximize its benefits. Buckwheat cover crop was compared with weedy fallow and a harrowed control at six planting dates in spring and fall in 2007 and 2008. Generally, buckwheat resulted in fewer weeds than the weedy fallow and was as effective at suppressing weeds as the harrowed control. With the mild weather in spring and fall in north-central Florida, climatic conditions at the beginning of May and mid October may be the most suitable for buckwheat growth and weed suppression. When termination practices of rolling, flail mowing, light tillage, and the combination of flail mowing and light tillage were compared, light tillage may be a promising option for buckwheat planted in fall. Rolling and flail mowing may be more applicable for use in spring and for systems in which growers wish to retain buckwheat residue as an organic mulch.

GS07-063 Reducing Nutrient Loss Below the Root Zone of Drip-Irrigated Vegetables Using Low-Pressure, Increased Irrigation Time, University of Florida, FL, \$9,966, Eric Simonne, 352-392-4711, esimonne@ufl.edu, Aparna Gazula, virgoinc@ufl.edu

Keeping water and nutrients within the rootzone of vegetable crops is the main goal of nutrient Best Management Practices. Ideally, a no-leach situation may be created if the flow rate of irrigation matches exactly the rate of crop evapotranspiration. These results suggest that reducing operating pressure can be a practical tool to reduce water application and fertilizer rates without reducing yields. Growers can easily reduce operating pressure by inserting a pressure regulator in the drip system, but will need to determine the actual flow rate at the reduced operating pressure.

GS08-065 Effects of Organic Amendments on Aggregation and Microbial Community Dynamics in Soils, University of Kentucky Plant and Soil Sciences, KY, \$10,000, Elisa D'Angelo, 859-257-8651, edangelo@uky.edu, Shawn Lucas, stluca2@uky.edu

This project evaluated the use of organic amendments to foster a soil microbial community profile that favors improved soil structure.

GS08-066 Conservation of Predatory Carabid Beetles (Coleoptera: Carabidae) in Agroecosystems of the Southern Great Plains, Oklahoma State University, OK, \$9,996, Kristopher Giles, 405-744-6298, kris.giles@okstate.edu, Sarah Donelson s.l.donelson@okstate.edu

This study has provided information to producers regarding carabid colonization and dispersal abilities in diverse agroecosystems. Tillage and dispersal data demonstrates that alfalfa is utilized as a refuge habitat by carabids during catastrophic environmental disturbances. This data supports the need for diversifying agroecosystems to provide carabids with the various habitats necessary to complete all life stages. Carabid mobility and polyphagous feeding habits demonstrate the need to conserve these biological control agents within the agroecosystems of the Southern Great Plains.

GS08-071 Effect of Sericea Lespedeza Leaf Meal Pellet Supplementation on Haemonchus Contortus Infection in Grazing Ewes, Louisiana State University Department of Pathobiological Sciences, LA, \$10,000, James Miller, 225-578-9652, jmille1@lsu.edu, Dana Pollard, dpollar1@lsu.edu

In this study, AUGrazier sericea lespedeza (AUGSL) leaf meal pellets which have a higher concentration of condensed tannin, was evaluated, as a supplement pelleted feed, for affect on naturally acquired *Haemonchus contortus* infection in grazing ewes. Results indicated that supplementation did not affect fecal egg count (FEC), blood packed cell volume (PCV), FAMACHA score or survival/development of larvae in feces during the peri-parturient period. During the summer grazing period, there was no effect on FEC, PCV or FAMACHA, but there was a reduction of larval survival/development in feces. For both periods there was a reduction in survival/development of *Haemonchus* larvae in AUGSL leaf meal supplemented ewes.

GS08-077 Providing Habitat for Native Pollinators at Farm Sites, University of Tennessee, Knoxville, \$10,000, John Skinner, 865-974-0209, jskinner@utk.edu, Michael Wilson, mwilso14@utk.edu

This study set out to document what groups of bees are providing visitation to insect pollinated crops in East Tennessee, and what bees will utilize a number of flowers used as bee food. Conclusions found that native bees are important visitors to crop flowers, but their importance and composition depend on the type of flower. Within a flower type, other environmental effects can shift the community structure. Plants selected for bee food plots can be chosen based on the similarity of the community of bees which utilize them as compared to crops. This study establishes a record of the importance of native bee visitation to crops within the study period and location. It also conceptualizes a method to develop a plant list for bee food plots specific to any location where the plants are tested.

Graduate Student Projects

GS09-082 The Smells and Sounds of a Subterranean Sessid: Mating disruption and acoustic detection of grape root borer, University of Florida, FL, \$9,434, Dr. Oscar Liburd, 352-392-1901, oeliburd@ufl.edu, William Sanders, willsanders@ufl.edu

The grape root borer, *Vitacea polistiformis* (Harris), is the key pest of grapes in Florida. A study was initiated to evaluate the potential to use acoustic devices for detecting *V. polistiformis* in the root of vines. The project goal was to provide additional monitoring tools for detecting *V. polistiformis* in the root system of grape vines and potentially reduce the cost of mounding since growers will be able to distinguish infested from un-infested roots.

GS09-084 Microbial Changes Associated With Use of Brassica Cover Crops Compared to Traditional Production Systems for Strawberry, University of Arkansas, AR, \$9,971, Dr. Craig Rothrock, 479-575-6687, rothrock@uark.edu, Mandy Cox, mmcox@uark.edu

The objectives of this project included characterizing plant pathogen and general microbial population changes in soils under different sustainable management practices for strawberry production systems at two different locations in Arkansas. A brassica cover crop, mustard seed meal, solarization or a combination of the cover crop and solarization were compared to no soil treatment prior to establishing the strawberry crop. This project has successfully proven how including soil treatments such as a brassica cover crop, solarization or mustard seed meal application as a practice in annual strawberry production can enhance the soil microflora, especially the bacterial community.

GS09-086 Testing the Efficacy of Three New Alternative Treatments for Nosema Disease of Honey Bees in Tennessee, University of Tennessee, TN, \$9,963, Dr. John Skinner, 865-974-7138, js Skinner@utk.edu, Paul Rhoades, prhoades@utk.edu

The purpose of this study was to evaluate the effect of fumagillin, thymol, Nozevit and Honey-B-Healthy on Honey bees infected with either *Nosema ceranae* or *Nosema apis*. Although treatment greatly affected mortality, no difference was noted with respect to the species of *Nosema*. Bees treated with thymol and Honey-B-Healthy were found to have rates of mortality similar to uninfected bees. Bees treated with Nozevit had rates of mortality similar to untreated bees. Fumagillin improved mortality, but not to levels of uninfected bees.

Continuing Projects

GS08-072 Sustainable Management for Scarab Pests Impacting Grape Production in the Southern Region, University of Kentucky, KY, \$9,750, Daniel Potter, 859-257-7458, dapotter@uky.edu, Derrick Hammons, dlhamm3@uky.edu

GS08-074 Seeds of Persistence: The ethnoecology of crop agrobiodiversity maintenance in the American Mountain South, University of Georgia, GA, \$10,000, Robert Rhoades, 706-542-1042, rrhoades@uga.edu, James Veteto, jv61598@uga.edu

GS09-078 Evaluating Vermicompost Mediated Host Plant Resistance as a Sustainable Alternative to Manage Agricultural Insect Pests, North Carolina State University, NC, \$9810, Dr. Yasmin Cardoza, 919-513-1285, yasmin_cardoza@ncsu.edu, Amos Little, aglittl@ncsu.edu

GS09-079 Optimal Nutritive Value of Honeylocust Seed Pods Within Temperate Silvopasture, Virginia Polytechnic Institute and State University, VA, \$9,894, Dr. John Fike, 540-231-8654, jfike@vt.edu, Jacob Johnson, jacobwj@vt.edu

GS09-080 Emerging Local Food Systems: The role of locally developed innovation in small-scale sustainable farming in northeast Georgia, University of Georgia Odum School of Ecology, GA, \$8,492, Dr. Carl Jordan, 706-542-6019, cfjordan@uga.edu, Justin Ellis, jsellis@uga.edu

GS09-081 Trap Cropping for Management of Harlequin Bug in Cole Crops, Virginia Tech Eastern Shore AREC, VA, \$9,523, Dr. Thomas Kuhar, 757-414-0724, tkuhar@vt.edu, Anna Wallingford, awalling@vt.edu

GS09-083 Effect of Copper Oxide Wire Particles Compared to Copper Sulphate on *Haemonchus contortus* Infection in Lambs, Louisiana State University Department of Pathobiological Sciences, LA, \$10,000, Dr. James Miller, 225-578-9652, jmille1@lsu.edu, Javier Garza, jgarza7@lsu.edu

GS09-085 Evaluation of *Simplicillium ianasoniveum* as a Biological Control Agent, Louisiana State University AgCenter, LA, \$9,734, Dr. Raymond Schneider, 225-578-4880, RSchneider@agcenter.lsu.edu, Nicole Ward, NWARD@agcenter.lsu.edu

GS09-087 Bioenergy and Biofertilizer for Small-Farm Enterprises, University of Florida-IFAS, FL, \$10,000, Dr. Ann C. Wilkie, 352-392-8699, acwilkie@ufl.edu, Ryan E. Graunke, reg1214@ufl.edu

Graduate Student Projects

GS10-088 Predictors of Short-Term Nitrogen Availability in Organic Farming Systems That Utilize Warm Season Cover Crops, North Carolina State University Dept. of Horticultural Science, NC, \$10,000, Nancy Creamer, 919-515-9447, Nancy_creamer@ncsu.edu

- Horticultural Sciences, FL, \$10,000, Xin Zhao, 352-392-1928, zxin@ufl.edu

GS10-089 The Black Pearl Pepper Banker Plant for Biological Control of Thrips in Commercial Greenhouses, North Carolina State University, NC, \$9,959, Steve Frank, 919-515-8880, steven_frank@ncsu.edu

GS10-091 Managing Field Borders for Weed Seed Predators, Crop Science Department, North Carolina State University, NC, \$9,856, Chris Reberg-Horton, 919-515-7597, chris_reberg-horton@ncsu.edu

GS10-092 Do Human-Modified Landscapes Affect Solitary Bee Diversity, Foraging, and Reproduction in Northern Florida?, University of Florida Dept. of Wildlife Ecology and Conservation, FL, \$10,000, Kathryn Sieving, 3528460569, chucao@ufl.edu

GS10-093 Improving Nutrient Retention with Biochar, University of Florida Horticultural Sciences Department, FL, \$9,852, Danielle Treadwell, 352-392-7928, ddtreadw@ufl.edu

GS10-094 Evaluation of Herbal Remedies as Alternatives to Antibiotic Therapy in Dairy Cattle, North Carolina State University, NC, \$9,990, Steve Washburn, 919-515-7726, steve_washburn@ncsu.edu

GS10-095 Efficacy of Entomopathogenic Fungi in an Integrated Pest Management Plan for Cucumber Beetles in Melons and Pumpkins, University of Tennessee, TN, \$8,154, Annette Wszelaki, 865-974-8332, awszelak@utk.edu

GS10-096 Integrated Use of Grafting Technology to Improve Disease Resistance, Yield and Fruit Quality in Organic Heirloom Tomato Production, University of Florida, FL, \$10,000, Xin Zhao, 352-392-1928, zxin@ufl.edu

GS10-097 Enhancing Nitrogen and Water Use Efficiency in Tomato Production by Using Grafting Technique, University of Florida

On-Farm Research Projects

Final Reports

OS07-033 Precious Indigenous Woods For Coffee Shade, El Caribe Resource Conservation & Development, Inc., PR, \$14,967, Jose Aponte, Ph: 787-841-3136, jose.aponte@pr.usda.gov

Our first project goal was to develop commercial quality wood seedlings through a production system based on forestry tube containers. Our second goal was to provide the tube seedlings for farmers to combine coffee with non-traditional precious wood trees. The results demonstrate that deepot cell containers solve the problem posed by bagged wood seedlings at the nursery and to coffee farmers. Tubed seedlings showed adequate development above ground, and root systems superior to bagged seedlings, and faster establishment. So far, survival rates have been good. Production costs for the tube seedlings are much less than the bag product and the environmental impact is minimal.

OS07-036 Sensory Evaluation of Alternative Turkey Genotypes, University of Arkansas Center of Excellence for Poultry Science, AR, \$14,962, Casey M. Owens, Ph: 479-575-4281, cmowens@uark.edu

A trial was conducted to assess impact of genotype on yield, meat quality, and sensory attributes. The data indicated differences in yield, meat quality and sensory attributes between the commercial fast-growing and specialty slow-growing turkeys as well as differences in reasons for purchase.

OS08-041 Increasing the Sustainability of Oklahoma Cropping Systems Using Cover Crops, Oklahoma State University, OK, \$15,000, Chad Godsey, 405-744-3389, chad.godsey@okstate.edu

On-farm testing was conducted in southwestern Oklahoma to evaluate the use of summer cover crop in a continuous winter wheat cropping system. Guar, cowpea, soybean, and mungbean were seeded in late June following wheat harvest. Cover crops were terminated after 60 days of growth. The use of cover crops did not decrease wheat grain yield in the following wheat crop. Data generated from the test locations indicated cowpea to be the best choice of a summer cover crop. Inclusion of a cover crop appears to help increase diversity into a monoculture wheat cropping system.

OS08-043 Monitoring Nutrient Availability and Leaching Below the Root Zone in Organic Vegetable Production, University of Florida, FL, \$14,900, Eric Simonne, 352-392-7928, esimonne@ufl.edu

This project increased the farmer's ability to monitor nutrient shortages (poor N synchronization or excess rainfall) using a combination of leachate analysis and plant petiole sap analysis, thus avoiding many common pitfalls

associated with nutrient and water management in Florida vegetable systems.

OS08-044 The Use of Controlled Grazing, Chicory Pasture and Herbal Treatments to Prevent Parasitism in Sheep and Goats, Phase II, Heifer International, AR, \$14,941, Ann Wells, 479-409-8772, annw@pgtc.com

This project is a culmination of 6 years of work, using rotational grazing and animal selection as the primary methods of controlling internal parasites in small ruminants. Using these two strategies has shown that we can control most internal parasite problems. With all the different alternative treatments we have tried, with the exception of the chicory pastures, along with other bioactive forage plants, there is not any alternative treatment that will work as well as an effective chemical anthelmintic. Because some producers don't have effective chemical anthelmintics, we would like to see additional trials on the black walnut/tobacco tincture/cayenne pepper/garlic juice preparation.

OS09-045 Identifying Ewes Resistant to Gastrointestinal Parasitic Worms During Gestation and Lactation, USDA, Agricultural Research AR, \$14,866, Joan Burke, 479-675-3834, joan.burke@ars.usda.gov

Selecting sheep resistant to gastrointestinal nematodes will diminish parasite challenges in pastures, leading to reduced infections. The relationship between fecal egg counts (FEC) in the ewe during lambing and her offspring was examined. There was a positive relationship between FEC of lambs at 90 days of age and dams at 30 days post-lambing, and FEC of lambs at 120 days of age and dams at 60 days post-lambing. There was a negative relationship between FEC of dams at 60 days post-lambing and weight of offspring at 60 days of age. These relationships will help develop selection strategies for producers.

OS09-048 Teff: An alternative crop for Oklahoma, Oklahoma State University Plant and Soil Sciences, OK, \$14,948, Kefyalew Desta, 405-744-4667, kefyalew.desta@okstate.edu

We conducted two studies in 2009 and 2010 at various sites to evaluate performance of teff varieties and determine fertilizer recommendations. Teff grain yield ranged from 0.8 to 1.5 t ha⁻¹ when grown in the field. We determined 67 kg N ha⁻¹ as optimum N rate and about 25-50 kg P₂O₅ ha⁻¹ as optimum P rate for teff. Additional N might be needed if teff is intended for multiple cut. Fertilizer rates should be adjusted for soil supplied N and P. Based on current costs and output prices, growers can produce teff profitably and with minimal financial risk.

On-Farm Research Projects

Continuing Projects

OS09-046 Grafting Heirloom Tomatoes on Disease Resistant Rootstock in Western North Carolina, NC Cooperative Ext. Service- Henderson County, NC, \$4,960, Susan Colucci, 828-697-4891, sue_colucci@ncsu.edu

OS09-047 Sweetpotatoes: A profitable crop for small farms in rural eastern Kentucky, University of Kentucky, Department of Horticulture, KY, \$14,791, Timothy Coolong, 859-257-3374, timcoolong@uky.edu

OS09-049 Creating, Planning, and Using Forage Quality Budgets to Optimize Milk Production on Grazing Dairies, University of Georgia Soil, Plant, Water Lab, GA, \$14,340, David Kissel, 706-542-5350, dkissel@uga.edu

OS09-050 Development and Implementation of On-Farm Biological Soil Disinfestation to Manage Soil-borne Diseases In Organic Strawberry Production Systems, North Carolina State University, Plant Pathology, NC, \$15,000, Frank Louws, 919-515-6689, frank_louws@ncsu.edu

OS10-051 Appalachian Forest Farming Network for Native Medicinal Plant Production, USDA, National Agroforestry Center Southern Research Station, VA, \$15,000, James Chamberlain, 540-231-3611, jchamberlain@fs.fed.us

OS10-052 Optimizing Biological Control of Greenhouse Pests With Banker Plant Systems, North Carolina State University, NC, \$14,959, Steven Frank, 919-515-8880, sdfrank@ncsu.edu

OS10-053 Biological Control of Saltcedar on West Texas Ranches Conserves Forage and Water Resources, Texas AgriLife Extension Service, Texas A&M, TX, \$14,965, Allen Knutson, 972-952-9222, a-knutson@tamu.edu

OS10-054 Evaluating Compost and Lime Effects on Soil Organic Matter, Soil Microbial Communities and the Control of Fusarium Wilt in Commercial Tomato Grown in Florida's Sandy Soils, University of Florida, FL, \$14,955, Amy Shober, 813-634-0000, alshober@ufl.edu

OS10-055 Increasing On-Farm Sustainability Through Agritourism Research: An examination of agritourism visitors, farms, and marketing strategies, North Carolina State University, NC, \$15,000, Stacy Tomas, 919-513-7407, stacy_tomas@ncsu.edu

OS10-056 Improving Cover Crop Management in Florida Row, Vegetable and Organic Citrus Systems, University of Florida, FL, \$14,940, Danielle Treadwell, 352-392-1928, ddtreadw@ufl.edu

OS11-057 Organic Forage Production Systems for Organic Dairies in the Southern Region, University of Tennessee, Plant Sciences Dept, TN, \$14,993, David Butler, 865-974-7164, dbutler@utk.edu

OS11-058 Comparison of Soil Quality of Farms Managed With Sustainable and Conventional Soil Management Practices in Oklahoma, Oklahoma State University, OK, \$15,000, Hailin Zhang, 405-744-9566, hailin.zhang@okstate.edu

OS11-059 Sustainable Goat Farming: Pasture enhancement and diet selection by goats, Tuskegee University, AL, \$14,993, Uma Karki, 334-727-8336, karkiu@tuskegee.edu

OS11-060 Investigating Various Tactics of Intercropping Buckwheat With Squash to Increase Natural Enemy Populations, Reduce Pest and Disease Pressure and Increase Yield, University of Florida, FL, \$14,978, Oscar Liburd, 352-273-3918, oeliburd@ufl.edu

OS11-061 A Measurement of the Pollination Success of Native Bees in North Georgia Apple Orchards: Is there a need for commercial European honey bees?, Georgia Gwinnett College School of Science and Technology, GA, \$15,000, Mark Schlueter, 678-407-5796, mschluet@ggc.edu

OS11-062 Promoting Tropical Cover Crop Mulch Systems for Minimum-Till Crop Production in the U.S. Virgin Islands, University of Virgin Island Agricultural Experiment Station, VI, \$14,957, Stuart Weiss, 340-692-4020, stuweiss@yahoo.com

Sustainable Community Projects

Final Reports

CS06-048 Schools + Potatoes Upper East Tennessee Development System (SPUDS), Jubilee Project, TN, \$39,762, Steve Hodges, Ph: 423-733-4195, steveh@over-home.net

A frozen potato wedge product made from potatoes grown by local farmers was developed and produced by Jubilee Project in the Clinch Powell Community Kitchens as a healthy, oven-baked replacement for frozen French fries made from non-local potatoes and bought from a commercial distributor. Schools purchased the partly cooked, spiced frozen potato wedge product in 5-lb bags.

CS07-056 "Gathering" of Homestead Economic and Entrepreneurs of Food Based, Organic Foods and Other Related Businesses, University of Tennessee Extension of Montgomery County, TN, \$10,000, Martha Pile, 931-648-5725, mmpile@utk.edu

The "Gathering" has built a strong coalition of community level leaders, volunteers, and small businesses. Through the coalition's effort, over 550 entrepreneurs in an eight county region, (six Tennessee Counties and two Kentucky Counties) have been involved. We have identified issues, created community brochures and banners, offered opportunities (meetings, tours and special events) and further developed a community kitchen to enhance and sustain businesses. There have been ten issues of "Sustainability Makes Cents" Newsletter published.

CS08-061 Mentoring Today for Tomorrow, Indian Springs Farmers Association, MS, \$10,000, Ben F. Burkett, 601-543-0900, benburkett@earthlink.net

The Indian Springs Farmers Association provided mentoring in agriculture to persons in southern Mississippi. The cooperative used funds to cultivate a new cohort of agricultural leaders. Through training and mentoring in diversified areas of agriculture, the participants received on-the-farm and off farm training. Workshops in crop production, marketing, value-added production, leadership, and cooperative training were held over a one-year period.

CS08-063 SNAP! A sustainable network at Polk From Farm to Fork and back to farm again, Earth-Song Rising LLC dba Giardini Gardens, Giardini Catering Co., NC, \$10,000, Mary Lyth, 828-817-3727, mdlyth@aol.com

The SNAP initiative has greatly energized the Polk County with its agricultural heritage. In a time of deep recession, work is being done with the social service agencies, such as the Isothermal Outreach Ministries to integrate agriculture into an economic strategy for distressed families from growing backyard gardens to starting farming operations. Many families, now unemployed, have land that can be farmed and there is an open market for good locally grown

produce.

CS08-065 Marshview Community Organic Farms - Young Farmers of the Lowcountry, Marshview Community Organic Farms Community Supported Agriculture, SC, \$9,700, Sara Reynolds, 84-381-20202, svreynolds@earthlink.net

The project provided adult leadership and training to youth residing in a low income area on St. Helena Island. As a result of this grant we were able to expand the project in the form of expanded outreach activities. The youth gained more responsibility and increased self-esteem as they prepare presentations. As they received training in customer relations and public speaking their skills improved in the use of the audio visual equipment and improved computer skills. This also translated with improved leadership skills and work ethics. Personal talents emerged and group cohesiveness developed as they had to rely on each other to complete many task on the farm and off. The community partners were surprised to see the impact youth can have on each other as they echo the pitfalls of onset juvenile diabetes as the youth made presentations to their peers.

CS09-070 Stecoah Kitchen Entrepreneurship & Agri-Tourism Project, Stecoah Valley Arts, Crafts & Educational Center, Inc., NC, \$10,000, Beth Fields, 828-479-3364, Programs@StecoahValleyCenter.com

The Stecoah Entrepreneurship and Agri-Tourism project is ongoing and was successful during the grant period as it met the goals of providing entrepreneurs with facilities and training for value-added food production and provided tourists with educational opportunities through classes and special events. The overall effect was to help sustain the agricultural community by providing awareness of and demand for farm-fresh products whether used for value-added products, retail sale or in a dining experience.

CS09-071 The East Hattiesburg Fresh Food on the Block Program, Pinebelt Association for Families, MS, \$10,000, Sylvia Forster, 601-582-0909, brightpaff@aol.com

The East Hattiesburg Fresh Food on the Block Project established The East Jerusalem Farmer's Market in the low wealth community of East Jerusalem in Hattiesburg Mississippi. The Market not only provided locally grown fresh fruits and vegetables but also increased nutrition knowledge in this same community through information outreach and community events partnering with The Mississippi Department of Agriculture and Commerce, The City of Hattiesburg, local nonprofit community organizations, churches, youth groups, the University of Southern Mississippi, and Mississippi State Extension Services.

Sustainable Community Projects

CS10-080 Farm to Market Alliance

(F2MA), Madison-Morgan Conservancy, GA, \$10,000, Christine McCauley, 706-342-9252, cmccauley@mmcgeorgia.org

The Madison-Morgan Conservancy's Farm to Market Alliance (F2MA) was created to support the marketing and transportation of local food fresh from farm to table through providing education and marketing materials. This SARE grant funded the creation of FARMeander, a map-based educational and promotional piece designed to locate and promote the farms and farm-related activities in and around Morgan County. FARMeander was successful in promoting agritourism, local farms, and local agricultural businesses and is the first step in branding this area of Georgia as the hub of the local food movement.

Continuing Projects

CS08-067 The Alabama Blackbelt Community Food System Project, The United Christian Community Association (TUCCA), AL, \$10,000, Andrew Williams, 334-627-3970, unitedchristiancommunity@frontiernet.net

CS09-069 New Opportunities on the Farm Community and Farm Revitalization in Five Eastern Kentucky Counties, Elliott Co. Coop Ext Service, KY, \$10,000, Gwenda Adkins, 606-738-6400, gadkins@uky.edu

CS09-072 Wildwood Growers' Market Starting a Local Food System, FL, UF/IFAS Sumter Co. Extension, \$7,910, Susan Kelly, 352-793-2728, sakelly@ufl.edu

CS09-073 Marketing Local Value-Added Products in Southwest Georgia, GA, Federation of Southern Cooperatives/Land Assistance Fund, \$9,934, Cornelius Key, 229-432-5799, corneliuskey@bellsouth.net

CS09-074 Producers/Buyers Cooperative: Linking family farms and institutions, Food Bank of North Alabama, AL, \$10,000, Kathryn Strickland, 256-855-6565, kstrickland@fbofna.org

CS10-075 Building Sustainable Families Through a Celebration of Low-Impact and Organic Community-Supported Agriculture, The University of Tennessee Extension, TN, \$10,000, Alice Ruth Correll, 615-444-9584, acorrell@utk.edu

CS10-076 Investing in Community Linkages to Improve Our Food System, Houston Tomorrow, TX, \$10,000, Jay Crossley, 713-523-5757, jay.crossley@houstontomorrow.org

CS10-077 Live Green and Prosper

Community Education Initiative, Upper Cumberland Broadcast Council WCTE TV, TN, \$10,000, Erica Duarte, 931-528-2222, eduarte@wcte.org

CS10-078 Project Indigo, South Carolina Coastal Conservation League, SC, \$10,000, Lisa Turansky, 843-725-2066, lisajt@sccl.org

CS10-079 PolkFresh TradePost Project: A strategy to implement Polk County's 20/20 vision plan for sustainable community development, Hourly-Contractor for Polk Agricultural Economic Development Office, NC, \$10,000, Carol Lynn Jackson, 828-817-2308, caroljackson@tds.net

CS10-081 Establishing Sustainable Agriculture & Community Development in Elgin Texas, City of Elgin, TX, \$10,000, Amy Miller, 512-285-5721, amiller@ci.elgin.tx.us

CS10-082 Farming and Agricultural Recommendations for Mount Pleasant (F.A.R.M.), Town of Mount Pleasant Dept. of Planning and Development, SC, \$10,000, Michael Robertson, 843-884-1229, mrobertson@townofmountpleasant.com

CS10-083 United Cherokee Ani-Yun-Wiya Nation Blackberry Development Project (UCANBD Project), United Cherokee Ani-Yun-Wiya Nation, AL, \$10,000, Gina Williamson, 256-582-2333, ucanonline@bellsouth.net

Which SARE Grant for You?

Southern SARE administers six grant programs, each with its own priorities and audiences. The process begins with the release of calls for proposals for each of the programs. All proposals must be submitted online. Get calls for proposals from the SSARE web site www.southernsare.org

Research and Education Projects generally are conducted by multi-disciplinary, multi-institutional research teams addressing whole systems. These projects include farmers as participants.

	2011
March	Call for pre-proposals released
June	Pre-proposals due
August	Full proposals requested
Nov.	Full proposals due
	2012
February	Administrative Council announces grant awards

Professional Development Program Projects train agricultural information providers in sustainable agriculture techniques and concepts.

	2011
March	Call for pre-proposals released
June	Pre-proposals due
August	Full proposals requested
Nov.	Full proposals due
	2012
February	Administrative Council announces grant awards

Graduate Student Awards are intended for full-time graduate students (Masters or PhD) enrolled at accredited colleges and universities in the Southern region. Up to \$10,000 will be awarded to each successful applicant for up to three years of project activities. The funds are paid directly to the university for use on the graduate student's project.

	2011
March	Call for proposals released
June	Proposals due
	2012
August	Administrative Council announces grant awards

Sustainable Community Innovation Projects link sound farm and nonfarm economic development with agricultural and natural resource management. Applicants may be farmers, ranchers, researchers, community organizations, environmentalists, ag and community development professionals, entrepreneurs, governmental and non-governmental organizations. Funded for a project maximum of \$10,000 for up to two years of activities.

	2011
August	Call for proposals released
October	Proposals due
December	Administrative Council announces grant awards

Producer Grant Projects are developed, coordinated and conducted by producers or producer organizations. These projects are generally located in one state, often on one farm. There is a \$10,000 limit for funding proposals submitted by an individual producer and a \$15,000-limit on proposals submitted by producer organizations.

	2011
September	Call for proposals released
November	Proposals due
	2012
February	Administrative Council announces grant awards

On-Farm Research Projects are conducted by agricultural professionals such as extension agents, NRCS and/or NGO personnel who currently work with farmers and ranchers. Cooperators must include at least one producer at all stages of the project. Funded for a maximum of \$15,000 for up to two years of activities.

	2011
September	Call for proposals released
November	Proposals due
	2012
February	Administrative Council announces grant awards

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Visited Our Website Lately?



Our website (<http://www.southernsare.org>) is sporting a new look.

Our website has historically been the hub of information on the organization's grant programs and educational publications on sustainable agriculture practices. Now it boasts even more comprehensive features.

Such features include additional information on the types of grants we offer and our grants process; a closer look at our Professional Development Program; a wealth of educational resources including fact sheets, bulletins and books; and a news section complete with press releases and access to our social media sites.

"For over a year we have been working to make the Southern SARE website more interesting, more useful and more inviting," said Jeff Jordan, director of the Southern SARE program. "We hope you will find all the information you need to apply for grants, as well as find information to help make agriculture more sustainable."

We invite you to explore the site and learn more about our organization, which has been providing grants and educational opportunities to farmers/ranchers, students, organizations and communities to advance innovations in sustainable agriculture since 1988.