



January 2020

ANNUAL REPORT

Inside This Report . . .

Learn how the NNYADP uniquely benefits the environmental, economic, local foods, and farming interests of New York State





Funding for the Northern New York Agricultural Development Program is supported by the New York State Legislature and administered by the New York State Department of Agriculture and Markets. Ninety-seven percent of funding goes into research and results transfer to the agricultural industry; two percent goes to grant processing and program delivery. Learn more about the NNYADP, find project results/success stories, return-on-investment and value indicators, and more in this report, online at www.nnyagdev.org, or by contacting the NNYADP Co-Chairs listed below.

NYS Senate Agriculture Committee

Chair: Jen Metzger

Members:

Alessandra Biaggi
 John. E. Brooks
 Pamela Helming
 Daphne Jordan
 Rachel May
 Velmanette Montgomery
 Robert G. Ort
 James Skoufis

NYS Assembly Agriculture Committee

Chair: Donna A. Lupardo

Members:

Didi Barrett	Ken Blankenbush	Marianne Buttenschon
Clifford W. Crouch	Erik M. Dilan	Harvey Epstein
Gary D. Finch	Michael J. Fitzpatrick	Aileen M. Gunther
Stephen Hawley	Billy Jones	Barbara Lifton
Brian D. Miller	Walter T. Mosley	Jose Rivera
Linda B. Rosenthal	Angelo Santabarbara	Al Stirpe
Jaime R. Williams	Carrie Woerner	

Northern New York Agricultural Development Program Farmer Members

The following farmers, representing the diversity of the NNY regional agricultural industry, volunteer their time, on-the-ground experience and expertise to identify and prioritize research requests for NNYADP grant funding.

NNYADP Co-Chairs: Joseph Giroux, Plattsburgh: 518-563-7523
 Jon Greenwood, Canton: 315-386-3231
 Jon Rulfs, Keeseville: 518-572-1960, 518-643-7958

Clinton County:

Sam Dyer, Plattsburgh • Tom Everett, Peru • Mary Fortin, Chazy • Joe Giroux, Plattsburgh • Willie Giroux, Chazy • Joy Herfurth, Ellenburg Center • Doug Lamoy, Morrisonville • Tony LaPierre, Chazy • Tom Remillard, Peru • Jon Rulfs, Peru/Plattsburgh • Dan Tetreault, Champlain • Jeremy Youngmann, Peru

Essex County:

Ian Ater, Keeseville • Lucas Christianson, Keeseville • Tony Corwin, Lake Placid • Henry Drinkwine, Ticonderoga • Craig Dumond, Ray Brook • Lee Garvey, Willsboro • Linda & Shaun Gilliland, Willsboro • Adam Hainer & Melody Horn, Westport • Rob Hastings, Keene Valley • Kristen & Mark Kimball, Essex • Bernard Leerkes, Ticonderoga • Al & Cindi Mulbury, Peru • Bob Perry, Essex • George Sayward, Essex • Allan "Bucky" Smith, Fort Covington • Beth Spaugh-Barber, Peru • Sam Sherman, Westport

Franklin County:

Bruce Bonesteel, North Bangor • Steve Gokey, Malone • Doug Malette, Chateaugay • Randy Ooms, Constable • Jo Ellen Saumier & Kirby Selkirk, Chateaugay • Norm Shipman, Burke • David Stauffer, Brushton

Jefferson County:

Dave and Dani Baker-Belding, Wellesley Island • Jay Canzonier, Belleville • Dennis Forrester, Henderson • Delta Keeney, Watertown • Mike Kiechle, Philadelphia • Patsy Makuch, Carthage • Greg Mason, Cape Vincent • Gail Millard, Watertown • Lynn Murray, Copenhagen • Doug Shelmidine, Belleville • Nick Surdo, Watertown • Ed Walldroff, LaFargeville • Steve Winkler, Rodman

Lewis County:

Emily Beller, Carthage • Ralph Chase, Croghan • Violet Colwell, Glenfield • Larry Herr, Lowville • Ken Krokowski, Turin • Nadeen Lyndaker, Croghan • Jake Moser, Croghan • Gary Rosiczkowski, Turin • Sharon Stewart, Turin • Dean Yancey, Lowville • Haskell Yancey, Croghan

St. Lawrence County:

Jack Adel, Brasher Falls • Kevin Acres, Madrid • Bob Andrews, Gouverneur • Dan Chambers, Heuvelton • George Erdman, Gouverneur • David Fisher, Madrid • Jon Greenwood, Canton • Jeff Jenness, DeKalb Junction • Brian Knight, Lisbon • Jim Sheehan, Potsdam • Kenneth Tupper, Canton • Andy Weaver, Potsdam • Bob Zufall, Lisbon

Oneida County Adjunct: Scott Martin • Mark Savage

New York State's 2nd Highest Ag Sales Region & Growing

Northern New York's agricultural industry is an economic powerhouse for New York State. New York State Comptroller Thomas P. DiNapoli's August 2019 *"Profile of Agriculture in New York State"* defines the north country as consisting of Jefferson, Lewis, St. Lawrence, Clinton, Essex, Franklin, and Hamilton counties, and ranked it second highest in agriculture sales of all regions in the state on the strength of its \$776.56 million in sales. The report also notes:

- ✓ "This (NNY) region was the only one in the State that saw an increase in farmland from 2007 to 2017, a gain of 25,811 acres.
- ✓ "Essex, Franklin, and Lewis counties collectively added 83 farms during this period (2007-2017).
- ✓ "The North Country is the leading producer of maple syrup in the State... "second largest source of milk..."ranks first for sales of hay and other crops..." and "Lewis County is the top producer of Christmas trees."

In the regional profile on page 11:

- ✓ Census of Agriculture data shows 5 of the 6 northernmost counties with steady growth in market value of products with every Census of Ag since 2002.
- ✓ NNY counties hold 23 top 10 rankings for commodities or total agricultural sales.
- ✓ Livestock industry growth is seen in the last Census with increasing numbers of beef farms (112 from 2012 to 2017), more than 400% growth in poultry numbers, and a 74% increase in swine numbers from 2012 to 2017.

Northern New York Agricultural Development Program research has helped write this success that also includes the growth of the regional maple industry from \$5 million annually in 2008 to an estimated \$12 million in 2012, with room to yet reach \$15 million!

Agriculture powers the economic engines of NNY's rural economies. The NNYADP's cost-conscious farmers diligently target grants to achieve timely, practical, and cost-effective data-driven research addressing regional and statewide agricultural interests related to water quality and natural resource conservation, climate adaptability, farm labor efficiency and quality, local food hub development, and NY farm and food sustainability.



In This Report

New York State Agriculture Committees	2
NNYADP Farmer Committee	2
Unprecedented Water Quality Research for NYS.....	4
NY's Climate Adaptability Testing Ground.....	5
Young Farmer Success Story	6
NNYADP Soil & Water Conservation Research.....	7
NNYADP Project Success Extends to Growers Statewide and Nationally	8
Local Food Hub Opportunities Growing	9
NNYADP Projects' Impact Sampler	10
NNY Regional Profile: State Rankings and Values	11
NNY Maple Industry \$12 Million and Growing Toward \$15 Million	11
For More Info.....	2, 12



Unprecedented & Needed

NNYADP Water Quality Research for New York State

Water is a precious resource. In recent years, interest in water quality science related to agricultural production has grown in watersheds from the Lake Champlain valley to New York City, throughout New York, and wherever** there are concerns about eutrophication, harmful algal blooms, and other water quality issues.

In New York State, the Northern New York Agricultural Development Program has taken a lead in developing the real-world, field-tested, data-driven science needed to accurately drive water quality conservation for New York State and beyond. This work, in cooperation largely with Miner Institute*, is identifying opportunities to develop best practices for nutrient efficiency to support both crop production and environmental stewardship.

NNYADP grants:

- have established on-farm and dedicated tile drainage research facilities at Miner Institute, regional farms, and the NYSDEC Lake Alice Wildlife Area at Chazy,
- have equipped sites for the long-term data collection needed to create critical baseline data sets of the surface and subsurface (tile) drainage and nutrient content, and
- are funding the analysis of hydrodynamics of how groundwater flow, crop nutrients, farming practices, rainfall, snow melt, and other climate-related events interact and impact water quality, soil erosion, agricultural production, and water conservation.

“The NNYADP-funded projects provide critical year-round runoff monitoring (surface tile drainage) within dairy systems and generate important results with broad interests from farmers, regulators, managers, legislators, and scientists in NY, New England, and Canada. Field runoff water quality research establishes an important link between agriculture and society because it helps better quantify environmental implications of food production that affect everyone. Edge-of-field studies (underway by NNYADP) provide a direct measure of runoff water quality in relation to agricultural practices and assess nutrient use efficiency, an important economic and environmental farm metric.”

— Eric Young, Research Soil Scientist, USDA Agricultural Research Service, Marshfield, WI

An on-farm site that recently became fully instrumented is now capable of year-round monitoring of surface and tile drainage flows. This research also includes monitoring of shallow groundwater wells.

Annual reports inform farmers, researchers, agencies, and community and conservation groups and, at each successive knowledge gain, highlight incrementally-developing water quality protection best practices.

* Collaborators in this unprecedented research have included the Lake Champlain Basin Program, State University of New York, University of Vermont, New England Interstate Water Pollution Control Commission, and agricultural and environmental consulting businesses.

** The results of the NNYADP trials have been requested by agencies, non-for-profits, and groups, including the American Society of Agronomy, Crop Science Society of America, Lake Champlain Basin Program, Green Mountain Dairy Discussion Group, Franklin Watershed Committee, and others, in New York, the Northeast (Vermont, New Hampshire); the Southeast (Southern (US) Extension and Research Activity Information Exchange; the USDA Natural Resources Conservation Service, and interested groups in Canada.



From Lake Champlain and the Adirondack Mountains to Tug Hill, the St. Lawrence River and Lake Ontario's Eastern Shore

NNY: New York State's Climate Adaptability Testing Ground

As climatic conditions continue to change across New York State, no region is more diversely-suited, and no entity more uniquely positioned than the NNYADP, to serve as the state's climate adaptability research "laboratory."

- Northern New York's topography and dozens of different soils alone create enough challenges for dairy farmers; crop, fruit, and vegetable growers; beekeepers; wine makers; and maple producers from Lake Champlain and the Adirondack Mountains through the foothills to Tug Hill, the St. Lawrence River and Lake Ontario's eastern shore.

Add weather extremes and microclimates within the region and one can understand how NNY is uniquely suited to host research to determine the feasibility of new agronomic and environmental stewardship practices so New York State's farm and community dollars can be wisely invested in proven practices.

- NNYADP high tunnel, colder climate research has shown fruit and vegetable growers statewide how to extend growing and sales opportunities earlier in the spring, later in the fall. Some NY growers are now producing year-round.



- **Protecting NY's pollinators** — NNY's first bee health survey indicated less colony loss in both summer and winter than any other region in New York State, providing researchers with study potential.

- NNYADP Crops Disease Assessment Survey — a sentinel alerting NY growers to emerging/re-emerging plant diseases for timely response locally and statewide to limit damage, cost and environmental impact.
- NNYADP dairy research has shown how adjusting housing, ventilation, bedding and animal care practices can increase animal comfort and protect animal health, longevity, and milk production during heat stress and extreme cold.

"Progressive research by the farmer-led Northern New York Agricultural Development Program is advancing the science-based understanding of how climate and farm management practices impact dairy calf health . . . We have seen a reduction in winter-related calf health issues, primarily respiratory challenges, on the farms that have implemented management changes based on the research data."

— Kimberley Morrill, Ph.D., *Empire Farm & Dairy, March 2019*



- NNYADP trials at Miner Institute documented the increased sensitivity of higher-producing cows to heat stress and identified heat abatement measures to keep them more comfortable, hold milk production steadier, and maintain milk fat (premium) percentage.
- Cold-hardy grape research — NNYADP cold climate trials in Jefferson and Essex counties helped establish and inform 2 new wine tourism regions for New York State.
- Successive-year plant breeding — NNYADP-funded research teams are increasingly adding winter-hardiness to alfalfa, a key dairy/livestock/equine crop, and are now working on adding brown root rot resistance.



- NNYADP Maple research — Tapping time testing at Uihlein Maple Research Forest in Lake Placid is adding to producers' understanding of production opportunities/challenges related to variable climate. "Maple and now birch, syrup producers are on the front lines of dealing with the effects of climate change and the variations that have increased the un-predictability of when sap will flow."

— Dr. Joseph Orefice, *Yale University*

Northern New York's Future

Young Farmer Success Story: Entrepreneur Mary DeBeer

With a passion for helping farmers with crop challenges and opportunities, and prompted by the NNYADP-funded alfalfa snout beetle (ASB) research, Mary DeBeer established her own biocontrol nematode-rearing enterprise on the family farm in Moira, NY (Franklin County), in 2016.

To set up her lab, Mary learned how to rear and apply the biocontrol nematodes in a training with Cornell University Research Support Specialist Tony Testa. Testa developed the protocol in concert with Cornell entomologist Dr. Elson Shields, who pioneered the science behind the use of nematodes as a biocontrol for managing ASB (see more on page 8).

After seeing the nematodes' success on a new 7-acre seeding of alfalfa on her family's farm, Mary began scheduling custom applications by her father Ronald DeBeer of DeBeer Seeds and Spraying. She concentrated her first efforts with farmers in the heavily ASB-infested North Bangor area of Franklin County.

In her first two years of operation, she tripled the number of alfalfa acres protected by the microscopic worms proven to reduce ASB populations. Gradually growing into her business, Mary has now raised nematodes for application to 7000 acres in Franklin and St. Lawrence counties. She also supplies other customer applicators and farmers who have learned to apply the biocontrol nematodes themselves.

"The NNYADP research provided us with the opportunity to improve our farm business and we feel we have done remarkably well, particularly in light of four years of low milk prices. In spite of those prices, the farmers have been willing to invest in the nematode applications to protect their crops," says Mary.

"Now with the NNYADP research showing promise for the control of corn rootworm by these biocontrol nematodes, we have the opportunity to expand our coverage of not only alfalfa acres but corn fields as well," she notes.

Mary's story has been featured in such publications as the national Progressive Forage Grower, local Malone Telegram, and statewide New York Ag Connection and Morning Ag Clips.

Keeping an eye on all the NNYADP projects, Mary comments, "I see a lot of young farmers interested in coming back to their family farms and diversifying into maple, greenhouses, and other opportunities supported by the NNYADP research outcomes."

"Mary is leading the way for new business opportunities as a result of the long-term commitment the farmers of Northern New York made to finding a science-based solution for alfalfa snout beetle."

— Dr. Elson Shields, the Cornell University entomologist who pioneered the use of native NY nematodes as a biocontrol



Agricultural entrepreneur Mary DeBeer in her nematode-rearing lab at her family farm in Moira. Participating in an NNYADP-funded workshop inspired her to create this new enterprise.



Soil & Water Conservation Research: Proactive Nutrient Efficiency Research Whole Farm Nutrient Balancing

“Frontrunners”—that’s how Cornell University’s Nutrient Management Spear Program Director Quirine M. Ketterings, Ph.D., credits the farmers who guide the Northern New York Agricultural Development Program for their prompting of the re-evaluation of the Cornell corn production guidelines.

Having observed an impact in production rates, the NNYADP farmers’ request to adjust the guidelines for advances in corn breeding and production practices spurred the updating of the nitrogen application guidelines that help farmers across New York State achieve:

- 1) agronomic efficiency,
- 2) economic efficiency (potential savings for less fertilizer purchases), and
- 3) increased environmental stewardship, including reduction of unnecessary nutrient applications, reduced risk of runoff and volatilization losses, and reduced soil compaction and erosion.

With other NNYADP grant funding, Dr. Ketterings is working with NNY farmers and farm advisors on whole farm nutrient mass balance assessment to:

- identify opportunities for more precise and efficient nutrient use,
- enhance watershed and agricultural stewardship while simultaneously increasing on-farm efficiency, milk production, and crop yield;
- document improvements over time for continued monitoring and calibration as needed,
- become both economically viable and environmentally sustainable, and
- contribute to a Statewide database.

The whole-farm nutrient mass balance software tool allows farmers to compare the nutrient imported onto the farm in feed, fertilizer, animals and bedding with the amount of nutrients exported off the farm as milk, crops, animals, and manure. The difference (the farm balance) can be presented as a plus or minus balance per acre of cropland or per hundredweight of milk produced. Using the whole-farm management approach helps farmers evaluate opportunities to reach optimal balance. Farms that have adjusted management practices have decreased the import of nitrogen and phosphorus without a decrease in milk production.

In tandem with other NNYADP-funded projects, this work helps to:

- increase soil health/replenish soil nutrients
- moderate production costs
- increase on-farm forage production of higher quality forages
- better distribute manure on a farm’s land base
- adjust feed rations to meet varying nutritional needs of calves, heifers, and milking cows.
- reduce erosion
- increase nutrient use efficiency
- improve feed bunk management

Assuring Water Quality Critical for Animal Health and Milk Production

Water is an important nutrient source for dairy cows. Water quality delivered in water and through feed crops is critical to maintaining healthy, productive cows. Some components, such as iron and nitrates, can adversely impact dairy water quality. 109 dairy farms in NNY have participated in NNYADP-funded water quality research to evaluate on-farm water quality and its impact on fiber digestion and milk production, and to address any issues associated with minerals, pH, hardness, sulfates, nitrates, or bacteria.





NNYADP Research Success Extends to Growers Statewide, Nationally

Farmers in New York State are applying the science-based biocontrol solution resulting from the NNYADP's long-term commitment to stopping the most highly destructive pest of alfalfa crops critical to the dairy, livestock and equine industries. Today, continuing research has extended the value of that NNY success toward managing pests in fruit, berries, corn, and other agricultural and turf crops across the U.S.



This ongoing success would not be possible without the funding commitment by the New York State Legislature in support of Northern NY's farmers.



Above: Alfalfa Snout Beetle. Left: Students helped beta-test the NNYADP biocontrol application protocol: Allyson Jones-Brimmer, Cornell University, with Belleville-Henderson FFA student Erik Shelmidine at Sheland Farms. Center: Cornell University entomologist Dr. Elson Shields, who pioneered the biocontrol solution now helping farmers manage multiple pests, shows NY farmers a healthy alfalfa plant. Right: Shields talks with a farmer receiving a Texas-funded biocontrol nematode application in 2019.

- 1980s: Alfalfa Snout Beetle (ASB) invades Peck Homestead Dairy Farm, Great Bend, NY
NNYADP research (Cornell: Shields, Testa/Cornell University) begins to seek solution to ASB, an invasive pest that can travel miles away on equipment, by water, and by walking
- 1990s: ASB impacts 13% (500,000 acres) of NY cropland (9 counties, SE Ontario, Canada)
2.5 million beetles/ac at Peck Farm with 25% loss in milk production/income and increased costs to buy protein supplement and reseed fields
Nematodes as potential biocontrol trials begin
NNYADP funds ASB-resistance alfalfa breeding to research (Viands, Hansen/Cornell University)
- 2000s: ASB population collapses on Peck Farm, believed a result of native NY entomopathic nematodes collected in Oswego County. Survey shows ASB migrating away from nematodes to neighboring farm
Research begins evaluating ASB and nematode movement, tests application on different soils
Sheland Farm, Belleville, NY, hosts first ASB-resistant alfalfa trials
- 2010-15: FFA students/farm youth help beta-test on-farm nematode rearing and application protocol
Early-adopter farmers adapt existing equipment to apply biocontrol nematodes
Biocontrol Nematode Manual posted at nnyagdev.org and distributed to farmers
Farmers report revival of alfalfa fields treated with nematodes
Corn rootworm (CRW) ID'd as future risk to fields rotated to corn
On-farm demonstration trials expand in Clinton, Franklin, Jefferson, Lewis, St. Lawrence counties
- 2015-19: NNYADP funds nematode trials vs. 2 strawberry pests with success
Seedway releases first commercial variety of ASB-resistant alfalfa (NNY trials)
Other funders step up to test biocontrol nematodes in corn, apple, grape crops
Young farmer Mary DeBeer establishes new nematode-rearing business in Franklin County
Russian agriculturists (14,000 acre ASB loss in 2014) visit NNY farms to meet with Shields
National publications: Hoard's Dairyman, Progressive Forage Grower report on NNY nematode success
NNYADP funds nematode trials vs. CRW
Farmers in TX, NM, MI, AL... establish biocontrol trials vs. multiple pests & to reduce soil insecticide use
Shields receives NESARE grant to expand protocol in NY, VT, PA
NNYADP funds Cornell Cooperative Extension trial of nematode application by manure
Farmer John D. Peck posts social media photos of the 2019 alfalfa crop at the NNY dairy farm where this NNYADP research success story began.



NNYADP Survey, Season Extension Research Support Local Foods/Food Hub Potential

Fresh local food production supports public health, food security, and local economies. A 2013-2014 NNYADP-funded survey of 25 professional food buyers, 254 consumers, and 125 farmers has sparked regional food hub development. The survey, analyzed by Cornell University, identified opportunities for growers in the major markets of Canton, Lake Placid, Lowville, Malone, Plattsburgh, and Watertown, and established a foundation upon which regional entities were able to secure a \$1 million NYS Ag & Markets grant to study such factors as matching NNY-grown produce and meats to market demand and economies-of-scale logistics.

NNYADP High Tunnel Research

NNYADP horticultural and high tunnel research supports the local foods movement and food hub development by assisting growers with crop innovation, production efficiencies and season-extension opportunities field-tested under local climate and growing conditions. This work includes conservation and soil health building practices, including a recent emphasis on reduced tillage practices and cover crop use to build soil health.

NNY Local Foods Innovation for Northern Climate

NNYADP trials are evaluating the feasibility of new crops and best practices for fruit, berry and vegetable production under northern climate conditions, and testing ways to save growers time and money. Examples:

- NNYADP funding established New York State's first Juneberry "Super Fruit" varieties research nursery at Willsboro, and on-farm trials of this high-value, high-antioxidant berry.
- New trials with aronia and honeyberry are recently underway.
- High-value high tunnel crops research examples:
 - Fresh baby ginger: \$16-\$18/lb. at farmers' markets
 - Winter salad crops: can be grown year'round in NNY ~\$12/lb.
- First-to-Market Vegetable Trials: high-value (\$3,461/ac) cherry tomato production systems evaluated for labor efficiency revealed \$39.27-\$55.31/plant ave. net revenue opportunity.
- NNYADP's successful seeding of the cloning of NNY's sugar maple trees at the Uihlein maple and potato research stations in Lake Placid leveraged Cornell University interest in adopting the project forward to commercial-scale.
- Healthy Pollinators: The first-ever NNY bee health survey showed lower colony losses here than in any other region of NYS. In 2019, 81 farms in NNY reported \$440,000 in honey sales. Some estimates value NNY's honey industry potential at >\$2.36 million.

Photos from top: Juneberry value-added jam; grower Dani Baker-Belding with a new planting of honeyberry at Cross Island Farms, Wellesley Island, NY; fresh ginger; farmer's market array; Cornell researcher Emma Mullin checks a NNY bee colony.



NNYADP Projects' Impact Sampler

The New York State Legislature established the Northern New York Agricultural Development Program in 1961.

Here is a brief sampler of how the NNYADP has benefited New York agriculture.



Climate Adaptability "... insight on the best ways to keep cows comfortable and healthy and to maintain milk yield in times of heat stress."
— Katie Ballard, Director of Research, Miner Institute

"Knowing the factors that have the greatest opportunity to enhance calf health through the winter..." — Kimberley Morrill, Ph.D., Dairy Specialist

"... insights that apply directly to the challenges we face... the best science based on our microclimates, soils, and farming practices to sustain and strengthen our agricultural economy." — Jon Rulfs, Clinton County farmer, NNYADP Co-Chair

"This (Northern New York Agricultural Development Program-funded) research offered the opportunity to demonstrate a simple milking parlor adjustment that can be made to enhance how quickly, completely and gently milking can be accomplished." — Paul D. Virkler, D.V.M., Quality Milk Production Services



"The impact of this NNYADP research is depicted in the fact that growers did not have any new fire blight epidemics in 2017 or 2018 in the same or nearby orchards nor any new tree or fruit losses."
— Srdjan G. Acimovic, Ph.D., Hudson Valley Research Laboratory

"The goal behind (the NNYADP) program was to find the right crops to fit the...climate, soils and harsh winters. (Founder Dr. Robert F. Lucey) Bob's work was instrumental in improving plant genetics and crop selection to make farming viable in Northern New York."
— Bob Andrews, dairy farmer, NNYADP Committee Member

NYADP Dairy Research (Winter Post-Milking Treatment)
Published in January 2019 Journal of Dairy Science

Empire Farm Days Program featured NNYADP Dairy Project:
27 Seconds=15 Minutes & More Comfortable Cows

"This type of research supports opportunities to enhance animal welfare, efficiency and consumer confidence in dairy products."
— Kimberley Morrill, Ph.D., Cornell University Regional Dairy Specialist

Proactive Crop Management "The (NNYADP) research often serves as a sentinel alerting farmers to new field and livestock challenges, first wave opportunities for management response, and control solutions that may benefit farms here and beyond." — Joseph Giroux, dairy farmer, NNYADP Co-Chair



"We are seeing an increasing number of growers using an integrated approach to managing field crop diseases... paying closer attention to disease-resistant crop varieties, crop rotations, tillage practices, soil fertility management and fungicide selection based on the crop diseases identified in this regional survey (NNYADP Field Crops Survey Project)." — Michael Hunter, Cornell University Field Crops Specialist

"We wanted to feature this (NNYADP) research... to give our viewers a look into the fascinating work that is going on to develop several varieties of Juneberries for commercial scale production that may, in the not-too-distant future, be available for farmers markets across New York State."
— Mountain Lake PBS Senior Producer Thom Hallock



NNY Regional Profile: Farms, People & Products



- 4,179 Farms
- 1.136 million acres in agricultural production 2nd highest region in NY
- 692 Young Farmers (see page 6) <35 years old
- 2,018 New & Beginning Farmers <10 years' farming experience
- 2,578 Small Farmers (179 or fewer acres) 61% of all NNY regional farmers
- 2,638 Female Farmers 37% of all NNY farmers by gender
- 10,960 Farm Workers (payroll & unpaid)
- \$79.487 million farm labor payroll > \$12.3 million over 201
- 19 school districts w/ag education 15 FFA chapters with >675 students
- Farm sales/market value (products) > \$776.5 million, up \$23.7 million over 2012
- Steady growth in market value of products with every Census of Agriculture since 2002 5 of 6 NNY counties
- # 1 ranking of all NY counties: poultry/egg sales Clinton County
- # 1 ranking of all NY counties: Christmas trees sales Lewis County
- # 1 ranking of all NY counties: maple farms St. Lawrence County
- # Top 10 rankings of all NY counties 23 by commodity or total sales/ ag products
- NNY counties' ranking of all NY counties for total sales/agricultural products sold (2017) 8th, 11th, 12th, 5th, 26th, 49th
- NNY alfalfa crop \$180-300/ton cash crop
- NNY alfalfa-grass forage crops \$2,055/ac (14,090 lb milk/acre)
- NNY apple industry \$16 million
- NNY corn silage crop (grain and silage) \$106.9 million
- NNY dairy industry \$489 million
- NNY grapes \$4,431.51/acre
- NNY Juneberries \$5-7/qt, \$8/8 oz jam
- NNY livestock: beef 112 beef producers added 2012-2017
- NNY livestock: poultry numbers >400% growth 2012-2017
- NNY livestock: swine numbers 74% increase 2012-2017
- NNY soybeans >\$6.31 million
- NNY vegetable value sampler: \$14/cherry tomato plant, \$3,491/ac baby ginger, \$2.24 sq ft zucchini, \$21 ft onions, \$5.63-7.08/sq ft cucumbers, up to \$12 lb winter salad crops

NNY Maple Industry: \$12 Million and Growing toward \$15 Million

In 2008, then-Cornell University's NNY Maple Specialist Mike Farrell issued a report that predicted NNY could double its maple industry from \$5 million to \$10 million.

From 2007 to 2017, the number of maple farms in NNY increased 25%, and production in gallons of syrup more than doubled.

In 2019, Farrell estimated NNY maple production at \$12 million and predicts it can yet reach \$15 million!





Northern New York Agricultural Development Program

Farmer-Driven Research

**Real-World Results
for NNY & New York State**

*Made Possible by Funding from
the New York State Legislature*

Established by the New York State Legislature

Unprecedented Water Quality Research

SOIL HEALTH

Ag Environmental
Stewardship

Tile Drainage Science

2,578
Small
Farmers



2,018 New
& Beginning
Farmers

962 Young Farmers

23 Top 10 State Rankings

Fiscal Efficiency

Journal of Dairy Science

NY'S 2ND HIGHEST AG SALES REGION

\$776.5 Million
in Sales



High Tunnel 4-Season Research

2,638
Female
Farmers



NY'S FIRST "SUPER FRUIT" RESEARCH NURSERY

Biocontrol National Success Story

Emerging Honey Production

**\$15 Million Maple
Industry Potential**

Local Foods/Hubs



**Soil & Water
Best Practices**

*Lake Champlain
Lake Ontario Watersheds
St. Lawrence River*



Timely Response Crop Disease Sentinel

CLIMATE ADAPTABILITY



**RESEARCH
FRONTRUNNERS**

PBS TV Mountain Journal

Research results/updates available at www.nnyagdev.org, by RSS, mail, email, and text.

For More Information:

NNYADP Coordinator Michele Ledoux, 315-376-5270, mel14@cornell.edu

NNYADP Publicist Kara Lynn Dunn, 315-465-7578, karalynn@gisco.net