



# Cornell Cooperative Extension

## South Central NY Dairy and Field Crops Program

### SECOND QUARTER HIGHLIGHTS

APRIL – JUNE 2023



### Strengthening New Grazing Dairies; *Fay Benson, Small Dairy Support*

I recently completed a project funded by the NE Dairy Business Innovation Center (NEDBIC). The project was to aid new and beginning dairy farmers to improve their farm's viability. The format was designed to provide cohort discussion meetings with general topics offered for each meeting. As members brought up topics and questions, I provided resources to help answer them. The cohort members covered a wide area, from western NY to northern NY. Due to this distance, eight of our meetings were conducted via zoom. There were also six in-person meetings offered over the two years. The NEDBIC project provided that on completion of the cohort meetings, each farm could identify a project that would improve the grazing on their dairies. NEDBIC would provide \$5,000 to aid with completing this project. From spring through early summer, most of my work was to help members identify a project. Then, I developed a proposal which described the project and created a budget to submit to NEDBIC. Below is a description of the projects completed with the grants from NEDBIC.

**Annie and Ryan Murray:** The Murrys have been grazing on their dairy farm in Truxton, NY since 2019. In 2021, they switched to once a day milking. Initially this caused a drop in milk production but made huge improvement in quality of life. To offset the loss of production they increased their milking herd size to 95 cows. During our cohort discussions, they realized the expansion had increased their purchased forage costs. Their solution was to extend their grazing season to some of their current 300 acres by installing a series of frost-free hydrants in their nearby paddocks. This would allow them to stockpile forage on these paddocks and be grazed in the winter months.

I worked on writing the NEDBIC grant plan to allow them to install the frost free hydrants and extend their grazing season with stockpiled forage. The resulting project was estimated to save them \$40,000 a year in purchasing off-farm baleage.

**Nathaniel Thompson:** Nathaniel owns a relatively large Bio-dynamic vegetable farm in Trumansburg, NY. Due to the rules of being certified Bio-dynamic, his farm is required to have livestock involved with the nutrient cycling for the farm. They recently added 8 milking cows to their farm. Since these were the first livestock on the farm, there was a steep learning curve. They have an excellent market opportunity for the dairy products they produce from the milk. They benefitted from asking questions in our cohort meetings about animal care and dairy equipment. During our cohort meeting, Nathaniel described an incident of two cows bloating in the pasture. In our discussions and in a follow-up meeting with Karen Hoffman, NRCS Animal Scientist, it was determined that the cause was most likely due to the very digestible cover crops that the cows had access to. A solution to prevent bloat was to allow the cows more time to consume long stem grass hay to supplement the pasture.

- The grant plan I developed was for "an extended use area" where the cows could eat hay before and after going to pasture.
- The plan called for: the removal of 12" of top soil, adding 6" of crushed stone and 6" of wood chips.
- The wood chips would be replaced 3-4 times a year. The wood chips would retain most of the nutrients from the cows and would be recycled through the farm's composting system.



Completed Extended Use Area at Thompson Farm.

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**Cornell Cooperative Extension** links the research and extension efforts at **Cornell University**, and **Cornell AgriTech**, the New York State Agricultural Experiment Station, **providing the knowledge** to maximize New York State's agricultural and natural resources. The **South Central New York Dairy and Field Crops Program** is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in 7 Counties.

**Our mission** is to enhance the profitability of farmers to maintain a strong regional dairy industry, create greater awareness of trends and options to help producers achieve family and business goals, maintain environmentally responsible agricultural practices, and encourage a better understanding of agriculture by the general community. We work to help producers meet their goals and enhance dairy farm profitability to maintain a strong dairy industry in the region.



## Applied Research Seeks to Reduce Injury from Seed Corn Maggot

*Janice Degni, CCE Field Crop Specialist*

**Need Opportunity:** Seed corn maggot has long been recognized as a major pest of corn and other crops. Although corn is in the name it is a generalist that feeds on a wide array of seeds and possibly prefers bean species over corn. Seed corn maggot is known to be attracted to fields with fresh organic matter from green or livestock manure. Damage usually occurs in an irregular pattern in a field. The seed corn maggot adult is a fly, about the size of a house fly. It is the larvae stage or maggot that seeks out seed to feed on. They hatch from eggs and feed on the germ of the seed before and during early germination. There are several flights of egg laying adults in the early spring. Damage is correlated with cool, wet periods in the spring when seeds are slow to germinate. Once soils warm and seeds germinate rapidly, damage is less likely.

### Why is this Research Needed?

This research is timely because of legislation that is currently active in the Senate (S1856A.) The bill is commonly known as - The Birds and the Bees Protection Act. You can find the bill here: <https://www.nysenate.gov/legislation/bills/2023/S1856>. This law if passed would prohibit the use of neonicotinoid seed treatments on January 1, 2027. (While writing this I learned the bill passed in the Senate and Assembly June 9 and will be sent to the Governor for her approval or veto.)

There is concern that neonics have contributed to the decline of honey bees in particular and other pollinators. The report, *Neonicotinoid Insecticides in New York State Economic Benefits and Risk to Pollinators* by Travis A. Grout, Phoebe A. Koenig, Julie K. Kapuvári & Scott H. McArt implicates neonics as a factor that contributes to the decline of pollinators. There is disagreement among experts about the interpretation and relevance of some of the data in the report relating to the importance of neonic seed treatments to different agricultural sectors and their impact to honey bees and other pollinators.

The following quote captures the disagreement among experts about the importance of current seed treatments in corn and soybean production.

“And yet despite all this risk of toxicity, there’s a growing body of evidence suggesting that neonics—at least in their almost universal use as seed treatments—provide little direct benefit to farmers. A 2020 report by Cornell University’s CALS found that, while neonic sprays and direct soil applications provide important crop protection from five kinds of pests for which few other alternatives exist in the state, the “routine use of neonicotinoid-treated seeds does not consistently increase net income for New York field corn

or soybean producers.” Even when compared with plots using no insecticides at all, 89% of the field trials in the Cornell study saw no increase in corn yield using neonic-treated seeds. Other studies, including one by the EPA, have found a similar lack of consistent yield benefit for soybean farmers.” (Source: [Neonic Nation: Is Widespread Pesticide Use Connected to Grassland Bird Declines? | All About Birds](#))

The assessment above conflicts with the experience of extension field crop specialists and what we see in the field and what results from NYS research has found. Seed corn maggot does cause damage. We see damage in organic systems and in fields with plowed down cover crops. We do not see damage frequently because we have relied on effective insecticides for protection. Prior to the release of neonic insecticides, planter box treatments were used. The neonic seed treatments simplified planting and potential insecticide exposure by eliminating the need for the planter box treatments.

**What has CCE done?** For the past several years there has been a coordinated effort of establishing research plots across the state to assess seed corn maggot damage using a network of CCE field crop educators coordinated by the NYS IPM program and/or the Poveda Lab at Cornell. In 2023 the Poveda lab provided a protocol that included both sticky trap assessment for prevalence and field placed seed traps to measure feeding damage by the maggots. The data collected will inform the level of concern for crop damage from seed corn maggot.

**Potential Impact:** Seed corn maggot research is important for understanding and managing this pest that can cause significant stand losses and yield reductions in corn and other field crops. According to research data collected in controlled studies during 2021 at the Cornell Musgrave Farm located in Aurora, NY, seed corn maggot economically damaged **54%** of the non-insecticide seed treated plots in corn production following a cover crop, and **38%** of the non-insecticide seed treated plots in continuous corn production<sup>1</sup>. Researchers at Cornell are also investigating the role that environmental cues, such as soil temperature, moisture, organic matter and crop residue, play in mediating seed corn maggot preference and attack<sup>2</sup>. This could help provide evidence-based recommendations to growers on how to avoid or reduce seed corn maggot infestations by adjusting their planting practices or using insecticide seed treatments.

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# One-on-One Consultations Impact Farm Operations

*Betsy Hicks, Dairy Management Specialist*

While offering demonstrations and giving farmers opportunities to interact during workshops are certainly important facets of extension programming, many times the most impactful work we do as educators involves the one-on-one consultations we do on farm. This effort is often behind the scenes and not captured in photographs or written about in articles, as the day-to-day operations of dairy farming can be very personal. While results are often confidential, this work is very rewarding as an educator because farmers take our input and recommendations and incorporate them into their daily operations. Sometimes these recommendations come from the input of a profit team, and other times, it comes directly from the extension educator's personal interaction.

This quarter, farms received one-on-one consultations on a myriad of topics. Three farms across the region requested help on calf barn ventilation. Together with Tim Terry of PRO-DAIRY, a farm visit was set up, measurements taken on barn size and space, and recommendations given based on farm need. In these instances, farms received recommendations for increasing airflow via investment in positive pressure tubes, but also making small changes in management to positively impact calf health.

Two farms are receiving on-going assistance with grazing and pasture management, utilizing a grazing chart. These farms benefit from the time spent with them in walking paddocks together and analyzing information recorded in the charts and comparing to cow performance.

Profit team meetings, generally held quarterly, offer the collective experience of the farm's consultants to encourage the farm to make sound decisions for their business. One farm has focused on reducing lameness and has received on-

going support to ensure they are making the right improvements. Another farm is working through the final stages of farm succession and utilized the DAP program to do so. A third farm has made cow comfort improvements and is planning to utilize the team's data loggers to analyze lying time.

One farm in Broome County is receiving on-going assistance to get their FARM program requirements updated. FARM is a nationwide program, required by most farms' processors in order to ship milk. Main facets of this program include an annually updated Veterinary Client Patient Relationship (VCPR), protocols for animal care updated annually, and on-going employee training in the employee's native language. For this particular farm, we have held semi-monthly trainings on herd health topics in Spanish to ensure the farm employees have continuing education. These topics include stockmanship, maternity pen care, care of special needs cows, euthanasia and calf care. A coordinated effort between farm owners, managers, the veterinarian and extension has made it possible to not only update this farm's standards, but also bring educational opportunities to key herd health employees.

These consultations come about after creating a relationship with the farmer – sometimes these topics are very personal and sensitive, and adoption of recommendations comes with trust built. Some of this trust is inherent; we as extension educators are a trusted third party with no sales agenda. Some trust, though, is in the relationships we build over time with our region's farmers. It is a very rewarding relationship, but also one that can have a positive impact on farm operations and profitability.



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Seed corn maggot research could also help develop predictive models for adult emergence and risk assessment based on weather and environmental data. The New York State Integrated Pest Management (NYSIPM) and Cornell University's Department of Entomology have partnered to monitor adult seed corn maggot emergence on more than 80 farms statewide in 2022 and 2023, with the goal of creating a state-specific model for the Network for Environment and Weather Application (NEWA) platform<sup>3</sup>. This could help growers plan their planting dates to avoid the peak

emergence periods of seed corn maggots and reduce crop injury.

## References:

Seed Corn Maggot, Stand Losses and the Need for Insecticide Seed Treatments – What's Cropping Up? Blog ([cornell.edu](https://cornell.edu))  
Seedcorn Maggot IPM | CALS ([cornell.edu](https://cornell.edu))  
NYSIPM, Cornell Entomologists Partner on Seedcorn Maggot Research | CALS



## Onboarding Dairy Farm Employees project has over \$7 million impact!

*Provided by Rich Stup, Cornell Ag Workforce Development*

A total of 39 farms participated in the in-depth consultation and development of a new employee onboarding program for the farm. Many more farms participated in online workshops using Zoom once the COVID-19 pandemic made farm visits impossible. Of the 39 farms who engaged with our consultants and educators, 17 completed both an enrollment survey and an exit survey. Results from these 17 give a solid picture of change that occurred from the onboarding intervention.

Farms in the project ranged in size from 250 to 5,700 cows, with an average of 1,795. Full-time employees ranged from 3 to 85 with an average of 25.3. Part-time employees ranged from 0 to 35, with an average of 6.7.

We can report a favorable change in employee turnover for the 17 farms who completed both an enrollment and exit survey for the project. Total employee turnover at the beginning of the project was at 41%, meaning that 4 out of every 10 employee positions had to be refilled in the prior year. In the year after starting the onboarding project, employee turnover declined to 32%. These are small numbers of farms to report, and many other factors, other

than onboarding, could influence employee turnover. Nonetheless, we are pleased to report this 10% reduction in total turnover.

A cost of turnover varies but many estimates put it at around 150% of employee annual salary. This cost includes management time to find and hire a new employee, stress on the remaining team, and reduced performance while the new employee is learning the job.

Farms in this project averaged 25 full-time employees. A 10% reduction in turnover across these farms would mean a reduction in turnover of 2.5 employees. Assuming, conservatively, that a typical full-time employee salary was \$50,000 per year, with a turnover cost of 150% of salary, that would be \$75,000 per turnover. By avoiding 2.5 employee turnovers, we saved these farms (2.5 x \$75,000) or \$187,000. If we extend this savings to all 39 farms in the project, the total impact comes to \$7,312,500.



***Mary Kate worked in collaboration with the Ag Workforce Development Team to deliver this program.***

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**Dakota Finch:** Dakota is an Air Force veteran who bought his current dairy in Marathon, NY two years ago. There was no grazing infrastructure on the farm so this project will help him design and implement the infrastructure. He is in the grass-fed market, so efficient use of his pastures is important to the farm's profitability. The need for fencing became critical this summer when his cows got out and into the nearby road numerous times. There was a car/cow accident and the police were called. The matter is still pending.

- We held a cohort meeting at Dakota's farm in 2022. We asked cohort members to make suggestions and comments to help Dakota develop his grazing plan.
- I wrote the grant plan for Dakota to include fencing and water system for 42 acres of his farm.
- Fencing was installed on the farm in May and June of this year. I helped with installation and donated fencing and water pipe, which I was removing from my farm.

**Eric Beiler:** Crogan, NY; Eric had always wanted to be with his family on a dairy farm and has now bought a farm that he plans on transitioning to a grazing dairy and hopefully an organic certified dairy, as well. He has about 100 milking animals, however his heifers were kept in an undeveloped area which was waterlogged in wet weather and nutrients were not recycled. Before he purchased the farm, it had been farmed for corn after corn, therefore the soil is rundown and some of the

land near the barn needs to be cleared to get a good pasture sward established.

- In our cohort meetings, it was suggested that since none of his animals currently graze the best way to start would be to set up a grazing system for his heifers.
- Through two farm visits, an area was identified to establish 30 acres of pasture that would allow him to start grazing his heifers.
- I wrote the plan which included the use of a fencing contractor.
- The work was completed in June of 2023. Photos show heifer area before project and the other photo shows Eric's two sons moving fence in new heifer pasture.

