

# FARM REPORT



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## FROM THE PRESIDENT’S DESK: “THE COWS ARE PRODUCING TOO MUCH MILK”

“The cows are producing too much milk.” Our farm manager, Steve, made this comment recently when reviewing lactation records for four cows scheduled to dry off the next day. The cows were all producing over 90 lb of milk; one was even over 110 lb. Typically, we dry off cows weekly when they reach 225 days carried calf so that they have a 50- to 55-day dry period. We use an abrupt cessation of milking and administer intramammary antibiotic treatment. However, these four cows required a different approach as drying-off high-producing cows requires careful management to keep them healthy and ensure a successful next lactation.

When cows are dried off producing over 30 to 40 lbs. of milk it can increase the risk of mastitis, delay mammary gland involution, and increase inflammation and metabolic stress. Rapid involution stimulates the immune system and promotes udder health and animal welfare. So, the challenge becomes how best to dry off higher-producing cows. The “simple” approach is to reduce milk yield before dry-off. The most common approaches to do this are feed or nutrient restriction with or without a decrease in milking frequency. We move our cows a few weeks before dry-off to a low group cow pen that is fed a less energy-dense diet that is higher in fiber to promote rumen fill and limit intake. This often does the trick

to reduce milk yield. Occasionally, we have some cows, like the four cows recently, with lactation curves that are incredibly persistent. What should we do?

Recently a group of researchers from Italy and Florida reviewed in the Journal of Dairy Science management practices to reduce milk yield of higher-producing cows before dry off and their implications for udder health, animal welfare, behavior, endocrine status, metabolism, and inflammation. Feed restriction through a change in the amount of feed offered or a change in the energy density of the diet has resulted in 40 to 60% reductions in milk yield before dry off. However, excessive feed restriction can cause metabolic changes consistent with negative energy balance like in early lactation, changes in milk composition, and negative effects on the immune system. Also, restricting feed intake can cause increased feeding motivation, vocalization, and stress. Extending the lactation and shortening the length of the dry period is another option. However, too short (e.g., < 30 days) is not recommended since it can affect milk production in the next lactation. It takes approximately 25 days during the dry period for mammary cell turnover and replacement of senescent mammary epithelial cells. This

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# SPRING THINGS

Here are a few things dairy farmers should be doing in preparing for the coming crop season:

- Apply nitrogen fertilizer to grass and grass-alfalfa fields, ideally at “green-up” but better late than never since whatever N isn’t used by the first growth will be available for the second cut. Slurry or liquid manure applications are OK from a nutrient standpoint, but many fields are soft this time of year so heavy manure spreaders may rut them up. Applying N to your grass fields is a “no-brainer” since it increases both yield and crude protein. Depending on the quality of the stand and past manure applications, apply 70-100 lbs. of actual N/acre using protected urea or UAN solution. You can use slightly less UAN because it’s a more efficient source of N vs. straight urea. Another option is a 50-50 blend of protected urea and ammonium sulfate since many soils are sulfur-deficient. (And yes, I know that N fertilizer is expensive, but so is the impact of poor yield and low crude protein forage.)
- Check your alfalfa and alfalfa-grass fields for winter damage and winterkill. To do so properly you’ll need to get out of your pickup truck and “put boots on the ground”. A winter-damaged alfalfa plant will usually green up slower than a healthy one. Some of these plants may have been damaged not by winter but from damage last season by heavy field equipment. The cracks in the alfalfa crowns allow pathogens to enter, resulting in taproot diseases. These plants may produce some first cut yield but many will die as the soil dries.
- Don’t be in too much of a hurry to do spring tillage. Clods are the enemy of seed germination, and just because you can “mud in” corn in late April doesn’t mean you should. The earliest-planted corn seldom turns out to be the highest-yielding. Modern no-till corn planters are much improved over older models, and especially on stony fields notill can be a real time-saver. But you still need to wait for proper soil conditions.

— *Ev Thomas*  
*ethomas@oakpointny.com*

## NOBODY ASKED MY OPINION, BUT...

... before the internet people thought that ignorance was due to the lack of access to information. Turns out it wasn’t that at all.

... it makes no sense to be asked to limit AC use on hot days to reduce the load on the power grid while at the same time we’re encouraged to trade in our gasoline-fueled car for an EV.

... my people skills are fine; it’s my intolerance of idiots that needs work.

... if we look we can find humor in the strangest places, for instance this sign on the wall of a mammography exam room:  
2 Corinthians 4:8a (NIV)

# WHAT HAPPENS TO ENTERIC METHANE EMISSIONS WHEN COWS ARE FED A 'SPICIER' DIET?

The growing concern for greenhouse gas emissions globally and the impact on climate change has necessitated the development of climate-smart goals to address the issue. One of such goals is the November 2021 Global Methane Pledge to reduce the 2020 methane emissions by 30% in 2030. The Innovation Center for US Dairy also indicated the target of the US dairy industry to achieve greenhouse gas neutrality as part of its 2050 environmental stewardship goals. To meet these goals, several efforts and resources are being expended with the aim of reducing the amount of greenhouse gases emitted from the different sources. One of the sources of methane (CH<sub>4</sub>), a potent greenhouse gas, is ruminant livestock production via enteric emissions and manure storage. Hence, the need for effective and sustainable strategies to reduce CH<sub>4</sub> emissions from ruminant livestock production systems.

According to Fouts et al. (2022), some of the interventions that have been employed in enteric CH<sub>4</sub> mitigation are reformulation of the diet by reducing the forage to concentrate ratio, improving the forage quality, increasing dietary fat content, the inclusion of feed additives like 3-Nitrooxypropanol (3-NOP), seaweeds (e.g. *Asparagopsis* sp), nitrate, essential oils, plant secondary metabolites like tannins, and the use of selective breeding methods like direct, indirect, and genomic selection. The selective breeding approach is a long-term intervention compared to dietary reformulation and inclusion of feed additives.

A recent study done at The Pennsylvania State University by Martins et al. (2024) evaluated the impact of including botanical feed additives in diets fed to lactating dairy cows, and the effect on their lactational performance, enteric CH<sub>4</sub> emissions, and nutrient use efficiency. The botanicals used in this study were Capsicum oleoresin, with or without clove oil. The National Center for Biotechnology Information (2024) defines Capsicum oleoresin as an oily organic resin that is extracted from the fruit of plants like chili peppers which belong to the genus *Capsicum*, and it's used as a cooking spice. The inclusion of Capsicum oleoresin in dairy and beef cattle diet has been attributed to its potential to modify rumen fermentation and increase intake based on the response of the animal's body system to the additive (Oh et al., 2015). Clove oil contains eugenol which has wide-spectrum antimicrobial activity. The study by Martins et al. (2024) was a 10-week experiment, with 48 lactating Holstein cows (18 first lactation and 30 2+ lactation) which were assigned to 1 of 3 treatments- a basal diet (CON) without any botanicals, a basal diet supplemented with 300 mg/cow/day of Capsicum oleoresin (CAP), and a basal diet supplemented with 300 mg/cow/day of a combination of Capsicum oleoresin and clove oil (CAPCO). The botanicals (CAP and CAPCO) were included at 0.8% of the daily dry matter intake (DMI).

The results from this study showed that the CAP and CAPCO treatments had no effect on the DMI, milk yield, milk components, feed efficiency,

daily CH<sub>4</sub> emissions, blood energy markers ( $\beta$ -hydroxybutyrate, total fatty acids, and insulin), and total-tract apparent digestibility (apart from a tendency for a decrease in starch digestibility) of the cows that received the treatments. The authors, however, noted an increase in body weight of the cows during the last 2 weeks of the experiment. They also stated that the combination of Capsicum oleoresin and clove oil (CAPCO) decreased CH<sub>4</sub> emission yield (CH<sub>4</sub> per kg of DMI) and intensity (CH<sub>4</sub> per kg of milk yield) up to 11% in the first lactation cows, while Capsicum oleoresin (CAP) increased blood haptoglobin concentration in the 2+ lactation cows (according to Naryzny & Legina 2021, the presence of haptoglobin in the blood shows the functionality of the liver and signals the onset of the destruction of red blood cells and other inflammatory processes in the body). It also improved the efficiency of energy utilization in all the cows, however, the available energy was not used for milk production or milk components but was channeled for body weight gain.

The authors noted that due to the diversity of botanicals, their impact on performance will be dependent on the type and productivity of the animal, composition of the diet, chemical composition of the botanical, inclusion rate in the diet, and the rumen environment. More research is needed to ascertain the efficacy of botanicals on rumen fermentation, CH<sub>4</sub> emission, and lactational performance of dairy cows.

— Gift Omoruyi  
gomoruyi@whminer.com

# WHOSE RESPONSIBILITY IS IT ANYWAY?

The burden of responding to public pressure on the dairy industry is passed around like a hot potato. When those questions are asked, who ends up with the potato? In 2019, researchers from the University of British Columbia conducted focus groups at the US Dairy Education and Training Consortium in Clovis, New Mexico. Working with 45 animal science undergraduates they discussed the students' views of the future of dairy farming, especially animal care and sustainability, and how they regarded the role of the public in influencing this future. Focus groups give researchers the unique ability to compare participants' opinions and reactions to the topics on hand in real time. In contrast to surveys or interviews, the community aspect of focus groups can create a more realistic representation of how the world works.

In these focus groups the facilitator asked students to explain what they saw as "must haves" on dairy farms in the future, how those requirements can be achieved, and how they can be aligned with public expectations. They also discussed how the public can play a role in the achievement of these must haves. Students' answers were expected- what they struggled with was more interesting. They gave common answers such as increased environmental sustainability in the face of climate change, preventative steps to combat negative perceptions of animal welfare, and a reinvestment in the industry's relationship with consumers.

Students across each focus group

reached a point in the discussion where they questioned why they thought these must haves were necessary. Was it because the research and education they had undertaken told them that they were necessary for a sustainable industry with healthy, productive cows? Or was it because they knew that there was public pressure for these must haves? Did they really think these were best practices for the dairy industry, or were they goals that they knew consumers wanted fulfilled? When we try to address sustainability or welfare concerns in the dairy industry, we're working towards multiple goals. We're trying to retain and increase our consumer base, continue producing nutritious products, support farmer livelihoods, and push the industry to improve across these categories. To successfully fulfill these goals it's important for our motivation to be factually based, incorporating consumer demand rather than valuing perception over best practices.

Researchers, students, nutritionists, extension agents and more have a responsibility as experts in this field to disseminate accurate information. This includes checking our own biases and asking ourselves if we are putting out information edited to make ourselves look better. Animal welfare and the sustainability of dairy are contentious topics that people can get defensive about. It's easy to fall back on the mindset that dairying works well the way it does now. But it's important to consistently evaluate expectations for welfare and sustainability, and

make sure that they line up with what is feasible for the farm, what is fair treatment for the animals, and what is a reasonable response to public pressure. We in the industry can be open to animal welfare concerns and respond with peer reviewed data on what is best for the animal, within a respectful dialog between industry and consumer. In my opinion, trust between the consumer and the producer is the most important part of that relationship. This can only be achieved through communication and reasonable compromise between both groups.

To conclude their analysis of the focus groups, the researchers pointed out that students recognized that their lists of must haves for farmers were lengthy and, in some cases, not doable. These groups vocalized that this responsibility of working towards sustainability and animal welfare is a burden that cannot be solely undertaken by farmers. They spoke about the importance of other experts in the dairy industry to undertake some of this burden. I see this as an excellent opportunity for Miner Institute to fulfill its main tenets of research, education, and demonstration; to be an example within the industry, researching sustainability and welfare, educating both producers and the public on best practices, and demonstrating those practices. So, I ask any of you Farm Report readers to respond to this piece via my email below, how do you address these issues?

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

# MAY I TAKE YOUR COAT, MISS?

Here in the Northeastern US we've just experienced what is affectionately known as "Fake Spring (1 of 2)." These hints of warm weather have those of us desperate for sunshine immediately shedding our winter layers in favor of lighter clothes, only to put them right back on again when the temperatures inevitably return to seasonal. Luckily for us, we can self-regulate our attire to avoid cold stress, but this is not the case for our calves. As we begin to think about hanging up the calf jackets for the season in the chillier regions, here are a few things to consider before you open the coat check.

Young calves are more prone to heat loss due to thinner skin and lack of subcutaneous fat. Dry and deep bedding, a housing area protected from drafts, dry hair coats, and sufficient nutrition improve calves' tolerance to colder temperatures. The comfortable thermoneutral zone for calves from birth to 4 weeks of age is between 50-78°F (10-25°C), and 32-77°F (0-25°C) from 4 weeks to weaning. Cold stress can occur when temperatures are below 50°F (10°C) in calves less than one month of age. Calves older than one month of age typically have enough body fat reserves and developed hair coat to withstand a lower critical temperature (the temperature where energy is diverted to maintaining body

temperature rather than growth) of approximately 32°F (0°C).

Despite the warmer days, temperatures can still dip near or below freezing at night, and the seasonal weather inconsistencies are always a challenge. Body temperature follows a circadian rhythm, with increased body temperature observed during the day and lowered at night. Being cold may disrupt resting cycles, and the temperature during the day isn't likely to be warm enough yet to counteract any cold stress the calf experienced overnight. Wind, precipitation, and humidity can also contribute as thermic stressors to calves housed outdoors and can necessitate further use of a jacket. Group-housed calves often huddle together for warmth, but still should be monitored closely for signs of cold stress (such as shivering and restlessness). Calves that are cold tend to eat more, but the energy derived from the meal will be allocated to making body heat rather than to growth and immune function, which can negatively impact performance.

Regional weather, climate, and housing should always be taken into consideration when it comes to making decisions about removing calf jackets. Dry bedding and draft-free housing should be a priority for all

calves, and jackets are recommended for calves from newborn to 3 weeks of age and sick calves. As calves consume more grain, ruminal fermentation will contribute to body heat, making a jacket less necessary as long as weather conditions aren't extreme. As warmer days approach, monitoring calves during the day to make sure that they aren't sweating is important, because evaporative cooling will occur when the temperatures drop in the evening and lower the calf's body temperature. Similarly, ensure newborn calves are dry before putting the jacket on. If necessary, remove the jackets during the day and put them back on in the evening to help calves maintain body temperature overnight when temperatures are below 50°F (10°C). If wardrobe changes prove to be too labor-intensive, increasing the depth of straw bedding could allow for removal of jackets if temperatures are fluctuating between 40-50°F (4.5-10°C). For calves housed outdoors in hutches, keep an eye out for any moisture accumulation from humidity within the hutch, as this can also contribute to sweating. Offer to take the lady's coat when the weather stabilizes and she's eating and growing well.

— Cari Reynolds  
reynolds@whminer.com

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## HEART'S DELIGHT SPRING PREMIER OPEN HORSE SHOW

### MAY 25-26, 2024

### Clinton County Fairgrounds Plattsburgh, NY

The 4th Annual Heart's Delight Spring Premier is on target to be another great horse show May 25-26, 2024 at the Clinton County Fairgrounds in Plattsburgh, NY. We all know horses are great, but let's share that love with a wider audience! We've invited Jeff Wilson, Western Dressage Trainer and performer, to bring his Morgan stallions to put on an entertaining show on Saturday afternoon and then chat with the audience about training and how he's come to such good partnerships with his horses.

Plan to enjoy a complimentary tasty treat from Tammy's Lunch Box while you take it all in. Spectators are welcome and admission to the show is FREE!



# DOES MILKING ORDER MATTER?

Most of my days at Miner Institute begin with me walking the research pens at about 7:30 AM. Almost every morning I see the same cow, 3355 or as most around here know her, “Puppy”, eating from the same spot in the feed bunk. She’s always eating in the first or second section of headlocks, closest to the pen exit. It’s not uncommon for cows to have preferences for which stalls they like to lay in, or which spot of the feed bunk they chose to eat at. What’s interesting is that some cows even have a preference for when they are milked within their group.

Many studies have demonstrated the consistency of milking order across farms. For example, Australian researchers examined the consistency of milking order of 5 Australian dairy herds that were milking over 500 cows as a single group in a rotary. The researchers found that 70% of the cows were milked within the same 30-40 minute time period from the morning to evening milkings. There are many factors that can affect milking order within a group, some of which include social hierarchies, health and fitness of cows, estrus, and even milk production. Interestingly, studies have observed that cows in large groups that are milked first produce more milk than those milked last.

The impact of milking order and diet composition in a pasture-based system on milk yield and milk composition was investigated by K. Dias and colleagues in a study that was published in the *Animals* journal. One experiment in this

study found that cows milked earlier in the group produced on average 18% more milk than those milked at the end. Another experiment sampled the first and last 50 cows milked on 3 farms for 3 consecutive days. Results varied by farm with the first 50 cows on farm 1 having higher milk, protein, and solids non-fat (SNF) yields and less lactose content than the last. The cows milked first on farm 2 had higher milk, SNF, lactose, and fat yield, but lower protein and SNF content. Cows milked first on farm 3 had higher milk fat and protein content than those milked last.

Observational studies on the order of cows entering the parlor were conducted on commercial dairy farms in New South Wales, Australia by A.K. Rathore, with farm sizes ranging from 42 to 718 cows. The one trial in this study consisted of 6 commercial dairy farms, and Rathore observed that all 6 farms had a significant linear relationship between the milking order and milk yield, with the cows being milked earlier in the group tending to have higher yields than those milked later.

To explain these findings, some researchers have suggested that the high-yielding cows enter the parlor first because the relief of udder pressure from milking is a reward. Dias and colleagues (2019) found in a pasture-based system that crude protein decreased by 21% and acid detergent fiber increased by 15% from the time the first cow had access to pasture after milking to when the last cow was back from the parlor after a 1.7 h milking. This difference in

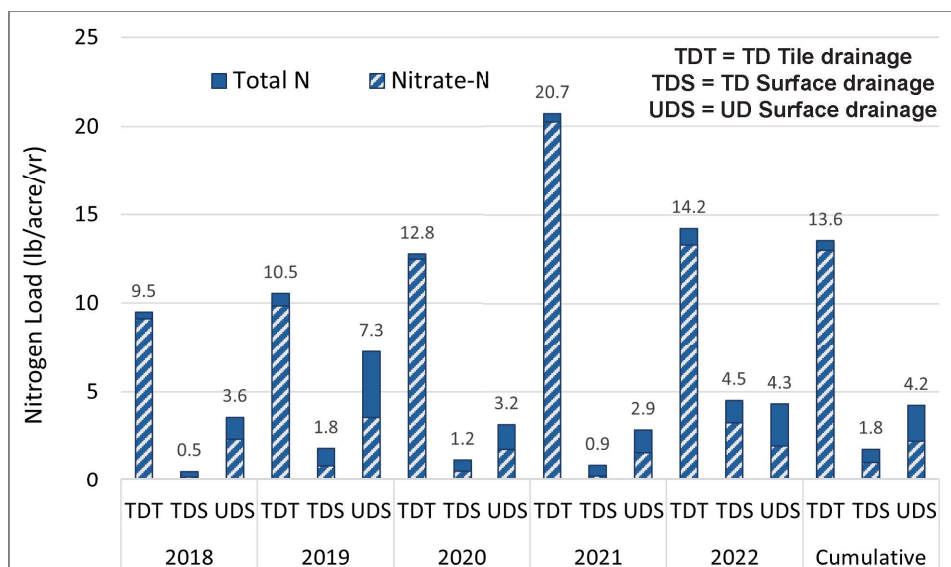
nutritive value could explain why Dias and her colleagues saw differences in milk yield and composition between cows milked first and last. We also know that lying time and recumbent rumination is essential for milk production, and the cows that are milked later in the group spend more time standing in the parlor and thus have less time available to lay down.

While the order at which cows enter the parlor is out of our control, there are strategies farms can use to help mitigate any yield difference that may appear between cows milked first and last within groups. Reducing pen size would limit cows’ time in the holder area and result in them having more time to eat and lay down. While smaller pen sizes are not feasible for all farms because of parlor efficiency or pen layout, we can keep up with everyday feed management to improve access to the diet. For example, delivering or pushing up feed when all cows have returned from the parlor will improve access for all cows. Bach and colleagues (2008) found that herds that routinely pushed up feed produced on average 8 lb more milk than herds that did not push up feed. Having a well-formulated diet that is not easily sortable will ensure that the cows returning from the parlor last are eating the same diet as the cows who got back from the parlor first. In a pasture-based system, waiting to open a new paddock until after milk is complete will ensure that all cows have access to the same nutritive value.

— Emily Bourdeau  
[ebourdeau@whminer.com](mailto:ebourdeau@whminer.com)

# PHOSPHORUS, NITROGEN, AND THE TILE DRAINAGE CONUNDRUM

In last month's issue of the *Farm Report*, I summarized some results from a 5-yr study investigating the impacts of tile drainage on the amounts and distribution of drainage water and phosphorus (P) between surface and tile drainage pathways in a corn silage field. Surface drainage from both fields and tile drainage from the tilled field was collected with automated sampling equipment that adjusted sampling frequency in response to flow rates. Sampling was conducted continuously, year-round to characterize the water quality across the entire year.



As I wrote last month, from 2018 through 2022, there was 44% more total drainage from the tile-drained field (TD; surface + tile drainage) than the undrained field (UD; surface drainage only). However, TD only generated half as much surface runoff as UD, likely significantly contributing to the 22% lower load of total P leaving the field from TD (0.21 lb/acre/yr) compared with UD (0.27 lb/acre/yr).

While the impact of tile drainage on P losses has been shown to be negligible to positive in these fields, it's a very different story for nitrogen (N). Nitrate is the soluble form of N and is the primary form that plants use. Most of the crop's N needs comes from commercial N fertilizer applications and the breakdown of organic N (unavailable to plants) in the soil by microbes into nitrate. When fields are tile drained, they are better aerated and therefore warmer, the perfect conditions for microbes to thrive in. With these optimum conditions, the microbes convert organic N (not available for plants) into nitrate at a higher rate than if the field were not drained.

Thus, while hoping the improved drainage would increase crop yields and reduce P losses by reducing erosion (which it did), we have inadvertently increased the rate of N loss, far from a desired result. In the graph we can see that the amount of nitrate and total N varies from year to year for both fields, but tile drainage was consistently the greatest source and delivered 88% of the total N load from TD. Cumulatively, TD lost 263% more N than UD, or 15.3 lb/acre/yr from TD compared to 4.2 lb/acre/yr from UD. Furthermore, while these fields ranged from ~3-4% organic matter during the study, fields with higher levels of organic matter are likely to see an even greater difference due to the large organic N pool within that organic matter, just waiting to be mineralized into plant available nitrate whenever conditions improve for the microbes.

All cropping systems require regular N additions to balance the repeated removal in biomass. The highly soluble nature of nitrate makes this especially challenging as we have to try to determine not only what is in the soil, but what will be available

when our crops actually need it. Even when we're right on the money with our application rates relative to crop needs, tile-drained corn fields will still experience some degree of N loss if left fallow during the nongrowing season because much of the remaining available N in the soil from the growing season will be leached from the field. Planting a winter hardy cover crop such as cereal rye (aka winter rye) can help retain some of this N pool in the field rather than losing it through the tiles. As the rye grows throughout the fall and during warm periods in the winter and early spring, it will scavenge N and P from the soil and retain it in its biomass until it is terminated in the spring and returns those nutrients to the soil. For more information on how to choose cover crop species based on your goals and date of planting, check out the Winter Cover Crop Decision Tool from Cornell University's Climate Smart Farming website (<http://climatesmartfarming.org/tools/csf-winter-cover-crop-planting-scheduler/>)

— Laura Klaiber  
klaiber@whminer.com

# NORTH AMERICAN MANURE EXPO 2024

The North American Manure Expo visits the Northeast in 2024. Join us July 17-18 in Cayuga County near Auburn, NY. Experience the thrilling demonstrations and engaging exhibitors of the Expo in the heart of the Finger Lakes region. Tour local facilities to witness the best in manure innovations of the Northeast. See spreaders, agitators, separators and other technology side-by-side – and witness the manure expertise that separates the Manure Expo from every other farm show!

Early bird registration rates end June 15, 2024.

<https://www.manureexpo.ca/>



## CLIMATE CHANGE AND THE THINKING FARMER

Peter Finlayson is an Ormstown, Quebec farmer with weather station data dating back 58 years. He's summarized average winter (November through March) and summer (May through September) temperatures by decade, beginning in 1967. These records show that our winters have warmed about twice as much as our summers, with much of the increase in winter temperatures due to warmer night-time lows. The average November-March temperature increased from 22°F in 1967-1976 to 26°F in 2017-2023, while the average May-September temperature increased from 63°F to 65°F. These are North American trends, confirmed by the US EPA. Peter also notes that summer nights have warmed twice as much as have the days. This has resulted in a significant increase in heat units or Growing Degree Days without much of an increase in daytime heat.

From Peter: "Farmers, more than any group in society, are influenced by climate change. Every time we plant a crop we hope for the best and make do with the results because we know that weather is out of our control. We certainly don't need to play the lotteries for excitement. We gamble our net income every day and we adapt our practices to suit what is available at the time." He also says that warmer (less frigid) winter nights "fit in with my vision of an improving world."

— Ev Thomas

Is there something you'd like to know more about?

Email article suggestions to [dutil@whminer.com](mailto:dutil@whminer.com)



# WHAT'S HAPPENING ON THE FARM

Here in Northern New York the weather has been all over the board. Some days we are in the 50's, allowing our curtains and doors to open allowing our cows to bask in the sun, and then some days we are back in the 20's having to bunker down the barn for a cold spell. Our cows have loved the curtains being down and feeling the sun, and so have all of us working on the farm!

We've experienced high volumes of calvings in the past few weeks which has been great for adding replacement heifers to our herd. Once our cows calve we send them to our fresh group, which is a sawdust-bedded free stall pen. Fresh cows will remain there for at least 7 days before moving to our second fresh group. With so many fresh animals we had to make a second group for them. This next group is a sand-bedded free stall pen where we are still able to keep a close eye on them, but they'll be able to adjust back into herd life. After about 20 days being fresh, most of our cows are ready to move into one of our high lactating groups, where they will remain for a majority of their lactation.

Some of our fresh animals have been struggling with ketosis. This is simply when the cow is suddenly producing a large amount of milk but not consuming enough energy to contain this increase. This causes the cow to involuntarily take energy from her fat reserves, and she will start feeling pretty icky and lose interest in eating. Cows that struggle with ketosis for a substantial amount of time can lose a lot of weight quickly. We are able to treat ketosis with Propylene Glycol and supplementing some Vitamin B12. Most of our cows will recover with adequate treatment and some TLC. Some of these heavily ketotic cows could develop a displaced abomasum, also known as a DA. This means the abomasum, one of the stomach chambers, fills with gas and floats into the wrong position. This causes an excruciating stomachache for the cows. Our cows will receive surgical repair for DA's from our veterinarian, and will go on to recover well!

There has been an increase in pneumonia cases with the fluctuating temperatures in the calf barn. We are currently working closely with our veterinarian to perfect our vaccination protocols along with our treatment protocols.

— Nicole Stover  
nstover@whminer.com

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## MILK, Continued from Page 1

is critical for milk production in the next lactation. Reducing milking frequency (e.g., 3x to 2x daily) or intermittent milking (e.g., 1x daily on day 1, 2, 3, and 5 then dry off at day 5) in the week before dry off resulted in up to a 40% reduction in milk yield. Less frequent milking prevents milk synthesis and promotes normal cell death (apoptosis) because of prolonged milk accumulation in the udder between milkings. The downside to this approach is increased intramammary pressure that increases the risk of milk leakage, intramammary infections, and cow discomfort. The odds of milk leakage increased 31% for every 10 lb above 40 lb for gradually dried off cows. Abruptly dried off high-producing cows increased

standing time or activity at milking time indicating a need to be milked, had increased udder firmness, and avoidance behavior to udder palpation indicating pain. The researchers concluded that the combination of a moderate feed restriction and reduced milking frequency was the preferred approach to decreasing milk yield in higher-producing cows before dry off.

Well, we applied the combination strategy to our four higher producing cows. The cows were moved to a pen where they were fed the far-off dry diet that was less energy dense and more filling and had their milking frequency reduced from 3x per day to 2x per day for 3 days then 1x per day for 2 days

and then dried off. Milk yield decreased as expected to 34 to 45 lb at dry off. Interestingly, cows showed increased activity around the time of their first "missed" milking. One cow was so active that she flagged as having a heat event even though she was pregnant, suggesting that she was motivated to get milked. The activity for the four cows didn't spike again after that first missed milking. The cows seemed to adapt to the changes well. We will know in a few weeks how this different management practice impacted udder health. We will be very surprised if these cows have mastitis.

— Heather Dann  
dann@whminer.com

# MINER LEGACY RUN

A CENTURY OF CARING FOR THE NORTH COUNTRY



THE  
**Foundation**  
Champlain Valley Physicians Hospital



5k/10K  
Run/Walk

May 11, 2024  
at  
Miner  
Institute



Register Now!

**National Nurses Week is May 6 – May 12, 2024 and to honor the amazing nurses in the North Country, we have teamed up with the CVPH Foundation to support nursing education and nursing work. This race is dedicated to the memory of James Wilson – as he was the inspiration for this event.**

**The course is a unique on-road and off-road course around the farm and farm fields at Miner Institute in Chazy.**

**Questions?**

**Contact Rachel at [dutil@whminer.com](mailto:dutil@whminer.com) or 518-846-7121, ext. 115**

# Advanced Dairy Nutrition & Management Shortcourse



JUNE 3 - 6,  
2024

Cornell University | Ithaca, New York

Presented as a partnership between Cornell University Animal Science and Miner Institute, the Advanced Dairy Nutrition and Management Shortcourse is conducted in even calendar years at Cornell University. This shortcourse is designed primarily for experienced nutritionists and allied industry professionals seeking a more in-depth exposure to selected topics of emerging and continued interest relating to dairy cattle nutrition and management.

## Summary

This year's course will feature 2 sessions. You may choose to attend the entire course or just one session. Session 1 will feature nutrition management lectures, similar to previous courses. Session 2 will focus on implementation of the CNCPS and will include case studies in addition to round robin lecture sessions. Both sessions will provide opportunities for attendees to network with each other and with course faculty in informal settings.

## Topics

Post-weaning nutrition and management  
Forage quality and utilization  
Advances in fiber characterization and application  
Calcium management in transition cows  
Amino acid nutrition and metabolism  
Nutrition and environmental programming  
Transition cow nutrition and management  
Advances and application of the CNCPS biology and more!

## Faculty

Dr. Joao Costa, University of Vermont  
Dr. Heather Dann, Miner Institute  
Dr. Laura Hernandez, University of Wisconsin-Madison  
Dr. Sarah Morrison, Miner Institute  
Dr. Tom Overton, Cornell University  
Dr. Kristan Reed, Cornell University  
Dr. Mike Van Amburgh, Cornell University

## Registration

Full Course: Monday - Thursday = \$700  
Session 1: Nutrition Management Monday - Wednesday = \$450  
Session 2: Implementation of CNCPS Wednesday - Thursday = \$350

For more information or to register, visit:

<https://cals.cornell.edu/animal-science/events/advanced-dairy-nutrition-and-management-shortcourse>

Presented by:

Cornell  
CALS

College of Agriculture  
and Life Sciences

Animal Science





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ENJOY!

Celebrating World Water Day at the Champlain Centre Mall on March 16! Laura Klaiber, Matt Kelting, and Jacob Leduc from our water quality research team joined 25 other exhibitors to help engage and inform the public about ways we are actively trying to protect and preserve our local waterways. World Water Day was initiated by the United Nations in 1993 to draw attention to the issues and threats surrounding the world's water resources.

## Closing Comment

Common sense is a flower that doesn't grow in everyone's garden.

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

518.846.7121 Office

518.846.8445 Fax