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 $406 million to more than 8,803 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.

Sustainable Agriculture Research & Education

www.sare.org

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

Delaware

Project Highlight: Using Drones to Measure Cover Crop Biomass as a Predictor of Soil Nitrogen And Corn Emergence Issues

Jamie Taraila, a graduate student at the University of Delaware, is using drone technology to investigate how seeding rates of cover crops impact crop yields. Cover crops are a common soil health management practice adopted by Delaware farmers who seek to capitalize on ecosystem services like N fixation, nutrient scavenging and soil cover. The services that cover crops provide make them valuable for increasing crop productivity; however, the timing of cover crop termination plays a significant role in the level of ecosystem services provided. The goal of this project was to integrate consumer drone technology into cover crop scouting to figure out how to improve productivity while maximizing the soil health benefits of cover crops.

With the help of a SARE grant, Taraila and a team of researchers from the University of Delaware used drone imaging technology to observe and compare cover crop biomass readings and stand counts. By using drones, the researchers were able to rapidly collect and analyze cover crop data to identify what termination timing and seeding rate provide the most opportunity for ecosystem services. This research will help producers improve crop productivity and will support future uses of drone technology for sustainable agriculture research.

For more information on this project, see sare.org/projects and search for project number GNE20-241.

SARE in Delaware

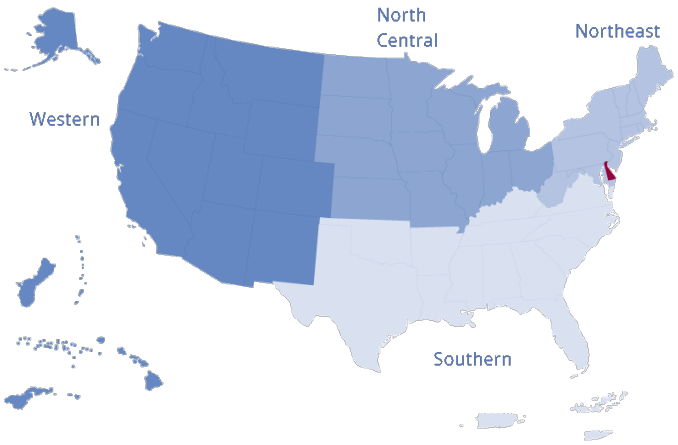
northeast.sare.org/state-profiles/delaware/

$426,218 in total funding

12 grant project

(since 1988)

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



SARE in Delaware

Grants awarded 2019–2024

Total awards: **12 grants**

2	Farmer/Rancher
1	Research and Education
3	On Farm Research/Partnership
6	Graduate Student

Total funding: **$426,218**

$59,992	Farmer/Rancher
$199,992	Research and Education
$79,252	On Farm Research/Partnership
$86,982	Graduate Student

Find a complete list of projects on page 3.

Farmer and rancher impacts 2019–2024

SARE grantees have reported the following impacts from their projects:

2,243 farmers participated in a SARE-funded project

2,231 farmers reported a change in knowlege, awareness, skills or attitude

16 farmers changed a practice

Learn about local impacts at:
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-profiles/delaware/ to learn more.

Rose Ogutu
Delaware State University
(302) 857-6397
rogutu@desu.edu

For detailed information on SARE projects, go to
www.SARE.org

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

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

AGRICULTURE PROJECTS FUNDED IN DELAWARE

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

Delaware has been awarded $1,254,586 grants to support 34 projects, including but not limited to, 5 research and/or education projects, 2 professional development projects and 11 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
LNE21-418	Increasing the Use of a Natural Fungus (Duddingtonia flagrans) to Control Internal Parasites in Small Ruminants	$199,992	Dr.Kwame Matthews Delaware State University
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

FNE23-035	Technology Boosts Rate of Gain: Evaluating the Effects of Repurposed Poultry Housing Versus Intensive Grazing for the Modern Sheep Producer	$29,997	Steven Breeding Shepherd's Hope Farm
FNE22-004	Automated Drainage Water Management for Improved Precision, Yield, and Water Quality	$29,995	Chris Breeding Twin Cedar Ag
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
GNE22-294	Promoting natural suppression of slugs using local parasitic nematodes	$15,000	Dr.Michael Crossley University of Delaware Thabu Mugala University of Delaware
GNE20-241	Using Drones to Measure Cover Crop Biomass as a Predictor of Soil Nitrogen And Corn Emergence Issues	$14,832	Dr.Jarrod Miller University of Delaware Jamie Taraila University of Delaware

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
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
GNE19-217	Microbial Inoculants for the Improvement of Alfalfa Crop Productivity and Health	$12,453	Dr.Harsh Bais University of Delaware Amanda Rosier University of Delaware
GNE19-210	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
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, Ph.D. Delaware State University Courtnay Janiak Delaware State University

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
ONE22-417	Providing a Research Base for Indoor Lighted Production of Strawberries in a Repurposed Poultry House.	$21,039	Dr.Gordon Johnson University of Delaware Erik Ervin
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 Bombus impatiens on crops in Delaware	$5,696	Dr.Deborah Delaney University of Delaware Jacquelyn Marchese University of Delaware

Total funding from the USDA SARE program to Delaware
$1,254,586

For further information on projects, contact 802-651-8335 or nesare@uvm.edu.
Sustainable Agriculture Research and Education (SARE) is funded by USDA's National Institute of Food and Agriculture (NIFA).