



Cornell Cooperative Extension

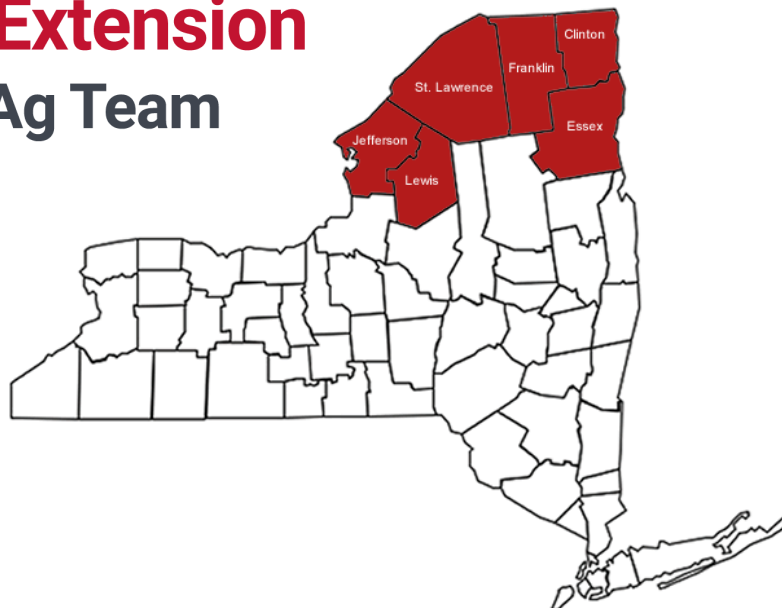
North Country Regional Ag Team

2023 Annual Report

Cornell Cooperative Extension

North Country Regional Ag Team

“The North Country Regional Ag Team is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex counties.”



Mission

“The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people, and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties by promoting productive, safe, economically, and environmentally sustainable management practices and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry.”

Website: <http://ncrat.cce.cornell.edu/>

Facebook: <https://www.facebook.com/CCENorthCountryRegionalAgTeam/>

Blog: <https://blogs.cornell.edu/northcountryregionalagteam>

YouTube: <https://www.youtube.com/channel/UCxb3fv12XdCA3GjuDsflM3Q>

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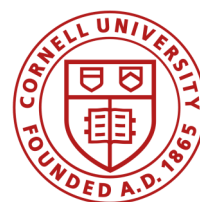
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A Year in Review

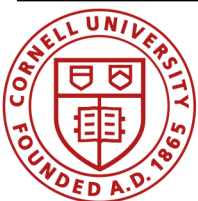
The 2023 growing season in the North Country has had a little bit of everything – droughty beginnings, a very wet middle, plenty of pest and pathogen challenges in the later season, and a relatively sunny and dry conclusion this fall. The CCE North Country Regional Ag Team (CCE NCRAT) is again grateful for a continued role in supporting all its agriculture and farmland constituents through another year of production, marketing, and problem-solving. The team hopes to continue offering support and recommendations to all again in 2024.

The CCE North Country Regional Ag Team collaborates with the six county CCE associations, many other partners, state and federal agencies, small and large businesses, and other CCE regional and statewide teams to bring analysis, guidance, discovery, and innovation to all farms and communities of Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties. The staff of dairy and field crops specialists support all NNY dairy, livestock, and crop farms - large and small, conventional and organic, full-time and part-time farmers, as well as their English- and Spanish-speaking employees. In addition to farms, the team works with associated ag businesses like veterinarians, nutritionists, custom operators, crop consultants, seed and supply vendors, and many pieces of our ag economy with research, individualized technical support upon request, and pertinent educational programs. The team aspires to keep all farms and ag businesses progressing, capitalizing on every opportunity to become more efficient, profitable, compliant, and sustainable.

All these new developments help to sustain an ever-growing agricultural economy in the North Country. The 2017 Census of Agriculture estimated total sales of all ag commodities in the 6-county region to be well over three quarters of a billion dollars annually and is expected to be larger with the next published census in 2024. To remain viable and productive in this competitive environment, North Country farms need to constantly seize every advantage, adapt to a volatile climate and markets, and become more efficient by keeping costs down and productivity up. Our global marketplace often provides thinning margins, so the economic impact of tiny improvements can be enormous for farms as they strive to remain profitable. Reducing calf illness from 33% to 20% can save \$585 per year in treatment costs for a single 100-cow farm, or \$720K for the whole North Country dairy industry. Harvesting corn silage with a single percentage unit decrease in uNDF240 can increase milk production by 7 pounds of milk per cow per day, according to Miner Institute findings. For an organic 50-cow farm receiving \$28 per hundredweight, this generates more than \$35K per year. For a 1000-cow farm receiving \$16 per hundredweight, this small achievement would gain \$400K per year. Improving dairy cow lameness rates by 10-25% could save \$1.1-\$2.5M for the North Country dairy industry. Research leads to opportunities for these small improvements that add up to a big difference to the bottom line for each individual farm and for the regional ag economy.

Speaking of research, CCE NCRAT Specialists are routinely awarded funds from two farmer-driven sources: the Northern NY Agricultural Development Program and the NY Farm Viability Institute. Both organizations receive funds from the NYS legislature through the Department of Agriculture and Markets and use farmer-identified needs and priorities and farmer selection panels to determine awards. This past year, the team received awards from both agencies to further study the relationship between soil compaction and crop yield, new strategies for managing herbicide-resistant weeds, options for accommodating new restrictions on atrazine use, and benchmarking herd health and outlining case definitions for disease diagnosis and treatment protocols used on NY farms.

Like most years, 2023 brought new problems to address, new opportunities to learn, as well as new solutions to implement. The accomplishments, impacts, and research projects highlighted here are described in more detail inside this report. Please contact any of the CCE NCRAT Specialists for more information on the program or to help address a challenge on your farm.



Herbicide Resistant Management Increases Farm Net Income

Herbicide resistant weeds are becoming increasingly problematic for corn and soybean growers across New York State. Managing herbicide resistant weeds can result in higher weed control costs, but provides better weed control, improved yields, and increased net farm income.

To illustrate the economic impact of herbicide resistant weeds, there are approximately 15,000 acres of soybeans grown in the North Country region. It has been estimated that herbicide resistant marestail (confirmed in 5 of the 6 counties in NNY) is present on 5% of all field crop acres. Resistant marestail would cause an annual monetary loss of \$275,000 in NNY if soybean growers did not adjust their weed management program to control this troublesome weed. With changes in management practices these losses could be reduced to only \$40,000.

CCE North Country Regional Ag Team Field Crop Specialists are committed to remain proactive in their educational outreach to growers and continue to maintain vigilance in detecting and identifying resistant weed populations that are rapidly expanding in the North County. The team's efforts to address herbicide resistant weed management has included on-farm research trials and demonstrations, articles, grower meetings, and field days.

Since 2019, these efforts have included:

- Six on-farm herbicide trials targeting multiple resistant marestail and additional trials planned for 2024.
- Writing or co-authoring 27 extension articles about herbicide resistance management, including the March 2023 Progressive Dairy quarterly insert "The Manager" from PRO-DAIRY.
- Giving 73 in person and virtual herbicide resistant management presentations throughout New York State.
- On-farm demonstration of importing weed seeds in a used combine purchased from out of state, with more planned in the future.



Photo Credit: M. Hunter.

These continuous efforts have heightened the awareness of growers, crop consultants, and agribusinesses to closely monitor fields for the presence of herbicide resistant weed species, such as marestail, tall waterhemp, and Palmer amaranth. CCE NCRAT's on-farm research trials have provided sound research-based information needed to make informed management decisions. Delivering the most accurate information about herbicide resistant weed species will increase the likelihood that proper management tactics will be used to control these weeds and ultimately increase net farm income.

Dairy Specialist Helps North Country Dairies Prepare for FARM Animal Care Evaluations

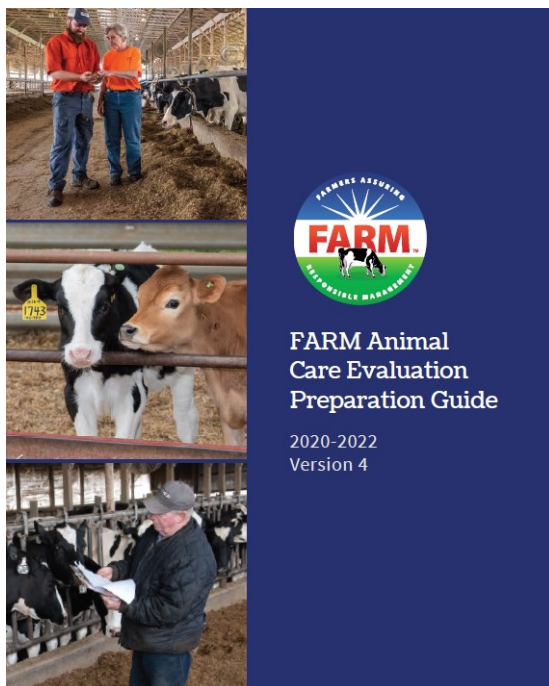
The regulations that dairy farms have to comply with will continue to increase, from environmental to workforce development and HR to animal care. There is a need to assist North Country dairy farmers to better understand and prepare for these regulations as they change and are implemented across the state and nation. Since it includes over 99% of the nation's milk supply, the National Milk Producers Federation FARM Animal Care Program directly impacts almost every North Country dairy farmer. As part of the program, dairies are evaluated at least once every 3 years, including an assessment of the facilities and animals, as well as a review of documentation and protocols. During an evaluation, if a farm does not meet certain targets, it will trigger a mandatory corrective action plan or a continuous improvement plan, and they will have up to 9 months or 3 years, respectively, to address it and achieve the target.

Understanding what paperwork is needed and how to prepare for an evaluation can be overwhelming for an individual farm. To help provide sound unbiased information to local farms, a CCE NCRAT Dairy Specialist became a certified FARM Program evaluator in 2017. For the last seven years, CCE NCRAT has provided updates about the FARM Program during local dairy educational programs, conducted on-farm research to assess how well local farms are prepared for and meeting the targets of the program, and worked with individual farms one-on-one to help them prepare for their evaluation. Further, CCE NCRAT has become the statewide Cornell Extension resource on the FARM Program, which has included collaborating with other Regional Ag Teams to help deliver support.

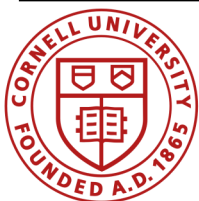
Most recently, a North Country farm reached out to CCE NCRAT for help preparing for their upcoming FARM evaluation. The Dairy Specialist went through all the farm's paperwork and protocols, and summarized for the farm what was missing and what needed to be updated. The Dairy Specialist also walked through each age class of animals on the farm and assessed the animals using

the program scoring charts and identified areas where program targets were not met and discussed potential ways to address them. The farm was appreciative of the individualized information and resources provided. A couple months later, they had their official FARM Program evaluation, and afterward, they reached out to CCE NCRAT to say thank you and that during their evaluation everything looked good.

Having CCE NCRAT provide this information and support is extremely helpful for North Country dairies. A new version of the FARM Animal Care Program will become active next summer, and the CCE NCRAT Dairy Specialists have already started planning how to ensure local farmers are aware and prepared.



<https://nationaldairyfarm.com/>



Preparing Corn Growers for Proposed Changes in the Use of Atrazine

Atrazine is an important and widely used herbicide in field corn because it is economical, has a flexible use pattern, long residual herbicidal activity, is effective against a broad spectrum of weeds, and is an important tool in the management of herbicide resistant weeds. The Environmental Protection Agency (EPA) has proposed mitigation measures to reduce the runoff risks to aquatic plant communities from the use of atrazine, including limiting when and how atrazine can be applied and reducing the maximum use rates in field corn. The use of atrazine has been a foundational herbicide used in preemergence field corn weed control programs in Northern New York (NNY) for decades.

While atrazine has been proven to be effective for broad spectrum weed control, NNY corn growers have relied on atrazine use rates higher than those outlined in the EPA's proposed label changes that could be implemented as soon as Fall 2023. There is an uncertainty of whether reduced rates or no atrazine entirely can provide acceptable weed control in field corn without additional costs or reduced weed control.

In 2023, CCE NCRAT Field Crop Specialists have been discussing these proposed atrazine use and application rate changes with corn growers, crop consultants, and agribusiness during individual field visits and grower meetings. This information has been presented at fifteen in person and virtual CCE and industry sponsored grower meetings and field days to over 625 attendees throughout New York State, including eleven educational events in NNY.

To further prepare corn growers for the possible reduction of atrazine use rates, CCE NCRAT Field Crop Specialists successfully secured funding from the Northern New York Agricultural Development Program to conduct two on-farm research trials in NNY to evaluate corn weed control programs with and without atrazine during the 2023 growing season.

Two field days were held in NNY to showcase these important on-farm research trials. Growers, agribusinesses, crop consultants, and chemical representatives were given the opportunity to tour the plots to compare the effectiveness of each treatment. Attendees learned about the proposed atrazine herbicide label changes, strategic weed control strategies, and proper identification of many weed species found in NNY field crops. It also provided an opportunity for participants to receive continuing education credits needed to maintain their pesticide applicator license.

This research will compare currently used rates of atrazine, reduced rates, and no atrazine at all in field corn weed control systems on farms in NNY. The development and evaluation of several herbicide programs with and without atrazine will help NNY corn growers make informed decisions about their weed control systems.



Photo credit: M. Hunter.

Improving Labor Efficiency on Northern NY Dairy Farms Through English and Spanish Training

Many dairy farms in Northern NY rely on some Spanish-speaking hired labor, which creates a challenge for producers to provide necessary training to improve farm efficiency and ensure best management practices are followed. After the success of the CCE Calving Workshop regional program offered by CCE NCRAT this past Spring, there has been an increasing demand for hands-on training in English and Spanish. Most of the attendees are native Spanish speakers working in the maternity and fresh cow areas, and in calf barns.

The CCE NCRAT Dairy Specialists have conducted several trainings on individual farms in multiple counties, tailored to the specific farm's needs. The Specialists cover a range of topics, such as the stages of calving, care of newborn calves, and postpartum cow care. Most farms are interested in training their personnel on the stages of calving to reduce stillbirths or calves born in an alley rather than the maternity pen.

Through these trainings, the Dairy Specialists have also been able to address miscommunication problems on the dairy. For example, colostrum and newborn protocol management training was delivered in Spanish for a farm with herd health challenges, allowing CCE NCRAT to identify and address miscommunication between Spanish-speaking employees and English-speaking managers regarding the newborn calf vaccine protocol.

The feedback received from these hands-on trainings has been extremely positive. Many attendees have expressed how much they enjoyed and learned from them. It is evident that farm personnel are engaged during the training, asking questions, actively practicing with the cow-model, and sharing personal experiences. These trainings have also allowed for more collaboration between CCE NCRAT and the herd veterinarians to troubleshoot issues on these specific dairies, and address more regional challenges.



Photo credits: L. Ferlito.



Is Soil Compaction Limiting Crop Yields Across NYS?

Soil health is a priority for farmers and has been an area of focus for Cornell and CCE research and outreach efforts across NYS, but it includes a complex set of problems to detect, evaluate, and correct on commercial farms. Farmers and crop consultants recognize that properly functioning soil is critical for long term farm viability and have begun making management changes toward that goal, such as establishing more winter cover crops and reducing or eliminating tillage on many fields and farms each year. Soil compaction, one critical aspect of soil health, is a form of soil degradation from decades of conventional crop production with heavy field traffic and has been shown to limit air and water infiltration, root penetration, and overall crop plant productivity and climate resilience.

Results of previously funded Northern New York Agricultural Development Program (NNYADP)- and New York Farm Viability Institute (NYFVI)-funded research projects revealed a link between soil compaction severity and historical corn yield on several conventionally tilled dairy farm fields. Both non-profit organizations are farmer-driven, and use committees and selection panels made up of farmers to identify needs and opportunities, and to award funds to projects that will produce practical, real-world results that benefit farms, agricultural businesses, and the communities to address those needs. Initial projects conducted in NNY through a collaboration with Dr. Quirine Ketterings at Cornell, revealed the universal presence of soil compaction on farm fields in 2019 and then, in 2021, a strong relationship between severity of compaction and historical corn yield. Those preliminary studies involved a just a small number of fields on a small number of NNY dairy farms and indicated a need for more research.

The CCE NCRAT Field Crops Specialists expanded this important soil health research with additional NYFVI and NNYADP grants for 2023 and 2024. More farms were recruited to participate to gain a larger view of the relationship between soil compaction and yield. The new grants permitted an expansion of the NNY data set with a more fields and farms, and for additional equipment to be purchased and utilized on more farms in Western and Central NYS by additional

CCE specialists. A larger and more robust dataset will permit a better understanding of the relationship between soil health and corn yield, but also the potential relationship between compaction and other parameters already measured on the WNY and CNY fields.

As of Fall 2023, data collection is still ongoing and findings are not yet analyzed or finalized, but so far, data collected in CNY and WNY appear quite similar to NNY findings from 2021. Stay tuned for further information on this important project as these findings will help North Country farmers make more informed decisions to better improve soil health on their farms.



Photo credit: K. O'Neil.

Monitoring Heifer Barn Ventilation Across the Seasons

Calves and heifers are the future of a dairy farm, and it takes a large amount of time, effort, and money to keep calves and heifers growing and healthy. In the North Country, having four very different seasons throughout the year can make it hard to provide adequate ventilation to these smaller animals, while keeping them out of the elements. Good ventilation can have a big impact on animal growth and health and is important to regularly monitor on farm. One way to assess ventilation is by fogging a barn using a smoke stick to create fog/smoke in the barn, and watching where and how quickly smoke moves through the barn.

After building a new heifer barn, a North Country dairy farm reached out to the CCE NCRAT Dairy Specialists last summer to assess the ventilation system. The Dairy Specialists fogged the barn and determined it was performing adequately for the warmer summer months. The farm then requested to repeat this during the winter months, and the Dairy Specialist fogged it again. Given the colder temperatures, the barn was more closed up and was relying more on the positive pressure tubes for ventilation, but the fogging showed that the barn was still achieving adequate air exchanges according to industry standards.

This is a good example of the CCE NCRAT Specialists providing local farms with data specific to their farm. This information can be used to help troubleshoot an active issue, or as preventative maintenance to double check the current system or protocols. In this case, no changes were recommended, but instead this helped confirm to the farm the new barn was performing as they hoped and providing adequate ventilation for their heifers.



Photo credits: CCE NCRAT.

