

## 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 \$310 million to more than 7,433 initiatives.

### SARE is grassroots with far-reaching impact

Four regional councils of expert practitioners set priorities and make grants in every state and island protectorate.

### SARE communicates results

SARE shares project results by requiring grantees to conduct outreach and grower engagement; and by maintaining an online library of practical publications, grantee-produced information products and other educational materials.



[www.sare.org](http://www.sare.org)

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

# Delaware

### Project Highlight: *Training the Trainers on Cover Crop Practices*

Interest in cover crops is high due to their ability to improve soil health, reduce off-farm inputs and protect both the soil and water quality. In 2014, a national conference on soil health and cover crops co-hosted by SARE drew strong engagement from Northeastern farmers, educators and researchers. As a follow up to keep the momentum going and expand the use of cover crops in the Northeast, Extension professionals with a sustainable agriculture focus came together in 2015 to organize an in-depth train-the-trainer workshop.

The Northeast SARE Regional Cover Crops Training, hosted by Delaware State University, covered the latest research on the benefits and successful management of cover crops in grain, vegetable and animal production. The planning committee included agricultural leaders from 13 states. Ninety-four participants were organized into 11 teams that integrated farmers, USDA-NRCS representatives, Extension professionals, academics and leaders from industry and nonprofits.

From this two-year project, 12 farmers adopted new cover crop species, planted new fields in cover crops, or used new establishment and termination techniques, with more reporting their intention to do so. Additionally, 71 service providers recommended cover crop practices to other farmers. Videos from the three-day conference are posted on the SARE website.

For more information on this project, see [sare.org/projects](http://sare.org/projects), and search for project number [ENE15-141](#).

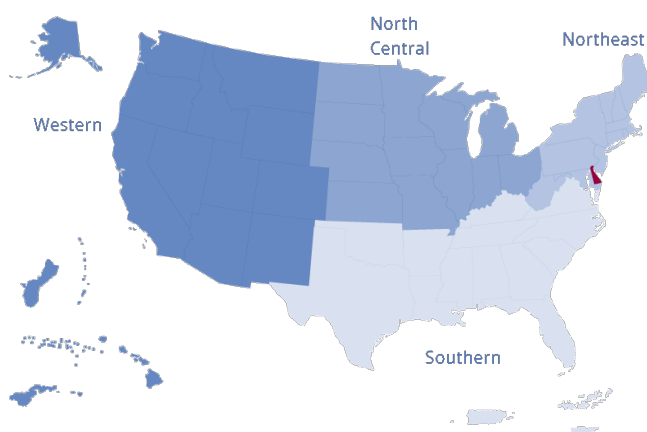
## SARE in Delaware

[northeast.sare.org/sare-in-your-state/delaware](http://northeast.sare.org/sare-in-your-state/delaware)

**\$958,563**  
in total funding

**30 grant projects**  
(since 1988)

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



# SARE Grants in Delaware

Total awards: 30 grants



9 Farmer/Rancher  
8 Graduate Student  
6 On Farm  
2 Research/Partnership  
2 Professional Development Program  
5 Research and Education

Total funding: \$958,563



\$64,573 Farmer/Rancher  
\$115,921 Graduate Student  
\$101,301 On Farm  
\$140,943 Research/Partnership  
\$140,943 Professional Development Program  
\$535,825 Research and Education

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:

[northeast.sare.org/sare-in-your-state/delaware](http://northeast.sare.org/sare-in-your-state/delaware)

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

Jason Challandes  
Delaware State University  
(302) 388-2241  
[jchallandes@desu.edu](mailto:jchallandes@desu.edu)

John Clendaniel  
Delaware State University  
(302) 857-6425  
[jclendaniel@desu.edu](mailto:jclendaniel@desu.edu)

Dan Severson  
University of Delaware  
(302) 831-8860  
[severson@udel.edu](mailto:severson@udel.edu)



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

SARE is funded by the USDA's National Institute of Food and Agriculture (NIFA).

This report includes summaries of competitive grant programs only. Some competitive grant programs that are no longer offered may be included or excluded from the totals in this report depending on the grant program and SARE region.



# AGRICULTURE PROJECTS FUNDED IN DELAWARE

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

Delaware has been awarded \$958,563 grants to support 29 projects, including but not limited to, 4 research and/or education projects, 2 professional development projects and 9 producer-led projects. Delaware has also received additional SARE support through multi-state projects.

## RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
LNE12-314	Improving water and nitrogen use efficiency using soil moisture monitoring to improve irrigation management	\$210,666	James Adkins University of Delaware
LNE08-269	Efficacy of Natural Dewormers in the Control of Gastrointestinal Nematodes of Small Ruminants	\$166,168	Dr. Dahlia Jackson-O'Brien Delaware State University
LNE07-261	Farming for native bees	\$93,991	Dr. Faith Kuehn Plant Industries Administrator
LNE05-221	Mentoring small fresh produce farmers who want to increase farm revenue by selling value-added products through direct-market channels	\$65,000	Anne Fitzgerald Delaware Department of Agriculture

## PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE Support	Project Leaders
ENE15-141	2016 Northeast SARE Regional Cover Crops Training	\$134,443	John Clendaniel Delaware State University
ENE98-043	Nutrient Management Education: Development and Implementation of Training Modules on Basic Principles, Current State of Knowledge and Advances in Research	\$6,500	Karen L. Gartley University of Delaware

## FARMER/RANCHER GRANTS

Project #	Project Title	SARE Support	Project Leaders
FNE17-873	Improving poultry farm sustainability through pollinator buffers	\$11,481	Tina Hill Hill Farms, Inc
FNE13-786	Economic analysis of oyster mushroom production in an unused poultry house	\$8,849	Ramrattan sagram
FNE12-746	Survivability and production of heritage breed egg layers on pasture in Delmarva	\$13,784	Kim Hartline Spring Morning Farm LLC.
FNE11-735	Effects of Pole Lima Production in North/South vs. East/West Row Placement	\$5,375	Edward Zitvogel Zitvogel Farms
FNE09-655	Sustainable cropping systems for processing baby lima bean production	\$10,000	Wm. Donald (Don) Clifton, II Clifton Farms, Inc.

FNE07-598	Greenhouse heating system	\$2,744	Katherine Brooks
FNE04-505	Using Innovative Production Systems to Meet the Needs of new Emerging Markets	\$5,000	Luke Chappel
FNE98-200	Organic No-Till Cropping System Farm Evaluation 1998-2000	\$4,200	Jon Danko
FNE96-147	Economical Analysis of Kenaf Grown with Different Nutrient Sources	\$3,140	Daniel Palmer

#### GRADUATE STUDENT GRANTS

Project #	Project Title	SARE Support	Project Leaders
GNE20-241	Using Drones to Measure Cover Crop Biomass as a Predictor of Soil Nitrogen And Corn Emergence Issues	\$14,832	University of Delaware Jamie Taraila University of Delaware
GNE19-210	Do Soil Health Practices Impact Subsurface "Legacy" Phosphorus Losses from Soils on the Delmarva Peninsula?	\$14,713	Amy Shober University of Delaware Lauren Mosesso University of Delaware
GNE19-217	Microbial Inoculants for the Improvement of Alfalfa Crop Productivity and Health	\$12,453	Dr.Harsh Bais University of Delaware Amanda Rosier University of Delaware
GNE19-203	Improvements to Quality-related Limitations to Market Growth of Biodiesel and Renewable Hydrocarbon Diesel Produced from Low-value Feedstocks	\$15,000	Dr.Gulnihal Ozbay Delaware State University Dr.Shehu Isah Delaware State University
GNE19-219	Soil Microbiome Impacts on Floral Rewards and Implications for Pollinator Nutrition	\$14,984	Dr.Deborah Delaney University of Delaware Grace Savoy-Burke University of Delaware
GNE15-111	Using silicon fertilizers to improve soil phosphorus availability and uptake by winter wheat in high-phosphorus soils	\$14,995	Amy Shober University of Delaware Angelia Seyfferth University of Delaware Zhixuan Qin University of Delaware
GNE14-086	Use of a Natural Biocontrol Agent Bacillus subtilis UD1022 to Increase Crop Yield and Reduce Contamination by Listeria monocytogenes On Cantaloupes	\$14,035	Dr.Kalmia Kniel University of Delaware Dr.Harsh Bais University of Delaware Sarah Markland University of Delaware
GNE11-023	Developing sustainable aquaculture methods for the mummichog, Fundulus heteroclitus, with emphasis on egg production	\$14,909	Dennis McIntosh Delaware State University Courtney Janiak Delaware State University

#### ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
ONE20-372	Prevalence of Toxoplasma gondii on Small Ruminant Farms in Delaware	\$29,992	Dr.Kwame Matthews Delaware State University
ONE19-344	Cost Benefits of Common Insecticide Practices Used to Prevent Soybean Pest Problems in Delaware	\$28,221	Dr.David Owens University of Delaware

ONE18-317	Characterization of Gastrointestinal Nematode Anthelmintic Resistance on Small Ruminant Farms in Delaware	\$14,974	Dr.Kwame Matthews Delaware State University
ONE16-280c	Utilizing cover crops for additional benefits in Delaware	\$11,111	Mark VanGessel University of Delaware
ONE14-215	Determining the risks associated with scavenging raptors to the biosecurity of broiler farms on Delmarva.	\$11,307	Dr.Brigid McCrea Delaware State University Cooperative Extension
ONE12-157	Development of best use practices on commercial colonies of <i>Bombus impatiens</i> on crops in Delaware	\$5,696	Dr.Deborah Delaney University of Delaware Jacquelyn Marchese University of Delaware

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**Total funding from the USDA SARE program to  
Delaware  
\$958,563**

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For further information on projects, contact Deb Heleba, Northeast SARE communications specialist, at 802-651-8335, ext 552 or [debra.heleba@uvm.edu](mailto:debra.heleba@uvm.edu). Sustainable Agriculture Research and Education (SARE) is funded by USDA's National Institute of Food and Agriculture (NIFA).