
Innovations
in sustainable agriculture
NORTHEAST
SARE
Sustainable Agriculture
Research & Education
2022 Annual Report

About Northeast SARE

The Northeast Sustainable Agriculture Research and Education (SARE) Program offers grants and education to farmers, educators, service providers, researchers and others to address key issues affecting the sustainability of agriculture throughout our region.

The program serves Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C.

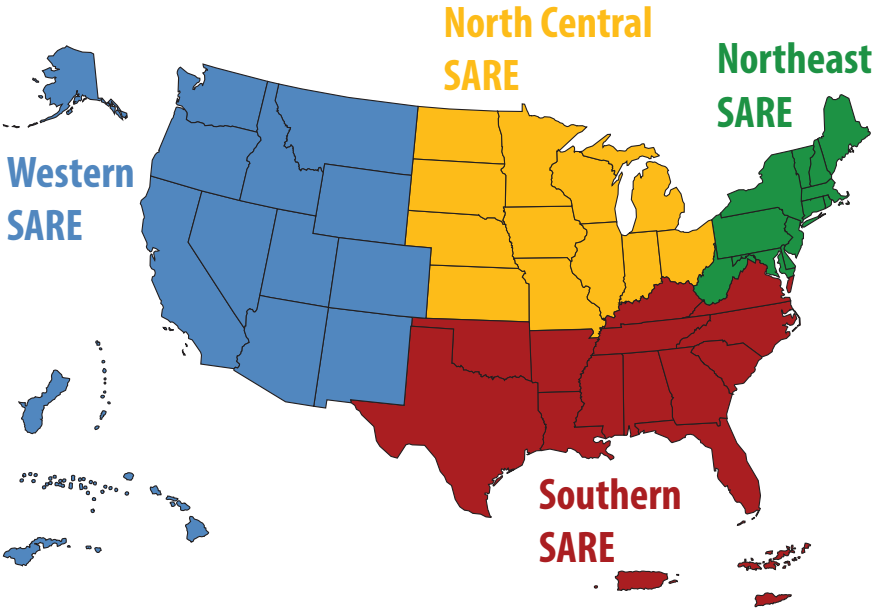
The program is administered by Northeast SARE's host institution, the University of Vermont.

Northeast SARE's Outcome Statement

"Agriculture in the Northeast will be diversified and profitable, providing healthful products to customers. Farmers and the people they work with will steward resources to ensure sustainability and resilience, and foster conditions where farmers have high quality of life and communities can thrive."

Northeast SARE is one of four regional SARE programs funded by the USDA National Institute of Food and Agriculture. The program is authorized under Subtitle B of Title XVI of the Food, Agriculture, Conservation, and Trade Act of 1990. SARE serves all states and Island Protectorates.

SARE's Nationwide mission is to advance, to the whole of American agriculture, innovations that improve profitability, stewardship, and quality of life by investing in groundbreaking research and education.



From our Director

Expanding Our Understanding is Demanding

At its core, SARE supports the scientific understanding of farming. That seems specific, but there are many approaches to science, many ways to interpret data, and of course, many types of farming. Such variety is a beautiful thing, allowing SARE projects to go in many directions as our applicants and grantees expand on current ways of thinking to explore new possibilities.

In the early days of SARE, it was exciting to see "alternative" agricultural topics get traction in research and education communities. Cover cropping, direct to consumer marketing, intensive pasture management, and organic production were outside the mainstream, and our projects helped build credibility for them by developing and sharing new knowledge. Over the years, other topics emerged and gained recognition, as our applicants and grantees identified their importance. Aquaculture, on-farm energy, pollinators, and urban farming, to name just a few. SARE projects addressing social issues have increased, too, focusing on topics like access to farmland, farm labor, farm transition, stress management, and support for underserved communities of farmers.

Recently, Northeast SARE took a good look at ourselves in the mirror, to see if we could expand our understanding of which communities participate and succeed in our programs, which do not, and why? We engaged consultants to analyze our grantmaking, and to conduct interviews, focus groups and surveys to gather the experiences and perspectives of hundreds of people that we have interacted with. Consideration of that data was key to the adoption of our strategic plan for diversity, equity, inclusion, and justice (DEIJ) in February 2022 by our Administrative Council.

The plan has two broad strategic directions. One is to do the internal work at Northeast SARE to become a more anti-racist agency. The other is to shift resources to Black, Indigenous, and People of Color (BIPOC) communities that have been excluded from full participation in our programs.

A committee of internal and external stakeholders is actively coordinating the implementation of our plan. They oversee work groups that are delving into specific goals in our plan, such as redesigning our grant programs to make them more accessible, establishing a new grant program to serve BIPOC communities, changing the culture of our organization to be more welcoming to all, and communicating with accountability and transparency about our DEIJ work.

This is demanding work, and we take it seriously. Our Administrative Council approved a one-year pause to most of our grant programs to increase our capacity for this journey, which is powered by individuals each working to expand our own understanding--to open our minds to the experiences of others. We won't all move at the same pace, or in identical directions, but I'm confident we will expand our understanding of how to be diverse, equitable, inclusive, and just. That will strengthen SARE's ability to enhance the sustainability of agriculture in our region as we engage with new ideas and approaches that come from people with a wide diversity of experience, knowledge, and perspective.

Vern Grubinger
Northeast SARE Director

Completed Project Outcomes in 2022

Northeast SARE considers a variety of outcomes in evaluating a project's impact on sustainability in our region. In 2022, 109 projects, representing $5.27 million in grants, were completed.

109 Projects completed

$5.27million
(Oct 2021- Sept 2022)

One-on-one consultations conducted

2,512

Farmers who participated in research

1,894

New collaborations and working relationships

369

Grants received to continue work, totaling $20.1 million

87

Press articles and newsletters published

177

Farmers who learned through project activities

21,179

Farmers who made changes to practices

1,089

Journal Articles Published

50

Farmers who reported gaining knowledge and skills

2,294

Agricultural Service Providers who participated in education and outreach

5,830

Agricultural service providers who reported gaining knowledge and skills

866

Curricula, factsheets or educational tools

229

Educational activities

1,277

Farmer Grant Project
FNE 21-981

Visual Learning Media for Deaf New American Farming

Many Deaf New Americans don't have strong English language literacy so visual aids can be important to supporting their success in educational programs.

In this project, Visual Learning Media for Deaf New American Farming, Salt City Harvest Farm set out to create an educational resource for the Deaf New American community to learn agricultural skills. The farm utilized sign language and focused on creating videos and informative photos, working within the Deaf community to gain insights into best practices for education.

Because there has never been agricultural content created for Deaf New American Community, adapting to new tools such as cultivating, irrigation, and tractor tools is something the deaf community often struggles to grasp. Upon watching their greenhouse seeding video, one of the farmers mentioned that they had no idea that was how it was done.

These videos help the public and the Deaf Community learn the foundations of bed prep, seeding, transplanting, common pests, setting up irrigation, and more. Having clear videos helps viewers gain a deeper understanding that can be taken into the fields and practiced.

Salt City Harvest Farm filmed segments on direct seeding, greenhouse seeding, transplanting, scouting for pest and disease, general backpack spraying, using a BCS tractor, irrigation, and a general harvest video.

Monu Chhetri leads viewers through what to expect in the "Farm Education for the Deaf Community" video series produced as part of project FNE21-98.

1 

Farm Education for the Deaf Community - Introduction (Nepali Sign Language)

Salt City Harvest Farm • 16 views • 9 months ago

2 

Farm Education for the Deaf Community - Bed Preparation (Nepali Sign Language)

Salt City Harvest Farm • 15 views • 9 months ago

3 

Farm Education for the Deaf Community - Seeding Outside (Nepali Sign Language)

Salt City Harvest Farm • 11 views • 9 months ago

4 

Farm Education for the Deaf Community - Greenhouse Seeding (Nepali Sign Language)

Salt City Harvest Farm • 4 views • 9 months ago

5 

Farm Education for the Deaf Community - Transplanting (Nepali Sign Language)

Salt City Harvest Farm • 8 views • 9 months ago

6 

Farm Education for the Deaf Community - Weed Management (Nepali Sign Language)

Salt City Harvest Farm • 19 views • 9 months ago

7 

Farm Education for the Deaf Community - Crop Pests (Nepali Si

Salt City Harvest Farm • 8 views • 9 months ago

8 

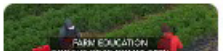
Farm Education for the Deaf Community - Using a Backpack Sp

Salt City Harvest Farm • 11 views • 9 months ago

9 

Farm Education for the Deaf Community - Installing Row Cover

Salt City Harvest Farm • 5 views • 9 months ago



Farm Education for the Deaf Community - Harvesting Carrots (Nepali Sign Language)

Deaf New American farmers and interpreters within the Deaf Community reviewed the content and Salt City Harvest Farm found that American Sign Language isn't enough – and created the same set of 12 videos in Nepali Sign Language as well.

Graduate Student Grant Project
GNE 20-241

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

The nitrogen content of cover crop biomass provides information farmers can use to better predict their nitrogen fertilizer needs, protecting the environment as well as saving money. However, due to sampling and analysis expenses, nitrogen in cover crop biomass is hardly ever measured by farmers or researchers.

In this project, graduate student Jamie Taraila and faculty advisor Jarrod Miller from University of Delaware tested the use of drones to provide rapid information on field-wide cover crop biomass to improve productivity while maximizing cover crop effects on soil health.

The ease and frequency of data collection is a key benefit of using drones. Flights were performed bi-weekly in the fall of 2020, once a month in the winter of 2021, and bi-weekly in the spring of 2021 until termination and cash crop planting. Soil and biomass tests were conducted throughout the process and while Taraila and Miller were unable to use drones to outmaneuver variables like weather, they gained valuable insights into the intersections of technology and sustainable agriculture.

Drones can also be used to better monitor cover crop density. Cover crops have many benefits including retaining moisture and regulating soil temperatures, but if they are too dense, they can act as a barrier for subsequent cash crop seedlings. If a cash crop is planted into an excessively dense cover crop residue and seedlings are unable to thrive, poor stand and potential need to replant decreases farm productivity and increases production costs.

Taraila and Miller shared their findings with farmers, crop consultants, and other researchers through extension events, an Environmental Systems Research Institute storymap, as well as a field day at the Carvel Research and Education Center.

"Walking a field does not have the same effect as aerial imagery, which shows variations in cover crop growth. For farmers hoping to precision map available nitrogen, drone or satellite photos combined with minimal tissue sampling may allow for a better understanding of cover crop nitrogen availability."

GNE 20-241 Final Report

Partnership Grant Project
ONE 19-328

Training Northeast Farmers to Confront and Dismantle Racism and Inequity in Food and Farming Systems

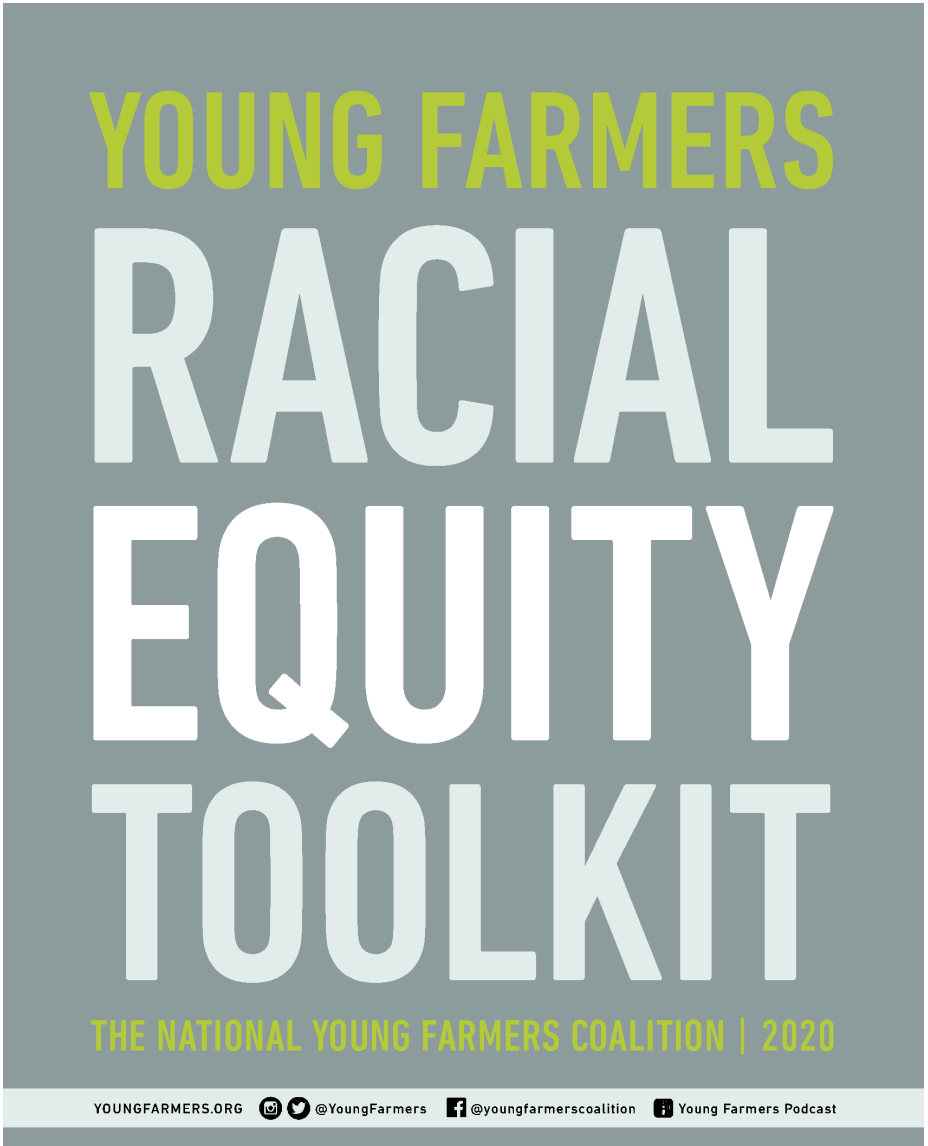
In the Northeast, young Farmers of Color can experience racism on a daily basis. These young farmers are seeking access to land, capital and resources to build successful farm businesses.

However, when moving to rural communities, farmers of Color are confronted with barriers built by systemic racism, exclusion from existing rural networks and a lack of resources that acknowledge their unique experiences and needs.

A just and healthy food system for all people won't be possible if we don't reckon with legacies of harm to people of Color in the U.S. as a result of forced migration, enslavement, and centuries of violent intimidation, disenfranchisement, and discrimination. In this project, project leader Caitlin Arnold and the National Young Farmers Coalition, worked to address racism in the food system by creating a Racial Equity Toolkit as well as hosting multiple Uprooting Racism trainings in cooperation with Soul Fire Farm. Uproooting Racism facilators delved deep into the history and structural realities of racial injustice and the movement strategies of frontline communities struggling for food sovereignty.

The Black, Indigenous, and People of Color (BIPOC) caucus at the National Young Farmer Coalition's 2019 Convergence conference.

Young farmers in the Northeast are positioned to create a different kind of rural farming community; one in which all young farmers have an equal chance to feel accepted and to succeed, regardless of race. By confronting racism and supporting young farmers of color, project participants are growing more diverse and resilient farm communities.



About The Racial Equity Toolkit

The Racial Equity Toolkit builds foundational understandings about racism, how it operates in our food system, and why dismantling racism is central to the pursuit of a just agricultural system.

It also provides guidance, structure, and practical tools for convening conversations about race, racism, equity, and justice. These conversations are intended to spark deep engagement and greater personal and collective understandings around the ways in which food, land, and climate justice are contingent on efforts to understand, identify, confront, and dismantle racism.

Consciousness-raising is an ongoing, lifelong process. Developing awareness around systems of oppression can be difficult and uncomfortable; it can also be vitalizing and joyful. It includes both individual work and collective action.

Research and Education Grant Project
LNE19-376

Growing the Specialty Mushroom Industry in the Northeast

In this project, Willie Crosby and his company Fungi Ally educated potential mushroom farmers through educational workshops, guidebooks, and videos. The project helped address a critical gap between rising interest from farmers in starting mushroom production and a lack of resources and assistance to plan and start a mushroom operation.

Research was conducted on five farms cultivating mushrooms. The farmers collected weekly data on labor, yield, sales, and methods of cultivation and reported back to the project team. Over 30 weeks of cultivation, the five farmers grew more than 11,000 pounds of mushrooms generating $159,779 in revenue.

As a result of this project, Crosby and Fungi Ally have introduced thousands of people to mushroom farming.

They developed tools for farmers to decide how they want to start and what they can expect for their operation.

Based on their research, the project team came to several conclusions:

Producing mushroom blocks in house or buying in ready to fruit blocks can both be profitable. This decision depends on what the farmer wants to do, resources available, and skill sets they have.

Profitability can be achieved once a farmer is growing 50+ pounds of mushrooms per week.

Yield per block is an extremely important metric that influences all other aspects of the farm. Cultivators should also track labor to understand costs for their operation.


There are many variables and areas of rapid growth in the mushroom cultivation industry. Continuing to develop cultivation techniques for new mushrooms and find ways to create value added products is essential for continuing to build the mushroom industry in the Northeast

Professional Development Grant Project
ENE19-154

Building the Resiliency of Farms through Farm Law Education of Agriculture Professionals

Farms across the Northeast region suffer from serious legal vulnerabilities that threaten the strength and resiliency of farm communities as a whole. Farmers are asking for legal guidance from Extension agents, nonprofit staff, accountants, and other farm professionals. At the same time, agriculture professionals say they do not have the knowledge, training, or resources to be effective in guiding farmers around legal issues.

In this project, Rachel Armstrong and the nonprofit Farm Commons worked to make farmers less vulnerable by offering a series of educational products, including a comprehensive online workshop titled "Guiding Resilience," an in-depth land law issues workshop, and a newsletter on farm law issues.

The Guiding Resilience workshop covered the basics of farm employment, business structures, land matters, insurance/liability law, sales, and agritourism/processing while emphasizing specific best practices that reduce legal risk on sustainable farms. The general workshop was complemented by an in-depth workshop on land issues (the subject on which most ag professionals sought guidance) which provided 6 hours of detailed training on leasing, land purchasing, and more. Participants received an e-workbook and resources for finding further information and attorney guidance.

FARM COMMONS

GUIDING FARMERS TO LEGAL RESILIENCE

Use this guide to keep the basics of farm law at hand, alongside resources, and action steps that will create legal resilience for your agricultural community over the long term.

TABLE OF CONTENTS

FARMCOMMONS.ORG
GUIDING WORKBOOK

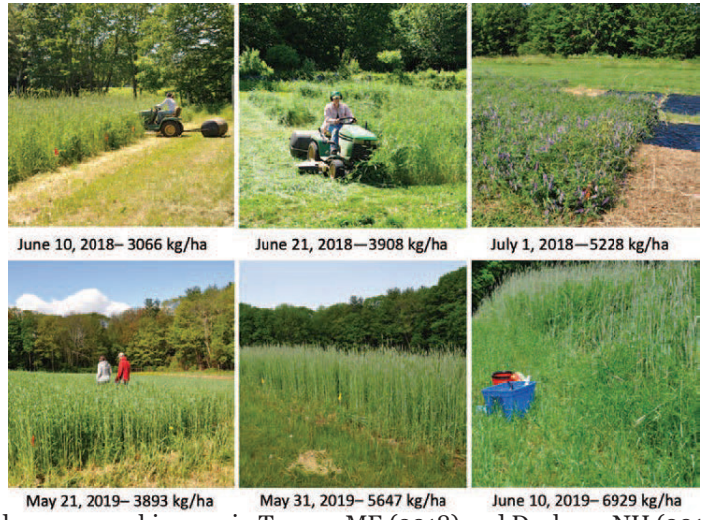
"It's a really well designed course with smart and approachable presenters that will improve your skills and knowledge in supporting farmers in making informed business decisions."

- Project Participant

Research for Novel Approaches Grant Project
LNE18-371R

Expanding No-till Organic Vegetable Production through the Combination of High-residue Cover Crops and Solarizing Tarps

Cover crops and no-till are management practices that can improve soil health, but their implementation in vegetable production systems remains limited, particularly in cooler climates with shorter growing seasons like New England. While cover crop use is increasing, most vegetable farmers terminate them before peak biomass because of challenges associated with residue incorporation and nutrient immobilization. In LNE 18-371R, Project leader Richard Smith of University of New Hampshire investigated employing reusable plastic tarps to make cover crop-based no-till a viable strategy for vegetable farms in northern New England.



Rye-vetch cover crop biomass in Turner, ME (2018) and Durham, NH (2019). Delaying cover crop termination until peak biomass leads to greater weed-suppressive mulch and, in the case of hairy vetch, much more N accumulation. Photos: Bonnie Lounsbury.

Tarps are an increasingly popular tool for many small-scale growers and are mostly used to augment stale seedbedding with bare soil. Placing tarps over a cover crop can create a dead residue that facilitates non-till, acting as a mulch to suppress weeds and retain moisture. Additionally, legume cover crop residues can provide a source of biologically fixed nitrogen while scavenging cover crops like rye can capture nutrients before they enter waterways. Smith and team found that tarps are a critical tool to harness the benefits of cover crop-based no-till because they facilitate flexible timing of cover crop termination while providing additional weed suppression and possible benefits of increased N mineralization.


Tarps eliminate the need for specialized cover crop termination equipment, and can help overcome weed and nutrient management challenges associated with cover crop-based no-till in northern regions.

Projects funded in 2022

Research and Education

The Research and Education Grant program funds projects that result in gains in farmer knowledge, awareness, skills, and attitudes that are then applied to make measurable on-farm changes leading to greater sustainability.

District of Columbia

LNE22-442

Women for the Land: Helping Women Farmers Advance Soil Health in Pennsylvania

Michelle Perez
American Farmland Trust
$106,847

Maryland

LNE22-443

Implementation of Improved Intestinal Parasite Management Practices on Maryland Livestock Farms

Sarah Potts
University of Maryland
$165,354

New Hampshire

LNE22-436

Developing Mediated Market Models to Increase Consumer Engagement and Market Access for New England Farmers

Analena Bruce
University of New Hampshire
$257,846

LNE22-441

Education and On-farm Research to Advance Agroforestry for Climate Resilience for Northeast Farmers

Theresa Ong
Dartmouth College Agroforestry Transition Hub
$149,831

New York

LNE22-435

Optimizing the Economic Return of Pasture-Raised Slow-growth and Conventional Broilers

Amy Barkley
Cornell University
$175,000

LNE22-444

Regenerative Organic Dry Bean Production in the Northeast

Matthew Ryan
Cornell University
$250,000

LNE22-446

Increasing Capacity to Produce High-Quality, Regionally Adapted Seed to Enhance Northeast Biosecurity and Diversify Markets for Vegetable Growers

Crystal Stewart-Courtens
Cornell Cooperative Extension
$149,749

LNE22-440

Immigrant Urban Farmer's Project

Brittany O'Neill
International Rescue Committee
$250,000

Pennsylvania

LNE22-447

Improving Honeybees Through Local Queen Rearing, Selection, and Controlled Mating via Artificial Insemination

Robyn Underwood
Penn State University
$217,050

Vermont

LNE22-437

Capturing Value with Cereal Rye: Growing High Quality Rye in the Northeast for Value-Added Markets

Heather Darby
University of Vermont Extension
$247,241

LNE22-438

Online Educational 'Hub' for Migrant Farmworkers

Sarah Kleinman
University of Vermont Extension
$261,372

LNE22-439

Scaling Northeastern Agroforestry using a Farmer-centered Field Consultancy Model

Meghan Giroux
Interlace Commons
$68,365

LNE22-445

Supporting New High-Tunnel Vegetable Growers with a Comprehensive Crop Management Approach

Margaret Skinner
University of Vermont
$199,688

Projects funded in 2022

Research for Novel Approaches

The Research for Novel Approaches in Sustainable Agriculture Grant Program funds "proof of concept" projects to confirm the benefit and/or feasibility of experimentally viable practices and approaches.

Maine

LNE22-448R
Investigating Dual-use Solar for Wild Blueberry Farms in Maine

Lily Calderwood
University of Maine
$134,509

LNE22-451R
Covering Ground: Assessing Effectiveness of Interseeding Cover Crops in Late Season Vegetable Crops to Enhance Soil Health in the Northeast

Jason Lilley
University of Maine Cooperative Extension
$184,013

LNE22-457R
Development of a Rapid, Inexpensive Assay for Farm-based Detection of Four Pathogenic Vibrio Strains linked to Shellfish Hatchery Failures

Meredith White
Mook Sea Farm
$199,989

Massachusetts

LNE22-458R
Using Unoccupied Aerial Vehicles for Application of Fertilizers to Cranberry Bogs in Massachusetts

Brian Wick
USDA-ARS
$69,724

New Jersey

LNE22-455R
Exploring Novel Natural Products for the Development of Push-pull Systems to Manage Spotted-wing Drosophila

Cesar Rodriguez-Saona
Rutgers, The State University of New Jersey
$199,868

LNE22-449R
Foliar Nickel Fertilizer Nutrition to Enhance Cranberry Yield and Decrease Fungicide Use

Joseph Heckman
Rutgers, The State University of New Jersey
$199,993

New York

LNE22-452R
The Use of Biochar in Agroforestry to Promote Soil Microbial Health, Tree Productivity, and Carbon Sequestration

David Newman
Arthur's Point Farm
$154,586

Vermont

LNE22-450R
Development of Above and Below Ground Strategies Using Entomopathogenic Fungi and RNAi Technologies for the Control Root Crop Pests

Victor Izzo
University of Vermont
$199,710

LNE22-453R
Biochar from Biosolids and Source Separated Human Urine: Soil Health Impacts and Farmer Perspectives

Abraham Noe-Hays
Rich Earth Institute
$175,724

LNE22-454R
Vertical Bifacial Solar Panels: A Winning Solution for Agrivoltaics and Farmers

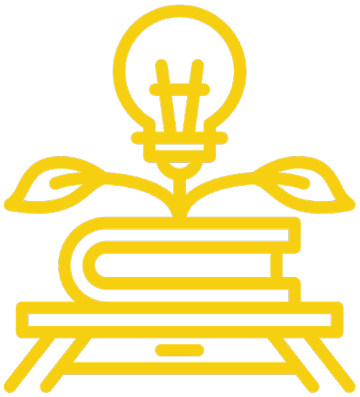
Bruce L. Parker
University of Vermont
$199,998

LNE22-456R
Culturally Meaningful, Regionally Adapted Seed: Making the Ujamaa Cooperative Farmers Alliance Market Ready

Projects funded in 2022

Professional Development Grants

The Professional Development Grant Program funds train-the-trainer projects that develop and share knowledge across the full range of service providers who work with farmers.



Maine

ENE22-176
Reducing Tensions on Market Day: Training Farmers' Market Organizers and Service Providers on Conflict Resolution and De-escalation Strategies

James DeBiasi
Maine Federation of Farmers' Markets
$149,407

Massachusetts

ENE22-177
Designing Multifunctional Buffers to Improve Farm Viability in the Berkshire-Taconic Region of MA, NY, and CT

Mark Phillips
Berkshire Agricultural Ventures
$71,474

New Jersey

ENE22-174
The Greater Newark Sustainable Farming Practices and Local Entrepreneurship Program

Alexandra Chang
Rutgers, The State University of New Jersey
$135,459

New York

ENE22-175
Northeast Pollinator Partnership – A Program to Educate Agricultural Service Providers About the Biology, Importance, and Conservation of Wild Bees

Bryan Danforth
Cornell University
$150,203

West Virginia

ENE22-178
Sprout School: Developing a Comprehensive Farm to School Toolkit for Central Appalachia

Jennifer Totten
Future Generations University
$150,000

Projects funded in 2022

Farmer Grants

Farmer Grants explore new concepts in sustainable agriculture conducted through experiments, surveys, prototypes, on-farm demonstrations or other research and education techniques.

Connecticut

FNE22-005
Germination Testing to Improve the Quality of Ecotypic Native Seed in the Northeast

Dina Brewster
The Hickories, LLC
$29,299

Delaware

FNE22-004
Automated Drainage Water Management for Improved Precision, Yield, and Water Quality

Chris Breeding
Twin Cedar Ag
$29,995

Maine

FNE22-012
Improving Pastured Broiler Operations for Chickens and Farmers: Automating Feed Systems on Mobile Pasture Coops and Sharing the Results

Haden Gooch
Mayday Farm
$24,837

FNE22-013
Efficient Leaf-dense Tree/Shrub Silage Production from Field Edges: Climate-resilient Winter Forage Supplement for Cattle, Sheep, and Goats

Shana Hanson
3 Streams Farm
$30,000

FNE22-015
Get the Fish Out: Black Soldier Fly Larvae and Marine Macro-algae as Feed Ingredient Replacements for Small Land-based Aquaculture Operations

Kate Holcomb
Canopy Farms L3C
$29,484

FNE22-017
Field Testing the Viability of 3D-printed Oyster Farm Equipment

Jordan Kramer
Winnegance Oyster Farm
$24,662

Maryland

FNE22-007
Determining the Effect of Tree Pruning and Nutritional Inputs on a Neglected Chestnut Orchard

Jane Dennison
Morris Orchard LLC
$29,975

FNE22-014
Improving Soil Tilth and Productivity with Mycorrhizal and Saprophytic Fungi

Matthew Harhai
Goat Plum Tree Farm, LLC
$2,268

FNE22-016
Ground cherries: improving harvesting efficiency and defining marketing measures

Jenni Hoover
Serenity Grove Farm
$5,687

FNE22-020
Nature's Colors: Exploring the Production and Profitability of Natural Dyes in Baltimore

Kenya Miles
Blue Light Junction
$30,000

FNE22-021
For the Love of Legumes: Sustainable Urban Micro-scale Grains and Dried Beans on a Demonstration Farm in Baltimore City

Denzel Mitchell
Farm Alliance of Baltimore
$29,806

FNE22-031
Foliar Application of Kaolin Clay to Manage Pest and Diseases in Day Neutral Strawberry

Mariav Velikonja
Carniola Farms Inc
$22,247

Massachusetts

FNE22-018
The Oysterbot: Developing a Ropeless Bottom Cage Retrieval System for Nearshore Oyster Farms

Dale Leavitt
Blue Stream Shellfish LLC
$22,996

FNE22-019
Gracilaria Seaweed Aquaculture Farm Grow-out, Harvest, and Marketing

Dan Martino
Martino's Seafood, LLC
$27,290

FNE22-022
Farm and Conservation Land for Black, Indigenous, and People of Color Self Determination and Sovereignty in Rural Massachusetts

Carmen Mouzon
The Farm School
$29,990

FNE22-009
Establishment and Evaluation of Founder Plots for Native Seed Production

Alexis Doshas
Native Plant Trust
$29,854

FNE22-025
Transferred Mulch System for Organic Reduced Tillage Vegetable Production

Jeremy Plotkin
Simple Gifts Farm
$29,587

New Hampshire

FNE22-008
Agroforestry Production of Rare Medicinal Herbs in New Hampshire

Kate Dobrowski
Green Hill Farm
$30,000

New Jersey

FNE22-011
Grafting Heritage African Eggplants for Disease Control and Enhanced Production

Morris Gbolo
World Crops Farm
$29,950

New York

FNE22-001
Comparison of Farm-produced and Commercial Microorganism Inoculants: Cost, Nutrients, and Biological Constituents

Matt Bedeaux
Unadilla Community Farm Education Center, Inc.
$11,852

FNE22-006
An Illustrated Guide to Value Adding: Rules, Regulations & Good Ideas

Nichole Carangelo
Letterbox Farm Collective
$14,950

FNE22-010
Establishing Willow and Poplar Tree Fodder Blocks for Resilient Livestock Feed and Flood Mitigation in a Silvopasture Riparian Buffer

Steve Gabriel
Wellspring Forest Farm
$14,977

FNE22-024
Solving the Agroforestry Cash Flow Gap: Intercropping Short Term Cash Crops During Tree Crop Establishment

Nicholas Pandjiris
Whistle Down Farm
$9,492

FNE22-028
Traditional Tortilla Maize Cultivation in New York's Hudson Valley: Evaluating Viability of Heirloom Cultivars from Mexico and Central America

Samuel Rose
SunRunner Farm LLC
$7,689

FNE22-029
Sustainable Microgreens Packaging

Gwen Schantz
Brooklyn Grange
$29,137

FNE22-030
Determining the Biggest Bang for our (Time) Buck: Dealing with Fall Brassica Diseases in High Humidity Environments

Maryellen Sheehan
Hartwood Farm
$14,198

FNE22-033
Clonal Production of Hybrid Chestnuts via Stool Bed Layering to Improve Overall Orchard Quality

Jeffrey Zarnowski
Z's Nutty Ridge LLC
$19,696

Pennsylvania

FNE22-003
Techniques for Growing and Overwintering Japanese Fig Tree Espalier in the Northeast

Craig Boyer
Boyer Holdings LLC
$30,000

FNE22-023
Organic and Biological Control of Colorado Potato Beetle

Robert Moynihan
Plowshare Farms
$18,741

Vermont

FNE22-002
Piloting a Year-round Sliding-scale CSA and Unified Online Management System to Improve Food Access

Brandon Bless
Bread and Butter Farm
$22,275

FNE22-027
Enhancing Health Benefits of Pasture Raised Lamb, Pork, and Chicken Utilizing Organic Fish Hydrolysate and Compost Supplementation

Karen Rodgers
MKVT Farm
$21,628

FNE22-032
Evaluating Weed Suppression for Saffron Production: Manual, Flame Weeding, Tarping, and Cover Crops

Erica Walch
Hobby Hill Farm
$12,011

West Virginia

FNE22-026
Analysis of Organic Matter and Pipe Depth in a Geothermal Climate Battery High Tunnel

Tommye Rafes
T. L. Fruits and Vegetables LLC
$14,955

Projects funded in 2022

Graduate Student Grants

Graduate Student Research grants conduct research on topics specific to sustainable agriculture under the supervision of a faculty advisor.

Connecticut

GNE22-281

Farmer Engagement with Regenerative Agriculture in New England: Understanding Barriers and Facilitators to Improve Services and Outreach

Katherine Michels
Advisor Amity Doolittle
Yale University
$14,999

GNE22-297

Controlling Salmonella on eggs using probiotics and postbiotics.

Ragini Reddyvari
Advisor Mary Anne Amalaradjou
University of Connecticut
$15,000

Delaware

GNE22-294

Promoting natural suppression of slugs using local parasitic nematodes.

Thabu Mugala
Advisor Michael Crossley
University of Delaware
$15,000

Massachusetts

GNE22-300

Performance and agronomic management of crabgrass to meet summer forage shortfalls in the Northeast

Arthur Siller
Advisor Masoud Hashemi
University of Massachusetts - Amherst
$14,955

GNE22-301

Evaluating decomposition trends and effects of fall planted annual CC on spring soil active carbon in the Northeast.

Alexandra Smychkovich
Advisor Masoud Hashemi
University of Massachusetts-Amherst
$14,981

Maine

GNE22-277

Investigating Lobster Byproducts as Soil Amendments for Disease Suppression and Soil Health Improvement in Potato Production.

Katie Ashley
Advisor Dr. Jianjun Hao
University of Maine
$14,620

New Hampshire

GNE22-289

Cutting Management Approaches to Understand Phytoestrogens Accumulation in Forage Legume Species Used in Dairy Production Systems

Palash Mandal
Advisor Richard Smith
University of New Hampshire
$14,997

New Jersey

GNE22-299

Standardizing Farming Practices of Leafy Green Amaranth in the Northeast to Ensure Cultural Availability and Nutrient Density.

Tori Rosen
Advisor James Simon
Rutgers University
$14,685

GNE22-305
Monitoring beneficial insects with plant volatiles: a landscape approach

Yahel Ben-Zvi
Advisor Cesar Rodriguez-Saona
Rutgers University
$14,984

GNE22-288
Insecticide Efficacy Trial in Vineyards Against Spotted Lanternfly Adults.

Katarzyna Madalinska
Advisor Anne Nielsen
Rutgers University
$14,969

GNE22-292
Surveying an insect collection from a 17th-century Northeastern agrarian settlement to determine changes in beneficial insects, pests, and climate.

Michael Monzon
Advisor George Hamilton
Rutgers University, New Jersey Agricultural Experiment Station
$14,859

GNE22-306
Influences of habitat-level crop diversity on community dynamics of pentatomids and their parasitoids in New Jersey

Anna Waltman
Advisor Anne Nielsen
Rutgers University
$15,000

New York

GNE22-286
Epigenetic Inheritance of Maternal Disease Status in Dairy Cattle and Effect on Offspring Performance

Sydney Jewell
Advisor Heather Huson
Cornell University
$15,000

GNE22-304
Evaluation of tetralone abscisic acid as a novel budbreak delay and spring frost damage mitigation product in vineyards

Hongrui Wang
Advisor Jason Londo
Cornell University
$14,226

Pennsylvania

GNE22-275
Determining the Impact Changing Host Metabolism has on Leaf Associated Microbiomes for Improved Efficacy of Foliar Biopesticides.

Max Aleman
Advisor Kevin Hockett
Pennsylvania State University
$14,997

GNE22-276
Engineering Design of Pilot Biofilters for Ventilation Air Methane Abatement Via Biological Oxidation.

Camila Gonzalez Arango
Advisor Juliana Vasco-Correa
Pennsylvania State University
$15,000

GNE22-278
Evaluating the impact of housing on pork quality and slaughter day stress

Chelsea Becker
Advisor Elizabeth Hines
Pennsylvania State University
$13,560

GNE22-280
Characterizing Environmental Drivers of Phenolic Extractability in Wine Grapes.

David Campbell
Advisor Joshua Lambert
Pennsylvania State University
$14,737

GNE22-285
Robotic System for Green Fruit Thinning in Apple Orchards.

Magni Hussain
Advisor Long He
Pennsylvania State University
$14,941

GNE22-282
Understanding the potential for biological control and pest management in industrial hemp cropping systems.

Jorge Luis Jaramillo Gonzalez
Advisor Sara Hermann
Pennsylvania State University
$14,994

GNE22-287
Sustainable Management of Spotted Lanternfly by Native and Naturalized Predators.

Anne Johnson
Advisor Kelli Hoover
Pennsylvania State University
$14,876

GNE22-296
Understanding the Effects of Cover Crops and Nutrient Management on Microbial Carbon Use Efficiency and Nitrogen Mineralization.

Zoelie Rivera Ocasio
Advisor Charles White
Pennsylvania State University
$14,889

GNE22-298
Balancing weeds, nitrogen, and soil health in cover crop mixtures.

Emma Rice
Advisor Carolyn Lowry
Pennsylvania State University
$14,998

GNE22-302
The Effect of Fat Supplementation on Milk Fat Melting Temperature.

Alanna Staffin
Advisor Kevin Harvatine
Pennsylvania State University
$14,291

GNE22-290
Building for bees: the effect of plant arrangement on pollinator communities in managed habitats.

Codey Mathis
Advisor Dr. Christina Grozinger
Pennsylvania State University
$15,000

GNE22-293
Advancing Robotic Approaches to Precise Apple Crop Load Management.

Xinyang Mu
Advisor Long He
Pennsylvania State University
$14,999

Rhode Island

GNE22-283
Cultivation of Native Productive Plants in Urban Agroforestry Systems in the U.S. Northeast: Perceptions and Barriers

Nicole Hagan
Advisor John Taylor
University of Rhode Island
$14,990

Vermont

GNE22-284
Warm Season Legumes as an Alternative Forage in the Northeast United States.

Jasmine Hart
Advisor Eric Bishop-von Wettberg
University of Vermont
$14,999

GNE22-295
Effect of Mycorrhizal Fungi on Blueberry Fruit Anthocyanin Content

Sandra Nnadi
Advisor Jeanne Harris
University of Vermont
$14,938

West Virginia

GNE22-279
Improving immune competence and disease resistance in sheep by selecting for parasite resistance.

Kelsey Bentley
Advisor Scott Bowdridge
West Virginia University
$15,000

Projects funded in 2022

Partnership Grants

Partnership Grants fund projects conducted by researchers, educators and agricultural service providers working in direct partnership with farmers to encourage design and implementation of innovative solutions to current sustainability challenges.

Connecticut

ONE22-412

Pairing Residues, Resistance Genes and Microbial Community Structure to Understand Off-Farm Impact of Antibiotic Use on Dairy Farms

Christine Georgakakos
University of Connecticut
$29,057

ONE22-431

Monitor Streptomycin Resistance in Erwinia Amylovora Populations in New England.

Quan Zeng
Connecticut Agricultural Experiment Station
$30,000

Delaware

ONE22-417

Providing a Research Base for Indoor Lighted Production of Strawberries in a Repurposed Poultry House

Gordon Johnson
University of Delaware
$21,039

Maine

ONE22-423

"Exploring the Viability of Intertidal Quahog Aquaculture in Maine

Marissa McMahan
Manomet
$29,943

Massachusetts

ONE22-411

Tracking Vegetable Yields and Labor in a No-Till Perennial Clover Living Mulch System.

Lincoln Fishman
Sawyer Farm
$14,880

ONE22-422

Closing the Mushroom Production Loop: Evaluating Soil Microbe Changes Following Field Application of Compost Inoculated with Spent Mushroom Substrate.

Christine Manuck
NOFA/Mass
$24,712

New Jersey

ONE22-415

Investigating Poor Growth of Hard Clams in New Jersey

Zachary Gordon
Northeast Fisheries Science Center Milford Lab
$28,713

New York

ONE22-409

Improving Production Practices for Three Niche Crops in Response to Shifting Climatic Opportunities.

Elizabeth Buck
Cornell Cooperative Extension
$21,470

ONE22-419

Greenhouse IPM Scout School: Online and Hands-on Training for Current and Next Generation Scouts

Elizabeth Lamb
New York Integrated Pest Management, Cornell University
$29,105

ONE22-414

Laying the Foundation for Affordable Farmer Housing

Faith Gilbert
Faith Gilbert Cooperative Consulting
$30,000.00

ONE22-418

Yield, Environmental, and Financial Impact of Double-Cropping Buckwheat (No Till) After Wheat.

Kyle Gifford
The Birkett Mills
$29,795

ONE22-424
Exploring Winter Lentil and Winter Pea Production in the Northeastern United States."

Virginia Moore
Cornell University
$24,236

ONE22-427
Compost Exhaust to Provide Nutrients for Plants in Biofilter and Heat for Greenhouses

Jennifer Perry
AdkAction Compost for Good
$29,999

Pennsylvania

ONE22-425
Growing Growers: Community of Practice and Apprenticeship for Women, BIPOC, and LGBTQ Farmers

Christopher Murakami
Chatham University
$26,356

ONE22-413
Application of Ultraviolet Light and MilStop to Restrict Powdery Mildew Infestation in Vegetable Greenhouses

Arash Ghalehgolabbehbahani
Rodale Institute
$28,131

ONE22-428
Renovating Native Grass Swards: An On-farm Trial of Improved Warm-Season Grass Varieties.

Wesley Ramsey
Penn Soil Council
$27,473

ONE22-421
Optimized Management Practices to Control Swine Parasites in Organic Pig Farms.

Sara Major
Rodale Institute
$26,120

Rhode Island

ONE22-430
A Partnership for Innovative Use of Emerging Species in Aquaculture.

Coleen Suckling
University of Rhode Island
$29,496.

Vermont

ONE22-416
Adopting a New Culling Strategy to Reduce Johne's Disease and Improve Economic Sustainability on Dairy Farms

Whitney Hull
University of Vermont Extension
$25,950

ONE22-410
Hemp Fiber – Finding Value in the Supply Chain.

Heather Darby
University of Vermont Extension
$29,465

ONE22-426
Farm-scale Urine Fertilizer Implementation: Refining Application Methods, Gathering Buyer and Consumer Perspectives, and Producing Farmer Guide.

Abraham Noe-Hays
Rich Earth Institute
$29,998

ONE22-429
Evaluating Essential Oil-based Formulations for the Alternative Control of Winter Cattle Lice

Jeffrey Sanders
University of Vermont Extension
$26,738

ONE22-420
Understanding Farmer Decision Making in Performance-Based PES Programs through the Vermont Pay for Phosphorus Program.

Mario Machado
University of Vermont
$29,934

ONE22-408
Dual Use Winter Vegetable Peas: Examining the Viability of Double Cropping in Zone 4

Eric Bishop-von Wettberg
University of Vermont
$29,804

Scan for access to all Sustainable Agriculture Research and Education resources available as PDFs.

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