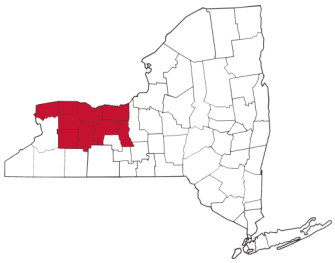
Cornell Cooperative Extension | Northwest NY Dairy, Livestock and Field Crops Program

2020 YEAR IN REVIEW



Northwest New York Dairy, Livestock and Field Crops Team

A partnership between Cornell University and the CCE Associations in these 9 counties: Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Seneca, Wayne, and Wyoming.

NWNY Growers Stand Tall in 2019 NYS Yield Contests

The NY Corn and Soybean Growers Association (NYC&SGA) sponsors the annual NYS corn and soybean yield contests. It is an opportunity for farms to push their practices to the limits, experiment a little, learn a little and enjoy some friendly competition and bragging rights at the coffee shop.

The NWNY Team supervises the contest for NYC&SGA. There are cash prizes for the top three corn and soybean yields in the state and plaques for the top place winners in each of five designated regions (West, Finger Lakes, Central, North and East). The culmination of this event is the awards ceremony that takes place in January at the NY Corn and Soybean Winter Expo in Syracuse. The team has the privilege of emceeing the ceremony and announcing the winners to receive their awards. It is a great opportunity to promote corn and soybean production in NY.

Mike Stanyard with Corn Champ, Adam Kirby (left) and Soybean Champ, Robin Root (right).

In 2019, growers in NWNY made us proud at the state and regional levels. Orleans county growers won top honors in NY for both the corn and soybean contests! Adam Kirby was the NY corn champion with a yield of 277.44 bu/a. Robin Root (Root Brothers) was the NY soybean champion with an impressive 80.56 bu/a. Both growers won an all expense trip for two to the Commodity Classic in San Antonio, TX in February. Verratti Farms, Niagara County, also had some of the best corn and soybean yields in the state. They took home the 2nd and 3rd place awards for the soybean contest and 3rd place for the corn contest. If you would like to see all the regional winners from our area, check out the results on the NYC&SGA webpage at: https://nycornsoy.org/yield-contests/

Beef Quality Assurance Transportation, a New Training Requirement

There are many times where cattle are transported by producers or by a hired hauler, utilizing a pick-up truck and trailer. The line between agriculture and commercial hauling may be confusing; specific laws and requirements need to be followed depending on equipment weight and other factors. Cattle health and welfare need to be considered as well. Many auction barns and processors are now requiring drivers to be certified in Beef Quality Assurance Transportation, a new program through BQA in order to deliver to their facilities.

Small-scale haulers were targeted for the certification training. The Empire Livestock Marketing barn in Pavilion, Genesee County, hosted and along with support from Cargill, covered the costs of the training. Mike Baker, Beef Cattle Specialist and certified trainer led the training for certification. Topics included: cattle handling and loading, weather factors, biosecurity, and whether cattle are fit for transport.

Also present was the regional NY State Trooper who is the WNY contact for DOT requirements and checkpoint inspections. He led a "truck-side" discussion with the barn's pick-up and trailer to point out inspection points. He also explained licensing requirements needed by drivers and answered many questions.

Thirteen participants were certified from the region, including dairy and beef producers plus small scale cattle haulers. More of these trainings will be conducted as a NWNY team member is now a qualified trainer. Partnerships will allow these trainings to be free, thanks to the Beef Checkoff and industry sponsors.

A NYS trooper leads a discussion on truck and trailer safety at the BQAT training in Pavilion, NY.

Economics of Growing Hemp: Fiber, Grain, Fiber & Grain, and CBD Enterprises

Farm business owners in the NWNY region frequently express interest in alternative crops for their potential to enhance the economic viability of their farm businesses. Recent examples include double cropping winter cereals for forage following corn silage, grain sorghum, and malting barley. Helped by legislation at the state and federal levels and funding decisions by NYS' executive branch and others, the state's agricultural sector can add hemp to the list.

To help determine hemp's place in farm business owners' cropping systems, NWNY Program team members examined the economics of growing hemp in NYS. Using enterprise budgeting concepts, team members developed: 2020 budgets for the fiber, grain, and dual purpose fiber & grain end uses; and 2019 costs of production estimates for the hemp CBD enterprise.

Team members disseminated findings from the economic analyses using several methods.

- Approximately 400 farm business owners, vendors, and other ag industry stakeholders in total attended events where team members presented the 2020 budgets and 2019 cost estimates – November 2019 CALS/CCE Ag In-service, December 2019 Field Crop Dealer Meeting, January 2020 Long Island Ag Forum, January 2020 NY Producer Expo, February 2020 ENY Fruit and Vegetable Conference.
- Approximately 300 people in total participated in the August 2020 Virtual Hemp Field Day, and about 30 in total participated in the August 2020 Virtual Hemp Office Hours session on hemp economics -- team members presented findings from the economic analyses.
- Team members posted content to the team's website, the Cornell Hemp website, CCE's NY Hemp Exchange & Growers News, and content appeared in newsletters and others.

Meeting attendees, webinar participants, newsletter readers, website visitors, and others learned that

- Projected 2020 total costs are $539, $484, and $492 per acre for hemp for fiber only, grain only, and dual purpose fiber and grain, respectively.
- Projected 2020 returns above total costs are $95, $216, and $406 per acre for fiber only, grain only, and dual purpose fiber and grain, respectively.
- Estimated total costs of production for a land based, raised bed, plastic mulch, drip tape irrigation hemp CBD production system for 2019 are $13,110 per acre.
- Farm business owners are encouraged to evaluate numerous risks and uncertainties that characterize the newly developing markets for the various hemp end uses.

Research suggests that farm business owners that apply information regarding the economics associated with proposed changes to the farm business achieve greater levels of profit when compared to the group that does not use such information. Producers looking to evaluate hemp's possible fit in cropping systems will achieve better results from decision making efforts when they apply a better understanding of: expected economic outcomes; and sources of variability.

Dairy Farm Business Summary (DFBS) Cooperators, a Significant Source of Economic Activity in 2019

Applying financial management skills, owners of about 40 dairy farm businesses from the region cooperated with regional specialists, PRO-DAIRY staff, and agribusiness consultants to complete DFBS's for 2019. Cooperators learned about the strengths and weaknesses of their businesses using:

- Their farm's summary and analysis results
- DFBS data for the Northwest New York region as a whole, and
- by using DFBS data for a group of most profitable businesses by size using the two page Comparison Report

Research studies conclude that producers using DFBS with analysis achieve greater levels of profit compared to producers who do not. Greater profitability contributes to enhanced economic viability, increasing the likelihood that businesses have the capacity to invest in replacement and/or expansion assets, and maintain and/or increase employment levels. Estimates using DFBS results suggest that the cooperating businesses invested a total of $5.9 million in land, buildings and improvements in 2019, and a total of $7.2 million in machinery and equipment. Estimates suggest that the roughly 40 farms employed a total of 760 worker equivalents, excluding operators, where an equivalent represents 230 hours worked per month for 12 months, and generated a total of about $224.1 million in farm receipts from milk, cattle, crops and other receipt sources.

Precision Ag Educational Program

Agriculture producers have quickly adopted precision agriculture (PA) technologies over recent years. The concept of precision farming is to do the right thing, at the right time, in the right place, with the right amount. This practice results in improved sustainability, increased productivity, and higher profitability for farmers. New emerging technologies on farms have created education and training opportunities in the field of precision agriculture. Producers need further assistance in adopting innovative and proven conservation technologies and approaches to improve crop production.

Ali Nafchi presenting a regional precision agriculture program at CCE Genesee in Batavia, NY.

The NWNY Team offered a series of PA workshop/meetings at varying levels of experience – beginner, intermediate and advanced. The target audience for the program was farm owners, managers, employees, industry, crop advisers, researchers and extension personnel. This series was developed to answer producer questions, address precision ag topics and introduce new technologies. Regional workshops were offered in five WNY counties: Erie, Genesee, Niagara, Seneca, Steuben – with collaboration from the CCE Associations in each of those counties.

Seven workshops were held this winter prior to the COVID-19 shutdown. Participants learned about data, zone and site-specific management, soil electrical conductivity mapping, generating prescription maps and calibrating machinery. Niagara County was the only group to complete all three workshop sessions. A survey of this group revealed that participants strongly believed that the workshops would be beneficiary to improving crop management and agreed to continue these sessions in the future. As a result, we have started collaborative efforts on implementing precision Ag practices with two of the participating farms.

Precision Agriculture - Implementing Variable Corn-Seeding Rates

The optimum seeding rate can vary within and among fields with differences in soil types and conditions. A new planter technology called Variable-Rate Seeding (VRS) allows growers to adjust seeding rates within a field as field conditions change. Farmers can use the seeding rate recommendations provided by researchers for a hybrid, incorporate with their previous yield potentials, and estimate their optimal seeding rates.

A variable rate corn-seeding project was conducted in cooperation with Branton Farms in Genesee County. Four seeding rates were planted at four different management zones, ranging from 28,000 to 40,000 seeds per acre (Fig. 1). The four zones were created based on multiple crop yield data and the grower's personal knowledge of the field.

The harvest data (Fig. 2) clearly shows the areas planted at lower seeding rate did not result in lower yields and actually improved the uniformity of yield into a higher yield. **Based on 36,000 seeds/ac conventional flat rate seeding rate, there was approximately 5% saving on seed using VRS system. On a farm planting 500 acres of corn, this is roughly a savings of $6.50 an acre or $3250 a year.** Chad Branton also commented, "**I believe overall yield was increased by using variable rate population. My plan for this year is to variable rate seed every corn field and possibly expand into other row crops.**" This project was initiated to help farmers conduct on-farm research and to assist them in adopting site-specific management zone techniques.

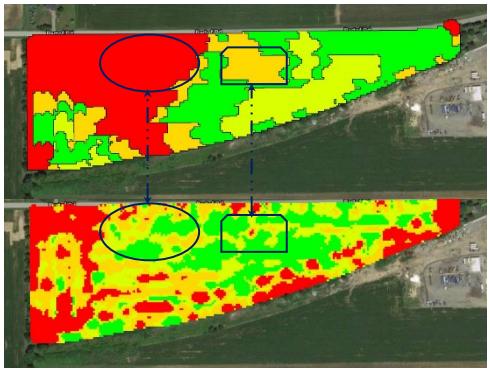


Figure 1. *Variable Rate Seeding prescription map based on multiple year crop yield and grower personal knowledge of the field ranged from 28,000 to 40,000 seeds per acre.*

Figure 2. *Yield map and harvesting data, ranged from 34 to 281 bushel per acre (bu/ac). Area: 23.48 ac, Yield Min: 14.30 bu/ac, Yield Max: 280.56 bu/ac, Yield Ave: 182.36 bu/ac*

New Soybean Yield Potential Database Advances Expertise on Farms

Advances in yield monitor technology have increased the availability of crop yield data for both farm managers and researchers. An exciting project is strengthening the utility of this data through a process of data cleaning. Initiated in 2019, "Assessment of Soybean Yield Potentials with Yield Monitors in Western New York," is funded by New York Corn & Soybean Growers Association Soybean Checkoff and led by the NWNY team in collaboration with Professor Quirine Ketterings, and the Cornell Nutrient Management Spear Program.

Our work has focused on soybean yield data as part of a regional project to evaluate soil type-specific yield potentials on individual farms and to develop a yield potential database for soybeans, which currently does not exist. Yield monitor data allows for the evaluation of both spatial and temporal yield variability for all fields, soil types, and management zones within a specific farm. This information will help identify areas of high yield potentials and areas of stable yield versus variable yield over time. When three years or more of this data is available, the yield data can then be used to develop yield stability maps for farmers. These maps will help farmers make improvements in nutrient management.

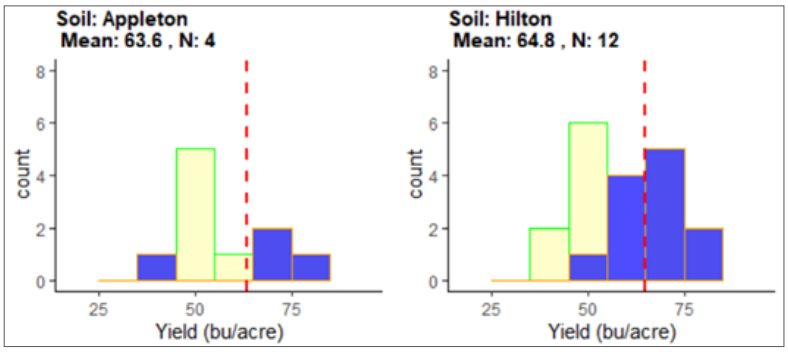


Figure 1: Multi-year histograms of yield data for each soil type represented by farm.

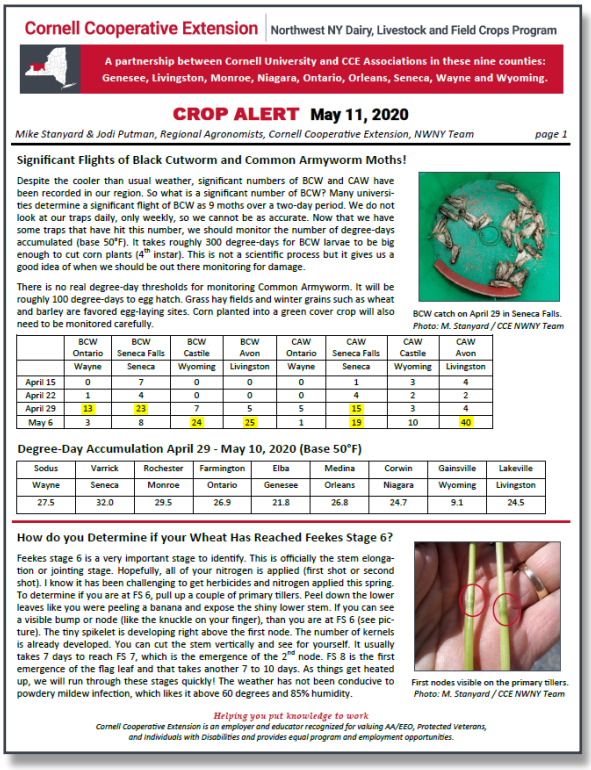
Fourteen farms across multiple counties in northwest New York participated and received soybean grain yield reports showing the yield for (1) the farm per year of data submitted, (2) each of the fields for which we received yield records in the current year, and (3) yields per soil type within a field and current year as well. More than 6,000 acres worth of data has been added to a growing database of yield values for specific soil types. Once we have sufficient amounts of data, yield potentials per soil type can be derived. This project will be strengthened as farmer participation expands across the state.

Crop Alerts: Timely Pest Observations from the Field

There is no better way to scout for insects, weeds and diseases than "boots on the ground." Every growing season is different. Environmental conditions can affect which pests will be problematic and lead to economic populations and possible yield losses.

The NWNY Team publishes a weekly online Crop Alert starting on May 1st. The alert informs growers and industry reps what pests we are currently seeing in corn, alfalfa, soybean and small grain fields. We include pictures of the pest and plant injury and possible management solutions. Many of the tips we get are from growers, consultants and industry reps. Our hope is to get the ag community out in the fields correctly identifying pests and their injury, at the right time, with the appropriate control measure before economic losses occur.

A great example of Crop Alert's value is our utilization of pheromone traps to monitor for Black Cutworm and Common Armyworm. Both of these pests migrate in every spring on storm fronts from the south and can cause severe yield losses in corn and wheat. The traps allow us to monitor their first arrival into NY and how many come in each week. Based on degree-day data we can determine when eggs will hatch and when larvae will be large enough to cause economic plant injury. We had some very large flights of both of these moths this spring. We were able to alert everyone when to start scouting their fields and determine if economic populations were present to warrant a control measures.



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CROP ALERT May 11, 2020

Mike Stanyard & Jodi Putman, Regional Agronomists, Cornell Cooperative Extension, NWNY Team page 1

Significant Flights of Black Cutworm and Common Armyworm Moths!

Despite the cooler than usual weather, significant numbers of BCW and CAW have been recorded in our region. So what is a significant number of BCW? Many universities determine a significant flight of BCW as 9 moths over a two-day period. We do not look at our traps daily, only weekly, so we cannot be as accurate. Now that we have some traps that have hit this number, we should monitor the number of degree-days accumulated (base 50°F). It takes roughly 300 degree-days for BCW larvae to be big enough to cut corn plants (4th instar). This is not a scientific process but it gives us a good idea of when we should be out there monitoring for damage.

There is no real degree-day thresholds for monitoring Common Armyworm. It will be roughly 100 degree-days to egg hatch. Grass hay fields and winter grains such as wheat and barley are favored egg-laying sites. Corn planted into a green cover crop will also need to be monitored carefully.

BCW catch on April 29 in Seneca Falls. *Photo: M. Stanyard / CCE NWNY Team*

	BCW Ontario	BCW Seneca Falls	BCW Castile	BCW Avon	CAW Ontario	CAW Seneca Falls	CAW Castile	CAW Avon
	Wayne	Seneca	Wyoming	Livingston	Wayne	Seneca	Wyoming	Livingston
April 15	0	7	0	0	0	1	3	4
April 22	1	4	0	0	0	4	2	2
April 29	13	23	7	5	5	15	3	4
May 6	3	8	24	25	1	19	10	40

Degree-Day Accumulation April 29 - May 10, 2020 (Base 50°F)

Sodus	Varrick	Rochester	Farmington	Elba	Medina	Corwin	Gainsville	Lakeville
Wayne	Seneca	Monroe	Ontario	Genesee	Orleans	Niagara	Wyoming	Livingston
27.5	32.0	29.5	26.9	21.8	26.8	24.7	9.1	24.5

How do you Determine if your Wheat Has Reached Feekes Stage 6?

Feekes stage 6 is a very important stage to identify. This is officially the stem elongation or jointing stage. Hopefully, all of your nitrogen is applied (first shot or second shot). I know it has been challenging to get herbicides and nitrogen applied this spring. To determine if you are at FS 6, pull up a couple of primary tillers. Peel down the lower leaves like you were peeling a banana and expose the shiny lower stem. If you can see a visible bump or node (like the knuckle on your finger), than you are at FS 6 (see picture). The tiny spikelet is developing right above the first node. The number of kernels is already developed. You can cut the stem vertically and see for yourself. It usually takes 7 days to reach FS 7, which is the emergence of the 2nd node. FS 8 is the first emergence of the flag leaf and that takes another 7 to 10 days. As things get heated up, we will run through these stages quickly! The weather has not been conducive to powdery mildew infection, which likes it above 60 degrees and 85% humidity.

First nodes visible on the primary tillers. *Photo: M. Stanyard / CCE NWNY Team*

Helping you put knowledge to work

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and individuals with Disabilities and provides equal program and employment opportunities.

Crop Alerts are available to view online at: https://nwnyteam.cce.cornell.edu/newsletter.php

Cow Comfort Workshops Provide Tools for Dairy Producers to Make Positive Changes

The NWNY Team, in conjunction with a statewide effort, hosted two Cow Comfort Workshops in Livingston and Yates counties in December 2019. Fifty-five dairy farmers and several consultants from Livingston, Wyoming, Yates, Seneca, Wayne, and Ontario counties attended the workshops, representing 2,677 cows in the region.

Libby Eiholzer gives a presentation on partial budgets during the tiestall class.

In answer to demands from dairy consumers and milk processors that are raising the bar on requirements for cow comfort, the workshops focused on cow comfort guidelines, economics, and facility analysis for both freestall and tiestall producers. Attendees learned about the purpose and principles behind having comfortable cows, how to identify different levels of cow comfort, and the economics of making improvements on their dairies.

Rick Grant, President of the William H. Miner Institute and leading cow behavior scientist, spoke to producers with freestalls about cow time budgets and the social dynamics of the herd that influence cow comfort. Lindsay Ferlito, Dairy Specialist for the North Country Regional Team, spoke about her recent research in decreasing lameness in tiestall barns. NWNY Team Dairy Specialists presented on facility ventilation and partial budgets to complete the well-rounded morning session. Both groups discussed and learned how to assess cows and facilities for comfort while touring the host farm.

Participants left each workshop with the ability to conduct cow comfort assessments on their own farms along with simple tools to create a partial budget and make impactful changes on their own dairies. Farmers commented that the workshop helped them make the connection between cow comfort and overall wellness, and how that contributes to the farm's overall economic health.

Margaret Quaassdorff demonstrates measuring stall dimensions during the freestall class.

Modern On-Farm Preparedness Workshops

The NWNY Team, in conjunction with a statewide effort, hosted a series of six Modern On-Farm Preparedness Workshops designed to help dairy farmers reduce risk and plan for farm success. Workshops were held in Genesee, Orleans and Wyoming Counties from January into early March. Twenty-five farmers and emergency service personnel from Genesee, Livingston, Monroe, Ontario, Orleans and Wyoming counties attended multiple workshops and represented nearly 7,000 cows in the region.

Participants discuss hazards and emergency response on farms.

NWNY Team Specialists collaborated with the *NY State Cattle Health Assurance Program (NYSCHAP), the American Dairy Association North East (ADANE), and the NY Center for Agriculture Medicine and Health (NYCAMH*) to provide participants with tools to keep people, farm assets, and business reputations safe, along with resources to work through unexpected disasters.

The workshops focused on a variety of risks that affect modern dairy farms. For two days, farmers and emergency service personnel came together to discuss preparedness for natural disasters and how to make improvements in farm safety. Other workshops provided updates on the FARM 4.0 animal care program, and discussed what to do in the event of animal activist involvement at the farm or on a farm's social media page. Prevention of disease outbreaks and appropriate biosecurity protocols were also covered.

Participants left each workshop with the ability to assess their farm for safety and social risks and make improvements. Participant reviews showed an additional successful outcome: emergency service personnel gained a better understanding of the farming communities' concerns and how to collaborate with them, while farmers learned ways to make their farmsteads more accessible to emergency service personnel.

Webinars on Heat Stress Management for Dairy Cattle

New York State averages four months a year with temperatures above 70 degrees. At these warm temperatures along with humidity, dairy cows and calves struggle to maintain their body temperatures, which can lead to negative effects on their milk production, health and growth. As cows need to be healthy and producing milk to keep farms economically viable, the issue of mitigating heat stress is of critical importance to dairy farmers.

Research has shown that cows in the New York region that have minimal heat abatement during times of heat stress will produce up to 306lbs (almost 36 gallons) less per year than cows that were cooled during the same time period. Using the milk price for July 2020, that could mean a ~$11,300 loss for a single farm that milks 200 cows.

As the summer heated up, the NWNY Team collaborated with the neighboring SWNY Team to present a webinar titled "Heat Stress: Key Indicators and Management Strategies" during the last week of July 2020. It was presented in English one day, and in Spanish the following day. The webinars helped farmers to better detect heat stress in their cows (especially by early signs), and led them through detailed solutions for lowering incidences of heat stress in their animals, and saving costs associated with heat stress.

The webinars had 50 total live views, and the recordings posted on YouTube have been viewed 257 times by farmers and agri-business professionals across the region. Farmer response showed this to be a useful series indeed.

Assisting Farms Through the Pandemic

The COVID-19 virus has certainly changed our lives. New information and resources from NYS agencies and Cornell were being compiled and updated daily, leaving many people feeling bombarded with information overload. The NWNY Team began meeting weekly via Zoom to discuss critical issues and commodity updates.

Our goal quickly became to filter and distribute the most recent developments in timely updates once a week in email and a mailer to our audience. The first update sent out on March 27 contained the team's status, safety precautions and emergency financial resources. Subsequent updates pertained to the team's topic areas of dairy, livestock and field crops with resources for operations of all sizes. Other resources that were included related to impacts such as marketing, employee safety training, and farm safety plan development. The email updates were sent to approximately 1,300 people and paper mailings were sent to 85 people.

The New NWNY Team Blog Provides Timely Updates

The NWNY team members worked together to launch the NWNY Team Blog on August 21, 2020. The blog features timely content developed by NWNY team specialists, that is available to viewers in one convenient location. The goal for this blog is to share with farmers and allied industry professionals, technical and applicable resources regarding all aspects of dairy farming, livestock and small farms, field crops and soils, and topics related to farm business management and precision agriculture. The blog will also feature Crop Alerts, Dairy Alerts, bilingual (Spanish) resources and more! Posts appear chronologically on the left-hand side of the page. Additionally, readers can browse posts by category/topic or search a specific 'keyword' tag, located on the right- hand side of the page.

The NWNY team is very excited to try this new information platform, and subscribers will automatically receive an email notification with the latest updates. Subscribing to our blog allows you immediate access to the new content as we produce it. The blog is free for everyone to use, explore and enjoy. Since launching, the blog has reached over 1,500 subscribers! We hope you enjoy the blog, and are looking forward to engaging with you in the future. Visit the blog at: https://blogs.cornell.edu/nwny-dairy-livestock-field-crops/

Cornell Cooperative Extension | Northwest NY Dairy, Livestock and Field Crops Program

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John Hanchar	Farm Business Specialist
Ali Nafchi	Precision Ag
Jodi Putman	Field Crops Specialist
Joan Sinclair Petzen	Farm Business Specialist
Margaret Quaassdorff	Dairy Management
Mike Stanyard	Field Crops & Team Leader
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NWNY Team Members from left to right: Ali Nafchi, Jodi Putman, John Hanchar, Nancy Glazier, Libby Eiholzer, Joan Petzen, Mike Stanyard and Margaret Quaassdorff. *Photo by R.J. Anderson, CCE*

Helping NWNY Farms Thrive

WEBSITE: nwnyteam.cce.cornell.edu

BLOG: blogs.cornell.edu/nwny-dairy-livestock-field-crops

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