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.

SARE in Virginia

Project Highlight: Fighting Downy Mildew with Better Crop Selection

Seed crop growers of cucumbers, squash, melons, gourds and watermelons have faced severe losses in Virginia from downy mildew. To stem these losses and to reduce the economic impact, seed grower Edmund Frost used a SARE grant to find varieties of melons, cucumbers and winter squash able to withstand downy mildew. By finding such varieties, he could share results with other seed growers and gather information needed to make progress with seed production and breeding of the resistant varieties.

Frost conducted trials that identified 15 cucumber varieties with the ability to produce twice as much as standard varieties labeled “resistant,” 20 winter squash and tropical pumpkin varieties with better downy mildew resistance than other varieties, and several varieties that produce good-quality melons in areas with high downy mildew pressure.

While the identified pumpkin varieties showed downy mildew resistance, there were quality problems that Frost looked at in a second SARE-funded project. Frost made significant progress with three pumpkin varieties and shared the results with growers at two conferences. One of the seeds bred during the project, F6 Seminole-Waltham seed, is now being sold to growers.

For more information on these projects, see sare.org/projects, and search for project numbers FS13-273 and FS16-291.

SARE in Virginia

$6,634,189 in total funding

141 grant projects

(since 1988)

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

Total awards: 141 grants
- 23 Research and Education
- 9 Sustainable Community Innovation
- 9 Professional Development Program
- 50 Farmer/Rancher
- 29 Graduate Student
- 18 On Farm Research/Partnership
- 3 Education Only

Total funding: $6,634,189
- $4,584,615 Research and Education
- $112,727 Sustainable Community Innovation
- $680,900 Professional Development Program
- $468,377 Farmer/Rancher
- $367,745 Graduate Student
- $269,940 On Farm Research/Partnership
- $149,885 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/virginia

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/virginia to learn more.

Eric Bendfeldt
Virginia Tech
(540) 432-6029 Ext: 106
ebendfel@vt.edu

Sanjun Gu
Virginia State University
(804) 524-5480
sgu@vsu.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.
Virginia has been awarded $6,634,189 grants to support 139 projects, including but not limited to, 21 research and/or education projects, 9 professional development projects and 50 producer-led projects. Virginia has also received additional SARE support through multi-state projects.

### RESEARCH AND EDUCATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| LS22-367  | Biological Recycling of Agricultural residues with Mushroom for Multidimensional Use | $371,000 | Dr. adnan Yousuf  
Virginia State University  
Dr. Asmare Atalay  
Virginia State University, Agriculture Research Station  
Dr. Chyer Kim  
Virginia State University  
Dr. Theresa Nartea  
Virginia State University Cooperative Extension  
Dr. Eunice Ndegwa  
Virginia State University  
Dr. Laban Rutto  
Virginia State University |
| LS20-332  | Silvopasture for Poultry Production with Outdoor Access: Impact on animal welfare, economic, and environmental parameters | $279,078 | Dr. Leonie Jacobs  
Virginia Polytechnic Institute and State University (Virginia Tech)  
John Fike  
school of Plant and Environmental Sciences, Va Tech  
Dr. John Munsell, PhD  
Virginia Tech - Department of Forest Resources and Environmental Gabriel Pent  
Dept. of Crop and Soil Environmental Science, Virginia Tech |
Virginia Tech |
| LS16-268  | Integrating Row Covers Into Sustainable Production Systems to Strengthen the Sustainability of Specialty Crops Farmers | $252,542 | Dr. Mark Reiter  
Virginia Polytechnic Institute and State University  
Dr. Ramon Arancibia  
University of Missouri Extension |
| LS13-255  | Made in the Shade – Using Silvopasture Research and On-farm Demonstrations to Advance These Sustainable Agroforestry Systems | $190,000 | John Fike  
school of Plant and Environmental Sciences, Va Tech |
| LS13-258  | Towards ecologically-based fertilizer recommendations that improve soil quality in high-density apple orchards | $140,000 | Dr. Gregory Peck  
Cornell University |
| LS08-206  | Sustainable agriculture in Virginia and North Carolina: a multi-state assessment of the economic, social and political context | $155,481 | Dr. Jonah Fogel  
University of Virginia |
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS07-195</td>
<td>How farmers learn: improving sustainable agriculture education</td>
<td>$205,000</td>
<td>Dr.Nancy Franz Virginia Tech</td>
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<tr>
<td>LS06-191</td>
<td>Promoting the development of economically and ecologically sustainable pasture-fed beef markets</td>
<td>$198,652</td>
<td>Denise Mainville Department of Agricultural &amp; Applied Economics</td>
</tr>
<tr>
<td>LS03-149</td>
<td>Enhancing Sustainability of Organic Broccoli Production through Integration of No-tillage and Farmscaping</td>
<td>$163,741</td>
<td>Ronald Morse Virginia Polytechnic Institute &amp; State University</td>
</tr>
<tr>
<td>LS03-156</td>
<td>Saving our Seed: A program to train farmers</td>
<td>$204,500</td>
<td>Tony Kleese Carolina Farm Stewardship Association Brian Cricket Rakita Carolina Farm Stewardship Association</td>
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<tr>
<td>LS99-099</td>
<td>Economic and Environmental effects of Compost use for Sustainable Vegetable Production</td>
<td>$153,969</td>
<td>Greg Evanylo Virginia Tech</td>
</tr>
<tr>
<td>LS97-083</td>
<td>The Hometown Creamery Revival</td>
<td>$145,474</td>
<td>Vicki Dunaway Dairy Farm Cooperators</td>
</tr>
<tr>
<td>LS97-084</td>
<td>Regionally Centered Sustainable Agriculture System</td>
<td>$173,240</td>
<td>Anthony Flaccavento Clinch Powell Sustainable Development Initiative</td>
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<tr>
<td>LS96-080</td>
<td>Alternative Agriculture Strategies for Rural Community Sustainable Development Northampton County, Virginia</td>
<td>$228,517</td>
<td>Terry Thompson The Nature Conservancy Virginia Coast Reserve</td>
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<tr>
<td>LS95-070</td>
<td>Effects of Organic and Chemical Fertility Inputs on Soil Quality in Limited Resource Vegetable Farms</td>
<td>$184,319</td>
<td>Greg Evanylo Virginia Tech</td>
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<tr>
<td>LS91-037</td>
<td>Low-Input Crop and Livestock Systems for the Southeastern United States</td>
<td>$360,000</td>
<td>J.P. Fontenot Virginia Tech</td>
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<tr>
<td>LS90-029</td>
<td>An Expert Crop Rotation Planning System (CROPS) for Implementing and Evaluating Low-input Crop and Livestock Systems</td>
<td>$60,000</td>
<td>Nicholas Stone Virginia Polytechnic Institute &amp; State University</td>
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<tr>
<td>LS88-008</td>
<td>Development, Implementation and Evaluation of Low-input Crop and Livestock Systems for the Southern Region (88-96-2)</td>
<td>$390,000</td>
<td>John Luna Oregon State University</td>
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<tr>
<td>LS88-008.2</td>
<td>Low-Input Crop and Livestock Systems for the Southeastern United States</td>
<td>$360,000</td>
<td>John Luna Oregon State University</td>
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</tbody>
</table>

**PROFESSIONAL DEVELOPMENT PROGRAM GRANTS**
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| SPDP23-020 | Expanding the Agroforestry Regional Knowledge (ARK) Exchange Network in Virginia | $79,957      | Dr. Katie Trozzo  
Virginia Tech Department of Agricultural, Leadership, and Community Education  
Eric Bendfeldt  
Virginia Cooperative Extension  
Herbert Brown, Jr.  
Virginia State University's Small Farm Outreach Program  
Dr. Kim Niewolny  
Virginia Tech  
Adam Taylor  
Virginia Tech Catawba Sustainability Center |
| SPDP22-11  | Advancing Comprehensive, Peer-to-Peer Soil Health Training across Virginia   | $74,903      | Rory Maguire  
Virginia Tech  
William Crutchfield  
Virginia State University  
Mary Sketch  
Virginia Tech |
| ES18-144   | Sharing the Wealth of Cover Crops: Improved cover crop and soil health knowledge sharing and networking | $79,091      | Wade Thomason  
Virginia Tech |
| ES11-109   | Expanding the Expertise of Agricultural Professionals to Serve New Constituents: Practical Training on Organic Horticulture and Hoophouses | $99,980      | Jim Lukens  
Southern Sustainable Agriculture Working Group  
Pamela Kingfisher  
Southern SAWG |
| ES11-110   | Comprehensive Training in Direct Marketing of Meat and Meat Products for Cooperative Extension Agents and Agricultural Professionals | $90,573      | Scott Greiner  
Virginia Tech |
| ES06-085   | Sustainable Organic No-Till Systems: A Training Program for CES and NRCS Field Professionals | $104,623     | Ronald Morse  
Virginia Polytechnic Institute & State University |
| ES03-071   | Developing a Hair Sheep Production Systems for Southwest Virginia            | $51,879      | Martha Mewbourne |
| ES01-053   | Innovative Cropping Systems SARE-PDP Project, Colonial Soil and Water Conservation District | $49,913      | Brian Noyes  
Colonial Soil and Water Conservation District |
| ES01-059   | Training for the Pasture Land Management Research Extension & Education Program | $49,981      | John Galbraith  
Virginia Polytechnic Institute & State University |

**FARMER/RANCHER GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| FS23-347   | Summer and Winter Squash Research and Breeding for the Southeast              | $20,000      | Edmund Frost  
Common Wealth Seed Growers / Twin Oaks Seed Farm |
| FS23-353   | Effects of Aerated Compost Tea on Swiss Chard, Kale & Lettuce Production in Virginia | $12,447      | Nicky Schauder  
Permaculture Gardens LLC |
| FS22-340   | Small Grains on Very Small Farms                                              | $13,987      | Michael Grantz  
Great Day Gardens |
| FS22-345   | Effects of Using a Native Legume as a Cover Crop in Small Scale Vegetable Production | $15,000      | Patrick Johnson  
NANIH Farm and Garden, Inc. |
| FS21-332   | Cropland Remediation of Heavy Metals                                          | $11,707      | William Drumheller, Sr.  
Royall D Farm, LLC |
<table>
<thead>
<tr>
<th>Code</th>
<th>Project Title</th>
<th>Budget</th>
<th>Investigator(s)</th>
</tr>
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<tbody>
<tr>
<td>FS18-308</td>
<td>Evaluating the Effectiveness of Locally Available Woodchips for Weed Control</td>
<td>$9,756</td>
<td>Patrick Johnson, NANIH Farm and Garden, Inc.</td>
</tr>
<tr>
<td>FS16-287</td>
<td>Retro Fitting an Existing Orchard</td>
<td>$9,837</td>
<td>Marianne Cicala, Farmer</td>
</tr>
<tr>
<td>FS16-289</td>
<td>Analyzing Baby Ginger as a Profitable Crop Through Organic Certification and Value-Added Processing</td>
<td>$9,978</td>
<td>William Crenshaw, Farmer</td>
</tr>
<tr>
<td>FS16-291</td>
<td>Winter Squash Evaluation and Improvement for Downy Mildew Resistance and Fruit Quality</td>
<td>$14,862</td>
<td>Edmund Frost, Common Wealth Seed Growers / Twin Oaks Seed Farm</td>
</tr>
<tr>
<td>FS16-292</td>
<td>Comparing Methods for No-Till Lespedeza Pasture Establishment</td>
<td>$8,688</td>
<td>Gail Hobb's-Page, Farmer</td>
</tr>
<tr>
<td>FS14-280</td>
<td>Controls on vegetable growth, flowering, and production of Hops in the Southeastern USA</td>
<td>$8,834</td>
<td>Justen Dick, Kelly Ridge Farms, LLC</td>
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<td>FS14-285</td>
<td>Development of a Clean Hay Mulch System for a Diverse, Biologically Managed CSA Vegetable Farm</td>
<td>$5,866</td>
<td>Arthur and Carol Upshur, Copper Cricket Farm</td>
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<tr>
<td>FS12-261</td>
<td>Are beeswax cappings contaminated with pesticides?</td>
<td>$3,500</td>
<td>Elizabeth LeGall, Meadows Edge Farm</td>
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<tr>
<td>FS10-243</td>
<td>Winter Production of Nucleus Honeybee Colonies</td>
<td>$9,944</td>
<td>John Fraser</td>
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<tr>
<td>FS09-238</td>
<td>Development of a novel grazing system for sustainability of a cow-calf operation</td>
<td>$9,500</td>
<td>Jason Carter, VA Cooperative Extension</td>
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<tr>
<td>FS09-241</td>
<td>Developing a Sustainable Commercial Production System for the Goji berry</td>
<td>$7,349</td>
<td>Norma Wilson</td>
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<tr>
<td>FS08-223</td>
<td>Promoting Sustainable Beekeeping Practices through local production of nucs (nucleus colonies) and local queen honeybees</td>
<td>$14,736</td>
<td>Karla Eisen, Prince William Regional Beekeepers Association</td>
</tr>
<tr>
<td>FS08-225</td>
<td>Improving Sustainability of A Long-term Certified Organic Cash Grain Production System</td>
<td>$8,828</td>
<td>W. Todd Henry, Hillsborough Farm, Kathy Henley, Hillsborough Farm, Inc.</td>
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<tr>
<td>FS08-227</td>
<td>Optimizing management of manure composts to yield high value mushroom crops and soil amendments</td>
<td>$6,317</td>
<td>Mark Jones, Sharondale Farm</td>
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<tr>
<td>FS08-229</td>
<td>Enhanced genetic selection of dairy sheep for the Southern US</td>
<td>$9,486</td>
<td>Marcia McDuffie, Allen's Creek Farm</td>
</tr>
<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Funding</td>
<td>Investigator</td>
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<tr>
<td>FS08-231</td>
<td>Financial analysis of growing no till organic field corn and wheat using cover crops for weed suppression</td>
<td>$8,827</td>
<td>Joel Thomas Yowell</td>
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<tr>
<td>FS07-217</td>
<td>Low Input No-Till Vegetable Production in the Shenandoah Valley</td>
<td>$9,988</td>
<td>Michael Phillips</td>
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<tr>
<td>FS07-218</td>
<td>Biodegradable Mulch</td>
<td>$3,457</td>
<td>Eric Plaksin</td>
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<tr>
<td>FS06-210</td>
<td>Which Edamame Variety is best for a Market Garden?</td>
<td>$4,459</td>
<td>Patricia Stansbury</td>
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<tr>
<td>FS05-186</td>
<td>Growing Alternative Crops in Tobacco Greenhouses</td>
<td>$4,085</td>
<td>Charlie Broadwater</td>
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<tr>
<td>FS05-192</td>
<td>Managing Cover Crops Under-The-Trellis: A Vital Step Toward Vineyard Sustainability</td>
<td>$9,958</td>
<td>Jason Murray</td>
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<tr>
<td>FS05-194</td>
<td>On Farm Hatchery for Fingerling Catfish</td>
<td>$9,450</td>
<td>James O. Shands</td>
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<tr>
<td>FS04-179</td>
<td>Production Cost vs. Market Value Comparison of Rare Breed and Commercial Swine</td>
<td>$10,000</td>
<td>Darin Buse</td>
</tr>
<tr>
<td>FS04-180</td>
<td>A Varroa Mite Management Project</td>
<td>$13,271</td>
<td>Billy M. Davis</td>
</tr>
<tr>
<td>FS03-169</td>
<td>Using Compost Tea to Enhance Growth of Pasture for Livestock Grazing</td>
<td>$8,784</td>
<td>George Nolting</td>
</tr>
<tr>
<td>FS03-173</td>
<td>Pasture-based Goat and Sheep Producer to Processor Transfer Station Project</td>
<td>$15,000</td>
<td>Marilyn Sanford</td>
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<tr>
<td>FS03-177</td>
<td>Nigerian Dwarf Goats for Value-added Dairy Products to Provide Sustainable Off-season Farm Income</td>
<td>$7,317</td>
<td>Liane Young</td>
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<tr>
<td>FS02-147</td>
<td>Appropriate-Scale, Inexpensive Cheese Vat for the Farmstead Cheesemaker</td>
<td>$6,430</td>
<td>Vicki Dunaway</td>
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<tr>
<td>FS02-153</td>
<td>Making Honey Bee Pollination More Sustainable by Reducing Miticides to Control Varroa Mites</td>
<td>$9,340</td>
<td>Wyatt A. Mangum</td>
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<tr>
<td>FS02-154</td>
<td>Scott County Hair Sheep Faire</td>
<td>$3,068</td>
<td>Martha Mewbourne</td>
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<tr>
<td>FS02-158</td>
<td>Winter Green Manure Crops for Organic Vegetable Production in the Tidewater Virginia Region</td>
<td>$4,785</td>
<td>J. W. Phillips</td>
</tr>
<tr>
<td>FS01-136</td>
<td>A Natural Control for Algae in Virginia Farm Ponds</td>
<td>$5,140</td>
<td>Linda Layne</td>
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<tr>
<td>FS00-108</td>
<td>Community Supported Agriculture Marketing Program</td>
<td>$14,975</td>
<td>Alice Coles</td>
</tr>
</tbody>
</table>
### Agricultural Entrepreneur Course
- **Project #**: FS00-115
- **Title**: Agricultural Entrepreneur Course
- **SARE Support**: $14,500
- **Project Leaders**: Sharon Keith
  - Farmer Market Association

### Building a Successful Small-Farmer Marketing Group When Customers are Geographically Dispersed
- **Project #**: FS00-117
- **Title**: Building a Successful Small-Farmer Marketing Group When Customers are Geographically Dispersed
- **SARE Support**: $14,800
- **Project Leaders**: Ned Johnson
  - Highlands Bioproduce, Inc.

### Developing a Producers’ Cooperative and Market for Free-Range Poultry
- **Project #**: FS00-119
- **Title**: Developing a Producers’ Cooperative and Market for Free-Range Poultry
- **SARE Support**: $9,672
- **Project Leaders**: Andy Lee
  - Good Earth Organic Farm

### Cut Flowers: Tilapia Aquaponics Study
- **Project #**: FS00-120
- **Title**: Cut Flowers: Tilapia Aquaponics Study
- **SARE Support**: $5,111
- **Project Leaders**: Bert McLaughlin

### Marketing Open-Pollinated Garden Seed as an Alternative Crop
- **Project #**: FS00-124
- **Title**: Marketing Open-Pollinated Garden Seed as an Alternative Crop
- **SARE Support**: $4,486
- **Project Leaders**: Brian Rakita
  - Acorn Farm

### Developing a Dairy Hair Sheep: Assessing the Potentials
- **Project #**: FS98-073
- **Title**: Developing a Dairy Hair Sheep: Assessing the Potentials
- **SARE Support**: $4,377
- **Project Leaders**: Amy Hayner

### Test Marketing and Financial Analysis of Fresh Cut Flowers
- **Project #**: FS98-077
- **Title**: Test Marketing and Financial Analysis of Fresh Cut Flowers
- **SARE Support**: $5,416
- **Project Leaders**: Emmet Lowe

### Soil Nutrient Balancing in Vegetable Production
- **Project #**: FS98-081
- **Title**: Soil Nutrient Balancing in Vegetable Production
- **SARE Support**: $7,325
- **Project Leaders**: Mark W. Schonbeck
  - Virginia Association for Biological Farming

### No-Tillage Production of Transplanted Crops in High Cover Crop Residues
- **Project #**: FS95-020
- **Title**: No-Tillage Production of Transplanted Crops in High Cover Crop Residues
- **SARE Support**: $8,300
- **Project Leaders**: Linford Belcher

### Alternative Control of Soil Diseases in Vegetable Production
- **Project #**: FS95-024
- **Title**: Alternative Control of Soil Diseases in Vegetable Production
- **SARE Support**: $5,625
- **Project Leaders**: Dennis C. Dove
  - Buttercup Gardens

## GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tbody>
<tr>
<td>GS23-291</td>
<td>Virginia Orchard IPPM: Native wildflower plot to provide alternative forage, habitat, and refuge for bee pollinators</td>
<td>$16,500</td>
<td>Dr. Margaret Couvillon&lt;br&gt;Virginia Tech&lt;br&gt;Ian McKellips&lt;br&gt;Virginia Tech</td>
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<tr>
<td>GS22-258</td>
<td>Climate Change and the Sustainability of Deciduous Fruit and Nuts in the Southern States</td>
<td>$16,500</td>
<td>Dr. Wei Zhang&lt;br&gt;Virginia Tech&lt;br&gt;Yuanyuan Wen&lt;br&gt;Virginia Tech</td>
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<tr>
<td>GS22-270</td>
<td>The Role of Black Farmer Organizers in Promoting Healthy and Sustainable Local Community Food Access</td>
<td>$15,258</td>
<td>Dr. Kim Niewolny&lt;br&gt;Virginia Tech&lt;br&gt;Nicole Nunoo&lt;br&gt;Virginia Tech</td>
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<tr>
<td>GS22-272</td>
<td>Improving Vegetable Soybean Seedling Emergence Through Novel Organic Seed Treatments</td>
<td>$14,998</td>
<td>Dr. Steven Rideout&lt;br&gt;Virginia Tech&lt;br&gt;Xiaoying Li&lt;br&gt;Virginia Tech</td>
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<td>GS21-245</td>
<td>Spraying Too Much: Understanding the biology of the red headed flea beetle to inform IPM in nursery crops</td>
<td>$16,480</td>
<td>Alejandro Del Pozo-Valdivia&lt;br&gt;Virginia Tech&lt;br&gt;Eleanor Lane&lt;br&gt;Virginia Tech</td>
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<tr>
<td>GS20-232</td>
<td>Assessing Suitable Production Techniques for Ramps in Appalachia</td>
<td>$14,660</td>
<td>Dr. John Munsell, PhD&lt;br&gt;Virginia Tech - Department of Forest Resources and Environmental&lt;br&gt;PABITRA ARYAL&lt;br&gt;School of Plant and Environmental Sciences, Virginia Tech</td>
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<td>Grant No</td>
<td>Title</td>
<td>Amount</td>
<td>Principal Investigator(s)</td>
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<tr>
<td>GS19-204</td>
<td>Production of High Protein Feeds from Brewer's Spent Grain to Replace Fishmeal in Aquaculture Diets</td>
<td>$16,333</td>
<td>Dr. Haibo Huang, Virginia Tech, YANHONG HE, IFF</td>
</tr>
<tr>
<td>GS19-201</td>
<td>Investing in Tribal Food Security and Agricultural Recovery</td>
<td>$15,740</td>
<td>Marcus Comer, Teena Hamlin, IFF</td>
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<tr>
<td>GS19-202</td>
<td>Cortisol as an Indicator of Stress in Animals Under Different Grazing Systems</td>
<td>$13,500</td>
<td>John Fike, School of Plant and Environmental Sciences, Va Tech, Sanjok Poudel, Virginia Polytechnic Institute and State University</td>
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<tr>
<td>GS18-188</td>
<td>Ecology and Impact of Chauliognathus spp. as Beneficial Insects in Agricultural Integrated Pest Management</td>
<td>$15,234</td>
<td>Dr. Thomas Kuhar, Virginia Tech, Katlyn Catron, Virginia Tech</td>
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<tr>
<td>GS18-187</td>
<td>Farmers' Market Leadership: Factors contributing to success and failure</td>
<td>$11,823</td>
<td>Eric Kaufman, Virginia Tech, Jama Coartney, Virginia Tech</td>
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<tr>
<td>GS17-167</td>
<td>Development of a Novel Approach for Monitoring the Samurai Wasp, Trissolcus japonicus (Ashmead), an Effective Parasitoid of the Brown Marmorated Stink Bug, Halyomorpha halys (Stal)</td>
<td>$14,813</td>
<td>Chris Bergh, Virginia Tech, Nicole Quinn, Virginia Tech</td>
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<td>GS17-176</td>
<td>Enhancing Biological Control in Vegetable Production in Eastern Virginia and Maryland</td>
<td>$16,105</td>
<td>Megan O'Rourke, Virginia Tech, Christopher McCullough, Virginia Tech</td>
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<td>GS17-177</td>
<td>Effect of Cultural Practices in Controlling Southern Blight of Potato in the Mid-Atlantic Region</td>
<td>$16,413</td>
<td>Dr. Steven Rideout, Virginia Tech, Jose Garcia Gonzalez, Virginia Tech</td>
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<td>GS16-153</td>
<td>Living Soil for a Sustainable Future: Assessing the Effects of Cover Crops and Tillage on the Soil Microbial Community and Health</td>
<td>$10,995</td>
<td>Dr. Ramon Arancibia, University of Missouri Extension, Samantha Taggart, Virginia Tech</td>
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<td>GS16-162</td>
<td>Designing and Evaluating Complex Cover Crop Mixtures</td>
<td>$10,994</td>
<td>Dr. Mark Reiter, Virginia Polytechnic Institute and State University, Bethany Wolters, Virginia Tech</td>
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<tr>
<td>GS16-164</td>
<td>Shade Effects on Yield, Botanical Composition, Nutritive Value, and Ergot Alkaloid Concentrations of Forage Mixtures for Silvopastures</td>
<td>$11,000</td>
<td>Dr. Chris Teutsch, Virginia Polytechnic Institute and State University, Dr. Kelly Mercier, USDA-NRCS</td>
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<tr>
<td>GS15-144</td>
<td>Improved Trapping Strategies for Managing Harlequin Bug: Applying recent research and discovery of its aggregation pheromone as a tool for vegetable growers</td>
<td>$9,893</td>
<td>Dr. Thomas Kuhar, Virginia Tech, Anthony Dimeglio, Bayer Crop Science</td>
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<tr>
<td>GS15-150</td>
<td>Non chemical methods of weed control in strawberry annual plasticulture system</td>
<td>$11,000</td>
<td>Dr. Jayesh Samtani, Virginia Tech. University, Sanghamitra Das, Bayer Crop Science</td>
</tr>
</tbody>
</table>
Acoustic analysis: A novel way to measure livestock grazing behavior

$10,981
Gabriel Pent
Dept. of Crop and Soil Environmental Science, Virginia Tech
John Fike
School of Plant and Environmental Sciences, Va Tech

Making Pest Management More Sustainable in Cucurbit Production

$10,922
Dr. Thomas Kuhar
Virginia Tech
Dr. James Wilson
Virginia Tech

Management of Mexican Bean Beetle, Epilachna varivestis Mulsant, in Snap Beans Using Cultural Control Strategies

$10,622
Dr. Thomas Kuhar
Virginia Tech
Louis Nottingham
Virginia Tech

Mob grazing effects on nutrient runoff in cool season pastures

$10,974
Dr. W. Cully Hession
Virginia Tech
Emily Williams
Virginia Polytechnical Institute and State University

Increasing Fresh Virginia-Grown Edamame Supply through Season Extension Techniques

$10,731
Dr. Maru Kering
Virginia State University
Dr. Bo Zhang
Virginia State University
Shawntae Nolen
Virginia State University

Optimal Nutritive Value of Honeylocust Seed Pods Within Temperate Silvopasture

$9,894
John Fike
School of Plant and Environmental Sciences, Va Tech
Jacob Johnson
Virginia Polytechnic Institute and State University

Trap cropping for management of Harlequin bug in cole crops

$9,523
Dr. Thomas Kuhar
Virginia Tech
Anna Wallingford
Virginia Tech

Effect of European Corn Borer on Corn Whole-Plant Yield and Forage Quality

$6,107
Roger Youngman
Virginia Polytechnic Institute and State Univ.
Siddharth Tiwari
Virginia Polytechnic Institute and State Univ.

Effects of Organic Amendments on Soil Humic Substances Content and Physiological Properties of Water-Stressed Zea mays and Glycine max

$9,793
Greg Evanylo
Virginia Tech
Chandra Bowden
Virginia Tech

Optimizing Forage Production and Quality Within a temperate Silvopasture System

$9,959
John Fike
School of Plant and Environmental Sciences, Va Tech

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project # | Project Title | SARE Support | Project Leaders
--- | --- | --- | ---
OS23-167 | Development of a Safer Vehicle for Draft Animal Use | $27,959 | Lincoln Montgomery-Rodgers, DVM A.V.S.
OS23-168 | Killing Perennial Weeds Using Light Blocking Tarps | $7,871 | Shawn Jadrnicek
Virginia Cooperative Extension
OS22-152 | Adjustable Farrier Stocks for Draft Power | $19,000 | Lincoln Montgomery-Rodgers, DVM A.V.S.
OS22-158  Evaluation of Current Virginia Peanut Cultivars and Advanced Breeding Lines for Southern Corn Rootworm Resistance  $20,000  Sally Taylor  Virginia Tech Tidewater Agricultural Research and Extension Center

OS21-143  Tapping New Forest Farming Opportunities in Central Appalachia Through Black Walnut Syrup Production  $19,546  Dr.A. L. (Tom) Hammett  Virginia Tech

OS21-144  Cluster Protection Shelter to Reduce Fungicide Usage in Conventional and Organic Vineyards  $20,000  Mizuho Nita  Virginia Tech

OS18-111  Evaluating Legume Cover Crops for Sustainable Corn Grain Production in the Virginia Coastal Plain  $9,747  Keith Balderson  Northern Neck Soil and Water Conservation District

OS18-122  Sustainable Varroa Mite Management in Honey Bee Queen Production  $14,998  Dr.James Wilson  Virginia Tech

OS17-103  Integrating Cropping Practices to Improve Nutrient Management Plans and Ensure Environmental and Economic Sustainability in Dairy Farming Systems  $15,000  Gonzalo Ferreira  Virginia Tech

OS17-107  Use of Protective Covers to Reduce Fungicide Usages in Organic Wine Grape Production in Virginia  $15,000  Mizuho Nita  Virginia Tech

OS13-069  Developing jujube (Ziziphus jujube Mill) or Chinese date as an alternative fruit tree crop to improve sustainability of small farmers in Mississippi  $15,000  Dr.Ramon Arancibia  University of Missouri Extension

OS12-065  Sustainable practices for the management of the invasive brown marmorated stink bug, Halyomorpha halys (Stal), on vegetables  $14,820  Dr.Thomas Kuhar  Virginia Tech

OS10-051  Appalachian Forest Farming Network for Native Medicinal Plant Production  $15,000  Dr.James Chamberlain, III  Research Scientist

OS07-037  Allelopathic potential of a biculture cover cropping system utilizing Fabaceae and Brassicaceae cover crops  $12,840  Janet Spencer  Virginia Cooperative Extension

OS06-030  Reducing soil erosion and nitrogen leaching through sustainable cropping systems  $6,271  Wade Thomason  Virginia Tech

OS02-001  Production, Marketing and Financial Analysis of Seedless Watermelons Growing in Tobacco Transplant Greenhouses  $12,118  Scott Jessee  Virginia Polytechnic Institute & State Univ.

OS02-005  Direct Marketing Assessment for the Potential of Ethnic Crops  $9,775  Jason Murray  Virginia Cooperative Extension

OS02-007  Developing Sustainable Internal Parasite Control Programs for Small Ruminants  $14,995  Joseph Tritschler  Virginia State University

SUSTAINABLE COMMUNITY INNOVATION GRANTS

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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tbody>
<tr>
<td>CS12-090</td>
<td>The Montgomery County Farm to Community Planning Project</td>
<td>$9,997  Ellen Stewart  Friends of the Farmers Market</td>
<td></td>
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</table>
CS12-091  Refugee Farm Worker Training Program  $10,000  Adrianna Vargo  
Local Food Hub

CS08-066  Growing Food & Community: 2009 Initiatives  $10,000  Dawn Story  
Growing Food & Community

CS06-043  Building sustainable communities through agricultural and food-based entrepreneurship  $10,000  Julie Brown  
Institute for Advanced Learning and Research

CS06-047  Value-added Sustainable Agriculture Initiative  $40,000  Kathyln Chupik  
Appalachian Sustainable Development

CS03-011  Making the Connection: Enhancing Agricultural Understanding in an Urbanizing Area  $7,200  Suzanne Heflin  
Prince William County Farm Tour

CS03-015  Community Development through a Regional Food System Plan  $10,000  Barbara Schwenk  
Accomack-Northampton Planning District Commission

CS02-001  Agri-tourism: A Strategy Toward Sustainable Farm, Business, Family and Community  $8,230  Brian Calhoun  
Virginia Cooperative Extension

CS02-003  Making the Connection: Enhancing Agricultural Understanding in an Urbanizing Area  $7,300  Suzanne Heflin  
Prince William County Farm Tour

**EDUCATION ONLY GRANTS**

<table>
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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| EDS22-37  | Empowering Farmers, Farmers Market Managers, and Gleaners to Safely Address Local Hunger and Food Insecurity | $49,999 | Dr.Harry Schonberger  
Virginia Tech  
Dr.Renee Boyer, Ph.D.  
Virginia Tech  
Dr.Tiffany Drape, Ph.D.  
Virginia Tech  
Allyson Ey  
Society of St. Andrew  
Dr.Laura Strawn, Ph.D.  
Virginia Tech |
| EDS20-17  | Organic Soil Health Education Online Course and Resources for the Southern SARE Region Farmers and Ranchers | $49,882 | Brise Tencer  
Organic Farming Research Foundation |
| EDS20-20  | A Modular Curriculum for Growing Food Grain for the Local Market | $50,004 | Dr.Heather Coiner  
Common Grain Alliance |

**Total funding from the USDA SARE program to Virginia**  
$6,634,189

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).