



NORTHERN NEW YORK AGRICULTURAL DEVELOPMENT PROGRAM

Annual Report

January 2019



• PRACTICAL RESEARCH REAL-WORLD RESULTS •

LAND STEWARDSHIP • WATER QUALITY
CLIMATE ADAPTABILITY

• ANIMAL, CROP & SOIL HEALTH •

ECONOMIC RETURN-ON-INVESTMENT

• ENVIRONMENTAL SUSTAINABILITY •

GROWING INTO NNY'S \$10 MILLION

MAPLE INDUSTRY POTENTIAL

• LOCAL FOOD HUBS •

NEW PRODUCT/NEW BUSINESS

INNOVATION

• NYS' 1ST "SUPER FRUIT" NURSERY •

POLLINATOR-FRIENDLY

• PRECISION MANAGEMENT •

WHOLE-FARM NUTRIENT EFFICIENCY





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Real-World Research, Practical Results Fuel NY State's Ag-Economic Engine

This annual report highlights the broad return-on-investment (ROI) value to New York State from Northern New York Agricultural Development Program research projects. That ROI on funding provided by the State Senate also pays dividends in agricultural land and water stewardship advances.

Per the last reported Census of Agriculture, NNY regional farmers manage more than 1 million acres of farmland on 4,268 farms with an annual employee payroll of \$52.9 million and a product market value of \$595.7 million.

The NNY region's diverse soils, from well-drained loams to poorly-drained clay, make it an ideal field-testing grounds for developing best management farming practices. This report includes a snapshot of why NNYADP research is critical for:

- enhancing natural resource conservation/sustainability
- maintaining land and water quality; developing practices to add soil health
- developing precision management for nutrient use efficiency
- evaluating drought-tolerant crops and the value of irrigation
- adapting to changing climate conditions, including extreme heat, cold, drought conditions, with data-driven science
- growing New York State's local food hubs' production capacity with the associated jobs and taxable land base
- continuing to grow into NNY's \$10 million maple industry potential
- demonstrating methods for time and cost savings, crop yield and revenue gain; pest and disease management; and soil, crop and milk production restoration
- discovering and developing insight in support of region-specific, farm-based revenue centers for New York State:

Alfalfa:	\$180-300/ton cash crop
Alfalfa-grass forage:	\$2,055/ac (14,090 lb milk/ac)
Apples:	\$16 million
Corn crops:	\$106.9 million
Dairy industry:	\$489 million
Grapes:	\$4,431.51/ac
Honey:	>\$2.36 million
Maple industry:	\$5-6 million, \$10 million potential
Soybeans:	>\$6.31 million

Please read on to learn more. . .

Science-Based Ag Environmental Stewardship for NY

Northern New York's diverse soils, growing conditions and micro-climates spanning New York's Great Lakes-St. Lawrence River region to the Adirondacks and Lake Champlain Valley provide ideal "testing grounds" for research benefitting the agriculture industry, farm-based economy, and environmental stewardship statewide. A sampling of projects with value indicators follows.



Whole-Farm Nutrient Mass Balance (NMB) Precision Management

VALUE: Identifies environmentally-sustainable ways to improve farm-wide use of nitrogen (N), phosphorus (P), and potassium (K) to benefit watershed and land stewardship, farm efficiency, milk production, and crop yield. Development of this precision software tool to date has produced a ~25-30% decrease in N and P import without milk production loss by participating farms.

"... the ultimate goal (is) to be both economically and environmentally sustainable."

— Dr. Quirine M. Ketterings, Director,

Cornell University Nutrient Management Spear Program

Extended Value: While NMB feasible balance ranges are being developed for dairy farms exporting milk, the NMB approach applies to all farms by adjusting interpretation based on main export (lb. beef, eggs, etc.).

Corn Yield Potential Field Mapping for Dairy/Livestock/Cash Crops

VALUE: Environmental losses of nutrients not used by crops plus cost, time and labor to produce dairy/livestock/cash crops are reduced through zone-based management and field mapping that guides better allocation of fertilizer and manure resources. 2018 NNY farm harvest data supports farm-specific, field-specific, yield-based zone management for corn growers. Per-farm yield averages and variability are determined over 3-or-more-year timeframe. Field-by-field nutrient use in trials produced >110% corn yield gain over 8 fields.

"The corn yield potential study is one project where Northern New York took the initiative and leads the rest of the state with its focus on research." — Dr. Quirine M. Ketterings

Extended Value: Current field mapping focus is on N use, but this work can be applied to other nutrients, manure application methods, tillage decisions, crop variety/seed density choices, foliar applications.

NNYADP Research-Prompt Initiates Nutrient Use Efficiency/Runoff Reduction Review

VALUE: NNYADP farmers prompted a Cornell evaluation into how corn breeding/production advances impact corn yields and the need to update nitrogen application guidelines to enhance nutrient use efficiency and reduce runoff. NNY corn grain/silage crops' value: \$106.9 million.

Soil Conservation, Drought/Heat-Tolerant Dairy Forage Option

VALUE: Early field trials indicate NNY dairy farmers may be able to grow sorghum for soil health and conservation benefits as well as a forage crop with yield and quality equal to corn silage.



First-of-a-Kind Trials in New York State: Agricultural Watershed Stewardship Research along Lake Champlain

VALUE: The farmer-driven NNYADP has identified the need for research to better understand how the use of tile drainage interacts with soil, crops, and water resources. This multi-year research is building baseline data on agronomic (crop yield/quality) and water quality impact from tiled and naturally poorly-drained fields as well as cost. Early data indicates the opportunity for 7-12% return on investment in 5-10 yrs on some farms.



NNYADP research initiated at Peck's Homestead Farm produced the science and science-based solution needed to manage NNY's most damaging alfalfa pest. That biocontrol solution is now being applied to other crops across New York State and in other states.

- \$30,000-\$60,000/yr every year depending on size of infestation and speed of alfalfa stand loss (*Cornell/Shields*).
- Biocontrol nematode cost: ~\$28/ac+application cost
- Nematode application now finding success vs. pests in other crops (corn, berries) in New York State and other states (OH, MI, NM, TX. .).

"The Northern New York Agricultural Development Program snout beetle project has paid dividends here. . . we now have two fields (still) producing more than 60 percent alfalfa into their sixth year. . . best first cutting yield ever."
— Lynn Murray, Murcrest Farms, Copenhagen, NY

"The Northern New York research showed a science-based benefit. . . that kind of information helps make our decisions." — Cody Reynolds, Crops Manager, Windsong Dairy, Adams Center, NY; 1st nematode application in 2015



NNYADP Success Applies to Other Pests/Crops/States

Following the successful NNYADP project that initiated and designed the use of biocontrol nematodes to reduce the devastating impact of alfalfa's #1 crop pest, alfalfa snout beetle (ASB), NNY farmers and a research team led by Cornell University entomologist Dr. Elson Shields are now evaluating nematode use to combat corn rootworm (CRW, at left) on 85 fields in NNY. The nematodes have persisted in fields after rotation to corn and are known to increase in corn years 2-4 when CRW larvae feed on corn roots.

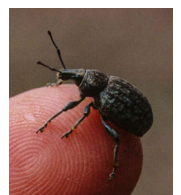
Impact for Alfalfa & Corn Growers: Left untreated, ASB costs NNY farmers w/100-cow dairies \$30,000-\$60,000/yr every year, depending on infestation level and speed of alfalfa stand loss. If biocontrol nematodes prove as effective against CRW, farmers could potentially eliminate the need and expense for corn varieties , with incorporated BT toxin for corn rootworm or for soil insecticide use on conventional corn varieties.

Extended Value: The science developed with NNYADP's long-term support of this project is now being tested in multiple crops, including berry crops, in NNY, and in multiple states.

Breeding Beetle-Resistant Alfalfa

Farmers can now plant Cornell-bred alfalfa with increased resistance to alfalfa snout beetle in tandem with biocontrol nematodes to protect crops valued at \$82/ton@4 tons/ac.

"Now that beetle-resistant alfalfa seed is available (NNYADP trials), we are that trying that as well."
— Doug Shelmidine, Sheland Farms, Belleville, NY; host of on-farm ASB-resistance & nematode trials





Climate Extreme Adaptation for Calves, Cows, Crops & Conservation

Reducing Heat Stress in Dairy Calves

VALUE: Heat stress in calves costs New York State ~\$253,000 in annual losses of dairy animals up to 1-year-old. This NNYADP research showed the positive impact/savings of proper choice of feeding strategy to protect calves from damaging heat extremes. At left, young dairy farmer Mark Murray in the calf barn at Murcrest Farms in Copenhagen, NY.



Reducing Costly Respiratory Illness in Dairy Calves

VALUE: This on-farm research indicated that barns, calf housing, bedding and calf care protocols can all be adjusted to reduce the risk of winter respiratory illness that can reduce weight gain and 1st lactation milk production, and increase age at 1st calving, and associated revenue/costs. Changes can reduce the number of sick calves and treatment (93.4% of calves diagnosed with respiratory illness receive antibiotics).

Mastitis Prevention Research Shows Winter Season Udder Treatment Choice Reduces Risk

VALUE: NNYADP research indicated the choice of udder application for use under NNY winter conditions can significantly increase *Staph* (63%) and *Strep* (223%) infections in milking cows and increase costs. At right, dairy farmer Heather Hyman and veterinarian Dr. Jessica Scillieri-Smith talk with a WWNY-TV reporter about NNYADP on-farm research results.



Heat Abatement for Cow Comfort, Milk Production

VALUE: This study showed the need for implementation of systems to reduce heat stress in dairy cows which has cost the NYS dairy industry an annual loss of ~\$23 million/yr in lower milk production/premium components, animal health/reproduction, and farm revenues.

"The higher-producing cows appear to be more sensitive to heat stress.

Dairy cattle respond to heat stress in several ways, including greater standing time, reduced eating activity and less rumination, increased water consumption, and reduced milk production."

— Katie Ballard, Director of Research, WH Miner Agricultural Research Institute, Chazy, NY

Selective Breeding for Climate Tolerance

VALUE: Cornell plant breeders with on-farm trials in NNY are selectively increasing the winter-hardiness/micro-climate tolerance of alfalfa varieties without yield or quality loss. Alfalfa is valued at ~\$135/ton DM (dry matter) for milk production and \$180-300/ton as a cash crop.

At right, Cornell Plant Breeder Julie L. Hansen updates farmers on alfalfa field trials at Sheland Farms in Belleville, NY.



Climate-Adaptable Precision Nitrogen Management

VALUE: One NNY farm saved \$20,000 during trials contributing data to the development of the award-winning, computer-based Adapt N software that helps reduce nutrient losses to soil, air & water and associated costs. Cornell researchers estimate the profit possible with use of the tool is \$26-53/acre (Cornell/Van Es).

NY Dairy Crops & Water Quality Research

Multi-Year Crop Disease Survey Alert Farmers

Growers in NNY, and statewide, are alerted to emerging and common crop pathogens by the NNYADP corn & soybean disease survey established in 2013 with 12 sentinel cornfields, 21 soybean fields and on multiple farms. Fields with diverse soils, growing conditions and cropping practices are scouted at various stages of crop growth. NNY soybean acres (>\$6.31 million) more than doubled 2012-2017.

“Multi-year surveys better capture variations in weather from year-to-year. . . The data helps farmers make more informed corn and soybean variety selections, evaluate soil and crop debris for potential problems, and plan management strategy.”

— Cornell Plant Pathologist
Dr. Gary C. Bergstrom

NNY Crop Disease Survey Results 2013-2018

- 2018: NNY showed the highest trap counts for Western bean cutworm in corn crops; more data pending
 - 2017: Four corn diseases, 4 soybeans diseases identified; common rust widespread in corn; white mold, stem canker, pod & stem blight most commonly identified diseases in soybeans
- 2016: 1st confirmation in NNY of Charcoal rot & Phytophthora root rot
 - 2014, 2015, 2017: Head smut re-emerges in corn, not in NY since 1980s
 - 2014: Northern stem canker in soybean; 1st confirmation in NYS in northern & western NY
 - 2013-2016: Northern corn leaf blight dominate disease in corn



Corn trials for nutrient use efficiency

NNYADP field trials' yield-to-moisture data is an excellent guide for selecting hybrids for yield/maturity for NNY conditions, and for cash crop sales for feed or ethanol production. NNY corn grain/silage crops' value: \$106 million.

“A focus by the seed industry on silage-specific corns has increased the need for independent evaluation of the corns' traits, particularly to determine their merit, in a dairy feeding program.”

— Cornell University Dairy Forage Specialist Joe Lawrence

Water Quality Research

Increasing water quality on dairy farms increases forage digestibility and milk production. This NNYADP project identified >15% of participating farms as above the problem threshold and alerted others to the need to maintain water quality to prevent the loss of 5.5-14.2 lbs milk/cow/# of water quality factors/farm.

“I think it's a great idea they thought to do this study on how water quality impacts a cow's diet and milk production performance.”

— Michael A. Northrup, Northrup Dairy Farm, Rodman, NY

Adding Conservation, Forage Quality, Technology

NNYADP on-farm research trials proved hay crop silage yield/quality can be achieved for soil conservation and to add dairy forage by double-cropping with winter rye and triticale for spring harvest.

Evaluating how new grass and alfalfa seed grows under NNY soils & climate included a meadow fescue (MF) variety with reportedly higher digestibility which enhances cow health and milk production. Trials also indicated planting reduced-lignin alfalfa with MF can add digestibility to boost milk production (\$17-20.75/cwt by milk class during trials). Alfalfa-grass forage improvement has been generally valued at up to 14,090 lb. milk/acre and ~\$2,085/ac (Cornell/Cherney).



High-Tech Forage Research: Cornell's Dr. Debbie Cherney has pioneered the use of digital imaging to estimate optimal harvest time for high quality dairy forage production. She notes, *“Essentially, until now (NNYADP project), we have not had a quick or effective way to estimate the alfalfa percentage in a mixed stand prior to harvest.”*

Growing into Northern NY's \$10 Million Maple Industry Potential

Northern NY's maple industry is estimated to have a current value of more than \$5 million with the potential to become a \$10 million industry (Cornell, M. Farrell).

"The Northern New York region has tremendous potential to grow its maple industry." — Dr. Joseph Orefice, Director of Forest & Agricultural Operations, Yale University; Immediate-Past Director, Uihlein Maple Research Forest, Lake Placid, NY



Research Responds to Climate Impact

Maple producers dealing with the increasing unpredictability of sap flow due to early-winter thaws, extended spring freezes, and exceptionally warm stretches look to NNYADP research at Uihlein Maple Research Forest (Lake Placid) and regional sugarbushes for insight. Recent NNYADP results provide data to help guide tapping schedules for optimal maple and birch sap production with trials evaluating different sizes of sap collection equipment for vacuum and sap gain.

Value: Profit can be lost if producers tap too early or tap after an unexpected mid-winter thaw. Each inch of added vacuum = 5-7% sap gain (avg).

Trials also provided data on end-of-season taphole plugging that can decrease income.

Tapping time also impacts sugar content in the sap. Maple syrup: \$47.40/gal avg.

New Product Development: Birch Syrup

NNYADP research has responded to producer interest in new product development with birch syrup production trials as a way to extend the short maple production season and add to maple producer sales with a niche product.

Value: \$80/half-gal in NNY (2017), as much as \$200/gal

"I was interested to participate in this NNYADP research as a way to develop an opportunity for extra income. This type of regional research is part of helping landowners discover untapped resources."

— Joy Herfurth, Brandy Brook Maple Farm, Ellenburg Center, NY

Extended Value: 2018 NNYADP maple-birch tapping project results were presented at regional producer meetings in 2018 and at the 2019 New York State Maple Conference.

Associated Research: Earlier NNYADP research re: maple sap collection practices influenced 2018 trial conclusions in that the using new spouts/tubing allows early-season tapping of maple trees without serious risk of yield reduction, while birch trees should not be tapped early due to the risk of early taphole closure.

NNYADP Initiates Cloning of NY's Sweetest "Sweet Trees"

Sugar maple "sweet tree" genetic cloning trials initiated by NNYADP research in 2017 in Lake Placid showed it may be possible to root cloned seedlings to produce higher-sugar sap-producing sugar maple trees with top genetic lines to grow NY's maple industry.

With the initial success of those NNYADP trials, the work now continues longer-term with Cornell University funding.



Precision Apple Orchard Management Adds Efficiency & Quality

NNYADP precision orchard management in-orchard research is progressively developing key practices for the harvesting of larger, higher quality, high-consumer-interest apples suited to production in the NNY climate. The NNY apple industry value is estimated at \$16 million.

Irrigation Trials:

Fruit size and quality influence income/acre; a proper water supply that limits/eliminates drought stress is essential to maximizing apple size at any given crop load. Regional growers are helping Cornell University researchers refine computer models designed to more precisely irrigate orchards on a weekly basis to improve yields. Cornell researchers estimate that in some seasons a lack of irrigation can lead to small fruit and economic losses of \$3,850 to \$6,809 per 2.5 acres, depending on tree density and higher for late-season varieties.

Orchard Thinning Trials:

Precisely-guided orchard thinning reduces grower costs and encourages use of pollinator-friendly treatments. For each variety of apple, each individual orchard, and each grower, there is an optimum number of fruits/tree to achieve desired cropload for best yield and desired fruit size and quality, and highest economic return.

This is achieved by bud thinning. Data from NNY apple growers is enhancing computer-modeling accuracy and sensitivity, particularly to extreme weather conditions, to guide precisely when bud thinning is needed. Sudden drops in temperature, extended cold or rainy seasons, hail, and other challenges can damage apples and grower income. To prompt fruit size and quality, the modeling also directs hand-pruning to reduce competition among flowers and fruitlets. Recent NNYADP trials focused on the popular and high-value Honeycrisp and Gala varieties.



Orchard thinning workshop for NY apple growers in NNY.

Enhancing Honeycrisp Apple Production:

Precision harvest trials are underway to support Honeycrisp short-term and storage-based sales; Honeycrisp call sell at prices 2-3x higher than other varieties (\$2.3 / lb: US avg Nov. 18).

Pest ID, Grower Education, Environmental Benefits

NNY apple grower education on trapping/scouting/precision application for managing key orchard pests has included trials demonstrating that 96% (avg) clean fruit@harvest can be achieved with time/expense savings and worker/environmental health benefits associated with reduced spraying.

"Changes in the landscape of Northern New York apple orchards over the past decade have influenced which insects have become economically-significant pests of the apple industry in the region."

— Anna Wallis, past Cornell Cooperative Extension Fruit Specialist

NNYADP: Growing the Local Foods Economy

Regional Food Hub • Pollinator Health

Berries • Cold-Climate Grapes • Juneberries



NNY FOOD HUB

SURVEY: 254 consumers, 25 food buyers, 125 farmers

VALUE: NNY food hub survey provided data input for

the development of localized food hub, e.g., 66% of farmers sell 75-100% of their products in NNY, Opportunities to sell fresh produce locally translates to farm product values of cherry tomatoes: \$14/plant, \$3,491/acre; baby ginger: up to \$16/lb; cucumbers: \$5.63-7.08/sq ft; zucchini: \$2.24 sq ft; onions: \$21/ft; winter salad crops: \$12/lb.



At left, researchers check spring bloom in the young Juneberry nursery, NY's 1st-of-its-kind site.

JUNE BERRY: NY State's 1st "Super Fruit" Nursery Featured on PBSTV

The NNYADP established New York State's first "Super Fruit" Juneberry nursery to evaluate the high-antioxidant fruit for production under NNY cold- and micro-climate conditions. Trials are now underway on NNY farms. **VALUE:** \$3.25/pt Juneberries vs. \$2.75 blueberries, Juneberries: \$5-7/qt and 8 oz. jam \$8

EMERGING AG SECTOR:



Honey Production

NNY's first bee health survey evaluated regional bee colonies for disease/pest status and provided data to educate beekeepers

on trends and best management practices.

VALUE: NNY honey industry: >\$2.36 million.



"We wanted to feature this research... to give our viewers a look into the fascinating work going on to develop several varieties of Juneberries for commercial-scale production that may, in the not-too-distant future, be available at farmers markets across New York State."

— Thom Hallock,

Mountain Lake PBS TV Senior Producer,
Plattsburgh, NY, Summer 2018



BERRY CROPS:

Transferring field crop biocontrol to protect berry crops

13 NNY farms participated in trials evaluating the

NNY alfalfa snout beetle nematode treatment to protect berry crops from vine & root weevils.

VALUE: Crop investment protection/establishing cost: blueberry: \$8,500/ac, raspberry: \$6000/ac, strawberry: \$3,700-8,500/ac (Cornell/Shields)

"This Northern New York Agricultural Development Program project has addressed a big problem (up to \$30,000/yr in lost strawberry crop) for our farm business"

— Robert Rulfs, Rulfs Orchard, Peru, NY



COLD-CLIMATE GRAPES, AWARD-WINNING WINES

New variety trials are underway in the grape nursery at Willsboro Research Farm. At right top:

NNY growers at Willsboro, below: NNY award-winning wines

VALUE: \$4,431.51/grape acre

Soil Health • Cover Crops • High-Value Vegetables



Rebuilding Soil Health: “Seeing is Believing”

NNYADP vegetable research in 2018 demonstrated how using cover crops after early season vegetable harvest can restore soil health. Growers touring field trials saw the result of using single cover crops and multi-species mixes that they may have been reluctant to invest in due to cost and, in some cases, establishment requirements.

“... research trials (show) first-hand how the newer cover crop mixes are working in a test field before growers commit precious dollars to try them on their own land... those with smaller acreage can struggle to find space and the justification to take fields out of production just to plant cover crops... see it to believe it.”

— CCE Vegetable Specialist Amy Ivy

Associated Research:

Recent NNYADP field trials have evaluated opportunities for early harvest of popular summer high tunnel-grown vegetable crops and optimizing nitrogen uptake in winter-grown spinach.

Reduced Tillage Handbook Available Free Online

To read or download this handbook for vegetable, row crop and small grain growers, visit the Horticulture section at www.nnyagdev.org.

NNYADP research results keep vegetable growers apace with increasing consumer interest in locally-grown products. Nearly 60% of the 254 consumers participating in the NNY food hub feasibility survey (p. 9) purchase food locally in their county or the NNY region monthly or more frequently. Project data provides growers statewide with practical information for crop production.

Cover Crops for Soil Conservation

VALUE: a) opportunity to lengthen vegetable growing season and increase sales, b) enhances soil health, c) encourages use of pollinator-friendly mixes, d) demonstrates use of reduced tillage practices or soil conservation in organic and conventional crops, and e) identifies ways to reduce labor and expenses.

Cherry Tomato Time-Saver Trials

VALUE: Proof of time-saving plant training techniques for veg growers: 34.8 lbs/hr vs. 45.1 lb/hr with 11.3 lb/plant vs. 15.8 lb/plant; avg net revenue \$39.27-\$55.31/plant. Similar pepper trials showed one system took less time and averaged 1.5 lbs more/plant.

High Tunnel/High-Value Fresh Market Crop Season and Sales Extension Trials

VALUE: Growers first to market with peppers, tomatoes, and other fresh market vegetables gain a distinct advantage in the marketplace.

NNYADP trials showed opportunity for:

a) earlier spring crops, b) double yields, and c) potential for \$1390 in added net revenue with some crops. Crop value: tomatoes: \$14/plant; peppers: 4.98 lb/plant (avg) Aug 23-Nov 3 high tunnel vs. field-grown peppers: 2.19 lb/plant Sept 9-Oct 17.

“The peppers clearly benefitted from the protection of a high tunnel, with more than double the production and a significantly earlier first harvest. Harvest timing is an important factor for peak sales and profitability in Northern New York.”

— Cornell Cooperative Extension Vegetable Specialist Amy Ivy



FUNDING CREDIT:

**Funding for the Northern New York Agricultural Development Program
is supported by the New York State Senate
and administered by the NYS Department of Agriculture and Markets.**

NNYADP FARMER COMMITTEE:

**Nearly 100 farmers voluntarily serve on the Northern New York Agricultural Development
Program committee to identify and prioritize research needs and technical assistance
for the six northernmost counties of New York State.**

NNYADP CO-CHAIRS: Jon Greenwood • Joe Giroux • Jon Rulfs

CLINTON COUNTY

Sam Dyer • Tom Everett • Mary Fortin • Willie Giroux • Joy Herfurth • Doug Lamoy
Richard Lamoy • Tony LaPierre • Rob McDowell • Al & Cindy Mulberry
Tom Remillard • Beth Spaugh-Barber • Dan Tetreault • Jeremy Youngman

*Agriculture is one of Clinton County's largest economic sectors with a combined output value
of >\$148 million supporting vibrant local food systems.*

ESSEX COUNTY:

Ian Ater • Lucas Christianson • Tony Corwin • Henry Drinkwine • Craig Dumond
Lee Garvey • Linda & Shaun Gilliland • Adam Hainer • Rob Hastings • Melody Horn
Kristen & Mark Kimbal • Bernard Leerkes • Bob Perry • George Sayward • Sam Sherman
*Essex County is home to Adirondack Harvest with 100+ members located across 12 counties selling
local foods, cheeses, wines, grass-fed livestock, maple, forestry & fiber products.*

FRANKLIN COUNTY:

Bruce Bonesteel • Donna Foley • Steve Gokey • Doug Malette • Randy Ooms
Jo Ellen Saumier • Kirby Selkirk • Norm Shipman • Allan "Bucky" Smith • David Stauffer
*In Franklin County, from 2007 to 2012, the number of farms increased 14%
with a >24% increase in market value of products sold.*

JEFFERSON COUNTY:

Dave and Dani Baker-Belding • Emily Beller • Jay Canzonier
Dennis Forrester • Delta Keeney • Mike Kiechle • Greg Mason
Lynn Murray • Doug Shelmidine • Nick Surdo • Ed Walldroff • Steve Winkler
*Jefferson County is a leader for dairy production and total agricultural product, crops and hay sales.
Farmers here manage about 36% of the county landmass.*

LEWIS COUNTY:

Emily Beller • Ralph Chase • Violet Colwell • Larry Herr • Ken Krokowski • Nadeen Lyndaker
Patsy Makuch • Jake Moser • Gary Rosiczowski • Sharon Stewart
Bill Stine • Dean Yancey • Haskell Yancey
*Lewis County's maple industry is consistently among NY's top producers,
helping to grow NNY into its' \$10 million maple-production potential (Cornell/Farrell).*

ST. LAWRENCE COUNTY:

Kevin Acres • Jack Adel • Bob Andrews • Tim Burley • Dan Chambers • George Erdman
David Fisher • Jeff Jenness • Brian Knight • Clark Lashomb • Jim Sheehan
Kenneth Tupper • Andy Weaver • Bob Zufall
*Agriculture is one of the "most significant contributors to the economy... ranking 4th in the State
for market value of agricultural products, 71% from milk and other dairy products" with >3,200 farmland
parcels w/ "a combined taxable value in excess of \$230 million." (St. Lawrence County Planning Office)*

Adjunct: Oneida County: Scott Martin, Mark Savage



Northern New York Agricultural Development Program

**Farmer-Driven Research • Practical Real-World Results
for NNY and New York State**

**Research results and updates are available at
www.nnyagdev.org,
and by RSS feed, and on request by mail, email, or text.**

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