

# FARM REPORT



## In This Issue:

First Cut Aftermath; Pastures	2
Don't put a Freeze, for Too Long, on Colostrum	3
A Non-Negotiable Determinant of Longevity	4
Recipe Report: Strawberry Rhubarb Bars	5
Meloxicam Use for Pain Management	6
Spring Planting Window Woes	7
Are Farmers Willing to Sell Outside of Co-ops?	8
Farm Days for Fifth Graders 2025	9
Drainage Project Enters New Phase	10
What's Happening on the Farm	11



<https://www.instagram.com/minerinstitution/>



[facebook.com/MinerInstitute](https://facebook.com/MinerInstitute)

## FROM THE PRESIDENT'S DESK: TECHNOLOGY FOR NUTRITIONISTS & THE FARMERS THEY WORK WITH

Early in June we had the pleasure of hosting the Cornell-Miner Dairy Nutrition and Management Short Course – a 4-day immersive experience blending classroom instruction, hands-on skill development, and invaluable networking. With around 75 early-career nutritionists and allied industry professionals along with Cornell faculty, Pro-Dairy staff, Lallemand staff, and Miner Institute staff, the course offered a dive into the principles of dairy cattle nutrition and their practical application on farms. One of the highlights for me was the informal conversations during the breaks, lunches, and dinners that provided perspectives on dairy farming across the US and around the world.

During our round robin sessions at our dairy farm, I led discussions on the technologies we use at Miner Institute and those being adopted by participants and the farmers they work with. It's easy to get swept up in the buzz around AI and machine learning technology, but at its core, technology is simply the application of scientific knowledge to solve problems and improve lives – whether it's a basic tool or a complex system. In a quest to understand what technology is "out there" to help dairy farmers, I came across the "Dairy Farm Tech v3.0" logo poster by Progressive Dairy and IFCN, which

identified 251 companies innovating across 11 technology categories – from herd health to feed management to people management. Some of these technologies are from start-ups touching fewer than 100,000 cows each and then ranging all the way to well-established companies impact over a million cows each.

At Miner Institute, we have several technologies that have become integral to our daily operations. One of the more impactful ones is wearable sensors that monitor cow activity and rumination. These devices help us detect health issues early, identify cows ready for breeding, and improve overall herd performance. Many of the participants echoed this sentiment, noting that wearables are either widely used by farmers they work with or high on their wish lists. A recent University of Wisconsin Technology Adoption Survey, led by Victor Cabrera and Gustavo Mazon, found that over 70% of farmer respondents used wearables on their animals. Another useful tool for us is the Scio Cup, a portable near-infrared (NIR) spectrometer that determines forage dry matter in just 1 to 3 minutes per sample. This rapid analysis allows us to make timely adjustments to rations without slowing down feeding. Some

See **TECHNOLOGY**, Page 9

# FIRST CUT AFTERMATH

By now your first cut alfalfa-grass should be safely stored, so now you can see how much alfalfa is in the stand. If the stand is thin your options may depend on the grass species you used.

If you planted timothy there may be relatively little grass in second and later cuts. Timothy often becomes dormant as soil temperatures rise, even with plenty of rain. If you planted timothy it should probably be for the last time; the exception is if you have a good horse hay market since some horse owners can't recognize any grass species except headed timothy. Horse owners can be an untrusting lot and considering the quality of hay some of them have been sold (not by you of course) they have reason to be. In this case it would be better to educate them (the clients, not the horses) since timothy is a poor fit for alfalfa-grass.

If, on the other hand, you seeded either

tall fescue or meadow fescue you'll probably see a fair amount of grass in your second cut. If the alfalfa is thin you might want to rotate it to another crop next year, but if you topdress the stand with manure (as soon as possible after harvest) you could get a decent yield. The N in the manure won't hurt the alfalfa, in fact it will slightly increase alfalfa yield but not enough to make N fertilizer application to alfalfa economical.

If you seeded orchardgrass it may regrow if there's enough rain. I've never liked this species as a companion to alfalfa, not even the so-called "late maturity" varieties. Orchardgrass quality declines very fast after heading, its mineral composition makes it one of the worst grasses for prefresh dry cows, and it has very poor resistance to ice sheets. Other than that...

While there may be a temptation to notill seed something into a thin stand

I generally recommend against it. Drilling in alfalfa seed is out because of autotoxicity, and while red clover is an option the first crop of alfalfa-grass usually removes a lot of soil moisture. Between lack of moisture and competition from the regrowing crop, forage seedlings will have a tough time competing with the established plants around them. A farmer friend once tried this after I advised him not to, and he was delighted when he found some seedlings that had just emerged. He called me to come out so he could show me the "error of my ways". I did and there were indeed some tiny seedlings, but also the start of the second cut. I told him to wait a couple weeks and call me again. He didn't call so I did, but he wasn't interested in talking about it. Gee, I wonder why?

— Ev Thomas

[ethomas@oakpointny.com](mailto:ethomas@oakpointny.com)

## PASTURES

Readers of this newsletter may wonder why it includes so little information on pastures. I can't speak for Miner Institute's agronomist Allen Wilder, but in my case it's because pasture management is a very low priority. This sentiment is apparently shared by most dairy farmers in the region; I can't remember the last time I had a question from a farmer about pastures, but it's been years. Proper pasture management usually involves rotational grazing, something that's exceedingly rare on dairy farms in the Northeast. (An exception may be a small number of organic dairies in New England.) Pasture "management" on many of our dairy farms is decidedly low-tech, sometimes consisting of turning a bunch of heifers into a rock-strewn pasture in the spring, supplementing with hay as needed, and fetching the survivors back in the fall. A high percentage of forage on progressive dairy farms is stored feed, mostly corn and hay crop silages, with a decreasing amount of dry hay in either small or large bales. In this region of the U.S. only a tiny percentage of lactating cow forage intake is in the form of pasture. This makes my reading of farm magazines more efficient since I usually skim over pasture management articles.

— E.T.

# DON'T PUT A FREEZE, FOR TOO LONG, ON YOUR COLOSTRUM

Colostrum is one of the most important meals for a newborn calf. Its administration is required to be appropriately timed in the right volume and quality to facilitate transfer of passive immunity (TPI). Colostrum includes nutrients required by the newborn calf in addition to the immunological aspects that are highly emphasized in colostrum management i.e. immunoglobulin G (IgG), which confers TPI to newborn calves. Furthermore, immunoglobulin M (IgM) in colostrum can help to mitigate pathogen colonization on mucosal surfaces and in the blood stream, and insulin can influence intestinal maturation by stimulating insulin receptors.

Many farms are constantly managing colostrum storage to help ensure the proper supply and administration to their calves. Saving excess colostrum can be a great way to ensure that adequate supplies are available when production is low or when you have an excess when supply is good. Longer term storage is often facilitated through freezing. Historically, it was commonly accepted and promoted that colostrum could be stored in a non-frost-free freezer for up to a year.

A couple of things to digest here. A “frost-free” freezer is one that cycles temperatures to avoid accumulation of ice within the unit. This temperature cycling means that the contents within the freezer also experience different temperatures. With colostrum, there are a couple of concerns with fluctuating

temperatures. The first is that if there is any bacteria contamination in the colostrum this could potentially grow during these cycles. The second is there are functional proteins within the colostrum (i.e. immunoglobulin G) that we want to preserve. Therefore, we want to use freezers that do not go through these cycles. The freezer temperature should be -20°C (-4°F).

When preserving colostrum here are some key things to capture or monitor. On the label include cow identification number and date of collection. Furthermore, if your farm is measuring colostrum quality with a Brix, include the number on the label.

When thawing, use a hot water bath of 40°C (104°F). Warmer temperatures >60°C (140 °F) should not be used as this can denature the proteins in the colostrum. Repeated freeze-thaw cycles can denature IgG so only one thaw is advised.

A recent paper from Cornell University (JDS Communications, 2025, 6:406-410) evaluated colostrum samples stored at -20°C for up to a year. They compared the fresh samples that had never been frozen, to samples frozen for different times over the course of a year. They analyzed the colostrum for Brix%, IgG, IgA, IgM, insulin, and total plate count (TPC).

Over the year of freezer storage there was no difference in IgM, IgA, or TPC. However, over time IgG, coliform, insulin, and Brix% decreased. After 32 weeks (8 months) IgG decreased by ~8

% compared to the fresh colostrum.

From these results it's now recommended to use colostrum within 8 months of storage in a freezer, though it may not mean you cannot use the colostrum that has been stored per se. You could still use this for a second feeding and not a first feeding to ensure that there is the appropriate amount of IgG to have more success of TPI.

When considering the lower Brix% I would encourage the use of this at the time of colostrum collection and not worry about measuring this after it's been frozen. The Brix % would be important to include on the label and still can provide information about the quality of the colostrum that has been stored up until 8 months of storage. Because Brix% decreases over time, but up until 8 months IgG doesn't go down, it would still be safe to use this as a quality measure on farm at the time of collection.

The study conducted at Cornell did use high quality colostrum, so more information is needed on a range of qualities over time. However, this is important information to incorporate into colostrum management systems. Make sure to check the date on when colostrum was collected and make sure to use the oldest stuff first to ensure the best quality for your calves. Will you be adding a “Best By” date on your colostrum?

— Sarah Morrison  
[morrison@whminer.com](mailto:morrison@whminer.com)

# A NON-NEGOTIABLE DETERMINANT OF FARM LONGEVITY

Resilience is defined by the Oxford dictionary as “the capacity to withstand or to recover quickly from difficulties.” As a high school student in a physics class, resilience was demonstrated with an elastic band to show the impact of tension on the elasticity (ability to return to its original shape after stretching it), plasticity (permanent distortion when it is stretched beyond the elastic limit), and break point (“the point of no return”) of that band. But in the real world, resilience goes beyond stretching an elastic band. It entails adapting, learning, re-strategizing where necessary, and growing in response to a stress event. Furthermore, being proactive and putting measures in place to mitigate against damages of future events.

Narrowing this down to the dairy industry, it relates to both the animal and the farmer. For the animal, resilience determines how it can recover from environmental, pathological, physical, or other stressors, and for the farmer, it shows their capability to rebound from the economic, psychological, and other effects as a result of such stressors.

The American Dairy Science Association Discover Conference that was held on May 5-8 in Itasca, Illinois, was centered on the theme: “Dairy Cow Resilience: Mitigating Stress Impacts to Welfare, Health, and Production.” It was a rich discussion on how resilience can be attained holistically, and below are some of my takeaways:

1. It is never too early to start: building resilience in our animals should start as early as possible, from conception, through the dry period, to parturition, and calf management. Studies have

shown how the management and health of the dam affects the survivability of the calf. More critically, the management of the newborn calf goes a long way to determine its survival, longevity, and other production outcomes. Recommendations include abating heat stress during the prenatal period, adhering to the 5Qs of colostrum management (Quality, Quantity, sQueaky clean, Quickness, and Quantify), encouraging adequate milk and starter feed intake, hygienic housing, and proper disease/health management. By starting early, potential issues are minimized, and the calves are well equipped to become highly productive cows that can withstand foreseen or unforeseen challenges.

2. Paying attention to financial risks: four important questions that should be answered are- What are the financial risks that the farm is bound to face? How likely are they to occur? How much damage are they going to have on the farm’s financial position if they happen? How can the farm tackle them when they happen? Doing this will help the farm’s decision makers to allocate sufficient resources to handle any perceived threats. A comprehensive evaluation of the financial standing of a farm can be quite technical, so, I think having a finance professional to review the farm’s financial records periodically can facilitate this.
3. Consider the farmers too: the ripple effect of adverse agricultural incidents on farmers’ mental (and even physical) health and wellbeing should not be underestimated.

More avenues should be created for farmers to get help to navigate such distressing situations. The Canadian Center for Agricultural Wellbeing (website: <https://ccaw.ca/>) is a good model that can be used in other locations/communities to provide support that is tailored to the unique needs of farmers.

4. The recurring issue of labor: this relates to both external labor and farm succession. This may be a quite sensitive topic knowing that there are several factors connected to it like immigration policies, personal choices, and so on, however, planning in advance can forestall a farm labor shortage situation in the future.
5. The role of genetics: genetics is an important tool in developing resilience through the selection of desirable traits like disease resistance, disease tolerance, and thermotolerance, and continuous progress in genomic advancement.

With the current trends and future projections of climate change, national and global macro-economic outlook, labor availability, dynamic consumer behaviors, etc., resilience should be given more attention by all players in the dairy industry to address these considerations and ensure the stability and sustainability of the industry.

We may not be able to quantify resilience as a concept on its own, but indicators like animal health and production, farmers’ wellbeing, farm finance, etc., can serve as pointers to the overall resilience of the farm.

— Gift Omoruyi  
[gomoruyi@whminer.com](mailto:gomoruyi@whminer.com)

# RECIPE REPORT

June is a month full of sunshine and summer foods, but most importantly it's a time to celebrate all things dairy. As we mark National Dairy Month, I thought it would be the perfect opportunity to highlight how dairy plays a vital role in the meals we love.

This month I wanted to share one of my favorite seasonal treats: Strawberry Rhubarb Bars topped with Homemade Whipped Cream. These bars showcase how essential dairy is in creating foods that are comforting, satisfying, and filling. From the butter in the crust to the heavy cream whipped into fluffy peaks, dairy gives this recipe richness, texture, and flavor. Whether you're baking or sauteing, dairy brings out the best in ingredients, binding them in a way that is both nostalgic and nourishing.

Beyond the kitchen, dairy supports local farm families, contributes to rural economies, and delivers key nutrients like calcium, protein, and vitamin D that support strong bones and a healthy lifestyle in a cost-effective way.

As we celebrate Dairy Month, I encourage you to reach for those farm-fresh ingredients and try these bars yourself. They are a small, delicious reminder of how dairy continues to be a staple in our homes, our traditions, and our communities.

Happy June Dairy Month and thank you to our dairy farmers who make it all possible!

## Strawberry Rhubarb Bars

### Ingredients

#### *Crumb layer*

- 1 1/3 cups all-purpose flour
- 1/2 tsp baking soda
- 1/4 tsp salt
- 1 1/3 cups rolled old fashioned oats
- 1/2 cup packed light brown sugar
- 1/2 cup granulated sugar
- 3/4 cup unsalted butter, melted
- 2 tsp vanilla extract

#### *Filling*

- 1 3/4 cups diced strawberries
- 1 1/2 cups diced rhubarb
- 1 tbsp fresh lemon juice
- 1/3 cup granulated sugar
- 1 tbsp cornstarch

#### *Whipped Cream*

- 1 cup cold heavy cream or heavy whipping cream
- 2 tbsp confectionary or granulated sugar (add more if you want it to be sweeter)
- 1/2 tsp vanilla extract

### Instructions

#### *Crumb layer:*

1. Preheat oven to 350°F. Butter a 9 x 9 inch baking dish and line with parchment paper.
2. Whisk together flour, baking soda, and salt. Then add oats, brown sugar and granulated sugar, whisk. Use fingertips to break up clumps of brown sugar
3. Whisk vanilla into melted butter and pour over oats mixture. Stir with a spatula until evenly coated.
4. Press 2/3 of the mixture into the prepared baking dish. Save the remaining 1/3 for the top.



#### *Filling:*

5. Toss diced strawberries and rhubarb with lemon juice. In a separate bowl whisk together sugar and cornstarch. Then pour over strawberry mixture and toss to coat.
6. Pour strawberry mixture evenly over the crumb layer in the baking dish. Then evenly sprinkle the remaining 1/3 of crumb mixture on top.
7. Bake at 350°F for 45-50 minutes, or until the top is golden brown and filling is bubbling. Allow time to cool before cutting.

#### *Whipped cream:*

8. Using a handheld or stand mixer fitted with a whisk attachment, whip heavy whipping cream, sugar, and vanilla extract on medium-high speed for 3-4 minutes until medium peaks form. Use immediately or tightly cover and chill in fridge for up to 24 hours.

— Emily Bourdeau  
ebourdeau@whminer.com



# OPTIMIZING MELOXICAM USE FOR PAIN MANAGEMENT IN CALF DEHORNING

Dehorning is a widespread practice on dairy farms, undertaken to remove horns or inhibit their growth. This procedure primarily aims to enhance safety for handlers and prevent injuries among herd animals. Recognizing that dehorning causes pain and discomfort, the American Veterinary Medical Association (AVMA) supports the practice yet strongly emphasizes the importance of effective pain management. While local anesthetics are frequently combined with non-steroidal anti-inflammatories (NSAIDs) for dehorning procedures, it is important to note that no FDA approved NSAIDs are currently specifically labeled for pain management in food animals.

The assessment of pain associated with dehorning can be attempted through various physiological and behavioral metrics. These include measuring concentrations of cortisol, haptoglobin, and plasma substance P (SP), monitoring ocular temperature, heart and respiratory rates, or observing physical restlessness and mechanical nociceptive threshold (MNT). However, a significant challenge remains since none of these methods are validated for precise pain scoring in cattle. Despite the availability of numerous drug options for cattle pain management that comply with the Animal Medicinal Drug Use Clarification Act of 1994, this discussion will specifically focus on a study that investigated the effects of meloxicam on calf stress responses.

An article published in the *Journal of Dairy Science*, research at Kansas State University in Manhattan, KS investigated the effect of meloxicam, given before and after dehorning, on calf pain and stress in response to dehorning. Thirty Holstein bull calves were randomly assigned to three treatments: 1) those receiving

meloxicam 12 h before dehorning (MEL-PRE), 2) immediately after dehorning (MEL-POST) or 3) a placebo control (CONT). Blood samples were taken at multiple time points between 5 and 720 minutes, as well as 24 h, and 7 d post-dehorning, via the jugular vein. These samples measured the concentration of cortisol, SP, haptoglobins,  $\text{PgE}_2$ , and the drug. An algometer was used to measure the mechanical nociceptive threshold, which is the minimum amount of pressure that can be applied to evoke an aversive response. This response was measured at three sites around the horn bud at various points between -1 to 720 minutes, as well as 24 h and 7d post-dehorning. Maximum ocular temperatures (MOT) were measured using an infrared inspection system. With these comprehensive measures in place, the study aimed to evaluate the efficacy of oral meloxicam on pain responses and determine if its administration 12 hours prior to a procedure is more clinically effective than immediate post-procedure administration.

The administration of meloxicam in the MEL-PRE and MEL-POST calves had a considerable impact on physiological indicators of pain and inflammation when compared to the CONT group. Interestingly, the timing of meloxicam administration (before or after dehorning) did not affect serum cortisol, substance P, haptoglobin, ocular temperature, or MNT. Specifically, at 4 h post-dehorning, calves treated with meloxicam were found to have significantly lower serum cortisol concentrations when compared with those who did not. Additionally, at 120 h post procedure, treated calves were found to have significantly lower SP concentrations than their untreated counterparts. Haptoglobin concentration increased

over time for all three groups; thus, no treatment effect was observed. The study observed no significant effect of meloxicam administration, regardless of its timing, on the maximum ocular temperature of the calves. While the initial mechanical nociceptive threshold (MNT) was higher in control calves at 1 h postdehorning, meloxicam-treated calves showed a trend towards a higher MNT at 6 hours. In contrast, the timing of meloxicam administration proved relevant when observing the concentration of Prostaglandin  $\text{E}_2$  ( $\text{PgE}_2$ ) in the treated and untreated calves. The concentration of  $\text{PgE}_2$  at 6 and 12 h was lower in the MEL-PRE and MEL-POST calves. However, at 24 h, the calves treated 12 h before dehorning (MEL-PRE) and the placebo control group (CONT), exhibited significantly higher  $\text{PgE}_2$  concentrations than those treated with meloxicam at the time of the procedure (MEL-POST); this trend was true for 3 days postdehorning.

In summary, the study demonstrated that meloxicam effectively alleviates pain and inflammatory responses in calves post-dehorning. While several indicators of physiological stress were consistently reduced by the treatment, the precise timing of meloxicam administration proved to be a factor, particularly influencing the duration of certain anti-inflammatory effects. However, the impact of pre- or post-administration of meloxicam on varying time points may in  $\text{PgE}_2$  concentration may justify further research to fully understand and optimize the use of pain management drugs in this context. Overall, these findings highlight the benefits of meloxicam in managing post-operative pain in livestock.

—Hannah Jones  
[hjones@whminer.com](mailto:hjones@whminer.com)

# SPRING PLANTING WINDOW WOES

The month of May has come and gone, and we still have a good portion of our corn acreage left to plant here at Miner Institute. While we haven't been completely flooded out, the frequent weather systems have kept the planting windows very tight - making it difficult for us to get large blocks of fieldwork done at a time. While no two locations experience the exact same conditions, our situation at Miner Institute is far from unique.

Wet conditions in the month of May stretched all the way down the East Coast, with some areas experiencing one of their wettest Mays on record. Our neighbors in Vermont, for instance, got their second wettest May on record. It's no wonder that planting progress was at less than half of what it usually is this time of year based on the most recent reports.

The good news is that we still have

time to raise a great corn crop this year. Our seasons have been getting longer, and studies show that most of the yield potential is still there for corn planted in early June. If you are concerned about yields, no-till some extra corn acres into first cut stubble and spray the regrowth as soon as you can. This has worked very well for us here at Miner Institute— especially in years like this where spring moisture is abundant. Keep your starter fertilizer rate the same, but you may want to cut back on total nitrogen for the year since the yield potential is a little lower and use efficiency may be a little higher for late-planted corn. In some ways, it is better to plant corn late than plant before a cool, wet streak, since the nitrogen can be lost while the corn just sits there in the ground.

When we do get some sunshine, there is always a temptation to jump the

gun and start planting corn into mud. This is never a good idea, it is better to bide your time and wait for conditions to improve. Sidewall compaction from a wet spring can easily ruin a crop when it shrivels up in July and August since the roots can barely get beyond the planter furrow.

Those who have prioritized their haylage should keep doing so. One of the benefits of a spring like this is that the cool wet weather is perfect for high-quality grass growth. You just have to get it on time. If you didn't get manure out on second cut. Hit the stands that are mostly grass with some nitrogen to set yourself up for a high-quality second cut. If you didn't get first cut on time, your best bet is to prioritize corn and designate 1st cut as heifer feed.

— Allen Wilder  
wilder@whminer.com



**Strawhatters  
Community Band  
Live on the Lawn!**

**July 29  
7 pm**

**Miner Institute  
1034 Miner Farm Rd.**

**Bring your lawn chair and some snacks  
and enjoy some live music!**

**This event is free and fun for all ages.**



# ARE FARMERS WILLING TO SELL OUT-SIDE OF CO-OPS, BECOME CERTIFIED ORGANIC, OR GRAZE THEIR COWS?

At the end of April I defended my master's thesis. I spent 18 months collecting data from Northeastern dairy farmers. While my peers at Miner Institute worked on dairy nutrition research, studying the role of fiber in a cow's diet, or mineral metabolism in the transition period, I interviewed 25 farmers across the region.

In these interviews, I asked farmers to discuss their values, connections to their community, and attitudes to adoption of three alternative management practices.

The idea for this research came from a 2019 Vermont Farm to Plate brief that described the current state of the dairy industry in Vermont, and three alternative management practices that Vermont and Northeastern dairy farmers were well-placed to take advantage of. These practices - selling into alternative milk markets, becoming certified organic, and grazing -- were selected for their ability to gain more value for the farmer, perceived demand from consumers, and availability of grazing land. While the brief included well-founded reasonings for their selection of these management practices, I became interested in how the possible adoption of these practices would play out with farmers. The team that authored this brief also leads the Northeast Dairy Business Innovation Center, a USDA funded grant awarding group that helps connect dairy farmers from Maine to Maryland with funding, education, and technical services.

The goal of this research was to more deeply understand the values, ideals, and norms that shape farmer decision-making, and how farmers absorb outside opinion in their adoption of alternative management practices. This research involved finding a diverse group of farms and farmers, intentionally interviewing farmers who were as different from each other as possible. Farms varied in size from 45 to 10,000 acres, with 29 to over 2,000 lactating cows. Farmers varied in age from 22 to 65 years old, with 13 female and 12 male participants. Thirteen farms sold exclusively to co-ops, nine sold at least some milk on the value-added market and the rest to a co-op, and three sold all of their milk on the value-added market. Farms were located in Maine (5), Rhode Island (1), Vermont (6), New York (8), and Pennsylvania (5).

Unsurprisingly, farmers' willingness to adopt any of the three alternative management practices was based in their practical ability to apply them. For example, infrastructure barriers to entering the value-added market and land availability barriers to grazing were referenced. Farmers also described the role of their personal values in their adoption of these practices. One conventional farmer said about organic certification and antibiotic use, "On some level, it's not right for the animals. If your child was sick, you would take them to the doctor and give antibiotics". On the other hand, an organic farmer said, "It feels like being an organic farmer is...my identity rather than just being a farmer". Practical and values-based reasoning was a key component to

farmers' explanation of their chosen practices.

However, analysis of farmers' self-descriptions revealed deeper motivations in their decision making. Farmers identified the importance of community connection, education, and local food in the face of ethical and sustainability criticism. Within their description of these factors, farmers revealed a need for dairy products to be more highly valued socially and economically. Farmers saw their contributions to the community through experiential learning like farm tours or the Adopt a Cow program, and contribution to local food availability as a justification for their existence, and a way to outweigh potential negativities of dairy farming.

Farmers also described their frustrations within the overlapping intricacies of dairy marketing, advertising, and education, and how the economic goals of the industry do not necessarily align with the practical and ethical goals of farmers. One farmer said, "(The co-op's) pictures are very bucolic...and it's misleading... because marketing and educating are very different things". Here, this farmer acknowledged that marketing grazing practices may work well for their co-op to gain consumer acceptance, but that this portrayal of farming may damage long term consumer trust and view of the industry. Therefore, farmers described a desire to be more involved in the education of the public on dairy farming realities.

See **FARMERS**, Page 9



# FARM DAYS FOR FIFTH GRADERS 2025



We hosted our annual Farm Days for Fifth Graders event the first week in June. Over the course of three days, we toured more than 300 students around the farm to eight different stations where they learned about agriculture — facets of how we farm today, and how William Miner operated Heart's Delight Farm in the early 1900s. Each station was led by summer interns. This is an enriching educational experience both for all the fifth grade participants and our undergraduate student interns! We are grateful to be able to offer this field trip experience to students in Clinton County.

## FARMERS, Continued from Page 8

Unlike quantitative research, which is performed to statistically accept or reject a hypothesis based, qualitative research is done to expand our understanding of a group and give a voice to those who might not always be heard. In this case, these findings can help agricultural researchers, advocates, service providers, legislators and more to understand how farmers internalize pressures when considering farm management changes. People may take from this research that, while these farmers largely made practical and values-based decisions, farmers absorb and reflect consumer and public pressure to adapt to sustainability concerns, and that farmers have a deep desire for their cultural, economic, and nutritional contributions to their communities to be more highly valued.

— Bridget Craig  
[bcraig@whminer.com](mailto:bcraig@whminer.com)

## TECHNOLOGY, Continued from Page 1

participants noted the growing use of air fryers for dry matter determination due to their low cost but they acknowledged the trade-off in speed and convenience. Drone technology is allowing us to track the volume of our silage piles and make better feed inventory decisions and predict when bunk changes will occur. This technology was not used much by the participants. However, some participants indicated that their feed mills used grain bin monitoring systems to track inventory (one less job for the farmer) and coordinate grain deliveries more efficiently across multiple farm sites. Other technologies

that participants highlighted as useful on farms that they work with included: feeding management software, robotic feed pushers, and cameras to monitor feed availability at the bunk. Some participants shared the usefulness of virtual fences for farmers that graze their cattle.

During our discussions we touched on the idea of a “technology graveyard” — tools that have fallen out of favor or failed to deliver on their promises. Interestingly, there weren’t too many specific technologies that participants wanted to bury. Instead, the consensus was

that most technologies fail not because they’re inherently flawed, but because of a “people problem.” Challenges arise from unrealistic expectations (especially in regards to labor savings or needs), lack of maintenance, and steep learning curves. Clear expectation, proper training, and tech support are critical for their successful adoption.

What technologies are you using — or retiring — on your farm? I’d love to hear about them.

— Heather Dann  
[dann@whminer.com](mailto:dann@whminer.com)

# DRAINAGE PROJECT ENTERS A NEW PHASE

Increased awareness of the impact of nutrient loading from agricultural activities has driven public and producer interest alike in adopting practices such as cover cropping (CC) and no tillage (NT) corn production. While considerable strides have been made in adapting these practices to northern climates with short growing seasons, harsh winters, and unpredictable weather in the fall harvest and spring planting windows, there has been much less focus as to whether the intended environmental benefits are being achieved.

Research has demonstrated that the agronomic benefits of NT+CC in combination is greater than the sum of the benefits of either practice in isolation. Therefore, NT is rarely implemented without the accompanying usage of CC.

Much of the cropland in the Lake Champlain Basin of New York and Vermont has a high potential for surface runoff due to the topography and an abundance of poorly drained soils. The limited soil disturbance and increased residue cover with NT management can result in significant reductions of sediment and particulate phosphorus (P) in surface runoff. Conversely, the improved soil structure in NT fields can result in elevated subsurface losses of P through preferential flow pathways in fields with systematic tile drainage, especially when manure is applied and remains on the soil surface. Cover cropping is often paired with NT production as the continuous vegetative cover and root system enhances the development of soil structure. The living CC in the fall and spring (when planting winter hardy varieties such as cereal rye) helps remove



The same surface runoff monitoring location at the corner of the previously untilled field is pictured at different times of the year. Notice that despite the same approximate rate of drainage, the potential for increased erosion when there isn't a growing crop to anchor the soil in place and protect the soil from raindrops with its leafy canopy.

plant available P and nitrogen (N) that could otherwise be lost in runoff. Tile drainage has and continues to be widely adopted in the region, and research has demonstrated the potential for NT+CC systems to contribute a significant proportion of annual P and N loads in certain circumstances. Understanding how the conversion to NT+CC impacts field hydrology (surface vs tile drainage), nutrient dynamics, and the potential tradeoffs that may occur with conversion to NT+CC in tiled fields is critical to developing sound recommendations for producers.

Despite the possible benefits to the producer, there are also challenges related to implementing NT+CC in corn fields. Short growing seasons, allelopathic effects on the subsequent corn crop, water and nutrient competition between the CC and corn during the early growth stages, can all impact the quality and yield of the corn crop. Although cereal rye is a winter hardy crop that can be planted as late as October 10 in the region, it's not unusual for CC to be planted well into October. Understanding the degree to which a well-established CC compared to a low biomass CC stand will impact water quality metrics is important for real-world

assessment as conditions are rarely ideal.

From 2018-2022, two fields in Keeseville, NY were monitored for surface and tile drainage water quality. While surface drainage was monitored and sampled from both fields, only one of the fields was tile drained. During this 5-yr period, it was clear that tile drainage had a substantial impact on the water balance for each field; total drainage was 46% greater in the tiled versus untilled field, but the primary runoff pathways differed with

the vast majority of drainage from the tiled field occurring through the subsurface. This increased soil drainage capacity also resulted in 244% greater N losses from the tiled field, but no meaningful differences were observed for P.

As we enter the new phase of the project, the untilled field has now been tiled (summer 2023) and sampling began in December 2023. Currently both fields are being managed with conservation tillage and no winter cover crop to develop a new baseline comparison of their surface and tile drainage water quality. The NT+CC management will begin in one of the fields in 2026. This study will provide an opportunity to collect data that will enhance the experimental rigor of the previous study at this site (impacts of tiling), allowing for more robust and scientifically defensible conclusions to be drawn, while simultaneously generating data for the investigation of the environmental and agronomic benefits of NT+CC corn silage production and whether this system can help mitigate the additional N losses that occur when fields are tiled.

— Laura Klaiber  
klaiber@whminer.com



# WHAT'S HAPPENING ON THE FARM

Happy National Dairy Month! Despite what seems like constant rainy weather, we were able to take advantage of a few dry days to begin our first cutting of the season. During the last week of May our team successfully completed and covered the first haylage bunk after two long days of chopping. We are currently collaborating closely with our nutritionist to adjust some rations. We are currently feeding from both the conventional and BMR corn silage bunks from 2023. While not ideal, we're focused on utilizing the available feed as effectively as possible.

With warmer weather settling in we've also seen an increase in mastitis cases. It's a good reminder of the importance of strong communication and a good chance for some extra training among all employees and students working with the herd. We're emphasizing proper stall cleaning procedures and thorough teat sanitation in the parlor before and after each milking session to support udder health.

Earlier this month we hosted one of our annual events: Farm Days for Fifth Graders! During a three-day period hundreds of students from across the North Country visited Miner Institute for a day of hands-on dairy education. Students rotated through stations such as milking, field equipment, the calf barn, and cow nutrition. The most popular stop, as always, was the cannulated cow station, where students learned about the ruminant digestive system and even had the chance to feel inside one of our cannulated cows.

We also welcomed our 2025 class of Summer Experience students in mid-May. This year's interns in Farm Management — Alayna, Connor, Rachel, and Will — are going to spend the summer rotating through key areas of dairy operations, including milking, calf care, herd management, field crops, and feeding. Each intern is also preparing to show a heifer at the Clinton County Fair in July. They are responsible for halter training, washing, clipping, and fitting their animals for the show.

We're looking forward to a busy and productive summer season ahead!

— Nicole Roblero  
nstorover@whminer.com



Summer students help dairy staff to put tires on our 1st cut Milk cow haylage. We put silo stop orange vapor barrier down first and then the white layer that has a fiber membrane in it that helps to prevent birds and other small animals from poking holes in it. Tires — placed so that they are tight against each other — are placed on top to prevent air gaps.

The William H. Miner Agricultural Research Institute  
1034 Miner Farm Road  
P.O. Box 90  
Chazy, NY 12921

Change Service Requested



Non-Profit  
Organization  
U.S. POSTAGE PAID  
Chazy N.Y. 12921  
Permit No. 8



An unexpected visitor caught on camera at the edge-of-field research site in Keeseville.

## *Closing Comment*

There's a reason we were given two ears but only one mouth.

[www.whminer.org](http://www.whminer.org)

518.846.7121 Office  
518.846.8445 Fax